City of Norman

Informational Meeting

TRAFFIC CALMING PROGRAM

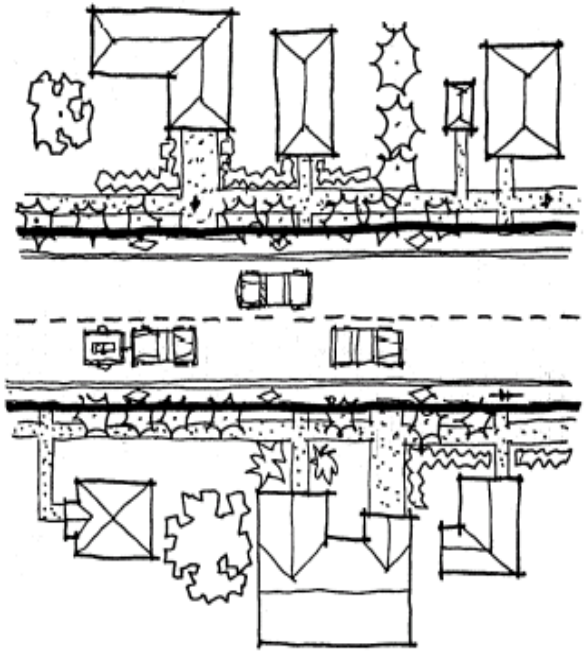
Presentation to
HAMDEN AVENUE Residents

September 24, 2018

Calming Methods

- Passive Traffic Control
- Enforcement
- Physical Traffic Control

Striping Narrow Lanes	
Advantages	**Disadvantages**
Changes can be quickly implemented	Increases regular maintenance
Striping can be easily modified	Residents don't perceive as a speed control tool
Speeds decreased and safety improved by positively guiding drivers	



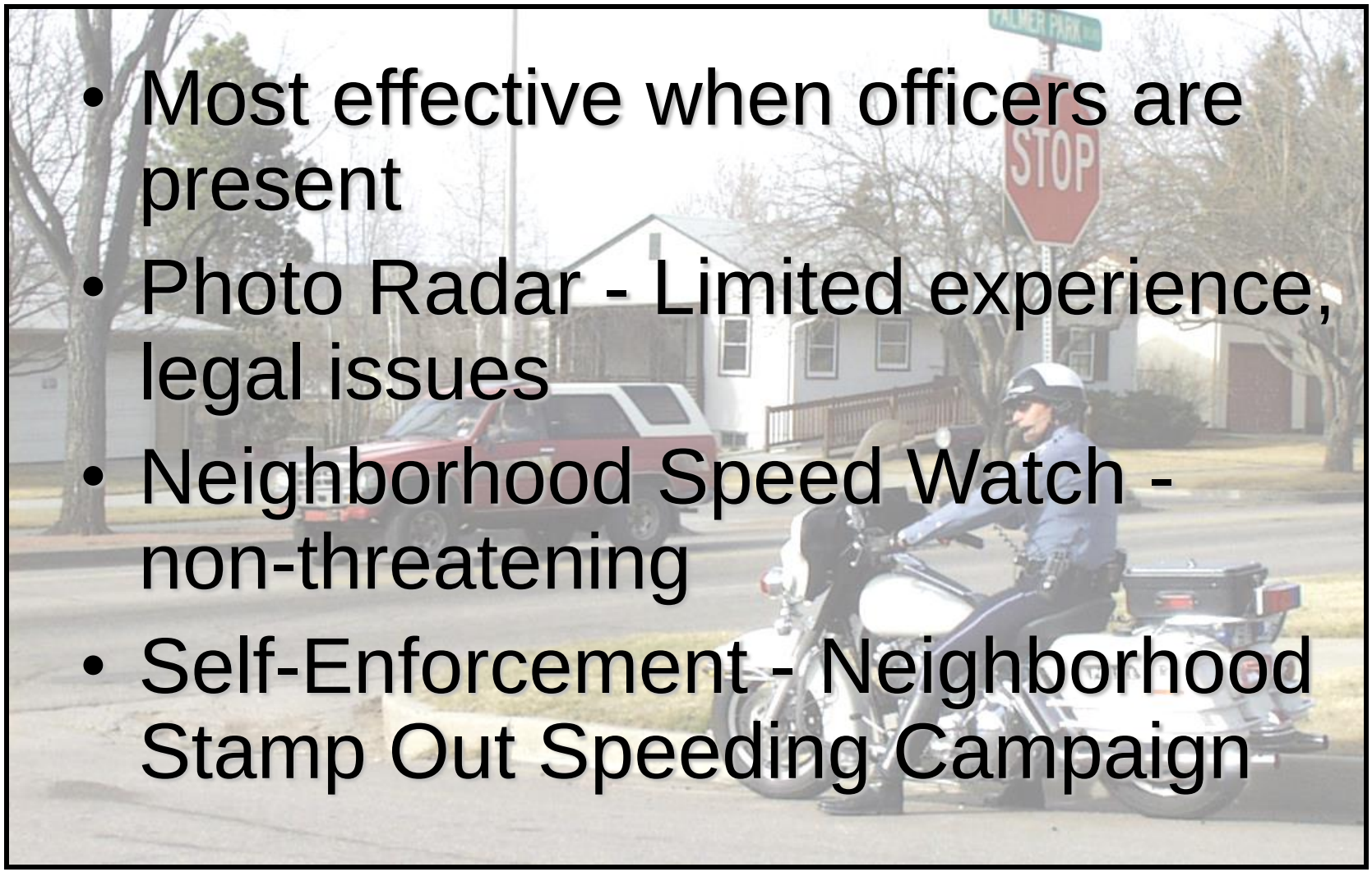
Passive Controls

- Neighborhood Speed Posting
- Signed Turn Prohibitions
- Warning Signs
- Pavement Marking Treatments (bike lanes, hash lines, lane narrowing, etc.)

Calming Methods

- Passive Traffic Control
- Enforcement
- Physical Traffic Control

Enforcement



- Most effective when officers are present
- Photo Radar - Limited experience, legal issues
- Neighborhood Speed Watch - non-threatening
- Self-Enforcement - Neighborhood Stamp Out Speeding Campaign

Figure 2

Police Enforcement	
Advantages	**Disadvantages**
Visible enforcement reduces speeding	Benefits are usually short term
Driver awareness about speeding is increased	
Enforcement flexible - any time of day	
Effect can be quick	

RADAR TRAILERS

Portable Speed Feedback Unit

Permanent Radar Speed Feedback Unit

Calming Methods

- Passive Traffic Control
- Enforcement
- Physical Traffic Control

Definition of TRAFFIC CALMING from Institute of Transportation Engineers:

"TRAFFIC CALMING is the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users."

