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The Traffic Committee meeting was called to order at 7:32 p.m. in the Lower Level Conference Room of Troy City Hall on November 20, 1996 by Chairman Charles Solis.

ITEM 1: ROLL CALL

PRESENT: Ted Halsey
 Jan Hubbell
 Charles Solis
 Peggie Perry
 John Diefenbaker

ABSENT: Arthur Cotsonika
 Alan Weisberg

Also present were the following:

Item 4: Tom Peerey, 2185 Derby
 Dale Schairer, 2662 Derby, Birmingham
 Janet Schairer, 2662 Derby, Birmingham
 Doris Raymoure, 2689 Derby
 Al Vannini, 2125 Derby
 Paul Hoef, 2802 Derby, Birmingham
 Jerry Dreer, 2794 Derby, Birmingham
 John Giroulx, 2075 Derby
 Mike Holowecki, 2025 Derby
 Clark Harris, 2305 Derby

Item 7: Michael Grube, 4076 Middlebury
 Cathy Grube, 4076 Middlebury
 Josephine Kallioinen, 4076 Middlebury
 Mark Bean, 4142 Ramblewood
 Sandy Hudkins, 4066 Middlebury
 Bob Hudkins, 4066 Middlebury
 Cynthia Donnellon, 4082 Middlebury
 James Putti, 4069 Middlebury
 Anita Putti, 4069 Middlebury
 Mike O'Bryan, 4072 Middlebury

Item 8: Barbara Tracht, Carlson Management, 2800 Livernois

and John Abraham, Traffic Engineer
 Richard F. Beaubien, Traffic Consultant
 Lt. Gerard Scherlinck, Traffic Safety Unit
 Lt. Robert Matlick, Fire Department

Moved by Halsey
Supported by Solis

Recommend that Mr. Cotsonika be excused because of a prior commitment.

YEAS: 5

NAYS: 0

ABSENT: 2

MOTION CARRIED

ITEM 2: MINUTES - SEPTEMBER 19, 1996

Moved by Perry
Supported by Hubbell

Recommend that the minutes of the September 19, 1996 meeting be approved as printed.

YEAS: 5

NAYS: 0

ABSENT: 2

MOTION CARRIED

ITEM 3: VISITORS' TIME

No one appeared to address the Committee on any items not on the agenda.

Moved by Diefenbaker
Supported by Perry

Recommend that the items be taken in the following order: 4, 7, 8, 5, 6, 9

YEAS: 5

NAYS: 0

ABSENT: 2

MOTION CARRIED

ITEM 4: Install "No Right Turn 4-6 p.m." Signs on Coolidge at Derby.

Al Vannini, 2125 Derby, has asked that "No Right Turn 4-6 p.m." signs be installed on Coolidge at Derby. Mr. Vannini's intention is to reduce the volume of "through" traffic on Derby during this time period. The attached table shows the result of hourly traffic counts conducted on Derby west of Coolidge during 1988, 1993, and 1995. The most recent daily traffic volume on Derby was the 781 vehicles per day recorded in October 1996.

In November 1996 a license plate survey was conducted in Section 30 in conjunction with the City of Birmingham. City of Troy observers stationed at Derby and Coolidge recorded vehicles entering Derby from Coolidge between 4 and 6 p.m. The results are shown in the table below.

<i>DERBY AT COOLIDGE</i>		
	<i>Vehicles Entering</i>	
	6/11/96	11/7/96
4:00-4:15 p.m.	10	5
4:15-4:30 p.m.	10	8
4:30-4:45 p.m.	24	14
4:45-5:00 p.m.	16	15
5:00-5:15 p.m.	42	34
5:15-5:30 p.m.	60	55
5:30-5:45 p.m.	28	39
5:45-6:00 p.m.	13	14

The survey indicates that there is a higher volume of traffic entering Derby between 5 and 6 p.m. than between 4 and 5 p.m. On November 7, 1996, 143 vehicles entered Derby from Coolidge between 5 and 6 p.m. Of these 143 vehicles, 14 exited Derby at Adams. A more complete analysis of the traffic patterns in this square mile will be available in 7-10 days.

Prohibiting all turns from Coolidge onto Derby will make it difficult for many of the residents of Section 30 to return home after a day at work. Installation of these signs would encourage motorists to use other roads to enter Section 30 such as Witherbee or streets to the south of Derby in Birmingham. Because the volume of traffic on Derby is within the range of 500 to 3000 vehicles per day, which is typical for residential streets in Troy, installation of signs to direct traffic to other streets in Section 30 is not recommended.

The Cities of Troy and Birmingham are conducting a joint traffic study in this area. The two communities felt it would be appropriate to wait until after the opening of Somerset North and area schools to have a complete picture of traffic patterns in the area. Given the background of the ongoing but not yet completed traffic study in this area, it would be premature to make a recommendation which would preempt the cooperative traffic study of the two communities. Mr. Beaubien said the next meeting with Birmingham officials would most likely be early in January.

The table below shows traffic volumes on some of the streets in this area.

OCTOBER - NOVEMBER 1996 TRAFFIC VOLUME

<u>LOCATION</u>	<u>5-6 PM VOLUME</u>	<u>DAILY VOLUME</u>
Eton, south of Witherbee	207	1883
Eton, south of Derby	249	2758
WB Golfview, west of Coolidge	117	2319
WB Somerset, east of Coolidge	164	1476
EB Somerset, east of Coolidge	176	1481

Mr. Vanini presented petitions signed by his neighbors supporting his request (copies attached). He estimates that 98% of area residents want the "No Right Turn" sign at Derby. He and other residents feel that they have waited long enough for action on their traffic concerns.

Jerry Dreer of 2794 Derby in Birmingham questioned the results of the license plate survey conducted on November 7, 1996 because of poor visibility due to darkness and rain. Clark Harris, 2305 Derby, questioned the traffic counts. He has counted an average of one car on Derby every 38 seconds.

Mr. Beaubien said that the volume of traffic in Section 30 is not unusual for residential areas. Lt. Scherlinck said that past studies show that most violators of turn prohibitions, speed limits and stop signs were residents of the area in which the devices were posted. Derby residents indicated that they might violate a turn prohibition, but they hoped it would discourage others.

Moved by Halsey
Supported by Diefenbaker

Recommend that temporary "No Right Turn 5-6 p.m." signs be installed on Coolidge at Derby on a 90 day trial basis. City of Birmingham officials should be notified before the sign is installed.

YEAS: 4

NAYS: 1

ABSENT: 2

MOTION CARRIED

Ms. Perry explained that she voted against this resolution because she is not in favor of temporary signs. Once they are installed they are difficult to remove. She wanted to wait for the results of the Troy/Birmingham study, and would have preferred to table this item until all data had been received and tabulated.

ITEM 5: Permit temporary parking on east side of Butterfield during construction project.

Kirco, Inc. has requested that existing parking regulations be waived for a period of six months to allow parking on the east side of Butterfield, in front of their proposed project. Currently there are "No Parking" signs posted on both sides.

A traffic study was performed on Butterfield to determine if parking restrictions can be waived near the proposed project. The 36 foot wide roadway has a sharp horizontal curve (432' inner radius) in the vicinity of the project (see diagram attached). Parking on the east side, on the horizontal curve, may pose sight obstructions to motorists. Therefore, it is recommended that the existing parking restrictions be retained on the east side of Butterfield.

No one appeared to speak on behalf of Kirco. The Traffic Committee thinks that parking on the sharp curve would create a hazardous situation for motorists.

Moved by Diefenbaker
Supported by Hubbell

Recommend that no change be made to the existing parking regulations on Butterfield.

YEAS: 5

NAYS: 0

ABSENT: 2

MOTION CARRIED

ITEM 6: Install traffic control devices at Edith/Gulliver intersection.

At the request of Lt. Gerard Scherlinck of the Traffic Safety Unit, we reviewed the sight conditions at the intersection of Edith and Gulliver. There is a large evergreen tree on the northeast corner of the intersection, and there are homes on all four corners. The home on the northeast corner has a fence along the Edith right of way line, north of the building structure. These vision obstructions restrict the motorists' ability to see conflicting traffic movements.

There has been one injury accident at this intersection; however, the citizen was at fault and probably would have been at fault even if there were traffic control devices in place. At unsigned intersections such as this, approaching motorists are required to slow and yield the right of way as they would be required to do at a four-way stop. An independent witness estimated that the injured party's vehicle was traveling at 50-60 mph, and made no attempt to slow or stop. Although there is a space between the home and the evergreen tree on the northeast corner which would allow motorists to

get a glimpse of conflicting traffic, the tree reduces the safe approach at the intersection to less than 25 miles per hour. Sight distances were checked from all approaches and were found to be adequate for vehicular speeds between 15-20 miles per hour (expected speeds since both are unpaved residential roads).

