

# Traffic Impact Report

Valley Family Church – Kalamazoo  
2500 Vincent Avenue  
Portage, Michigan

October 2010



**Prepared By:**

**City of Portage Department of Transportation & Utilities**

W. Christopher Barnes, Director  
Muhammad Arif, Traffic Engineer

## TABLE OF CONTENTS

Introduction	Page 1
Background – Traffic Study Information	Page 1
Current Traffic Operations	Page 2
Traffic Volume Counts and Analysis	Page 3
Traffic Signal Warrant Analysis	Page 8
Conclusion / Summary Findings	Page 9

### Attachments:

1. Valley Family Church-Kalamazoo Vicinity Map
2. Traffic Control Services Agreement between VFC-K and City of Portage and the Traffic Control Response Agreement between Cities of Portage and Kalamazoo
3. Portage Police Department communication, dated August 24, 2010
4. Citizen email/inquiries received
5. 2010 Major Thoroughfare Plan Status Update Tables
6. MDOT correspondence, dated November 23, 2009 and September 8, 2010

### Appendices:

1. Appendix A, City of Portage Oakland-Vincent Hourly Count Summary
2. Appendix B, MDOT Hourly Count Report (Table A through Table D) and Oakland Drive 24 hour traffic counts tables (14 pages)
3. Appendix C, Weekend Peak Period Figures (Figure I through Figure IV)
4. Appendix D, Oakland Drive @ Vincent Avenue Peak Hour Vehicle Counts
5. Appendix E, Traffic Signal Warrant Analysis
6. Appendix F, 2005 Edition, Michigan Manual of Traffic Control Devices, Section 4C.01

## **Introduction**

This Traffic Report is provided as required by the Planning Commission with the May 1, 2008 approval of the Valley Family Church – Kalamazoo (VFC-K) special land use permit and site plan for the project situated at 2500 Vincent Avenue. The Department of Transportation & Utilities has prepared this report in fulfillment of condition #4 established by the Planning Commission:

*“A traffic report be prepared and provided by the City of Portage Department of Transportation & Utilities to the Planning Commission that documents traffic volumes and turning movements at the Oakland Drive-Vincent Avenue intersection and, if traffic data is available from the City of Kalamazoo, traffic volumes and turning movements at the Oakland Drive-Angling Road intersection. This traffic report is to also incorporate traffic volume, traffic counts on Vincent Avenue west of the VFC and turning movement information collected by MDOT for the Oakland Drive-I-94 interchange as traffic data is available. Any recommendations from MDOT, the City of Kalamazoo and from the City of Portage are to be included in the traffic report. The traffic report is to be prepared and provided to the Planning Commission not later than October 2010.”*

The Department of Community Development assisted the Department of Transportation & Utilities in compiling, reviewing and analyzing the traffic data and related information.

## **Background -- Traffic Study Information**

The development history of the VFC-K project dates from 2006 when the VFC-K considered purchasing the former Cathedral of Christ the King church and the surrounding acreage. A vicinity map showing the VFC-K area is included as Attachment 1. Subsequently, and as part of project planning particularly related to traffic flow, the following traffic information was completed, submitted and considered:

- VFC-K contracted with Midwestern Consulting, a traffic engineering firm, to prepare a traffic impact study of their proposed project, which was received from Midwestern Consulting on November 16, 2007 and reviewed by the City of Portage, City of Kalamazoo and Michigan Department of Transportation (MDOT) technical staffs.
- A revised traffic impact study was received on March 24, 2008, which addressed review comments of the City of Portage, Kalamazoo, and MDOT. This revised study also included a traffic signal warrant analysis to evaluate whether a traffic signal was permissible under Michigan Manual of Uniform Traffic Control Devices (MMUTCD) standards.
- A Special Traffic Assessment Report, dated March 24, 2008, was received on March 27, 2008 from Midwestern Consulting that examined the Angling Road Alternative Trip Distribution Scenario (increased traffic projections to/from the north via Angling Road from 3% to 9%)
- Midwestern Consulting revised the traffic impact study on April 21, 2008 (to evaluate an 80% occupied facility analysis).

At the conclusion of the process of studying traffic impacts and issues associated with the project, the parties involved including Midwestern Consulting on behalf of the VFC-K, MDOT and the City of Portage agreed that a traffic signal was not warranted and street improvements at the Vincent Avenue-Oakland Drive-I-94 Exit 75 were not appropriate without further monitoring

and evaluation. The most appropriate and recommended approach to accommodate existing and projected traffic for the planned VFC-K project involved traffic control by authorized uniformed police officers. City of Portage traffic engineering staff and planning staff concurred with the MDOT findings and recommendation concerning this mitigation strategy. Additionally, and consistent with the traffic impact study as revised, it was agreed that the existing Vincent Avenue right-turn lane be extended 300 feet west of Oakland Drive. This turn lane extension was designed and constructed in July 2009. Further, to ensure safe and efficient traffic flow on Vincent Avenue, it was recommended that City Council authorize a Traffic Order to prohibit parking on Vincent Avenue from Oakland Drive to Angling Road. The parking prohibition was subsequently implemented. As a final traffic-related matter, and as voluntarily offered by VFC-K, a traffic information sign – No Right-Turn, Local Traffic Only – was to be erected at the western driveway. This sign has been erected. These activities and actions were accomplished to fulfill conditions established by the Planning Commission with approval of the necessary Special Land Use Permit and site plan for the project.

### **Current Traffic Operations**

As part of the Planning Commission approval of the Special Land Use Permit, at the request of VFC-K the City of Portage entered into a Traffic Control Services Agreement dated September 16, 2009. Additionally, the City of Portage and City of Kalamazoo entered into a Traffic Control Response Agreement that authorized Kalamazoo public safety officers to provide traffic control services in the event of the unavailability of Portage Police Department officers. The agreements, the amendment and the renewal documents are attached in Attachment 2 as information.

Generally, the agreements provide that uniformed officers from either Portage Police Department or Kalamazoo Public Safety will perform traffic control at the westbound I-94 off-ramp/Oakland Drive and Oakland Drive/Vincent Avenue intersections as follows:

- Traffic control generally begins 10 minutes to 20 minutes before a scheduled service time and is suspended during the service time. Experience with the operation showed that effective traffic control could be done by one officer. One officer is able to safely direct traffic in and out of Vincent Avenue by coordinating with the signal timing of the I-94 westbound off-ramp and stopping southbound traffic to allow vehicles to enter Vincent Avenue. As detailed in the agreement documents, costs associated with the traffic control services are borne by the VFC-K with no costs to the City of Portage.
- Upon the dismissal of church services, VFC-K has their own volunteers to direct traffic through the church parking lot to one of two exits. A uniformed officer stationed at the Vincent Avenue/Oakland Drive intersection directs traffic. Vehicles turning right from Vincent Avenue onto Oakland Drive are typically in a free flow movement and turn right without assistance of an officer. The timing of traffic control assistance has varied, but generally, all traffic control operations are complete 30 – 45 minutes after the service dismisses.

The Portage Police Department has prepared a communication detailing their operations. A copy of this communication is included as Attachment 3 to this report. This communication also contains a diagram of typical traffic control operations at Oakland Drive and Vincent Avenue.

To date, the Department of Transportation & Utilities has received no formal complaints or concerns regarding the current traffic control operations. The department has received two telephone communications from citizens complaining about a perceived fairness issue concerning the use of uniformed officers. Both citizens expressed concern that the exiting church traffic should not be given preference at Vincent Avenue and Oakland Drive over Oakland Drive through traffic. The department is also aware that several citizens have inquired about traffic issues and the Planning Commission project approvals. These email inquiries are referenced in Attachment 4. Finally, as additional information about current traffic operations, attached in Attachment 5 are several tables that show street segments together with traffic volumes, capacity, crashes and related details about major streets in the community. These tables are excerpts from the Major Thoroughfare Plan – Status Update provided to the Planning Commission on April 1, 2010. Information about Oakland Drive, Vincent Avenue and Angling Road are displayed including historic traffic data about these major streets. In summary, these major streets – Oakland Drive, Vincent Avenue and Angling Road – carry greater traffic volumes, but have capacity to accommodate the anticipated traffic.

### **Traffic Volume Counts and Analysis**

There are several components to the following traffic volume counts and analysis. This section begins with several pieces of general information. A more detailed discussion of traffic counts specifically for the I-94, Oakland Drive and Vincent Avenue is then provided.

First, as information for the Planning Commission, analysis of existing traffic using several days in May 2009 showed an average of 23,255 vehicles on Wednesday (May 27) and Thursday (May 28) compared to 18,009 vehicles on Saturday (May 30) and 15,105 vehicles on Sunday (May 31). It is important to know that the total traffic at the intersection of Oakland Drive and Vincent Avenue on Saturday and Sunday was less by 23% and 35%, respectively, compared to the average weekday traffic count recorded on Wednesday and Thursday.

The City of Portage collected traffic count data from Oakland Drive and Vincent Avenue during the study period. This traffic count data was used in the analysis of street segment and street intersections. The southbound Oakland Drive right turn traffic to westbound Vincent Avenue data was not collected since the right turn traffic is combined with the southbound Oakland Drive thru traffic. Traffic count data for inbound and outbound vehicles using Vincent Avenue has been collected, however, and has been incorporated into this analysis.

Also, weekday/weekend traffic counts were obtained from MDOT. Appendix B contains several tables that show weekday/weekend traffic counts recorded by MDOT on the on/off ramps of I-94 at Oakland Drive and on Oakland Drive. Traffic count data at these locations were available for 2007 and 2009, before and after the VFC-K facility opened. The traffic counts are provided as additional general information. MDOT indicated in a November 23, 2009 correspondence that traffic counts on Oakland Drive would be accomplished. (See Attachment 6) These traffic counts show consistency with the City of Portage traffic count data collected at the Oakland Drive and Vincent Avenue intersection.

MDOT is now rebuilding I-94 and the South Westnedge Avenue interchange. This significant project was not scheduled and not anticipated in 2007 and 2008 when the VFC-K project was under review by the Planning Commission. Federal stimulus funding was received from American Recovery and Reinvestment Act, which accelerated the construction project schedule.

Due to construction, the westbound I-94 ramp, the eastbound I-94 ramp onto northbound South Westnedge Avenue are currently closed. Additionally, the eastbound I-94 ramp onto southbound South Westnedge Avenue is closed. These temporary ramp closures began on April 19, 2010. It is likely that additional through traffic on Oakland Drive is the result of detoured traffic utilizing Oakland Drive to access the north side of South Westnedge Avenue by way of Kilgore Road and using Oakland Drive to access I-94. Traffic engineering staff anticipated the potential for this detoured traffic on Oakland Drive as a result of the South Westnedge Avenue ramp closures and requested that MDOT provide traffic projections of the anticipated traffic. MDOT considered the modeling of this anticipated traffic, as referenced in the November 23<sup>rd</sup> correspondence, but was unable to develop a useful approach that would effectively model this anticipated traffic. Furthermore, in a recent discussion with MDOT officials, it was confirmed that MDOT has not revised the traffic signal timings of its traffic signals on Oakland Drive at I-94, as this increased traffic has not caused any significant impact on the ramps or the Oakland Drive corridor.

As a final element of general information, the City of Kalamazoo has not responded to written requests for traffic data from the department concerning Angling Road and the Oakland/Angling and Oakland/Kilgore intersections to document before and after conditions on streets within the City of Kalamazoo. However, based on the Kalamazoo Area Transportation Study FY2011-2014 Transportation Improvement Program, the department is aware that the City of Kalamazoo has included the resurfacing of Angling Road, from the city limits to 500 feet south of Oakland Drive. This street improvement project is projected to be completed in 2011.

With specific regard to the VFC-K project, and in anticipation of this report, a large volume of traffic and turning movement count data at the Oakland Drive and Vincent Avenue intersection and for Vincent Avenue was collected between May 27, 2009 and May 16, 2010. This time period is considered to be representative of typical traffic flows. These detailed counts are provided in Table A through Table Q in Appendix A to this report.

The vehicle count program primarily focused on traffic volumes during Saturday and Sunday before and after the opening of the new VFC-K facility. In summary, weekend counts were recorded as follows:

Before Opening –

- May 30, 2009 and May 31, 2009
- October 17, 2009 and October 18, 2009

After Opening –

- October 24, 2009 and October 25, 2009 (first soft opening event)
- November 7, 2009 and November 8, 2009 (grand opening event)
- November 14, 2009 and November 15, 2009
- May 15, 2010 and May 16, 2010
- Traffic counts were taken on Vincent Avenue west of the westerly drive of VFC-K for east and westbound through traffic on these same dates.

Weekday counts were also taken “before opening” and “after opening” for comparison purposes. These weekday counts are also shown in Appendix A. However, with only limited church services on Monday, and the resulting increased traffic volumes, weekday traffic is not a relevant factor from a traffic engineering perspective and is provided as information only. The Monday

service times are well past the peak hour period at the intersection of Oakland Drive and Vincent Avenue. This report, then, will focus only on weekend traffic patterns, which are considered more critical.

Church service times at the 2500 Vincent facility as provided by VFC-K are 6 PM on Saturdays, 10 AM on Sundays and 7 PM on Mondays (Monday evening services started on May 1, 2010). The tables in Appendix A indicate that:

- When comparing 24-hour traffic volume data collected on May 30, 2009 (Table D) to 24-hour traffic volume data collected on May 15, 2010 (Table P), it can be determined that an additional 2,475 vehicles were travelling on Oakland Drive (through traffic) on Saturday, May 15, 2010.
- When comparing 24-hour traffic volume data collected on May 31, 2009 (Table E) to the same data collected on May 16, 2010 (Table Q), it can be determined that an additional 2,390 vehicles were travelling on Oakland Drive on Sunday, May 16, 2010.

The department analysis of 24-hour traffic volume data collected on church service weekends indicates peak hour traffic for church services (i.e. inbound, or the northbound left-turn traffic on Oakland Drive at Vincent Avenue, and outbound, or the eastbound traffic on Vincent Avenue at Oakland Drive intersection). The following peak periods were identified:

- On Saturday, the inbound peak hour is 5 PM to 6 PM and outbound is 7 PM to 8 PM;
- On Sunday, the peak hours are 9 AM to 10 AM and 11 AM to 12 PM for both inbound and outbound traffic, respectively.
- When two services were held on Saturday, November 7, 2009, the inbound peak hours occurred from 4 PM to 5 PM and 6 PM to 7 PM, whereas, the outbound peak hours occurred from 6 PM to 7 PM and then 8 PM to 10 PM.
- When two services were held on Sunday, November 8, 2009, the inbound peak hours occurred from 8 AM to 9 AM and 10 AM to 11 AM and outbound peak hours occurred from 10 AM to 11 AM and 12 PM to 2 PM.

For ease of reviewing the above peak period information, inbound and outbound peak period data is graphically shown in Appendix C, Figure I through Figure IV.

As can be observed in the peak period data, with regard to the last of the two services held as part of the grand opening services, the eastbound peak hour period is extended, which is likely due to number of attendees, length of the service, after-services activities and rate of parked vehicles leaving the parking facility. Also, as can be observed, a slight surge in traffic volume was observed before and after the inbound and outbound peak hours during the weekend study period. This surge relates to the arrival and departure of support staff at the church that usually arrive before the inbound peak occurs and leave after the outbound peak diminishes.

Another surge in inbound and outbound traffic volume was observed on Sundays from 5 PM to 6 PM and 8 PM to 9 PM, respectively. This surge relates to Sunday School/Bible classes, which are held at the Cathedral next to the new church facility.

In addition to the preceding paragraphs, the following is in regard to Vincent Avenue traffic data and particularly on Vincent Avenue, west of the VFC-K facility. The table on the following page provides a comparison of weekday and weekend traffic volumes on Vincent Avenue west

of the church with weekday and weekend traffic volumes at the Oakland Drive and Vincent Avenue intersection. Total and peak hour information is provided.

**TABLE I: WEEKDAY/WEEKEND VINCENT AVENUE 24 HOUR TRAFFIC VOLUMES  
(WEST OF THE VFC-K FACILITY)**

Day	Date	Eastbound		Westbound		Eastbound/ Westbound Total	Eastbound Vincent at Oakland (Total <sup>2</sup> )
		Total	Peak hour <sup>1</sup>	Total	Peak hour <sup>1</sup>		
Wednesday	May 27, 2009	1,123	125 (7 am)	1,159	125 (5 pm)	2,282	1,671
Thursday	May 28, 2009	1,123	129 (8 am)	1,152	137 (3 pm)	2,275	1,605
Friday	May 29, 2009	1,195	146 (3 pm)	1,215	172 (3 pm)	2,410	1,604
Friday	Nov. 6, 2009	947	77 (5 pm)	931	95 (5 pm)	1,878	1,549
Friday	Nov. 13, 2009	1,112	116 (7 am)	1,157	137 (3 pm)	2,269	1,633
<b>Weekday Average</b>		<b>1,100</b>	<b>119</b>	<b>1,123</b>	<b>133</b>	<b>2,223</b>	<b>1,612</b>
Saturday	May 30, 2009	689	60 (10 am)	675	65 (1 & 4 pm)	1,364	972
Sunday	May 31, 2009	620	54 (10 am)	608	59 (1 & 4 pm)	1,228	875
Saturday	Oct. 17, 2009	671	59 (2 pm)	675	58 (11 am)	1,346	1,206
Sunday	Oct. 18, 2009	571	55 (2 pm)	606	62 (4 pm)	1,177	1,319
Average weekend traffic before church opening		638	57	641	61	1,279	1,093
Saturday	Oct. 24, 2009	710	63 (11 am)	680	57 (6 pm)	1,390	1,845
Sunday	Oct. 25, 2009	593	60 (3 pm)	723	111 (11 am)	1,316	2,069
Saturday	Nov. 7, 2009	813	73 (6 pm)	967	175 (6 pm)	1,780	2,327
Sunday	Nov. 8, 2009	634	64 (10 am)	763	100 (12 pm)	1,397	2,469
Saturday	Nov. 14, 2009	794	71 (10 am)	845	77 (7 pm)	1,639	1,895
Sunday	Nov. 15, 2009	640	62 (12 & 5 pm)	738	77 (5 pm)	1,378	1,933
Saturday	May 15, 2010	838	69 (11 am)	922	84 (5 pm)	1,760	1,799
Sunday	May 16, 2010	660	65 (2 pm)	755	145 (11 am)	1,415	1,862
Average weekend traffic after church opening		710	66	799	103	1,509	2,025
<b>Weekend Average</b>		<b>686</b>	<b>63</b>	<b>746</b>	<b>89</b>	<b>1,433</b>	<b>1,714</b>

Notes :

<sup>1</sup> Peak hour begins at the hour shown.

<sup>2</sup> Combined eastbound left and eastbound right Vincent Avenue turning movements at Oakland Drive.

 Peak hour traffic corresponds to the peak hour VFC-K outbound traffic.

The data in Table I: Weekday/Weekend Vincent Avenue 24 Hour Traffic Volumes, shows several important pieces of traffic information:

- Average total weekday traffic (Eastbound/Westbound Total column) along Vincent Avenue is greater than the average total weekend traffic at the intersection. This is likely primarily due to work trips by neighborhood residents and school trips during the weekday. These trips decline on the weekend when church services are offered.

- Peak hour is consistent during the weekday, but is variable on the weekend, largely due to church service times.
- There is considerably more total traffic at the Oakland and Vincent intersection than compared to westbound traffic west of the VFC-K facility, which suggests most VFC-K traffic to and from the Oakland Drive/Vincent Avenue intersection.
- As anticipated, the average weekend Vincent Avenue eastbound traffic at Oakland Drive increased from 1,093 before services started to 2,025 after services started.
- Although the average westbound peak hour traffic volumes increased from 61 before church services started to 103 after church services started, the increase is less than the 133 average peak hour weekday traffic volume.
- Inbound traffic on Vincent Avenue from Angling Road (measured west of the three church drives on Vincent) has not significantly increased. Average weekend traffic before church opening – total and peak hour – was 638 and 57, respectively, compared to after church opening when traffic counts were 710 and 66, respectively.

The review of inbound (northbound left-turn on Oakland Drive) and outbound (eastbound right and left-turns on Vincent Avenue) traffic volumes during weekends revealed a relatively consistent level of traffic after opening of services at the VFC-K facility. As expected, there is an observed increase associated with the opening of services by VFC-K. Also, it is anticipated that both inbound (northbound left-turn) and outbound (eastbound traffic) volumes will likely stabilize over a period of time thus allowing a reduced need to use uniformed officers to control traffic during church services on Saturday and Sunday.

Department staff conducted additional visual observations during the study period. In particular, traffic associated with church services on the grand opening weekend was observed. The following is a representative comment from these field observations:

- Traffic observations were made at both grand opening services on Sunday (November 8, 2009), especially in regard to the overlap of the entering and departing traffic. The parking lot at the church was completely full with some overflow traffic parking on a grass area west of the existing parking lot: The church seating was likely full. Two Portage Police officers handled the traffic flow very well and no incidents or excessive delays were witnessed. From observation, the delay for traffic approaching Oakland Drive from the church entrances was about 4-5 minutes. The only traffic concern involved vehicles exiting Westbound I-94 at the Oakland Drive ramp and immediately attempting to turn left onto Vincent Drive. Under heavy traffic, the left turn lane onto Vincent Drive would fill up, and the officers had to watch the ramp traffic carefully to be sure that enough room was available in the left turn lane to accept the exiting ramp traffic. One observation was made that a vehicle backed up into the ramp intersection before the officer could clear the left turn lane turn. From the traffic observed on Sunday, it appeared that police officer traffic control worked effectively and was necessary for about 30 minutes before the service start time to 45 minutes after the service ends, with a break in between when there is little traffic demand on Vincent Drive.

An additional observation was made by Community Development Department staff on Sunday, June 20, 2010 as follows:

- Traffic flow was observed before and after the 10:00 a.m. Sunday service. From 9:20 to 10:00 a.m. traffic flow was observed at the Oakland and Vincent intersection from the MDOT park and ride lot. One Portage police officer was stationed at this intersection and traffic (through and turning movements) flowed very smoothly.

From 11:00 to 11:45 traffic exiting from the westernmost Vincent Avenue driveway following church services was observed. Just before services ended, traffic control staff for VFC-K erected a sign in the left-turn lane that stated "Right Turn Only". This sign and the VFC-K staff member that was directing traffic restricted the west drive to right-turn movements only. Vehicles that wanted to turn left from the west drive were instructed by the VFC-K staff member to drive to the east drive via the internal maneuvering lane. During an approximate 20 minute window, a total of 76 vehicles were counted that turned right and traveled westbound on Vincent. The vehicles that turned right onto Vincent did so in small groups (1-4 vehicles at a time). It was not a continuous flow of vehicles onto Vincent.

The staff member exited the VFC-K site at approximately 11:45 and traveled east on Vincent Avenue. Upon reaching Oakland Drive, the police officer had left and 6-8 vehicles were stacked waiting to turn right onto Oakland Drive. It took approximately 3 minutes to make the right turn onto Oakland.

As a last comment concerning staff observations, visual observations from uniformed officers as conveyed in the communication from the Portage Police Department indicated that:

- Though there have been church services that do not require officer-assisted traffic control prior to the church services, in most instances, officers have assisted vehicles making left turns from northbound Oakland drive to westbound Vincent Drive. This normally occurs about 10 minutes before the scheduled service.

Vehicles exiting the parking areas move more efficiently onto Oakland Drive with officer assistance.

There is little doubt that without officer assistance after church service, traffic moving west out of the parking lots and into the neighborhoods would be greatly increased to avoid the back-up on eastbound Vincent Drive.

### **Traffic Signal Warrant Analysis**

Appendix D contains two traffic signal warrant analyses for the intersection of Oakland Drive and Vincent Avenue utilizing the counts taken on Saturday, May 15, 2010 and Sunday, May 16, 2010. This weekend was chosen not only to determine the basis for installing a traffic signal at the intersection of Oakland Drive and Vincent Avenue during a regular church service weekend, but also to consider the effect of diverted traffic from I-94 and South Westnedge Avenue ramps, which are currently closed due to construction.

The installation of a traffic signal requires a warrant study as specified in the MMUTCD. The 2005 Edition of the MMUTCD defines eight warrants that are applicable for a traffic signal installation. At least one of the warrants must be met before serious consideration can be given to a traffic signal installation. However, per Section 4C.01 of the 2005 Edition of MMUTCD the satisfaction of one warrant is not in itself justification for signal control (Refer to Appendix E for this section). Before a traffic signal is installed, it should be clearly demonstrated that the installation of a traffic signal will improve the overall safety and operation of the intersection more so than less restrictive control.

The results of the first warrant analysis based on May 15, 2010 traffic indicated that three warrants were fulfilled: Warrants # 1 (eight-hour volume), # 2 (four-hour volume) and # 3 (peak hour volume). The results of the second warrant analysis on May 16, 2010 revealed that two warrants were fulfilled: Warrant #1 (eight-hour volume) and Warrant #3 (peak hour volume). However, as mentioned above, the satisfaction of a warrant is not in itself justification for signal control. This finding applies particularly to Warrant # 1 that involves traffic volume on a major street and the delay for traffic on an intersecting street. This warrant is rarely used to justify the installation of a traffic signal. Warrant # 2 involves traffic volume on a major street and traffic

volume on the intersecting street. This warrant was only met in one of the analyses and from a traffic engineering judgment perspective, conditions would not justify traffic signal installation. Also, Warrant #3 accounts for delay experienced by traffic entering or crossing a major street. This warrant was just marginally met. As a final comment on the two analyses that were conducted, Section 4C.01 of the MMUTCD also advises that any signal warrant analysis should also consider the effects of the right-turn vehicles from minor street approaches as it is relatively easy for a right-turn vehicle to maneuver at an unsignalized intersection. Right-turn vehicles from Vincent Avenue can readily turn south onto Oakland Drive and/or I-94. Therefore, with only one applicable warrant considered to be satisfied, a traffic signal is not warranted at this intersection at this time. This finding is consistent with the input from MDOT as indicated in the September 8, 2010 correspondence. (See Attachment 6)

As an added comment, the MMUTCD also requires a minimum of five correctable accidents occurring in any one year that can be considered in the analysis of a traffic signal being warranted. Only two correctable accidents were recorded at this intersection in each year of 2006, 2009 and 2010, so this additional requirement is not fulfilled.

### **Conclusion / Summary Findings**

Based on the following findings, the installation of a traffic signal, or the programming of street improvements, at this location is not advisable at this time. This conclusion is based on the following:

1. Church worship services and special events have been occurring since the church opening on October 17, 2009. Uniformed police officers from either cities of Portage or Kalamazoo have provided effective traffic control services when available.
2. Traffic counts and observations by city staff and MDOT staff have documented the number of vehicles entering and exiting the church facility as well as the Vincent Avenue/Oakland Drive and Angling Road/Oakland Drive intersection area. Traffic volumes after the project opening are higher than before project opening, but have not presented public safety concerns, or significantly impacted levels of service on Oakland Drive, Vincent Avenue and Angling Road.
3. City of Portage professional staff including traffic engineering and planning staff, and uniformed officers, who conduct traffic control services, and MDOT professionals have observed that weekend traffic control services are effective, but not mandated on all occasions based on traffic conditions.
4. In the next two years, additional information concerning the completion of the I-94 reconstruction project, traffic flow and turning movements in the I-94, Oakland Drive and Vincent Avenue intersection area, private property investment (growth and development) and related information will be available for examination and consideration.
5. MDOT has assisted by providing traffic-related information for incorporation into this report and, further, has observed that traffic control services have been effective to accommodate anticipated traffic resulting from the VFC-K project. Additional monitoring and evaluation of traffic operations will continue in the I-94 and Oakland Drive area, which is under the jurisdiction of MDOT.
6. The current traffic control operation using uniformed officers will continue as may be necessary. Ongoing traffic control services will be based on ensuring traffic safety objectives and traffic engineering principles.

7. As part of the annual city traffic monitoring program, continued review of the Oakland Drive corridor as an element of the street network will be accomplished. Changes or modifications to the current traffic control operations and street configuration in this area can then be considered and, as needed, recommended as part of the annual budget process including the 10-Year Capital Improvement Plan.

# ATTACHMENT 1

Valley Family Church-Kalamazoo Vicinity Map

# Valley Family Church - Kalamazoo Vicinity Map



# ATTACHMENT 2

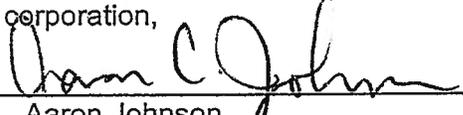
Traffic Control Service Agreements

**RENEWAL OF TRAFFIC CONTROL SERVICES AGREEMENT**

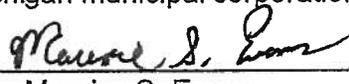
The Traffic Control Services Agreement dated September 16, 2009 and Amendment thereto dated April 12, 2010, between the City of Portage, 7900 South Westnedge Avenue, Portage, Michigan, hereinafter referred to as the "City" and Kalamazoo Valley Family Church, also known as Valley Family Church, a Michigan non-profit corporation, whose address is 2500 Vincent Avenue, Portage, Michigan 49024, hereinafter referred to as "VFC" is hereby renewed in its entirety for two (2) years (through September 30, 2012) by mutual consent of both parties.

The City and VFC agree that all terms and conditions of this Renewal Agreement shall be exactly as stated in the Traffic Control Services Agreement dated September 16, 2009 and the Amendment thereto dated April 12, 2010.

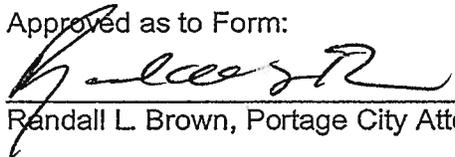
KALAMAZOO VALLEY FAMILY CHURCH  
D/B/A VALLEY FAMILY CHURCH, a Michigan non-profit corporation,

By:   
Aaron Johnson  
Its:            Executive Administrator

CITY OF PORTAGE,  
A Michigan municipal corporation

By:   
Maurice S. Evans  
Its:            City Manager

Approved as to Form:

  
Randall L. Brown, Portage City Attorney

**TRAFFIC CONTROL SERVICES AGREEMENT**

This Traffic Control Services Agreement (referred to herein as "Agreement") is made and entered into on this 16<sup>th</sup> day of September, 2009, between Kalamazoo Valley Family Church, a/k/a Valley Family Church, a Michigan non-profit Corporation (referred to herein as "VFC") whose address is 995 Romence Road, Portage, Michigan 49002, and the City of Portage, a Michigan municipal corporation, (referred to herein as "City"), whose address is 7900 South Westnedge Avenue, Portage, Michigan 49002.

*WHEREAS*, on May 1, 2008, the City's Planning Commission approved a Special Land Use Permit for VFC's new facility at 2500 Vincent Avenue, Portage, Michigan (referred to herein as the "Facility")(the Special Land Use Permit issued by the Planning Commission for the Facility shall be referred to herein as the "SLUP");

*WHEREAS*, VFC has requested that the City, through its police department, (referred to herein as the "PPD"), provide law enforcement officers to provide traffic enforcement and control services (referred to herein as "Traffic Control Services" or "TCS") in the area of the intersection of Vincent Avenue and Oakland Drive in Portage, Michigan (referred to herein as the "Control Area"), to comply with condition one of the SLUP;

*WHEREAS*, the terms set forth in this Agreement substantially complies with condition one of the SLUP;

*WHEREAS*, the Traffic Control Services as provided in this Agreement are an acceptable method by which to control traffic that may be caused by and relating to certain services and/or events held at the Facility;

*NOW, THEREFORE* in consideration of mutual covenants and agreements set forth

herein and for other good and valuable consideration, the parties hereby agree as follows:

1. Services to be Provided by PPD. PPD shall provide TCS at the Control Area with state certified law enforcement and/or reserve officers in the number and at the times described in this Agreement.

2. Soft and Grand Openings of the Facility. From October 17, 2009 through November 8, 2009, PPD shall provide TCS for the Soft and Grand Opening Worship services as described in Exhibit A, attached hereto and incorporated herein, with such personnel and at the times set forth in Exhibit A.

3. TCS for Remainder of Agreement. The schedule for TCS for remainder of this Agreement term shall be as follows:

A. Beginning November 9, 2009, TCS for the remainder of the Agreement shall be based upon the availability of trained personnel to provide such service.

B. VFC acknowledges that following November 9, 2009: (i) PPD's ability to provide TCS is subject to voluntary enlistment of its officers as provided in Section 3.C below; and (ii) PPD may not be able to dedicate and commit its officers to TCS due to certain circumstances, such as public safety emergencies, illness, family emergency or act of God whether before or after a commitment to provide TCS has been given to VFC.

C. Regular weekend worship services (hereinafter referred to as a "Weekend Service" or "Weekend Services") and required TCS personal for such services are set forth on Exhibit B attached hereto and incorporated herein. VFC shall also provide to PPD the schedule of activities conducted at other times during the week, whether sponsored by VFC or other organizations that they reasonably believe will exceed 681 cars or 1600 people in the Facility's sanctuary (hereinafter referred to as an "Event" or "Events") by the first of each month preceding the month scheduled and this paragraph shall apply to each schedule. PPD shall provide such schedules of Weekend Services and Events to its personnel who will have the opportunity to volunteer to provide the TCS requested on an overtime basis. PPD may provide telephone notice to VFC no later than seven (7) days prior to the upcoming month's Weekend Services or Events of the inability of PPD to provide TCS. The notice may be given by telephone under Section 22, Emergency Contacts.

D. PPD (or, as applicable, another law enforcement agency that is providing TCS), in its sole discretion may discontinue TCS at any Weekend Service or Event, if either the volume of traffic does not warrant continued TCS at such

Weekend Service or Event or if a public safety emergency occurs (or other circumstances described in Section 3.B. above) that necessitates reassignment of the TCS personnel, which, in either event, no TCS shall be deemed required and the SLUP will be deemed satisfied without TCS.

E. VFC may obtain TCS from any other jurisdiction(s) allowed by law to provide such service. The City agrees to allow such other jurisdiction(s) (including the City of Kalamazoo) to provide TCS within the City of Portage under a written agreement approved by the City Attorney containing release, indemnification and insurance provisions customarily used by the City, on the condition that no other jurisdiction(s) is permitted to provide TCS for any service or event until PPD officers have declined the opportunity to provide TCS pursuant to Section 3.C above.

F. Should either party desire to amend the TCS personnel and time requirements set forth on Exhibits A and B, such party shall notify the other party of its desire and the parties agree to use their good faith efforts to meet and discuss such an amendment.

4. Compensation to City. VFC shall compensate the City for all TCS provided by PPD at the rate of \$70.00 per hour per TCS officer. There shall be a two (2) hour minimum per officer and the compensation shall be based on the actual time of each officer providing TCS from the time the officer checks in with the dispatcher that he or she is on VFC duty until the time that the officer checks out with the dispatcher that he or she is off VFC duty, i.e., from portal to portal. The City shall invoice VFC on a monthly basis and VFC shall have thirty (30) days from date of such invoice to make full payment.

5. TCS Provided by VFC. Nothing contained in this Agreement shall prevent or prohibit VFC from providing TCS as permitted by law, which may include, but is not be limited to, the following:

A. Management of traffic on the VFC site by VFC members or employees in a "controlled release" manner which would include persons assigned under the supervision of VFC to be located on the Facility to manage and control the number of vehicles which are permitted to exit the Facility at any one time so as to ensure maintenance of traffic flow along Vincent Avenue at all times.

B. Obtaining assistance from the Kalamazoo County Sheriff's Department under its "reserve officer program".

C. Making application to qualify up to twelve (12) reserve officers through and under the direction and control of the Portage Police Chief that could, upon certification, be assigned to assist with TCS as determined appropriate by the Portage Police Chief.

D. Obtaining assistance from the City of Kalamazoo to provide its police officers in the event the PPD is unable to provide the requisite officer(s) for TCS.

6. Employment and Supervision of PPD Officers. PPD Officers providing TCS shall be supervised and employed by the PPD and not VFC. The PPD shall have sole discretion in the hiring, training, disciplining, scheduling and removal of any PPD officer providing TCS. The specific responsibilities to be performed by any PPD officer providing TCS shall be in the sole discretion of the PPD.

7. VFC Voluntary Parking Area Limits. To reduce the necessity for TCS, beginning November 9, 2009 and in the event the PPD (or other appropriate governmental agency, including the City of Kalamazoo) is unable to provide TCS at a Weekend Service or Event, VFC shall limit the paved parking area at 2500 Vincent Avenue to no more than 681 vehicles. To fulfill this provision, VFC will (as applicable): (i) publish the limits as information for VFC members at least one time prior to the applicable Weekend Service or Event date; and (ii) advise Event sponsors of the limits in writing at least ten (10) days prior to the Event date. To further fulfill this provision, VFC shall, on the date of the Weekend Service or Event, post temporary informational signs at each entrance to the paved parking lot area on Vincent Avenue stating that the "Parking Lot Is Full" when 681 vehicles have entered the paved parking area to prevent vehicles from entering the Facility.

8. Changes to Saturday and Sunday Service Schedule. Beginning January 9, 2010, VFC will consider scheduling at least one additional Saturday service if attendance at the Saturday service continuously over a period of three months exceeds 1600 people in the Facility's sanctuary to reduce the necessity for TCS.

9. Other Traffic Control Measures.

A. Michigan Department of Transportation Involvement. It is understood by the parties that the State of Michigan Department of Transportation ("MDOT") has agreed to monitor and evaluate the Control Area to determine whether traffic control devices would be placed at the intersection. The parties further understand that MDOT has agreed to review and, thereafter modify if necessary, the traffic signal timings to facilitate traffic flow in the area.

B. City Involvement. It is understood by the parties that it is the intent of the City of Portage to take other traffic control and monitoring actions including, but not limited to, the following:

i. Review and modify, as necessary and appropriate, traffic signal timings at Greenbriar Avenue and Kilgore Road when needed to facilitate traffic flow in the vicinity; and

ii. Establish directed traffic patrols by PPD, as necessary and appropriate in the sole discretion of the Chief of Police, in the vicinity of the Control Area including Oakland Drive, Vincent Avenue and Angling Road to monitor and ensure safe traffic movements.

