



## CITY COUNCIL AGENDA ITEM

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Date: July 1, 2011

To: John Szerlag, City Manager

From: Mark F. Miller, Director of Economic & Community Development  
Steven J. Vandette, City Engineer  
William J. Huotari, Deputy City Engineer/Traffic Engineer

Subject: Traffic Committee Recommendations and Minutes  
June 15, 2011

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### Background

The Traffic Committee considered a request to install a Stop sign on eastbound Rothwell at Provincial. This item was considered at the June 15, 2011 meeting (minutes attached).

### Recommendations

There are two recommendations:

1. The Traffic Committee recommends no change.

OR

2. City Management recommends installation of a stop sign on the Provincial approach to Rothwell. Supporting documentation is attached.

C: Traffic Committee  
Traffic Committee meeting attendees  
Neil Fletcher

A regular meeting of the Troy Traffic Committee was held Wednesday, June 15, 2011 in the Lower Level Conference Room at Troy City Hall. Pete Ziegenfelder called the meeting to order at 7:30 p.m.

1. **Roll Call**

PRESENT: Sarah Binkowski  
Ted Halsey  
Richard Kilmer  
Pete Ziegenfelder

ABSENT: John Diefenbaker  
Jan Hubbell  
Gordon Schepke

Also present: Bill Huotari, Deputy City Engineer/Traffic Engineer  
Lt. David Livingston, Troy Police Dept.

And: Suzie Wanstreet, 1141 Provincial  
Nicole Gearty, 1066 Salma  
Lou Wassel, 1221 Rothwell

2. **Minutes – March 16, 2011**

RESOLUTION # 2011-06-09

Moved by Kilmer  
Seconded by Halsey

To approve the March 16, 2011 minutes as printed.

YES: All-4  
NO: None  
ABSENT: 3 (Diefenbaker, Hubbell, Schepke)

MOTION CARRIED

**REGULAR BUSINESS**

3. **Install STOP sign on Eastbound Rothwell at Provincial**

Susie Wanstreet, 1141 Provincial, opposes the installation of a Stop sign on Provincial. Concerns stated are relative to speeding on Rothwell by residents living in the area. Lou Wassel, 1221 Rothwell, reiterated support for no changes at the intersection as well as concerns about speeding on Rothwell. Specifically during the a.m. and p.m. peak hours.

**Install STOP sign on Eastbound Rothwell at Provincial (continued)**

Lt. Livingston offered to place the radar trailer on site and to provide select enforcement of the area.

Discussion ensued among Traffic Committee members, Traffic Engineer, Lt. Livingston and residents. Residents were informed that they could come back to Traffic Committee if issue persists.

**RESOLUTION # 2011-06-10**

Moved by Halsey

Seconded by Binkowski

Recommend no changes at the intersection of Rothwell at Provincial.

YES: All-4

NO: None

ABSENT: 3 (Diefenbaker, Hubbell, Schepke)

MOTION CARRIED

4. **Public Comment**

No one wished to address the committee.

5. **Other Business**

Mr. Halsey observed that the Stop sign on the southeast corner of Hartland at Talbot or Kilmer is obstructed by a tree. The Traffic Engineer will investigate and resolve the issue.

6. **Adjourn**

The meeting adjourned at 8:03 p.m.

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Pete Ziegenfelder, Chairperson

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Bill Huotari, Recording Secretary