Types of Physical Controls

Diverters

Traffic Circles

Raised Intersections/Crosswalks

Mid-block Chokers

Curb Extensions/Bulb-outs at Intersections

Speed Tables / Humps

Rumble Strips

Forced Turn Channelizations

Center Median Barriers

Road Closures

Physical Controls

Pluses

Enforce compliance by physical presence

May cause volume reduction

Speed reduction when properly placed

Positive effect on vehicular & pedestrian safety

Minuses

Substantial cost of construction & maintenance

Affects emergency response

May negatively affect bicyclists & motorcyclists

Could hinder snow plowing operations

Examples of Physical Traffic Controls that remove speeders by changing the traffic circulation patterns

Figure 20

Turn Restriction Barrier	
Advantages	**Disadvantages**
Intersections safer by reducing number of conflicting movements	Little speed reduction
Can reduce traffic volumes and accidents	Gives residents fewer turning options

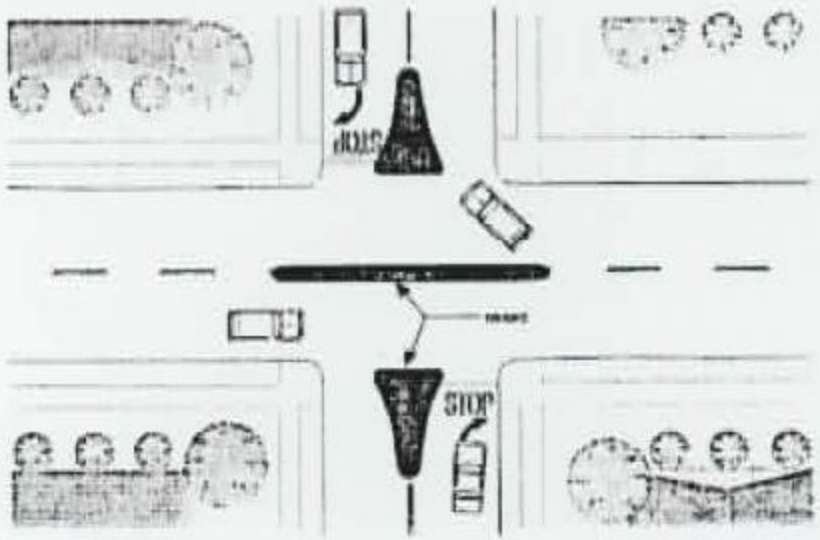


Figure 21

Diagonal Diverter	
Advantages	**Disadvantages**
Reduces speeds and volumes	Can shift volume problems elsewhere
Reduces accidents by reducing number of conflicting movements	Gives residents fewer path options
Has lesser impact on traffic circulation than complete street closure	

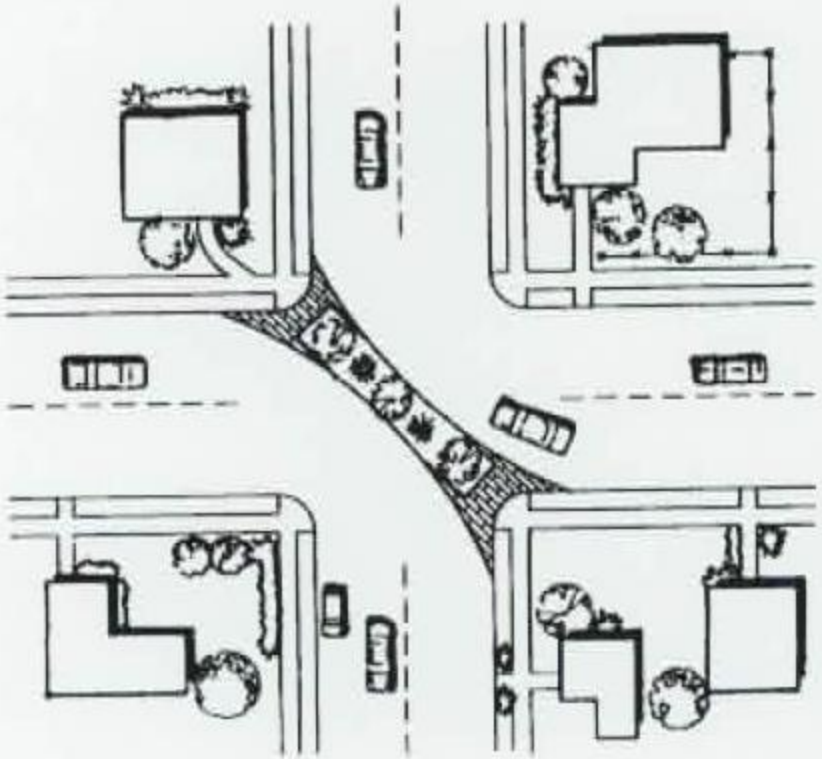


Figure 22

Half Closure (Semi-Diverter)	
Advantages	**Disadvantages**
Reduces cut-through traffic	Increased landscaping maintenance
May reduce traffic speeds	Easy to go around, especially at night

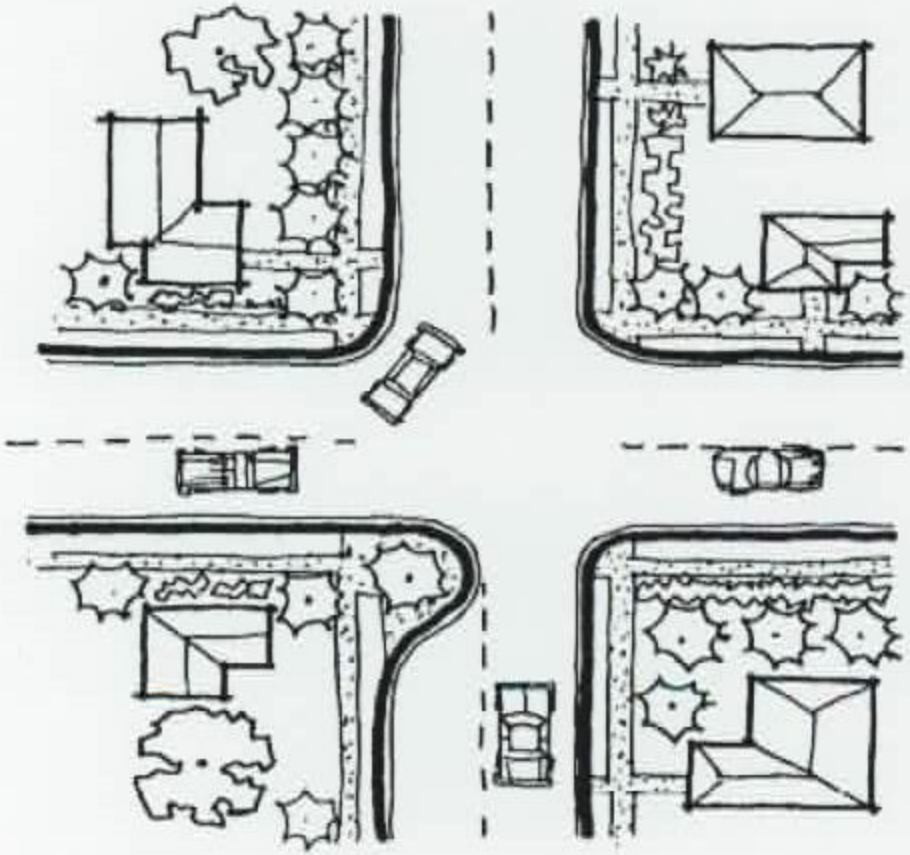


Figure 23

Mid-Block Road Closure	
Advantages	**Disadvantages**
Eliminates cut-through traffic	Can shift volume problems elsewhere
Reduces speeds in vicinity of closure	Increased landscaping maintenance
	Impedes emergency access
	Loss of on-street parking