10. Expiration of Agreement. This Agreement shall expire September 30, 2010. The parties may agree in writing to a renewal of this Agreement for no more than one (1) year from the expiration date. This Agreement shall also terminate if the Planning Commission determines that TCS are no longer needed as a result of the review of traffic information from the City, MDOT or the installation of a traffic signal at the intersection of Vincent Avenue and Oakland Drive.

11. Planning Commission Orders. To the extent permitted by the City's Zoning Ordinance, the Planning Commission has and may retain jurisdiction over the SLUP and any modification to the SLUP and conditions imposed thereunder, must be reviewed and approved by the Planning Commission.

12. No Authorization to VFC. Nothing contained herein shall authorize or permit any officer, agent or employee of VFC to provide TCS in the public right-of-way at the Control Area without written certification and/or authorization from the City.

13. Non-Transferable. The rights and obligations contained in this Agreement are personal to the parties and their successors and assigns and, otherwise, may not be assigned or transferred to any other person, corporation or other entity without prior expressed written consent of the parties.

14. Termination and Default. In the event of a breach of any of the terms or conditions of this Agreement, the non-defaulting party may, in addition to all other rights and remedies provided by law or in equity, terminate this Agreement; provided, that: (a) the non-defaulting party has provided written notice of the breach to the alleged defaulting party; and (b) the noticed breach has not been cured within thirty (30) days of the alleged defaulting party's receipt of the notice. No breach or termination of this Agreement by the City or VFC shall result in any damage, cost or expense being imposed upon the City for VFC's failure to comply with the SLUP.

15. Relationship of Parties. The nature of the relationship between VFC and City is governed by this Agreement. In no event shall this Agreement be interpreted to create a tenancy or leasehold of any kind between the parties. Nothing contained in this Agreement nor any act of the parties shall be deemed or construed by any party or by any third party to create the relationship of principal and agent, of partnership, of joint venture, of joint enterprise, or of any association between the parties hereto, nor shall anything contained in this Agreement or any act of the parties be construed to render any party liable for the debts and obligations of any other party.

16. Governmental Immunity. Nothing herein contained constitutes, nor should the same be construed as, a waiver of any governmental immunity otherwise provided to the City, its agents, employees, officers, or representatives as provided for under common law or statute.

17. No representations. In entering into this Agreement and providing TCS at the Control Area, the City makes no representations as to the quality, type or manner in which such TCS will be provided.

18. No Permit. The parties agree that this Agreement does not obligate City to issue any license nor obtain any further permit or license from any agency, board or commission. If it is determined that a license, permit or approval is needed by either party to exercise its rights and obligations under this Agreement, each party shall cooperate to obtain such license, permit or approval or either party may terminate this Agreement in writing effective upon the written notice.

19. Third Party Rights. This Agreement is for the benefit of the parties hereto and is not entered into for the benefit of and shall not be construed to confer any benefit upon any other person or entity.

20. Survival, representations, warranties and indemnities. All representations and indemnities made by the parties shall survive payment and performance of the obligations imposed by this Agreement and shall survive expiration and/or termination of this Agreement.

21. Release, Indemnification and Insurance.

A. Release of Parties. The parties shall not be liable to each other or any of their agents, officers, contractors, subcontractors, employees, invitees, guests, or members for any personal injury, property damage, or loss of life or property caused by or arising out of or in connection with the services provided under this Agreement.

B. Indemnification. The parties shall, at their sole cost and expense, indemnify and hold harmless each other, their agents, officers, boards, employees and contractors (hereinafter referred to as "Indemnities"), from and against any and all liability, obligation, damages, penalties, claims, liens, casts, charges, losses and expenses (including, without limitation, reasonable fees and expenses of attorneys, expert witnesses and consultants), which may be imposed upon, incurred by or be asserted against the Indemnities by reason of any act or omission of each other, their agents, officers, contractors, subcontractors, employees, invitees, guests, volunteers or members resulting in personal injury, bodily injury, sickness, disease or death to any person or

damage to, loss of or destruction of tangible or intangible property, which may arise out of this Agreement.

C. No settlement of indemnified claim (as set forth in 21.B) that involves a remedy other than the payment of money shall be entered into without the prior consent of the indemnified party.

D. Notice of a Claim seeking indemnification must be sent to the other party within thirty (30) days of the occurrence of events that gives rise to the Claim. Nothing shall be deemed to prevent each party from cooperating with each other and participating in the defense of any litigation by their own counsel at their own expense.

E. Insurance.

i. During the term of this Agreement, each party shall maintain, in full force and effect and at their sole cost and expense, commercial general liability insurance in the amount of no less than One Million (\$1,000,000.00) Dollars and other forms of insurance that are appropriate and reasonable for each party in amounts and form that are commercially reasonable.

ii. Certificates of insurance for each insurance policy required to be obtained by the parties in compliance with this paragraph shall be filed with the each party ten (10) days after execution of this Agreement and maintained annually during the term of this Agreement. Alternatively, either party may provide evidence of participation in a satisfactory self-insurance program. Each party shall immediately advise the other party of any claim or litigation that may result in liability.

iii. All insurance policies pursuant to this Agreement shall contain the following endorsement:

"It is hereby understood and agreed that this insurance policy may not be canceled by the insurer nor the intention not to renew be stated by insurer until thirty (30) days after receipt by City and/or VFC of a written notice of such intention to cancel or not renew:"

Said notice shall be sent to the parties' address as provided in this Agreement.

iv. All insurance shall be effected under valid and enforceable policies, insured by insurers licensed to do business by the State of Michigan.

v. Each party agrees to indemnify and save harmless the other, the indemnities from and against the payment of any deductible, self-insured retention and from the payment of any premium on any insurance policy required to be furnished by this Agreement.

vi. The insurance coverage required herein may be reviewed provided that such review shall be based upon commercially reasonable insurance underwriting standards and is performed by an independent insurance agency or brokerage.

vii. All insurance policies maintained by the parties pursuant to this Agreement shall contain a clause or endorsement under which the insurer waives all rights of subrogation against each party, their agents and employees for losses payable under this policy.

22. Emergency Contacts. Each party shall identify one or more persons as twenty-four (24) hour/seven days per week/365 days per year as an emergency contact. Such contact may be provided by telephone. The contact information must be updated immediately if any changes. The initial provision of the required contact information is as follows:

City  
Chief Richard White  
7810 Shaver Road  
Portage, Michigan 49024  
Telephone: (269) 217-6712  
Facsimile: (269) 329-4569  
Email: [whiter@portagemi.gov](mailto:whiter@portagemi.gov)

VFC  
Valley Family Church  
Attn: Aaron Johnson  
995 Romence Road  
Portage, Michigan 49024  
Telephone: (269) 324-5599 x117  
Facsimile: (269) 324-5511  
Email: [aaronjohnson@valleyfamilychurch.org](mailto:aaronjohnson@valleyfamilychurch.org)

23. All notices and communications relating to this Agreement shall be executed and sent:

- A. Electronically (either by electronic mail or facsimile) with confirmation of receipt;
- B. Personally;
- C. U.S. First Class Certified Mail/Return Receipt Requested; or
- D. Via recognized overnight courier service (e.g., UPS, Federal Express).

All notices under this Agreement shall be deemed delivered upon the date of receipt or

refusal and shall be delivered to the following:

City  
City of Portage Police Department  
Attn: Chief Richard White  
7810 Shaver Road  
Portage, Michigan 49024  
Facsimile (269) 329-4569  
Email: [whiter@portagemi.gov](mailto:whiter@portagemi.gov)

VFC  
Valley Family Church  
Attn: Aaron Johnson  
995 Romence Road  
Portage, Michigan 49024  
Facsimile: (269) 324-5511  
Email: [aaronjohnson@valleyfamilychurch.org](mailto:aaronjohnson@valleyfamilychurch.org)

24. Pronouns. Whenever words herein are used in the masculine, they shall be read in the feminine or neuter whenever they would so apply and vice versa, and words in this Agreement that are singular shall be read as plural whenever the latter would so apply and vice versa.

25. Entire Agreement. This Agreement represents the entire agreement between the parties. It may not be amended, altered or modified unless done so in writing by the persons against whom enforcement of any waiver, change or modification or discharge is sought.

26. Choice of Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Michigan that are applicable to agreements made and to be performed in that State.

27. Severability. In the event any of the provisions of this Agreement are deemed to be invalid or unenforceable, those provisions shall be deemed severable from the remainder of this Agreement and shall not cause the invalidity or unenforceability of the remainder of this Agreement. If any provision of this Agreement shall be deemed invalid due to its scope or breadth, such provision shall be deemed valid to the extent of the scope or breadth permitted by

law.

28. Waiver and Modifications. Any waiver, alteration or modification of any of the provisions of this Agreement, or cancellation or replacement of this Agreement, shall not be valid unless in writing and executed by the parties with the same formality as this Agreement. Any waiver by any party of any provision of this Agreement or any right or option under this Agreement shall not be controlling, nor shall it prevent or estop such party from thereafter enforcing such provision, right or option. The failure of any party to insist in any one or more instances upon the strict performance of any of the terms or provisions of this Agreement by another party shall not be construed as a waiver or relinquishment for the future of any such term or provision, and the same shall continue in full force and effect. By tendering and entering into this Agreement, VFC is not waiving its position that it has already satisfied all of the conditions of the SLUP.

29. Interpretation. No provision in this Agreement is to be interpreted for or against any party because that party or that party's legal representative drafted the provision.

30. Attorney Fees and Costs. If any party commences an action against another party as the result of a breach or alleged breach of this Agreement, the prevailing party shall be entitled to have and recover from the losing party reasonable attorney fees and costs of suit.

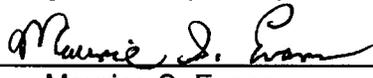
31. Duplicates. This Agreement and any originals of exhibits referred to herein may be executed in any number of duplicate originals or counterparts, each of which (when the original signatures are affixed) shall be an original but all of which shall constitute one and the same instrument.

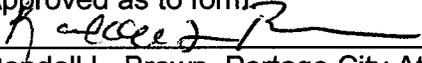
32. Authority. VFC and City warrants and represents to the other that it is properly authorized to enter into this Agreement.

KALAMAZOO VALLEY FAMILY CHURCH  
a/k/a VALLEY FAMILY CHURCH, a Michigan non-profit corporation,

By:   
Aaron Johnson  
Its: Executive Administrator

CITY OF PORTAGE,  
A Michigan municipal corporation

By:   
Maurice S. Evans  
Its: City Manager

Approved as to form:  
  
Randall L. Brown, Portage City Attorney

## **EXHIBIT A**

### **SOFT AND GRAND OPENING WORSHIP SERVICES**

#### **Soft Opening: 3 Weekends**

Oct 17/18, Oct 24/25, Oct 31/Nov 1

Service Times - Saturday @ 5pm and Sunday @ 9am (no 9am service on 10/18) and 11:15am

VFC reserves the right to cancel the 9am services for 10/25 and 11/1 on four (4) days notice.

#### **Grand Opening: Nov 7/8**

Service Times: Saturday @ 5pm and 7:15pm and Sunday @ 9am and 11:15am

- For Saturday service and Sundays with one (1) service, one (1) officer will provide TCS one-half hour before the commencement of the service and one-half hour after the service.
- For Sundays with two (2) services, one (1) officer will provide TCS on TCS one-half hour before the commencement of the first service and one-half hour after the second service and one (1) officers for one-half hour after the first service and one-half hour before the second service.

## **EXHIBIT B**

### **REGULAR WEEKEND WORSHIP SERVICES**

#### **Regular Schedule of Weekend Services Commencing November 14, 2009**

Saturday @ 5pm (Until growth demands an additional service @ 7:15pm)

Sunday @ 9am and 11:15am

- For Saturday service, one (1) officer will provide TCS one-half hour before the commencement of the service and one-half hour after the service.
- Sunday service will require one (1) officer will provide TCS on TCS one-half hour before the commencement of the first service and one-half hour after the second service and one (1) officers for one-half hour after the first service and one-half hour before the second service.

9-27-10

## RENEWAL OF TRAFFIC CONTROL RESPONSE AGREEMENT

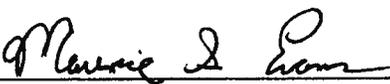
The Traffic Control Response Agreement dated November 30, 2009, between the City of Portage, a municipal corporation, 7900 South Westnedge Avenue, Portage, Michigan ("Portage"), and the City of Kalamazoo, a municipal corporation, 241 West South Street, Kalamazoo, Michigan ("Kalamazoo") is hereby renewed in its entirety for two (2) years (through September 30, 2012) by mutual consent of both parties.

Portage and Kalamazoo agree that all terms and conditions of this Renewal Agreement shall be exactly as stated in the Traffic Control Response Agreement dated November 30, 2009.

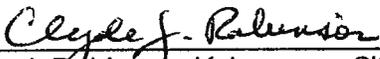
CITY OF KALAMAZOO

By:   
Kenneth P. Collard  
Its: City Manager

CITY OF PORTAGE

By:   
Maurice S. Evans  
Its: City Manager

Approved as to Form:

  
Clyde J. Robinson, Kalamazoo City Attorney

Approved as to Form:

  
Randall L. Brown, Portage City Attorney

**COPY**

*file*

**TRAFFIC CONTROL RESPONSE AGREEMENT**

This Intergovernmental Traffic Control Response Agreement dated the 31<sup>th</sup> day of November, 2009, between the CITY OF KALAMAZOO, a municipal corporation, 241 West South Street, Kalamazoo, Michigan ("Kalamazoo") and the CITY OF PORTAGE, a municipal corporation, 7900 South Westnedge Avenue, Portage, Michigan ("Portage"), is as follows:

WHEREAS, the City of Portage Planning Commission has required Valley Family Church ("VFC") located at 2500 Vincent Avenue, Portage, Michigan, to obtain Traffic Control Services ("TCS") in the area of the intersection of Oakland Drive and Vincent Avenue ("Control Area") in the City of Portage by an authorized law enforcement agency as a condition of its Special Land Use Permit; and

WHEREAS, VFC has requested the Kalamazoo Department of Public Safety ("KPS") to provide TCS at the Control Area; and

WHEREAS, KPS, in response to VFC's request, by letter dated August 24, 2009, has offered to provide TCS at the intersection of Oakland Drive and Vincent Avenue under certain conditions and at VFC's sole cost; and

WHEREAS, this Agreement is intended to give Kalamazoo the authority to provide traffic control services at the Control Area subject to certain conditions; and

WHEREAS, Michigan law permits a peace officer of a city to exercise authority and powers outside his or her own city while acting in conjunction with a police officer of the city which he or she is located as if he or she were in his or her own city even if not personally present;

NOW, THEREFORE, in consideration of the mutual undertakings of the parties hereto, IT IS AGREED:

1. Response by KPS. Beginning November 9, 2009, trained and certified peace officers employed by KPS are authorized to provide TCS in the Control Area subject to the terms of this Agreement.
2. KPS Officer Status. KPS officers providing TCS shall be employed by KPS and not Portage. KPS shall have the sole discretion in the hiring, training, disciplining, and scheduling of any KPS officer providing TCS. The specific responsibilities to be performed by any KPS officer providing TCS shall be in the sole discretion of KPS.
3. Notice to PPD. Before any KPS officer provides TCS at the Control Area, KPS shall notify the Portage Police Department ("PPD"), by contacting the PPD Patrol Administrative Lieutenant at (269) 329-4508, that VFC has requested that KPS provide TCS on specific date(s) and time(s). The PPD shall work in conjunction with KPS, by any reasonable means, to assist in enforcing the traffic laws of the State, as well as the ordinances of the City of Portage. Such assistance may

*5*

include being personally present in the case of an emergency, but otherwise, does not require the personal presence of any PPD officer. The KPS officer providing TCS at the Control Area shall notify the PPD Public Safety Communication Center by radio of his or her arrival and departure from the Control Area.

4. PPD's First Option. KPS shall not provide TCS at the Control Area at the same time PPD officers are scheduled and performing TCS.
5. Removal of TCS. PPD may, at any time direct any KPS officer to discontinue TCS at the Control Area for any reason.
6. No Cost Incurred by PPD. TCS performed by Kalamazoo in the City of Portage shall be rendered without charge to Portage of any kind or character.
7. Release, Indemnification and Insurance.

A. Release.

- i. KPS shall be solely responsible for all costs and expenses associated with its department's personnel and equipment when performing TCS under this Agreement including, without limitation, wages, fringe benefits, workers' compensation, disability or pension contributions and the purchase, repair and maintenance of equipment and vehicles.
- ii. Portage shall not be liable to Kalamazoo or any of its agents, officers, contractors, subcontractors, employees, invitees, guests, or members for any personal injury, property damage, or loss of life or property caused by or arising out of or in connection with the services provided under this Agreement.
- iii. KPS shall assume liability for claims, judgments, demands, costs, and attorney fees, damages caused by its personnel or equipment arising out of the transportation to and from the performance of TCS at the Control Area, whether or not the liability is incurred within its boundaries or that of Portage. No personnel from KPS shall be considered a drafted person when performing services in furtherance of this Agreement under MCLA 123.401 through MCLA 123.403.

B. Indemnification.

- i. Kalamazoo shall, at its sole cost and expense, indemnify and hold harmless Portage, its agents, officers, boards and employees (hereinafter referred to as "Indemnities"), from and against any and all liability, obligation, damages, penalties, claims, liens, casts, charges, losses and expenses (including, without limitation,

reasonable fees and expenses of attorneys, expert witnesses and consultants), which may be imposed upon, incurred by or be asserted against the Indemnities by reason of any act or omission of Kalamazoo, their agents, officers and employees resulting in personal injury, bodily injury, sickness, disease or death to any person or damage to, loss of or destruction of tangible or intangible property, which may arise out of this Agreement except for the sole negligence or intentional acts of the Indemnities.

- ii. In providing the indemnification set forth above, the Indemnitor is not waiving any defense as is otherwise available to it by law, or any such defenses as are also available to and may be asserted by the Indemnitor for the benefit of the Indemnities. The Indemnitor shall not be responsible for the Indemnification obligation set forth above with respect to the Indemnities to the extent that the Indemnities have waived a defense that was otherwise available to it by law. The Indemnitor shall have the option to settle any claim, demand or liability on such terms as it shall determine.
- iii. In the event any action or proceeding shall be brought against the Indemnities by reason of any matter for which the Indemnities are indemnified hereunder, Kalamazoo shall, upon notice from any of the Indemnities, at Kalamazoo's sole cost and expense, resist and defend the same with legal counsel reasonably acceptable to Portage. No settlement of a claim that involves a remedy other than the payment of money by Kalamazoo shall be entered into by Kalamazoo without the prior consent of Portage, which consent will not be unreasonably withheld.
- iv. Kalamazoo shall give Portage prompt notice of the making of any claim or the commencement of any action, suit or other proceeding covered by the provisions of this paragraph. Nothing shall be deemed to prevent Portage from cooperating with Kalamazoo and participating in the defense of any litigation by Portage's own counsel at its own expense. If Kalamazoo requests Portage to assist it in such defense, then Kalamazoo shall pay all reasonable expenses incurred by Portage for such assistance.
- v. The obligation of Kalamazoo to release and indemnify Indemnities pursuant to this Section shall survive termination or expiration of this Agreement.

C. Insurance.

- i. During the term of this Agreement, Kalamazoo shall maintain, in full force and effect and at its sole cost and expense, commercial general liability insurance in the amount of no less than Two

Million (\$2,000,000.00) Dollars and other forms of insurance that are appropriate and reasonable for each party in amounts and form that are commercially reasonable.

ii. Certificates of insurance for each insurance policy required to be obtained by the parties in compliance with this paragraph shall be filed with the each party ten (10) days after execution of this Agreement and maintained annually during the term of this Agreement. Alternatively, either party may provide evidence of participation in a satisfactory self-insurance program. Each party shall immediately advise the other party of any claim or litigation that may result in liability.

iii. All insurance policies pursuant to this Agreement shall contain the following endorsement:

"It is hereby understood and agreed that this insurance policy may not be canceled by the insurer nor the intention not to renew be stated by insurer until thirty (30) days after receipt by City and/or VFC of a written notice of such intention to cancel or not renew:"

Said notice shall be sent to the parties' address as provided in this Agreement.

iv. All insurance shall be affected under valid and enforceable policies, insured by insurers licensed to do business by the State of Michigan.

v. Kalamazoo agrees to indemnify and save harmless the indemnitees from and against the payment of any deductible, self-insured retention and from the payment of any premium on any insurance policy required to be furnished by this Agreement.

vi. The insurance coverage required herein may be reviewed provided that such review shall be based upon commercially reasonable insurance underwriting standards and is performed by an independent insurance agency or brokerage, an attorney or a licensed insurance counselor.

8. Effective Date: This Agreement shall become effective on the last date each party has approved the Agreement.

9. Term. This Agreement shall terminate on September 30, 2010 or until cancelled by either party, with or without cause, upon seven (7) days written notice to the other party.

10. Emergency Contact. Each party shall identify one or more persons as twenty-four (24) hour/seven days per week/365 days per years as an emergency

contact. The contact information must be updated immediately if any changes. The initial provision of the required contact information is as follows:

City  
Chief Richard White  
Portage Police Department  
7810 Shaver Road  
Portage, Michigan 49024

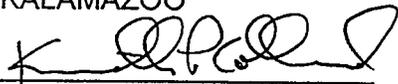
KPS  
Chief Jeffrey Hadley  
Kalamazoo Department of Public Safety  
150 East Crosstown Parkway  
Suite A  
Kalamazoo, Michigan 49001

11. Notices. All notices and communications relating to this Agreement shall be executed and sent:
  - A. Electronically (either by electronic mail or facsimile) with confirmation of receipt;
  - B. Personally;
  - C. U.S. First Class Certified Mail/Return Receipt Requested; or
  - D. Via recognized overnight courier service (e.g., UPS, Federal Express).
12. Effect on Other Agreements. Nothing herein contained shall prevent or supercede any written agreement between the parties with regard to intergovernmental cooperation agreements.
13. Governmental Immunity. Nothing herein contained constitutes, nor should the same be construed as, a waiver of any governmental immunity otherwise provided to the parties, their agents, employees, officers, or representatives as provided for under common law or statute.
14. Non-Transferable. The rights and obligations contained in this Agreement are personal to the parties and their successors and assigns and shall not be assigned or transferred without prior express written consent of the parties.
15. Relationship of Parties. The nature of the relationship between the parties is governed by this Agreement. Nothing contained in this Agreement nor any act of the parties shall be deemed or construed by any party or by any third party to create the relationship of principal and agent, of partnership, of joint venture, of joint enterprise, or of any association between the parties hereto, nor shall anything contained in this Agreement or any act of the parties be construed to render any party liable for the debts and obligations of any other party.
16. Waiver and Modifications. Any waiver, alteration or modification of any of

the provisions of this Agreement shall not be valid unless in writing and executed by the parties with the same formality as this Agreement. Any waiver by any party of any provision of this Agreement or any right or option under this Agreement shall not be controlling, nor shall it prevent or estop such party from thereafter enforcing such provision, right or option. The failure of any party to insist in any one or more instances upon the strict performance of any of the terms or provisions of this Agreement by another party shall not be construed as a waiver or relinquishment for the future of any such term or provision, and the same shall continue in full force and effect.

17. Duplicates. This Agreement may be executed in any number of duplicate originals or counterparts, each of which (when the original signatures are affixed) shall be an original but all of which shall constitute one and the same instrument.

CITY OF KALAMAZOO

By: 

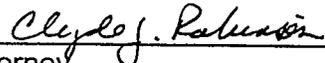
Kenneth P. Collard

Its: City Manager

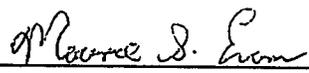
Date: 11-18, 2009.

Approved as to form:

Date: 11-18-2009

  
City Attorney

CITY OF PORTAGE

By: 

Maurice S. Evans

Its: City Manager

Date: 11/30, 2009.

Approved as to form:

Date: 11/24/09

  
City Attorney

# ATTACHMENT 3

Portage Police Department Communication, August 24, 2010

## CITY OF PORTAGE

## COMMUNICATION

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**TO:** Jeffrey Erickson, Director of Community Development

**DATE:** August 24, 2010

**FROM:** Kit I. Lirot, Deputy Police Chief 

**SUBJECT:** Valley Family Church Operations

On August 12, 2010, a meeting was conducted at City Hall with City Engineer Barnes, Deputy Director Forth, Lt. Palenick, and yourself. The following information was requested to include in the report to the Planning Commission reference Valley Family Church.

1. *The amount of time and number of officers needed to direct traffic per church service (you referenced one officer was typical). Also include with your report a copy of the cone layout map/drawing you referenced.*

One officer or supervisor from our agency can sign up for posted traffic control by seniority for each service at Valley Family Church. An officer is assigned traffic control before and after church services. A supervisor may at times monitor traffic, but traffic control is always handled by one person only. The average officer time commitment is three hours. The longest commitment was four and a half hours.

2. *The number of special events from commencement date in the agreement to the present where PD provided traffic control services (from billing records).*

The Police Department has provided traffic control at only one special event this year, which took place on Thursday, August 19, 2010. One additional special event took place in December of 2009 for their grand opening. If additional coverage was requested for special events during the contract period, the events were not covered by our agency.

3. *The number of times traffic control services were provided versus City of Kalamazoo PS and/or County Sheriff Department as other authorized agencies (percent of church services covered by PD).*

Since November 1, 2009, the Portage Police Department has completed 104 traffic overtime postings for Valley Family Church, of which 72 (70%) were filled by our agency, and 32 (30%) were filled by the Kalamazoo Department of Public Safety and/or the Kalamazoo County Sheriff's Department. It is our understanding that the Kalamazoo County Sheriff's Department is no longer participating in filling any traffic posts.

4. *An assessment as to whether or not the commitment to provide traffic control services for VFC-K has disrupted PD operations.*

Yes, in two ways. The administration of concerns, posting of overtime, notifications, and subsequent contacts are currently handled by the Field Operations Lieutenant. These job duties can consume on average approximately eight hours a month, none of which is covered monetarily by the contract. The second disruption occurs when an officer signs up for the traffic control overtime and is ill on the date of occurrence. Since the commitment has been made for coverage, a district officer or the team sergeant must cover the traffic detail, which removes them from normal and emergency assignments in the City.

*5. During our conversation, you mentioned that providing traffic control services was perhaps more of a "convenience" issue for church members rather than a "traffic safety" issue for the public. If this is the case, perhaps your report could expand more on this matter. I would add, however, that other parties who use, or live near, the Oakland/Vincent intersection may disagree that the traffic during church services (inbound and outbound) does not create "traffic safety" issues. (There may be an additional issue that without traffic control services at the Oakland/Vincent intersection, some people may believe more vehicles will exit the church parking lot and travel west on Vincent Avenue to Angling Road and the signalized Oakland/Angling intersection and safety could become an issue.)*

Since contract inception, both the Field Operations Lieutenant and the sergeants have, at times, monitored officers assigned to the traffic control posts for church services. By advising that contractual traffic control is more of a convenience than a traffic safety issue, it is felt that if officers were not present, traffic would in all likelihood back up, but not present a safety concern. Traffic direction by officers before and after church services assists in decreasing vehicles waiting to enter or exit the church property. After church services, vehicles exiting the parking areas move more efficiently onto Oakland Drive with officer assistance. There is little doubt that, without officer assistance after the church service, traffic moving west out of the parking lots and into the neighborhoods would be greatly increased to avoid the back-up on eastbound Vincent Drive.

*6. Related to number 5 above, you mentioned it may be the perspective of PD personnel that traffic control services are not needed to direct inbound traffic prior to church services. Observations by PD personnel on this issue would be helpful together with supporting information or further explanation. (Traffic information is also being provided by the city traffic engineer, which may also indicate some traffic patterns/frequency that can support PD observations.)*

Though there have been church services that do not require officer-assisted traffic control prior to the church service, in most instances, officers have assisted vehicles making left turns from northbound Oakland Drive to westbound Vincent Drive. This normally occurs about 10 minutes before the scheduled service.

*7. You mentioned the observation that there has been minimal impact on the Oakland/Vincent intersection resulting from the closure of the eastbound South Westnedge Avenue I-94 ramps, but*

*would confirm this statement with officers that have been present before and after the I-94 ramp closures and would include this information in your report.*

In discussing this with officers, no appreciable change in traffic has been noted due to these closures. This may be due in part to the time the church services are completed, which is after 7:30 p.m. on Saturdays and 8:30 p.m. on Mondays or 11:30 a.m. on Sundays.

*8. If there is other relevant information you believe will be useful for consideration and in reporting for Planning Commission consideration, please provide.*

Officer commitment to this detail has dropped off appreciably in recent weeks. Valley Family Church was advised on August 23 that no Portage officers have volunteered for any of the traffic details for the month of September. Church administrators advised they doubted the Kalamazoo Department of Public Safety would be able to fill all the post openings in September. This will feasibly leave dates with no traffic control assistance before or after scheduled church services.

KIL:TP:tp

c: Richard J. White, Chief of Police  
Thomas Palenick, Lieutenant



OAKLAND DE

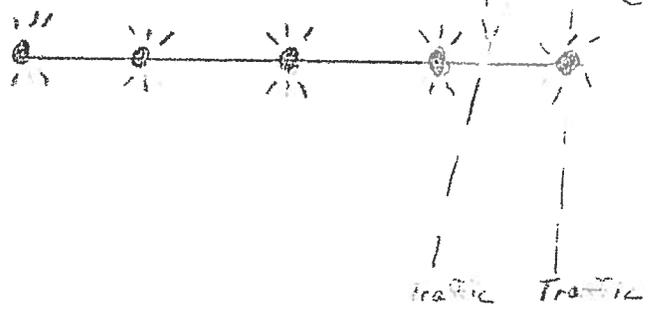
VINCENT

OFFICER

CONES (20)

I-94 RAMP

I-94 RAMP



# ATTACHMENT 4

Citizen e-mail/inquiries received

**Maurice Evans - Re: VFC issues to be evaluated**

---

From: Maurice Evans  
 To: evie.asken@wmich.edu  
 Date: 4/15/2010 10:54 AM  
 Subject: Re: VFC issues to be evaluated  
 CC: Campbell, Elizabeth; edsackley@msn.com; Obrien, Margaret; Randall, Patricia; Reid, Claudette; strazdas, Peter; Urban, Terry

---

Good afternoon, Ms. Asken.

Thank you for your recent inquiry sent to Mayor Strazdas regarding traffic activity, parking issues and occupancy levels at Valley Family Church. As you know, Mayor Strazdas forwarded your email to me for review and comment. Please note my responses to each of your issues / questions below.

I hope this information is helpful. As always, if you have any question or comments or need further information, please do not hesitate to contact me.

Respectfully,

Maurice S. Evans,  
 City Manager  
 City of Portage  
 7900 South Westnedge Ave  
 Portage, MI 49002  
 Ph: 269-329-4400  
 Fax: 269-324-9244  
 Cell: 269-217-0455  
[evansm@portagemi.gov](mailto:evansm@portagemi.gov)  
 Learner, Achiever, Positivity, Relator, Responsibility

>>> Peter strazdas 4/12/2010 8:53 PM >>>

Dear Evie,

You have identified several points and asked several questions. These need to be reviewed by administration and legal counsel. All City ordinances and terms in the conditional use permit will be followed....in a fair and equal manner as we do for all applicants.

Our City Manger and his staff will review these and provide you with a response.

Regards,

Peter Strazdas

>>> Evie Asken <evie.asken@wmich.edu> 04/12/10 8:20 PM >>>

To: Mayor Strazdas:

Pete

There are several issues I must question concerning the conditional use permit issued by the City's Planning Commission spring 2008 to the Valley Family Church on Vincent Road. The conditional use permit included the following:

1. The city's building department established the lot capacity for the number of parking spaces based upon the projected occupancy levels illustrated in the final plans issued to and approved by the city for design and construction.

**RESPONSE:** The number of parking spaces at the VFC site is based on the projected occupancy level. The Zoning Code establishes minimum parking lot requirements for churches and temples, based on a formula of one space for every three seats or 6-feet of pew. VFC has a total of 2,000 seats (1,500 in the new facility/500 in the cathedral), which requires a minimum of 667 parking spaces. Also, the Zoning Code establishes a maximum of 734 parking spaces at the VFC site (minimum number of parking spaces plus 10%). If additional spaces are desired (over the maximum number of 734) Planning Commission approval is required. The approved site plan for VFC contains 681 parking spaces, which are currently present. The site plan also included potential, future parking spaces in a "green" area for which site plan approval must be obtained.

2. The use permit required all cars leaving the church parking lots to turn east to exit the area via the Oakland Drive intersection. When the church opened, there were signs placed at the entrances directing exit traffic east.

**RESPONSE:** The special land use permit did not require all cars leaving the church parking lot to turn east to exit the area via the Oakland Drive intersection. The special land use permit conditions of approval actually make no such reference. However, condition #3 that was attached to the site plan approval states the following: "Installation of a "No Right-Turn, Local Traffic Only" sign on the church property at the western driveway, as offered by the applicant." This single sign at the west driveway was installed by VFC but had been recently removed. After an inquiry by the City of Portage Community Development, VFC advised that the sign was recently damaged and removed to be repaired. The repaired sign was re-installed this morning.

3. The church was instructed to provide traffic coordination at the Oakland Drive/Vincent intersection.

**RESPONSE:** You are correct. A condition of the special land use permit requires VFC to provide traffic control/coordination at the Oakland Drive/Vincent intersection: VFC continues to provide for traffic control.

4. Only local traffic was to be directed (and allowed) to travel west on Vincent to Angling Road north.

**RESPONSE:** You are correct in this regard as well. The sign, which is referenced in Item 2 above, instructs "Local Traffic Only" to travel west on Vincent from the VFC site. As noted above, the sign was recently damaged and removed to be repaired. The repaired sign was re-installed this morning.

Here are the issues questioned today:

1. The church opened in early fall 2009 and immediately parked "overflow" cars on the grass areas west of the church and shuttled people to the church entrances via a golf cart.

**RESPONSE:** VFC received a certificate of occupancy on October 23, 2009. Vehicular parking did occur in grass areas on an as needed basis when the facility first opened. Recent conversations with VFC officials have occurred and a revised site plan proposing additional on-site parking is anticipated. It is believed that the grassed area defined on the approved site plan for "future parking" (84 parking spaces) is the area in which added parking may be being considered.

2. This past week-end, (and according to the church web site), overflow traffic on Sundays would be accommodated at the Angling Road School lot with a shuttle to the church every 10 min. Last Sunday many cars parked at the school & the shuttle was a Portage school bus.

**RESPONSE:** Use of Angling Road Elementary School for overflow parking with a shuttle bus service to VFC was confirmed through review of the VFC web site ("Weekly Announcements") and through a telephone conversation with Mr. Tom Vance of Portage Public Schools. According to Mr. Vance, a lease arrangement with VFC was recently completed (1-2 weeks ago). Mr. Vance indicated that similar lease arrangements have also occurred at Moorsbridge Elementary School and Woodland Elementary School. This type of activity is not prohibited by the Zoning Code and has been used by other organizations to address parking needs.

3. The east turn only signs at the church entrances had been removed.

**RESPONSE:** As referenced above, the "No Right-Turn, Local Traffic Only" sign was removed from the western driveway was recently damaged and removed to be repaired. The repaired sign was re-installed this morning.

4. The traffic directors at the church entrances allowed cars to exit the area by turning west from the church onto

Vincent and then north on Angling.

**RESPONSE:** The issue of using the adjacent public streets was the subject of discussion with the Planning Commission when the special land use permit and site plan were being considered. Vincent and Angling are public streets and can be used by the public (i.e.: the city cannot prohibit vehicles exiting the VFC parking lot from using these public streets.) However, a letter has been sent to church officials regarding this matter as a result of a complaint received from a neighborhood resident.

5. Most of the cars leaving the school lot turned north onto Angling Road to avoid the Oakland /Vincent intersection back up.

**RESPONSE:** As indicated above, there is no regulatory prohibition regarding this activity.

6. Major question: If the occupancy levels on the plans accepted for construction by the city's building department dictated the original capacity of the parking lots, is the facility as being used in violation of Fire Marshall requirements?

**RESPONSE:** Based on the bi-monthly reports submitted by church officials, attendance at church services has not exceeded the occupant load of the building.

I appreciate your looking into these issues.

Evie

Evie Asken, FAIA, FAUA (E)  
3707 Wedgwood Drive  
Portage, MI 49024  
269-344-4789  
[evie.asken@wmich.edu](mailto:evie.asken@wmich.edu)

**Jeffrey Erickson - Re: KVFC --> Angling Road Neighborhood Traffic Flow**

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**From:** Maurice Evans  
**To:** garnet.eckstrand@pfizer.com  
**Date:** 4/16/2010 4:29 PM  
**Subject:** Re: KVFC --> Angling Road Neighborhood Traffic Flow  
**CC:** campbell4portage@yahoo.com; edsackley@msn.com; Erickson, Jeffrey; evie.asken@wmich.edu; O'Brien, Margaret; Randall, Patricia; Reid, Claudette; strazdas, Peter; Urban, Terry

---

Good afternoon, Mr. Eckstrand.

Thank you for your email. I have forwarded it to the Director of Community Development, who will ensure that the Planning Commission receives a copy.

Respectfully,

Maurice S. Evans,  
City Manager  
City of Portage  
7900 South Westnedge Ave  
Portage, MI 49002  
Ph: 269-329-4400  
Fax: 269-324-9244  
Cell: 269-217-0455  
[evansm@portagemi.gov](mailto:evansm@portagemi.gov)  
Learner, Achiever, Positivity, Relator, Responsibility

>>> Margaret O'Brien 4/16/2010 3:37 PM >>>  
Dear Mr. Eckstrand,

Thank you for emailing. As you are aware, the Planning Commission was the body involved in this process and made the decisions. City Council had no jurisdiction over this matter. As such, I am cc'ing Maurice Evans, our city manager, on this email so he can do any follow up that may be needed.

Ms. Asken had sent an email earlier this week with some questions, which I know both Mr. Evans and I tried to answer- some of her questions were ones I had asked last year. Some also touched on traffic concerns and right turn only.

You are correct that the Planning Commission did not require the church to have all traffic turn east. It is also my understanding, due to recent conversations with Mr. Evans and leaders at the church, that the attending police officers had asked the church volunteers to have some cars turn west when traffic reached a certain waiting point. Clarification has been made with all entities involved, and this will no longer occur. I hope you will see a reduction in traffic as such. Additionally, right turn only signs had been damaged, and the church is in process of securing new ones, which I believe will be back out for this weekend's service.

