



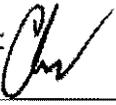
CITY of NOVI CITY COUNCIL

www.cityofnovi.org

Agenda Item 2
January 22, 2007

SUBJECT: Approval of Traffic Control Order 07-01 for the installation of a three-way Stop Sign at Christina Lane and Concord Drive as requested by the Cedarspring Estates I & II Board of Directors, or a one-way Stop Sign on eastbound Concord Drive as recommended by OHM's traffic analysis.

SUBMITTING DEPARTMENT: Public Works

CITY MANAGER APPROVAL: 

EXPENDITURE REQUIRED	N/A
AMOUNT BUDGETED	N/A
APPROPRIATION REQUIRED	N/A
LINE ITEM NUMBER	N/A

BACKGROUND INFORMATION:

On December 6, 2006, the Cedarspring Estates I & II Board of Directors submitted a written request to City Council for the installation of a three-way Stop Sign at the intersection of Christina Lane and Concord Drive. Traffic counts were recorded and a traffic analysis was conducted. A public notice was issued in the January 18, 2007 Novi Newspaper advising residents that this item was scheduled for consideration at the January 22nd City Council meeting.

At this time and according to OHM's traffic analysis, the installation of a one-way Stop Sign on eastbound Concord Drive is the recommended traffic signage.

RECOMMENDED ACTION:

Approval of Traffic Control Order 07-01 for the installation of a 3-way Stop Sign at Christina Lane and Concord Drive as requested by the Cedarspring Estates I & II Board of Directors, or a one-way Stop Sign on eastbound Concord Drive as recommended by OHM's traffic analysis.

	1	2	Y	N
Mayor Landry				
Mayor Pro Tem Capello				
Council Member Gatt				
Council Member Margolis				

	1	2	Y	N
Council Member Mutch				
Council Member Nagy				
Council Member Paul				

**CITY OF NOVI
TRAFFIC CONTROL ORDER**

_____ SPEED
_____ PARKING
 X OTHER

DATE OF ORDER: January 12, 2007

CONTROL NUMBER: 07-01

PURSUANT TO CHAPTER NO. 33 OF THE CODE OF ORDINANCES OF THE CITY OF NOVI, MICHIGAN, SAME BEING THE UNIFORM TRAFFIC CODE FOR CITIES, TOWNSHIPS, AND VILLAGES OF MICHIGAN, AND IN THE INTEREST OF PUBLIC SAFETY AND CONVENIENCE, THE FOLLOWING TRAFFIC CONTROL ORDER IS HEREBY ISSUED BY WILLIAM McCUSKER, DIRECTOR OF PUBLIC WORKS, DULY AUTHORIZED AS TRAFFIC ENGINEER, BY SEC. 33.141 OF THE AFORESAID CHAPTER.

ISSUANCE OF THIS TRAFFIC CONTROL ORDER WAS PRECEDED BY STUDY AND INVESTIGATION OF TRAFFIC CONDITIONS ON THE FOLLOWING PUBLIC ROAD OR ROADS IN THE CITY OF NOVI, MICHIGAN.

CHRISTINA LANE AND CONCORD DRIVE

AND AFTER SAID INVESTIGATION, IT IS HEREBY ORDERED AND DIRECTED THAT THE DEPARTMENT OF PUBLIC WORKS ERECT AND MAINTAIN THE THREE-WAY STOP SIGN (S) IN ACCORDANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AS REQUIRED BY SEC. 33.217 OF THE AFORESAID CHAPTER, SAID SIGNS TO GIVE NOTICE OF THE FOLLOWING DETERMINATION:

THREE-WAY STOP SIGN AT THE INTERSECTION OF CHRISTINA LANE AND CONCORD DRIVE

TRAFFIC ENGINEER

DATED: January 12, 2007

APPROVED BY CITY COUNCIL

TRAFFIC CONTROL ORDER NUMBER 07-01 HAVING BEEN PRESENTED TO THE COUNCIL OF THE CITY OF NOVI, MICHIGAN FOR STUDY AND APPROVAL, IS HEREBY APPROVED AND IT IS HEREBY ORDERED AND DIRECTED THAT THIS ORDER BE FILED IN THE OFFICE OF THE CITY CLERK AND A COPY THEREOF IN THE OFFICE OF THE CHIEF OF POLICE OF SAID CITY.