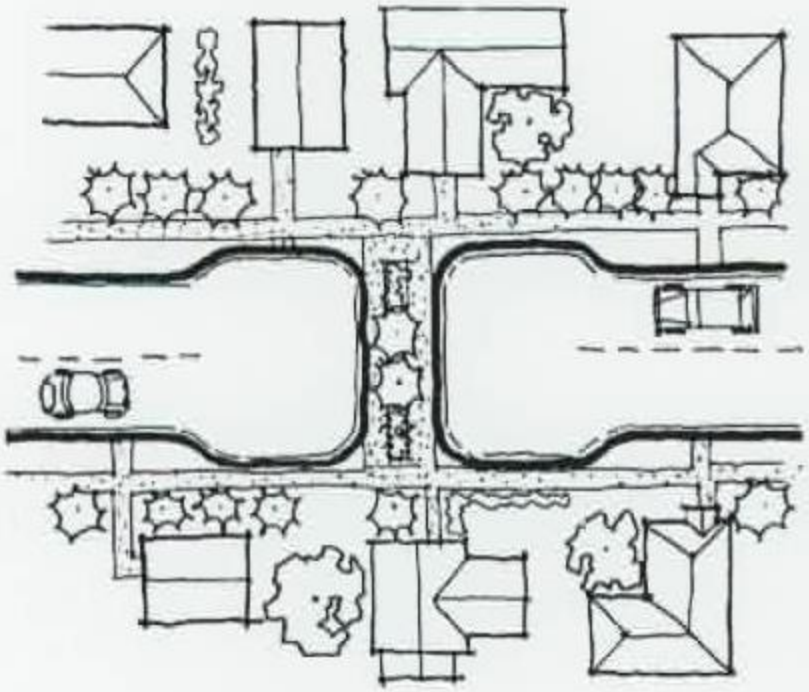
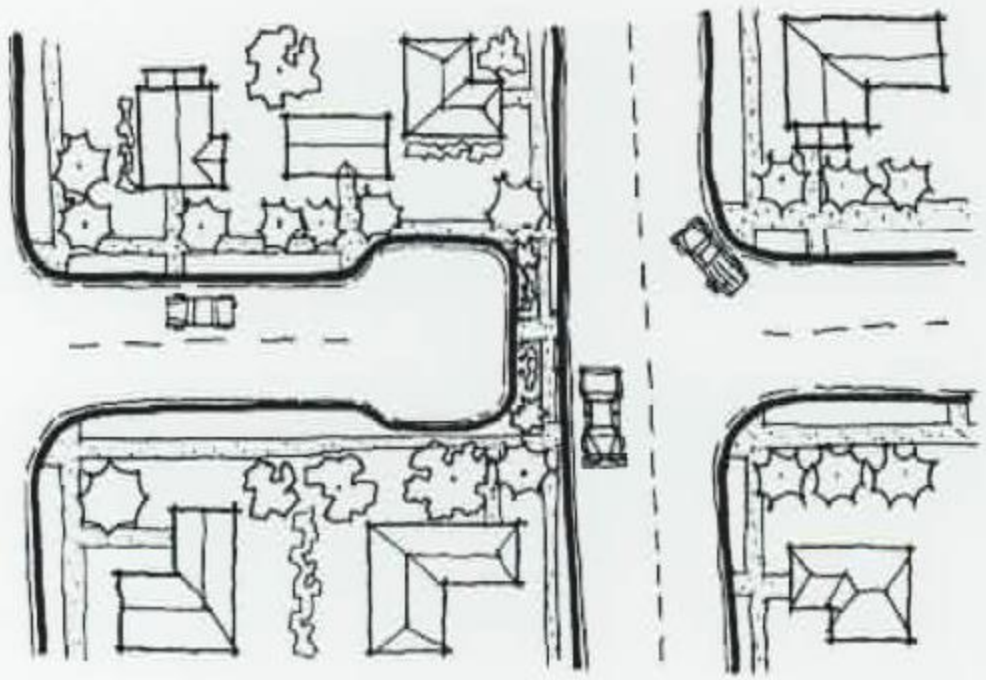


Figure 24

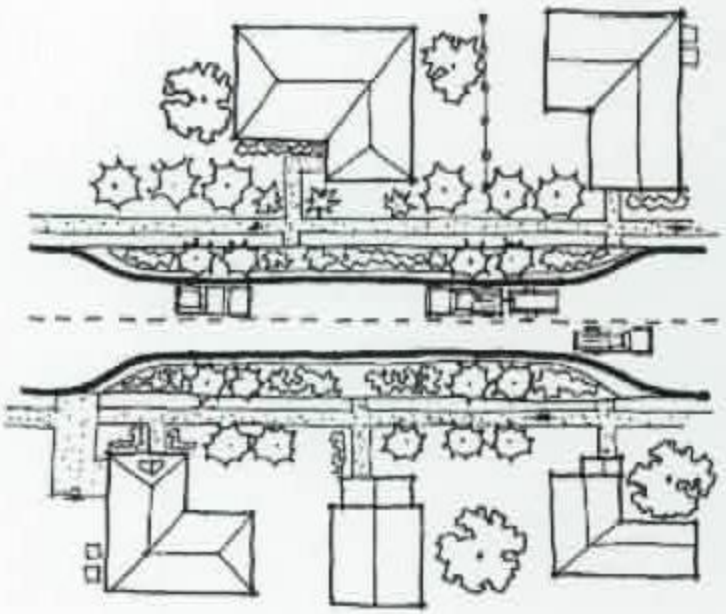
Complete Road Closure	
Advantages	**Disadvantages**
Eliminates speeding traffic	Impedes emergency access
Effective volume reduction	Gives residents fewer path options
Can be aesthetically pleasing when landscaped	Can shift volume problems elsewhere
Safer for children	



Examples of Calming Devices that physically encourage speeding drivers to slow down

Figure 8

Choker / Choker Island	
Advantages	**Disadvantages**
Slight slowing is normal result	Potential object for motorist to run into
Shorter pedestrian crossing distances	May impede bicycle mobility and safety
Creates added streetscape area for landscaping	Can impede legitimate truck movements
Can discourage truck entry	May require drainage modifications