Thank you for emailing us.

Margaret O'Brien

Margaret O'Brien  
 Portage City Councilwoman  
 269-324-9626

>>> "Eckstrand, Garnet" <garnet.eckstrand@pfizer.com> 04/16/10 12:40 PM >>>

It has been approximately 6 months since KVFC moved into the Angling Road neighborhood and "opened for business". During this time, we have observed traffic flow and counted cars that travel through our neighborhood following several of the church services. The numbers are staggering.

First - to refresh your memory - during the application process to the Portage Planning Commission; the KVFC Church hired a firm that presented a traffic study, believing they could predict traffic flow.

#### The Prediction

The "expert evidence" as presented by the church suggested that 9% of the attendees to the VFC Church had zip codes that showed them living north of the church. In their "expert" opinion and it was stated that approximately 1/3 of those members may choose to go home (north) via Vincent Rd/Angling Rd rather than turn left out of the church and then have to wait to turn left and go north on Oakland. Given these numbers, if the parking lot holds ~ 640 cars per service ... then that would mean approximately 19-20 cars would turn right out of the parking lot after church service. We were told by the Planning Commission that it was unreasonable for "the neighborhood" to be concerned over this small number of cars driving through our neighborhood. Additionally, the church - at that time - saying anything that needed to be said to gain approval for their application - offered to put up "No Right Turn - Local Traffic Only" signs and assured us that they would route all traffic to the east out of the parking lot after each service.

When the neighborhood questioned these assumptions as being naïve and simply provided to ensure the commission that there would be no traffic impact to the neighborhood - we were told by the commission that they believed the experts over the opinions of the neighborhood. It was a lie then - and now has proven itself as such.

#### The Reality

Each of the last two occasions that we have observed traffic flow - on March 28th and April 11th - there have been > 145 cars that turned right out of the church and traveled down Vincent Rd and onto Angling Rd. That is over 7 times or 700% the estimate given to the planning commission!!! These car counts were gathered during the 15-20 minute period - immediately after church service had ended - 7 extra cars per minute or a car every 8 seconds on a residential two lane road, much of which does not even have sidewalks! It is obvious to me - that the church is not even trying to limit the traffic impact to the neighborhood.

If you don't think this is a big deal - just imagine the change in the quality of your life - if several times every weekend you had > 145 cars drive by the front of your house in a matter of minutes.

I would appreciate it if this information could be forwarded to the Planning Commission members - who approved this matter and did this to our neighborhood - and to any appropriate staff.

I look forward to responses from my elected officials.

Garnet Eckstrand  
5015 Glencove Ln  
Portage, MI 49024

## Jeffrey Erickson - VFC-K Inquiries from Ms. Nedrud

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**From:** Jeffrey Erickson  
**To:** Evans, Maurice  
**Subject:** VFC-K Inquiries from Ms. Nedrud  
**CC:** Block, MaryBeth

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Maurice-

Per your request, following are responses to the inquiries received from Melody Nedrud, [jimel08@att.net](mailto:jimel08@att.net), the afternoon of April 20th. Several of the inquiries are similar to questions received from Ms. Evie Asken, who also resides in the neighborhood. Responses are provided as follows:

**INQUIRY:** It is my understanding that the Final Site plan included a provision that the western exit from the Church have a "No Right-Turn Local Traffic Only" sign. I understand that this sign was damaged but was to be replaced recently. The Church has been using Portage police to direct traffic on Oakland Drive on their Sunday and Saturday services. At some times the Police officer has directed the Church to direct traffic to go west. Who is in charge? The Police or the Planning Commission?

**RESPONSE:** Vincent Avenue and Angling Road are public streets and are available for use by the public. As part of the Planning Commission approval, the church offered, and the Planning Commission approved a condition, that the church would erect a sign at the west drive that conveyed information to discourage right turns except for local traffic. This sign has been erected. Also, the Police Department directs the motoring public during the time that traffic control services are provided. Traffic control is judgement-based in the interests of traffic safety and efficient traffic flow on public streets. While some traffic may turn right, which is legally permissible, Portage Police officers have been advised to encourage church traffic to use the Vincent Drive and Oakland Drive intersection. Finally, a large number of church patron vehicles routinely wait in the church parking lot and have been observed to primarily use the Vincent Avenue and Oakland Drive intersection.

**INQUIRY:** The Site Plan included the use of uniformed Police officers at Oakland and Vincent on Sat & Sun services and when the capacity of the facility sanctuary exceeds 80% (1600 people) or 681 vehicles. The contract or agreement must be in effect until October 2010. What happens after 2010?

**RESPONSE:** The special land use permit is subject to review by the Planning Commission in October 2010. Subsequent to this review, the Planning Commission will decide.

**INQUIRY:** I am a little confused as to how many parking spots the Church can have and who would approve changes. I think they currently have 681. If they want to increase this do they come back to the Planning Commission or the Zoning board? I have heard talk of them adding 84 more spots. This would exceed the 734 max of the Zoning Code.

**RESPONSE:** In this case, the approved site plan includes a parking area that was not paved for use. Use of the parking spaces would represent an increase beyond the 681 parking spaces that were approved and will require Planning Commission review and approval, as noted on the approved site plan.

**INQUIRY:** I understand that they are currently renting parking space from Angling Rd. School. Certainly a creative solution to their parking problem. It also keeps more of church's green space free. How does this impact the agreement on the use of police to direct traffic? Is the planning commission willing to impose added conditions on cars turning left into the neighborhood (cars are turning left)?

**RESPONSE:** The church is leasing parking spaces at the Angling Road Elementary School. Also, an additional religious institution is currently leasing building and parking space at the Angling Road

Elementary School. The Portage Public School has entered into these arrangements for some time. These arrangements have also occurred at other schools such as Woodland Elementary School and Moorsbridge Elementary School. The special land use permit is subject to review by the Planning Commission in October 2010. Subsequent to this review, the Planning Commission will decide.

INQUIRY: The Final Site plan indicated that there will be a traffic report to be prepared and provided to the Planning Commission not later than Oct 2010 by the City of Portage Dept of Trans and Util. What will the Planning Commission do with this information? Would it change any of the conditions of the site plan?

RESPONSE: The special land use permit is subject to review by the Planning Commission in October 2010. The traffic report that is referenced will be prepared and provided to the Planning Commission. Subsequent to review, the Planning Commission will decide.

INQUIRY: Apparently the Church is growing; they have decided to add an additional service on Monday nights starting in May, rather than added services on Sat or Sun. Since according to their Web site "this counts" as a worship service similar to Sat or Sun will the same Police officer requirement apply to Monday nights? Is the Planning Commission willing to make this a requirement?

RESPONSE: The provision of traffic control services will continue for the Monday night service. The traffic control services agreement has been formally amended to include the Monday night service. This activity will be consistent with the special land use permit approved by the Planning Commission.

If you need further information, please let me know.

JEFF

On Tue, Apr 20, 2010 at 2:02 PM, Melody Nedrud <jimel08@att.net> wrote:

Dear Tom,

First of all I apologize for contacting you at your KIA email address if you have one for the City of Portage Planning Commission. I could not easily find one on the City's web page. I am also copying Maurice Evans at the City in hopes that this gets to the right Department.

The reason I am writing you is to clarify my understanding of some information and action/enforcement issues with the Planning Commission and Special Land Use Permits. As you may recall I had some interest in the approval of the Special Land Use Permit for the Valley Family Church. As a neighbor one of my concerns has been traffic on Oakland Drive and along Vincent and Angling Roads. The Church has been open since the fall of 2009 and there have been some issues in this area that I believe the City has been working with the Church to resolve.

Here are the process issues I am concerned about:

1. When a final site plan is approved how long do the conditions set forth remain in effect?
2. If any of the conditions need to be changed or are wanted to be changed by any party how is that accomplished?
3. Must the Planning Commission approve the changes?
4. Who enforces the conditions of the Site Plan?

Specifically with regard to the Valley Family Church Site Permit I have the following questions:

1. It is my understanding that the Final Site plan included a provision that the western exit from the Church have a "No Right-Turn Local Traffic Only" sign. I understand that this sign was damaged but was to be replaced recently. The Church has been using Portage police to direct traffic on Oakland Drive on their Sunday and Saturday services. At some times the Police officer has directed the Church to direct traffic to go west. Who is in charge? The Police or the Planning Commission?
2. The Site Plan included the use of uniformed Police officers at Oakland and Vincent on Sat & Sun services and when the capacity of the facility sanctuary exceeds 80% (1600 people) or 681 vehicles. The contract or agreement must be in effect until October 2010. What happens after 2010?
3. I am a little confused as to how many parking spots the Church can have and who would approve changes. I think they currently have 681. If they want to increase this do they come back to the Planning Commission or the Zoning board? I have heard talk of them adding 84 more spots. This would exceed the 734 max of the Zoning Code.
4. I understand that they are currently renting parking space from Angling Rd. School. Certainly a creative solution to their parking problem. It also keeps more of church's green space free. How does this impact the agreement on the use of police to direct traffic? Is the planning commission willing to impose added conditions on cars turning left into the neighborhood (cars are turning left)?
5. The Final Site plan indicated that there will be a traffic report to be prepared and provided to the Planning Commission not later than Oct 2010 by the City of Portage Dept of Trans and Utl. What will the Planning Commission do with this information? Would it change any of the conditions of the site plan?
6. Apparently the Church is growing; they have decided to add an additional service on Monday nights starting in May, rather than added services on Sat or Sun. Since according to their Web site "this counts" as a worship service similar to Sat or Sun will the same Police officer requirement apply to Monday nights? Is the Planning Commission willing to make this a requirement?

Thanks for your help, Melody Nedrud

--  
Thomas A. Fox  
Kalamazoo Institute of Arts  
314 S. Park St; Kalamazoo MI 49007  
(269) 585-9284  
fax 349-9313  
[tomf@kiarts.org](mailto:tomf@kiarts.org)

## Jeffrey Erickson - Planning Commission - VFC

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**From:** MaryBeth Block  
**To:** Erickson, Jeffrey  
**Date:** 4/21/2010 8:14 AM  
**Subject:** Planning Commission - VFC

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Good morning, Jeff.

Would you please develop a response to Ms. Nedrud on behalf of the City Manager? Some of the questions are similar to those asked by Ms. Asken last week but others are related to Planning Commission actions, for which I don't have answers.

Thanks, Jeff.  
 Mary Beth

>>> Melody Nedrud <jimel08@att.net> 4/20/2010 4:23 PM >>>

Thanks Tom for your prompt response. I look forward to hearing from the Department of Community Development. Thanks too Tom for your service to the Planning Commission and the citizens of Portage.. I am sure it is not always an easy volunteer job. Mel

---

**From:** Tom Fox <tomf@kiarts.org>  
**To:** Melody Nedrud <jimel08@att.net>  
**Cc:** tom\_f@kiarts.org; evansm@portagemi.gov  
**Sent:** Tue, April 20, 2010 3:59:08 PM  
**Subject:** Re: Planning Commission

Hi Mel

You have asked several technical questions which can best be addressed by the Department of Community Development.

I will address a couple. In your first grouping of questions - if the developer wanted a change to drawings of a site plan, the extent of the change would determine whether the Community Development staff could decide or if it should return to the Planning Commission.

The requirement for counts and uniformed officers directing traffic until Oct 2010 is so that a year of actual experience could be gained. That was preferable to installing a traffic signal near other signals at great expense (six digits) which would be 'on' all 168 hours in a week but might be needed for services only a very few hours. The approach is to not spend chunks of money based on speculation in the absence of facts. When all of the information is in and reviewed, a determination will be made.

Mel, the month of May is my final one on the Planning Commission. I encourage you to address future questions directly to the Department of Community Development.

I really appreciate you asking specific questions to gain understanding. It is much more pleasant than the in-your-face challenges which some citizens have taken over the past 9+ years that I've volunteered on the Planning Commission. Tom

# **ATTACHMENT 5**

**2010 Major Thoroughfare Plan Status Update Tables**

**Table C-4:  
Existing Thoroughfare Street Segment Characteristics**

Street	From	To	Street Class	Jurisdiction	Lanes	Pavement Width	ROW Width	Posted Speed	Curb & Gutter	Daily Capacity	Daily Traffic	Year	Present V/C Ratio	2030 ADT (a)	2030 V/C Ratio
Westnedge	Kilgore	Andy	Major Art.	Portage	5	60	66 to 93	35	Yes	34,200	28,103	2008	0.82	30,251	0.88
Westnedge	Andy	Idaho	Major Art.	Portage	5	60	66 to 119	35	Yes	34,200	45,562	2004	1.33	42,255	1.24
Westnedge	Idaho	Milham	Major Art.	Portage	6-7	72-84	110	35	Yes	40,500	40,789	2008	1.00	59,586	1.47
Westnedge	Milham	Mall	Major Art.	Portage	6	72	83 to 125	35	Yes	40,500	39,875	2008	0.98	58,769	1.45
Westnedge	Mall	Ruth	Major Art.	Portage	6	72	93 to 110	35	Yes	40,500	40,549	2004	1.00	57,881	1.43
Westnedge	Ruth	Hudson	Major Art.	Portage	6	72	93 to 110	35	Yes	40,500	36,817	2004	0.91	57,881	1.43
Westnedge	Hudson	Romence	Major Art.	Portage	6	72	90 to 110	35	Yes	40,500	34,941	2009	0.66	35,054	0.87
Westnedge	Romence	Garden	Major Art.	Portage	5	57	66 to 93	35	Yes	32,200	32,515	2004	1.01	31,717	0.99
Westnedge	Garden	Schuring	Major Art.	Portage	5	57	66 to 93	35	Yes	32,200	24,150	2004	0.75	29,578	0.92
Westnedge	Schuring	Shaver	Major Art.	Portage	5	60	66 to 93	35	Yes	32,200	24,147	2004	0.75	25,141	0.78
Westnedge	Shaver	Centre	Minor Art.	Portage	4	44	99	30	Yes	30,600	7,565	2008	0.25	6,224	0.20
Westnedge	Centre	Melody	Minor Art.	Portage	3	38	66 to 86	30	50%	17,000	10,629	2006	0.63	6,514	0.38
Westnedge	Melody	Osterhout	Minor Art.	Portage	2	24	66	40	No	16,200	8,419	2006	0.52	5,668	0.35
Westnedge	Osterhout	Heverly	Minor Art.	Portage	2	32	66	40	Pvd Slidr	16,200	13,340	2006	0.80	10,624	0.66
Milham	Heverly	Oakland	Minor Art.	Portage	2	32	66	40	Pvd Slidr	16,200	14,580	2004	0.90	13,536	0.84
Milham	Oakland	Constitution	Major Art.	Portage	5	60	83	35	Yes	32,200	21,301	2009	0.66	20,700	0.64
Milham	Constitution	Westnedge	Major Art.	Portage	5	58	83	35	Yes	32,200	16,168	2009	0.50	19,936	0.62
Milham	Westnedge	Norfolk Southern	Major Art.	Portage	5	55	66 to 83	35	Yes	34,200	12,808	2008	0.37	14,131	0.41
Milham	Norfolk Southern	Lovers Lane	Major Art.	Portage	4-5	55	66 to 83	35	Yes	34,200	10,975	2004	0.32	14,351	0.42
Milham	Lovers Lane	Portage	Major Art.	Portage	4	48	131 to 148	40	Yes	34,200	7,829	2009	0.23	4,904	0.14
Milham	Sprinkle	E. City Limits	Collector	Portage	2	24	66	25	Pvd Slidr	16,200	2,325	2004	0.14	21,05	0.13
Oakland	Kilgore	I-94	Major Art.	Portage	4	40	66 to 135	35	Yes	30,600	22,145	2009	0.72	23,095	0.75
Oakland	I-94	Milham	Major Art.	Portage	5	60	99	35	Yes	34,200	31,132	2008	0.91	35,440	1.04
Oakland	Milham	Romence	Minor Art.	Portage	3	44	66	35	Yes	16,200	15,491	2004	0.96	19,589	1.21
Oakland	Romence	Shaver	Minor Art.	Portage	3	44	66	35	Yes	16,200	12,817	2004	0.79	14,745	0.91
Oakland	Centre	Osterhout	Minor Art.	Portage	2	22	66	40	Pvd Slidr	16,200	7,821	2005	0.48	4,079	0.25
Oakland	Shaver	Osterhout	Collector	Portage	2	22	66	40	Pvd Slidr	16,200	9,186	2006	0.57	4,181	0.26
Oakland	Osterhout	S. City Limits	Collector	Portage	2	22	66	40	Pvd Slidr	16,200	5,022	2004	0.31	3,792	0.23
Portage	Milham	Centre	Major Art.	Portage	4 & 5	44	66 to 100	45	Yes	32,500	16,242	2008	0.50	21,419	0.66
Portage	Kilgore	Milham	Major Art.	Portage	5	59	100	45	Yes	34,200	24,069	2008	0.70	23,435	0.69
Portage	Centre	Lakeview	Minor Art.	Portage	4 & 5	44	66 to 100	40-45	Yes	32,500	21,709	2005	0.67	17,305	0.53
Portage	Lakeview	Mandigo	Minor Art.	Portage	2-4	22-44	66	45	No	16,200	12,069	2006	0.75	16,102	0.99
Sprinkle	Kilgore	Meredith	Major Art.	KCRC	5	60	100	50	No	34,200	19,872	2006	0.58	19,794	0.58
Sprinkle	Meredith	Milham	Major Art.	KCRC	5	60	100	50	40%	34,200	19,174	2004	0.56	20,631	0.60
Sprinkle	Milham	Bishop	Major Art.	KCRC	5	60	100	50	No	34,200	19,225	2004	0.56	20,487	0.60
Sprinkle	Bishop	Centre	Major Art.	KCRC	5	60	100	50	No	34,200	16,194	2004	0.50	24,876	0.77
Sprinkle	Centre	S. City Limits	Major Art.	KCRC	5	60	66 to 100	50	Yes	24,700	11,615	2005	0.47	18,394	0.74
Centre	Centre	Oakland	Major Art.	Portage	4-5	48-60	83 to 120	45	Yes	32,500	24,575	2009	0.76	26,084	0.80
Centre	Oakland	Westnedge	Major Art.	Portage	5	55	76 to 86	45	Yes	34,200	22,119	2009	0.65	21,292	0.62
Centre	Westnedge	Waylee	Major Art.	Portage	5	55	66 to 86	35	Yes	34,200	24,161	2008	0.70	22,916	0.67
Centre	Waylee	Portage	Major Art.	Portage	5	55	66 to 86	35-45	Yes	32,500	20,070	2008	0.62	20,859	0.64
Centre	Portage	Sprinkle	Major Art.	Portage	4	48	100 to 122	45	Yes	34,200	10,205	2004	0.30	17,984	0.64
Centre	Sprinkle	E. City Limits	Collector	Portage	2	22	66	40	Pvd Slidr	16,200	10,222	2004	0.63	10,447	0.53
Romence	Angling	Oakland	Collector	Portage	2	24	66	35	Pvd Slidr	16,200	10,727	2006	0.66	8,141	0.50
Romence	Oakland	Sears	Minor Art.	Portage	3	35	66	35	Yes	16,200	14,237	2004	0.88	13,118	0.81
Romence	Sears	Westnedge	Minor Art.	Portage	5	55	66	35	Yes	34,200	20,620	2008	0.60	12,546	0.37
Romence	Westnedge	Lovers Lane	Minor Art.	Portage	4	44	132 to 186	35	Yes	34,200	13,477	2009	0.39	13,604	0.40

Table C-4:

Existing Thoroughfare Street Segment Characteristics

Street	From	To	Street Class	Jurisdiction	Lanes	Pavement Width	ROW Width	Posted Speed	Curb & Gutter	Daily Capacity	Daily Traffic	Year	Present V/C Ratio	2030 ADT (a)	2030 V/C Ratio
Romence	Lovers Lane	Portage	Minor Art.	Portage	4	44	100 to 273	35	Yes	32,500	10,600	2008	0.33	10,068	0.31
Romence	Portage	Mastenbrook	Minor Art.	Portage	3-4	36-44	66	45	40%	16,200	10,942	2008	0.67	12,543	0.77
Romence	Mastenbrook	Sprinkle	Minor Art.	Portage	2-3	22-33	66	45	Pvd Slidr	16,200	10,235	2008	0.63	13,486	0.83
Bishop	Sprinkle	E. City Limits	Minor Art.	Portage	2-3	23-33	66	40	Pvd Slidr	16,200	2,445	2008	0.15	3,163	0.20
Lovers Lane	Kilgore	I-94	Minor Art.	Portage	4	44	66 to 83	35	Yes	32,500	12,130	2009	0.37	22,856	0.70
Lovers Lane	I-94	Milham	Minor Art.	Portage	4	44	66 to 83	35	Yes	32,500	13,990	2008	0.43	19,455	0.60
Lovers Lane	Milham	Romence	Minor Art.	Portage	4	44	66 to 99	40	Yes	32,500	10,690	2008	0.33	11,750	0.36
Lovers Lane	Romence	Garden	Minor Art.	Portage	4	44	66 to 99	40	Yes	32,500	13,634	2004	0.42	10,010	0.31
Lovers Lane	Garden	Centre	Minor Art.	Portage	4	44	66 to 99	40	Yes	32,500	8,828	2008	0.27	7,839	0.24
Lovers Lane	Centre	Forest	Subcollector	Portage	2	24	66 to 99	25	Pvd Slidr	16,200	2,622	2004	0.16	1,954	0.12
Kilgore	Oakland	Westnedge	Minor Art.	Kalamazoo	2-3	24-36	66 to 83	35	Yes	16,200	16,213	2004	1.00	10,015	0.62
Kilgore	Westnedge	Burdick	Minor Art.	Portage	4-5	44-55	66 to 83	35	Yes	32,500	19,730	2006	0.61	25,614	0.79
Kilgore	Burdick	Lovers Lane	Minor Art.	Portage	4	44-55	66 to 83	35	Yes	32,500	15,965	2006	0.49	25,688	0.79
Kilgore	Lovers Lane	Portage	Minor Art.	Portage	3	44	66 to 120	35	Yes	16,200	8,844	2008	0.55	15,898	0.98
Kilgore	Norfolk Southern	Sprinkle	Minor Art.	Kalamazoo	4	44	66	45	Yes	32,500	5,571	2007	0.17	12,229	0.38
Kilgore	Portage	Norfolk Southern	Minor Art.	Kalamazoo	4	44	66 to 120	45	Yes	32,500	11,542	2007	0.38	15,767	0.49
Angling	Meryview	Vincent	Collector	Portage	2	24	66 to 83	25	Pvd Slidr	16,200	1,285	2009	0.08	1,651	0.10
Vincent	Angling	Oakland	Collecto	Portage	2	24	66	25-35	Pvd Slidr	16,200	3,122	2009	0.19	2,428	0.15
Angling	Milham	Romence	Collector	Portage	2	22	66 to 83	35	Pvd Slidr	16,200	4,137	2006	0.26	2,171	0.13
Angling	Romence	Centre	Collector	Portage	2	24	66 to 105	35	Pvd Slidr	16,200	6,016	2008	0.37	3,797	0.23
Angling	Centre	Vanderbilt	Collector	Portage	2	24	66 to 90	35	Pvd Slidr	16,200	1,803	2008	0.11	1,034	0.06
Vanderbilt	Angling	Shaver	Collector	Portage	2	22	66	35	Pvd Slidr	24,700	1,690	2008	0.07	1,985	0.08
Osterhout	Shaver	Westnedge	Minor Art.	Portage	2	21	66	40	Pvd Slidr	16,200	1,576	2008	0.10	4,470	0.28
Osterhout	Westnedge	Portage	Minor Art.	Portage	2	24	66	40	Pvd Slidr	16,200	4,614	2008	0.28	5,421	0.33
Shaver	Westnedge	Centre	Major Art.	Portage	5	55	66 to 73	35	Yes	34,200	16,414	2007	0.48	18,917	0.55
Shaver	Centre	Vanderbilt	Major Art.	Portage	4-5	44-55	78 to 100	45	Yes	32,500	18,114	2004	0.56	19,605	0.60
Shaver	Vanderbilt	S. City Limits	Major Art.	Portage	2-3	22-33	18 to 200	45-50	Pvd Slidr	16,200	6,623	2006	0.41	15,247	0.94
Moorsbridge	Centre	N. Old Centre	Collector	Portage	2	24	66 to 100	30	Yes	16,200	3,558	2009	0.22	3,494	0.22
Moorsbridge	N. Old Centre	Muirfield	Collector	Portage	2	34	66	30	Yes	16,200	3,004	2009	0.18	5,210	0.32
Moorsbridge	Muirfield	Romence	Collector	Portage	2	28	66	30	Pvd Slidr	16,200	3,696	2004	0.23	5,210	0.32
Schuring	Oakland	Westnedge	Collector	Portage	2	22	66	30	20%	16,200	3,702	2009	0.23	5,511	0.34
Garden	Westnedge	Lovers Lane	Collector	Portage	2	21	33 to 66	35	Pvd Slidr	16,200	2,661	2009	0.16	3,044	0.19
Mall	Constitution	JC Penney	Minor Art.	Portage	3	35	66	35	Yes	16,200	5,408	2009	0.33	1,482	0.09
Mall	JC Penney	Westnedge	Minor Art.	Portage	5	58	80	25	Yes	34,200	12,023	2008	0.35	3,653	0.11
Constitution	Milham	Mall	Minor Art.	Portage	4	48	100	35	Yes	34,200	12,204	2008	0.36	14,763	0.43
Constitution	Mall	Romence	Minor Art.	Portage	4	48	100	35	Yes	34,200	8,028	2008	0.23	3,464	0.10
Forest	Lovers Lane	Portage	Subcollector	Portage	2	24	66	25	Pvd Slidr	16,200	1,437	2008	0.09	2,036	0.13
Zylman	Portage	Sprinkle	Collector	Portage	2	24	66	45	Pvd Slidr	16,200	5,602	2008	0.34	4,147	0.26
S. 12th St.	N. City Limits	Hickory Hill	Minor Art.	KCRC	2	22	66	45	No	16,200	10,262	2008	0.63	8,961	0.55
S. 12th St.	Briarhill	Milham	Minor Art.	KCRC	3	44	66	45	Yes	16,200	8,009	2004	0.49	7,331	0.45
S. 12th St.	Milham	Golden Ridge	Minor Art.	KCRC	2	24	66	45-55	No	16,200	5,818	2006	0.36	6,956	0.43
S. 12th St.	Norfolk Circle	Centre	Minor Art.	KCRC	2	24	66	45-55	No	16,200	7,035	2006	0.43	9,646	0.60
S. 12th St.	Centre	Whipponwill	Minor Art.	KCRC	2	21	66	55	No	16,200	4,712	2006	0.29	7,607	0.40
S. 12th St.	R Ave	S Ave	Minor Art.	KCRC	2	21	66	55	No	16,200	1,533	2004	0.09	1,274	0.08
S. 12th St.	S Ave	S. City Limits	Minor Art.	KCRC	2	21	66	55	No	16,200	1,105	2004	0.07	1,105	0.07

**Table C-4:  
Existing Thoroughfare Street Segment Characteristics**

Street	From	To	Street Class	Jurisdiction	Lanes	Pavement Width	ROW Width	Posted Speed	Curb & Gutter	Daily Capacity	Daily Traffic	Year	Present V/C Ratio	2030 ADT (a)	2030 V/C Ratio
Nash	E Shore	Sprinkle	Subcollector	Portage	2	22	66	25	No	16,200	251	2004	0.02	227	0.01
East Shore	Mandigo	Nash	Subcollector	Portage	2	22	30 to 66	25-35	No	16,200	768	2004	0.05	695	0.04
Mandigo	Portage	Cox's Drive	Subcollector	Portage	2	22	30	25	No	16,200	670	2008	0.04	1,521	0.09
Newport	Milham	E. Shore	Subcollector	Portage	2	22	66	35	Pvd Slidr	16,200	1,088	2004	0.07	1,582	0.10
Newport	Alfa	Alfa	Collector	Portage	2	28	66 to 99	25	Yes	17,000	6,443	2004	0.38	6,347	0.37
Gladys	Newport	Gladys	Collector	Portage	2	34	66	25	Yes	16,200	6,540	2004	0.40	6,309	0.39
Gladys	Gladys Ser Dr	Gladys Ser Dr	Collector	Portage	2	22	66	25	No	16,200	4,819	2008	0.30	5,140	0.32
Bacon	Gladys Ser Dr	Westnedge	Collector	Portage	3	36	66 to 100+	25	Yes	25,200	3,399	2008	0.13	8,739	0.35
Meredith	Westnedge	Portage	Collector	Portage	2	24	66	35	Pvd Slidr	16,200	2,332	2009	0.14	1,947	0.12
Melody	Kilgore	Sprinkle	Subcollector	Portage	3	33	51 to 66	30	Pvd Slidr	16,200	5,670	2004	0.35	3,740	0.23
Melody	Shaver	Dolphin	Collector	Portage	2	22	66	25	No	16,200	1,591	2004	0.10	3,028	0.19
Ramona	Dolphin	Westnedge	Collector	Portage	2	34	66	25	Yes	16,200	1,596	2004	0.10	3,540	0.22
Cox's Drive	Lovers Lane	Portage	Collector	Portage	2	22	66	25	No	16,200	2,061	2004	0.13	3,470	0.21
Cox's Drive	E Shore	Zylman	Collector	Portage	2	22	66	25	No	16,200	878	2004	0.05	3,468	0.21
Winters	Zylman	Centre	Collector	Portage	2	22	66	25	No	16,200	886	2004	0.05	3,500	0.22
Old Centre	Lovers Lane	Portage	Collector	Portage	2	24	66	25	Pvd Slidr	16,200	1,554	2009	0.09	3,044	0.19
Old Centre	Centre	Cooley	Collector	Portage	2	22	66	30	No	16,200	2,284	2004	0.14	1,483	0.09
Old Centre	Cooley	Moorsbridge	Collector	Portage	2	34	66	30	Yes	16,200	2,165	2004	0.13	1,481	0.09

Source: City of Portage Department of Transportation and Utilities

**Table C - 5  
2006-2008 Traffic Crashes by Intersection**

No.	Intersection	Crash Frequency by Year												Estimated Vehicles Per Day (EVPD) (Average 2006-08)			Average Crash Rate per Million Estimated Vehicles (MEV)		
		2006			2007			2008			Average/Year			Total	Injury	Fatal	Severity		
		Total	Injury	Fatal	Total	Injury	Fatal	Total	Injury	Fatal	Total	Injury	Fatal						
1	Westnedge and Kilgore	9	3	0	16	5	0	11	2	0	12.00	3.333	0	22.00	0.80	0.22	0.00	1.47	
2	Westnedge and Andy	33	8	0	18	3	0	25	2	0	25.33	4.333	0	38.33	1.69	0.29	0.00	2.56	
3	Westnedge and Dawnlee	13	1	0	7	0	0	14	6	0	11.33	2.333	0	18.33	0.83	0.17	0.00	1.34	
4	Westnedge and Idaho	16	4	0	16	2	0	19	2	0	17.00	2.667	0	25.00	1.24	0.19	0.00	1.82	
5	Westnedge and Milham	25	5	0	38	5	0	23	1	0	28.67	3.667	0	39.67	1.47	0.19	0.00	2.03	
6	Westnedge and Mail/Glady's	27	5	0	27	4	0	26	2	0	26.67	3.667	0	37.67	1.83	0.25	0.00	2.59	
7	Westnedge and Crossroads/Ruth	19	4	1	11	4	0	18	2	0	16.00	3.333	0.333	30.00	1.23	0.26	0.03	2.31	
8	Westnedge and J.L. Hudson	7	0	0	4	0	0	4	1	0	5.00	0.333	0	6.00	0.44	0.03	0.00	0.53	
9	Westnedge and Romence	45	11	1	31	8	0	34	6	0	36.67	8.333	0.333	65.67	2.55	0.58	0.02	4.57	
10	Westnedge and Garden Lane	11	2	0	6	3	0	11	2	0	9.33	2.333	0	16.33	1.06	0.27	0.00	1.86	
11	Westnedge and Schuring	5	1	0	6	1	0	7	2	0	6.00	1.333	0	10.00	0.67	0.15	0.00	1.12	
12	Westnedge and Shaver	11	2	0	6	1	0	3	0	0	6.67	1	0	9.67	0.75	0.11	0.00	1.09	
13	Westnedge and Centre	19	3	0	13	2	0	17	3	0	16.33	2.667	0	24.33	1.62	0.27	0.00	2.42	
14	Shaver and Centre	16	2	0	22	8	0	21	7	0	19.67	5.667	0	36.67	1.64	0.47	0.00	3.06	
15	Shaver and Melody	5	2	0	4	1	0	6	2	0	5.00	1.667	0	10.00	0.85	0.28	0.00	1.70	
16	Shaver and Oakland	16	5	0	9	2	0	6	1	0	10.33	2.667	0	18.33	1.79	0.46	0.00	3.18	
17	Oakland and Milham	43	7	0	24	5	0	21	5	0	29.33	5.667	0	46.33	2.58	0.50	0.00	4.08	
18	Oakland and Romence	11	2	0	8	1	0	9	0	0	9.33	1	0	12.33	1.12	0.12	0.00	1.49	
19	Oakland and Centre	19	5	0	15	2	0	13	1	0	15.67	2.667	0	23.67	1.35	0.23	0.00	2.04	
20	Centre and Lovers Lane	6	3	0	9	1	0	7	1	0	7.33	1.667	0	12.33	0.73	0.17	0.00	1.23	
21	Milham and Devon/Monticello	7	1	0	7	0	0	2	0	0	5.33	0.333	0	6.33	0.66	0.04	0.00	0.79	
22	Milham and Constitution	10	2	0	18	7	0	11	1	0	13.00	3.333	0	23.00	1.31	0.34	0.00	2.31	
23	Milham and Oregon	6	0	0	3	1	0	2	1	0	3.67	0.667	0	5.67	0.62	0.11	0.00	0.96	
24	Lovers and Kilgore	6	1	0	7	2	0	7	1	0	6.67	1.333	0	10.67	0.80	0.16	0.00	1.28	
25	Lovers and Milham	1	0	0	13	2	0	4	0	0	6.00	0.667	0	8.00	0.82	0.09	0.00	1.10	
26	Lovers and Romence Rd. Pkwy	5	1	0	15	2	0	7	0	0	9.00	1	0	12.00	1.16	0.13	0.00	1.54	
27	Constitution and Mail	4	2	0	3	2	0	1	0	0	2.67	1.333	0	6.67	0.41	0.21	0.00	1.04	
28	Romence Rd. Pkwy. and Sears Drive	1	0	0	5	0	0	4	1	0	3.33	0.333	0	4.33	0.42	0.04	0.00	0.54	
29	Mall and J.C. Penney Dr.	0	0	0	2	1	0	2	0	0	1.33	0.333	0	2.33	0.21	0.05	0.00	0.37	
30	Constitution and Romence	10	4	0	8	1	0	7	1	0	8.33	2	0	14.33	1.06	0.25	0.00	1.82	
31	Portage and Winters	6	0	0	4	1	0	5	0	0	5.00	0.333	0	6.00	0.67	0.04	0.00	0.80	
32	Portage and Milham	11	2	0	6	2	0	9	1	0	8.67	1.667	0	13.67	1.16	0.22	0.00	1.83	
33	Portage and Romence Rd. Pkwy.	9	3	0	7	3	0	5	1	0	7.00	2.333	0	14.00	1.18	0.39	0.00	2.36	
34	Portage and Centre	21	4	0	14	4	0	24	5	0	19.67	4.333	0	32.67	3.32	0.73	0.00	5.51	