IT IS FURTHER ORDERED AND DIRECTED THAT THIS ORDER SHALL BECOME EFFECTIVE UPON BEING FILED WITH THE CLERK AND UPON ERECTION OF ADEQUATE SIGNS GIVING NOTICE OF THE EXISTENCE OF AFORESAID,

THREE-WAY STOP SIGN AT THE INTERSECTION OF CHRISTINA LANE AND CONCORD DRIVE

ADOPTED AT THE REGULAR MEETING
OF COUNCIL ON _____.

BY: _____
MAYOR – David Landry

CITY CLERK – Maryanne Cornelius

CITY OF NOVI
TRAFFIC CONTROL ORDER

_____ SPEED

DATE OF ORDER: January 12, 2007

_____ PARKING

CONTROL NUMBER: 07-01

X OTHER

PURSUANT TO CHAPTER NO. 33 OF THE CODE OF ORDINANCES OF THE CITY OF NOVI, MICHIGAN, SAME BEING THE UNIFORM TRAFFIC CODE FOR CITIES, TOWNSHIPS, AND VILLAGES OF MICHIGAN, AND IN THE INTEREST OF PUBLIC SAFETY AND CONVENIENCE, THE FOLLOWING TRAFFIC CONTROL ORDER IS HEREBY ISSUED BY WILLIAM McCUSKER, DIRECTOR OF PUBLIC WORKS, DULY AUTHORIZED AS TRAFFIC ENGINEER, BY SEC. 33.141 OF THE AFORESAID CHAPTER.

ISSUANCE OF THIS TRAFFIC CONTROL ORDER WAS PRECEDED BY STUDY AND INVESTIGATION OF TRAFFIC CONDITIONS ON THE FOLLOWING PUBLIC ROAD OR ROADS IN THE CITY OF NOVI, MICHIGAN.

CONCORD DRIVE

AND AFTER SAID INVESTIGATION, IT IS HEREBY ORDERED AND DIRECTED THAT THE DEPARTMENT OF PUBLIC WORKS ERECT AND MAINTAIN THE STOP SIGN (S) IN ACCORDANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AS REQUIRED BY SEC. 33.217 OF THE AFORESAID CHAPTER, SAID SIGNS TO GIVE NOTICE OF THE FOLLOWING DETERMINATION:

EASTBOUND CONCORD DRIVE TO STOP AT CHRISTINA LANE

TRAFFIC ENGINEER

DATED: January 12, 2007

APPROVED BY CITY COUNCIL

TRAFFIC CONTROL ORDER NUMBER 07-01 HAVING BEEN PRESENTED TO THE COUNCIL OF THE CITY OF NOVI, MICHIGAN FOR STUDY AND APPROVAL, IS HEREBY APPROVED AND IT IS HEREBY ORDERED AND DIRECTED THAT THIS ORDER BE FILED IN THE OFFICE OF THE CITY CLERK AND A COPY THEREOF IN THE OFFICE OF THE CHIEF OF POLICE OF SAID CITY.

IT IS FURTHER ORDERED AND DIRECTED THAT THIS ORDER SHALL BECOME EFFECTIVE UPON BEING FILED WITH THE CLERK AND UPON ERECTION OF ADEQUATE SIGNS GIVING NOTICE OF THE EXISTENCE OF AFORESAID,

EASTBOUND CONCORD DRIVE TO STOP AT CHRISTINA LANE

ADOPTED AT THE REGULAR MEETING
OF COUNCIL ON _____.