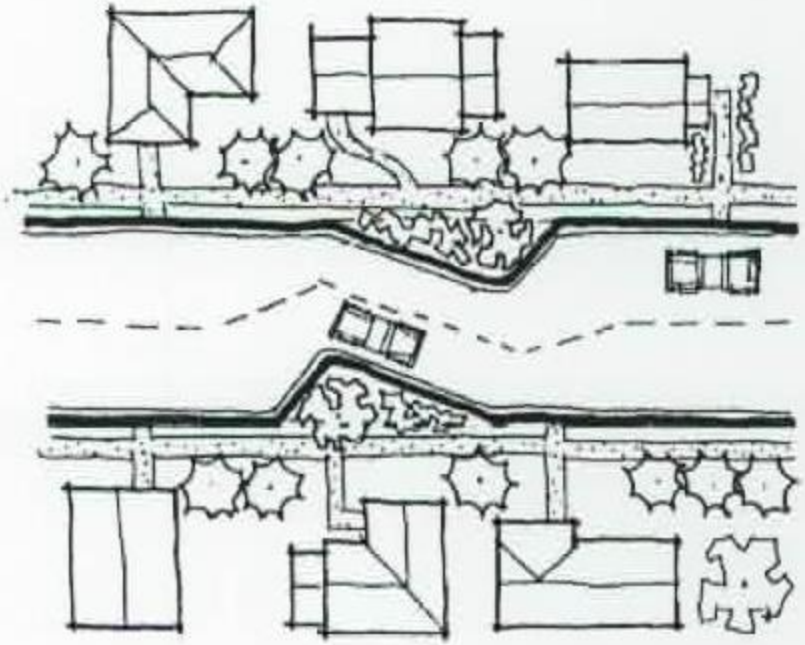


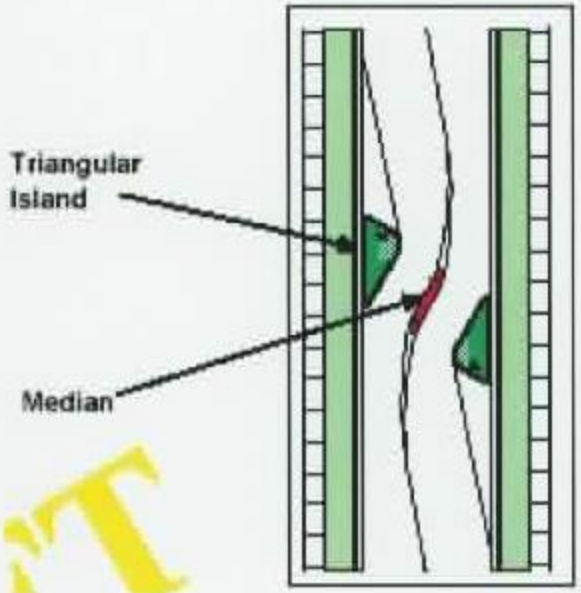
Cambridge Subdivision: Rhoades Drive

Curb Choker Islands between Edwards & Portland

Figure 9

Angled Slow Points	
Advantages	**Disadvantages**
Reduces vehicle speeds	Loss of on-street parking
No significant impedance to emergency vehicles	Regular landscaping maintenance needed
Creates added streetscape area for landscaping	Potential for head-on collisions



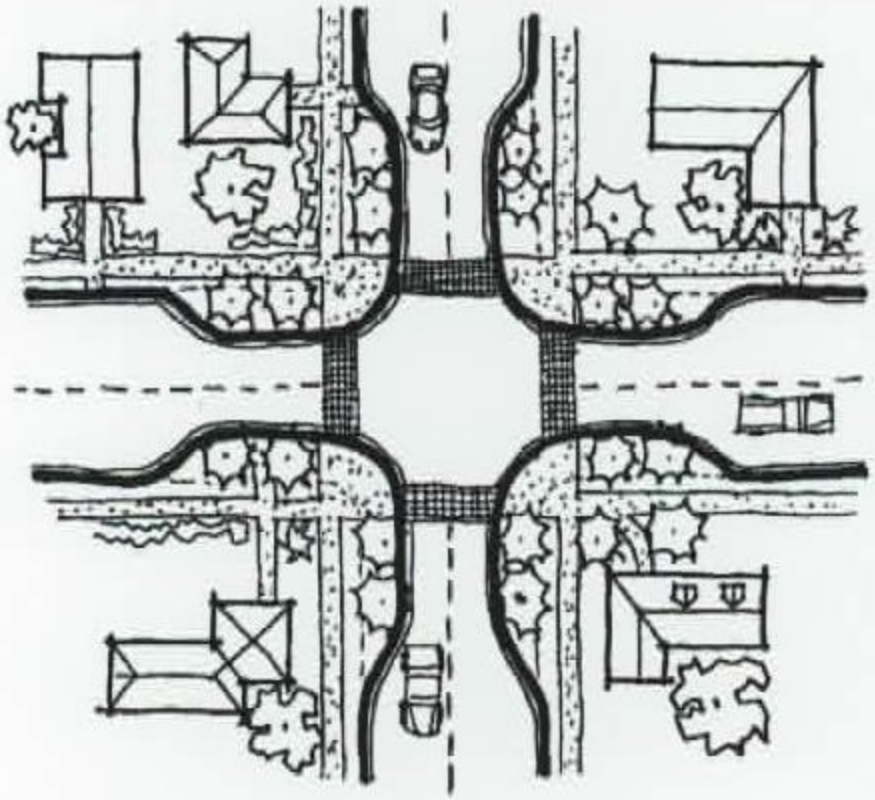


Cambridge Subdivision: Cypress Lake Drive

Offset Chokers at Bailey Court

Figure 11

Neckdowns (Curb Bulb-outs)	
Advantages	**Disadvantages**
May be aesthetically pleasing if landscaped	Increased landscaping maintenance
Shorter pedestrian crossing distances	Landscaping could cause sight triangle problems



Portland, OR

Curb Extension (Bulb)

Seattle, WA

Chokers/Curb Bulbs

38th Avenue South

Colorado Springs, CO

Lane Narrowing

Portland, OR

Curb Bulb/Choker at T-intersection

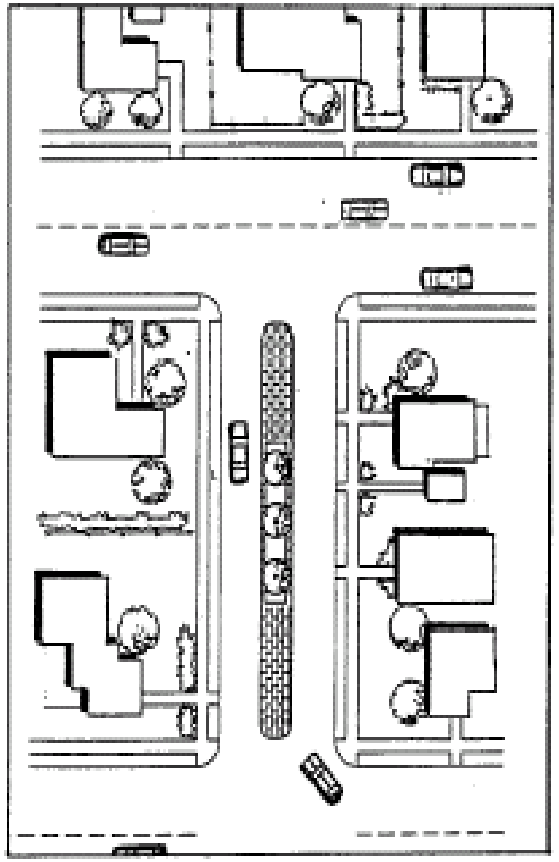
Cambridge Subdivision: Cypress Lake Drive

Chokers & Curb Extensions at Deerhurst Drive

Cambridge Subdivision: Cypress Lake Drive

Curb Chokers at Crosswalk / Park

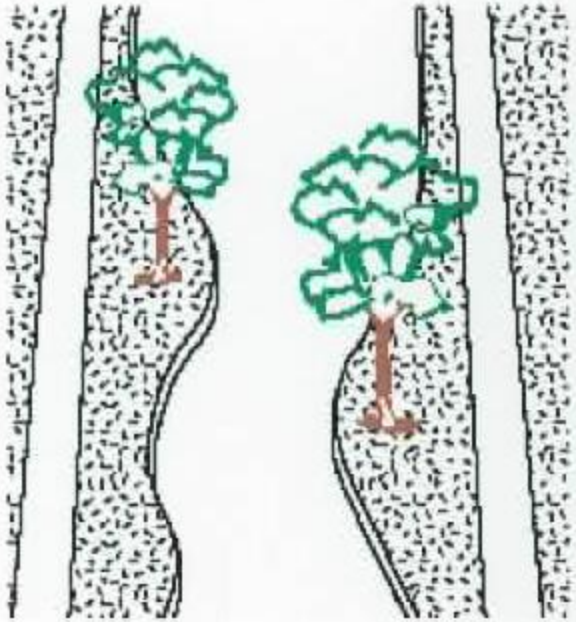
Center Island Median	
Advantages	**Disadvantages**
Reduces opportunities for head-on accidents	Loss of on-street parking
May be aesthetically pleasing if landscaped	Can restrict certain convenient turns