The tree which was partially obstructing vision has been trimmed, and the Committee feels no traffic control devices are necessary at this intersection.

Moved by Halsey
Supported by Diefenbaker

Recommend no change in existing traffic control devices at Edith/Gulliver intersection.

YEAS: 5

NAYS: 0

ABSENT: 2

MOTION CARRIED

ITEM 7: Prohibit parking on both sides of Middlebury from Ramblewood to a point 200 feet south of Ramblewood.

Mark Bean of 4142 Ramblewood has requested that parking be prohibited on both sides of Middlebury from Ramblewood to a point 200 feet south of Ramblewood to keep unwanted vehicles from parking near his house. Mr. Bean left the meeting before the Committee considered this item.

Several of Mr. Bean's neighbors attended the meeting to voice their objections to this item. Since parking is already prohibited on the east side of Middlebury (the fire hydrant side), residents feel there is already a shortage of parking spaces for residents and guests. Mike Grube, of 4076 Middlebury, brought in a petition signed by 34 residents registering their disapproval of Mr. Bean's request.

Moved by Hubbell
Supported by Diefenbaker

Recommend that no change be made in the existing parking regulations on Ramblewood.

YEAS: 5

NAYS: 0

ABSENT: 2

MOTION CARRIED

ITEM 8: Install traffic signal at Livernois and Royaldale.

Barbara Tracht of Carlson Management Group, suggested installation of a traffic signal on Livernois at Royaldale to facilitate left turns onto southbound Livernois. Ms. Tracht told the Committee that she and her co-workers feel that the heavy volume of traffic on Livernois makes left turns extremely dangerous. There is an alternate exit to Big Beaver through other buildings' parking lots, but the Carlson workers feel it is dangerous and time consuming to exit onto Big Beaver and go through two turnarounds to reach southbound Livernois. Ms. Tracht presented a petition (attached) signed by 134 employees out of 213 in her office requesting a traffic signal.

Building occupancy is expected to triple by April 1, 1997. In addition, a "sister building" is under construction at the same location, which will add 800-1000 more employees in the area. Many workers from the office buildings on Big Beaver who wish to travel south also use Royaldale.

To assist in evaluating various options for improving traffic circulation in the Royaldale/Livernois area, we conducted machine traffic counts on Royaldale, Linda, and the Henry Ford Clinic driveways. The results of those hourly traffic volume counts are shown in summary form in the table below:

	Linda		Henry Ford Clinic South Drive		Royaldale	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
Noon-1 pm	103	37	86	21	106	73
5-6 p.m.	141	33	150	9	108	103
Daily	1442	691	1020	244	685	1036

If a traffic signal were to be installed on Livernois between Big Beaver and Kirts, Royaldale is not the only option to be considered. The table below shows the approach volumes on Royaldale, Linda, and Henry Ford Clinic Drive during three different time periods. Approach volumes are used for traffic signal warrant analyses.

	Approach Volumes		
	Royaldale	Linda	Henry Ford Clinic Drive
Noon-1 p.m.	73	103	86
5-6 p.m.	103	141	150
Daily	1036	1442	1020

This table suggests that Linda currently has more traffic volume approaching Livernois than Royaldale. Therefore, on the basis of existing traffic volumes, Linda is a more logical location for a new traffic signal than Royaldale. A traffic signal at Linda would stop northbound traffic north of Royaldale, blocking access to Royaldale during the p.m. peak.

Livernois Traffic Progression

Other analyses have indicated that installing a traffic signal on Livernois between Big Beaver and Kirts would increase delays and congestion all along this section of Livernois, particularly during the afternoon peak traffic period.

To evaluate the impact of a proposed new traffic signal at Livernois/Royaldale, we developed a time/space diagram for the area of Livernois between Big Beaver and Kirts. This computer-generated time/space diagram allows us to determine the proportion of the traffic signal cycle available for progressive traffic movements, in both directions of travel.

Using the current signal timing and assuming no signal at Royaldale, northbound traffic has a band width equivalent to 58% of the traffic signal cycle available for progressive traffic movements during the PM peak hour. At the same time, the through band width for southbound traffic is 31% of the signal cycle.

When a traffic signal is installed at Royaldale, the signal timing can be set up to permit a 58% through band in the northbound direction. However, when this is done there is no through band width for southbound traffic between Big Beaver and Royaldale and the through band width between Royaldale and Kirts is 20% of the signal cycle.

Thus, it is our conclusion that, in fact, the installation of a traffic signal on Livernois at Royaldale would be detrimental to progressive movement along Livernois, particularly for southbound traffic in the area between Big Beaver and Royaldale.

Livernois Operation

The Livernois corridor between Kirts and Big Beaver was evaluated using TRAFNETSIM, which is a simulation program developed by the Federal Highway Administration which simulates a traffic system to aid in predicting the effects of changes to the system. A computer model was created for both the existing conditions on Livernois and with the addition of the proposed traffic signal at the intersection of Livernois and Royaldale.

The average speed and maximum queue per lane was calculated for each approach to the intersection of Royaldale and Livernois. A queue is a line of stopped vehicles. The maximum queue for north and southbound Livernois increased by approximately 10 vehicles with the addition of the proposed traffic signal. The average speed decreased by about 50 percent. These values are shown in the table below:

NETSIM Results for Average Speed and Maximum Queue Per Lane

Location	Average Speed		Maximum Queue By Lane			
	Without Signal	With Proposed Royaldale Signal	Without Signal Lane 1	Without Signal Lane 2	With Proposed Royaldale Signal Lane 1	With Proposed Royaldale Signal Lane 2
NB Livernois @ Big Beaver	9.1	10.8	0	1	9	9
NB Livernois @ Royaldale	35.3	17.2	25	28	23	24
SB Livernois @ Royaldale	35.5	11.1	0	0	11	12

The delay time in vehicle minutes for vehicles turning left from Royaldale onto Livernois increased from 6.64 vehicle minutes without a traffic signal to 14.53 vehicle minutes with a traffic signal.

Ms. Tracht suggested a blinking amber light as an alternative. It is felt that this would not accomplish any of the desired results, and might give drivers exiting Royaldale the perception that they have the right of way and encourage them to take more risks entering traffic.

Because of the adverse impact an additional signal at Royaldale would have on p.m. peak hour traffic operations on Livernois, we do not recommend that it be installed. It would increase delays for motorists on both Livernois and Royaldale.

A third northbound lane has been installed on northbound Livernois at Royaldale to facilitate traffic movements into and out of Royaldale.

Moved by Halsey
Supported by Perry

Recommend that a traffic signal not be installed on Livernois at Royaldale.

YEAS: 5

NAYS: 0

ABSENT: 2

MOTION CARRIED

ITEM 9: Install left turn arrow on Golfview at Coolidge.

Ann Miller has requested installation of a left-turn arrow for Golfview at Coolidge. All accidents at the location since 1993 were analyzed to determine any accident related deficiencies at the intersection. It was found that in 1995 there were eight rear-end type accidents and four accidents related to left turns from Coolidge onto Golfview. In 1995 the signal was operating with three phases with separate left

turn phase for Golfview. The above-mentioned types of accidents may have happened due to inadequate green and/or amber time for Coolidge. It is also observed that the number of accidents in 1996 has dropped drastically. This may be attributed to the signal timing improvements that were done after completion of construction. A left turn arrow for Golfview would be warranted if there were 4 accidents per year related to left turns from Golfview (as per left-turn warrants, Institute of Transportation Engineers, Technical Committee 76-1). In this case there have been no left turn related accidents in the years 1993, 1994 and 1995. There was one left turn related accident in 1996, however, this does not warrant the installation of a separate left turn arrow.

Traffic volumes for all approaches of the intersection were analyzed for different time periods in 1996. Traffic volumes from September 1996 were used for further analysis. The analysis indicated that there is a delay to left turners from Golfview during one hour of the day, between 5:00 PM and 6:00 PM. For the rest of the day traffic operations were found to be reasonably smooth. The analysis also indicated that traffic volumes on Coolidge for the time period between 5:00 and 6:00 PM were very high for both northbound and southbound approaches. Any decrease in green time for Coolidge would create excessive delay to motorists and may cause more rear-end type accidents as observed in 1995. Such a change may also affect traffic flow at several neighboring intersections on Coolidge.