Table C - 6  
2006-2008 Traffic Crashes by Segments

No.	Street	From	To	Crash Frequency by Year												Average Daily Traffic (ADT) (2006-08)			Average Crash Rate per Million Vehicle Miles (MVM)			
				2006			2007			2008			Total	Injury	Fatal	Severity	Length (mile)	Total	Injury	Fatal	Severity	
				Total	Injury	Fatal	Total	Injury	Fatal	Total	Injury	Fatal										
1	Westmedge	Kilgore	Andy	64	13	0	51	12	0	41	6	0	52.00	10.33	0.00	83.00	28,103	15.99	3.18	0.00	25.53	
2	Westmedge	Andy	Idaho	50	10	0	51	6	0	67	12	0	56.00	9.33	0.00	84.00	31,407	10.37	1.73	0.00	15.56	
3	Westmedge	Idaho	Milham	33	7	0	40	10	0	34	4	0	35.67	7.00	0.00	56.67	40,789	9.58	1.88	0.00	15.22	
4	Westmedge	Milham	Mall	71	18	0	74	14	0	49	6	0	64.67	12.67	0.00	102.67	39,875	11.91	2.33	0.00	18.91	
5	Westmedge	Mall	Ruth	35	5	1	32	5	0	38	3	0	35.00	4.33	0.33	52.00	40,150	0.162	1.474	1.83	0.14	21.90
6	Westmedge	Ruth	Hudson	20	5	0	15	5	0	20	3	0	18.33	4.33	0.00	31.33	39,753	6.29	1.49	0.00	10.74	
7	Westmedge	Hudson	Romence	58	11	1	39	6	0	36	9	0	44.33	8.67	0.33	74.33	39,356	11.39	2.23	0.09	19.09	
8	Westmedge	Romence	Garden Lane	33	5	0	31	10	0	31	6	0	31.67	7.00	0.00	52.67	37,352	6.67	1.48	0.00	11.10	
9	Westmedge	Garden Ln.	Schuring	8	1	0	9	2	0	12	2	0	9.67	1.67	0.00	14.67	24,052	7.10	1.22	0.00	10.78	
10	Westmedge	Schuring	Shaver	1	0	0	7	1	0	7	0	0	5.00	0.33	0.00	6.00	24,052	0.342	0.11	0.00	2.00	
11	Westmedge	Shaver	Centre	11	3	0	3	1	0	13	0	0	9.00	1.33	0.00	13.00	7,585	1.84	17.67	2.62	0.00	25.52
12	Westmedge	Centre	Melody	7	2	0	12	2	0	11	1	0	10.00	1.67	0.00	15.00	10,629	0.533	4.84	0.81	0.00	7.25
13	Westmedge	Melody	Osterhout	15	3	0	14	3	0	21	3	0	16.67	3.00	0.00	25.67	8,419	1.974	2.75	0.49	0.00	4.23
14	Milham	12th	Heverly	8	0	0	10	2	0	14	3	0	10.67	1.67	0.00	15.67	13,340	1.386	1.58	0.25	0.00	2.32
15	Milham	Heverly	Oakland	6	0	0	6	2	0	6	2	0	6.00	1.33	0.00	10.00	13,340	0.377	3.27	0.73	0.00	5.45
16	Milham	Oakland	Constitution	55	6	0	39	11	0	30	5	0	41.33	7.33	0.00	63.33	25,924	6.629	6.94	1.23	0.00	10.64
17	Milham	Constitution	Westmedge	26	3	0	35	8	0	25	6	0	28.67	5.67	0.00	45.67	20,206	6.826	6.21	1.23	0.00	9.89
18	Milham	Westmedge	Conrail RR	6	0	0	11	1	0	9	3	0	8.67	1.33	0.00	12.67	12,808	0.506	3.66	0.56	0.00	5.35
19	Milham	Conrail RR	Lovers Lane	2	0	0	8	0	0	2	0	0	4.00	0.00	0.00	4.00	14,069	0.256	3.04	0.00	0.00	3.04
20	Milham	Lovers Lane	Portage	12	0	0	8	2	0	7	0	0	9.00	0.67	0.00	11.00	8,051	0.746	4.11	0.30	0.00	5.02
21	Milham	Sprinkle	E City Limits	0	0	0	2	0	0	3	0	0	1.67	0.00	0.00	1.67	2,394	0.516	3.70	0.00	0.00	3.70
22	Oakland	Kilgore	1-94	24	4	0	21	4	0	33	2	0	26.00	3.33	0.00	36.00	23,541	0.498	6.08	0.78	0.00	8.41
23	Oakland	1-94	Milham	50	12	0	22	2	0	22	7	0	31.33	7.00	0.00	52.33	31,132	0.543	5.08	1.13	0.00	8.48
24	Oakland	Milham	Romence	21	4	0	11	3	0	20	2	0	17.33	3.00	0.00	26.33	15,589	1.005	3.03	0.52	0.00	4.60
25	Oakland	Romence	Centre	9	5	0	13	4	0	10	0	0	10.67	3.00	0.00	19.67	13,523	1.001	2.16	0.61	0.00	3.98
26	Oakland	Centre	Shaver	15	2	0	9	0	0	5	1	0	9.67	1.00	0.00	12.67	6,225	1.981	2.15	0.22	0.00	2.81
27	Oakland	Shaver	Osterhout	6	1	0	5	0	0	3	0	0	4.67	0.33	0.00	5.67	9,186	0.473	2.94	0.21	0.00	3.57
28	Oakland	Osterhout	S. City Limits	1	0	0	3	0	0	2	0	0	2.00	0.00	0.00	2.00	8,758	0.501	1.25	0.00	0.00	1.25
29	Portage	Kilgore	Milham	44	10	0	38	8	1	33	3	0	38.33	7.00	0.33	63.33	22,253	1.145	4.12	0.75	0.04	6.81
30	Portage	Milham	Centre	37	10	0	39	5	1	39	5	1	38.33	6.67	0.67	66.33	16,242	2.014	3.21	0.56	0.06	5.56
31	Portage	Centre	Lakeview	25	3	0	39	12	0	31	6	1	31.67	7.00	0.33	56.67	14,155	1.364	4.49	0.99	0.05	8.04
32	Portage	Lakeview	Mandigo	31	5	0	41	7	0	24	4	0	32.00	5.33	0.00	48.00	12,069	1.707	4.26	0.71	0.00	6.38
33	Sprinkle	Kilgore	Meredith	4	1	0	9	5	0	3	0	0	5.33	2.00	0.00	11.33	20,600	0.422	1.68	0.63	0.00	3.57
34	Sprinkle	Meredith	Milham	10	3	0	19	4	0	16	3	0	15.00	3.33	0.00	25.00	20,188	0.812	2.51	0.56	0.00	4.18
35	Sprinkle	Milham	Bishop	16	5	0	14	3	0	17	4	0	15.67	4.00	0.00	27.67	22,680	1.006	1.88	0.48	0.00	3.32
36	Sprinkle	Bishop	Centre	16	1	0	23	7	0	19	5	0	19.33	4.33	0.00	32.33	19,104	1.009	2.75	0.62	0.00	4.60
37	Sprinkle	Centre	Zylman	3	1	0	9	3	0	8	2	0	6.67	2.00	0.00	12.67	13,564	0.505	2.67	0.80	0.00	5.07
38	Centre	12th	Oakland	70	13	1	67	12	0	76	12	0	71.00	12.33	0.33	112.00	27,343	1.887	3.77	0.65	0.02	5.95
39	Centre	Oakland	Westmedge	61	12	0	50	5	0	53	13	1	54.67	10.00	0.33	88.67	22,310	1.258	5.34	0.98	0.03	8.66
40	Centre	Westmedge	Waylee	15	1	0	14	3	0	4	1	0	11.00	1.67	0.00	16.00	23,243	0.222	5.84	0.88	0.00	8.50
41	Centre	Waylee	Portage	35	9	0	27	3	0	31	4	0	31.00	5.33	0.00	47.00	20,070	1.283	3.30	0.57	0.00	5.00
42	Centre	Portage	Sprinkle	12	2	0	12	2	0	20	3	0	14.67	2.33	0.00	21.67	12,256	1.001	3.28	0.52	0.00	4.84
43	Centre	Sprinkle	E City Limits	3	1	0	1	0	0	5	0	0	3.00	0.33	0.00	4.00	12,276	0.527	1.27	0.14	0.00	1.69

Table C - 6  
2006-2008 Traffic Crashes by Segments

No.	Street	From	To	Crash Frequency by Year												Average Daily Traffic (ADT) (2006-08)			Average Crash Rate per Million Vehicle Miles (MVM)			
				2006			2007			2008			Total	Injury	Fatal	Severity	Total	Injury	Fatal	Severity		
				Total	Injury	Fatal	Total	Injury	Fatal	Total	Injury	Fatal									Severity	
44	Romence	Angling	Oakland	9	3	0	9	3	0	8	2	0	8.67	2.67	0.00	16.67	1.45	1.93	0.59	0.00	3.72	
45	Romence	Oakland	Sears	15	4	0	25	2	0	20	4	0	20.00	3.33	0.00	30.00	0.988	3.32	0.55	0.00	4.98	
46	Romence	Sears	Westnedge	21	10	0	19	3	0	20	5	0	20.00	6.00	0.00	38.00	0.268	10.33	3.16	0.00	20.00	
47	Romence	Westnedge	Lovers Lane	15	0	0	25	3	0	18	3	0	19.33	2.00	0.00	25.33	0.758	5.11	0.53	0.00	6.69	
48	Romence	Lovers Lane	Portage	11	0	0	15	2	0	14	2	0	13.33	1.33	0.00	17.33	0.756	4.56	0.46	0.00	5.93	
49	Romence	Portage	Mastenbrook	6	2	0	5	2	0	3	0	0	4.67	1.33	0.00	8.67	0.503	2.32	0.66	0.00	4.31	
50	Romence	Mastenbrook	Sprinkle	6	0	0	2	0	0	10	0	0	6.00	0.00	0.00	6.00	0.493	3.26	0.00	0.00	3.26	
51	Bishop	Sprinkle	E City Limits	1	0	0	3	1	0	5	0	0	3.00	0.33	0.00	4.00	0.536	5.69	0.63	0.00	7.59	
52	Lovers Lane	Kilgore	I-94	2	0	0	7	2	0	8	0	0	5.67	0.67	0.00	7.67	0.426	2.12	0.25	0.00	2.87	
53	Lovers Lane	I-94	Milham	3	1	0	14	3	0	5	1	0	7.33	1.67	0.00	12.33	0.608	2.36	0.54	0.00	3.97	
54	Lovers Lane	Milham	Ramona	5	1	0	9	3	0	6	0	0	6.67	1.33	0.00	10.67	0.645	2.65	0.53	0.00	4.24	
55	Lovers Lane	Ramona	Centre	11	2	0	17	4	0	9	0	0	12.33	2.00	0.00	18.33	1.398	2.74	0.44	0.00	4.07	
56	Lovers Lane	Centre	Forest	2	1	0	3	1	0	2	0	0	2.33	0.67	0.00	4.33	0.581	6.48	1.85	0.00	12.04	
57	Kilgore	Westnedge	Burdick	11	3	0	13	3	0	16	2	0	13.33	2.67	0.00	21.33	0.501	3.70	0.74	0.00	5.91	
58	Kilgore	Burdick	Lovers Lane	10	2	0	5	1	0	6	2	0	7.00	1.67	0.00	12.00	0.259	4.64	1.10	0.00	7.95	
59	Kilgore	Lovers Lane	E. Kilgore	1	0	0	0	0	0	4	2	0	1.67	0.67	0.00	3.67	0.966	0.41	0.16	0.00	0.89	
60	Angling	Merryview	Vincent	1	0	0	0	0	0	0	0	0	0.33	0.00	0.00	0.33	0.597	1.19	0.00	0.00	1.19	
61	Vincent	Angling	Oakland	1	0	0	0	0	0	2	0	0	1.00	0.00	0.00	1.00	0.747	1.61	0.00	0.00	1.61	
62	Angling	Milham	Romence	2	0	0	3	3	0	2	1	0	2.33	1.33	0.00	6.33	1.104	1.35	0.77	0.00	3.67	
63	Angling	Romence	Centre	4	1	0	7	1	0	5	1	0	5.33	1.00	0.00	8.33	1.286	1.89	0.35	0.00	2.95	
64	Angling	Centre	Vanderbilt	0	0	0	3	1	0	3	1	0	2.00	0.67	0.00	4.00	0.875	3.47	1.16	0.00	6.95	
65	Vanderbilt	Angling	Shaver	4	0	0	4	0	0	3	1	0	3.67	0.33	0.00	4.67	1.690	2.62	0.24	0.00	3.34	
66	Osterhout	Shaver	Westnedge	11	2	0	12	0	0	11	2	0	11.33	1.33	0.00	15.33	1.528	12.89	1.52	0.00	17.44	
67	Osterhout	Westnedge	Portage	5	2	0	7	1	0	6	2	0	6.00	1.67	0.00	11.00	1.011	3.52	0.98	0.00	6.46	
68	Shaver	Westnedge	Centre	7	3	0	14	3	0	4	1	0	8.33	2.33	0.00	15.33	0.181	7.68	2.15	0.00	14.14	
69	Shaver	Centre	Vanderbilt	22	3	1	30	6	0	19	6	0	23.67	5.00	0.33	42.67	1.441	3.71	0.78	0.05	6.69	
70	Shaver	Vanderbilt	S City Limits	26	10	0	29	7	0	16	3	0	23.67	6.67	0.00	43.67	2.004	3.52	0.99	0.00	6.50	
71	Moorsbridge	Centre	Old Centre	2	1	0	1	0	0	1	0	0	1.33	0.33	0.00	2.33	0.347	2.96	0.74	0.00	5.18	
72	Moorsbridge	Old Centre	Muirfield	2	0	0	5	0	0	1	0	0	2.67	0.00	0.00	2.67	0.757	3.21	0.00	0.00	3.21	
73	Moorsbridge	Muirfield	Romence	2	0	0	1	1	0	3	1	0	2.00	0.67	0.00	4.00	0.489	3.12	1.04	0.00	6.25	
74	Schuring	Oakland	Westnedge	6	1	0	7	4	0	4	0	0	5.67	1.67	0.00	10.67	1.258	4.24	1.25	0.00	7.99	
75	Garden Ln.	Westnedge	Lovers Lane	0	0	0	2	1	0	1	0	0	1.00	0.33	0.00	2.00	0.809	1.54	0.51	0.00	3.09	
76	Mall	Constitution	JC Penney	2	1	0	3	1	0	3	0	0	2.67	0.67	0.00	4.67	0.401	3.44	0.86	0.00	6.02	
77	Mall	JC Penney	Westnedge	9	1	0	7	3	0	14	1	0	10.00	1.67	0.00	15.00	0.202	11.28	1.88	0.00	16.92	
78	Constitution	Milham	Mall	11	2	0	7	1	0	7	0	0	8.33	1.00	0.00	11.33	0.87	2.15	0.26	0.00	2.92	
79	Constitution	Mall	Romence	11	3	0	6	2	0	3	0	0	6.67	1.67	0.00	11.67	1.193	1.91	0.48	0.00	3.34	
80	Forest	Lovers Lane	Portage	0	0	0	1	0	0	1	0	0	0.67	0.00	0.00	0.67	0.772	1.71	0.00	0.00	1.71	
81	Zylman	Portage	Sprinkle	7	2	0	7	1	0	5	1	0	6.33	1.33	0.00	10.33	1.067	2.90	0.61	0.00	4.74	
82	S 12th St.	Limits	Briarhill	1	1	0	1	0	0	0	0	0	0.67	0.33	0.00	1.67	0.808	0.29	0.15	0.00	0.73	
83	S 12th St.	Briarhill	Milham	1	0	0	0	0	0	5	1	0	2.00	0.33	0.00	3.00	7.946	0.276	2.50	0.42	0.00	3.75
84	S 12th St.	Milham	Golden Ridge	1	0	0	1	1	0	1	0	0	1.00	0.33	0.00	2.00	1.537	0.33	0.11	0.00	0.66	
85	S 12th St.	Ridge	Centre	9	2	0	5	0	0	4	0	0	6.00	0.67	0.00	8.00	7.448	1.915	1.15	0.13	0.00	1.54
86	S 12th St.	Centre	Whipporwill	5	0	0	3	1	0	3	0	0	3.67	0.33	0.00	4.67	0.967	2.21	0.20	0.00	2.81	

Table C - 6  
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				2006			2007			2008			Average/Year			Length (mile)	Total	Injury	Fatal	Severity		
				Total	Injury	Fatal	Total	Injury	Fatal	Total	Injury	Fatal	Severity									
87	S 12th St.	Whipporwill	S Ave.	0	0	0	1	0	0	0	4	1	0	0	1.67	0.33	0.00	2.67	2.20	0.44	0.00	3.52
88	S 12th St.	S Ave.	S city limits	2	1	0	0	0	0	0	0	0	0	0	0.67	0.33	0.00	1.67	2.16	1.08	0.00	5.41
89	Nash	E Shore	Sprinkle	1	0	0	0	0	0	0	0	0	0	0	0.33	0.00	0.00	0.33	11.18	0.00	0.00	11.18
90	East Shore	Mandigo	Nash	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
91	East Shore	Nash	Cox's Dr	2	0	0	1	0	0	0	0	0	0	1.00	0.00	0.00	1.00	700	2.44	0.00	0.00	2.44
92	Mandigo	Portage	E Shore	2	0	0	2	0	0	0	3	0	0	2.33	0.00	0.00	2.33	1,099	3.85	0.00	0.00	3.85
93	Newport	Milham	Charlie	1	0	0	2	0	0	0	2	0	0	1.67	0.00	0.00	1.67	4,819	1.76	0.00	0.00	1.76
94	Gladys	Charlie	Westredge	2	0	0	6	1	0	5	0	0	0	4.33	0.33	0.00	5.33	3,399	9.44	0.73	0.00	11.62
95	Bacon	Westredge	Portage	1	0	0	4	1	0	1	0	0	0	2.00	0.33	0.00	3.00	2,076	2.49	0.41	0.00	3.73
96	Mercedith	Kligore	Sprinkle	2	0	0	0	0	0	2	0	0	0	1.33	0.00	0.00	1.33	5,783	2.00	0.00	0.00	2.00
97	Melody	Shaver	Dolphin	2	1	0	1	0	0	2	0	0	0	1.67	0.33	0.00	2.67	1,670	35.51	7.10	0.00	56.82
98	Melody	Dolphin	Westredge	5	2	0	2	0	0	3	0	0	0	3.33	0.67	0.00	5.33	1,675	15.76	3.15	0.00	25.21
99	Ramona	Lovers Lane	Portage	1	0	0	1	0	0	0	0	0	0	0.67	0.00	0.00	0.67	2,081	1.17	0.00	0.00	1.17
100	Cox's Dr	East Shore	Zylman	0	0	0	1	1	0	0	0	0	0	0.33	0.33	0.00	1.33	886	6.25	6.25	0.00	24.99
101	Cox's Dr	Zylman	E Centre	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	890	0.00	0.00	0.00	0.00
102	Winters	Lovers Lane	Portage	0	0	0	0	0	0	4	1	0	0	1.33	0.33	0.00	2.33	1,569	3.07	0.77	0.00	5.38
103	Old Centre	Centre	Cooley	1	0	0	3	0	0	0	0	0	0	1.33	0.00	0.00	1.33	2,118	5.23	0.00	0.00	5.23
104	Old Centre	Cooley	Moorsbridge	1	0	0	0	0	0	0	0	0	0	0.33	0.00	0.00	0.33	2,007	1.76	0.00	0.00	1.76
105	Sprinkle	Zylman	Nash	25	5	0	22	6	0	15	7	0	0	20.67	6.00	0.00	38.67	12,211	2.62	0.76	0.00	4.91

# ATTACHMENT 6

MDOT Correspondence Dated November 23, 2009  
and September 8, 2010



STATE OF MICHIGAN

DEPARTMENT OF TRANSPORTATION  
KALAMAZOO TRANSPORTATION SERVICE CENTER

12-7-09  
Chris G  
Kirk T Steudle  
Director

JENNIFER M. GRANHOLM  
GOVERNOR

KIRK T. STEUDLE  
DIRECTOR

RECEIVED

November 23, 2009

DEC 02 2009

COMMUNITY DEVELOPMENT

Mr. Jeffrey M. Erickson, Director  
Department of Community Development  
City of Portage  
7900 South Westnedge Avenue  
Portage, Michigan 49002

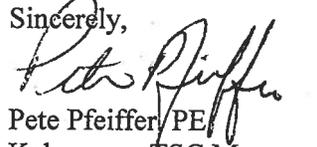
Dear Mr. Erickson:

Thank you for your letter dated November 11, 2009 regarding traffic diversion modeling for the I-94 widening project at Westnedge Avenue. Data collection is still on going for the purposes of populating a diversion model which could predict expected traffic volumes on Oakland Drive between I-94 and Vincent Drive.

The Kalamazoo Transportation Service Center (TSC) collected traffic data on Oakland Drive on the weekend of October 10-11, 2009. This data represents the traffic counts prior to traffic generated by the opening of the Valley Family Church (VFC). Similar traffic data collection will occur on the weekend of December 5-6, 2009. This data will represent the traffic counts after the opening of VFC allowing a few weekends for traffic patterns to stabilize. Once this data is collected and properly formatted, modeling efforts can be completed. I will contact you to set up a meeting to share these results shortly after the modeling work has been completed.

If you have any questions, please contact me at 269-375-8900 or at [pfeifferp@michigan.gov](mailto:pfeifferp@michigan.gov).

Sincerely,

  
Pete Pfeiffer PE  
Kalamazoo TSC Manager

PAP:tac

cc: Michael Bippley  
Jon Sytsma  
Jim Woods



STATE OF MICHIGAN

**DEPARTMENT OF TRANSPORTATION**  
KALAMAZOO TRANSPORTATION SERVICE CENTER

JENNIFER M. GRANHOLM  
GOVERNOR

KIRK T. STEUDLE  
DIRECTOR

September 8, 2010

Mr. W. Christopher Barnes, City Engineer  
Transportation & Utilities Department  
City of Portage  
7719 South Westnedge Avenue  
Portage, Michigan 49002

Dear Mr. Barnes:

I am in receipt of your letter dated September 2, 2010. You requested a review of traffic operations at the traffic signal at I-94 and Oakland Drive ramp terminal with respect to Valley Family Church (VFC) operations. This office has had the opportunity to review traffic operations at this location a number of times since the opening of the VFC on Vincent Avenue.

During weekend church services, observations by the Michigan Department of Transportation (MDOT) staff noted that "point police control" at the intersection of Oakland Drive and Vincent Avenue was effective at providing safe and well-organized ingress and egress through the intersection and efficient movement through the traffic signals at the ramp terminals. Further observations noted that VFC staff was providing effective traffic management efforts, within the VFC grounds and parking area, to aid in efficient entrance and exiting strategies which contributed to easing the traffic burden at the ramp terminal signals.

If you require any further information you may contact me at 375-2570 or [pfeifferp@michigan.gov](mailto:pfeifferp@michigan.gov).

Sincerely,

Pete Pfeiffer, PE  
Kalamazoo TSC Manager

PAP:tac

cc: Michael Bippley

# APPENDIX “A”

Oakland-Vincent Hourly Traffic Counts

**City of Portage**  
**Oakland-Vincent Hourly Turn Movement Count Summary**

LOCATION: **Oakland Drive at Vincent Avenue**

DAY: **Wednesday**

DATE: **27-May-09**

NO.	HOURLY PERIOD BEGIN @	Northbound				Southbound				Eastbound				Vincent Ave. west of Church					
		ON:		TOTAL		ON:		TOTAL		ON:		TOTAL		ON:		TOTAL			
		L	TH	R	TOTAL	L	TH+R	TOTAL	L	TH	R	TOTAL	L	TH	R	TOTAL	EB	WB	TOTAL
1	12:00 AM	8	41		49		60			2	5	7				3		9	12
2	1:00 AM	4	29		33		26			1	2	3				1		4	5
3	2:00 AM	1	22		23		18			5	0	5				0		4	4
4	3:00 AM	2	7		9		8			0	2	2				1		1	2
5	4:00 AM	1	38		39		32			1	3	4				3		1	4
6	5:00 AM	17	78		95		81			1	12	13				10		1	11
7	6:00 AM	40	256		296		245			6	52	58				40		8	48
8	7:00 AM	91	804		895		618			8	161	169				125		62	187
9	8:00 AM	107	605		712		558			13	135	148				122		107	229
10	9:00 AM	53	440		493		457			5	61	66				51		31	82
11	10:00 AM	48	447		495		473			13	62	75				54		43	97
12	11:00 AM	60	531		591		630			19	72	91				57		64	121
13	12:00 PM	88	638		726		615			7	89	96				70		64	134
14	1:00 PM	53	569		622		609			12	67	79				54		59	113
15	2:00 PM	71	663		734		753			16	80	96				49		56	105
16	3:00 PM	130	782		912		965			18	148	166				111		139	250
17	4:00 PM	104	758		862		1007			14	144	158				84		82	166
18	5:00 PM	131	771		902		1040			13	139	152				107		125	232
19	6:00 PM	68	610		678		794			3	69	72				51		62	113
20	7:00 PM	49	428		477		452			7	65	72				49		70	119
21	8:00 PM	54	387		441		335			5	51	56				37		80	117
22	9:00 PM	45	344		389		248			10	37	47				26		47	73
23	10:00 PM	16	191		207		184			7	14	21				9		27	36
24	11:00 PM	13	82		95		107			4	11	15				9		13	22
TOTALS		1,254	9,521	0	10,775	0	10,315	0	10,315	190	0	1,481	1,671	0	1,159	1,123	0	1,159	2,282

**Oakland-Vincent Hourly Turn Movement Count Summary**

LOCATION: **Oakland Drive at Vincent Avenue**

DAY: **Thursday**

DATE: **28-May-09**

NO.	HOURLY PERIOD BEGIN @	Northbound Oakland Drive				Southbound Oakland Drive				Eastbound Vincent Drive				Vincent Ave. west of Church		
		ON:		TOTAL	ON:		TOTAL	ON:		TOTAL	ON:		TOTAL	WB	TOTAL	
		L	TH		R	L		TH	R		L	TH				R
1	12:00 AM	6	54	60	74	0	74	2	6	8	3	6	9			
2	1:00 AM	6	20	26	37	0	37	3	5	8	5	6	11			
3	2:00 AM	3	22	25	25	0	25	0	3	3	2	2	4			
4	3:00 AM	3	11	14	14	0	14	1	5	6	3	2	5			
5	4:00 AM	4	33	37	20	2	22	2	2	4	1	3	4			
6	5:00 AM	18	86	104	81	0	81	1	18	19	13	0	13			
7	6:00 AM	39	253	292	248	11	259	3	46	49	33	9	42			
8	7:00 AM	87	768	855	611	18	629	13	146	159	124	48	172			
9	8:00 AM	133	648	781	567	6	573	19	136	155	129	110	239			
10	9:00 AM	45	513	558	481	4	485	9	83	92	66	35	101			
11	10:00 AM	48	485	533	532	16	548	7	63	70	50	44	94			
12	11:00 AM	53	568	621	611	30	641	13	66	79	61	70	131			
13	12:00 PM	87	639	726	593	19	612	15	81	96	62	79	141			
14	1:00 PM	54	562	616	630	5	635	7	64	71	51	52	103			
15	2:00 PM	62	669	731	697	33	730	21	82	103	51	71	122			
16	3:00 PM	127	743	870	936	29	965	15	140	155	125	137	262			
17	4:00 PM	100	771	871	887	8	895	14	112	126	88	90	178			
18	5:00 PM	132	1038	1170	1063	3	1066	15	108	123	75	98	173			
19	6:00 PM	65	825	890	612	25	637	10	83	93	62	76	138			
20	7:00 PM	52	436	488	430	28	458	8	48	56	38	70	108			
21	8:00 PM	57	374	431	409	8	417	7	54	61	37	53	90			
22	9:00 PM	44	361	405	592	4	596	13	27	40	30	52	82			
23	10:00 PM	29	193	222	193	0	193	3	17	20	8	24	32			
24	11:00 PM	16	98	114	110	3	113	2	7	9	6	15	21			
TOTALS		1,270	10,170	0	11,440	0	10,453	252	1,402	1,605	1,123	0	1,152	2,275		

**Oakland-Vincent Hourly Turn Movement Count Summary**

LOCATION: **Oakland Drive at Vincent Avenue** DAY: **Friday** DATE: **29-May-09**

NO.	HOURLY PERIOD	Northbound						Southbound						Eastbound						ON:		
		ON:			ON:			ON:			ON:			ON:			ON:					
		L	TH	R	L	TH	R	L	TH	R	L	TH	R	L	TH	R	EB	WB	TOTAL			
	BEGIN @																					
1	12:00 AM	9	52	61	47	0	47	2	5	7	3	7	10									
2	1:00 AM	3	29	32	34	3	37	2	7	9	5	10	15									
3	2:00 AM	3	28	31	39	2	41	3	3	6	1	2	3									
4	3:00 AM	2	18	20	23	1	24	0	1	1	0	1	1									
5	4:00 AM	6	29	35	21	1	22	2	3	5	2	3	5									
6	5:00 AM	16	74	90	83	1	84	7	13	20	9	20	29									
7	6:00 AM	36	253	289	239	1	240	9	46	55	35	81	116									
8	7:00 AM	78	760	838	606	8	614	10	122	132	114	144	258									
9	8:00 AM	125	582	707	557	21	578	13	131	144	124	155	300									
10	9:00 AM	54	475	529	505	16	521	9	65	74	58	81	139									
11	10:00 AM	45	524	569	475	20	495	9	77	86	66	93	159									
12	11:00 AM	78	578	656	614	4	618	14	88	102	75	107	182									
13	12:00 PM	83	587	670	673	7	680	16	88	104	69	104	173									
14	1:00 PM	75	653	728	695	6	701	15	72	87	58	87	145									
15	2:00 PM	78	665	743	740	11	751	14	79	93	62	93	155									
16	3:00 PM	166	758	924	927	21	948	18	154	172	146	172	318									
17	4:00 PM	117	769	886	958	2	960	13	113	126	85	126	211									
18	5:00 PM	101	817	918	967	11	978	2	86	88	71	88	159									
19	6:00 PM	93	636	729	630	15	645	10	64	74	58	74	132									
20	7:00 PM	65	507	572	467	18	485	14	71	85	59	85	144									
21	8:00 PM	69	413	482	332	10	342	3	44	47	35	47	82									
22	9:00 PM	51	405	456	340	7	347	10	26	36	27	36	73									
23	10:00 PM	29	299	318	219	4	223	8	25	33	23	33	56									
24	11:00 PM	26	174	200	200	0	200	4	14	18	10	18	28									
TOTALS		1,408	10,075	0	11,483	0	10,391	190	10,581	207	0	1,397	1,604	1,195	0	1,215	2,410					

**Oakland-Vincent Hourly Turn Movement Count Summary**

LOCATION: **Oakland Drive at Vincent Avenue**

DAY: **Saturday**

DATE: **30-May-09**

NO.	HOURLY PERIOD BEGIN @	Northbound						Southbound						Eastbound						Vincent Ave. west of Church								
		ON:			Oakland Drive			ON:			Oakland Drive			ON:			Vincent Drive			ON:			WB			TOTAL		
		L	TH	R	TH	R	TOTAL	L	TH	R	TH	R	TOTAL	L	TH	R	TH	R	TOTAL	L	TH	R	TH	R	TOTAL	EB	WB	TOTAL
1	12:00 AM	13	91		104			111	2	113		2		14	16					7					13		20	
2	1:00 AM	10	58		68			76	0	76		1		8	9					5					6		11	
3	2:00 AM	5	39		44			69	0	69		2		3	5					3					4		7	
4	3:00 AM	6	29		35			35	0	35		1		1	2					2					2		4	
5	4:00 AM	3	20		23			29	0	29		7		1	8					1					3		4	
6	5:00 AM	8	30		38			35	0	35		0		7	7					4					1		5	
7	6:00 AM	9	92		101			90	0	90		0		8	8					6					1		7	
8	7:00 AM	13	149		162			163	5	168		1		20	21					16					8		24	
9	8:00 AM	21	256		277			297	8	305		1		50	51					36					15		51	
10	9:00 AM	30	363		393			415	9	424		4		48	52					44					14		58	
11	10:00 AM	46	462		508			525	10	535		6		71	77					60					29		89	
12	11:00 AM	54	531		585			546	12	558		3		61	64					40					47		87	
13	12:00 PM	56	591		647			621	16	637		6		65	71					59					61		120	
14	1:00 PM	53	545		598			640	19	659		6		60	66					59					65		124	
15	2:00 PM	85	640		725			646	9	655		11		59	70					51					55		106	
16	3:00 PM	64	615		679			667	9	676		11		70	81					51					57		108	
17	4:00 PM	101	699		800			628	8	636		13		52	65					49					65		114	
18	5:00 PM	65	604		669			542	7	549		8		43	51					34					36		70	
19	6:00 PM	79	538		617			490	7	497		10		66	76					37					41		78	
20	7:00 PM	56	443		499			414	5	419		8		44	52					38					40		78	
21	8:00 PM	46	395		441			310	4	314		3		38	41					28					37		65	
22	9:00 PM	39	345		384			286	2	288		4		33	37					24					31		55	
23	10:00 PM	35	252		287			195	0	195		4		27	31					26					27		53	
24	11:00 PM	23	188		211			178	0	178		4		7	11					9					17		26	
TOTALS		920	7,975	0	8,895	0	8,008	132	8,140	116	0	856	972	689	0	675	1,364											

**City of Portage  
Oakland-Vincent Hourly Turn Movement Count Summary**

LOCATION: **Oakland Drive at Vincent Avenue** DAY: **Sunday** DATE: **31-May-09**

NO.	HOURLY PERIOD BEGIN @	Northbound Oakland Drive				Southbound Oakland Drive				Eastbound Vincent Drive				Vincent Ave. west of Church			
		ON: L	TH	R	TOTAL	ON: L	TH+R	TOTAL	ON: L	TH	R	TOTAL	ON: EB	WB	TOTAL		
1	12:00 AM	15	103		118		103		103	2	13	14	6	12	18		
2	1:00 AM	12	51		63		83		83	1	7	8	5	5	10		
3	2:00 AM	10	49		59		71		71	2	3	5	3	4	6		
4	3:00 AM	1	19		20		21		21	1	1	2	2	2	4		
5	4:00 AM	0	13		13		21		21	6	1	7	1	3	4		
6	5:00 AM	1	27		28		36		36	0	6	6	4	1	5		
7	6:00 AM	5	64		69		63		63	0	7	7	5	1	6		
8	7:00 AM	8	109		117		115		115	1	18	19	14	7	22		
9	8:00 AM	54	155		209		197		197	1	45	46	32	14	46		
10	9:00 AM	31	441		472		340		340	4	43	47	40	13	52		
11	10:00 AM	35	428		463		437		437	5	64	69	54	26	80		
12	11:00 AM	49	398		447		481		481	3	55	58	36	42	78		
13	12:00 PM	68	561		629		658		658	5	59	64	53	55	108		
14	1:00 PM	48	519		567		529		529	5	54	59	53	59	112		
15	2:00 PM	53	507		560		524		524	10	53	63	46	50	95		
16	3:00 PM	81	493		574		517		517	10	63	73	46	51	97		
17	4:00 PM	64	482		546		513		513	12	47	59	44	59	103		
18	5:00 PM	132	494		626		473		473	7	39	46	31	32	63		
19	6:00 PM	56	500		556		378		378	9	59	68	33	37	70		
20	7:00 PM	56	379		435		376		376	7	40	47	34	36	70		
21	8:00 PM	50	315		365		335		335	3	34	37	25	33	59		
22	9:00 PM	42	252		294		218		218	4	30	33	22	28	50		
23	10:00 PM	8	157		165		130		130	4	24	28	23	24	48		
24	11:00 PM	11	102		113		103		103	4	6	10	8	15	23		
TOTALS		890	6,618	0	7,508	0	6,722	0	6,722	104	0	770	620	0	1,228		

TABLE "E"



**City of Portage**  
**Oakland-Vincent Hourly Turn Movement Count Summary**

LOCATION: **Oakland Drive at Vincent Avenue** DAY: **Sunday** DATE: **18-Oct-09**

NO.	HOURLY PERIOD BEGIN @	Northbound Oakland Drive					Southbound Oakland Drive					Eastbound Vincent Drive					Vincent Ave. west of Church		
		ON:		TOTAL			ON:		TOTAL			ON:		TOTAL			ON:		TOTAL
		L	R	TH	R	TOTAL	L	TH+R	TOTAL	L	TH	R	TOTAL	EB	WB	TOTAL	ON:	EB	TOTAL
1	12:00 AM	12	0	0	0	12	0	0	0	0	0	0	2	14	16	6	8	14	
2	1:00 AM	8	0	0	0	8	0	0	0	0	0	2	11	13	9	9	18		
3	2:00 AM	2	0	0	0	2	0	0	0	0	0	2	12	14	4	4	8		
4	3:00 AM	1	0	0	0	1	0	0	0	0	0	0	1	1	1	1	2		
5	4:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1		
6	5:00 AM	8	0	0	0	8	0	0	0	0	0	1	5	6	3	2	5		
7	6:00 AM	5	0	0	0	5	0	0	0	0	0	4	4	8	2	1	3		
8	7:00 AM	12	0	0	0	12	0	0	0	0	0	7	6	13	8	6	14		
9	8:00 AM	29	0	0	0	29	0	0	0	0	0	5	33	38	33	12	45		
10	9:00 AM	23	0	0	0	23	0	0	0	0	0	8	44	52	33	15	48		
11	10:00 AM	32	0	0	0	32	0	0	0	0	0	11	74	85	44	20	64		
12	11:00 AM	51	0	0	0	51	0	0	0	0	0	6	59	65	40	48	88		
13	12:00 PM	59	0	0	0	59	0	0	0	0	0	4	78	82	51	40	91		
14	1:00 PM	68	0	0	0	68	0	0	0	0	0	12	65	77	49	54	103		
15	2:00 PM	68	0	0	0	68	0	0	0	0	0	10	82	92	55	47	102		
16	3:00 PM	77	0	0	0	77	0	0	0	0	0	13	67	80	53	56	109		
17	4:00 PM	122	0	0	0	122	0	0	0	0	0	14	81	95	31	62	93		
18	5:00 PM	168	0	0	0	168	0	0	0	0	0	13	79	92	52	56	108		
19	6:00 PM	76	0	0	0	76	0	0	0	0	0	20	133	153	30	53	83		
20	7:00 PM	107	0	0	0	107	0	0	0	0	0	7	63	70	31	40	71		
21	8:00 PM	71	0	0	0	71	0	0	0	0	0	7	52	59	19	35	54		
22	9:00 PM	38	0	0	0	38	0	0	0	0	0	8	140	148	8	20	28		
23	10:00 PM	15	0	0	0	15	0	0	0	0	0	4	31	35	5	11	16		
24	11:00 PM	8	0	0	0	8	0	0	0	0	0	2	22	24	3	6	9		
TOTALS		1,060	0	0	0	1,060	0	0	0	0	0	162	0	1,157	1,319	571	606	1,177	



**City of Portage**  
**Oakland-Vincent Hourly Turn Movement Count Summary**

LOCATION: **Oakland Drive at Vincent Avenue** DAY: **Sunday** DATE: **25-Oct-09**

NO.	HOURLY PERIOD BEGIN @	Northbound Oakland Drive				Southbound Oakland Drive				Eastbound Vincent Drive				ON: Vincent Ave. west of Church		
		L	TH	R	TOTAL	L	TH+R	TOTAL	ON:	L	TH	R	TOTAL	EB	WB	TOTAL
1	12:00 AM	10	0	0	10	0	0	0	0	5	13	18	8	9	17	
2	1:00 AM	9	0	0	9	0	0	0	0	2	10	12	4	6	10	
3	2:00 AM	8	0	0	8	0	0	0	0	1	5	6	2	7	9	
4	3:00 AM	1	0	0	1	0	0	0	0	2	1	3	2	2	4	
5	4:00 AM	2	0	0	2	0	0	0	0	2	3	5	3	3	6	
6	5:00 AM	6	0	0	6	0	0	0	0	2	5	7	5	3	8	
7	6:00 AM	11	0	0	11	0	0	0	0	2	10	12	5	4	9	
8	7:00 AM	33	0	0	33	0	0	0	0	6	14	20	10	2	12	
9	8:00 AM	142	0	0	142	0	0	0	0	11	36	47	24	15	39	
10	9:00 AM	456	0	0	456	0	0	0	0	11	37	48	38	21	59	
11	10:00 AM	82	0	0	82	0	0	0	0	8	81	89	51	36	87	
12	11:00 AM	49	0	0	49	0	0	0	0	59	462	521	41	111	152	
13	12:00 PM	62	0	0	62	0	0	0	0	21	207	228	49	59	108	
14	1:00 PM	63	0	0	63	0	0	0	0	9	96	105	52	49	101	
15	2:00 PM	71	0	0	71	0	0	0	0	9	71	80	46	45	91	
16	3:00 PM	104	0	0	104	0	0	0	0	21	81	102	60	76	136	
17	4:00 PM	145	0	0	145	0	0	0	0	16	79	95	43	57	100	
18	5:00 PM	222	0	0	222	0	0	0	0	20	121	141	42	54	96	
19	6:00 PM	65	0	0	65	0	0	0	0	9	69	78	36	44	80	
20	7:00 PM	64	0	0	64	0	0	0	0	7	50	57	30	36	66	
21	8:00 PM	87	0	0	87	0	0	0	0	27	137	164	26	42	68	
22	9:00 PM	28	0	0	28	0	0	0	0	16	196	212	8	25	33	
23	10:00 PM	9	0	0	9	0	0	0	0	3	10	13	5	9	14	
24	11:00 PM	8	0	0	8	0	0	0	0	2	4	6	3	8	11	
TOTALS		1,737	0	0	1,737	0	0	0	0	271	0	1,798	2,069	593	723	1,316

