

# Memorandum



CITY OF DALLAS

DATE: May 22, 2015

TO: Honorable Members of the Public Safety Committee:  
Sheffie Kadane (Chair), Adam Medrano (Vice Chair), Dwaine Caraway, Jennifer S. Gates,  
Sandy Greyson, Scott Griggs

SUBJECT: **All-Way Stop Petition Process**

On Tuesday, May 26, 2015, you will be briefed on the All-Way Stop Petition Process. Attached you will find the briefing materials for your information.

Please feel free to contact me if you need additional information.

A handwritten signature in black ink, appearing to read 'Jill Jordan'.

Jill A. Jordan, P.E.  
Assistant City Manager

## Attachment

c: Honorable Mayor and Members of the City Council  
A.C. Gonzalez, City Manager  
Warren M.S. Ernst, City Attorney  
Craig D. Kinton, City Auditor  
Rosa A. Rios, City Secretary  
Daniel F. Solis, Administrative Judge  
Ryan S. Evans, First Assistant City Manager

Eric D. Campbell, Assistant City Manager  
Mark McDaniel, Assistant City Manager  
Joey Zapata, Assistant City Manager  
Jeanne Chipperfield, Chief Financial Officer  
Sana Syed, Public Information Officer  
Elsa Cantu, Assistant to the City Manager -- Mayor & Council

# All-Way Stop Petition Process

**Potential Amendment to Section 51A-9.401  
of Dallas City Code**

**Public Safety Committee  
May 26, 2015**



# Purpose

- ❑ The purpose of this briefing is to review a potential amendment to Section 51A-9.401 of the Dallas City Code
- ❑ Section 51A-9.401 of the Dallas City Code requires that a petition for an all-way stop on a residential intersection should be supported by at least two-thirds of the owners or tenants residing within **900 feet** of the intersection at issue. The potential amendment proposes that the 900 feet requirement be reduced to **300 feet**

# Background

- ❑ The potential amendment was presented to the Public Safety Committee (“PSC”) on June 23, 2014. PSC directed staff to present it to the Dallas City Council
- ❑ Because the amendment affected the Dallas Development Code, protocol required that it be presented to the City Plan Commission (CPC) before it was presented to City Council
- ❑ Staff presented the amendment to CPC at its December 4, 2014 meeting. CPC directed staff to bring it back with detailed analysis and recommendations
- ❑ Pursuant to CPC directions, staff presented the amendment to CPC at its January 22, 2015 meeting with requested details. CPC recommended denial of the amendment

# Installation of Stop Signs

All-way stops in the City of Dallas are installed in two ways :

- ❑ Based on a Warrant Study
  - A Warrant Study is a technical analysis in accordance with guidelines in the Texas Manual on Uniform Traffic Control Devices (TMUTCD)
  - The TMUTCD conforms to national standards for planning and installing traffic control devices (Appendix D)
  - Staff conducts warrant studies for all-way stop requests - if the study indicates that an all-way stop is warranted, staff installs the stop signs
- ❑ Based on a petition process per Chapter 51A of Dallas City Code
  - The petition process is applicable for low volume residential streets

# Warrant Study

In a warrant study, staff collects technical data for analysis. Data collected includes, but is not limited to:

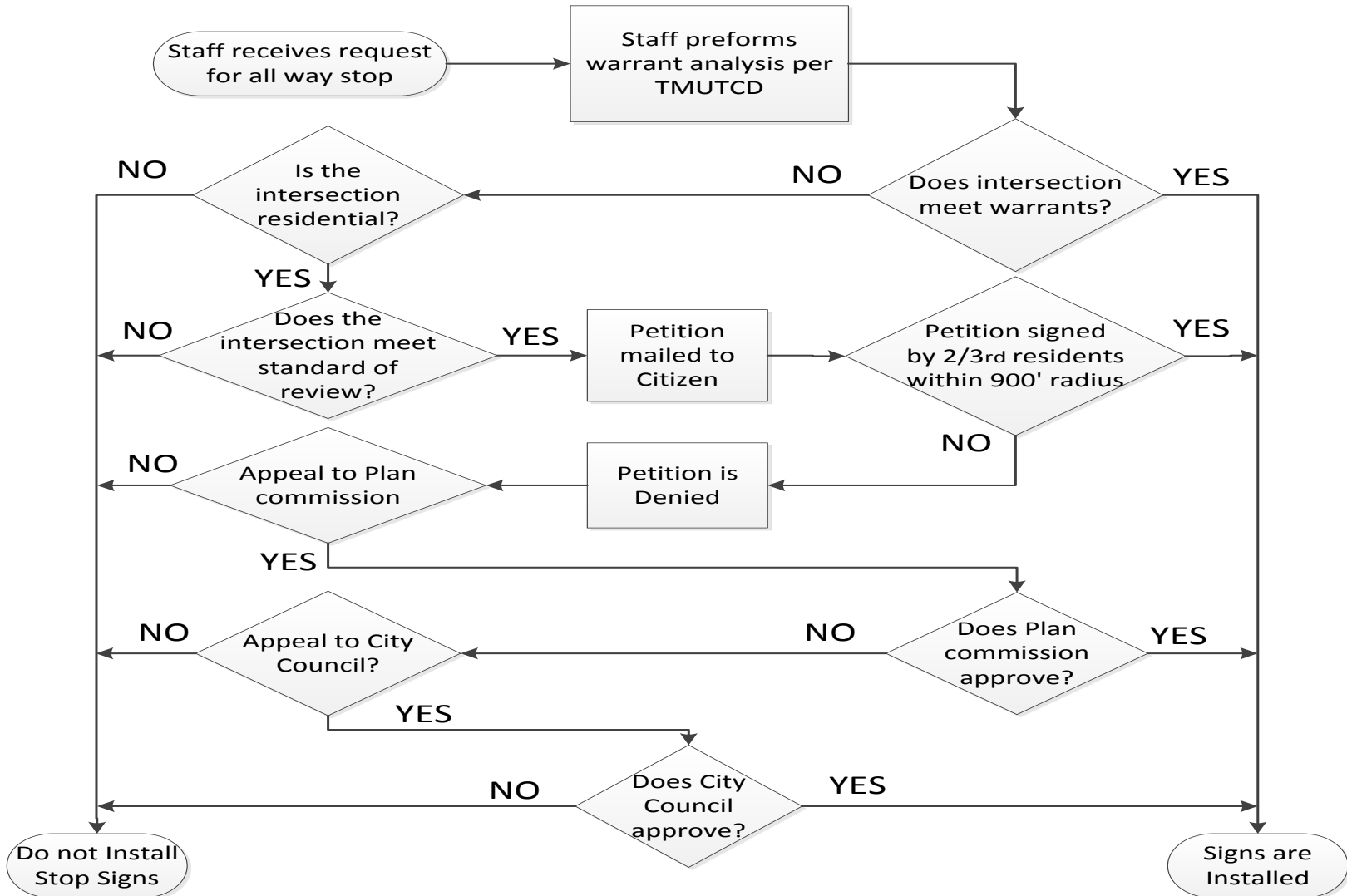
- ❑ Traffic (including bicycle and pedestrian where applicable) volumes for each approach of the intersection
- ❑ Traffic speeds
- ❑ Accident history, type and frequency of accidents
- ❑ Sight distance for each approach of the intersection
- ❑ Intersection geometrics

The data is analyzed per guidance in the TMUCD to determine if a four-way/all-way stop is warranted

# Petition Process

- ❑ If staff recommends against installation of an all-way stop on a residential intersection, a citizen can petition for its installation, per Section 51A-9.400 of Dallas City Code
- ❑ For a petition to be considered, at least 2/3<sup>rd</sup> of the residents or tenants residing within 900' of the intersection at issue must support the petition (Sec. 51A-9.401 of City Code – Appendix A) and the street should meet Standards of review in Sec. 51A-9.402 of City Code (Appendix B)
- ❑ If petition for installation of a four-way/all-way stop is denied; a citizen can appeal this decision to the City Plan Commission and City Council (Appendix C)