Level of service is defined in terms of delays to the motorists. This is a measure of driver discomfort, frustration, fuel consumption and lost travel time. The analysis was performed for several combinations of signal timing. It was found that when a left turn phase is added for Golfview traffic, the level of service for westbound left turn vehicles from Golfview improves but for all other traffic movements the level of service decreases. As mentioned earlier, this would mean more delays to all other motorists traveling through the intersection, increasing congestion in the area.

Based on the above analyses, it is recommended that the signal operations at the intersection be continued as existing. The intersection will be under observation for two months. In this period, it will be evaluated for safe and efficient traffic movement, and improvements may be recommended as deemed necessary.

Ms. Miller did not attend to address the Traffic Committee.

Moved by Halsey
Supported by Hubbell

Recommend no change in existing traffic signal timing plan.

AYES: 5

NAYS: 0

ABSENT: 2

MOTION CARRIED

ITEM 10: OTHER BUSINESS

The traffic flow on northbound Rochester at Stephenson has been changed, as all traffic must now turn right and use the new turnaround to reach the northbound lanes. Mr. Halsey noted that the traffic signal on northbound Rochester Road at times is blinking red. He feels that there should be a red arrow and green arrow signal indication pointing to the right to indicate that all traffic must now turn right.

Mr. Halsey also noted that Henderson Glass on Rochester Road has a one-lane driveway. If one car is exiting, another trying to enter from westbound Maple has to stop and wait for that car to move out of the way, blocking traffic.

There is a stacking lane on Wattles at Rochester road with white lines that are perceived to prohibit use. Mr. Halsey questions why the extra lane is there if it is not to be used.

ITEM 11: ADJOURN

Moved by Hubbell
Supported by Halsey

To adjourn the Traffic Committee meeting at 9:20 p.m. The next meeting is scheduled for Wednesday, December 18, 1996.

AYES: 5

NAYS: 0

ABSENT: 2

MOTION CARRIED

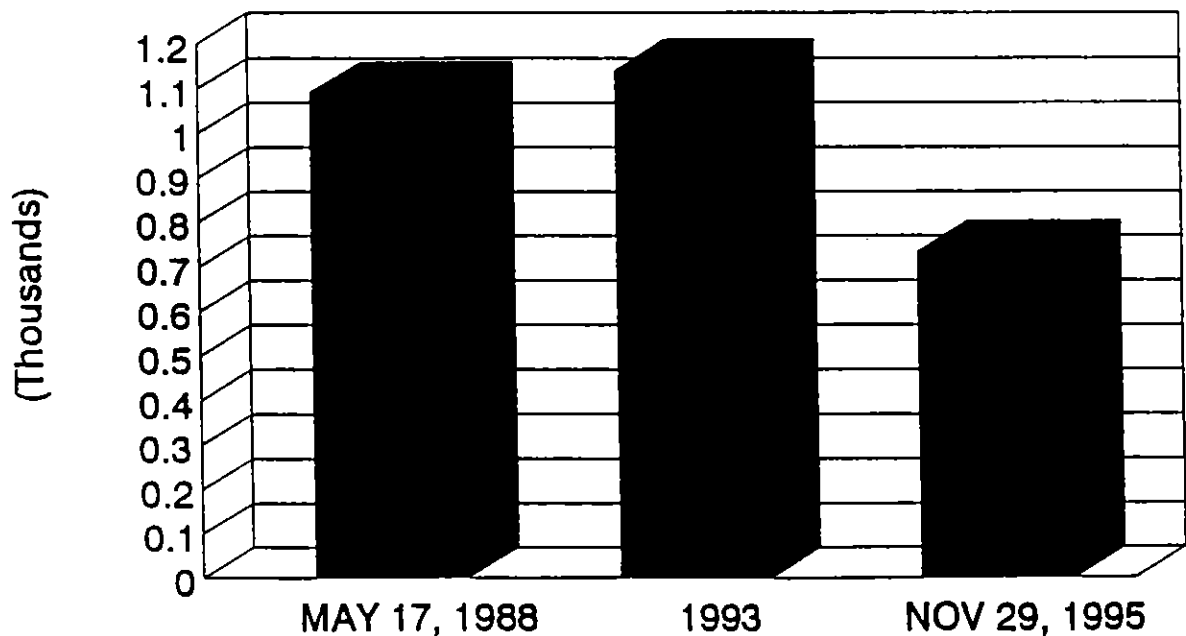
OCTOBER - NOVEMBER 1996 TRAFFIC VOLUME

<u>LOCATION</u>	<u>5-6 PM VOLUME</u>	<u>DAILY VOLUME</u>
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WB Golfview, west of Coolidge	117	2319
WB Somerset, east of Coolidge	164	1476
EB Somerset, east of Coolidge	176	1481

DERBY W. OF COOLIDGE

	MAY 17, 1988	1993	NOV 29, 1995
0100	1	hourly counts not available	8
0200	1		0
0300	0		2
0400	0		0
0500	2		2
0600	4		3
0700	19		14
0800	48		40
0900	42		49
1000	39		30
1100	42		39
1200	52		45
1300	59		54
1400	56		37
1500	51		36
1600	55		47
1700	168		56
1800	208		108
1900	100		62
2000	64		28
2100	35		36
2200	29		19
2300	12		12
2400	4		6
TOTAL	1091	1141	733

DAILY TOTAL VOLUMES



2055 KOPPY - NE ME H MO :

SEE 100 SCALE
-8 MAP

GOLF VIEW

BURY

BUCKINGHAM SQUARE

GLoucester

COOLIDGE

ST ALAN'S CHURCH 3011

DEKAY

5

At an inconvenience to ourselves, Birmingham residents of Derby Avenue (in an effort to return our residential street to a level of safety for our children) do support & recommend a “NO RIGHT TURN” sign at the northwest corner of Coolidge & Derby from 4 PM to 6 PM, Monday thru Friday.

Yes	No	Name	Address	Date
		Donald B. Borden	2870 Derby B'nham	11-13-96
✓		Paul V. Hart	2802 Derby B'nham	11-13-96
✓		Charles & Linda Borden	2794 Derby B'nham	11-13-96
✓		Eric S. Thomas	2836 Derby B'nham	11-13-96
✓		Michael Thomas	2836 Derby B'nham	11-13-96
✓		Hall H. Scharrer	2662 Derby B'nham	11-13-96
✓		Conny L. Loran	2648 Derby B'nham	11-13-96
✓		Conny L. Loran	2648 Derby B'nham	11-13-96
✓		N. P. Fisher	2604 Derby B'nham	11-13-96
✓		Bruce & Helen Say	2594 Derby B'nham	11-13-96
✓		Alvin Meyer	2776 Derby B'nham	11-16-96
✓		Antoinette S. S. S.	2776 Derby B'nham	11-16-96
✓		Arthur W. S. S.	2550 Derby B'nham	11-16-96
✓		Edith A. S. S.	2502 Derby B'nham	11-16-96
✓		Gisa Wagner	2528 Derby B'nham	11-16-96
✓		Ruth Florka	2488 Derby B'nham	11-16-96
✓		Ruth Florka	" "	11-16-96
✓		Donald B. Borden	2446 Derby B'nham	11-16-96
✓		Donald B. Borden	2376 Derby B'nham	11-16-96
✓		North M. Kendall	2350 Derby B'nham	11-16-96
✓		James M. Kendall	" "	11-16-96
✓		James M. Kendall	2424 Derby B'nham	11-16-96
✓		Arthur Anderson	2400 Derby B'nham	11-16-96

At an inconvenience to ourselves, Troy residents of Derby Avenue (in an effort to return our residential street to a level of safety for our children) do support & recommend a “NO RIGHT TURN” sign at the northwest corner of Coolidge & Derby from 4 PM to 6 PM, Monday thru Friday.

[illegible]

KIRCO

COLUMBIA CENTER
201 WEST BIG BEAVER ROAD
SUITE 1200
TROY, MI 48064-4169
810/680-7180 FAX 810/680-7181

RECEIVED
OCT - 1 1996
CITY OF TROY
CITY MANAGER'S OFFICE

October 1, 1996

Mr. James Bacon
City Manager
City of Troy

Re: The Wilson Building
2250 Butterfield
Troy, Michigan

Dear Sir:

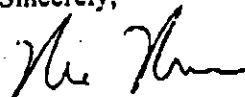
It is our understanding that the above referenced project is listed on the Agenda for City Council Meeting of Monday, October 7, 1996, to approve issuance of a permit for sewers and walks.

We request that City Council add, as a separate item, our request that temporary parking be allowed on the East side of Butterfield, in front of our proposed project.

Presently, there are posted "No Parking" signs. Our request is only for duration of construction, which is estimated to be approximately six (6) months.

Thank you for your cooperation.