**City of Portage  
Oakland-Vincent Hourly Turn Movement Count Summary**

LOCATION: **Oakland Drive at Vincent Avenue** DAY: **Friday** DATE: **6-Nov-09**

NO.	HOURLY PERIOD BEGIN @	Northbound Oakland Drive					Southbound Oakland Drive			Eastbound Vincent Drive					Vincent Ave. west of Church											
		ON:		TH		R	ON:		TH+R	TOTAL		ON:		L	TH	R	TOTAL		ON:	EB	WB	TOTAL				
		L	R	L	R	TOTAL	L	R	TOTAL	L	R	TOTAL	L	R	TOTAL	L	R	TOTAL	L	R	TOTAL					
1	12:00 AM	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	12				
2	1:00 AM	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	6				
3	2:00 AM	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	7				
4	3:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3				
5	4:00 AM	7	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	5				
6	5:00 AM	9	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	9				
7	6:00 AM	43	0	0	43	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	37				
8	7:00 AM	62	0	0	62	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	114				
9	8:00 AM	70	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9	96				
10	9:00 AM	44	0	0	44	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	16	98				
11	10:00 AM	62	0	0	62	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9	119				
12	11:00 AM	67	0	0	67	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	14	133				
13	12:00 PM	74	0	0	74	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11	132				
14	1:00 PM	88	0	0	88	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	12	121				
15	2:00 PM	84	0	0	84	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	15	134				
16	3:00 PM	94	0	0	94	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	20	117				
17	4:00 PM	99	0	0	99	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	13	135				
18	5:00 PM	128	0	0	128	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	17	172				
19	6:00 PM	93	0	0	93	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	142				
20	7:00 PM	48	0	0	48	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11	93				
21	8:00 PM	57	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11	73				
22	9:00 PM	35	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	48				
23	10:00 PM	38	0	0	38	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	39				
24	11:00 PM	20	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9	33				
TOTALS		1,234	0	0	1,234	0	0	0	0	0	0	0	0	0	0	0	0	0	203	0	1,346	1,549	947	0	931	1,878

TABIE "J"

**City of Portage**  
**Oakland-Vincent Hourly Turn Movement Count Summary**

LOCATION: **Oakland Drive at Vincent Avenue** DAY: **Saturday** DATE: **7-Nov-09**

NO.	HOURLY PERIOD BEGIN @	Northbound Oakland Drive				Southbound Oakland Drive				Eastbound Vincent Drive				ON:		Vincent Ave. west of Church	
		L	TH	R	TOTAL	L	TH+R	TOTAL	ON:	L	TH	R	TOTAL	ON:	EB	WB	TOTAL
1	12:00 AM	17	0	0	17	0	0	0	0	5	18	23	8	8	13	21	
2	1:00 AM	8	0	0	8	0	0	0	0	0	5	5	3	3	10	13	
3	2:00 AM	5	0	0	5	0	0	0	0	1	3	4	2	2	8	10	
4	3:00 AM	4	0	0	4	0	0	0	0	2	4	6	1	1	2	3	
5	4:00 AM	5	0	0	5	0	0	0	0	2	5	7	1	1	3	4	
6	5:00 AM	9	0	0	9	0	0	0	0	1	6	7	4	4	0	4	
7	6:00 AM	17	0	0	17	0	0	0	0	3	19	22	11	11	6	17	
8	7:00 AM	70	0	0	70	0	0	0	0	10	39	49	23	23	8	31	
9	8:00 AM	71	0	0	71	0	0	0	0	11	96	107	43	43	21	64	
10	9:00 AM	56	0	0	56	0	0	0	0	13	80	93	59	59	39	98	
11	10:00 AM	40	0	0	40	0	0	0	0	7	55	62	44	44	35	79	
12	11:00 AM	47	0	0	47	0	0	0	0	8	72	80	59	59	45	104	
13	12:00 PM	50	0	0	50	0	0	0	0	15	51	66	56	56	52	108	
14	1:00 PM	64	0	0	64	0	0	0	0	7	65	72	51	51	49	100	
15	2:00 PM	124	0	0	124	0	0	0	0	16	75	91	57	57	67	124	
16	3:00 PM	157	0	0	157	0	0	0	0	9	78	87	54	54	57	111	
17	4:00 PM	448	0	0	448	0	0	0	0	12	90	102	59	59	59	118	
18	5:00 PM	142	0	0	142	0	0	0	0	11	100	111	63	63	81	144	
19	6:00 PM	305	0	0	305	0	0	0	0	90	441	531	73	73	175	248	
20	7:00 PM	109	0	0	109	0	0	0	0	21	142	163	60	60	72	132	
21	8:00 PM	71	0	0	71	0	0	0	0	33	229	262	15	15	77	92	
22	9:00 PM	33	0	0	33	0	0	0	0	28	227	255	21	21	39	60	
23	10:00 PM	32	0	0	32	0	0	0	0	17	55	72	17	17	24	41	
24	11:00 PM	27	0	0	27	0	0	0	0	8	42	50	29	29	25	54	
TOTALS		1,911	0	0	1,911	0	0	0	0	330	0	1,997	813	813	967	1,780	

**City of Portage**  
**Oakland-Vincent Hourly Turn Movement Count Summary**

LOCATION: **Oakland Drive at Vincent Avenue** DAY: **Sunday** DATE: **8-Nov-09**

NO.	HOURLY PERIOD BEGIN @	Northbound Oakland Drive				Southbound Oakland Drive				Eastbound Vincent Drive				Vincent Ave. west of Church			
		ON: L	TH	R	TOTAL	ON: L	TH+R	TOTAL	ON: L	TH	R	TOTAL	ON: EB	WB	TOTAL		
1	12:00 AM	5	0		5		0	0		0	1	10	11		6	16	
2	1:00 AM	2	0		2		0	0		0	2	10	12		2	5	
3	2:00 AM	4	0		4		0	0		0	2	2	4		3	4	
4	3:00 AM	6	0		6		0	0		0	0	5	5		5	8	
5	4:00 AM	8	0		8		0	0		0	2	3	5		1	3	
6	5:00 AM	3	0		3		0	0		0	1	4	5		3	6	
7	6:00 AM	19	0		19		0	0		0	3	7	10		4	9	
8	7:00 AM	131	0		131		0	0		0	4	16	20		1	11	
9	8:00 AM	308	0		308		0	0		0	2	38	40		13	42	
10	9:00 AM	87	0		87		0	0		0	12	70	82		21	62	
11	10:00 AM	324	0		324		0	0		0	49	337	386		47	111	
12	11:00 AM	157	0		157		0	0		0	8	96	104		43	99	
13	12:00 PM	76	0		76		0	0		0	58	323	381		100	142	
14	1:00 PM	56	0		56		0	0		0	58	318	376		82	132	
15	2:00 PM	83	0		83		0	0		0	11	107	118		63	115	
16	3:00 PM	79	0		79		0	0		0	15	65	80		67	113	
17	4:00 PM	93	0		93		0	0		0	5	66	71		74	123	
18	5:00 PM	332	0		332		0	0		0	18	152	170		59	117	
19	6:00 PM	99	0		99		0	0		0	19	72	91		59	95	
20	7:00 PM	75	0		75		0	0		0	15	76	91		43	74	
21	8:00 PM	88	0		88		0	0		0	32	151	183		34	53	
22	9:00 PM	26	0		26		0	0		0	18	185	203		23	34	
23	10:00 PM	7	0		7		0	0		0	3	5	8		8	11	
24	11:00 PM	2	0		2		0	0		0	5	8	13		2	12	
TOTALS		2,070	0	0	2,070	0	0	0	0	0	343	0	2,126	0	763	1,397	

**City of Portage**  
**Oakland-Vincent Hourly Turn Movement Count Summary**

LOCATION: **Oakland Drive at Vincent Avenue** DAY: **Friday** DATE: **13-Nov-09**

NO.	HOURLY PERIOD BEGIN @	Northbound Oakland Drive				Southbound Oakland Drive				Eastbound Vincent Drive				Westbound Vincent Ave. west of Church			
		ON:		TOTAL		ON:		TOTAL		ON:		TOTAL		ON:		TOTAL	
		L	R	TH	R	L	R	TH	R	L	TH	R	TH	R	TH	R	TH
1	12:00 AM	10	0	0	10	0	0	0	0	1	4	5	2	10	12		
2	1:00 AM	0	0	0	0	0	0	0	0	0	3	3	1	2	3		
3	2:00 AM	4	0	0	4	0	0	0	0	1	4	5	0	4	4		
4	3:00 AM	0	0	0	0	0	0	0	0	0	3	3	2	2	4		
5	4:00 AM	2	0	0	2	0	0	0	0	1	3	4	2	1	3		
6	5:00 AM	9	0	0	9	0	0	0	0	2	15	17	11	2	13		
7	6:00 AM	32	0	0	32	0	0	0	0	6	42	48	30	10	40		
8	7:00 AM	86	0	0	86	0	0	0	0	21	133	154	116	49	165		
9	8:00 AM	101	0	0	101	0	0	0	0	14	109	123	111	100	211		
10	9:00 AM	49	0	0	49	0	0	0	0	10	74	84	57	37	94		
11	10:00 AM	49	0	0	49	0	0	0	0	10	64	74	55	39	94		
12	11:00 AM	58	0	0	58	0	0	0	0	10	80	90	63	64	127		
13	12:00 PM	87	0	0	87	0	0	0	0	18	87	105	77	85	162		
14	1:00 PM	93	0	0	93	0	0	0	0	16	92	108	92	97	189		
15	2:00 PM	70	0	0	70	0	0	0	0	10	74	84	61	59	120		
16	3:00 PM	158	0	0	158	0	0	0	0	15	132	147	106	137	243		
17	4:00 PM	106	0	0	106	0	0	0	0	13	111	124	67	74	141		
18	5:00 PM	136	0	0	136	0	0	0	0	6	132	138	82	114	196		
19	6:00 PM	89	0	0	89	0	0	0	0	14	75	89	61	76	137		
20	7:00 PM	58	0	0	58	0	0	0	0	11	68	79	38	54	92		
21	8:00 PM	48	0	0	48	0	0	0	0	7	28	35	18	49	67		
22	9:00 PM	37	0	0	37	0	0	0	0	3	36	39	27	41	68		
23	10:00 PM	31	0	0	31	0	0	0	0	12	31	43	23	29	52		
24	11:00 PM	23	0	0	23	0	0	0	0	4	28	32	10	22	32		
TOTALS		1,336	0	0	1,336	0	0	0	0	205	0	1,428	1,633	0	1,157	2,269	

TABLE "M"

**City of Portage**  
**Oakland-Vincent Hourly Turn Movement Count Summary**

LOCATION: **Oakland Drive at Vincent Avenue** DAY: **Saturday** DATE: **14-Nov-09**

NO.	HOURLY PERIOD BEGIN @	Northbound Oakland Drive				Southbound Oakland Drive				Eastbound Vincent Drive				Westbound Vincent Ave. west of Church			
		ON: L	TH	R	TOTAL	ON: L	TH+R	TOTAL	ON: L	TH	R	TOTAL	ON: EB	WB	TOTAL		
1	12:00 AM	15	0	0	15	0	0	0	0	4	22	26	12	19	31		
2	1:00 AM	12	0	0	12	0	0	0	0	2	9	11	5	11	16		
3	2:00 AM	6	0	0	6	0	0	0	0	2	9	11	5	4	9		
4	3:00 AM	3	0	0	3	0	0	0	0	0	2	2	1	2	3		
5	4:00 AM	5	0	0	5	0	0	0	0	2	3	5	2	2	4		
6	5:00 AM	9	0	0	9	0	0	0	0	4	9	13	4	0	4		
7	6:00 AM	11	0	0	11	0	0	0	0	3	7	10	5	3	8		
8	7:00 AM	16	0	0	16	0	0	0	0	11	40	51	27	4	31		
9	8:00 AM	34	0	0	34	0	0	0	0	7	62	69	47	12	59		
10	9:00 AM	46	0	0	46	0	0	0	0	12	56	68	48	34	82		
11	10:00 AM	74	0	0	74	0	0	0	0	8	97	105	71	47	118		
12	11:00 AM	62	0	0	62	0	0	0	0	5	70	75	55	52	107		
13	12:00 PM	65	0	0	65	0	0	0	0	13	79	92	60	63	123		
14	1:00 PM	84	0	0	84	0	0	0	0	12	85	97	69	68	137		
15	2:00 PM	76	0	0	76	0	0	0	0	11	66	77	46	61	107		
16	3:00 PM	96	0	0	96	0	0	0	0	8	85	93	52	58	110		
17	4:00 PM	145	0	0	145	0	0	0	0	15	64	79	45	61	106		
18	5:00 PM	468	0	0	468	0	0	0	0	14	88	102	69	66	135		
19	6:00 PM	95	0	0	95	0	0	0	0	8	59	67	43	62	105		
20	7:00 PM	72	0	0	72	0	0	0	0	74	463	537	42	77	119		
21	8:00 PM	51	0	0	51	0	0	0	0	23	145	168	23	49	72		
22	9:00 PM	41	0	0	41	0	0	0	0	10	48	58	30	38	68		
23	10:00 PM	40	0	0	40	0	0	0	0	11	33	44	13	31	44		
24	11:00 PM	21	0	0	21	0	0	0	0	7	28	35	20	21	41		
TOTALS		1,547	0	0	1,547	0	0	0	0	266	0	1,629	794	0	845	1,639	

**City of Portage  
Oakland-Vincent Hourly Turn Movement Count Summary**

LOCATION: **Oakland Drive at Vincent Avenue** DAY: **Sunday** DATE: **15-Nov-09**

NO.	HOURLY PERIOD BEGIN @	Northbound Oakland Drive				Southbound Oakland Drive				Eastbound Vincent Drive				Vincent Ave. west of Church		
		ON: L	TH	R	TOTAL	ON: L	TH+R	TOTAL	ON: L	TH	R	TOTAL	ON: EB	WB	TOTAL	
1	12:00 AM	20	0		20	0	0	0	0	12	27	39	8	12	20	
2	1:00 AM	6	0		6	0	0	0	0	3	6	9	8	7	15	
3	2:00 AM	5	0		5	0	0	0	0	2	8	10	1	5	6	
4	3:00 AM	3	0		3	0	0	0	0	1	5	6	1	3	4	
5	4:00 AM	2	0		2	0	0	0	0	0	2	2	0	0	0	
6	5:00 AM	1	0		1	0	0	0	0	1	8	9	5	1	6	
7	6:00 AM	9	0		9	0	0	0	0	4	10	14	7	5	12	
8	7:00 AM	27	0		27	0	0	0	0	4	5	9	4	5	9	
9	8:00 AM	96	0		96	0	0	0	0	9	37	46	28	14	42	
10	9:00 AM	429	0		429	0	0	0	0	8	53	61	38	15	53	
11	10:00 AM	100	0		100	0	0	0	0	8	76	84	47	34	81	
12	11:00 AM	68	0		68	0	0	0	0	110	478	588	49	71	120	
13	12:00 PM	59	0		59	0	0	0	0	22	214	236	62	65	127	
14	1:00 PM	68	0		68	0	0	0	0	11	80	91	57	56	113	
15	2:00 PM	79	0		79	0	0	0	0	7	90	97	59	57	116	
16	3:00 PM	66	0		66	0	0	0	0	3	59	62	48	62	110	
17	4:00 PM	90	0		90	0	0	0	0	12	75	87	53	73	126	
18	5:00 PM	188	0		188	0	0	0	0	24	129	153	62	77	139	
19	6:00 PM	83	0		83	0	0	0	0	5	60	65	28	54	82	
20	7:00 PM	46	0		46	0	0	0	0	11	39	50	26	39	65	
21	8:00 PM	76	0		76	0	0	0	0	18	146	164	26	39	65	
22	9:00 PM	31	0		31	0	0	0	0	5	27	32	10	30	40	
23	10:00 PM	9	0		9	0	0	0	0	3	9	12	9	10	19	
24	11:00 PM	6	0		6	0	0	0	0	0	7	7	4	4	8	
TOTALS		1,567	0	0	1,567	0	0	0	0	283	0	1,650	1,933	640	738	1,378

**City of Portage  
Oakland-Vincent Hourly Turn Movement Count Summary**

LOCATION: **Oakland Drive at Vincent Avenue**

DAY: **Saturday**

DATE: **15-May-10**

NO.	HOURLY PERIOD BEGIN @	Northbound Oakland Drive				Southbound Oakland Drive				Eastbound Vincent Drive				ON: Vincent Ave. west of Church				
		ON: L	TH	R	TOTAL	ON: L	TH+R	TOTAL	ON: L	TH	R	TOTAL	ON: L	TH	R	TOTAL	ON: EB	WB
1	12:00 AM	10	121		131		134		134	0		11	11		9		12	21
2	1:00 AM	4	63		67		75		75	4		6	6		1		4	5
3	2:00 AM	7	49		56		63		63	1		3	3		0		4	4
4	3:00 AM	3	30		33		27		27	5		3	3		1		5	6
5	4:00 AM	2	25		27		28		28	2		10	10		4		0	4
6	5:00 AM	4	45		49		45		45	1		5	5		6		1	7
7	6:00 AM	13	163		176		110		110	5		14	14		9		4	13
8	7:00 AM	15	231		246		198		198	5		33	33		28		10	38
9	8:00 AM	39	365		404		316		316	8		52	52		53		24	77
10	9:00 AM	36	534		570		523		523	4		63	63		52		30	82
11	10:00 AM	48	542		590		608		608	18		87	87		67		50	117
12	11:00 AM	48	644		692		663		663	12		80	80		69		61	130
13	12:00 PM	87	691		778		725		725	7		62	62		46		47	93
14	1:00 PM	86	669		755		679		679	10		73	73		66		67	133
15	2:00 PM	113	661		774		655		655	11		85	85		67		80	147
16	3:00 PM	71	665		736		701		701	16		75	75		54		61	115
17	4:00 PM	114	653		767		660		660	12		74	74		61		77	138
18	5:00 PM	342	684		1026		652		652	10		101	101		55		84	139
19	6:00 PM	76	644		720		533		533	25		89	89		56		58	114
20	7:00 PM	48	550		598		430		430	63		321	321		43		81	124
21	8:00 PM	52	412		464		325		325	24		135	135		25		48	73
22	9:00 PM	33	341		374		299		299	12		62	62		26		50	76
23	10:00 PM	23	302		325		260		260	13		49	49		16		38	54
24	11:00 PM	19	216		235		208		208	6		32	32		24		26	50
TOTALS		1,293	9,300	0	10,593	0	8,917	0	8,917	274	0	1,525	1,799	838	0	922	1,760	

TABLE "P"



# APPENDIX “B”

MDOT Hourly Count Report

**MDOT - Bureau of Transportation Planning**  
**Hourly Count Report**

County	Kalamazoo	Station	6083	CS #	39024	CS MP	8.15	PR MP	0.00																								
Route Desc	I-94 ON RAMP	PR #	0	City	PORTAGE	Year	2007 <th colspan="24"></th>																										
Station Desc	FROM OAKLAND DRIVE																																
Direction	East																																
	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	24 Hour Total	Day							
09/10/2007 Monday	0	0	0	0	0	0	0	0	0	0	0	144	147	173	160	180	219	219	259	178	137	108	80	54	24	3650	2082						
AM High	147																																
				AM High Hour	12:00	PM High	259	PM High Hour	18:00																								
09/11/2007 Tuesday	16	14	6	8	38	106	336	560	330	154	130	156	192	143	175	199	250	241	174	128	114	110	59	34	3775	3673							
AM High	560																																
				AM High Hour	08:00	PM High	250	PM High Hour	17:00																								
09/12/2007 Wednesday	15	8	14	18	37	95	338	659	324	162	155	139	184	0	0	0	0	0	0	0	0	0	0	0	478	2148							
AM High	659																																
				AM High Hour	08:00	PM High	184	PM High Hour	13:00																								

TABLE "A"

**MDOT - Bureau of Transportation Planning**  
**Hourly Count Report**

County	Kalamazoo	Station	6085	CS #	39024	CS MP	7.83	2000	2100	2200	2300	2400	24 Hour Total	Day												
Route Desc	I-94 OFF RAMP			PR #	0	PR MP	0.00																			
Station Desc	TO OAKLAND DRIVE	City	PORTAGE	Year	2007																					
Direction	East																									
0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	24 Hour Total	Day	
09/10/2007 Monday																										
0	0	0	0	0	0	0	0	0	0	0	0	0	418	402	447	549	580	668	460	310	137	137	46	33	6542	4187
AM High	0	AM High Hour	01:00	PM High	668	PM High Hour	18:00																			
09/11/2007 Tuesday																										
24	8	11	14	50	130	362	366	366	362	352	430	410	460	498	613	709	705	514	332	203	147	95	64	7051	7105	
AM High	600	AM High Hour	08:00	PM High	709	PM High Hour	17:00																			
09/12/2007 Wednesday																										
33	18	11	10	14	54	141	488	416	345	357	414	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2301
AM High	488	AM High Hour	08:00	PM High	0	PM High Hour																				

TABLE "B"



MDOT - Bureau of Transportation Planning  
Hourly Count Report

County	Kalamazoo	Station	6082	CS #	39024	CS MP	8.20	2000	2100	2200	2300	2400	24 Hour Total	Day												
Route Desc	I-94 OFF RAMP	PR #	0	PR MP	0.00	2000	2100	2200	2300	2400	2400	2400	24 Hour Total	Day												
Station Desc	TO OAKLAND DRIVE	City	PORTAGE	Year	2007	2000	2100	2200	2300	2400	2400	2400	24 Hour Total	Day												
Direction	West	Year	2007	Year	2007	Year	2007	Year	2007	Year	2007	Year	2007	Year												
0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	24 Hour Total	Day	
09/10/2007 Monday																										
0	0	0	0	0	0	0	0	0	0	0	134	170	193	133	181	300	365	521	300	190	168	101	63	58	5360	2877
AM High	170			AM High Hour	12:00			PM High			PM High	521		PM High Hour	18:00											
09/11/2007 Tuesday																										
31	17	14	8	416	675	416	466	311	129	126	172	178	142	178	292	362	490	306	218	169	150	71	63	3542	5400	
AM High	675			AM High Hour	06:00			PM High			PM High	490		PM High Hour	18:00											
09/12/2007 Wednesday																										
21	15	16	6	5	19	63	184	174	122	102	158	154	140	209	309	335	535	306	245	199	152	87	67	3523	3623	
AM High	184			AM High Hour	08:00			PM High			PM High	535		PM High Hour	18:00											
09/13/2007 Thursday																										
32	16	17	12	10	27	66	161	184	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	525
AM High	184			AM High Hour	09:00			PM High			PM High	0		PM High Hour												

TABLE "D"

Oakland  
Thursday October 8, 2009

Hour	NB Oakland Non-Commercial	NB Oakland Commercial	NB Oakland Total Volume	SB Oakland Non-Commercial	SB Oakland Commercial	SB Oakland Total Volume	SB RT Non-Commercial	SB RT Commercial	SB RT Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Total Volume
0	85	0	85	82	1	83	18	0	18	9	0	9	9	0	9	195
1	42	0	42	46	0	46	7	0	7	4	0	4	4	0	4	99
2	24	0	24	26	0	26	3	0	3	1	0	1	1	0	1	54
3	117	0	117	117	0	117	3	0	3	2	0	2	2	0	2	48
4	6	0	6	12	0	12	4	0	4	1	0	1	1	0	1	23
5	26	0	26	27	0	27	10	1	11	4	0	4	4	0	4	68
6	84	2	86	55	0	55	25	0	25	24	2	26	24	2	26	192
7	284	1	285	147	8	155	97	2	99	53	2	55	53	2	55	684
8	939	1	940	425	32	457	206	4	210	93	2	95	93	2	95	1702
9	689	9	708	424	48	472	189	4	193	108	7	115	108	7	115	1488
10	536	10	546	356	41	397	104	3	107	51	2	53	51	2	53	1103
11	498	6	504	363	33	396	89	1	90	48	2	50	48	2	50	980
12	520	8	528	483	52	535	96	0	96	55	4	59	55	4	59	1197
13	584	8	592	494	55	549	123	3	126	80	4	84	80	4	84	1331
14	581	4	585	470	56	526	105	2	107	57	3	60	57	3	60	1278
15	651	4	655	664	70	734	141	1	142	49	3	52	49	3	52	1483
16	804	13	817	828	69	897	212	6	218	129	8	137	129	8	137	2069
17	679	7	686	819	67	886	248	5	253	92	1	93	92	1	93	1908
18	796	6	802	908	56	964	341	6	347	110	4	114	110	4	114	2227
19	854	7	861	547	56	603	184	2	186	73	1	74	73	1	74	1504
20	487	1	488	394	33	427	114	4	118	56	0	56	56	0	56	1089
21	328	1	329	282	30	312	83	1	84	38	0	38	38	0	38	761
22	308	1	309	222	13	235	67	1	68	42	1	43	42	1	43	655
23	181	1	182	143	1	144	40	0	40	21	0	21	21	0	21	387
Total	9731	90	9821	8123	711	8834	2468	46	2514	1200	46	1248	1200	46	1248	22415

Total Volume for Thursday October 8: 22415

Oakland  
Friday October 9, 2009

Hour	NB Oakland Non-Commercial	NB Oakland Commercial	NB Oakland Total Volume	SB Oakland Non-Commercial	SB Oakland Commercial	SB Oakland Total Volume	SB RT Non-Commercial	SB RT Commercial	SB RT Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume
0	99	1	100	78	2	80	17	0	17	11	0	11	11	0	11
1	42	1	43	53	0	53	14	0	14	10	0	10	10	0	10
2	25	2	27	29	1	30	9	0	9	2	0	2	2	0	2
3	15	1	16	35	0	35	3	0	3	4	1	5	4	1	5
4	10	1	11	16	0	16	3	0	3	5	0	5	5	0	5
5	19	0	19	34	0	34	8	0	8	7	0	7	7	0	7
6	71	0	71	52	1	53	17	0	17	5	3	8	5	3	8
7	287	4	291	145	5	150	82	0	82	38	2	40	38	2	40
8	809	2	811	424	38	462	192	2	194	84	0	84	84	0	84
9	588	5	593	433	41	474	169	2	171	102	4	106	102	4	106
10	491	2	493	333	26	359	95	2	97	46	2	48	46	2	48
11	470	6	476	409	34	443	80	1	81	55	4	59	55	4	59
12	540	3	543	495	60	555	131	6	137	58	4	62	58	4	62
13	588	3	592	568	66	634	111	4	115	56	3	59	56	3	59
14	590	1	591	530	54	584	121	1	122	60	2	62	60	2	62
15	632	3	635	579	65	644	149	1	150	60	0	60	60	0	60
16	707	7	714	787	59	846	206	9	215	114	6	120	114	6	120
17	716	4	720	813	59	872	547	8	555	81	2	83	81	2	83
18	755	0	755	772	59	831	266	2	268	93	3	96	93	3	96
19	678	3	681	459	39	498	157	3	160	66	1	67	66	1	67
20	479	3	482	313	23	336	88	1	89	37	0	37	37	0	37
21	316	3	319	243	21	264	65	1	66	45	0	45	45	0	45
22	319	2	321	248	17	265	52	2	54	30	0	30	30	0	30
23	280	3	283	233	15	248	55	0	55	34	0	34	34	0	34
Total	9507	60	9567	8081	685	8766	2637	45	2682	1101	37	1138	1101	37	22153

Total Volume for Friday October 9: 22153

Oakland  
Saturday October 10, 2009

Hour	NB Oakland Non-Commercial	NB Oakland Commercial	NB Oakland Total Volume	SB Oakland Non-Commercial	SB Oakland Commercial	SB Oakland Total Volume	SB RT Non-Commercial	SB RT Commercial	SB RT Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Total Volume
0	167	1	168	121	3	124	31	0	31	21	0	21	0	0	21	344
1	80	0	80	65	0	65	28	0	28	19	1	10	0	0	10	183
2	47	1	48	65	0	65	18	0	18	10	0	10	0	0	10	141
3	35	0	35	54	0	54	3	0	3	5	0	5	0	0	5	97
4	24	0	24	29	0	29	4	0	4	4	0	4	0	0	4	61
5	15	1	16	26	0	26	4	0	4	0	0	0	0	0	0	46
6	28	0	28	42	0	42	11	1	12	8	2	10	0	0	10	92
7	105	2	107	75	2	77	31	1	32	14	1	15	0	0	15	231
8	193	1	194	140	8	148	64	0	64	19	1	20	0	0	20	426
9	288	2	290	212	21	233	84	3	87	31	1	32	0	0	32	652
10	404	0	404	331	24	355	100	1	101	34	0	34	0	0	34	894
11	488	2	490	432	51	483	125	1	126	38	2	40	0	0	40	1119
12	550	5	555	537	68	605	129	3	132	55	0	55	0	0	55	1347
13	587	5	592	586	69	655	120	0	120	50	0	50	0	0	50	1397
14	604	2	606	560	71	631	106	2	108	48	0	48	0	0	48	1393
15	628	1	629	488	68	556	122	1	123	47	3	50	0	0	50	1338
16	593	3	596	513	47	560	129	3	132	70	0	70	0	0	70	1358
17	617	1	618	451	58	509	103	0	103	92	0	92	0	0	92	1322
18	613	4	617	419	42	461	110	0	110	56	1	57	0	0	57	1245
19	611	0	611	399	42	441	89	1	90	81	0	81	0	0	81	1223
20	437	2	439	291	23	314	80	0	80	58	0	58	0	0	58	891
21	344	0	344	237	15	252	64	1	65	30	0	30	0	0	30	691
22	292	0	292	265	14	279	57	0	57	42	1	43	0	0	43	671
23	250	5	255	134	11	145	54	1	55	29	1	30	0	0	30	485
Total	7970	38	8008	6452	637	7089	1666	19	1685	851	19	865	0	0	865	17647

Total Volume for Saturday October 10: 17647

Oakland  
Sunday October 11, 2009

Hour	NB Oakland Non-Commercial	NB Oakland Commercial	NB Oakland Total Volume	SB Oakland Non-Commercial	SB Oakland Commercial	SB Oakland Total Volume	SB RT Non-Commercial	SB RT Commercial	SB RT Total Volume	SB RT Non-Commercial	SB RT Commercial	SB RT Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Total Volume
0	194	1	195	159	5	164	65	0	65	26	0	26	7	0	7	450
1	114	2	116	105	0	105	21	0	21	15	0	15	8	0	8	249
2	42	0	42	70	0	70	10	0	10	15	0	15	15	0	15	137
3	57	0	57	64	0	64	7	0	7	8	0	8	8	0	8	136
4	32	0	32	21	0	21	3	0	3	2	0	2	2	0	2	58
5	12	0	12	23	0	23	4	0	4	0	0	0	0	0	0	39
6	29	1	30	34	0	34	4	0	4	9	1	10	10	0	10	78
7	75	1	76	35	0	35	13	0	13	7	0	7	7	0	7	131
8	93	1	94	80	0	80	30	0	30	17	0	17	17	0	17	221
9	169	2	171	121	2	123	37	1	38	33	1	34	33	1	34	366
10	405	2	407	220	14	234	62	1	63	40	0	40	40	0	40	744
11	394	1	395	313	20	333	103	0	103	29	0	29	29	0	29	860
12	395	2	397	389	32	421	112	0	112	34	1	35	34	1	35	965
13	509	3	512	499	42	541	162	1	163	69	0	69	69	0	69	1285
14	511	3	514	421	52	473	101	0	101	61	0	61	61	0	61	1149
15	521	1	522	377	42	419	109	0	109	47	0	47	47	0	47	1097
16	474	2	476	439	42	481	89	1	90	64	0	64	64	0	64	1111
17	503	3	506	407	39	446	109	1	110	104	0	104	104	0	104	1166
18	530	6	536	379	52	431	100	2	102	113	1	114	113	1	114	1183
19	493	1	494	245	23	268	77	0	77	71	0	71	71	0	71	910
20	364	0	364	276	16	292	87	2	89	50	0	50	50	0	50	795
21	288	0	288	218	10	228	97	3	100	42	0	42	42	0	42	658
22	175	0	175	187	10	197	62	0	62	20	0	20	20	0	20	454
23	128	2	128	80	0	80	25	0	25	11	0	11	11	0	11	244
Total	6505	34	6539	5162	401	5563	1489	12	1501	879	4	883	879	4	883	14486

Total Volume For Sunday October 11: 14486

Westhedge  
Monday October 12, 2009

Hour	NB Oakland Non-Commercial	NB Oakland Commercial	NB Oakland Total Volume	SB Oakland Non-Commercial	SB Oakland Commercial	SB Oakland Total Volume	SB RT Non-Commercial	SB RT Commercial	SB RT Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Total Volume
0	62	0	62	56	1	57	9	0	9	6	0	6	4	0	4	134
1	38	0	38	28	1	29	6	0	6	4	0	4	4	0	4	75
2	23	0	23	18	0	18	1	0	1	3	0	3	3	0	3	45
3	21	1	22	20	0	20	7	0	7	2	0	2	2	0	2	51
4	11	0	11	7	0	7	2	0	2	1	0	1	1	0	1	21
5	25	0	25	21	0	21	5	0	5	5	0	5	5	0	5	56
6	75	0	75	69	1	70	28	0	28	15	0	15	15	0	15	188
7	264	5	269	143	9	152	91	1	92	37	1	38	37	1	38	551
8	830	2	832	426	41	467	212	5	217	73	4	77	73	4	77	1593
9	617	6	623	388	21	409	152	1	153	113	5	118	113	5	118	1303
10	484	13	497	271	33	304	67	0	67	51	1	52	51	1	52	920
11	442	5	447	292	30	322	88	0	88	40	0	40	40	0	40	897
12	511	9	520	347	53	400	85	2	87	61	3	64	61	3	64	1071
13	572	10	582	413	40	453	105	1	106	68	3	71	68	3	71	1212
14	587	2	589	345	29	374	110	1	111	73	2	75	73	2	75	1149
15	616	4	620	460	50	510	184	1	185	54	3	57	54	3	57	1322
16	667	9	676	723	56	779	186	6	192	106	8	114	106	8	114	1761
17	716	7	723	735	52	787	224	10	234	89	2	91	89	2	91	1832
18	793	6	799	759	62	821	252	6	258	119	3	122	119	3	122	2000
19	607	4	611	535	37	572	159	1	160	245	16	261	245	16	261	1604
20	430	0	430	365	36	401	131	0	131	85	0	85	85	0	85	1047
21	289	1	290	305	22	327	108	1	109	48	1	49	48	1	49	775
22	250	1	251	260	17	277	60	1	61	21	1	22	21	1	22	611
23	139	0	139	104	0	104	29	0	29	17	0	17	17	0	17	289
<b>Total</b>	<b>5067</b>	<b>65</b>	<b>9152</b>	<b>7080</b>	<b>591</b>	<b>7681</b>	<b>2248</b>	<b>37</b>	<b>2285</b>	<b>1336</b>	<b>53</b>	<b>1389</b>	<b>1336</b>	<b>53</b>	<b>1389</b>	<b>20507</b>

Total Volume for Monday October 12: 20507

Westhedge  
Tuesday October 13, 2009

Hour	NB Oakland Non-Commercial	NB Oakland Commercial	NB Oakland Total Volume	SB Oakland Non-Commercial	SB Oakland Commercial	SB Oakland Total Volume	SB RT Non-Commercial	SB RT Commercial	SB RT Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Total Volume
0	76	0	76	76	1	77	20	0	20	7	1	8	7	1	8	181
1	32	0	32	98	0	38	5	0	5	5	0	5	5	0	5	80
2	15	0	15	18	0	18	0	0	0	5	0	5	5	0	5	38
3	15	0	15	17	0	17	0	0	0	2	0	2	2	0	2	34
4	11	1	12	11	1	12	4	0	4	3	0	3	3	0	3	31
5	28	0	28	19	0	19	6	0	6	0	0	0	0	0	0	52
6	66	3	69	60	0	60	27	1	28	13	0	13	13	0	13	170
7	289	0	289	182	10	172	94	2	96	66	2	68	66	2	68	617
8	916	7	923	400	27	427	204	1	205	82	3	85	82	3	85	1640
9	703	7	710	387	53	440	189	5	174	104	10	114	104	10	114	1438
10	517	5	522	260	24	284	95	2	97	51	1	52	51	1	52	955
11	466	5	471	284	20	304	91	2	93	41	3	44	41	3	44	892
12	489	2	491	370	42	412	90	4	94	67	4	71	67	4	71	1068
13	561	6	567	419	47	466	98	5	103	68	6	74	68	6	74	1210
14	546	2	548	373	45	418	115	1	116	43	3	46	43	3	46	1128
15	624	4	628	424	47	471	135	0	135	60	2	62	60	2	62	1286
16	731	8	739	728	58	786	190	10	200	128	3	131	128	3	131	1856
17	738	4	742	534	30	564	237	3	240	85	3	88	85	3	88	1832
18	861	3	864	837	50	887	310	6	316	119	2	121	119	2	121	2188
19	637	7	644	582	39	621	150	2	152	84	1	85	84	1	85	1482
20	420	3	423	356	36	392	117	3	120	74	0	74	74	0	74	1009
21	359	1	360	307	16	323	66	1	67	55	0	55	55	0	55	805
22	250	4	254	208	10	218	62	0	62	28	0	28	28	0	28	562
23	148	0	148	111	3	114	31	0	31	16	0	16	16	0	16	309
Total	9496	72	9568	6541	559	7500	2315	48	2363	1188	44	1232	1188	44	1232	20663