BY: _____
MAYOR – David Landry

CITY CLERK – Maryanne Cornelius

Pam Anthe

December 6, 2006

Subject: Three-Way Stop Sign Request for Christina Lane at Concord Drive

Members of the Novi City Council,

A request for action by the City Council has been made by the homeowners of Cedarspring Estates I & II. On behalf of concerned citizens who live on Christina Lane, across from the police station, the Cedarspring Estates I & II Homeowner Association Board of Directors hereby **unanimously** requests the placement of a three-way stop at the junction of Christina Lane and Concord Drive in order to attempt to control the constant speeding on that half-mile stretch of road.

During the history of Cedarspring Estates, this issue has been addressed numerous times and approached by all sides with varying degrees of success. The police department has attempted parked patrol cars, frequent mobile passes and occasional radar-controlled speed signs in an attempt to slow down speeders. While we greatly appreciate these efforts, none have worked to date. We also realize that the department has a very large area to patrol every day and resources are frequently stretched beyond each neighborhood's individual needs. Every subdivision in this city has its own design, street layout and number of households that influence traffic patterns within its perimeters, some being more problematic than others.

As Novi's population has steadily increased, over the past ten years especially, the function of Christina Lane has been elevated to a heavily driven pass-through to eleven-mile road. The addition of phases III & IV and Churchill Crossing have caused traffic to far exceed the originally planned ten percent increase in traffic within the Cedarspring Estates subdivision.

Because of our discussions with public safety officers in the past, we are aware that the police department has a low level of confidence in a stop sign's ability to actually stop a determined driver from rolling on through. While acknowledging this deficiency, we are nonetheless pleading our case for signs at Christina Lane and Concord Drive to slow the overall pace of traffic and control the high speeds, which are alarmingly present at all hours, every day. The safety of our citizens, friends and especially our children demands that we make every attempt to protect our streets from those drivers who, however inadvertently, might cause harm to us and our loved ones.

Please refer questions on this request to Rick Watkins on 248-348-8235.

Sincerely,

Cedarspring Estates I & II Board of Directors

Thomas A. King

Tom King - President

Richard Mehl

Richard Mehl - Treasurer

Rick Watkins

Rick Watkins - Secretary

Proposed three-way stop at
Christina Lane & Concord Drive.
January 10, 2007



PUBLIC NOTICE

Notice is hereby given that the homeowners association of Cedarspring Estates I and II have requested a 3 way stop at the corner of Christina and Concord. This will be an item for consideration at the January 22, 2006 Novi City Council meeting to be held in Council Chambers at 45175 W. 10 Mile, Novi, MI 48375. Comments may be submitted to Benny McCusker, DPW Director, by email to bmccusker@cityofnovi.org, or by mail to 45175 W. 10 Mile Road, Novi, MI 48375.

January 11, 2007

Mr. Benny McCusker
DPW Director
45175 West Ten Mile Road
Novi, MI 48375-3024



Re: Christina Lane at Concord Drive Traffic Study

Dear Mr. McCusker,

Orchard, Hiltz & McCliment, Inc. (OHM) is pleased to submit this intersection control warrant analysis for the intersection of Christina Lane and Concord Drive. Our analysis indicates that, at this time, the intersection does not fulfill the warrants for a three-way stop. However, a one-way stop is warranted for Concord Drive due to a sight obstruction on the northwest corner. The following contains a brief overview of the stop sign warrants contained in the 2005 Edition of the Michigan Manual of Uniform Traffic Control Devices (MMUTCD), a summary of the procedures used in our analysis, and a discussion of our findings.

ROADWAY DESCRIPTION

The Cedar Springs subdivision is located north of Ten Mile Road and west of Novi Road. Concord Drive is a local street in a single-family residential development; Christina Lane serves as a residential collector road through this subdivision, as evidenced by its street width. Both are simple two-lane, two-way streets that intersect at right angle, forming a 'Tee' intersection.