# Petition Process Flow Chart





# COD All-way Stop Requests- 2014

- ❑ A quick review of new traffic sign requests for 2014 found 135 requests for all-way stops. Of these, 112 requests have a disposition, of which:
  - ❑ 19 locations met warrants and all-way stops were installed
  - ❑ Staff implemented alternative measures to address citizen concerns at 28 locations
  - ❑ 58 locations did not meet warrants - of these, 29 were eligible for petition; and petition forms were mailed to the citizens
  - ❑ Two (2) valid petitions were returned to staff and all-way stops were installed

# What is Industry Standard?

According to the TMUTCD:

- ❑ Stop signs should be used to establish right-of-way at intersections
- ❑ The decision to install multi-way stop control should be based on an engineering study
- ❑ Yield or Stop sign should not be used for speed control
- ❑ Yield or Stop sign should not be used on higher volume roadway unless justified by an engineering study
- ❑ Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal
- ❑ Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop

# TMUTCD Guidelines for installing All-Way Stops

*TMUTCD criteria for engineering study for a multi-way STOP sign installation:*

- *Where traffic control signals are justified, the multi-way stop is an interim measure while signal is constructed*
- *Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation..*
- *Minimum volumes:*
  - *1. The vehicular volume.. major street approaches (total of both approaches) ..*
  - *2. The combined vehicular, pedestrian, and bicycle volume.. minor street approaches (total of both approaches) ..*
  - *Combination of above (see Appendix D for details)*

Other considerations for multi-way stop installation per TMUTCD:

- The need to control left-turn conflicts
- The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes
- Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and
- An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

## Stop Sign Installation Process for Various Municipalities in the USA

Municipality	MUTCD	PETITION	Municipality	MUTCD	PETITION
Austin, TX	Yes	No	Los Angeles, CA	Yes	No
Baltimore, MD	Yes	No	Memphis, TN	Yes	No
<b>Charlotte, NC</b>	<b>Yes</b>	<b>Yes</b>	Milwaukee, WI	Yes	No
Cleveland, OH	Yes	No	Minneapolis, MN	Yes	No
Clark County, NV	Yes	No	<b>Oklahoma City, OK</b>	<b>Yes</b>	<b>Yes</b>
Denver, CO	Yes	No	Philadelphia, PA	Yes	No
El Paso, TX	Yes	No	Phoenix, AZ	Yes	No
Fort Worth, TX	Yes	No	Portland, OR	Yes	No
Fresno, CA	Yes	No	Sacramento, CA	Yes	No
Houston, TX	Yes	No	San Antonio, TX	Yes	No
Jacksonville, FL	Yes	No	San Diego, CA	Yes	No
Kansas City, MO	Yes	No	Seattle, WA	Yes	No
Las Vegas, NV	Yes	No			