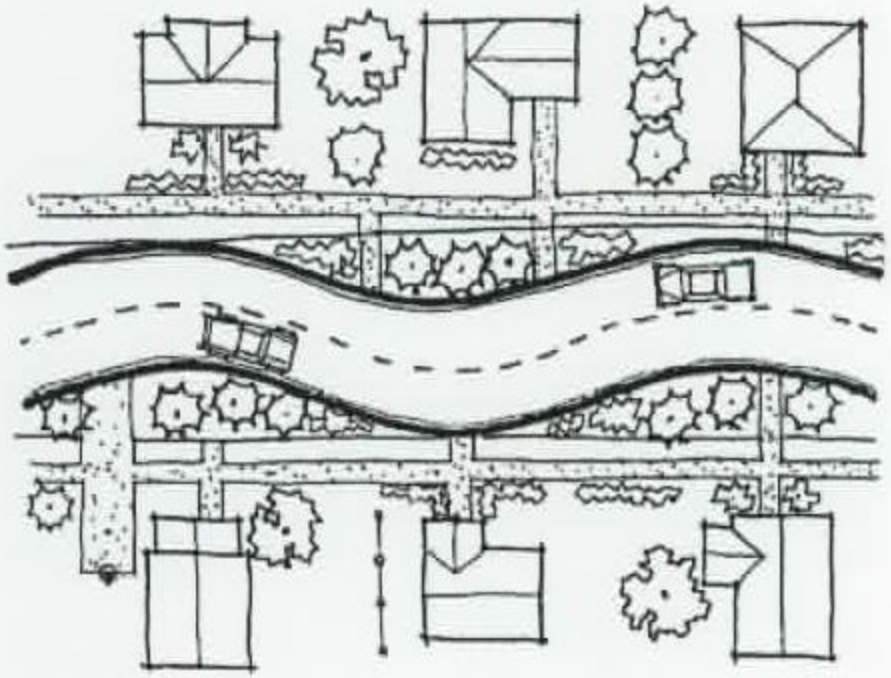


Gateway	
Advantages	**Disadvantages**
Creates an identity to a neighborhood	Increased maintenance costs
Creates added streetscape area for landscaping or monuments	Can impede legitimate truck movements
Discourages truck entry	

Figure 13

Chicane (Serpentine)	
Advantages	**Disadvantages**
Reduces vehicle speeds	Increased landscaping maintenance
May reduce through traffic volumes	Significant loss of on-street parking
	Emergency vehicles mildly effected





Raised Crosswalk	
Advantages	**Disadvantages**
Effective speed reduction	Affects emergency vehicle response time
Can be aesthetically pleasing	Expensive to construct and maintain
Improves pedestrian safety	Could cause drainage problems

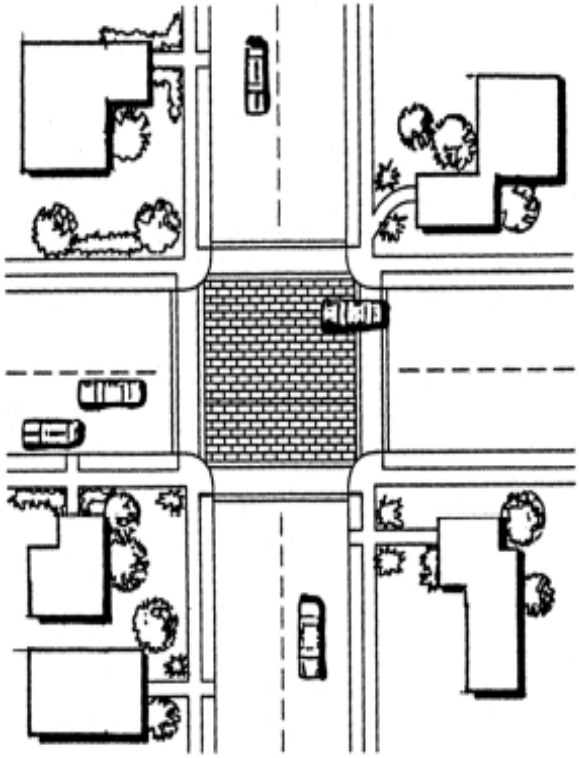
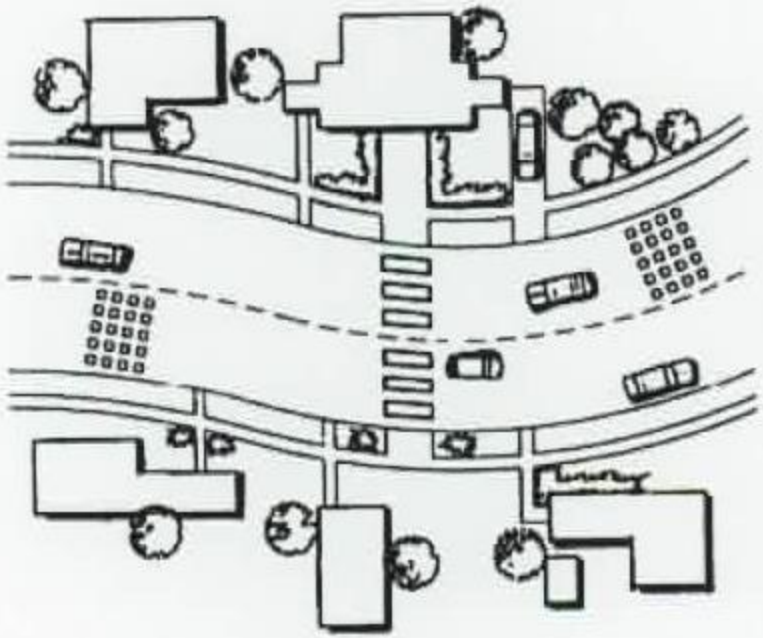


Figure 16

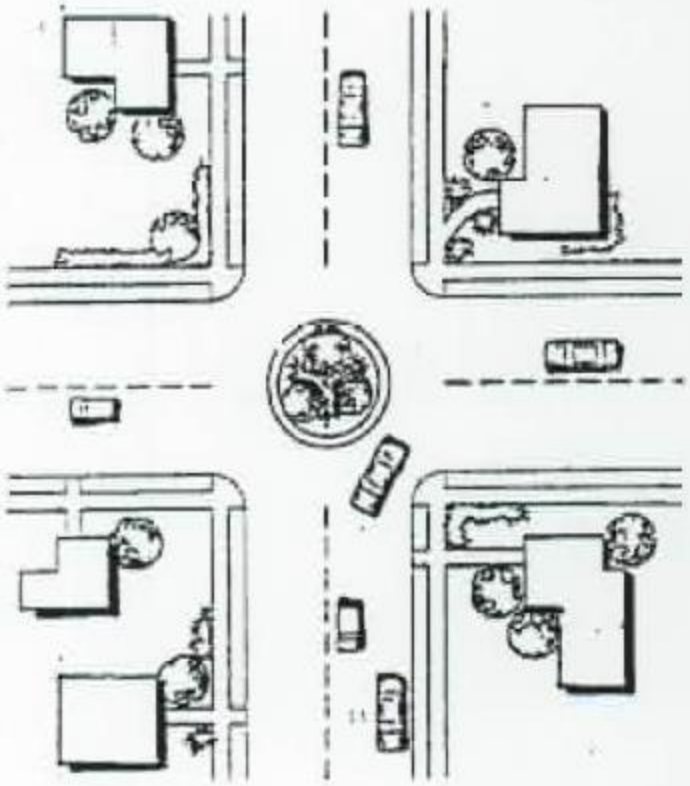
Rumble Strips	
Advantages	**Disadvantages**
Driver's attention alerted to heighten safety	High noise level for adjacent residents
Slight speed reduction	Regular maintenance needed
Low cost installation	