DATA COLLECTION

The City of Novi conducted a 24-hour speed study on NB and SB Christina Lane beginning on December 11, 2006. The study found that the median and average speed for both directions of travel were slightly higher than the prima facie speed limit of 25 MPH. The NB traffic data indicated an average speed of 26-27 MPH, and an 85th percentile speed of 30-31 MPH. The number of vehicles in pace ranged between 74.7-80.7%. The SB traffic data provided an average speed of 27-28 MPH, and an 85th percentile speed of 32-33 MPH, with the number of vehicles in pace ranging between 67.6-72.6%

A 70% minimum threshold is commonly used to identify locations with a high variance of speeds. This data indicates that the majority of vehicles exceed the 25 MPH limit, but travel at speeds that are still reasonable for a collector road. However, given the existing conditions at this location, we recommend that this intersection continue to be monitored for changes.

SIGN WARRANTS

The MMUTCD provides four warrants for the use of a multiway stop. They are as follows:

1. Where traffic control signals are justified, the multiway stop 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.
2. A crash problem, as indicated by 5 or more reported crashes in a 12-month period that are

susceptible to correction by a multiway stop installation. Such crashes include right- and left-turn collisions as well as right-angle collisions.

3. Minimum volumes:
 - A. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day, and
 - B. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour, but
 - C. If the 85th-percentile approach speed of the major-street traffic exceeds 65 km/h or exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the above values.
4. Where no single criterion is satisfied, but where Criteria 2, 3.A, and 3.B are all satisfied to 80% of the minimum values. Criterion 3.C is excluded from this condition.

In searching the crash data bases available from both the Traffic Improvement Association (TIA) and from the Southeast Michigan Council of Governments (SEMCOG), we were unable to identify any reported crashes that occurred at this intersection in the previous twelve months, which eliminates the second warrant. As of December 2006, data collected by the City of Novi found that the volume of traffic on Christina Lane was approximately 1400 vehicles per day, significantly less than the minimum volume warrants listed above. Together, these findings indicate that a multiway stop at this location is unwarranted.

However, this intersection is currently uncontrolled for the assignment of right-of-way. Therefore, we also evaluated the existing conditions to determine if either one-way YIELD or STOP controls would be appropriate. The MMUTCD warrants for the use of stop signs are:

1. Intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law;
2. Street entering a through highway or street;
3. Unsignalized intersection in a signalized area; and/or
4. High speeds, restricted view, or crash records indicate a need for control by the STOP sign.

DISCUSSION & RECOMMENDATIONS

A field review found that at the intersection of Christian Lane and Concord Drive, there were two potential sight obstructions. On the northwest quadrant, there was a landscaping bed containing four mature shrubs approximately 8' in height. It was located approximately 43.5' from Christina Lane, and 18' from Concord Drive. On the southwest corner of the intersection was an untrimmed deciduous tree approximately 10-12' in height. It was measured to be approximately 30' from Christina Lane, and 40' from Concord Drive. While the tree on the southwest corner does not currently impede the view of drivers approaching the intersection, it may pose a problem at some point in the future.

The AAA method for Safe Approach Speed was used to determine whether vehicles approaching an intersection would have adequate time to stop safely if necessary. Per the recommendations

of AAA and the Federal Highway Administration, the safe approach speed threshold used to determine whether a stop or yield sign should be used is 10 MPH; a calculated speed below this threshold indicates that a stop sign should be used.

We chose to assume travel speeds along Christina as 30 MPH to provide a realistic analysis of current conditions. Although both the shrubs and the tree are relatively mature in size, the shrubs were determined to be the greatest constraint to sight distance, and were evaluated as such. The calculated safe approach speed using this obstruction was 8.3 MPH, which is less than the 10 MPH threshold. Therefore, a stop sign should be placed on Concord Drive at Christina Lane.

If you have any concerns or questions, please feel free to contact us at 734-522-6711.

Sincerely,
Orchard, Hiltz & McCliment, Inc.