Total Volume for TuesdayOctober 13: 20663

Oakland  
Wednesday October 14, 2009

Hour	NB Oakland Non-Commercial	NB Oakland Commercial	NB Oakland Total Volume	SB Oakland Non-Commercial	SB Oakland Commercial	SB Oakland Total Volume	SB RT Non-Commercial	SB RT Commercial	SB RT Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Total Volume
0	47	0	47	70	2	72	18	0	18	3	0	3	140
1	49	0	49	39	0	39	9	0	9	7	1	8	99
2	16	1	17	26	0	26	2	0	2	5	0	5	50
3	9	0	9	24	0	24	2	0	2	3	0	3	88
4	12	0	12	11	0	11	2	0	2	1	0	1	26
5	30	1	31	21	0	21	6	0	6	0	0	0	58
6	82	0	82	64	1	65	23	0	23	10	0	10	180
7	267	2	269	171	8	179	97	1	98	40	1	41	587
8	920	5	925	455	36	491	212	8	220	77	1	78	1714
9	689	7	696	422	47	469	165	7	172	112	3	115	1492
10	510	7	517	314	25	339	121	2	123	67	1	68	1047
11	453	7	460	249	33	282	86	4	90	44	2	46	878
12	554	5	559	412	49	461	115	4	119	64	4	68	1207
13	560	7	567	461	52	513	117	4	121	82	5	87	1288
14	576	4	580	501	45	546	128	1	129	64	4	68	1323
15	655	4	659	569	55	624	147	1	148	58	1	59	1490
16	762	4	766	771	52	823	172	7	179	113	5	118	1866
17	704	2	706	873	57	930	217	5	222	95	9	104	1862
18	855	6	861	931	55	986	291	4	295	121	6	127	2269
19	660	6	666	412	29	441	147	4	151	73	2	75	1383
20	516	1	517	374	32	406	112	3	115	64	0	64	1102
21	366	1	367	372	32	404	83	2	85	49	0	49	927
22	308	4	312	223	16	239	67	0	67	39	0	39	657
23	172	0	172	124	3	127	30	0	30	8	0	8	387
Total	9788	79	9867	7889	629	8518	2569	57	2626	1799	45	1244	22030

Total Volume For Wednesday October 14: 22030

\*Data is a combination of data from Oct. 14 and Oct. 7

Saturday 12, 2009

Hour	NB Oakland Non-Commercial	NB Oakland Commercial	NB Oakland Total Volume	SB Oakland Non-Commercial	SB Oakland Commercial	SB Oakland Total Volume	SB RT Non-Commercial	SB RT Commercial	SB RT Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume
0	176	0	176	200	8	208	29	0	29	27	0	27	27	0	27
1	81	0	81	76	0	76	15	0	15	21	0	21	15	0	15
2	45	0	45	56	0	56	8	0	8	7	0	7	8	0	8
3	82	0	82	53	0	53	2	0	2	0	0	0	2	0	2
4	22	0	22	34	0	34	4	0	4	1	0	1	4	0	4
5	22	0	22	27	0	27	1	1	2	0	0	0	2	0	2
6	32	0	32	35	1	36	14	0	14	8	0	8	14	0	14
7	98	0	98	75	2	77	19	0	19	11	0	11	19	0	19
8	164	0	164	132	5	137	31	0	31	15	0	15	31	0	31
9	240	4	244	174	9	183	68	1	69	13	3	16	71	1	72
10	381	1	382	304	20	324	86	1	87	32	0	32	86	0	86
11	446	2	448	488	39	527	102	3	105	51	0	51	102	0	102
12	531	3	534	522	52	574	108	2	110	51	4	55	108	4	112
13	614	0	614	581	64	645	127	3	130	66	2	68	127	2	129
14	669	0	669	591	60	651	124	1	125	59	0	59	124	0	124
15	678	0	678	553	63	616	134	2	136	71	1	72	134	1	135
16	706	4	710	564	73	637	117	2	119	77	2	79	117	2	119
17	715	4	719	523	55	578	142	4	146	124	1	125	142	1	143
18	647	2	649	457	56	513	125	1	126	302	14	316	125	14	139
19	670	5	675	385	46	431	115	3	118	87	1	88	115	1	116
20	374	12	386	488	60	548	153	2	155	86	5	91	153	2	155
21	278	6	284	323	36	359	81	0	81	49	0	49	81	0	81
22	272	2	274	206	8	214	44	1	45	16	2	18	44	2	46
23	287	0	287	188	14	202	43	0	43	30	0	30	43	0	43
<b>Total</b>	<b>8180</b>	<b>44</b>	<b>8224</b>	<b>6993</b>	<b>671</b>	<b>7664</b>	<b>1892</b>	<b>27</b>	<b>1719</b>	<b>1204</b>	<b>35</b>	<b>1239</b>	<b>1892</b>	<b>35</b>	<b>1892</b>

18846

Total Volume for dec 12:

Westhedge

13-Dec

Hour	NB Oakland Non-Commercial	NB Oakland Commercial	NB Oakland Total Volume	SB Oakland Non-Commercial	SB Oakland Commercial	SB Oakland Total Volume	SB RT Non-Commercial	SB RT Commercial	SB RT Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Total Volume
0	207	1	208	169	9	178	33	0	33	73	0	73	73	0	73	482
1	103	0	103	91	2	93	13	2	15	42	0	42	42	0	42	253
2	59	0	59	69	2	71	20	1	21	12	0	12	12	0	12	163
3	43	1	44	64	1	65	3	0	3	3	0	3	3	0	3	115
4	16	0	16	28	0	28	3	0	3	2	0	2	2	0	2	49
5	10	0	10	17	0	17	0	0	0	2	0	2	2	0	2	29
6	27	0	27	34	0	34	6	0	6	3	0	3	3	0	3	70
7	72	0	72	36	0	36	12	1	13	12	0	12	12	0	12	133
8	128	1	129	78	1	79	17	0	17	30	1	31	30	1	31	256
9	165	0	165	151	1	152	35	0	35	108	1	109	108	1	109	461
10	371	1	372	221	14	235	62	0	62	396	12	408	396	12	408	1077
11	396	0	396	347	16	363	65	0	65	81	0	81	81	0	81	905
12	329	7	336	612	58	670	184	4	188	83	5	88	83	5	88	1282
13	483	2	485	683	46	709	172	3	175	59	0	59	59	0	59	1428
14	638	1	639	457	38	495	114	1	115	53	0	53	53	0	53	1302
15	529	0	529	408	46	454	89	2	91	61	0	61	61	0	61	1136
16	509	0	509	419	50	469	88	1	89	69	0	69	69	0	69	1136
17	540	1	541	340	37	377	84	0	84	69	1	70	69	1	70	1072
18	512	0	512	393	39	432	130	0	130	151	0	151	151	0	151	1226
19	473	4	477	336	34	370	87	3	90	66	0	66	66	0	66	1006
20	310	2	312	293	18	311	72	0	72	56	0	56	56	0	56	752
21	239	0	239	224	14	238	57	0	57	45	0	45	45	0	45	579
22	206	1	207	139	6	145	43	0	43	25	0	25	25	0	25	420
23	99	0	99	83	0	83	17	0	17	7	0	7	7	0	7	206
<b>Total</b>	<b>6484</b>	<b>22</b>	<b>6486</b>	<b>5672</b>	<b>432</b>	<b>6104</b>	<b>1406</b>	<b>18</b>	<b>1424</b>	<b>1510</b>	<b>22</b>	<b>1532</b>	<b>1510</b>	<b>22</b>	<b>1532</b>	<b>15546</b>

Total Volume for dec 13: 15546

Oakland  
14-Dec-09

Hour	NB Oakland Non-Commercial	NB Oakland Commercial	NB Oakland Total Volume	SB Oakland Non-Commercial	SB Oakland Commercial	SB Oakland Total Volume	SB RT Non-Commercial	SB RT Commercial	SB RT Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Total Volume
0	33	0	33	60	1	61	8	0	8	7	1	8	110
1	85	0	85	84	0	84	3	0	3	2	0	2	74
2	14	0	14	1	0	1	4	0	4	1	0	1	44
3	16	0	16	14	0	14	2	0	2	3	0	3	35
4	10	2	12	12	1	13	3	0	3	2	1	3	31
5	20	0	20	23	1	24	7	0	7	6	0	6	57
6	80	0	80	64	1	65	32	0	32	19	0	19	196
7	270	2	272	163	11	174	93	2	95	42	2	44	585
8	896	3	899	429	36	465	205	4	209	67	6	73	1646
9	638	5	643	469	47	516	134	4	138	124	3	127	1424
10	510	5	515	306	16	322	90	1	91	42	1	43	971
11	462	5	467	311	36	347	84	1	85	37	4	41	840
12	557	6	563	522	46	568	119	3	122	51	1	52	1305
13	581	5	586	493	42	535	113	2	115	59	5	64	1300
14	555	2	557	573	44	617	91	2	93	60	3	63	1328
15	686	4	690	571	66	637	117	1	118	54	3	57	1452
16	764	7	771	752	64	816	164	4	168	124	9	133	1888
17	756	4	760	750	55	805	193	3	196	106	4	110	1871
18	865	2	867	790	70	860	243	4	247	103	4	107	2081
19	612	3	615	348	31	379	140	1	141	71	2	73	1208
20	373	4	377	365	35	400	89	1	90	56	0	56	823
21	321	0	321	282	21	303	123	2	125	54	3	57	805
22	265	2	267	208	14	222	56	1	57	45	0	45	591
23	178	2	180	117	2	119	37	0	37	19	2	21	357
<b>Total</b>	<b>3647</b>	<b>83</b>	<b>3730</b>	<b>768</b>	<b>591</b>	<b>1359</b>	<b>2318</b>	<b>95</b>	<b>2354</b>	<b>1154</b>	<b>58</b>	<b>1208</b>	<b>21223</b>

Total Volume For dec 14:

21223

Oakland  
15-Dec-09

Hour	NB Oakland Non-Commercial	NB Oakland Commercial	NB Oakland Total Volume	SB Oakland Non-Commercial	SB Oakland Commercial	SB Oakland Total Volume	SB Oakland Non-Commercial	SB Oakland Commercial	SB RT Non-Commercial	SB RT Commercial	SB RT Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Total Volume
0	68	0	68	87	1	88	21	0	21	0	21	15	0	15	192
1	37	0	37	43	0	43	4	1	5	1	5	2	1	3	88
2	20	0	20	30	0	30	3	0	3	0	3	5	0	5	58
3	16	0	16	13	0	13	2	0	2	0	2	2	0	2	33
4	11	0	11	13	0	13	2	0	2	0	2	2	1	3	29
5	25	0	25	16	0	16	7	1	8	1	8	3	0	3	52
6	80	0	80	64	0	64	27	0	27	0	27	12	0	12	183
7	288	2	290	171	7	178	83	2	85	1	86	41	1	42	600
8	858	4	862	434	49	483	191	5	196	1	197	60	1	61	1602
9	657	5	662	476	35	511	148	1	149	1	150	135	6	141	1463
10	527	7	534	386	31	417	104	1	105	1	106	53	2	55	1111
11	494	3	497	394	33	427	84	1	85	1	86	51	0	51	1000
12	599	5	604	509	53	562	102	1	103	1	104	51	4	55	1324
13	594	4	598	525	60	585	100	2	102	2	104	53	2	55	1340
14	541	6	547	553	57	610	78	3	81	1	82	47	1	48	1286
15	597	5	602	395	53	448	88	1	89	1	90	52	1	53	1192
16	730	3	733	687	50	737	160	5	165	2	167	123	2	125	1760
17	685	2	687	752	52	804	189	9	208	2	210	92	4	96	1795
18	790	1	791	743	45	788	222	3	225	2	227	107	2	109	1913
19	617	2	619	481	51	532	108	0	108	0	108	96	2	97	1354
20	383	2	385	328	40	368	71	0	71	0	71	53	1	54	878
21	302	1	303	270	12	282	63	0	63	0	63	49	1	50	698
22	292	1	293	207	8	215	40	0	40	0	40	39	0	39	587
23	187	0	187	119	0	119	29	0	29	0	29	21	0	21	336
Total	9323	53	9376	7696	637	8333	1934	36	1970	32	1998	1163	32	1195	20874

Total Volume for dec 15:

20874

Oakland

16-Dec

Hour	NB Oakland Non-Commercial	NB Oakland Commercial	NB Oakland Total Volume	SB Oakland Non-Commercial	SB Oakland Commercial	SB Oakland Total Volume	SB RT Non-Commercial	SB RT Commercial	SB RT Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume
0	94	0	94	71	0	71	17	0	17	7	0	7	7	0	7
1	48	0	48	42	1	43	6	0	6	5	0	5	5	0	5
2	25	0	25	24	0	24	3	0	3	2	0	2	2	0	2
3	11	0	11	23	0	23	2	0	2	0	0	0	0	0	0
4	10	1	11	14	0	14	1	0	1	2	0	2	2	0	2
5	37	0	37	25	0	25	7	0	7	3	0	3	3	0	3
6	80	1	81	57	0	57	28	0	28	9	0	9	9	0	9
7	275	1	276	184	7	191	97	2	99	38	2	40	38	2	40
8	876	2	878	450	36	486	185	5	190	62	0	62	62	0	62
9	615	5	620	437	37	474	142	1	143	125	4	129	125	4	129
10	505	0	505	351	22	373	86	2	88	41	0	41	41	0	41
11	485	3	488	403	19	422	83	0	83	49	0	49	49	0	49
12	566	3	569	545	58	603	131	4	135	54	2	56	54	2	56
13	633	7	640	512	47	559	118	6	124	59	5	64	59	5	64
14	565	3	568	525	44	569	110	1	111	52	1	53	52	1	53
15	680	2	682	548	53	601	141	4	145	56	3	59	56	3	59
16	743	3	746	779	57	836	172	5	177	113	10	123	113	10	123
17	736	7	743	775	62	837	517	7	524	100	5	105	100	5	105
18	856	3	859	803	52	855	259	1	260	107	3	110	107	3	110
19	740	6	746	582	51	633	162	5	167	86	0	86	86	0	86
20	437	3	440	381	36	417	85	1	86	50	0	50	50	0	50
21	361	2	363	312	28	340	92	1	93	58	0	58	58	0	58
22	305	6	311	235	11	246	63	0	63	41	0	41	41	0	41
23	182	0	182	122	3	125	40	0	40	22	0	22	22	0	22
Total	9875	58	9933	8180	624	8804	2547	45	2592	1141	35	1176	1141	35	1176
Total Volume for dec 16: 22505															

Total Volume for dec 16: 22505

Oakland  
17-Dec-09

Hour	NB Oakland Non-Commercial	NB Oakland Commercial	NB Oakland Total Volume	SB Oakland Non-Commercial	SB Oakland Commercial	SB Oakland Total Volume	SB RT Non-Commercial	SB RT Commercial	SB RT Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Total Volume
0	83	0	83	71	0	71	16	0	16	11	0	11	181
1	52	0	52	45	0	45	8	0	8	3	0	3	108
2	19	0	19	19	0	19	4	0	4	4	0	4	46
3	18	0	18	24	0	24	3	0	3	1	0	1	46
4	9	0	9	16	0	16	3	0	3	1	0	1	29
5	29	0	29	18	0	18	12	0	12	4	0	4	63
6	75	1	76	64	0	64	23	0	23	15	0	15	178
7	289	3	292	151	7	158	88	1	89	35	1	36	589
8	835	1	836	432	35	467	188	5	193	68	3	71	1567
9	624	3	627	445	38	483	149	0	149	130	4	134	1393
10	493	6	499	378	32	410	109	1	110	53	2	55	1074
11	515	5	520	468	38	506	117	2	119	52	2	54	1199
12	615	9	624	516	38	554	105	1	106	67	1	68	1352
13	593	5	598	548	50	598	130	2	132	78	5	83	1411
14	608	1	609	561	56	617	104	1	105	62	1	63	1394
15	744	6	750	651	61	712	132	3	135	69	3	72	1889
16	767	6	773	775	58	833	208	5	213	131	6	137	1956
17	769	6	775	789	56	845	212	4	216	113	2	115	1941
18	709	3	712	823	54	877	284	5	289	136	4	140	2018
19	716	2	718	560	50	610	120	2	122	112	2	114	1584
20	481	0	481	403	37	440	107	0	107	64	1	65	1093
21	424	4	428	340	28	368	83	2	85	52	1	53	894
22	332	3	335	285	15	300	73	1	74	57	0	57	766
23	225	0	225	153	8	161	54	0	54	35	0	35	475
Total	10008	64	10072	8535	651	9186	2332	35	2367	1353	38	1391	23026

Total Volume for dec 17:

23026

Oakland  
18-Dec-09

Hour	NB Oakland Non-Commercial	NB Oakland Commercial	NB Oakland Total Volume	SB Oakland Non-Commercial	SB Oakland Commercial	SB Oakland Total Volume	SB RT Non-Commercial	SB RT Commercial	SB RT Total Volume	Center Turn Lane Non-Commercial	Center Turn Lane Commercial	Center Turn Lane Total Volume	Total Volume
0	128	1	129	101	0	101	21	0	21	12	0	12	263
1	53	0	53	54	0	54	5	0	5	10	0	10	122
2	33	1	34	47	0	47	5	0	5	7	0	7	93
3	20	0	20	38	1	39	4	0	4	2	0	2	65
4	6	1	7	23	0	23	3	0	3	2	0	2	35
5	29	0	29	27	0	27	8	0	8	10	0	10	74
6	82	0	82	66	3	69	29	0	29	13	0	13	193
7	274	5	279	151	8	159	79	0	79	28	1	29	548
8	735	3	738	401	33	434	167	3	170	78	2	80	1422
9	561	7	568	444	48	492	155	5	160	106	3	109	1328
10	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>1921</b>	<b>18</b>	<b>1939</b>	<b>1352</b>	<b>93</b>	<b>1445</b>	<b>476</b>	<b>8</b>	<b>484</b>	<b>268</b>	<b>6</b>	<b>274</b>	<b>4142</b>

total volume 12/18/2010

4142

# APPENDIX “C”

Weekend Peak Period Figures

### Saturday Inbound (Northbound Left) Traffic

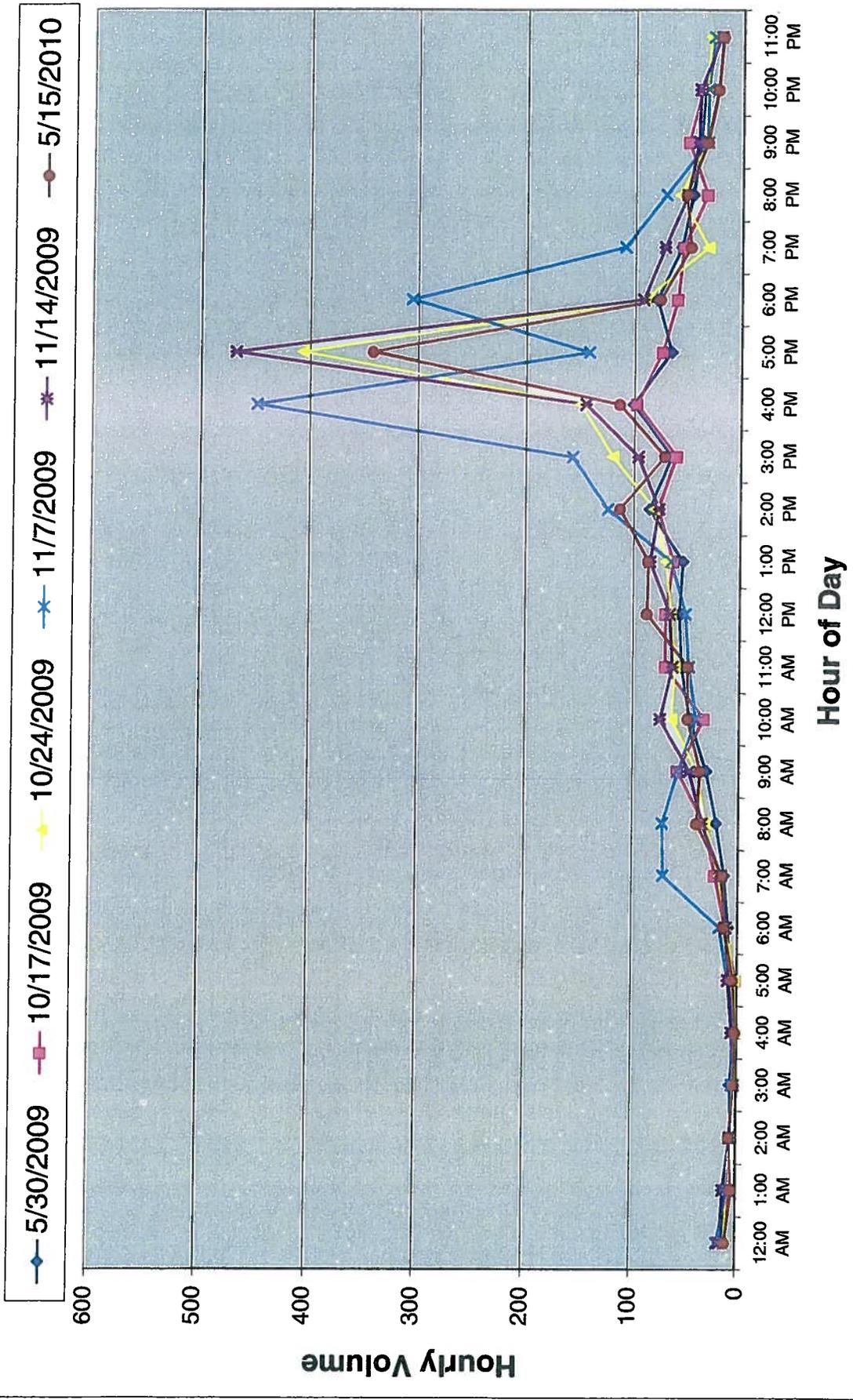


FIGURE "I"

### Saturday Outbound (Eastbound) Traffic

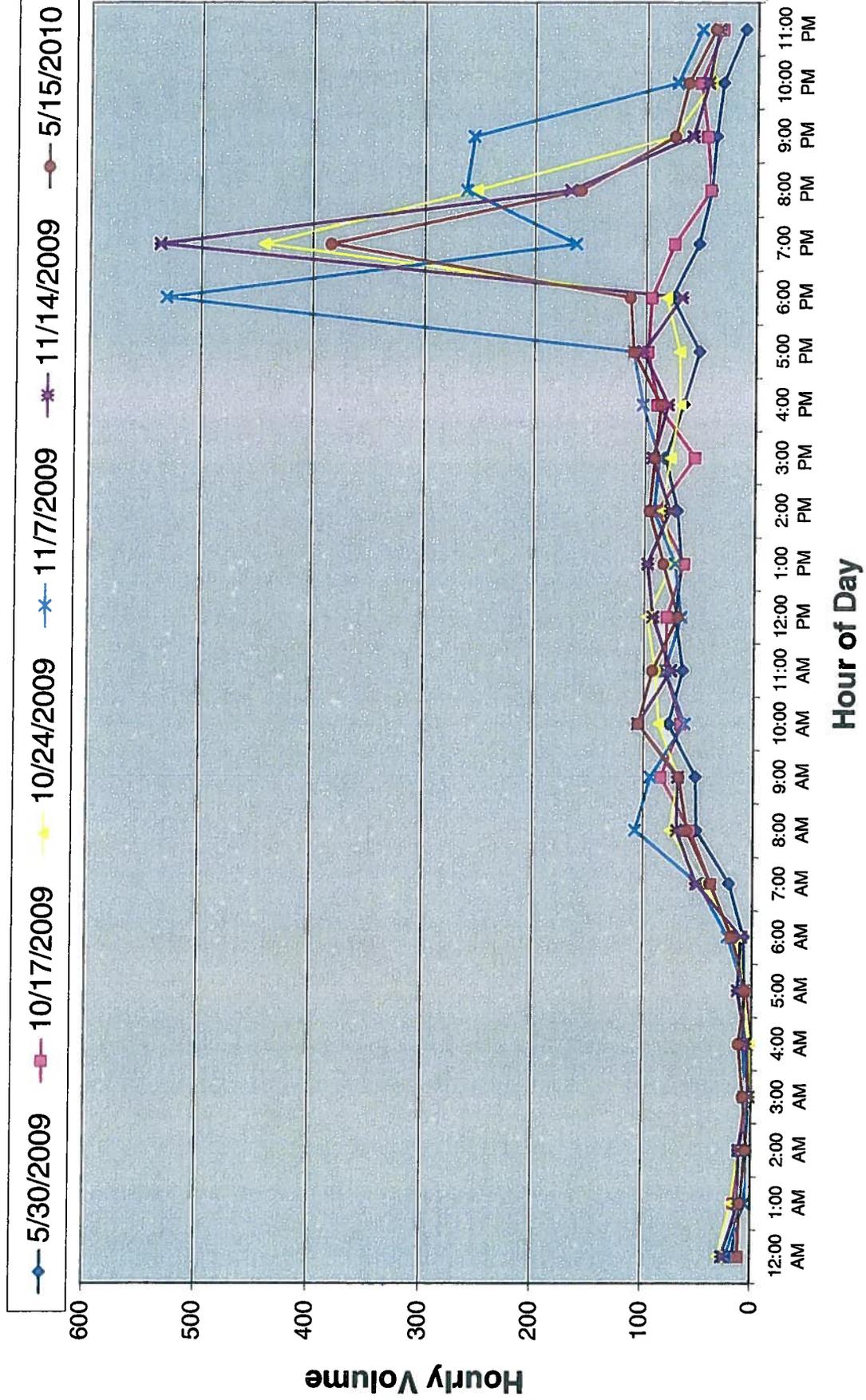


FIGURE "II"

### Sunday Inbound (Northbound Left) Traffic

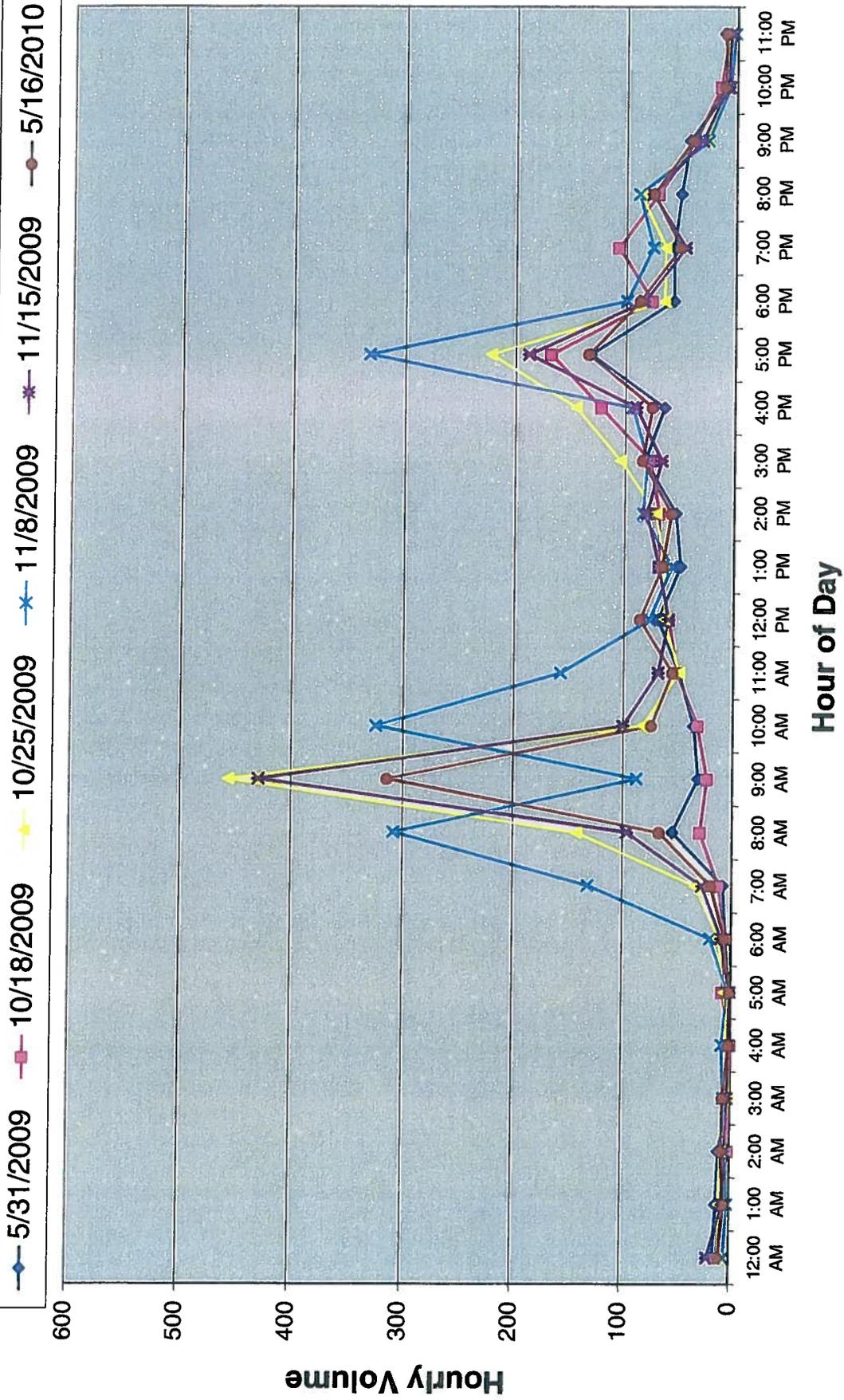


Figure III

### Sunday Outbound (Eastbound) Traffic

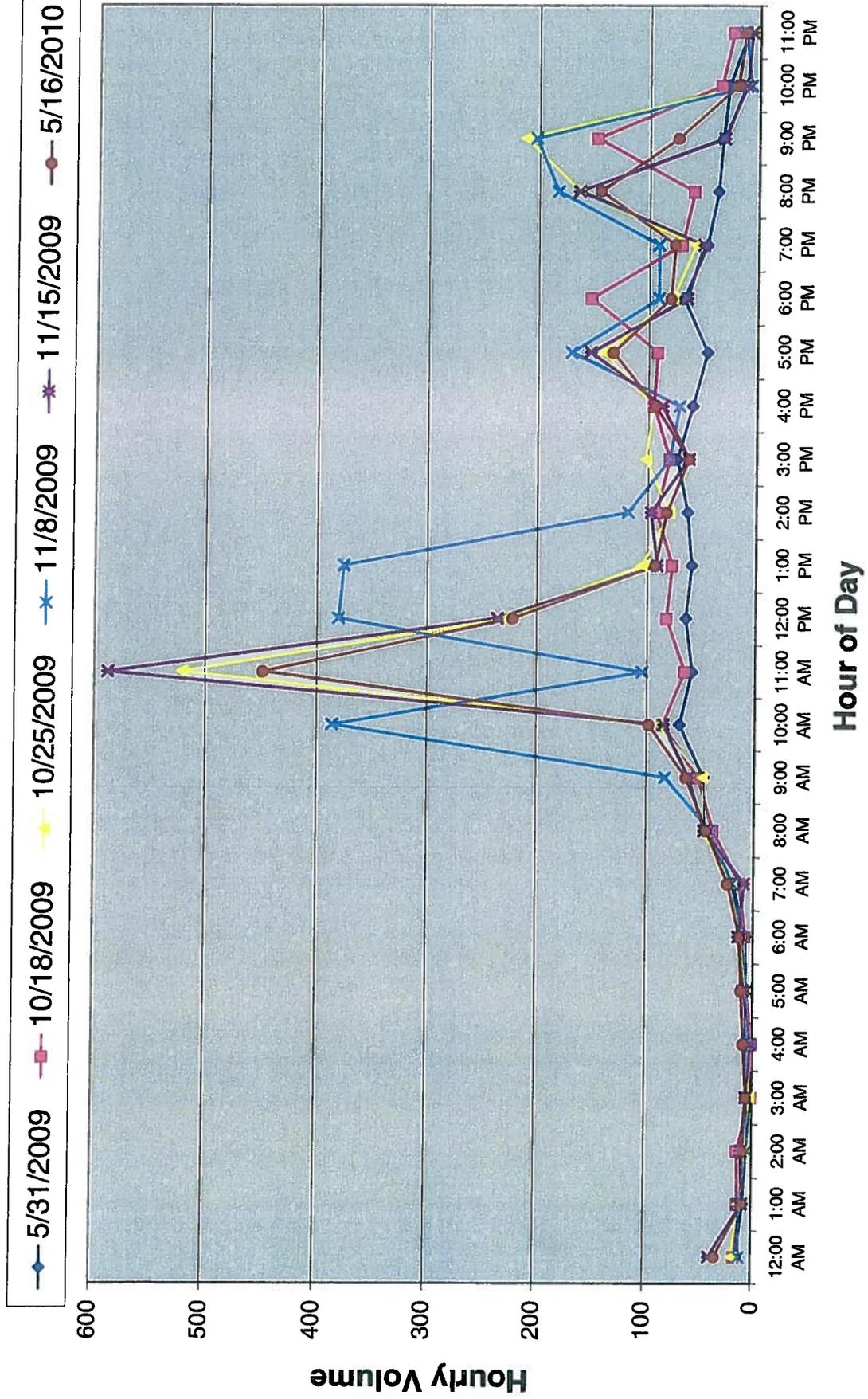


FIGURE "IV"

# APPENDIX “D”

Oakland Drive @ Vincent Avenue Peak Hour Vehicle Counts

**Oakland-Vincent Hourly Inbound Turn Movement Count Summary  
5 PM to 6 PM**

LOCATION: **Oakland Drive at Vincent Avenue**

DAY: **Saturday**

Date	Northbound Oakland Drive				Southbound Oakland Drive				Eastbound Vincent Drive				Vincent Ave. west of Church						
	ON:	L	TH	R	TOTAL	ON:	L	TH+R	TOTAL	ON:	L	TH	R	TOTAL	ON:	EB	WB	TOTAL	
30-May-09	65	604			669			549	549		8		43	51	34		36		70
17-Oct-09	74	0			74	0		0	0		13		85	98	46		46		92
24-Oct-09	407	0			407	0		0	0		13		56	69	41		53		94
7-Nov-09	448	0			448	0		0	0		12		90	102	59		59		118
	305	0			305	0		0	0		90		441	531	73		175		248
14-Nov-09	468	0			468	0		0	0		14		88	102	69		66		135
15-May-10	342	684			1026	652		652	652		10		101	111	55		84		139

**Oakland-Vincent Hourly Outbound Turn Movement Count Summary  
7 PM to 8 PM**

LOCATION: **Oakland Drive at Vincent Avenue**

DAY: **Saturday**

Date	Northbound Oakland Drive				Southbound Oakland Drive				Eastbound Vincent Drive				Vincent Ave. west of Church						
	ON:	L	TH	R	TOTAL	ON:	L	TH+R	TOTAL	ON:	L	TH	R	TOTAL	ON:	EB	WB	TOTAL	
30-May-09	56	443			499			419	419		8		44	52	38		40		78
17-Oct-09	55	0			55	0		0	0		11		63	74	27		44		71
24-Oct-09	32	0			32	0		0	0		66		378	444	24		45		69
7-Nov-09	305	0			305	0		0	0		90		441	531	73		175		248
	71	0			71	0		0	0		33		229	262	15		77		92
	33	0			33	0		0	0		28		227	255	21		39		60
14-Nov-09	72	0			72	0		0	0		74		463	537	42		77		119
15-May-10	48	550			598	430		430	430		63		321	384	43		81		124

**Oakland-Vincent Hourly Inbound Turn Movement Count Summary  
9 AM to 10 AM**

LOCATION: **Oakland Drive at Vincent Avenue**

DAY: **Sunday**

Date	Northbound Oakland Drive				Southbound Oakland Drive				Eastbound Vincent Drive				Westbound Vincent Ave. west of Church					
	ON:	L	TH	R	TOTAL	ON:	L	TH+R	TOTAL	ON:	L	TH	R	TOTAL	ON:	EB	WB	TOTAL
31-May-09	31	441			472	340			340	4			43	47		40	13	52
18-Oct-09	23	0			23	0		0	0	8			44	52		33	15	48
25-Oct-09	456	0			456	0		0	0	11			37	48		38	21	59
8-Nov-09	308	0			308	0		0	0	2			38	40		29	13	42
	324	0			324	0		0	0	49			337	386		64	47	111
15-Nov-09	429	0			429	0		0	0	8			53	61		38	15	53
16-May-10	314	477			791	454		454	454	10			53	63		47	22	69

**Oakland-Vincent Hourly Outbound Turn Movement Count Summary  
11 AM to 12 PM**

LOCATION: **Oakland Drive at Vincent Avenue**

DAY: **Sunday**

Date	Northbound Oakland Drive				Southbound Oakland Drive				Eastbound Vincent Drive				Westbound Vincent Ave. west of Church					
	ON:	L	TH	R	TOTAL	ON:	L	TH+R	TOTAL	ON:	L	TH	R	TOTAL	ON:	EB	WB	TOTAL
31-May-09	49	398			447	481			481	3			55	58		36	42	78
18-Oct-09	51	0			51	0		0	0	6			59	65		40	48	88
25-Oct-09	49	0			49	0		0	0	59			462	521		41	111	152
8-Nov-09	324	0			324	0		0	0	49			337	386		64	47	111
	76	0			76	0		0	0	58			323	381		42	100	142
	56	0			56	0		0	0	58			318	376		50	82	132
15-Nov-09	68	0			68	0		0	0	110			478	588		49	71	120
16-May-10	55	439			494	585		585	585	68			380	448		61	145	206

# APPENDIX “E”

Weekend Peak Period Figures

# City of Portage

## INTERSECTION APPROACH VOLUMES

Major Street: **Oakland Drive**  
 Minor Street: **Vincent Avenue**  
 Date of Counts: **15-May-10**