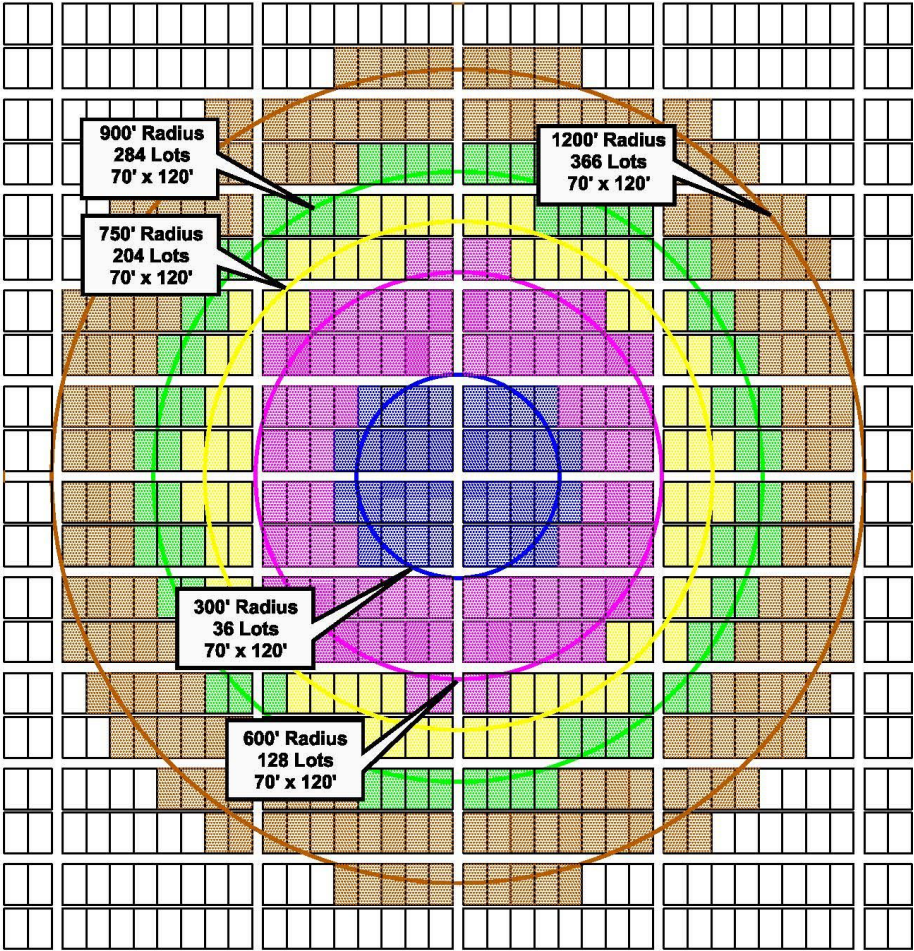
# National Practice - Summary

- ❑ 92% (23/25) municipalities surveyed exclusively use warrant studies to install all-way stops
- ❑ 8% (2/25) of the municipalities surveyed allows citizens to petition for all-way stops in residential neighborhoods:
  - ❑ Charlotte, NC has a petition area of 1200' radius and requires support from 60% of the residents for installation
  - ❑ Oklahoma City, OK has a petition radius of 300'. A petition with  $\frac{2}{3}$ <sup>rd</sup> support is required to initiate a warrant study for residential intersections. Staff presents study results to Traffic and Transportation Committee for action.
- ❑ In comparison, Dallas has a 900' petition area and requires  $\frac{2}{3}$ <sup>rd</sup> support for valid petitions

## Potential Options for Dallas

- ❑ While the proposed amendment is to reduce the petition requirement to 300' of the intersection where an all-way stop is desired; other potential combinations of reduced petition distance and/or increased support percent is presented for consideration in the next few slides
- ❑ Slides 14 through 17 graphically illustrate the number of properties affected for various lot sizes for radii of 1,200'; 900'; 750'; 600' and 300'
- ❑ The Table on slide 18 tabulates the above data and shows the number of properties required for 66.67% and 80% levels of support for each scenario