Sincerely,



Mike Moore
Vice President, Construction



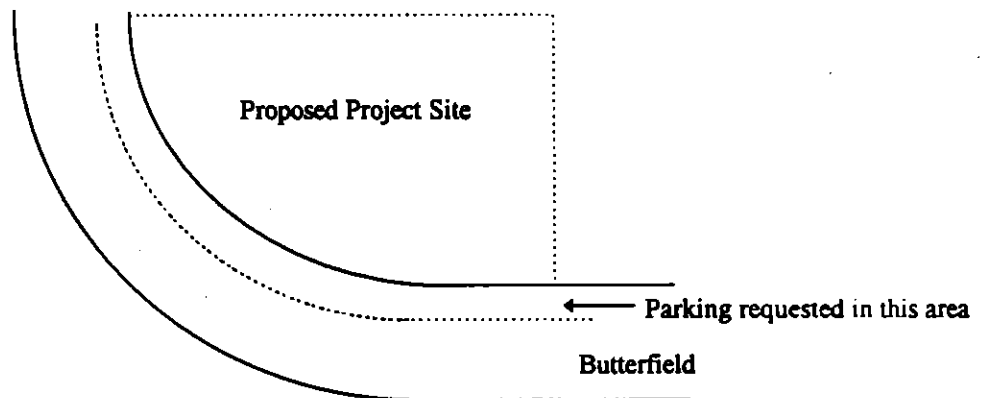
October 8, 1996

TO: John Szerlag, Assistant City Manager

FROM: John Abraham
Traffic Engineer

SUBJECT: Request for Waiver of Parking Restrictions on Butterfield

A traffic study was performed on Butterfield Road to determine if parking restrictions can be waived near the proposed project. The roadway has a sharp horizontal curve in the vicinity of the proposed project. Parking on the east side, on the horizontal curve, may pose sight obstructions to motorists using the roadway. Hence, it is recommended that the existing parking restrictions be retained on the east side of Butterfield, near the proposed project.



This issue will be added to the Agenda of the next Traffic Committee Meeting to be held on November 20, 1996. Please advise if you need any clarifications/additional information.

Respectfully submitted,


John K. Abraham
Traffic Engineer

cc: James Bacon, Neall Schroeder

October 3, 1996

TO: Lt. Gerard Scherlinck

FROM: John K. Abraham
Traffic Engineer

SUBJECT: Traffic Control Devices for Edith/Gulliver Intersection

As per your advise, this subject will be on the agenda for the traffic committee meeting for October, to be held on October 22, 1996. Since the subject will be discussed in detail at the meeting, additional studies were performed to determine the need for any Traffic Control Devices at the intersection. As already stated by Mr. Richard Beaubien, there are some vision obstructions, these are illustrated in the accompanying figure. The evergreen tree on the north east corner would be the major problem in the area. Sight distances were checked from all approaches and were found to be adequate for vehicular speeds between 15-20 mph (expected speeds since both are residential unpaved roads). Based on the study, the following are some recommendations:

- Trim/cut the tree on the north east corner. This will ease major sight problems at the intersection.
- Provide a yield sign on the eastbound and west bound approaches.

Stop signs may not be necessary since the traffic volumes on both roadways in question are low and the majority of drivers may be familiar with the intersection.


John K. Abraham
Traffic Engineer

cc: Neall Schroeder, City Engineer

file

September 27, 1996

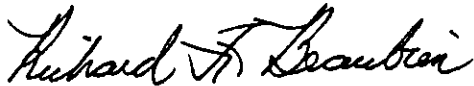
TO: Lt. Gerard Scherlinck

FROM: Richard F. Beaubien, P.E.
Acting Transportation Director

SUBJECT: Traffic Control Devices for the Edith/Gulliver Intersection.

At your request, we reviewed the sight conditions at the intersection of Edith and Gulliver. There is a large evergreen tree on the northeast corner of the intersection, and there are homes on all four corners. The home on the northeast corner has a fence along the Edith right of way line, north of the building structure. These vision obstructions restrict the motorists' ability to see conflicting traffic movements. Although there is a space between the home on the northeast corner and the evergreen tree on the northeast corner, which would allow motorists to get a glimpse of conflicting traffic, the tree on the northeast corner reduces the safe approach data at the intersection to less than 25 miles per hour. Consequently, based on vision obstructions, stop or yield signs could be posted on two of the intersection approaches.

The most likely recommendation for traffic control devices at this intersection would be to install stop signs on Gulliver at Edith.



Richard F. Beaubien, P.E.
Acting Transportation Director

RFB/ln

cc: Neall Schroeder, City Engineer

LMC.
Respond TO
Complainant WITH
1AW CITE & COPY TO
City Mgr.

RECEIVED

AUG 27 1995

CITY OF TROY
CITY MANAGER'S OFFICE

Dennis Whittie
631 Spencer
Ferndale, MI 48220
August 23, 1993

Troy Mayor and City Council
500 W. Big Beaver Rd.
Troy, MI 48064

Mayor and Council;

My name is Dennis Whittie. I am 18 years old and reside in the City of Ferndale. In November 1995, I began working as a delivery driver with The Paralyzed Veterans of America. To fulfill my job I had to use my own vehicle. My job consisted of making product deliveries and picking up money donations. I really enjoyed my job.

On December 1, 1995, I had a delivery to make in your city on the street of Burdic. (North of Square Lake, East of John R) I made my delivery, picked up the cash donation and returned to my car to continue my route.

I drove east down Burdic, turned right and proceeded driving southbound on Edith St. I was approaching the street of Gulliver, when out of no where came a big construction pick up truck, that was going westbound on Gulliver. I then slammed on my breaks. It was too late! My 1985 Chevy Cavalier and the truck slammed right into each other. During the impact, the truck flipped on its side and my car was run over by the trucks back tires and spun out. I spun into an angle facing north. The impact was horrible, rough and painful.

After reopening my eyes and looking out of my driver side window, I discovered the truck had flipped on its side and gas was leaking profusely from the truck.

I tried to get out of the drivers side door, but it was smashed shut. I tried the passenger door and after repeated attempts I was able to force it open. The employees in the truck managed to climb out. Troy police and fire were called as well as Paramed for our injuries.

One of the employees in the truck and myself were transported to Beaumont-Troy. Once I was in the Emergency Room a Troy police officer issued me citation for Careless Driving. I explained that I DID NOT see a stop sign in my path at all. He explained to me the other driver DID NOT have a stop sign either. Needless to say it is an "uncontrolled intersection." (There were no traffic control signals to warn either driver to stop) Nobody had to legally stop. To make matters worse there was a huge pine tree on the northeast corner of the intersection. (2111 Gulliver St.) This tree is the reason we could not see each other.

D-1

I later contested the Careless Driving Citation in court. Judge ruled I had no legal obligation to stop, so I was held not responsible (not guilty) of the ticket.

I am writing to you to tell you these uncontrolled intersections in your city are DANGEROUS and LIFE THREATENING. There are many intersections like this one in the city of Troy. I wanted you to hear what one person went through, because of this problem. Currently, I am still out of work and was just able to buy another vehicle since my other one was totaled. I was told I was lucky to even live through this accident. Also, one of the paramedics told me this isn't the first kind of injury accident he has seen in your city, due to uncontrolled intersections.

After listening to just what one person went through, I hope you can propose a plan to get these uncontrolled intersections some type of control, such as stop signs.

Please write to me to let me know what you can and will do about this hazard. Thank you for your time, consideration and response. You never know, the next person to go through one of these dangerous intersections could lose their life, because there was not a simple red stop sign on the corner and no warning of life threatening traffic ahead.

Sincerely,

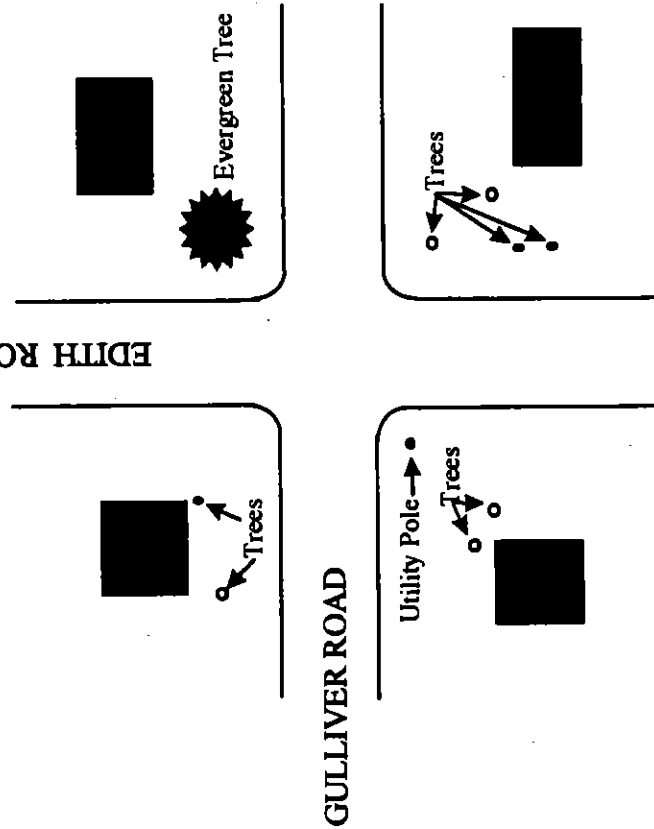
A handwritten signature in black ink that reads "Dennis G. Whittie". The signature is written in a cursive, flowing style with a large initial 'D' and a long, sweeping underline.