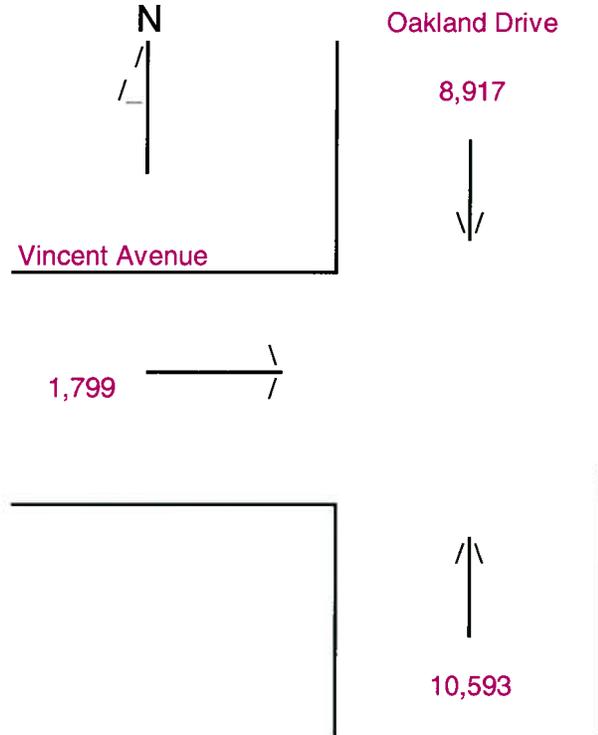
TIME	APPROACH VOLUME (VPH)						N + S TOTAL	GRAND TOTAL	PERCENTAGE
	EASTBOUND	WESTBOUND	E + W TOTAL	NORTHBOUND	SOUTHBOUND				
12:00 AM	11		11	131	134	265	276	1.30%	
1:00 AM	10		10	67	75	142	152	0.71%	
2:00 AM	4		4	56	63	119	123	0.58%	
3:00 AM	8		8	33	27	60	68	0.32%	
4:00 AM	12		12	27	28	55	67	0.31%	
5:00 AM	6		6	49	45	94	100	0.47%	
6:00 AM	19		19	176	110	286	305	1.43%	
7:00 AM	38		38	246	198	444	482	2.26%	
8:00 AM	60		60	404	316	720	780	3.66%	
9:00 AM	67		67	570	523	1093	1160	5.44%	
10:00 AM	105		105	590	608	1198	1303	6.11%	
11:00 AM	92		92	692	663	1355	1447	6.79%	
12:00 PM	69		69	778	725	1503	1572	7.38%	
1:00 PM	83		83	755	679	1434	1517	7.12%	
2:00 PM	96		96	774	655	1429	1525	7.16%	
3:00 PM	91		91	736	701	1437	1528	7.17%	
4:00 PM	86		86	767	660	1427	1513	7.10%	
5:00 PM	111		111	1026	652	1678	1789	8.40%	
6:00 PM	114		114	720	533	1253	1367	6.42%	
7:00 PM	384		384	598	430	1028	1412	6.63%	
8:00 PM	159		159	464	325	789	948	4.45%	
9:00 PM	74		74	374	299	673	747	3.51%	
10:00 PM	62		62	325	260	585	647	3.04%	
11:00 PM	38		38	235	208	443	481	2.26%	
<b>TOTAL</b>	<b>1,799</b>	<b>0</b>	<b>1,799</b>	<b>10,593</b>	<b>8,917</b>	<b>19,510</b>	<b>21,309</b>	<b>100.00%</b>	
<b>PERCENTAGE</b>	<b>8.44%</b>	<b>0.00%</b>	<b>8.44%</b>	<b>49.71%</b>	<b>41.85%</b>	<b>91.56%</b>	<b>100.00%</b>		

# City of Portage

Entering Traffic Volumes

24 Hour Count

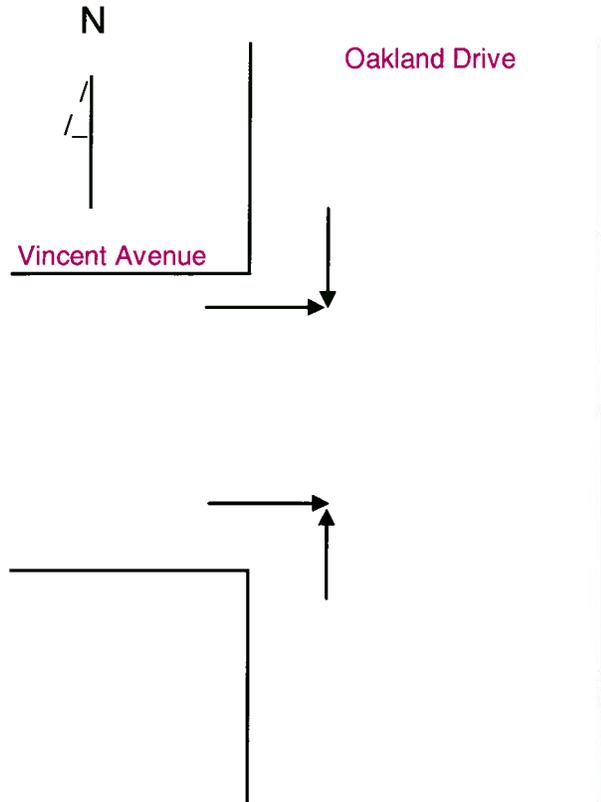
15-May-10



## Intersection Data:

1. Vincent Drive Traffic Stops for Oakland Drive Traffic.
2. Speed Limit on Oakland Drive is 35 MPH.
3. Number of Approach Lanes:  
Oakland Drive 2  
Vincent Avenue 1

**City of Portage**  
Collision Diagram  
Period Covered: 2005 - August 2010



Total Accidents =	15
Correctable Accidents =	2
Average Accidents Per Year =	2.7

**City of Portage**  
4-WAY STOP WARRANT ANALYSIS  
MICHIGAN MUTCD 2005

LOCATION: **Oakland Drive** at **Vincent Avenue**  
COUNT DATE: **5/15/2010**

CONDITIONS:

Ent. Traffic	Ped. + Veh.	Avg. Peak Hour Delay
300	200	30 sec.

TRAFFIC VOLUME REQUIREMENTS:

Ent. Traffic	Ped. + Veh.	Avg. Peak Hour Delay
300	200	30 sec.

1. 85TH PERCENTILE SPEED (MPH): **35**  
2. ASSUME 70% OF WARRANTS: **no**

TIME	APPROACH VOLUMES				E + W	N + S	Total	HOURS MEETING WARRANT		
	EAST	WEST	NORTH	SOUTH				PART C.1	PART C.2	C.1 & C.2
12:00 AM	11	0	131	134	11	265	276	0	0	0
1:00 AM	10	0	67	75	10	142	152	0	0	0
2:00 AM	4	0	56	63	4	119	123	0	0	0
3:00 AM	8	0	33	27	8	60	68	0	0	0
4:00 AM	12	0	27	28	12	55	67	0	0	0
5:00 AM	6	0	49	45	6	94	100	0	0	0
6:00 AM	19	0	176	110	19	286	305	0	0	0
7:00 AM	38	0	246	198	38	444	482	1	0	0
8:00 AM	60	0	404	316	60	720	780	1	0	0
9:00 AM	67	0	570	523	67	1093	1160	1	0	0
10:00 AM	105	0	590	608	105	1198	1303	1	0	0
11:00 AM	92	0	692	663	92	1355	1447	1	0	0
12:00 PM	69	0	778	725	69	1503	1572	1	0	0
1:00 PM	83	0	755	679	83	1434	1517	1	0	0
2:00 PM	96	0	774	655	96	1429	1525	1	0	0
3:00 PM	91	0	736	701	91	1437	1528	1	0	0
4:00 PM	86	0	767	660	86	1427	1513	1	0	0
5:00 PM	111	0	1026	652	111	1678	1789	1	0	0
6:00 PM	114	0	720	533	114	1253	1367	1	0	0
7:00 PM	384	0	598	430	384	1028	1412	1	1	1
8:00 PM	159	0	464	325	159	789	948	1	0	0
9:00 PM	74	0	374	299	74	673	747	1	0	0
10:00 PM	62	0	325	260	62	585	647	1	0	0
11:00 PM	38	0	235	208	38	443	481	1	0	0
TOTAL	1799	0	10593	8917	1799	19510	21309	17	1	1
TOTAL COMPLIANT HOURS:								17	1	1
WARRANT SATISFIED:								NO		
80% WARRANTS SATISFIED:								NO		

**City of Portage**  
 TRAFFIC VOLUMES SIGNAL WARRANT ANALYSIS  
 MICHIGAN MUTCD 2005  
 WARRANT #1

LOCATION: **Oakland Drive** at **Vincent Avenue**  
 COUNT DATE: **5/15/2010**

CONDITIONS:  
 1. NUMBER OF LANES ON MAJOR APPROACH STREET: **2**  
 2. NUMBER OF LANES ON MINOR APPROACH STREET: **1**  
 3. 85TH PERCENTILE SPEED (MPH): **35**  
 4. ASSUME 70% OF WARRANTS: **NO**

TRAFFIC VOLUME REQUIREMENTS:  
 MAJOR ST. MINOR ST.  
 2-DIR. 1-DIR.  
 600 150  
 CONDITION 'A' 900 75  
 CONDITION 'B'

TIME	APPROACH VOLUME (VPH)				MINOR ST. MAJOR ST.	HOURS MEETING WARRANT # 1					
	EAST	WEST	NORTH	SOUTH		E + W	N + S	"A"	"B"	"A"	"B"
12:00 AM	11	0	131	134	11	265	0	0	0	0	0
1:00 AM	10	0	67	75	10	142	0	0	0	0	0
2:00 AM	4	0	56	63	4	119	0	0	0	0	0
3:00 AM	8	0	33	27	8	60	0	0	0	0	0
4:00 AM	12	0	27	28	12	55	0	0	0	0	0
5:00 AM	6	0	49	45	6	94	0	0	0	0	0
6:00 AM	19	0	176	110	19	286	0	0	0	0	0
7:00 AM	38	0	246	198	38	444	0	0	0	0	0
8:00 AM	60	0	404	316	60	720	0	0	0	0	0
9:00 AM	67	0	570	523	67	1093	0	0	0	0	1
10:00 AM	105	0	692	608	105	1198	0	1	0	0	1
11:00 AM	92	0	778	663	92	1355	0	1	0	0	1
12:00 PM	69	0	778	725	69	1503	0	0	0	0	1
1:00 PM	83	0	755	679	83	1434	0	1	0	0	1
2:00 PM	96	0	774	655	96	1429	0	1	0	0	1
3:00 PM	91	0	736	701	91	1437	0	1	0	0	1
4:00 PM	86	0	767	660	86	1427	0	1	0	0	1
5:00 PM	111	0	1026	652	111	1678	0	1	0	0	1
6:00 PM	114	0	720	533	114	1253	0	1	0	0	1
7:00 PM	384	0	598	430	384	1028	1	1	1	1	1
8:00 PM	159	0	464	325	159	789	1	0	1	1	1
9:00 PM	74	0	374	299	74	673	0	0	0	0	0
10:00 PM	62	0	325	260	62	585	0	0	0	0	0
11:00 PM	38	0	235	208	38	443	0	0	0	0	0
TOTAL	1799	0	10593	8917	1799	19510	2	9	2	2	12
TOTAL COMPLIANT HOURS:							2	9	2	2	12
WARRANT SATISFIED:							NO	YES	NO	NO	NO

**City of Portage**  
**WARRANT #2 -- FOUR-HOUR VOLUMES**  
**MICHIGAN MUTCD 2005**

LOCATION: **Oakland Drive** at **Vincent Avenue**  
 COUNT DATE: **5/15/2010**

- CONDITIONS:
1. NUMBER OF LANES ON MAJOR APPROACH STREET: **2**
  2. NUMBER OF LANES ON MINOR APPROACH STREET: **1**
  3. 85TH PERCENTILE SPEED (MPH): **35**

TIME	APPROACH VOLUME (VPH)				SOUTH	MINOR ST. MAJOR ST.		MINOR STREET REQMT	HOURS MEETING WARRANT
	EAST	WEST	NORTH	E + W		N + S			
12:00 AM	11	0	131	11	134	265	1000	0	
1:00 AM	10	0	67	10	75	142	1000	0	
2:00 AM	4	0	56	4	63	119	1000	0	
3:00 AM	8	0	33	8	27	60	1000	0	
4:00 AM	12	0	27	12	28	55	1000	0	
5:00 AM	6	0	49	6	45	94	1000	0	
6:00 AM	19	0	176	19	110	286	1000	0	
7:00 AM	38	0	246	38	198	444	390	0	
8:00 AM	60	0	404	60	316	720	240	0	
9:00 AM	67	0	570	67	523	1093	130	0	
10:00 AM	105	0	590	105	608	1198	110	0	
11:00 AM	92	0	692	92	663	1355	80	1	
12:00 PM	69	0	778	69	725	1503	80	0	
1:00 PM	83	0	755	83	679	1434	80	1	
2:00 PM	96	0	774	96	655	1429	80	1	
3:00 PM	91	0	736	91	701	1437	80	1	
4:00 PM	86	0	767	86	660	1427	80	1	
5:00 PM	111	0	1026	111	652	1678	80	1	
6:00 PM	114	0	720	114	533	1253	90	1	
7:00 PM	384	0	598	384	430	1028	140	1	
8:00 PM	159	0	464	159	325	789	225	0	
9:00 PM	74	0	374	74	299	673	265	0	
10:00 PM	62	0	325	62	260	585	310	0	
11:00 PM	38	0	235	38	208	443	390	0	
<b>TOTAL</b>	<b>1799</b>	<b>0</b>	<b>10593</b>	<b>1799</b>	<b>8917</b>	<b>19510</b>		<b>8</b>	
<b>TOTAL COMPLIANT HOURS:</b>									
<b>WARRANT SATISFIED:</b>									
<b>YES</b>									

**City of Portage**  
**WARRANT #3 -- PEAK HOUR VOLUMES (CATEGORY "B")**  
**MICHIGAN MUTCD 2005**

LOCATION: **Oakland Drive** at **Vincent Avenue**  
 COUNT DATE: **5/15/2010**

CONDITIONS:

- 1. NUMBER OF LANES ON MAJOR APPROACH STREET: **2**
- 2. NUMBER OF LANES ON MINOR APPROACH STREET: **1**
- 3. 85TH PERCENTILE SPEED (MPH): **35**

TIME	APPROACH VOLUME (VPH)			MINOR ST. E + W	MAJOR ST. N + S	MINOR STREET REQMNT	HOURS MEETING WARRANT	
	EAST	WEST	NORTH					SOUTH
12:00 AM	11	0	131	134	265	1000	0	
1:00 AM	10	0	67	75	142	1000	0	
2:00 AM	4	0	56	63	119	1000	0	
3:00 AM	8	0	33	27	60	1000	0	
4:00 AM	12	0	27	28	55	1000	0	
5:00 AM	6	0	49	45	94	1000	0	
6:00 AM	19	0	176	110	286	1000	0	
7:00 AM	38	0	246	198	444	600	0	
8:00 AM	60	0	404	316	720	415	0	
9:00 AM	67	0	570	523	1093	275	0	
10:00 AM	105	0	590	608	1198	230	0	
11:00 AM	92	0	692	663	1355	180	0	
12:00 PM	69	0	778	725	1503	145	0	
1:00 PM	83	0	755	679	1434	170	0	
2:00 PM	96	0	774	655	1429	170	0	
3:00 PM	91	0	736	701	1437	170	0	
4:00 PM	86	0	767	660	1427	170	0	
5:00 PM	111	0	1026	652	1678	115	0	
6:00 PM	114	0	720	533	1253	205	0	
7:00 PM	384	0	598	430	1028	290	1	
8:00 PM	159	0	464	325	789	385	0	
9:00 PM	74	0	374	299	673	440	0	
10:00 PM	62	0	325	260	585	485	0	
11:00 PM	38	0	235	208	443	600	0	
TOTAL	1799	0	10593	8917	19510		1	
TOTAL COMPLIANT HOURS:								1
WARRANT SATISFIED:								YES



**City of Portage**  
**4-WAY STOP WARRANT EVALUATION**  
**MICHIGAN MUTCD 2005**

**INTRODUCTION**

This review is based on the methodology presented in the Michigan Manual of Uniform Traffic Control Devices (MMUTCD), 2005 edition, as amended by the Michigan Department of Transportation. Please refer to **Section 2B.07** (Multiway Stop Applications) in the manual.

The intersection of **Oakland Drive** and **Vincent Avenue** has the following characteristics:

The 85th percentile speed on **Oakland Drive** is: **35** MPH.  
Existing Traffic Control is: **Vincent Drive Traffic Stops for Oakland Drive Traffic.**  
24 hour entering vehicles = **21309** Date of Count: **5/15/2010**  
The Estimated annual traffic volume entering the intersection is **7,777,785** vehicles.

A "Multiway Stop" installation is useful as a safety measure at some locations. It should ordinarily be used only where the volume of traffic on the intersecting roads is approximately equal.

The traffic splits are as follows:

**Oakland Drive** 91.56%  
**Vincent Avenue** 8.44%

A traffic control signal is more satisfactory for an intersection with a heavy traffic volume (see signal warrant analysis).

**WARRANT ANALYSIS**

*The following Criteria should be considered in the engineering study for a multiway STOP sign installation:*

**A.** Where traffic control signals are justified, the multiway stop sign is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.

(See Signal Warrant Analysis)

Total number of warrants satisfied = **3**  
Warrant Number 1 is **NOT APPLICABLE**

**B.** A crash problem, as indicated by 5 or more reported crashes of a type susceptible of correction by a multiway stop installation in a 12 month period. Such accidents include right- and left-turn collisions as well as right-angle collisions.

Total number of accidents = **15**  
Average number of accidents = **2.7**  
Number of correctable accidents = **2** (highest)  
Accident Rate is **0.34** per million vehicles entering the intersection.

**Part B.** is **NOT SATISFIED**

**C. Minimum volumes:**

- 1) The total vehicular volume entering the intersection from major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day, and
- 2) The combined vehicular and pedestrian volume from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same eight hours, with an average delay to minor street vehicular traffic of at least 30 seconds per vehicle during the maximum hour, but
- 3) if the 85th percentile approach speed of the major street traffic exceeds 40 miles per hour, the minimum vehicular volume warrant are 70 percent of the above requirements.

**Part C.1 is** SATISFIED  
**Part C.2 is** NOT SATISFIED  
**Part C.3 is** NOT IN EFFECT

**Warrant Part C is** NOT SATISFIED

**D.** While no single criterion is satisfied, but where Criteria B, C.1 and C.2 are all satisfied to 80 percent of the intersection.

**Part B. is** NOT SATISFIED  
**Part C.1 is** SATISFIED  
**Part C.2 is** NOT SATISFIED

**Part D is** NOT SATISFIED

**CONCLUSIONS**

**Warrant Results:**

**Part A:** NOT APPLICABLE  
**Part B:** NOT SATISFIED  
**Part C:** NOT SATISFIED  
**Part D.** NOT SATISFIED

Warrant analysis results show that a multiway Stop **is not** justified for this intersection.

**City of Portage**  
**TRAFFIC SIGNAL WARRANT EVALUATION**  
**MICHIGAN MUTCD - 2005**

**INTRODUCTION**

This Review is based on the methodology presented in the Michigan Manual of Uniform Traffic Control Devices (**MMUTCD**), **2005**, as amended by the Michigan Department of Transportation. Please refer to part 4C (Signal Warrants) in the manual.

The intersection of **Oakland Drive Vincent Avenue** has the following characteristics:

The 85th percentile speed on the main street is: **35** MPH.

Existing Traffic Control is: **Vincent Drive Traffic Stops for Oakland Drive Traffic.**

Daily traffic volume of **21,309** was counted on **15-May-10**

Estimated annual traffic volume is **7,777,785** vehicles.

**1. EIGHT HOUR VOLUME**

The Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The interruption of Continuous Traffic, Condition B, is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a major intersecting street suffers excessive delay or conflict in entering or crossing the major street. It is intended that Warrant 1 be treated as a single warrant. If Condition A is satisfied then the criteria for warrant 1 is satisfied and Condition B and the combination of Condition A and B are not needed or vice versa

Number of hours traffic required =	8
Condition A Traffic Present =	2
Condition B Traffic Present =	9
<b>Warrant Number 1 is</b>	<b>SATISFIED</b>

**2. FOUR-HOUR VEHICULAR VOLUME**

The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.

Number of hours traffic required =	4
Number of hours traffic present =	8
<b>Warrant Number 2 is</b>	<b>SATISFIED</b>

**3. PEAK HOUR VOLUME**

The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a

minimum of 1 hour of an average day, the minor street traffic suffers undue delay when entering or crossing the major street.

This signal warrant shall be applied in only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.

The need for a traffic control signal shall be considered if an engineering study finds that the criteria in **either of the following two (A or B) categories are met:**

**A.** If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:

1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hour for a one-lane approach; or 5 vehicle-hour for a two-lane approach, and
2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and
3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches.

**B.** The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.

Category A = NOT APPLICABLE

Category B = 1

**Warrant Number 3 is SATISFIED**

#### **4. PEDESTRIAN VOLUME**

This warrant is similar to warrant 1B, but is intended to identify locations where additional gaps are needed to provide safe pedestrian crossings of a major street. A signal installed solely for pedestrian should use a fully actuated controller and, if in a signal system, be coordinated with that system. A signal installed only under this warrant shall include pedestrian push buttons for pedestrians crossing the major street. When installed at a midblock location, additional restrictions may apply. For further information see Section 4C.05.

Pedestrian Volume for each of any 4 hours = 0

Pedestrian Volume during any 1 hour = 0

Number of gaps per hour in major street traffic = 0

**Warrant Number 3 is NOT APPLICABLE**

#### **5. SCHOOL CROSSING**

An established school crossing may require signal protection if an engineering study reveals that the number of adequate gaps is less than the number of minutes during the period of crossing usage, with a minimum of 20 students during the highest crossing hour. See Section 7A.03 for details.

**Warrant Number 5 is NOT APPLICABLE**

**6. COORDINATED SIGNAL SYSTEM**

Progressive movement in a coordinated signal system sometimes necessitates installing traffic control signals at intersections where they would otherwise be needed in order to maintain proper platooning of vehicles.

The coordinated Signal System signal warrant **should not** be applied where the resultant spacing of traffic control signals would be less than 1,000-feet.

**Warrant Number 6 is NOT APPLICABLE**

**7. CRASH EXPERIENCE**

The Crash Experience signal warrant conditions are intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal. Many traffic signals are installed on the premise of reducing accidents. However, it must be recognized that signals may actually increase some types of accidents. The result is often contrary to the intended goal. Three criterion must be met before a signal is installed solely to reduce accidents:

- (A) Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and
- (B) There have been five or more reported crashes of types susceptible to correction by traffic control signal, have occurred within a 12-month period;
- (C) For each of any 8 hours, the vehicle per hour given in both of the 80 percent columns of Condition A or Condition B in Table 4C-1 (See Section 4C.02) exists on the major-street and the higher-volume minor-street approach respectively or the volume of pedestrian traffic is not less than 80 percent of the requirement specified in the Pedestrian Volume warrant.

**CRITERIA B.**

Total number of accidents =	15.0	
Average number of accidents =	2.7	
Number of correctable accidents =	2.0	(highest)
Accident Rate is	0.34	per million vehicles entering.

**CRITERIA C.**

Number of hours required for Condition A =	8
Number of hours present for Condition A =	2
Number of hours required for Condition B =	8
Number of hours present for Condition B =	12
Pedestrian Volume required =	100 or 190
Pedestrian Volume present =	0

**Warrant Number 7 is NOT SATISFIED**

**8. ROADWAY NETWORK**

Installing a traffic control signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network. The need for a traffic control signal shall be considered

if an engineering study finds that the common intersection of two or more major routes fulfill the criteria. Such a signal may be installed at the intersection of **two major routes** as defined by Section 4C.09 of the MMUTCD, with a total volume of 1000 vehicles entering during the typical peak weekday hour, and has five year projected volumes which meet one or more of Warrants 1,2 and 3 or at an intersection which has existing or immediately projected volumes of 1000 vehicles for each of any five hours on a Weekend.

**Warrant Number 8 is**

**NOT APPLICABLE**

***SUMMARY/CONCLUSIONS***

Warrant Number 1:	SATISFIED
Warrant Number 2:	SATISFIED
Warrant Number 3:	SATISFIED
Warrant Number 4:	NOT APPLICABLE
Warrant Number 5:	NOT APPLICABLE
Warrant Number 6:	NOT APPLICABLE
Warrant Number 7:	NOT SATISFIED
Warrant Number 8:	NOT APPLICABLE

Total number of warrants satisfied = 3

**City of Portage**  
**Signal Warrant Analysis Summary**  
**Michigan MUTCD - 2005 Edition**

Major Street: Oakland Drive  
 Minor Street: Vincent Avenue  
 Date of Counts: 15-May-10

<b>Warrant No.</b>	<b>Warrant Description</b>	<b>Analysis Result</b>		<b>Remarks</b>
1	Eight-Hour Vehicular Volume	SATISFIED	1	
2	Four-Hour Vehicular Volume	SATISFIED	1	
3	Peak Hour	SATISFIED	1	
4	Pedestrian Volume	NOT APPLICABLE	0	
5	School Crossing	NOT APPLICABLE	0	
6	Coordinated Signal System	NOT APPLICABLE	0	
7	Crash Experience	NOT SATISFIED	0	
8	Roadway Network	NOT APPLICABLE	0	

3

# City of Portage

## INTERSECTION APPROACH VOLUMES

Major Street: **Oakland Drive**  
 Minor Street: **Vincent Avenue**  
 Date of Counts: **16-May-10**

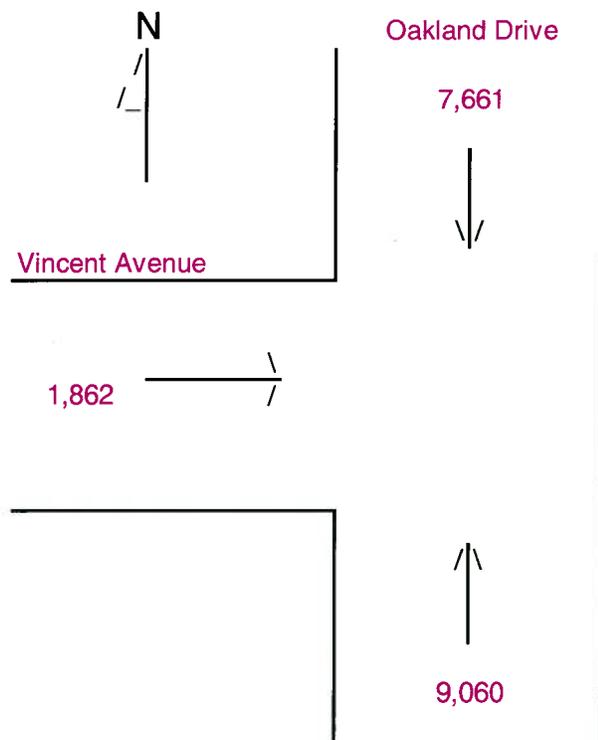
TIME	APPROACH VOLUME (VPH)						N + S TOTAL	GRAND TOTAL	PERCENTAGE
	EASTBOUND	WESTBOUND	E + W TOTAL	NORTHBOUND	SOUTHBOUND				
12:00 AM	34		34	126	123		249	283	1.52%
1:00 AM	9		9	82	82		164	173	0.93%
2:00 AM	9		9	55	67		122	131	0.70%
3:00 AM	6		6	43	47		90	96	0.52%
4:00 AM	9		9	39	33		72	81	0.44%
5:00 AM	11		11	62	33		95	106	0.57%
6:00 AM	13		13	136	69		205	218	1.17%
7:00 AM	24		24	143	133		276	300	1.61%
8:00 AM	44		44	305	205		510	554	2.98%
9:00 AM	63		63	791	454		1245	1308	7.04%
10:00 AM	98		98	601	524		1125	1223	6.58%
11:00 AM	448		448	494	585		1079	1527	8.22%
12:00 PM	222		222	677	752		1429	1651	8.88%
1:00 PM	93		93	645	592		1237	1330	7.16%
2:00 PM	82		82	579	601		1180	1262	6.79%
3:00 PM	62		62	660	581		1241	1303	7.01%
4:00 PM	94		94	619	573		1192	1286	6.92%
5:00 PM	133		133	719	551		1270	1403	7.55%
6:00 PM	80		80	703	456		1159	1239	6.67%
7:00 PM	76		76	469	434		903	979	5.27%
8:00 PM	145		145	487	312		799	944	5.08%
9:00 PM	74		74	310	203		513	587	3.16%
10:00 PM	20		20	193	164		357	377	2.03%
11:00 PM	13		13	122	87		209	222	1.19%
<b>TOTAL</b>	<b>1,862</b>	<b>0</b>	<b>1,862</b>	<b>9,060</b>	<b>7,661</b>		<b>16,721</b>	<b>18,583</b>	<b>100.00%</b>
<b>PERCENTAGE</b>	<b>10.02%</b>	<b>0.00%</b>	<b>10.02%</b>	<b>48.75%</b>	<b>41.23%</b>		<b>89.98%</b>	<b>100.00%</b>	

# City of Portage

Entering Traffic Volumes

24 Hour Count

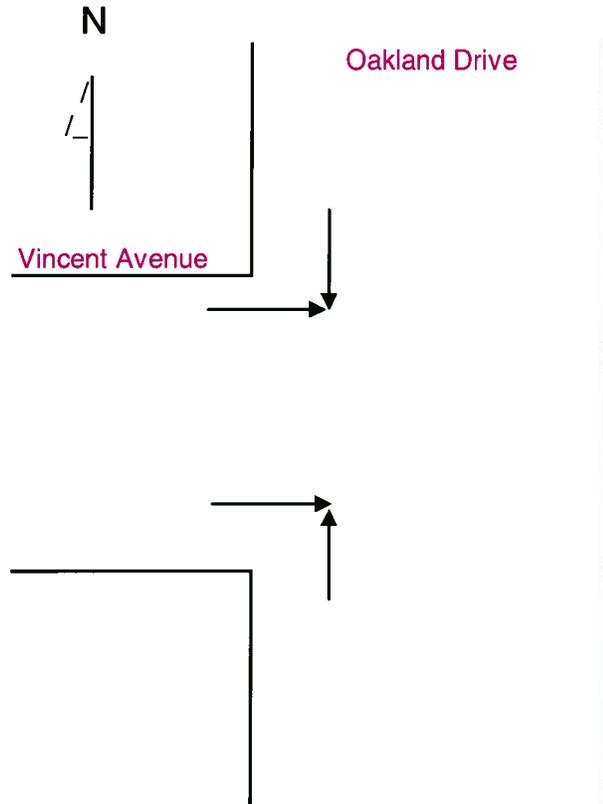
16-May-10



## Intersection Data:

1. Vincent Drive Traffic Stops for Oakland Drive Traffic.
2. Speed Limit on Oakland Drive is 35 MPH.
3. Number of Approach Lanes:  
Oakland Drive 2  
Vincent Avenue 1

**City of Portage**  
Collision Diagram  
Period Covered: 2005 - August 2010



Total Accidents =	15
Correctable Accidents =	2
Average Accidents Per Year =	2.7

**City of Portage**  
4-WAY STOP WARRANT ANALYSIS  
MICHIGAN MUTCD 2005

LOCATION: **Oakland Drive** at **Vincent Avenue**  
COUNT DATE: **5/16/2010**

TRAFFIC VOLUME REQUIREMENTS:

Ent. Traffic	Ped. + Veh.	Avg. Peak Hour Delay
Major St.	Minor St.	30 sec.
300	200	

1. 85TH PERCENTILE SPEED (MPH): **35**  
2. ASSUME 70% OF WARRANTS: **no**

TIME	APPROACH VOLUMES			E + W	N + S	Total	HOURS MEETING WARRANT		
	EAST	WEST	NORTH				SOUTH	PART C.1	PART C.2
12:00 AM	34	0	126	123	249	283	0	0	0
1:00 AM	9	0	82	82	164	173	0	0	0
2:00 AM	9	0	55	67	122	131	0	0	0
3:00 AM	6	0	43	47	90	96	0	0	0
4:00 AM	9	0	39	33	72	81	0	0	0
5:00 AM	11	0	62	33	95	106	0	0	0
6:00 AM	13	0	136	69	205	218	0	0	0
7:00 AM	24	0	143	133	276	300	0	0	0
8:00 AM	44	0	305	205	510	554	1	0	0
9:00 AM	63	0	791	454	1245	1308	1	0	0
10:00 AM	98	0	601	524	1125	1223	1	0	0
11:00 AM	448	0	494	585	1079	1527	1	1	1
12:00 PM	222	0	677	752	1429	1651	1	1	1
1:00 PM	93	0	645	592	1237	1330	1	0	0
2:00 PM	82	0	579	601	1180	1262	1	0	0
3:00 PM	62	0	660	581	1241	1303	1	0	0
4:00 PM	94	0	619	573	1192	1286	1	0	0
5:00 PM	133	0	719	551	1270	1403	1	0	0
6:00 PM	80	0	703	456	1159	1239	1	0	0
7:00 PM	76	0	469	434	903	979	1	0	0
8:00 PM	145	0	487	312	799	944	1	0	0
9:00 PM	74	0	310	203	513	587	1	0	0
10:00 PM	20	0	193	164	357	377	1	0	0
11:00 PM	13	0	122	87	209	222	0	0	0
<b>TOTAL</b>	<b>1862</b>	<b>0</b>	<b>9060</b>	<b>7661</b>	<b>16721</b>	<b>18583</b>	<b>15</b>	<b>2</b>	<b>2</b>
<b>TOTAL COMPLIANT HOURS:</b>							<b>15</b>	<b>2</b>	<b>2</b>
<b>WARRANT SATISFIED:</b>							<b>NO</b>	<b>NO</b>	
<b>80% WARRANTS SATISFIED</b>							<b>NO</b>	<b>NO</b>	

**City of Portage**  
 TRAFFIC VOLUMES SIGNAL WARRANT ANALYSIS  
 MICHIGAN MUTCD 2005  
 WARRANT #1

LOCATION: **Oakland Drive** at **Vincent Avenue**  
 COUNT DATE: **5/16/2010**

CONDITIONS:  
 1. NUMBER OF LANES ON MAJOR APPROACH STREET: **2**  
 2. NUMBER OF LANES ON MINOR APPROACH STREET: **1**  
 3. 85TH PERCENTILE SPEED (MPH): **35**  
 4. ASSUME 70% OF WARRANTS: **NO**

TRAFFIC VOLUME REQUIREMENTS:  
 MAJOR ST. MINOR ST.  
 2-DIR. 1-DIR.  
 600 150  
 CONDITION "A" 900 75  
 CONDITION "B"

TIME	APPROACH VOLUME (VPH)				SOUTH	MINOR ST. MAJOR ST.		HOURS MEETING WARRANT # 1		
	EAST	WEST	NORTH	MAJOR ST.		E + W	N + S	"A"	"B"	80% "A" "B"
12:00 AM	34	0	126	123	34	249	0	0	0	
1:00 AM	9	0	82	82	9	164	0	0	0	
2:00 AM	9	0	55	67	9	122	0	0	0	
3:00 AM	6	0	43	47	6	90	0	0	0	
4:00 AM	9	0	39	33	9	72	0	0	0	
5:00 AM	11	0	62	33	11	95	0	0	0	
6:00 AM	13	0	136	69	13	205	0	0	0	
7:00 AM	24	0	143	133	24	276	0	0	0	
8:00 AM	44	0	305	205	44	510	0	0	0	
9:00 AM	63	0	791	454	63	1245	0	0	1	
10:00 AM	98	0	601	524	98	1125	0	1	1	
11:00 AM	448	0	494	585	448	1079	1	1	1	
12:00 PM	222	0	677	752	222	1429	1	1	1	
1:00 PM	93	0	645	592	93	1237	0	1	1	
2:00 PM	82	0	579	601	82	1180	0	1	1	
3:00 PM	62	0	660	581	62	1241	0	0	1	
4:00 PM	94	0	619	573	94	1192	0	1	1	
5:00 PM	133	0	719	551	133	1270	0	1	1	
6:00 PM	80	0	703	456	80	1159	0	1	1	
7:00 PM	76	0	469	434	76	903	0	1	1	
8:00 PM	145	0	487	312	145	799	0	0	1	
9:00 PM	74	0	310	203	74	513	0	0	0	
10:00 PM	20	0	193	164	20	357	0	0	0	
11:00 PM	13	0	122	87	13	209	0	0	0	
TOTAL	1862	0	9060	7661	1862	16721	2	9	4	
					TOTAL COMPLIANT HOURS:		2	9	4	12
					WARRANT SATISFIED:		NO	YES	NO	NO

**City of Portage**  
**WARRANT #2 -- FOUR-HOUR VOLUMES**  
**MICHIGAN MUTCD 2005**

LOCATION: **Oakland Drive** at **Vincent Avenue**  
COUNT DATE: **5/16/2010**

CONDITIONS:

1. NUMBER OF LANES ON MAJOR APPROACH STREET: **2**
2. NUMBER OF LANES ON MINOR APPROACH STREET: **1**
3. 85TH PERCENTILE SPEED (MPH): **35**

TIME	APPROACH VOLUME (VPH)				MINOR ST. MAJOR ST.		MINOR STREET REQMT	HOURS MEETING WARRANT
	EAST	WEST	NORTH	SOUTH	E + W	N + S		
12:00 AM	34	0	126	123	34	249	1000	0
1:00 AM	9	0	82	82	9	164	1000	0
2:00 AM	9	0	55	67	9	122	1000	0
3:00 AM	6	0	43	47	6	90	1000	0
4:00 AM	9	0	39	33	9	72	1000	0
5:00 AM	11	0	62	33	11	95	1000	0
6:00 AM	13	0	136	69	13	205	1000	0
7:00 AM	24	0	143	133	24	276	1000	0
8:00 AM	44	0	305	205	44	510	340	0
9:00 AM	63	0	791	454	63	1245	100	0
10:00 AM	98	0	601	524	98	1125	120	0
11:00 AM	448	0	494	585	448	1079	130	1
12:00 PM	222	0	677	752	222	1429	80	1
1:00 PM	93	0	645	592	93	1237	100	0
2:00 PM	82	0	579	601	82	1180	110	0
3:00 PM	62	0	660	581	62	1241	100	0
4:00 PM	94	0	619	573	94	1192	110	0
5:00 PM	133	0	719	551	133	1270	90	1
6:00 PM	80	0	703	456	80	1159	110	0
7:00 PM	76	0	469	434	76	903	170	0
8:00 PM	145	0	487	312	145	799	225	0
9:00 PM	74	0	310	203	74	513	340	0
10:00 PM	20	0	193	164	20	357	1000	0
11:00 PM	13	0	122	87	13	209	1000	0
TOTAL	1862	0	9060	7661	1862	16721		3
TOTAL COMPLIANT HOURS:								3
WARRANT SATISFIED:								NO

**City of Portage**  
**WARRANT #3 -- PEAK HOUR VOLUMES (CATEGORY "B")**  
**MICHIGAN MUTCD 2005**

LOCATION: **Oakland Drive** at **Vincent Avenue**  
 COUNT DATE: **5/16/2010**

- CONDITIONS:
1. NUMBER OF LANES ON MAJOR APPROACH STREET: **2**
  2. NUMBER OF LANES ON MINOR APPROACH STREET: **1**
  3. 85TH PERCENTILE SPEED (MPH): **35**

TIME	APPROACH VOLUME (VPH)				MINOR ST.		MAJOR ST.		MINOR STREET REQMT	HOURS MEETING WARRANT
	EAST	WEST	NORTH	SOUTH	E + W	N + S				
12:00 AM	34	0	126	123	34	249	1000	0		
1:00 AM	9	0	82	82	9	164	1000	0		
2:00 AM	9	0	55	67	9	122	1000	0		
3:00 AM	6	0	43	47	6	90	1000	0		
4:00 AM	9	0	39	33	9	72	1000	0		
5:00 AM	11	0	62	33	11	95	1000	0		
6:00 AM	13	0	136	69	13	205	1000	0		
7:00 AM	24	0	143	133	24	276	1000	0		
8:00 AM	44	0	305	205	44	510	525	0		
9:00 AM	63	0	791	454	63	1245	215	0		
10:00 AM	98	0	601	524	98	1125	255	0		
11:00 AM	448	0	494	585	448	1079	275	1		
12:00 PM	222	0	677	752	222	1429	170	1		
1:00 PM	93	0	645	592	93	1237	215	0		
2:00 PM	82	0	579	601	82	1180	230	0		
3:00 PM	62	0	660	581	62	1241	215	0		
4:00 PM	94	0	619	573	94	1192	230	0		
5:00 PM	133	0	719	551	133	1270	205	0		
6:00 PM	80	0	703	456	80	1159	230	0		
7:00 PM	76	0	469	434	76	903	330	0		
8:00 PM	145	0	487	312	145	799	385	0		
9:00 PM	74	0	310	203	74	513	525	0		
10:00 PM	20	0	193	164	20	357	1000	0		
11:00 PM	13	0	122	87	13	209	1000	0		
<b>TOTAL</b>	<b>1862</b>	<b>0</b>	<b>9060</b>	<b>7661</b>	<b>1862</b>	<b>16721</b>		<b>2</b>		
<b>TOTAL COMPLIANT HOURS:</b>										
<b>WARRANT SATISFIED:</b>										
<b>YES</b>										



**City of Portage**  
**4-WAY STOP WARRANT EVALUATION**  
**MICHIGAN MUTCD 2005**

**INTRODUCTION**

This review is based on the methodology presented in the Michigan Manual of Uniform Traffic Control Devices (MMUTCD), 2005 edition, as amended by the Michigan Department of Transportation. Please refer to **Section 2B.07** (Multiway Stop Applications) in the manual.