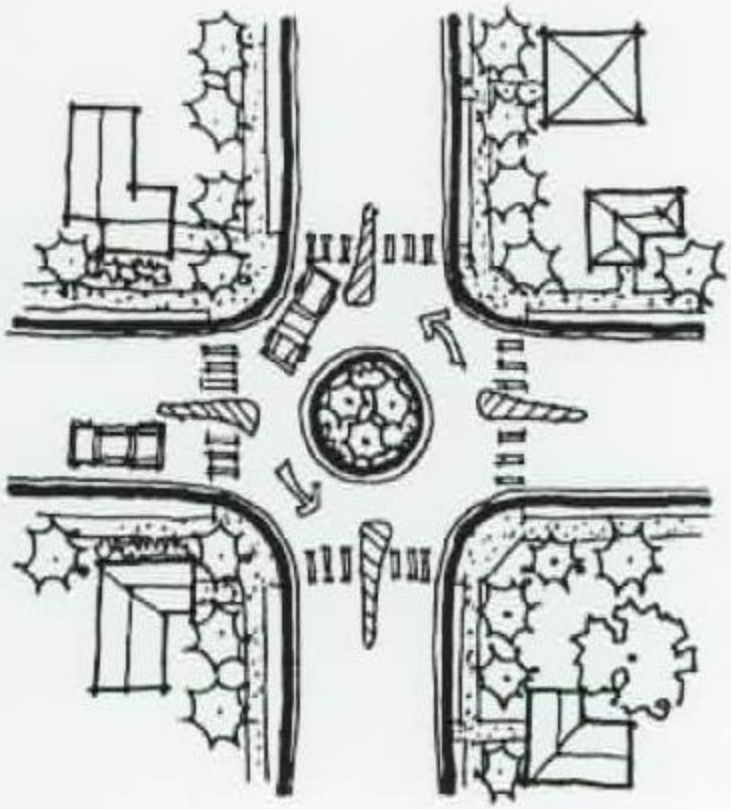


TRAFFIC CIRCLES

Figure 14

Traffic Circle	
Advantages	**Disadvantages**
Noticeable reduction of speeds	May increase accidents until drivers used to it
Aesthetically pleasing when landscaped	Pedestrians/bicyclists must adjust change of crossing patterns





Seattle, WA

What Are Traffic Circles?

- Islands in intersection
- Paved or landscaped
- $6K - $8K

Seattle, WA

Traffic Circle

Portland, OR

Traffic Circle

Broadmoor Hotel - Colo. Springs, CO

Traffic Circle

Portland, OR

Traffic Circle

Cambridge Subdivision: Cypress Lake Drive

28’ Traffic Circle at McSha-Lyon

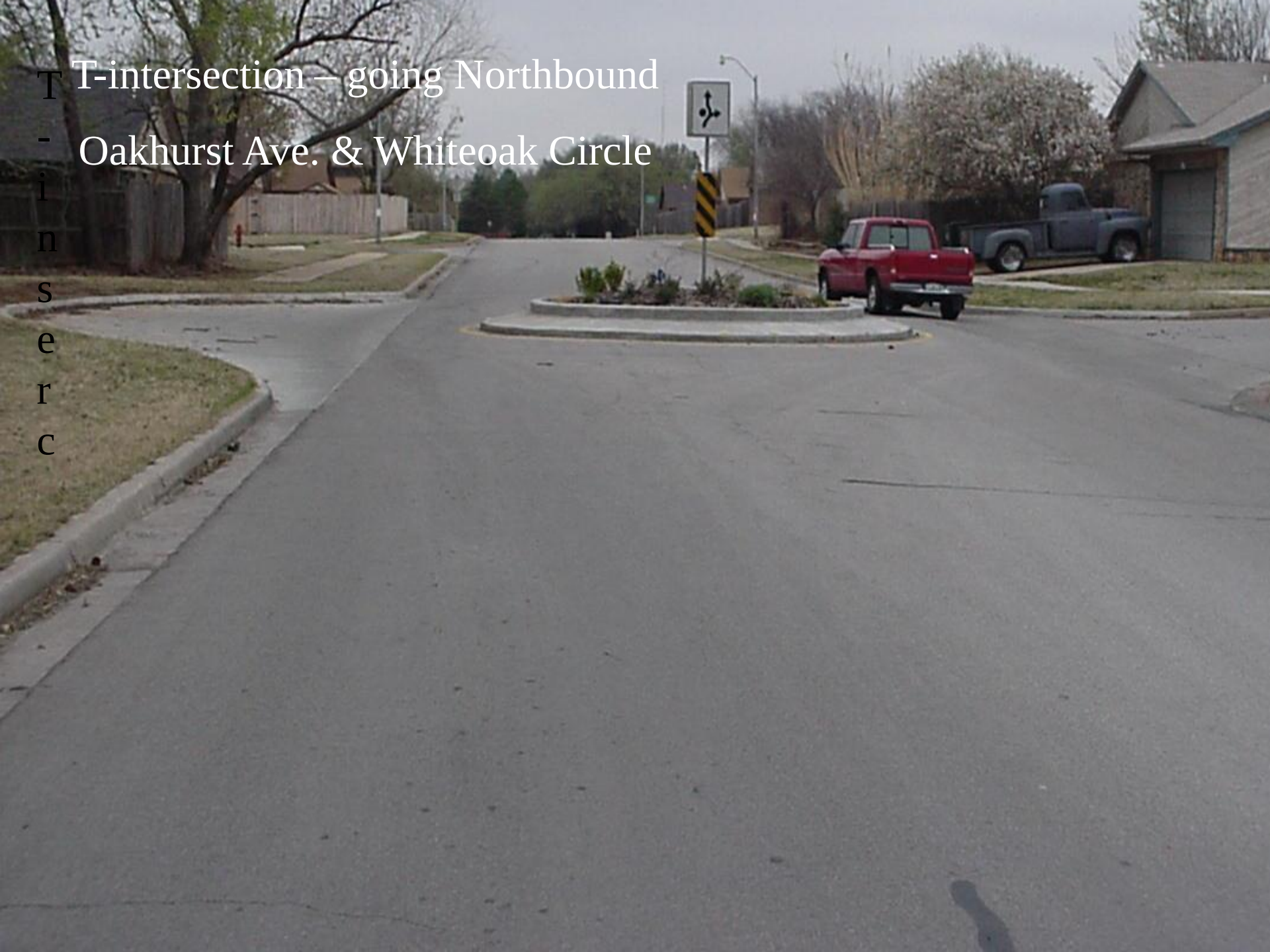

Oakhurst Ave.& Elmhurst Dr.