## TRAFFIC COMMITTEE REPORT

May 19, 2011

TO: Traffic Committee

FROM: Bill Huotari, Deputy City Engineer/ Traffic Engineer *UBH*

SUBJECT: Rothwell at Provincial  
Stop Sign Request

### Background:

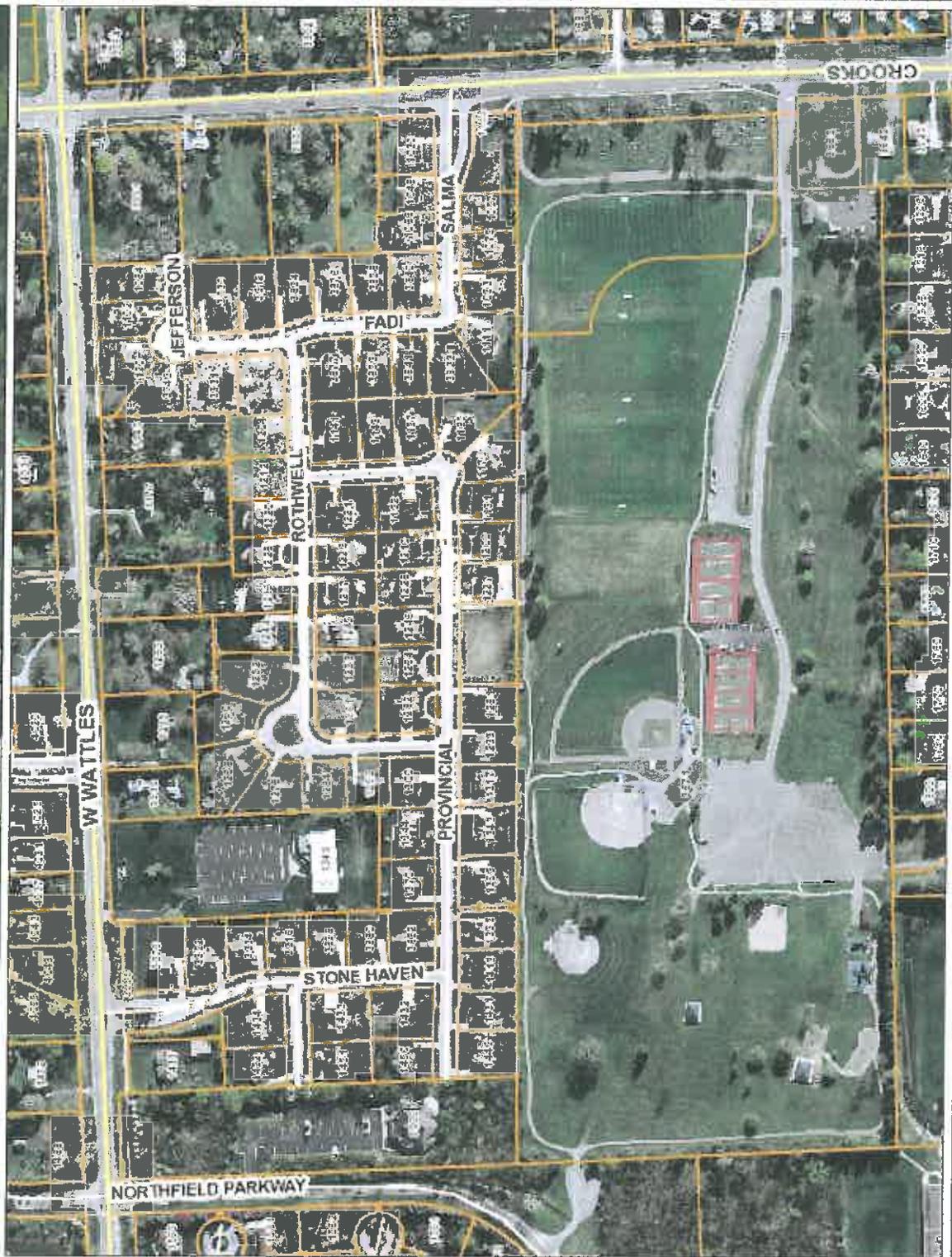
- Neil Fletcher of 1120 Jefferson requested that a STOP sign be installed on eastbound Rothwell at Provincial.
- The posted speed limit on both streets is 25 mph.
- Rothwell is considered the major road at this location due to its continuous nature, while Provincial is considered the minor road due to its termination at Rothwell.
- 24 hour traffic volumes were collected by city staff and indicate that the average daily traffic (ADT) on Rothwell was 139 with Provincial at 151.
- The highest peak hour volumes are 16 along each road.
- The volumes are well below the threshold levels for multi-way STOP sign warrants.
- There have been no crashes recorded at this intersection in the past four (4) years.
- 85<sup>th</sup> percentile speeds, are approximately 29 mph on Rothwell and 25 mph on Provincial.
- There are sight distance concerns with trees and landscaping, on private property, in the southeast quadrant.
- The city requested that our traffic engineering consultant (OHM) review the request and provide a report of their findings and recommendations (copy attached).
- The report recommends that a STOP sign be placed on the Provincial northbound approach to the intersection, based on their review and findings that the safe approach speed on Provincial is less than 10 mph.

### Recommendations:

- Staff concurs with our consultant's recommendation to modify the intersection control from "no traffic control" to a STOP sign on the Provincial northbound approach to Rothwell.

### Suggested Resolutions:

- a. Recommend installation of a STOP sign on the Provincial northbound approach to Rothwell.
- b. Recommend no changes at the intersection of Rothwell at Provincial.