Dennis G. Whittie

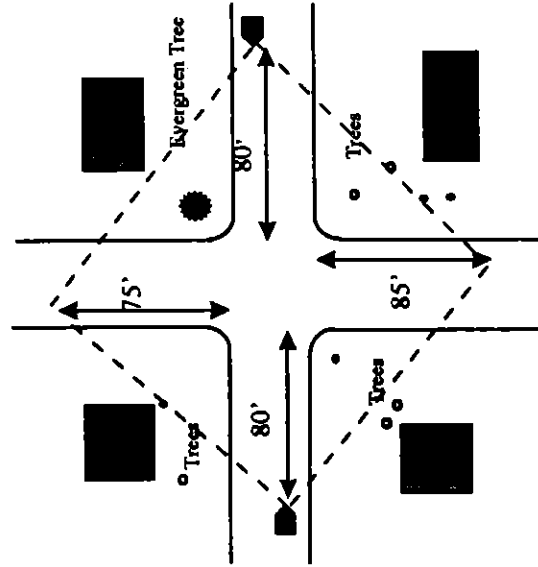
INTERSECTION OF EDITH AND GULLIVER, CITY OF TROY



EDITH ROAD



GULLIVER ROAD



SIGHT TRIANGLES

Indicates that the sight distances are adequate for 15-20 mph speed (as per AASHTO green book). Since the roads are unpaved, lower speeds can be expected.

Note: Both Roads are Unpaved Gravel Roads

Troy Police Department Special Operations Section Memorandum

To: Mr. Dennis Whittle
631 Spencer
Ferndale, MI 48220

RECEIVED

DEC 16 1996

From: Lt. G. Scherlinck *GS*

CITY OF TROY
CITY MANAGER'S OFFICE

Date: 10-2-96

Subject: Personal Injury Accident 95-44048

I have reviewed the letter you submitted to the mayor and council regarding this accident. I have reviewed the accident report, witness statements, as well as spoken with Off. Stansbury who investigated this case. Given the facts, I support the conclusions and enforcement action taken by Officer Stansbury. In addition, I have reviewed the court record based on your statement that the magistrate informed you there was no obligation to stop and were found not guilty in this case. This is not accurate, as the magistrate simply chose to use his discretion in reducing the Careless Driving charge the lessor but included charge of speeding, a violation directly contributory to this accident.

At unsigned intersections, such as Edith and Gulliver, approaching motorists are required to slow and yield right-of-way in the same manner as would be required at a four way stop. In this case, the investigation revealed the truck which you struck was already in the intersection as you arrived. That vehicle, therefore, had the right-of-way requiring an approaching vehicle to yield. This information was garnered by Off. Stansbury from the driver of the dump truck, as well as an independent witness. In addition, the independent witness indicated that your vehicle was traveling at an excessively high rate of speed. That witness estimated your speed at 50-60 mph. That witness stated that you never slowed or attempted to stop. The facts of the accident substantiate this observation as your vehicle, a Chevrolet Cavalier, would have had to strike the other vehicle, a dump truck, with considerable force at impact to cause the dump truck to roll. The law removes any right-of-way claim when a motorist violates the speed limit. I have attached copies of the pertinent laws and ordinances for your review.

Unsigned intersections are not inherently dangerous as you assert in your letter. There has been no accident history at this intersection for at least ten years. However, based on your input and unfortunate experience in this accident, I have forwarded your concerns over the need for traffic control, as well as your concern regarding vision obstruction at this intersection to the Traffic Engineering Department. An engineering study will be conducted to determine if this intersection meets state law warrants for traffic control. These findings will be forwarded to the Traffic Committee of City Council and ultimately to the Council itself for review and recommendations.

cc: Mr. James Bacon, City Manager
Lawrence R. Carey, Chief of Police
Captain Gary Mayer, Patrol Division Commander

D-12

PETITION FOR CITY OF TROY TRAFFIC COMMITTEE MEETING
Wednesday, November 20, 1996

We, the resident drivers of Middlebury in the Mt. Vernon Subdivision of the City of Troy, Michigan by our signatures below, register our disapproval of the request of Mark Bean, 4142 Ramblewood, to prohibit parking on both sides of Middlebury from Ramblewood to a point 200 feet south of Ramblewood.

NAME	ADDRESS	PHONE NO.	DATE
Charles May	4040 Middlebury	689-9287	11-18-96
John Hager	4090 Middlebury	689-9287	11/18/96
Donald Thomas	4082 Middlebury	528-2623	11-18-96
Cynthia Dore	4082 Middlebury	528-2623	11/18/96
Angela Tonello	4082 Middlebury	528-2623	11-18-96
John Hager	4153 Ramblewood	810-689-5808	11-18-96
Erica Ryan	4072 Middlebury	810-689-6692	11-18-96
N. D. O'Brien	4072 Middlebury	689-6692	11/18/96
Erica Benoit	2351 Greenbush, Troy	689-1254	11/18/96
Bob Hulko	4066 Middlebury, Troy	528-3327	11/20/96
Ellen Harkins	4066 Middlebury Troy, ME	689-7185	
Mike Harkins	4066 Middlebury Troy, ME	689-7185	

PETITION FOR CITY OF TROY TRAFFIC COMMITTEE MEETING

Wednesday, November 20, 1996

We, the resident drivers of Middlebury in the Mt. Vernon Subdivision of the City of Troy, Michigan by our signatures below, register our disapproval of the request of Mark Bean, 4142 Ramblewood, to prohibit parking on both sides of Middlebury from Ramblewood to a point 200 feet south of Ramblewood.

NAME	ADDRESS	PHONE NO.	DATE
Michael J. K	4076 MIDDLEBURY	689-4848	11-17-96
Michael J. Perry	4076 Middlebury	689-4849	11-17-96
Cathy Seube	4076 Middlebury	689-4849	11-17-96
Katrina Kallioinen	4076 Middlebury	689-4849	11-17-96
Timmy G. [unclear]	4164 Ramblewood	528-1839	11-17-96
Sandy Huelbier	4066 Middlebury	689-7185	11-17-96
Alan Francis	4044 Middlebury	528-9076	11-17-96
Sean Francis	4044 Middlebury	528-9076	11-17-96
Bob [unclear]	4056 Middlebury	524-9576	11-17-96
Richard [unclear]	4056 Middlebury	524-9576	11-17-96
Rose Osani	4056 Middlebury	524-9576	11-17-96
Rick Felbrath	4056 middlebury	524-9576	11-17-96
Diana Kingstrom	4061 Middlebury	689-6377	11-17-96
Don Kingstrom	4061 Middlebury	689-6377	11-17-96
Michelle Kingstrom	4061 Middlebury	689-6377	11-17-96
James A. Puth	4069 MIDDLEBURY	524-9349	11-17-96
James Puth	4069 Middlebury	524-9349	11-17-96
Blank Baker	4141 Ramblewood	524-2528	
James A. Puth	4069 Middlebury	524-9349	11-17-96
Gene Perry	4076 Middlebury	689-4849	11-17-96
Josephine Kallioinen	4076 Middlebury	689-4849	11-17-96
Alice May	4090 Middlebury	689-2	11-15-96

THE LOCATION OF THE POST OFFICE ON LIVERNOIS, THE INABILITY TO TURN LEFT ONTO LIVERNOIS, THE SHORT LEFT TURN LANE WHEN HEADING SOUTH ON LIVERNOIS, AND THE FACT THAT THE BUILDING (2800 LIVERNOIS) OCCUPANCY WILL TRIPLE APRIL 1, 1997, WE THE UNDERSIGNED, EMPLOYEES OF CARLSON MARKETING GROUP, 2800 LIVERNOIS, TROY, MICHIGAN, REQUEST THE INSTALLATION OF A TRAFFIC SIGNAL AT OUR DRIVEWAY (ROYALDALE) AND LIVERNOIS.