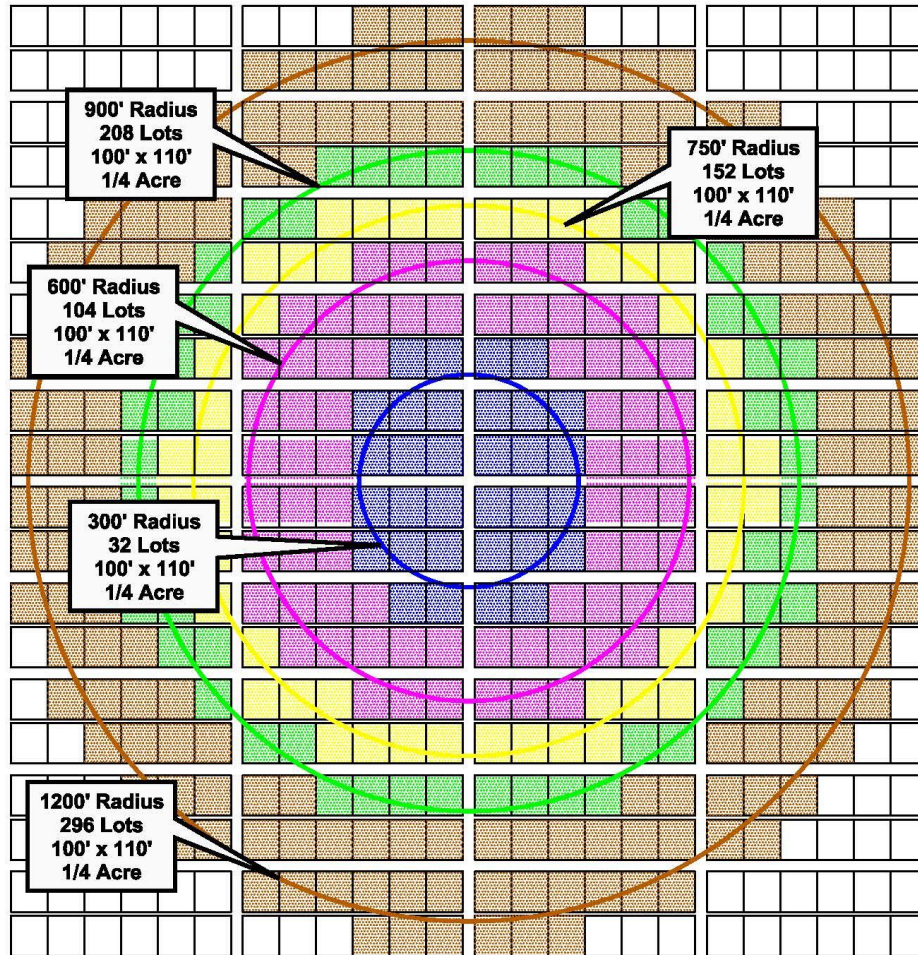
# Lots Effected - Standard Lot Size



## Lot Size Std Lot 70' x 120'

1200' Radius = 366  
900' Radius = 274  
750' Radius = 204  
600' Radius = 112  
300' Radius = 33

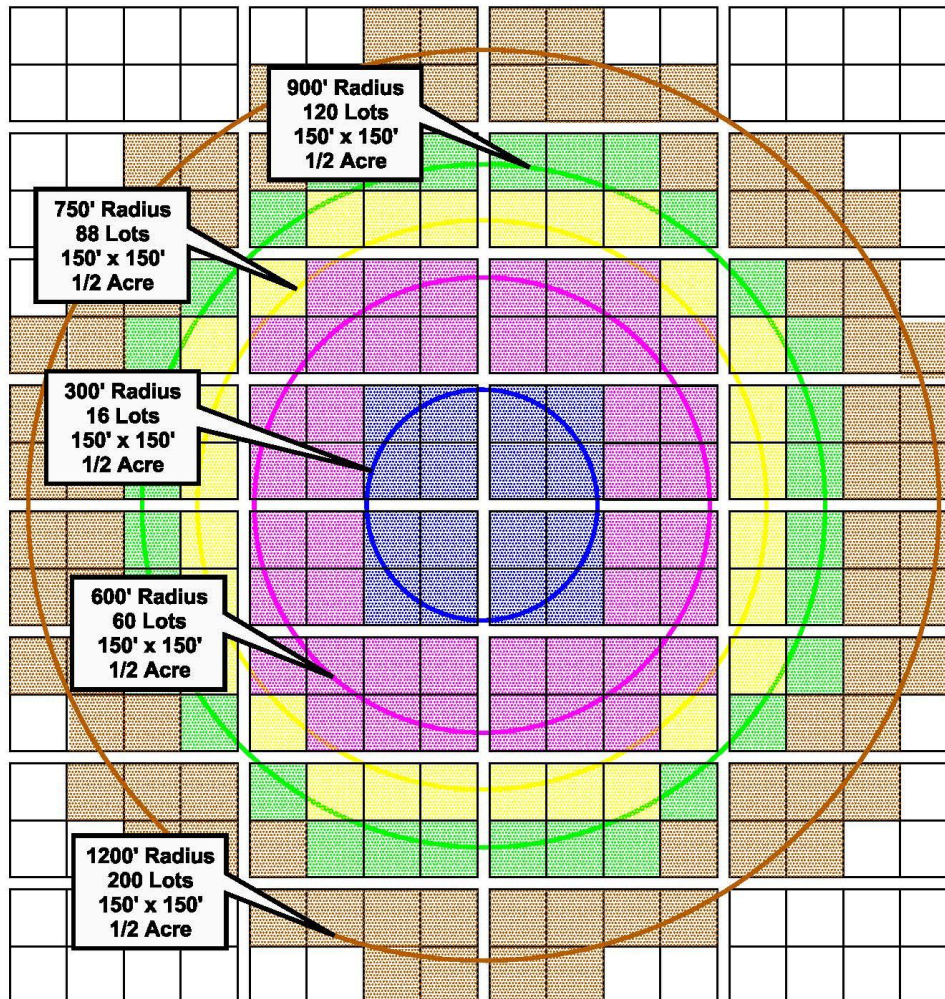
# Lots Effected - 1/4 Acre Lots



**Lot Size**  
**1/4 Ac - 100' x 110'**  
1200' Radius = 296  
900' Radius = 208  
750' Radius = 152  
600' Radius = 104  
300' Radius = 32