**Legend**

- I-75
- Road Centerline
  - Major Road
  - Industrial Road
  - Local Road
- Ponds and Basins
- Streams and Creeks
- Parcels
- Aerial Photos - 2010
  - Red:Band\_1
  - Green:Band\_2
  - Blue:Band\_3

1: 4,416



**Notes**  
 Rothwell at Provincial - STOP SIGN Request

Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally recorded map survey. Users of this data are hereby notified that the source information represented should be consulted for verification.



May 12, 2011



Mr. William Huotari, PE  
Deputy City Engineer  
City of Troy  
500 W Big Beaver Road  
Troy, MI 48084

Subject: Traffic Control Recommendation for the intersection of Rothwell Drive and Provincial Drive  
OHM JN: 0128-11-0020

Dear Mr. Huotari:

As requested, we have reviewed the Rothwell Drive/Provincial Drive intersection to determine the proper traffic control. The subject intersection is a T-intersection located in the City of Troy, in the Stone Haven Woods Subdivision, south of Wattles Road and west of Crooks Road. Provincial Drive is a local street, which runs north-south forming a T-intersection at the north end with Rothwell Drive. Rothwell Drive is a local street running in the east-west direction. The speed limit on both streets is 25 mph. There is currently no traffic control on any of the approaches. Reference the attachments for an aerial and intersection photos.

#### **Background on Traffic Control Determination**

Based on the *Michigan Manual of Uniform Traffic Control Devices (MMUTCD)* there are four conditions where STOP signs may be warranted:

- At the intersection of a less important road with a main road where application of the normal right-of-way rule is unduly hazardous.
- On a street entering a through highway or street.
- At an unsignalized intersection in a signalized area.
- At other intersections where a combination of high speed, restricted view, or crash records indicate a need for control by the STOP sign.

Many times STOP signs are installed where they may not be warranted. Traffic experts agree that unnecessary STOP signs:

- Cause accidents they are designed to prevent.
- Breed contempt for other necessary STOP signs.
- Waste millions of gallons of gasoline annually.
- Create added noise and air pollution.
- Increase, rather than decrease, speeds between intersections.

The use of "multiway-STOP" or "all-way" STOP sign installation is discouraged. The multiway-STOP warrant requires the volumes of traffic per approach leg on intersecting roads to be approximately equal.

The use of a YIELD sign is intended to assign the right-of-way at intersections where it is not usually necessary to stop before proceeding into the intersection. Conversely, the STOP sign is intended for use where it is usually necessary to stop before proceeding into the intersection.

The following conditions should be fully evaluated to determine how the right-of-way should be assigned:

- **Traffic Volumes:** Normally, the heavier volume of traffic should be given the right-of-way.
- **Approach Speeds:** The higher speed traffic should normally be given the right-of-way.
- **Types of Highways:** When a minor highway intersects a major highway, it is usually desirable to control the minor highway.
- **Sight Distance:** Sight distance across the corners of the intersection is the most important factor and is critical in determining safe approach speeds.

#### **Traffic Volumes**

24-Hour traffic volumes were provided by the City of Troy. The counts indicate the average daily traffic (ADT) on Rothwell Drive to be 139 with Provincial Drive at 155. The highest peak hour volumes along each road are 16 for Rothwell Drive and 16 on Provincial Drive. The MMUTCD indicates that multi-way STOP control could be warranted if there were at least 300 vehicles per hour from the major street approaches and 200 units (vehicles, pedestrians and bicycles) per hour from the minor street approaches for the same eight hours on an average day. Based on the peak hour volumes alone, the option of multi-way STOP control does not meet warrants.

With the pedestrian and vehicular traffic added together (assuming less than 20 pedestrians per hour) this location is still far below warrant thresholds for multi-way STOP control. All traffic counts are provided as an attachment to this letter. Pedestrian traffic has not been counted at the intersection.

#### **Crash Analysis**

Based on information provided by the City of Troy there have been no crashes reported at this intersection in the past four years.

#### **Approach Speeds**

The approach speed limit on both streets is 25 mph. Speed limits alone cannot be used in this case to determine which direction of traffic should be assigned the right-of-way.

#### **Types of Highways**

Although both Rothwell Drive and Provincial Drive are considered local streets, Rothwell Drive should be assigned right of way in this case, as it is the continuing road and Provincial Drive terminates at Rothwell Drive. Driver expectation is that the continuing road does not have to stop and the terminating road must at a minimum slow to make the turn.