The intersection of **Oakland Drive** and **Vincent Avenue** has the following characteristics:

The 85th percentile speed on **Oakland Drive** is: **35** MPH.  
Existing Traffic Control is: **Vincent Drive Traffic Stops for Oakland Drive Traffic.**  
24 hour entering vehicles = **18583** Date of Count: **5/16/2010**  
The Estimated annual traffic volume entering the intersection is **6,782,795** vehicles.

A "Multiway Stop" installation is useful as a safety measure at some locations. It should ordinarily be used only where the volume of traffic on the intersecting roads is approximately equal.

The traffic splits are as follows:

**Oakland Drive** **89.98%**  
**Vincent Avenue** **10.02%**

A traffic control signal is more satisfactory for an intersection with a heavy traffic volume (see signal warrant analysis).

**WARRANT ANALYSIS**

*The following Criteria should be considered in the engineering study for a multiway STOP sign installation:*

**A.** Where traffic control signals are justified, the multiway stop sign is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.

(See Signal Warrant Analysis)

Total number of warrants satisfied = **2**  
Warrant Number 1 is **NOT APPLICABLE**

**B.** A crash problem, as indicated by 5 or more reported crashes of a type susceptible of correction by a multiway stop installation in a 12 month period. Such accidents include right- and left-turn collisions as well as right-angle collisions.

Total number of accidents = **15**  
Average number of accidents = **2.7**  
Number of correctable accidents = **2** (highest)  
Accident Rate is **0.39** per million vehicles entering the intersection.

**Part B.** is **NOT SATISFIED**

**C. Minimum volumes:**

- 1) The total vehicular volume entering the intersection from major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day, and
- 2) The combined vehicular and pedestrian volume from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same eight hours, with an average delay to minor street vehicular traffic of at least 30 seconds per vehicle during the maximum hour, but
- 3) if the 85th percentile approach speed of the major street traffic exceeds 40 miles per hour, the minimum vehicular volume warrant are 70 percent of the above requirements.

**Part C.1 is** SATISFIED  
**Part C.2 is** NOT SATISFIED  
**Part C.3 is** NOT IN EFFECT

**Warrant Part C is** NOT SATISFIED

**D.** While no single criterion is satisfied, but where Criteria B, C.1 and C.2 are all satisfied to 80 percent of the intersection.

**Part B. is** NOT SATISFIED  
**Part C.1 is** SATISFIED  
**Part C.2 is** NOT SATISFIED

**Part D is** NOT SATISFIED

**CONCLUSIONS**

**Warrant Results:**

**Part A:** NOT APPLICABLE  
**Part B:** NOT SATISFIED  
**Part C:** NOT SATISFIED  
**Part D.** NOT SATISFIED

Warrant analysis results show that a multiway Stop **is not** justified for this intersection.

**City of Portage**  
**TRAFFIC SIGNAL WARRANT EVALUATION**  
**MICHIGAN MUTCD - 2005**

**INTRODUCTION**

This Review is based on the methodology presented in the Michigan Manual of Uniform Traffic Control Devices (**MMUTCD**), **2005**, as amended by the Michigan Department of Transportation. Please refer to part 4C (Signal Warrants) in the manual.

The intersection of **Oakland Drive Vincent Avenue** has the following characteristics:

The 85th percentile speed on the main street is: **35** MPH.  
Existing Traffic Control is: **Vincent Drive Traffic Stops for Oakland Drive Traffic.**  
Daily traffic volume of **18,583** was counted on **16-May-10**  
Estimated annual traffic volume is **6,782,795** vehicles.

**1. EIGHT HOUR VOLUME**

The Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The interruption of Continuous Traffic, Condition B, is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a major intersecting street suffers excessive delay or conflict in entering or crossing the major street. It is intended that Warrant 1 be treated as a single warrant. If Condition A is satisfied then the criteria for warrant 1 is satisfied and Condition B and the combination of Condition A and B are not needed or vice versa

Number of hours traffic required =	8
Condition A Traffic Present =	2
Condition B Traffic Present =	9
<b>Warrant Number 1 is</b>	<b>SATISFIED</b>

**2. FOUR-HOUR VEHICULAR VOLUME**

The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.

Number of hours traffic required =	4
Number of hours traffic present =	3
<b>Warrant Number 2 is</b>	<b>NOT SATISFIED</b>

**3. PEAK HOUR VOLUME**

The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a

minimum of 1 hour of an average day, the minor street traffic suffers undue delay when entering or crossing the major street.

This signal warrant shall be applied in only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.

The need for a traffic control signal shall be considered if an engineering study finds that the criteria in **either of the following two (A or B) categories are met:**

**A.** If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:

**1.** The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hour for a one-lane approach; or 5 vehicle-hour for a two-lane approach, and

**2.** The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and

**3.** The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches.

**B.** The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.

Category A = NOT APPLICABLE

Category B = 2

Warrant Number 3 is SATISFIED

#### **4. PEDESTRIAN VOLUME**

This warrant is similar to warrant 1B, but is intended to identify locations where additional gaps are needed to provide safe pedestrian crossings of a major street. A signal installed solely for pedestrian should use a fully actuated controller and, if in a signal system, be coordinated with that system. A signal installed only under this warrant shall include pedestrian push buttons for pedestrians crossing the major street. When installed at a midblock location, additional restrictions may apply. For further information see Section 4C.05.

Pedestrian Volume for each of any 4 hours = 0

Pedestrian Volume during any 1 hour = 0

Number of gaps per hour in major street traffic = 0

Warrant Number 3 is NOT APPLICABLE

#### **5. SCHOOL CROSSING**

An established school crossing may require signal protection if an engineering study reveals that the number of adequate gaps is less than the number of minutes during the period of crossing usage, with a minimum of 20 students during the highest crossing hour. See Section 7A.03 for details.

Warrant Number 5 is NOT APPLICABLE

**6. COORDINATED SIGNAL SYSTEM**

Progressive movement in a coordinated signal system sometimes necessitates installing traffic control signals at intersections where they would otherwise be needed in order to maintain proper platooning of vehicles.

The coordinated Signal System signal warrant **should not** be applied where the resultant spacing of traffic control signals would be less than 1,000-feet.

**Warrant Number 6 is NOT APPLICABLE**

**7. CRASH EXPERIENCE**

The Crash Experience signal warrant conditions are intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal. Many traffic signals are installed on the premise of reducing accidents. However, it must be recognized that signals may actually increase some types of accidents. The result is often contrary to the intended goal. Three criterion must be met before a signal is installed solely to reduce accidents:

- (A) Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and
- (B) There have been five or more reported crashes of types susceptible to correction by traffic control signal, have occurred within a 12-month period;
- (C) For each of any 8 hours, the vehicle per hour given in both of the 80 percent columns of Condition A or Condition B in Table 4C-1 (See Section 4C.02) exists on the major-street and the higher-volume minor-street approach respectively or the volume of pedestrian traffic is not less than 80 percent of the requirement specified in the Pedestrian Volume warrant.

**CRITERIA B.**

Total number of accidents =	15.0	
Average number of accidents =	2.7	
Number of correctable accidents =	2.0	(highest)
Accident Rate is	0.39	per million vehicles entering.

**CRITERIA C.**

Number of hours required for Condition A =	8
Number of hours present for Condition A =	4
Number of hours required for Condition B =	8
Number of hours present for Condition B =	12
Pedestrian Volume required =	100 or 190
Pedestrian Volume present =	0

**Warrant Number 7 is NOT SATISFIED**

**8. ROADWAY NETWORK**

Installing a traffic control signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network. The need for a traffic control signal shall be considered

if an engineering study finds that the common intersection of two or more major routes fulfill the criteria. Such a signal may be installed at the intersection of **two major routes** as defined by Section 4C.09 of the MMUTCD, with a total volume of 1000 vehicles entering during the typical peak weekday hour, and has five year projected volumes which meet one or more of Warrants 1,2 and 3 or at an intersection which has existing or immediately projected volumes of 1000 vehicles for each of any five hours on a Weekend.

**Warrant Number 8 is**

**NOT APPLICABLE**

***SUMMARY/CONCLUSIONS***

Warrant Number 1:	SATISFIED
Warrant Number 2:	NOT SATISFIED
Warrant Number 3:	SATISFIED
Warrant Number 4:	NOT APPLICABLE
Warrant Number 5:	NOT APPLICABLE
Warrant Number 6:	NOT APPLICABLE
Warrant Number 7:	NOT SATISFIED
Warrant Number 8:	NOT APPLICABLE

Total number of warrants satisfied = 2

**City of Portage**  
**Signal Warrant Analysis Summary**  
**Michigan MUTCD - 2005 Edition**

Major Street: Oakland Drive  
 Minor Street: Vincent Avenue  
 Date of Counts: 16-May-10

<b>Warrant No.</b>	<b>Warrant Description</b>	<b>Analysis Result</b>		<b>Remarks</b>
1	Eight-Hour Vehicular Volume	SATISFIED	1	
2	Four-Hour Vehicular Volume	NOT SATISFIED	0	
3	Peak Hour	SATISFIED	1	
4	Pedestrian Volume	NOT APPLICABLE	0	
5	School Crossing	NOT APPLICABLE	0	
6	Coordinated Signal System	NOT APPLICABLE	0	
7	Crash Experience	NOT SATISFIED	0	
8	Roadway Network	NOT APPLICABLE	0	

2

# Standard Crash Report - Intersection

## Portage

Report Module: Safety Management Analysis

Today's Date: Thursday, August 19, 2010

Dates: 1/1/2007 to 12/31/2009

Intersection: MP: 4.629 - Vincent Ave & Oakland Dr

Radius: 0.03 miles

Sort Order: PR No., Milepoint, Date of Crash

Physical Road(s) comprising intersection: MP: 4.629 - Vincent Ave & Oakland Dr

<u>PR Number</u>	<u>Road Name</u>	<u>Milepoint</u>
3392465	Oakland Dr	4.629
13702	Vincent Ave	0.747

**Report Filter**

<b>Field Name</b>	<b>Operator</b>	<b>Value(s)</b>
Crash Type	=	Angle Turn,Angle Drive,Rear End Left Turn,Side-Swipe Same,Rear-End Straight

# Standard Crash Report - Intersection

MilePoint	UD10 #	City/Township	UD-10 Crash Location	UD-10 Crossroad Reference	Crash Type	Crash Severity	Date	Hour of Occurrence	Number of:		Weekday	Environmental Condition		Relationship On Road
									Veh.	Occup.		Weather	Lighting	

**PR Number: 3392465**      **Road Name: Oakland Dr**

4.603	7599778	Portage	150' S	VINCEN	Side-Swipe Same	PDO	5/9/2005	06PM-07PM	2	9	0	Monday	Cloudy	Daylight	Dry	On Road
4.628	9545738	Portage	6' S	VINCEN	Head-On Left-Turn	PDO	3/9/2008	02PM-03PM	2	2	0	Sunday	Clear	Daylight	Dry	On Road
4.629	8226369	Portage	528' N	194	Side-Swipe Same	PDO	10/2/2005	07PM-08PM	2	2	0	Sunday	Rain	Dusk	Wet	On Road
4.629	8582401	Portage	0' X	VINCEN	Angle Turn	PDO	4/21/2006	NOON-01PM	2	2	0	Friday	Clear	Daylight	Dry	On Road
4.629	8946479	Portage	0' X	VINCEN	Head-On Left-Turn	PDO	11/11/2006	11AM-NOON	2	3	0	Saturday	Cloudy	Daylight	Wet	On Road
4.629	9414477	Portage	15' W	VINCEN	Angle Turn	PDO	11/24/2007	02PM-03PM	2	2	0	Saturday	Clear	Daylight	Dry	On Road
4.629	000000	Portage	10' E	VINCEN	Angle Turn	PDO	7/1/2009	05PM-06PM	2	3	0	Wednesday	Rain	Daylight	Wet	On Road
4.629	000000	Portage	25' E	VINCEN	Angle Turn	PDO	11/20/2009	07AM-08AM	2	2	0	Friday	Rain	Dark	Wet	On Road
4.631	8225280	Portage	10' N	VINCEN	Side-Swipe Same	PDO	12/7/2005	06PM-07PM	2	2	0	Wednesday	Clear	Dark	Dry	On Road
4.633	9545916	Portage	20' N	VINCEN	Angle Turn	PDO	6/3/2008	03PM-04PM	2	3	0	Tuesday	Rain	Daylight	Wet	On Road
4.635	000000	Portage	30' N	VINCEN	Side-Swipe Same	Injury	2/23/2009	11AM-NOON	2	4	1	Monday	Cloudy	Daylight	Wet	On Road

**Total crashes for PR 3392465--Oakland Dr: 11**

**Total Fatal Crashes: 0    Total Injury Crashes: 1    Total PDO Crashes: 10**

**PR Number: 0013702**      **Road Name: Vincent Ave**

0.742	000000	Portage	25' NW	OAKLAND	Side-Swipe Same	PDO	1/26/2009	10AM-11AM	2	2	0	Monday	Cloudy	Daylight	Dry	On Road
-------	--------	---------	--------	---------	-----------------	-----	-----------	-----------	---	---	---	--------	--------	----------	-----	---------

**Total crashes for PR 13702--Vincent Ave: 1**

**Total Fatal Crashes: 0    Total Injury Crashes: 0    Total PDO Crashes: 1**

**Total crashes for Intersection 39011178: 12**

**Total Fatal Crashes: 0    Total Injury Crashes: 1    Total PDO Crashes: 11**

Authority: 1949 PA 300, Sec.257.622  
Compliance: Required MSP UD-10E  
Penalty: \$100 and/or 90 days (Rev 11/2006)

External # 119214  
Crash ID

Page 1  
Incident # File Class : 93001

# STATE OF MICHIGAN TRAFFIC CRASH REPORT

ORI: <b>MI3967800</b>	Department Name <b>Portage Police Department</b>	
Crash Date <b>04/19/2010</b>	Crash Time <b>11:00</b>	No. of Units <b>02</b>
Crash Type <b>Angle</b>	Special Circumstances <input type="checkbox"/> School Bus <input type="checkbox"/> None <input type="checkbox"/> Deer <input type="checkbox"/> OHR and Run <input type="checkbox"/> Fleeing Police	
County <b>39 - Kalamazoo</b>	Traffic Control <b>Stop sign</b>	Relation to Roadway <b>On Road</b>
City/Twsp <b>80 - Portage</b>	Construction Zone (if applicable) Type Lane Closed Activity	Weather <b>Clear</b>
Special Checks <input type="checkbox"/> Fatal <input type="checkbox"/> Non-Traffic Area <input type="checkbox"/> ORV/Snowmobile		Area <b>07 - NON-FRWY in Intersection</b>
Light <b>Daylight</b>		Road Condition <b>Dry</b>
Total Lanes <b>05</b>	Speed Limit <b>35</b>	Posted <b>Yes</b>

Prefix <b>OAKLAND</b>	Road Name <b>OAKLAND</b>	Road Type <b>DR</b>	Suffix <b>Divided Roadway</b>
Distance (ft.) <b>10.0 Feet S</b>	Traffic Way <b>01 - Not physically divided</b>		Access Control <b>01 - No access control</b>
Prefix <b>VINCENT</b>	Intersecting Road <b>VINCENT</b>	Road Type <b>AVE</b>	Suffix <b>Divided Roadway</b>

Unit Number <b>01</b>	Unit Known <b>Yes</b>	State <b>MI</b>	Driver License Number <b>[REDACTED]</b>	Date of Birth (Age) <b>06/29/1983 (27)</b>	License Type <input type="checkbox"/> Operator <input type="checkbox"/> Cycle <input type="checkbox"/> Farm <input type="checkbox"/> Recreational	Endorsements <input type="checkbox"/> OHR and Run <input type="checkbox"/> Deer <input type="checkbox"/> Fleeing Police	Sex <b>M</b>	Total Occupants <b>01</b>	Hazardous Action <b>09 - Improper turn</b>
Unit Type <b>MV</b>	Driver Information <b>[REDACTED]</b>				Injury <b>O</b>	Position <b>01</b>	Restraint <b>04</b>	Hospital <b>None</b>	
Driver Condition <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 99				Interlock <b>No</b>	Ejected <b>No</b>	Trapped <b>No</b>	Airbag Deployed <b>No</b>	Ambulance <b>None</b>	
Alcohol Test Type <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Field <input type="checkbox"/> Refused <input type="checkbox"/> OBPB				Test Results <input type="checkbox"/> Not Offered <input type="checkbox"/> Breath <input type="checkbox"/> Blood <input type="checkbox"/> Urine		Drugs Test Type <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Blood <input type="checkbox"/> Urine		Citation Issued <input type="checkbox"/> Hazardous <input type="checkbox"/> Other	
Vehicle Registration <b>[REDACTED]</b>	State <b>MI</b>	Insurance/Policy # <b>C</b>	Towed To/By # <b>NA</b>		Special Vehicles	Private Trailer Type	Vehicle Defect		
VIN <b>[REDACTED]</b>	Vehicle Description <b>FORD</b>	Make <b>FORD</b>	Model <b>PU</b>	Color <b>BLK</b>	Year <b>1990</b>	Vehicle Type <b>Pickup truck</b>			
Location of Greatest Damage <b>08</b>	First Impact <b>08</b>	Extent of Damage <b>03</b>	Driveable <b>Yes</b>	Vehicle Direction <b>E</b>	Vehicle Use <b>01 - Private</b>	Action Prior <b>20 - Avoiding vehcl front/back</b>			
Sequence of Events <b>(*) indicates MOST harmful event</b>		First <b>17 - Motor veh in transport</b>	Second	Third	Fourth				

PASSENGERS	Passenger Information	Date of Birth (Age)	Sex	Position	Restraint	Hospital
		Injury	Airbag Deployed	Ejected	Trapped	Ambulance
	Passenger Information	Date of Birth (Age)	Sex	Position	Restraint	Hospital
		Injury	Airbag Deployed	Ejected	Trapped	Ambulance
	Passenger Information	Date of Birth (Age)	Sex	Position	Restraint	Hospital
	Injury	Airbag Deployed	Ejected	Trapped	Ambulance	
Passenger Information	Date of Birth (Age)	Sex	Position	Restraint	Hospital	
	Injury	Airbag Deployed	Ejected	Trapped	Ambulance	
Passenger Information	Date of Birth (Age)	Sex	Position	Restraint	Hospital	
	Injury	Airbag Deployed	Ejected	Trapped	Ambulance	

Carrier Information		Carrier Source	GVWR	ICCMC	USDOT	MPSC
Interstate/Intrastate	Vehicle Type	Type and Axle Per Unit First Second Third Fourth	Cargo Body Type	Medical Card	Hazardous Material <input type="checkbox"/> Placard <input type="checkbox"/> Cargo Spill	ID #
Driver's CDL Type		Endorsements <input type="checkbox"/> OH <input type="checkbox"/> OP <input type="checkbox"/> OT <input type="checkbox"/> ON <input type="checkbox"/> OS <input type="checkbox"/> OX	CDL Exempt <input type="checkbox"/> OFarm <input type="checkbox"/> OOther	CDL Restrictions <input type="checkbox"/> O28 <input type="checkbox"/> O29 <input type="checkbox"/> O30 <input type="checkbox"/> O35 <input type="checkbox"/> O36		

Owner Information	Owner Information
Person Advised of Damaged Traffic Control Contact Name Contact Date Contact Time	Damaged Property Owner and Phone Public

Authority: 1949 PA 300, Sec.257.622  
 Compliance: Required MSP UD-10E  
 Penalty: \$100 and/or 90 days (Rev 11/2006)

External # 117820  
 Crash ID

Page 1  
 Incident # File Class : 93001  
 Incident Disposition  
 Closed  
 Reviewer  
 Sgt. M COLLIER (10721)

# STATE OF MICHIGAN TRAFFIC CRASH REPORT

ORI: MI3967800		Department Name Portage Police Department	
Crash Date 04/27/2010	Crash Time 16:29	No. of Units 02	Crash Type Angle
County 39 - Kalamazoo	Traffic Control None	Relation to Roadway On Road	Special Circumstances None <input type="checkbox"/> School Bus <input type="checkbox"/> Hit and Run <input type="checkbox"/> Deer <input type="checkbox"/> Fleeing Police
City/Twsp 80 - Portage	Construction Zone (if applicable) Type	Lane Closed	Activity
Light Daylight		Road Condition Dry	Special Checks <input type="checkbox"/> Fatal <input type="checkbox"/> Non-Traffic Area <input type="checkbox"/> ORV/Snowmobile
Area 10 - NON-FRWY Straight roadway		Total Lanes 06	Speed Limit 35
Posted Yes			

Prefix	Road Name OAKLAND	Road Type DR	Suffix	Divided Roadway
Distance (ft.) 10.0 Feet S	Traffic Way 01 - Not physically divided		Access Control 01 - No access control	
Prefix	Intersecting Road VINCENT	Road Type AVE	Suffix	Divided Roadway

Unit Number 01	Unit Known Yes	State MI	Driver License Number	Date of Birth (Age) 12/10/1984 (25)	License Type Operator	Endorsements None	Sex F	Total Occupants 01	Hazardous Action 09 - Improper turn
Unit Type MV	Driver Information			Injury O	Position 01	Restraint 04	Hospital None		
Driver Condition				Interlock No	Ejected	Trapped	Airbag Deployed No	Ambulance None	
Alcohol <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Field <input type="checkbox"/> Refused <input type="checkbox"/> OPBT <input type="checkbox"/> Not Offered <input type="checkbox"/> Breath <input type="checkbox"/> Blood <input type="checkbox"/> Urine				Test Results		Drugs <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Test <input type="checkbox"/> Blood <input type="checkbox"/> Urine	Citation Issued <input type="checkbox"/> Hazardous <input type="checkbox"/> Other		
Vehicle Registration	State MI	Insurance	Towed To/By #		Special Vehicles	Private Trailer Type	Vehicle Defect		
VIN	Vehicle Description VOLKSWAGEN	Make JETTA	Model	Color BLK	Year 1999	Vehicle Type Passenger Car			
Location of Greatest Damage 03	First Impact 03	Extent of Damage 02	Driveable Yes	Vehicle Direction W	Vehicle Use 01 - Private	Action Prior 02 - Turning left			
Sequence of Events			First	Second	Third	Fourth			

(\*) indicates MOST harmful event      • 17 - Motor veh in transport

PASSENGERS	Passenger Information	Date of Birth (Age)	Sex	Position	Restraint	Hospital
		Injury	Airbag Deployed	Ejected	Trapped	Ambulance
	Passenger Information	Date of Birth (Age)	Sex	Position	Restraint	Hospital
		Injury	Airbag Deployed	Ejected	Trapped	Ambulance
	Passenger Information	Date of Birth (Age)	Sex	Position	Restraint	Hospital
		Injury	Airbag Deployed	Ejected	Trapped	Ambulance

Carrier Information		Carrier Source	GWR	JCCMC	USDOT	MPSC
Driver's CDL Type		Endorsements OH OP OT ON OS OX		CDL Exempt OFarm OOther	CDL Restrictions O28 O29 O30 O35 O36	
Interstate/Intrastate	Vehicle Type	Type and Axle Per Unit First Second Third Fourth	Cargo Body Type	Medical Card	Hazardous Material OPlacard OCargo Spill	ID # Class #

OWNER	Owner Information	Owner Information
-------	-------------------	-------------------

Person Advised of Damaged Traffic Control	Damaged Property	Public
Contact Name	Owner and Phone	
Contact Date		
Contact Time		

Authority: 1949 PA 300, Sec.257.622  
Compliance: Required MSP UD-10E  
Penalty: \$100 and/or 90 days (Rev 11/2006)

External # 109612  
Crash ID

Page 1  
Incident #  
File Class

# STATE OF MICHIGAN TRAFFIC CRASH REPORT

ORI: MI3967800	Department Name: Portage Police Department							
Crash Date: 02/09/2010	Crash Time: 15:09	No. of Units: 02	Crash Type: Side Swipe, Same	Special Circumstances: <input type="checkbox"/> School Bus <input checked="" type="checkbox"/> None <input type="checkbox"/> Hit and Run <input type="checkbox"/> Deer <input type="checkbox"/> Fleeing Police	Special Checks: <input type="checkbox"/> Fatal <input type="checkbox"/> Non-Traffic Area <input type="checkbox"/> ORV/Snowmobile			
County: 39 - Kalamazoo	Traffic Control: Signal	Relation to Roadway: On Road	Special Study: None	Weather: Snow/Blowing Snow	Area: 07 - NON-FRWY in Intersection			
City/Twsp: 80 - Portage	Construction Zone (if applicable) Type:	Lane Closed:	Activity:	Light: Daylight	Road Condition: Icy	Total Lanes: 05	Speed Limit: 35	Posted: Yes

Prefix: OAKLAND	Road Name: OAKLAND	Road Type: DR	Suffix: S	Divided Roadway: S
Distance (ft.): 75.0 Feet S	Traffic Way: 01 - Not physically divided	Access Control: 01 - No access control		
Prefix: VINCENT	Intersecting Road: VINCENT	Road Type: AVE	Suffix:	Divided Roadway:

Unit Number: 01	Unit Known: Yes	State: MI	Driver License Number:	Date of Birth (Age): 05/15/1978 (32)	License Type: <input checked="" type="checkbox"/> Operator <input type="checkbox"/> Chauffeur <input type="checkbox"/> Moped	Endorsements: <input type="checkbox"/> Cycle <input type="checkbox"/> Farm <input type="checkbox"/> Recreation	Sex: M	Total Occupants: 01	Hazardous Action: 01 - Speed too fast
Unit Type: MV	Driver Information:	Injury: O	Position: 01	Restraint: 04	Hospital: None				
Driver Condition: <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 99	Interlock: No	Ejected:	Trapped:	Airbag Deployed: No	Ambulance: None				
Alcohol Test Type: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Field	<input type="checkbox"/> Refused <input type="checkbox"/> PBT	<input type="checkbox"/> Not Offered <input type="checkbox"/> Breath <input type="checkbox"/> Blood <input type="checkbox"/> Urine	Drugs Test Type: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Blood <input type="checkbox"/> Urine	Test Results:	Citation Issued: <input type="checkbox"/> Hazardous <input type="checkbox"/> Other				
Vehicle Registration: MI	State: MI	Insurance/Policy #:	Towed To/By #: NONE	Special Vehicles:	Private Trailer Type:	Vehicle Defect:			
VIN:	Vehicle Description:	Make: LINCOLN	Model: 4DR	Color: WHI	Year: 2001	Vehicle Type: Passenger Car			
Location of Greatest Damage: 03	First Impact: 03	Extent of Damage: 01	Driveable: Yes	Vehicle Direction: N	Vehicle Use: 01 - Private	Action Prior: 02 - Turning left			
Sequence of Events: First	Second	Third	Fourth						
(* indicates MOST harmful event) • 17 - Motor veh in transport									

PASSENGERS	Passenger Information	Date of Birth (Age):	Sex:	Position:	Restraint:	Hospital:
	Injury:	Airbag Deployed:	Ejected:	Trapped:	Ambulance:	
	Passenger Information	Date of Birth (Age):	Sex:	Position:	Restraint:	Hospital:
	Injury:	Airbag Deployed:	Ejected:	Trapped:	Ambulance:	
	Passenger Information	Date of Birth (Age):	Sex:	Position:	Restraint:	Hospital:
	Injury:	Airbag Deployed:	Ejected:	Trapped:	Ambulance:	
Passenger Information	Date of Birth (Age):	Sex:	Position:	Restraint:	Hospital:	
Injury:	Airbag Deployed:	Ejected:	Trapped:	Ambulance:		
Passenger Information	Date of Birth (Age):	Sex:	Position:	Restraint:	Hospital:	
Injury:	Airbag Deployed:	Ejected:	Trapped:	Ambulance:		

Carrier Information	Carrier Source: GVWR	ICCMC	USDOT	MPSC			
Interstate/Intrastate:	Vehicle Type:	Type and Axle Per Unit: First, Second, Third, Fourth	Cargo Body Type:	Medical Card:	Hazardous Material: <input type="checkbox"/> Placard <input type="checkbox"/> Cargo Spill	ID #:	Class #:
Driver's CDL Type:	Endorsements: OH, OP, OT, ON, OS, OX	CDL Exempt: <input type="checkbox"/> Farm <input type="checkbox"/> Other	CDL Restrictions: 028, 029, 030, 035, 036				

Owner Information	Owner Information
Person Advised of Damaged Traffic Control: Contact Name, Contact Date, Contact Time	Damaged Property: Owner and Phone, Public

# APPENDIX “F”

2005 Edition, Michigan Manual of Uniform Traffic Control  
Devices, Section 4C.01

## CHAPTER 4C. TRAFFIC CONTROL SIGNAL NEEDS STUDIES

### Section 4C.01 Studies and Factors for Justifying Traffic Control Signals

#### Standard:

An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location.

The investigation of the need for a traffic control signal shall include an analysis of the applicable factors contained in the following traffic signal warrants and other factors related to existing operation and safety at the study location:

**Warrant 1, Eight-Hour Vehicular Volume.**

**Warrant 2, Four-Hour Vehicular Volume.**

**Warrant 3, Peak Hour.**

**Warrant 4, Pedestrian Volume.**

**Warrant 5, School Crossing.**

**Warrant 6, Coordinated Signal System.**

**Warrant 7, Crash Experience.**

**Warrant 8, Roadway Network.**

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

#### Support:

Sections 8D.07 and 10D.05 contain information regarding the use of traffic control signals instead of gates and/or flashing light signals at highway-railroad grade crossings and highway-light rail transit grade crossings, respectively.

#### Guidance:

A traffic control signal should not be installed unless one or more of the factors described in this Chapter are met.

A traffic control signal should not be installed unless an engineering study indicates that installing a traffic control signal will improve the overall safety and/or operation of the intersection.

A traffic control signal should not be installed if it will seriously disrupt progressive traffic flow.

The study should consider the effects of the right-turn vehicles from the minor-street approaches. Engineering judgment should be used to determine what, if any, portion of the right-turn traffic is subtracted from the minor-street traffic count when evaluating the count against the above signal warrants.

Engineering judgment should also be used in applying various traffic signal warrants to cases where approaches consist of one lane plus one left-turn or right-turn lane. The site-specific traffic characteristics dictate whether an approach should be considered as one lane or two lanes. For example, for an approach with one lane for through and right-turning traffic plus a left-turn lane, engineering judgment could indicate that it should be considered a one-lane approach if the traffic using the left-turn lane is minor. In such a case, the total traffic volume approaching the intersection should be applied against the signal warrants as a one-lane approach. The approach should be considered two lanes if approximately half of the traffic on the approach turns left and the left-turn lane is of sufficient length to accommodate all left-turn vehicles.

Similar engineering judgment and rationale should be applied to a street approach with one lane plus a right-turn lane. In this case, the degree of conflict of minor-street right-turn traffic with traffic on the major street should be considered. Thus, right-turn traffic should not be included in the minor-street volume if the movement enters the major street with minimal conflict. The approach should be evaluated as a one-lane approach with only the traffic volume in the through/left-turn lane considered.

At a location that is under development or construction and where it is not possible to obtain a traffic count that would represent future traffic conditions, hourly volumes should be estimated as part of an engineering study for comparison with traffic signal warrants. Except for locations where the engineering study uses the satisfaction of Warrant 8 to justify a signal, a traffic control signal installed under projected conditions should have an engineering study done within 1 year of putting the signal into stop-and-go operation to determine if the signal is justified. If not justified, the signal should be taken out of stop-and-go operation or removed.

For signal warrant analysis, a location with a wide median, even if the median width is greater than 9 m (30 ft), should be considered as one intersection.

to maximize the ability of the traffic control signal to satisfy current traffic demands.

- C. They reduce the frequency and severity of certain types of crashes, especially right-angle collisions.
- D. They are coordinated to provide for continuous or nearly continuous movement of traffic at a definite speed along a given route under favorable conditions.
- E. They are used to interrupt heavy traffic at intervals to permit other traffic, vehicular or pedestrian, to cross.

Traffic control signals are often considered a panacea for all traffic problems at intersections. This belief has led to traffic control signals being installed at many locations where they are not needed, adversely affecting the safety and efficiency of vehicular, bicycle, and pedestrian traffic.

Traffic control signals, even when justified by traffic and roadway conditions, can be ill-designed, ineffectively placed, improperly operated, or poorly maintained. Improper or unjustified traffic control signals can result in one or more of the following disadvantages:

- A. Excessive delay;
- B. Excessive disobedience of the signal indications;
- C. Increased use of less adequate routes as road users attempt to avoid the traffic control signals; and
- D. Significant increases in the frequency of collisions (especially rear-end collisions).

#### **Section 4B.04 Alternatives to Traffic Control Signals**

Guidance:

Since vehicular delay and the frequency of some types of crashes are sometimes greater under traffic signal control than under STOP sign control, consideration should be given to providing alternatives to traffic control signals even if one or more of the signal warrants has been satisfied.

Option:

These alternatives may include, but are not limited to, the following:

- A. Installing signs along the major street to warn road users approaching the intersection;
- B. Relocating the stop line(s) and making other changes to improve the sight distance at the intersection;
- C. Installing measures designed to reduce speeds on the approaches;
- D. Installing a flashing beacon at the intersection to supplement STOP sign control;
- E. Installing flashing beacons on warning signs in advance of a STOP sign controlled intersection on major and/or minor-street approaches;
- F. Adding one or more lanes on a minor-street approach to reduce the number of vehicles per lane on the approach;
- G. Revising the geometrics at the intersection to channelize vehicular movements and reduce the time required for a vehicle to complete a movement, which could also assist pedestrians;
- H. Installing roadway lighting if a disproportionate number of crashes occur at night;
- I. Restricting one or more turning movements, perhaps on a time-of-day basis, if alternate routes are available;
- J. If the warrant is satisfied, installing multiway STOP sign control;
- K. Installing a roundabout intersection; and
- L. Employing other alternatives, depending on conditions at the intersection.

#### **Section 4B.05 Adequate Roadway Capacity**

Support:

The delays inherent in the alternating assignment of right-of-way at intersections controlled by traffic control signals can frequently be reduced by widening the major roadway, the minor roadway, or both roadways.

Widening the minor roadway often benefits the operations on the major roadway, because it reduces the green time that must be assigned to minor-roadway traffic. In urban areas, the effect of widening can be achieved by eliminating parking on intersection approaches. It is desirable to have at least two lanes for moving traffic on each approach to a signalized location. Additional width on the departure side of the intersection, as well as on the approach side, will sometimes be needed to clear traffic through the intersection effectively.

Guidance:

Adequate roadway capacity should be provided at a signalized location. Before an intersection is widened, the additional green time pedestrians need to cross the widened roadways should be considered to determine if it will exceed the green time saved through improved vehicular flow.