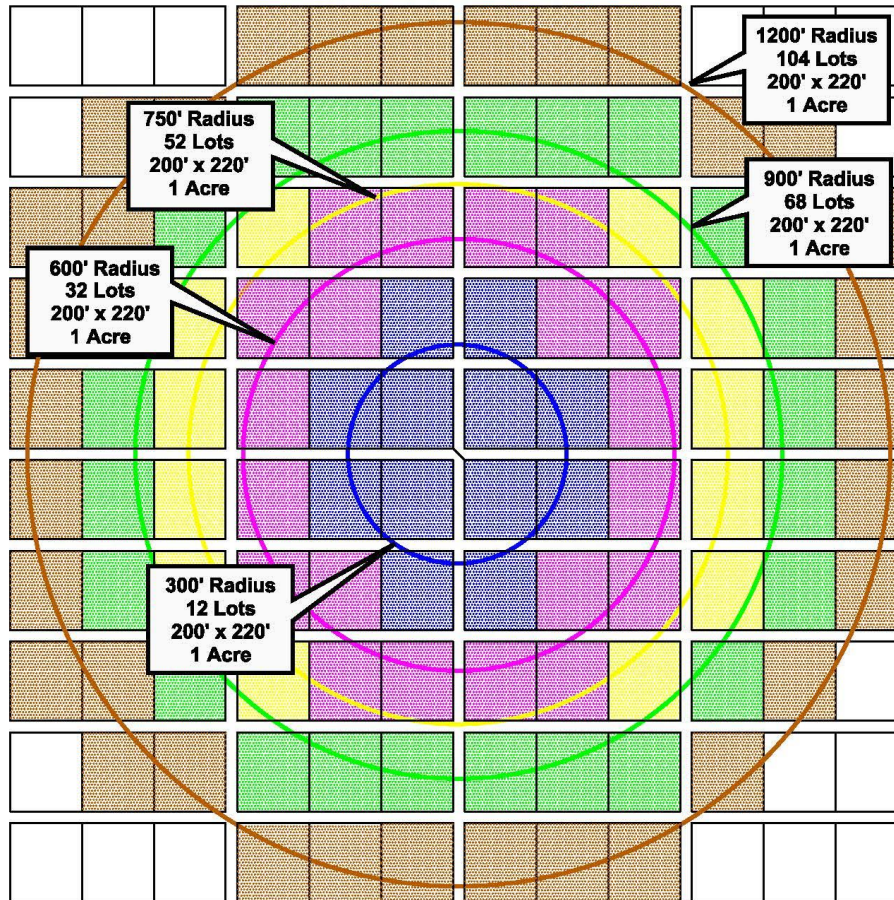


# Lots Effected - 1/2 Acre Lots



**Lot Size**  
**1/2 Ac - 150' x 150'**  
**1200' Radius = 200**  
**900' Radius = 120**  
**750' Radius = 88**  
**600' Radius = 60**  
**300' Radius = 16**

# Lots Effected - 1 Acre Lots



**Lot Size**  
**1 Ac - 200' x 220'**  
**1200' Radius = 104**  
**900' Radius = 68**  
**750' Radius = 52**  
**600' Radius = 32**  
**300' Radius = 12**

# Comparison Table

	LOT SIZE			
	STANDARD	1/4 AC	1/2 AC	1 AC
<u>1200' RADIUS</u>				
Number of Properties	366	296	200	104
66.67% Support	244	198	134	70
80% Support	293	237	160	84
<u>900' RADIUS</u>				
Number of Properties	274	208	120	68
66.67% Support	183	139	81	46
80% Support	220	167	96	55
<u>750' RADIUS</u>				
Number of Properties	204	152	88	52
66.67% Support	137	102	59	35
80% Support	164	122	71	42
<u>600' RADIUS</u>				
Number of Properties	128	104	60	32
66.67% Support	86	70	41	22
80% Support	103	84	48	26
<u>300' RADIUS</u>				
Number of Properties	36	32	16	12
66.67% Support	25	22	11	8
80% Support	29	26	13	10