Castlerock Addition
Brownwood Lane &
Buckingham Drive


Westbrooke Terrace at
Hollywood Avenue

Portland, OR

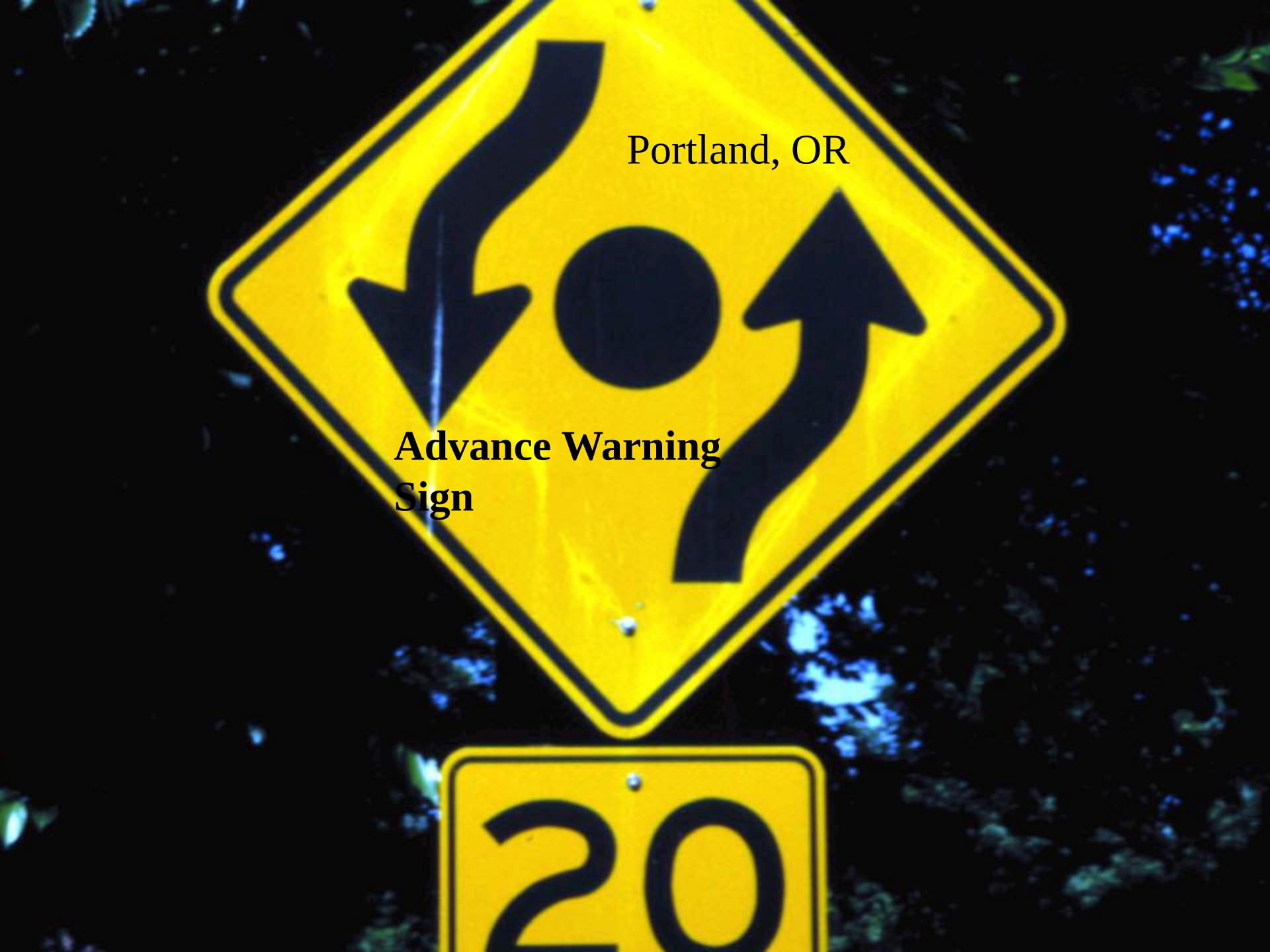
Traffic Circle at T-intersection


T-intersection – going Northbound
Oakhurst Ave. & Whiteoak Circle
T-inserc

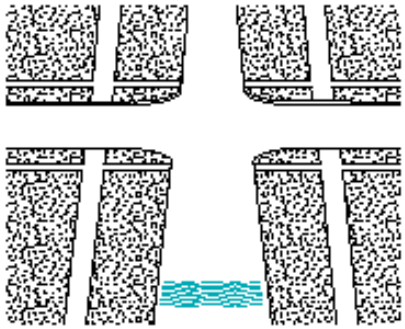
Portland, OR

Reflectors on Traffic Circle

Traffic Circle Sign

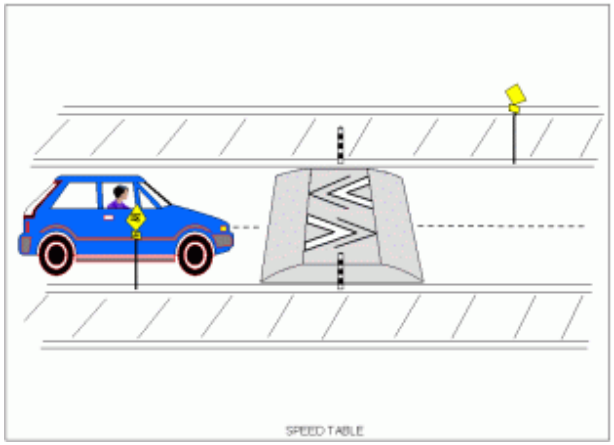

Portland, OR
Advance Warning
Sign
20

SPEED TABLES



Speed Humps

14’ long



Speed Tables

22’ long

Advantages	Disadvantages
Effective speed reduction	Jars vehicles
Can shift cut-through traffic elsewhere	Affects emergency vehicle response time
	May be increased noise

Pictures of Speed Tables in Norman

Westbrooke Terrace

Sequoyah Trail – going Westbound
(just W of Woodbriar


Sequoyah Trail – going Westbound
(just W of Woodbriar Drive)


Vine Street – going Westbound
(between Berry Rd. & McGee Dr.)


Oakhurst Avenue
1919

Figure 19

Speed Cushions	
Advantages	**Disadvantages**
Effective speed reduction	Jars vehicles
Can shift cut-through traffic elsewhere	May be increased noise
	Not too aesthetic

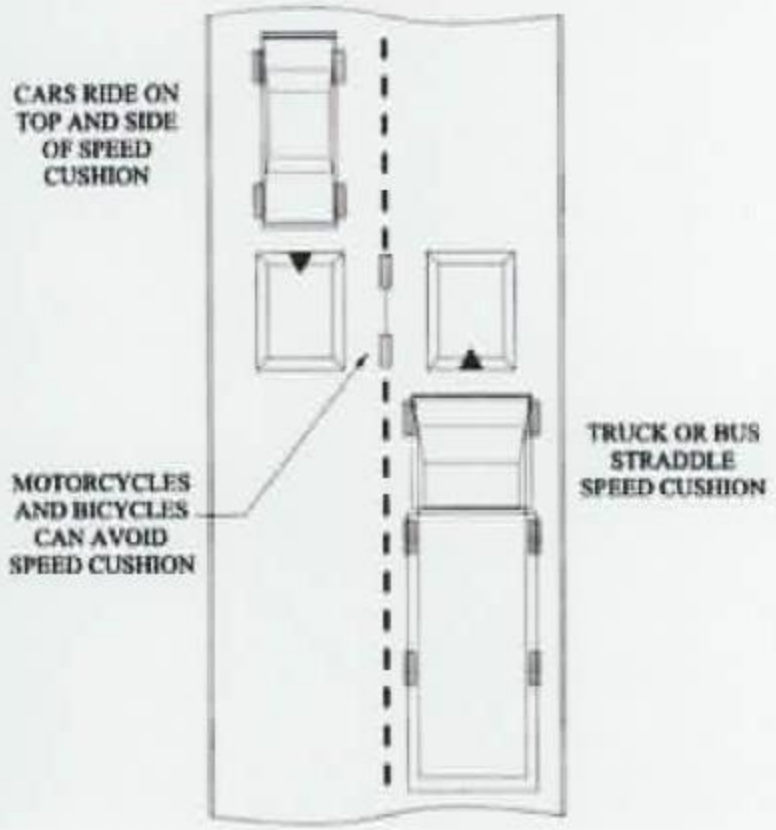
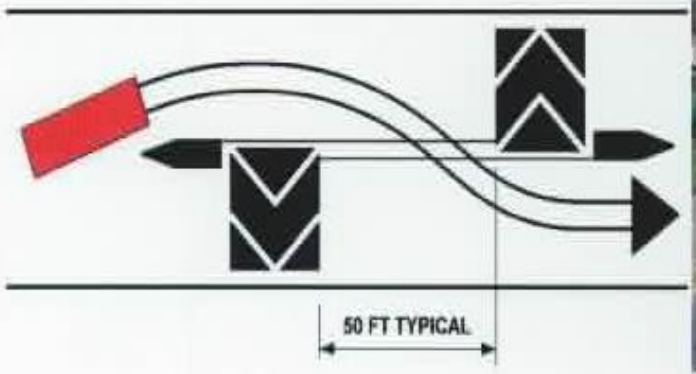