#### **Sight Distance**

The major sight distance obstructions at the intersection are the trees and landscaping in southeast quadrant. The trees, landscaping and sight distance come into play when determining the safe approach speeds for the intersection. The safe approach speed is the speed at which a vehicle can approach an intersection and still stop in time to avoid a collision with a vehicle on the cross street. Safe approach speeds are determined through calculations.

When the safe approach speed is found to be less than 10 mph for the minor road, a STOP sign is commonly used. In this case, the safe approach speed on Provincial Drive was found to be less than 10 mph; therefore a STOP sign is the recommended treatment. The safe approach speed calculation spreadsheet is attached for your reference.

**Recommendation**

OHM recommends that the intersection control be modified from "no traffic control" to a STOP sign on the Provincial Drive northbound approach to the intersection. We recommend against modifying the intersection to multi-way STOP control.

Sincerely,  
Orchard Hiltz & McCliment, Inc.

A handwritten signature in black ink, appearing to read "S. Loveland".

Steven M. Loveland, PE, PTOE  
Traffic Project Engineer

**Attachments:**

- Aerial and Intersection Photos
- Traffic Counts
- Safe Approach Speed Calculation Spreadsheet



Northbound Provincial



Eastbound Rothwell



Northbound Provincial



Westbound Rothwell



Eastbound Rothwell

# Safe Approach Speed Calculation

Rothwell at Provincial  
City of Troy, MI

Major = Rothwell  
Local = Provincial

Date: 5/12/2011  
Analyst: S. Loveland

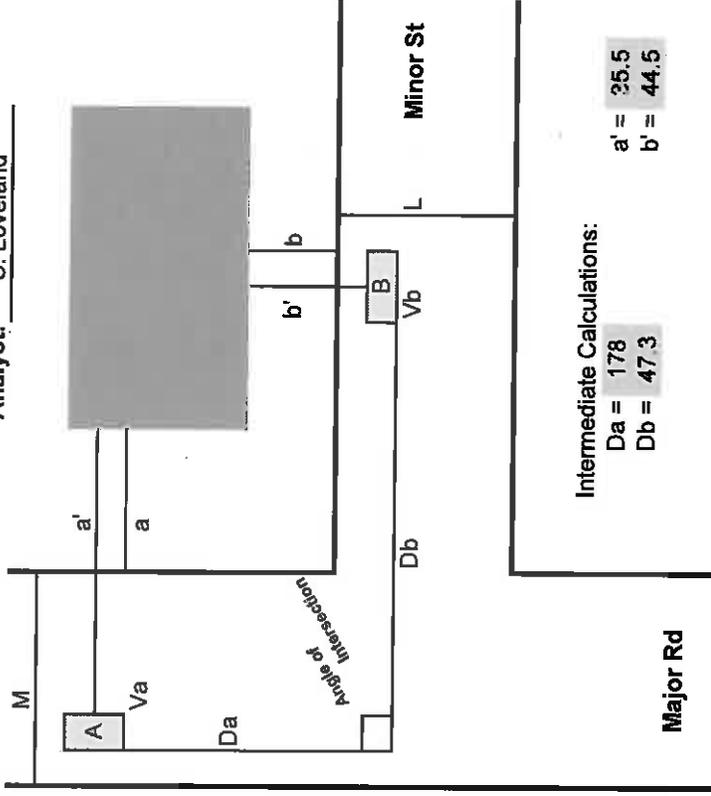
Measured:

Width of Roads  
Major: M = 29 (ft)  
Local: L = 29 (ft)

Distance to Obstruction  
a = 24 (ft)  
b = 27 (ft)

Angle of Intersection  
Delta = 90 (degrees)

Major Rd Posted  
Speed Limit = 25 (mph)



Intermediate Calculations:  
Da = 178  
Db = 47.3  
a' = 25.5  
b' = 44.5

## Assumed:

Speed of Vehicle A = Posted Speed Limit  
on Major Road + 5 (mph)  
Va = 30 (mph)

Perception / Reaction Time (AASHTO)  
t = 2.0 (sec)

Coefficient of friction (AASHTO)  
f = 0.40

Clearance distance in excess of safe stopping distance (AAA)  
C = 15 (ft)

Calculated Safe Approach Speed for Vehicle  
Approaching on Local Rd  
Vb = 8.8 (mph)

Notes: Enter field measurements in yellow highlighted area.  
Blue fields are std default values, change only for cause.  
Calculated by spreadsheet

Recommended ROW control for local street  
based on safe approach speed : **STOP Sign**