ITEM 8

Name	Business Address	Bus. Phone
1 JEFFREY C. MANLEY	2800 LIVERNOIS #600	810-824-7100
2 SCOTT MCGREGOR	2800 LIVERNOIS #600	(810) 824-7788
3 PECKY BOZEK	2800 LIVERNOIS #600	810-824-7707
4 ROBERT L. PARKER	2800 LIVERNOIS #600	810-824-7807
5 ROXANN HOWARD	2800 LIVERNOIS #600	810-824-7753
6 BOB KUZANEK	2800 LIVERNOIS	810-824-7742
7 J.E. GUNDEL	1900 JEFFERSON	313 259 8818
8 ANNE M. QUADLER	2800 LIVERNOIS #600	810-824-7818
9 WILSON	2800 LIVERNOIS #600	810-824-7812
10 ANN M. YEE	2800 LIVERNOIS #600	810-824-7736
Suzanne Nasay	2800 LIVERNOIS #600	810-824-7798
12 GERILYN DIFATTA	2800 LIVERNOIS #600	(810) 824-7725
13 ROBERT ZELE	2800 LIVERNOIS #600	(810) 824-7877
14 BILLY CUMMING	2800 LIVERNOIS #600	(810) 824-7719
15 CHRIS FEDERMAN	2800 LIVERNOIS #600	(810) 824-7878
16 MICHAEL ZIGLER	2800 LIVERNOIS #600	(810) 824-7878
17 MARGARET HANFIELD	2800 LIVERNOIS #600	810-824-7784
18 KIM SCAPULLITO	"	" " 7835
19 JIM COMBEE	2800 LIVERNOIS #600	810 824-7651
20 JIMMY WILK	2800 LIVERNOIS #600	810-824-7711
21 RONALD OTT	2800 LIVERNOIS #600	810-824-7696
22 JENNIFER FRAY	2800 LIVERNOIS, St 600	810-824-7842
JANIS BRILL	2800 LIVERNOIS, St 600	810-824-7708
24 JEANETTE KISH	2800 LIVERNOIS St. 600	810-824-7765
25 DEAN PARKER	2800 LIVERNOIS St 600	810 824 7806

THE LOCATION OF THE POST OFFICE ON LIVERNOIS, THE INABILITY TO TURN LEFT ONTO LIVERNOIS, THE SHORT LEFT TURN LANE WHEN HEADING SOUTH ON LIVERNOIS, AND THE FACT THAT THE BUILDING (2800 LIVERNOIS) OCCUPANCY WILL TRIPLE APRIL 1, 1997, WE THE UNDERSIGNED, EMPLOYEES OF CARLSON MARKETING GROUP, 2800 LIVERNOIS, TROY, MICHIGAN, REQUEST THE INSTALLATION OF A TRAFFIC SIGNAL AT OUR DRIVEWAY (ROYALDALE) AND LIVERNOIS.

ITEM 8

Name	Business Address	Bus. Phone
1 Julie Sombay	2800 LIVERNOIS St 600	824-7846
2 Mizdal Harrington	2800 LIVERNOIS	824-7821
3 Les Hernandez	11111 LAPPIN	839-6800
4 Cynthia Terasavich	2800 Livermois	824-7856
5 Renee Vertin	2800 LIVERNOIS St 600	824-7868
6 Sue Pottyes	2800 LIVERNOIS St 600	824-7811
7 Jim Houtt	2800 LIVERNOIS	824-7754
8 Joseph P. R.	2800 LIVERNOIS	824-7705
9 Mary Peterson	2800 Livermois	824-7810
10 Digny Leeeli	2800 LIVERNOIS	824-7775
11 Beth Ekpening	2800 Livermois	824-7775
12 Sheryl Marlett	2800 LIVERNOIS #600	824-7785
13 Eric Croning	2800 Livermois #600	824-7734
14 Amy Seiger	2800 Livermois #600	824-7737
15 Gretchen Hallway	2800 LIVERNOIS #600	824-7800
16 Renee Cuvenda	2800 Livermois #600	824-7714
17 Michael Lee	2800 LIVERNOIS #600	824-7779
18 Brian Kelley	2800 LIVERNOIS #600	824-7762
19 Chris D. Perry	2800 LIVERNOIS #600	824-7752
20 Michael Staley	2800 LIVERMOIS #60	824-7839
21 Janet Lee	2800 Livermois #600	824-7715
22 David E. Lee	2800 Livermois #500	824-7748
23 Barbara Hille	2800 LIVERNOIS #600	824-7775
24 Janet Samrecht	2800 LIVERNOIS #600	824-7772
25 Barbara Trent	2800 Livermois #600	824-7600

BECAUSE OF THE DANGEROUS VOLUME OF TRAFFIC STEMMING FROM THE LOCATION OF THE POST OFFICE ON LIVERNOIS, THE INABILITY TO TURN LEFT ONTO LIVERNOIS, THE SHORT LEFT TURN LANE WHEN HEADING SOUTH ON LIVERNOIS, AND THE FACT THAT THE BUILDING (2800 LIVERNOIS) OCCUPANCY WILL TRIPLE APRIL 1, 1997, WE THE UNDERSIGNED, EMPLOYEES OF CARLSON MARKETING GROUP, 2800 LIVERNOIS, TROY, MICHIGAN, REQUEST THE INSTALLATION OF A TRAFFIC SIGNAL AT OUR DRIVEWAY (ROYALDALE) AND LIVERNOIS.

ITEM 8

Name	Business Address	Bus. Phone
1 Beth Sallmeier	2800 Livernois	824 7834
2 LONNIE R. WILLIAMS	19226 ORCHARD LAKE RD.	855-5800
3 ROBERT KIRANA	2400 LIVERNOIS	824-7771
4 Katherine Solshury	2800 Livernois	824-7845
5 RENEE SUCHARA	2800 LIVERNOIS	824-7854
6 Tony Puntz	21477 BRIDGE	350-2060
7 K. McCaughy-Andrews	2800 Livernois	824-7787
8 Melisa Burks	2800 LIVERNOIS	824-7710
9 Melnicki	2800 Livernois Ste 600	824-7761
10 [Signature]	2800 LIVERNOIS / SUITE 600	824-7815
11 Shadow Printott	2800 LIVERNOIS/STE 600	824-7814
12 [Signature]	2800 Livernois	824-7776
13 [Signature]	2800 Livernois	824-7819
14 Earl [Signature]	2800 LIVERNOIS	824-7844
15 Don Bazz	2800 LIVERNOIS	538-1705
16 Michael [Signature]	2800 LIVERNOIS	824-7801
17 [Signature]	"	824-7752
18 Larry [Signature]	2800 Livernois	824-7766
19 Leslie [Signature]	2800 Livernois	824-7796
20 [Signature]	3150 LIVERNOIS	824-7766
21 [Signature]	2800 Livernois	824 7600
22 [Signature]	2700 Hague	779-7800
23 [Signature]	2800 Livernois	824-7769
24 [Signature]	2800 Livernois	824-7780
25 Kevin [Signature]	2800 Livernois	824-7833

BECAUSE OF THE DANGEROUS VOLUME OF TRAFFIC STEMMING FROM THE LOCATION OF THE POST OFFICE ON LIVERNOIS, THE INABILITY TO TURN LEFT ONTO LIVERNOIS, THE SHORT LEFT TURN LANE WHEN HEADING SOUTH ON LIVERNOIS, AND THE FACT THAT THE BUILDING (2800 LIVERNOIS) OCCUPANCY WILL TRIPLE APRIL 1, 1997, WE THE UNDERSIGNED, EMPLOYEES OF CARLSON MARKETING GROUP, 2800 LIVERNOIS, TROY, MICHIGAN, REQUEST THE INSTALLATION OF A TRAFFIC SIGNAL AT OUR DRIVEWAY (ROYALDALE) AND LIVERNOIS.