Stephen B. Dearing, P.E., PTOE.
Manager of Traffic Engineering



Sara A. Merrill
Traffic Engineer

Encl: Safe Approach Speed Calculation (1 page)

Safe Approach Speed Calculation

Christina Ln at Concord
City of Novi MI

Major = Christina Lane
Local = Concord Drive

Date: 1/11/2007
Analyst: SAM

Measured:

Width of Roads

Major: M = 31 (ft)

Local: L = 22 (ft)

Distance to Obstruction

a = 18 (ft)

b = 43.5 (ft)

Angle of Intersection

Delta = 90 (degrees)

Major Rd Posted

Speed Limit = 25 (mph)

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)

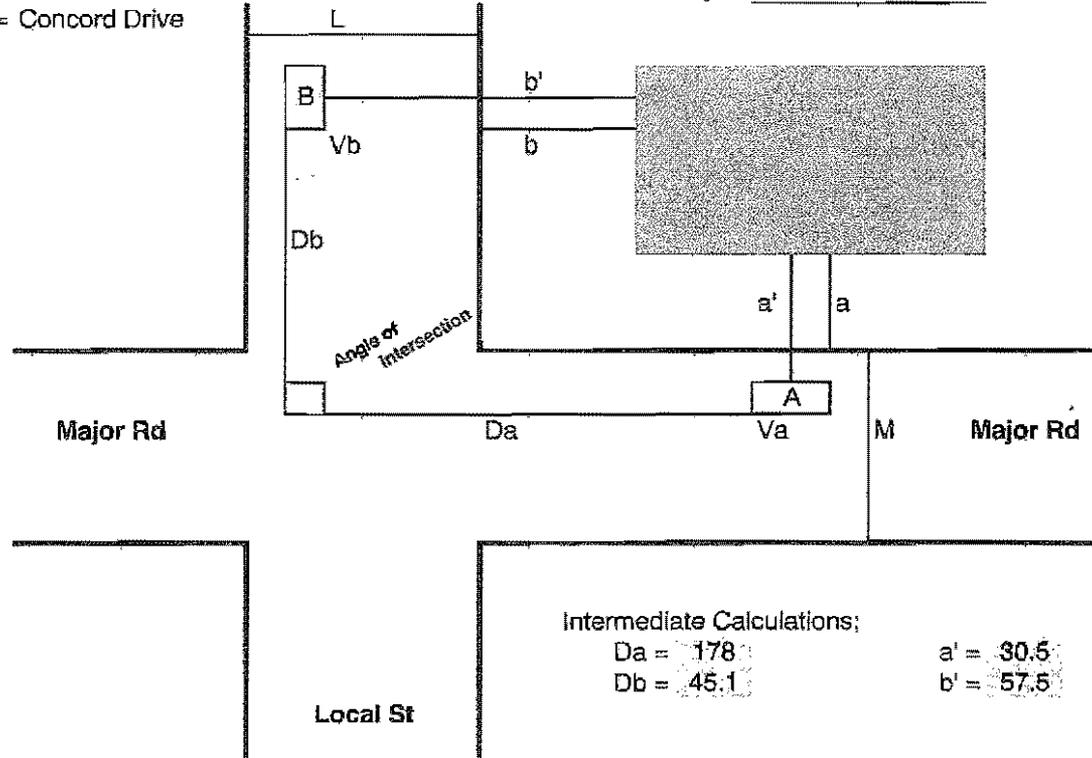
f = 0.40

Clearance distance in excess of safe stopping distance (AAA)

C = 15 (ft)

Calculated Safe Approach Speed for Vehicle
Approaching on Local Rd

Vb = 8.3 (mph)



Intermediate Calculations:

Da = 178

a' = 30.5

Db = 45.1

b' = 57.5

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**

Norman, Lynn

From: Merrill, Sara [sara.merrill@ohm-advisors.com]
Sent: Thursday, January 11, 2007 3:06 PM
To: Slater, Christine; McCusker, Benny
Cc: Dearing, Steve
Subject: Christina at Concord
Attachments: 0163060057_Christina_Concord_Study.pdf

Mr. McCusker & Ms. Slater,

As requested, we have reviewed the intersection of Christina Lane & Concord Drive in the Cedar Springs subdivision. At this time, this location does not meet the warrants for a multiway stop. However, we do recommend a one-way stop for Concord Drive at Christina Lane. Please see the attached letter for additional information.