# Comparison of Current and Proposed Distances

- ❑ Currently, a four-way/all-way stop petition is required to be supported by at least two-thirds of the owners or tenants residing within **900 feet** of the intersection at issue
- ❑ Number of properties effected by the 900' radius requirement varies depending upon roadway patterns and lot sizes in a neighborhood
- ❑ For a neighborhood with standard lots, **274** lots fall within a 900' radius and 183 properties need to support installation. For 1 acre lots, **68** lots are affected and support is needed from 46
- ❑ If the 900' requirement is reduced to 300', the corresponding number of properties effected would be **36** for standard lots (25 in favor) and **12** for 1 ac lots (8 in favor)
- ❑ It can be seen from above that variation in lot size and petition area radius impact the number of effected properties greatly

# Impacts of Installing Stop Signs

- ❑ Warranted stop signs reduce certain kinds of severe accidents
- ❑ Several researchers have documented the following negative impacts of installing unwarranted stop signs:
  - ❑ They result in negative compliance - drivers often tend to ignore stop signs installed on busy streets when they routinely do not see any traffic on the side street
  - ❑ They result in increased accidents – several studies have recorded drastic increase in accidents when high volume streets are stopped for low volume streets
  - ❑ They endanger pedestrians – unwarranted stop signs provide pedestrians a false sense of confidence, which combined with negative compliance from motorists often have tragic results
  - ❑ They are not effective for speed control
  - ❑ They increase emergency vehicle response times
  - ❑ They increase air and noise pollution

## Stop Signs – COD residential streets

- ❑ While numerous studies have documented increase in accidents and willful violation of stop signs when unwarranted stop signs are installed, these studies were for higher volume streets – staff did not find any study that documented similar impacts for low volume residential streets
- ❑ A preliminary review of accident history of four residential intersections where stop signs were installed through the petition process did show a slight increase in accidents; however, none of the accidents can be attributed to installation of the stop signs
- ❑ On an average, two residential intersections have had all-way stops installed through the petition process each year
- ❑ The current petition radius of 900' allows for neighborhood level input and transparency

## Conclusion and Recommendation

- ❑ There is no data to suggest that installation of unwarranted stops on residential streets reduce accidents or speeding
- ❑ The current petition radius of 900' allows for neighborhood level input and transparency
- ❑ Based on the above, staff does not recommend measures that will potentially result in increased number of unwarranted all-way stops

# QUESTIONS AND COMMENTS?



# Appendix A (Petition)

## SEC. 51A-9.401. APPLICATION.

(a) Prerequisites for accepting an application. An application for installation or removal of four-way/all-way stop controls at residential intersections must be filed with the traffic engineer. The traffic engineer shall not accept an application unless it has the support of at least two-thirds of the owners or tenants residing within **900 feet** of the intersection at issue.

(b) Calculation of votes. The following rules apply for purposes of calculating the extent to which an application has the support of owners or tenants:

(1) Lots containing no more than four dwelling units receive one application vote per unit.

(2) Lots containing more than four dwelling units receive no votes unless the application is signed by the owner or property manager, in which case the lot is allocated a number of application votes based on the following formula: Number of votes = Length of street frontage of the lot containing the dwelling units (in feet) divided by the average single family lot width (in feet) in the area within 900 feet of the intersection at issue.

(c) Owner or manager of a residential building may sign application. The owner or manager of a residential building may sign the application on behalf of the tenants. (Ord. Nos. 24177; 28424)

## Appendix B

### **SEC. 51A-9.402. STANDARDS OF REVIEW.**

(a) Standards for installation. The traffic engineer shall grant applications to install four-way/all-way stop controls at the intersection of two or more streets if an applicant shows that:

- (1) the intersecting streets are residential;
- (2) the intersecting streets are local;
- (3) the subject street is not a fire-rescue department emergency response route;
- (4) the subject street is used by less than 6,000 vehicles per day; and
- (5) it is in the public interest to grant the application.