ITEM 8

Name	Business Address	Bus. Phone
1. Aida Isbister	2800 LIVERNOIS Ste 600	(810) 824-775
2. Julie Collins	2800 LIVERNOIS, Suite 600	824-7716
3. Samuel J. Bell	2800 LIVERNOIS, SUITE 600	810-824-7703
4. Michael Pascurin	2800 LIVERNOIS Suite 600	810-824-7758
5. P. Ketur	2800 LIVERNOIS Suite 600	810-824-7654
6. [Signature]	2800 LIVERNOIS Suite 600	810-824-782
7. [Signature]	2800 LIVERNOIS Suite 600	810-853-9111
8. Carolyn Black	2800 LIVERNOIS, Suite 600	810-824-781
9. [Signature]	2800 LIVERNOIS, SUITE 600	810-824-7830
10. [Signature]	2800 LIVERNOIS, Suite 600	810-824-7825
11. Jeffery Stone	2800 LIVERNOIS, SUITE 600	810-824-7
12. Andrea Parisi	2800 LIVERNOIS, Suite 600	(810) 824-777
13. LINDA WALSH	2800 LIVERNOIS, STE 600	(810) 824-7606
14. Christina Herron	2800 LIVERNOIS, Ste 600	(810) 824-7743
15. Connie Miller	2800 LIVERNOIS Ste 600	(810) 824-7676
16. DALE RUZYLO	2800 LIVERNOIS	(810) 824-7805
17. Tim Zajac	2800 LIVERNOIS	810-824-7876
18. LARRY LOTO	2800 LIVERNOIS, #600	810-824-7781
19. Mark Muller	4150 VARSITY DR A ² MICH	1-313 274-6670
20. RACHEL KUCSULAIN	2800 LIVERNOIS Ste 600	810-824-7738
21. [Signature]	" "	(810) 824-7880
22. Karen M. Rumpel	2800 LIVERNOIS Ste 600	(810) 824-7653
23. Belinda Pickle	2800 LIVERNOIS, Suite 600	(810) 824-761
24. Randy Bachman	2800 LIVERNOIS, Suite 600	(810) 824-7699
25. Deborah Limbeck	2800 LIVERNOIS, Suite 600	(810) 824-7722

THE LOCATION OF THE POST OFFICE ON LIVERNOIS, THE INABILITY TO TURN LEFT ONTO LIVERNOIS, THE SHORT LEFT TURN LANE WHEN HEADING SOUTH ON LIVERNOIS, AND THE FACT THAT THE BUILDING (2800 LIVERNOIS) OCCUPANCY WILL TRIPLE APRIL 1, 1997, WE THE UNDERSIGNED, EMPLOYEES OF CARLSON MARKETING GROUP, 2800 LIVERNOIS, TROY, MICHIGAN, REQUEST THE INSTALLATION OF A TRAFFIC SIGNAL AT OUR DRIVEWAY (ROYALDALE) AND LIVERNOIS.

ITEM 8

Name	Business Address	Bus. Phone
1 Susan Ayck		824-7697
2 Barbara Hattley		824-7750
3 [Signature]		824-7653
4 Kelley Kim	2800 Livernois, Troy	824-7826
5 Lisa Ulbrich	2800 Livernois	824-7857
6 [Signature]	"	824-7795
7 Jim Cappellaro		824-7726
8 Mike McWilliams		824-7790
9 Cynthia Faw		824-7774
10 Nancy Crowe		824-7881
[Signature]		824-7756
12 Marlene Rftarch		824-7465
13 Arti Bapna		824-7663
14 [Signature]		824-7728
15 Tom Doubly		824-7848
16 [Signature]		824-7767
17 [Signature]		824-7828
18 [Signature]		824-7794
19 Julie Ryan		824-7882
20 Guy Winter		824-7768
21 Michelle Marshall		824-7792
22 Patricia Fautley		824-7678
23 Diane Baucha		824-7698
24 MARK MCKINNEY		824-7789
25 [Signature]		352-8247

THE LOCATION OF THE POST OFFICE ON LIVERNOIS, THE INABILITY TO TURN LEFT ONTO LIVERNOIS, THE SHORT LEFT TURN LANE WHEN HEADING SOUTH ON LIVERNOIS, AND THE FACT THAT THE BUILDING (2800 LIVERNOIS) OCCUPANCY WILL TRIPLE APRIL 1, 1997, WE THE UNDERSIGNED, EMPLOYEES OF CARLSON MARKETING GROUP, 2800 LIVERNOIS, TROY, MICHIGAN, REQUEST THE INSTALLATION OF A TRAFFIC SIGNAL AT OUR DRIVEWAY (ROYALDALE) AND LIVERNOIS.

ITEM 8

Name	Business Address	Bus. Phone
1 Marilyn Dayer	2800 Livernois	810 824-7747
2 Bepo Phillips		810 824 7013
3 Shannon Lawlis	2800 Livernois	810 824 7871
4 Jim Schmitt	2800 Livernois	810 542-2382
5 SC-RS	2800 Livernois	(610) 824-7220
6 Kellie Thompson	2800 Livernois	(810) 824-7861
7 Pat Page	2800 Livernois	(810) 824-7805
8 Steve Carlson	2800 Livernois	(810) 824-7759
9 Maria Roman	2800 Livernois	810-824-7695
10 Andrea Colucci	2800 Livernois	810-824-7702
11 Jeanne V. Gardner	2800 Livernois	810-824-7899
12 Nicole Greer	2800 Livernois	(810) 824-4301
13 Doreen Romanin	2800 Livernois	(810) 824-7883
14 Kevin Harlow	2800 Livernois	(810) 824-7744
15		
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22		
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25		

City of Troy

October 16, 1996

Ms. Ann Miller
3072 Gloucester Avenue
Troy, MI 48084

RE: Left turn arrow for the intersection of Golfview and Coolidge Roads.

Dear Ms. Miller:

As per your request, a complete review of the traffic conditions at the intersection of Golfview and Coolidge Roads was performed. The following is a list of the various analyses performed and comments:

1. Accident Analysis: All accidents at the location since 1993 were analyzed to determine any accident related deficiencies at the intersection. It was found that in 1995, there were 8 rear-end type accidents and 4 accidents related to left turns from Coolidge onto Golfview. In 1995 the signal was operating with three phases with separate left turn phase for Golfview. The above mentioned types of accidents may have happened due to inadequate green and/or amber time for Coolidge. It is also observed that the number of accidents in 1996 has dropped drastically. This may be attributed to the signal timing improvements that were done after completion of construction. A left turn arrow for Golfview would be warranted if there were 4 accidents per year related to left turns from Golfview (as per left-turn warrants, Institute of Transportation Engineers, Technical Committee 76-1). In this case there have been no left turn related accidents in the years 1993, 1994 and 1995. There was one left turn related accident in 1996, however, this does not warrant the installation of a separate left turn arrow.
2. Traffic Volume Analysis: Traffic volumes for all approaches of the intersection were analyzed for different time periods in 1996. Traffic volumes from September 1996 were used for further analysis. The analysis indicated that there is a delay to left turners from Golfview during one hour of the day, between 5:00 PM and 6:00 PM. For the rest of the day traffic operations were found to be reasonably smooth. The analysis also indicated that traffic volumes on Coolidge for the time period between 5:00 and 6:00 PM were very high for both northbound and southbound approaches. Any decrease in green time for Coolidge would create excessive delay to motorists and may cause more rear-end type accidents as observed in 1995. Such a change may also affect traffic flow at several neighboring intersections on Coolidge.

500 W. BIG BEAVER ROAD • TROY, MICHIGAN 48084 • AREA CODE (810)

Bldg. Inspections	524-3344	Dept. of Public Works	524-3370	Library	524-3545	Purchasing	524-3338
City Assessor	524-3311	Engineering	524-3383	Museum	524-3570	Recreation (Parks)	524-3484
City Attorney	524-3320	Finance	524-3411	Personnel	524-3339	Traffic Engineer	524-3379
City Clerk	524-3316	Fire	524-3419	Planning	524-3364	Treasurer	524-3334
City Manager	524-3330	Information	524-3300	Police Dept.	524-3443		

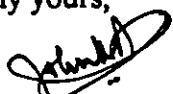


3. Level of Service Analysis: Level of service is defined in terms of delays to the motorists. This is a measure of driver discomfort, frustration, fuel consumption and lost travel time. The analysis was performed for several combinations of signal timing. It was found that when a left turn phase is added for Golfview traffic, the level of service for westbound left turn vehicles from Golfview improves but for all other traffic movements the level of service decreases. As mentioned earlier, this would mean more delays to all other motorists traveling through the intersection, increasing congestion in the area.

Based on the above analyses, it is recommended that the signal operations at the intersection be continued as existing. The intersection will be under observation for two months. In this period, it will be evaluated for safe and efficient traffic movement, and improvements may be recommended as deemed necessary.

Thank you for your concern for safe and efficient traffic operations in City of Troy. Please feel free to call me if you need any additional information regarding this issue. For your convenience, my phone number is (810) 524 3379.