Feel free to contact us with any questions or comments you may have.

Thank you.

Sara A. Merrill

Traffic Engineer

Orchard, Hiltz & McCliment, Inc.

34000 Plymouth Road
Livonia, MI 48150
p. 734.522.6711
f. 734.522.6427
d. 734.466.4578
www.ohm-advisors.com

Helping Build Better Communities for Tomorrow

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Effective Thursday, December 21, OHM's (Orchard, Hiltz & McCliment, Inc.) website and email addresses have changed.

From ---- lastname@ohm-eng.com
To ----- firstname.lastname@ohm-advisors.com

IE: John Doe
jdoe@ohm-eng.com
john.doe@ohm-advisors.com

01/11/2007

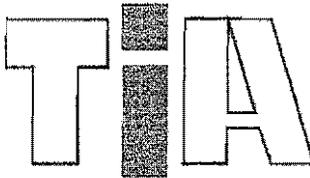
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To ----- firstname.lastname@ohm-advisors.com

IE: John Doe
jdoe@ohm-eng.com
john.doe@ohm-advisors.com



TRAFFIC IMPROVEMENT ASSOCIATION

FACT SHEETS

“MAYBE A STOP SIGN WILL SLOW TRAFFIC ON OUR STREET?”

Stop signs installed in the wrong places for the wrong purposes usually create more problems than they solve.

One common misuse of Stop signs is to arbitrarily interrupt traffic, either by causing it to stop or by causing such an inconvenience that motorists are forced to use other routes. Studies conducted in many parts of the country show that there is a high incidence of intentional violations where Stop signs are installed as “nuisances” or “speed breakers”. These studies show that speed was only reduced in the immediate vicinity (about 100 to 150 feet) of the “nuisance” stop signs. But, speeds were actually higher between Stop signs than they would have been if these signs had not been installed. These same studies show that drivers increase their speed between unwarranted Stop signs to make up for lost time. Because of these studies and the increased speeds of drivers on streets with unwarranted Stop signs, the Michigan Manual of Uniform Traffic Control Devices clearly states that “Stop signs should not be used for speed control.”

At the right place and under the right conditions, a Stop sign tells drivers and pedestrians who has the right of way. Nationally recognized standards have been established to determine when stop signs should be used. These standards, or “Warrants,” are:

- 1) Intersection of a less important road with a main road where the normal right-of-way rule is unduly hazardous,
- 2) Street entering a through highway or street,
- 3) Unsignalized intersection in a signalized area, or
- 4) Other intersections where a combination of high speed, restricted view, and serious crash record indicates a need for control by the Stop sign.

Before a Stop sign can be installed, a traffic study must be conducted to determine the prevalent speeds of vehicles, sight distance restriction between all approaching vehicles and analysis of crash data.

Prior to the application of these Stop sign Warrants, consideration should be given to less restrictive measures, such as a Yield sign.

Most drivers are reasonable and prudent, but, when confronted with unreasonable restrictions, they frequently violate them and develop a general contempt for all traffic controls – often with tragic results.