## Appendix C

### **SEC. 51A-9.403. APPEALS.**

(a) Appeal to the city plan commission. An applicant who is dissatisfied with the decision of the traffic engineer may appeal that decision to the city plan commission. A written notice of appeal must be signed by the applicant or its legal representative and filed with the traffic engineer within 30 days of the date that notice of the traffic engineer's decision is given.

(b) Public hearing before the commission; notice requirements. The city plan commission shall hold a public hearing to allow interested parties to express their views regarding the appeal. The traffic engineer shall give notice of the public hearing in a newspaper of general circulation in the city at least 10 days before the hearing. In addition, the traffic engineer shall send written notice of the hearing to all owners of real property lying within 900 feet of the intersection at issue. The notice must be given not less than 10 days before the date set for the hearing by depositing the notice properly addressed and postage paid in the United States mail to the property owners as evidenced by the last approved city tax roll.

## Appendix C (2 of 3)

### **SEC. 51A-9.403. APPEALS.**

(c) Decision of the commission. The city plan commission may reverse or affirm, in whole or in part, or modify the decision of the traffic engineer based upon testimony presented at the public hearing, technical information provided by city staff, and the standards contained in this division. The decision of the commission shall be final unless the applicant files a notice of appeal to the city council in accordance with this section.

(d) Appeal to the city council. An applicant who is dissatisfied with the decision of the city plan commission may appeal that decision to the city council. A written notice of appeal must be signed by the applicant or its legal representative and filed with the traffic engineer within 30 days of the commission's decision.

## Appendix C (3 of 3)

### **SEC. 51A-9.403. APPEALS.**

(e) Public hearing before the city council; notice requirements. The city council shall hold a public hearing to allow interested parties to express their views regarding the appeal. The traffic engineer shall give notice of the public hearing in a newspaper of general circulation in the city at least 15 days before the hearing. In addition, the traffic engineer shall send written notice of the hearing to all owners of real property lying within 900 feet of the intersection at issue. The notice must be given not less than 10 days before the date set for the hearing by depositing the notice properly addressed and postage paid in the United States mail to the property owners as evidenced by the last approved city tax roll.

(f) Decision of the city council. The city council may reverse or affirm, in whole or in part, or modify the decision of the city plan commission based upon testimony presented at the public hearing, technical information provided by city staff, and the standards contained in this division. The favorable vote of two-thirds of all members of the city council is required to grant an application that has been recommended for denial by the commission. (Ord. Nos. 24177; 28424)

# Appendix D

## **TMUTCD Guidelines for Installation of Multi-way Stops**

### **Section 2B.07 Multi-Way Stop Applications**

#### Support:

01 Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.

02 The restrictions on the use of STOP signs described in Section 2B.04 also apply to multi-way stop applications.

#### *Guidance:*

03 *The decision to install multi-way stop control should be based on an engineering study.*

04 *The following criteria should be considered in the engineering study for a multi-way STOP sign installation:*

*A. Where traffic control signals are justified, the multi-way 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.*

## Appendix D (2 of 3)

### **TMUTCD Guidelines for Installation of Multi-way Stops**

#### **Section 2B.07 Multi-Way Stop Applications** contd..

*B. Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*

*C. Minimum volumes:*

- 1. 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*
- 2. 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*
- 3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.*

# Appendix D (3 of 3)

## TMUTCD Guidelines for Installation of Multi-way Stops

### **Section 2B.07 Multi-Way Stop Applications contd..**

*D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.*

Option:

05 Other criteria that may be considered in an engineering study include:

- A. The need to control left-turn conflicts;
- B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;
- C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and
- D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.



# Appendix E

## **U.S. Law**

The MUTCD is adopted by reference in accordance with Title 23, United States Code, Section 109(d) and Title 23, Code of Federal Regulations, Part 655.603, and is approved as the national standard for designing, applying, and planning traffic control devices

## **State Law**

Title 43, Chapter 25.1 of the Texas Administrative Code adopts the 2011 Texas Manual on Uniform Traffic Control Devices, Revision 1 (TMUTCD) as the standard for all traffic control devices installed on any street, highway, bikeway, or private road open to public travel in the State of Texas, including those under a local jurisdiction