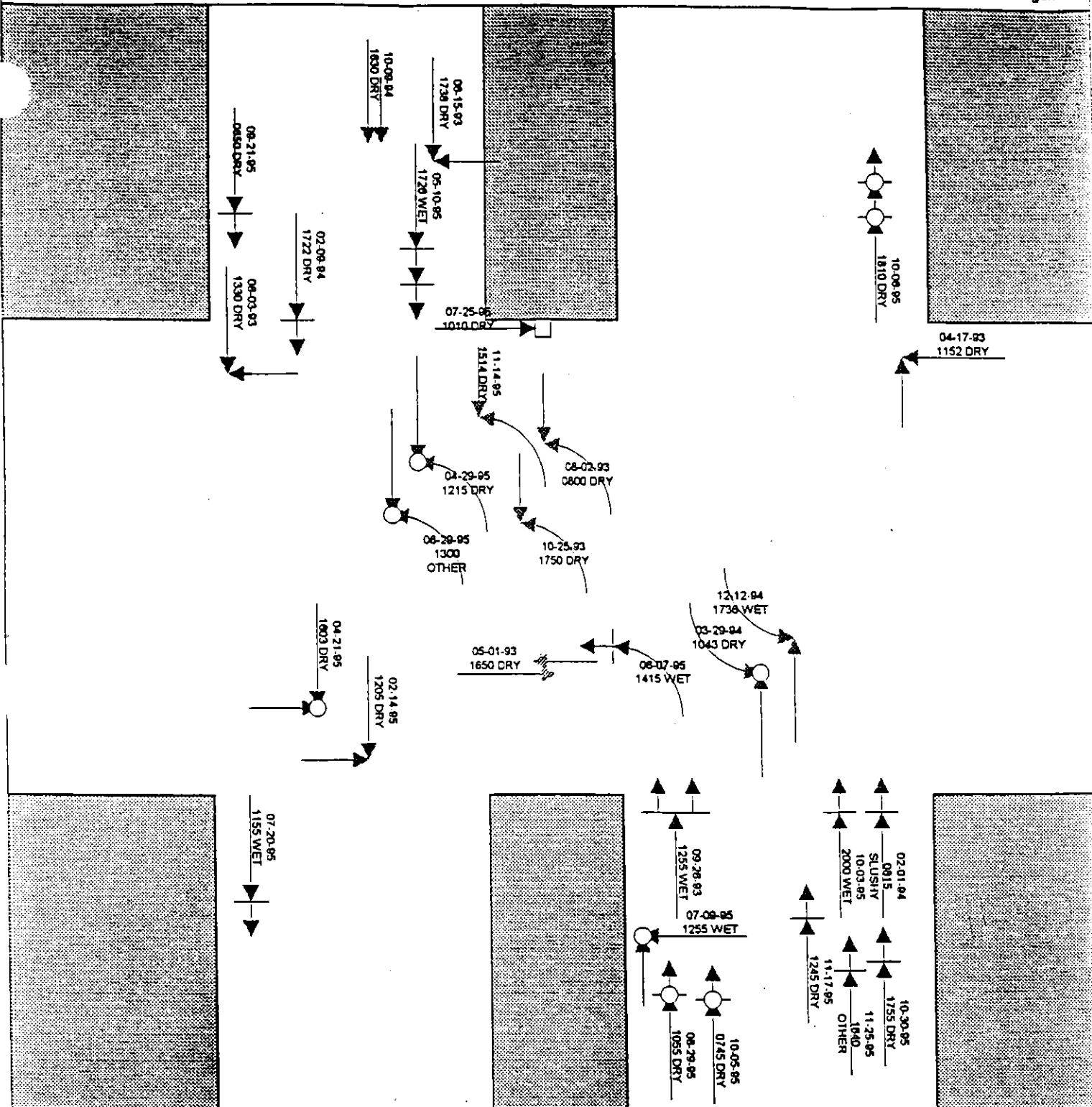
Truly yours,



John K. Abraham
Traffic Engineer

cc: James Bacon, City Manager
John Szerlag, Assistant City Manager
Neall Schroeder, City Engineer
Richard Beaubien, Traffic Consultant

COLLISION DIAGRAM



SYMBOLS

- | | |
|-------------------|------------------|
| ← Moving Vehicle | □ Fixed Object |
| ← Backing Vehicle | ○ Injury |
| ← Pedestrian | ● Fatality |
| ← Out of Control | ▢ Parked Vehicle |

TYPES OF COLLISIONS

- | | |
|--------------------------------|------------------------------|
| ← At Fault Rear End | ← At Fault Right Angle |
| ← At Fault Head On | ← At Fault Rear End Turning |
| ← At Fault Side Swipe Same | ← At Fault Head On Left Turn |
| ← At Fault Side Swipe Opposite | |

For Each Collision:
Date: dd-mm-yy
Time: 24 hr time
Road Conditions

COOLIDGE AND GOLFVIEW

From: 1993 To: 1995

By: COLWANDER

Date: 9/5/96



COLLISION DIAGRAM

City of Troy
Oakland County,
Michigan

08-15-96
1341 DRY

08-27-96
1120 DRY

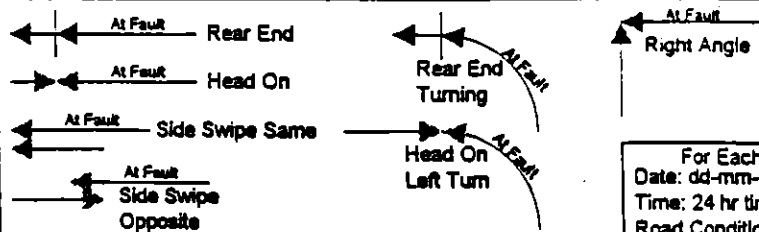
08-14-96
0910 DRY

GOLFVIEW
COOLIDGE

SYMBOLS

	Moving Vehicle		Fixed Object
	Backing Vehicle		Injury
	Pedestrian		Fatality
	Out of Control		Parked Vehicle

TYPES OF COLLISIONS



For Each
Date: dd-mm-y
Time: 24 hr time
Road Conditions

COOLIDGE AND GOLFVIEW 1996

By: COLWANDER

Date: 09-17-96

COOLIDGE/GOLFVIEW
LEVEL OF SERVICE ANALYSIS
FOR P.M. PEAK HOUR
SEPTEMBER 1996

<u>Intersection Approach</u>	<u>Existing Two-Phase Operation</u>	<u>Proposed Three-Phase Operation</u>
Eastbound Left	C	D
Eastbound Thru & Right	D	F
Westbound Left	F	D
Westbound Thru & Right	C	D
Northbound Left	B	F
Northbound Thru & Right	B	C
Southbound Left	F	F
Southbound Thru & Right	B	C

LEVEL OF SERVICE

Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, level-of-service criteria are stated in terms of the average stopped delay per vehicle per 15 minute analysis period. The criteria is given in the following table.

Delay may be measured in the field, or may be estimated using procedures presented later in this chapter. Delay is a complex measure, and is dependent on a number of variables, including the quality of the progression, the cycle length, the green ratio, and the volume to capacity ratio for the lane group or approach in question.

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service	Stopped Delay Per Vehicle (Seconds)
A	<5.0
B	5.1 to 15.0
C	15.1 to 25.0
D	25.1 to 40.0
E	40.1 to 60.0
F	>60.0

Level-of-Service A describes operations with very low delay, i.e., less than 5.0 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level-of-Service B describes operations with delay in the range of 5.1 to 15.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level-of-Service A, causing higher levels of average delay.

Level-of-Service C describes operations with delay in the range of 15.1 to 25.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

Level-of-Service D describes operations with delay in the range of 25.1 to 40.0 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level-of-Service E describes operations with delay in the range of 40.1 to 60.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.

Level-of-Service F describes operations with delay in excess of 60.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

GOLFVIEW AT COOLIDGE
LEFT TURNS
SEPTEMBER 1996

Time	Westbound to Southbound Left Volume	Opposing Eastbound Through and Right Volume	Eastbound to Northbound Left Volume	Opposing Westbound Through and Right Volume
11 am-12 pm	168	184	33	89
12 pm-1 pm	208	196	27	167
4-5 pm	235	335	48	111
5-6 pm	241	401	64	160

**COOLIDGE AND GOLFVIEW
PEDESTRIAN MOVEMENTS
SEPTEMBER 1996**

	11 AM - NOON	NOON - 1 PM	4 - 5 PM	5 - 6 PM
SOUTHBOUND COOLIDGE	19	20	0	4
NORTHBOUND COOLIDGE	2	4	5	3
EASTBOUND GOLFVIEW	2	5	3	4
WESTBOUND GOLFVIEW	1	2	6	3