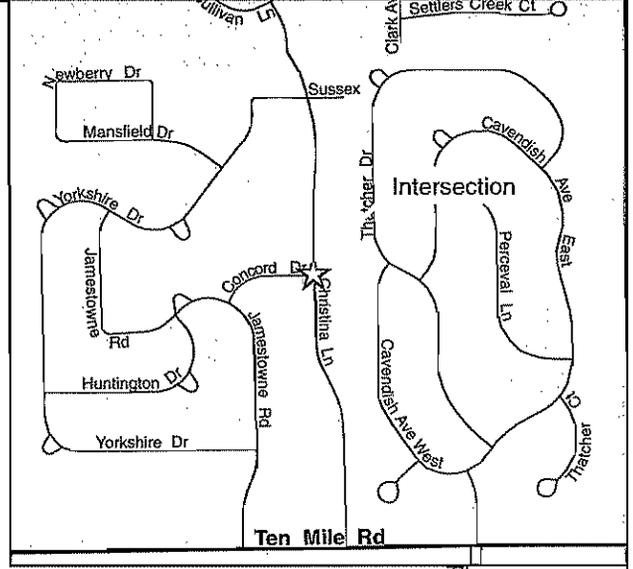
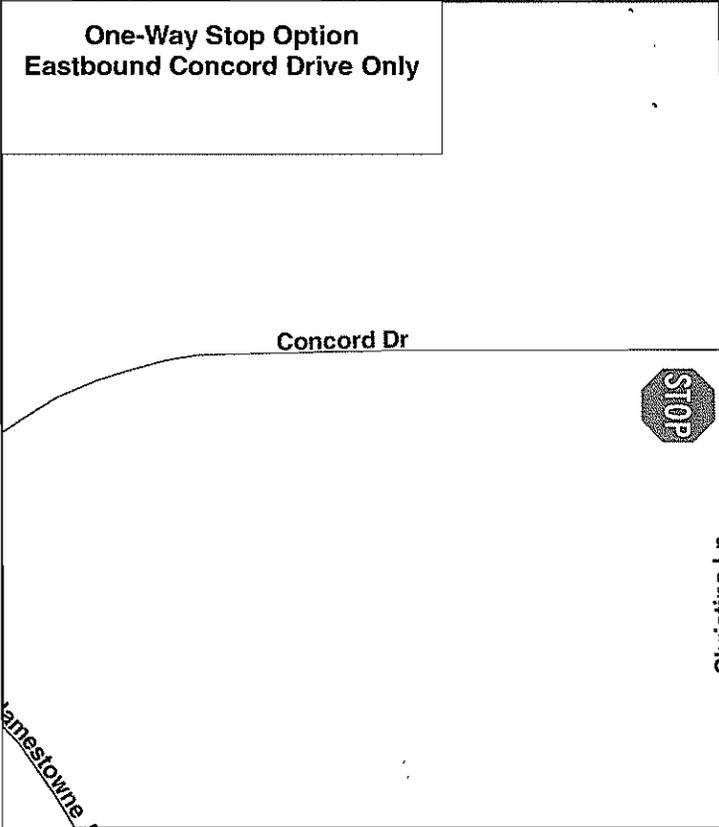


Proposed Traffic Stop Sign Locations City of Novi, Michigan

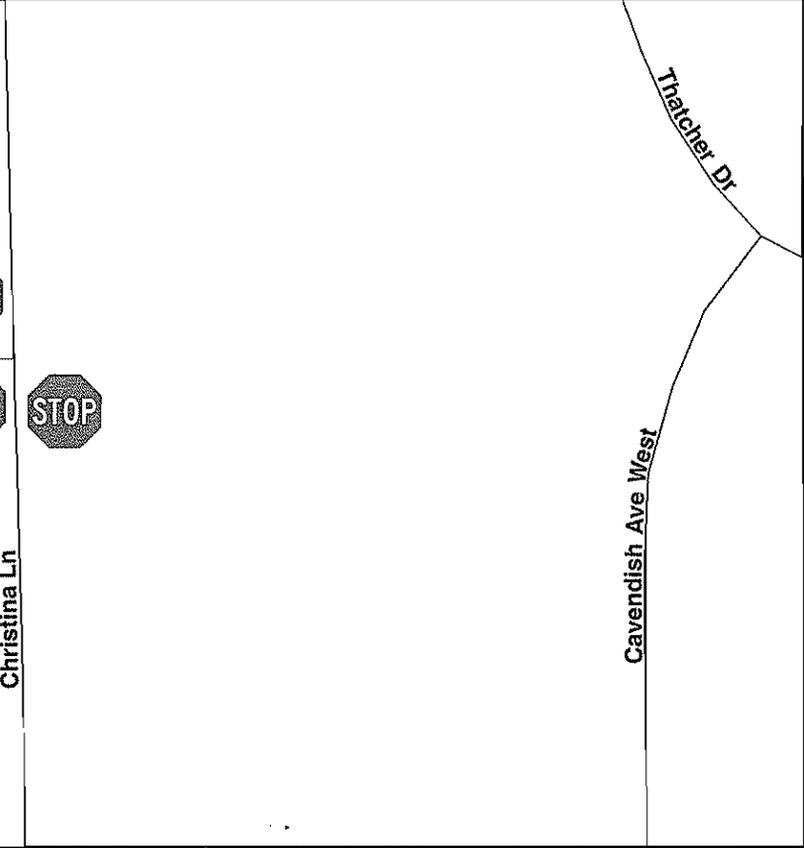
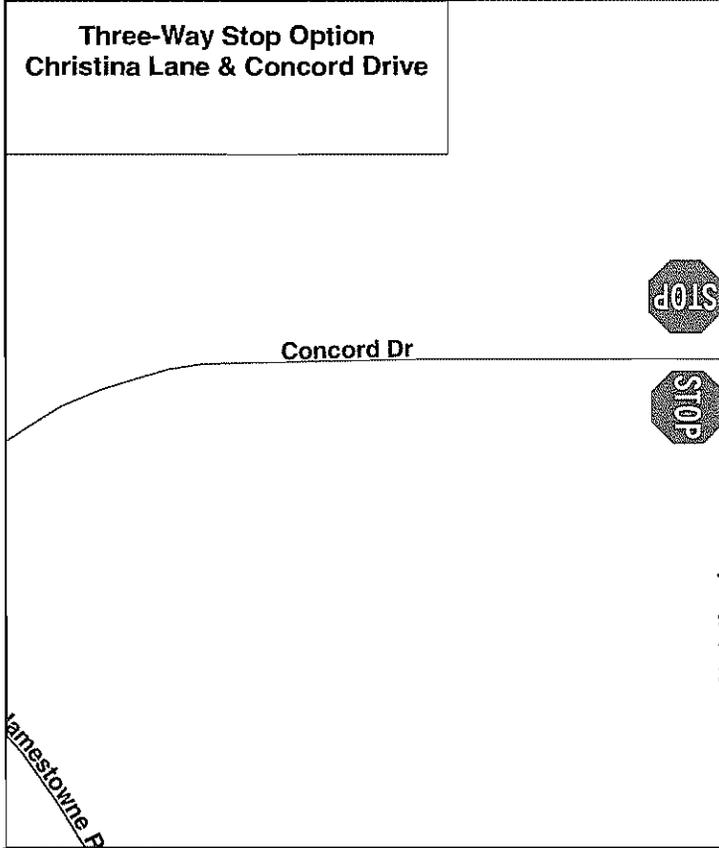


Proposed Locations In Cedarspring Estates Subdivision No. 2

**One-Way Stop Option
Eastbound Concord Drive Only**



**Three-Way Stop Option
Christina Lane & Concord Drive**



CITY OF NOVI
 DEPARTMENT OF INFORMATION TECHNOLOGY
 GEOGRAPHIC INFORMATION SYSTEMS OFFICE
 NOVI CITY HALL / CIVIC CENTER
 45175 W. TEN MILE ROAD
 NOVI, MI 48375-3024
 (248) 347-3229
 WWW.CITYOFNOVI.ORG

Map Revision Date: 1/17/2007
 Map Sources: City of Novi Transportation Layer
 Map Author: Chris Blough, City GIS Manager