Figure 25

Offset (Divided) Speed Table	
Advantages	**Disadvantages**
Effective speed reduction	Jars vehicles
Can shift cut-through traffic elsewhere	May be increased noise
Minimal delay for emergency vehicles	
Emergency vehicles can go around tables	



SPACING
of
Traffic Calming Devices

Research data indicate that speeds increase approximately 1 mph for every 100' of separation of calming devices. 300'-400' spacing seems to be an optimal spacing for calming a corridor.

HAMDEN AVENUE

North of Rock Creek Road

Classifications of Urban Streets

Arterials: 52' min. width [40 mph speed limit]
(e.g. Rock Creek Rd., Porter Ave.)

***Collectors*:** 34' width [25 mph speed limit]
(e.g. Hamden Avenue, Highland Village Dr.)

***Local Streets*:** 26' width [25 mph speed limit]
(e.g. Thornebrook Dr., Nathan Drive, Towry Dr.)

Traffic Data Collection

To Qualify for Traffic Calming Program:

- **85th Percentile Speed > 8 mph over posted speed limit**

- **Average Daily Traffic (ADT) > 600 veh./day (vpd)**

If no. of reported speed-related accidents on road in 3-year period > 5 accidents, this can be used as a substitute criterion in lieu of either the speed or volume requirement.

85th Percentile Speed

- Not the highest speed traveled by motorists
- Represents the speed that 85% of motorists are at or below
- Is considered the speed at which reasonable, responsible drivers drive
- Is the speed standard typically used in traffic engineering design

DATA COLLECTION SITES

SUMMARY of Traffic Study - Hamden Avenue [Rock Creek Rd. to Greens Pkwy.] (May 22-25, 2018)

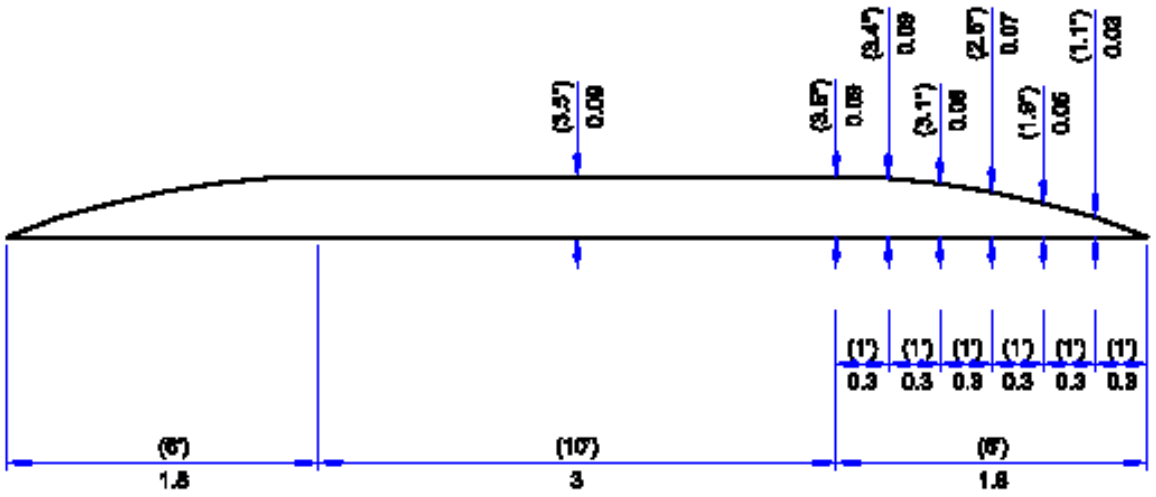
Location of Traffic Data Collection	***Traffic Direction***	***Average Speed***	***% Exceeding 25 mph***	***85th Percentile Speed***	***Avg.Daily Traffic (ADT)***
Site A:	Northbound	31 mph	81.1 %	35.08 mph	367 veh.
Hamden Avenue, between Greens Pkwy. & Thornebrook Dr.	Southbound	27 mph	62.2 %	32.53 mph	455 veh.
Site B:	Northbound	30 mph	72.7 %	34.58 mph	463 veh.
Hamden Avenue, between Thornebrook Dr. & Nathan Dr.	Southbound	27 mph	70.8 %	34.64 mph	516 veh.
Site C:	Northbound	28 mph	67.6 %	33.04 mph	642 veh.
Hamden Avenue, between Towry Dr. & Paxton Court	Southbound	31 mph	77.0 %	36.77 mph	603 veh.

Proposed

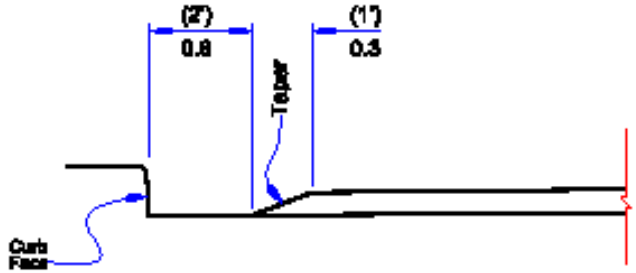
SPEED

TABLES

Tolerances: ± ½"



LONGITUDINAL PROFILE



AT EDGE OF ROADWAY
(transverse direction)

METRIC UNITS ARE IN METERS WITH ENGLISH UNITS IN PARENTHESIS, UNLESS INDICATED OTHERWISE.

SPEED TABLE - 22' LONG

22' long

SPEED

TABLE

Emergency Vehicle RESPONSE TIME

- Fire Depart Target Time to any address is 5 minutes
- Research estimates going over physical calming devices adds 9 seconds per device
- Hamden Avenue is approx. 7,000’ from Fire Station #7
- Response Time Calculation w/o Calming Devices = 4.2 min

  9 sec./table x 3 tables +.5 min

  Response Time going over 3 speed tables = 4.7 min

Hamden Avenue

Eligible Petition Signers

THE PROCESS

1. Citizen (or group of citizens) contacts Traffic Division about problem and requests traffic study.
2. Traffic Division collects and analyzes traffic data.
3. Neighborhood meeting held.
4. City prepares a support petition for affected residents to sign.
5. Neighborhood collects signatures and returns petition to Traffic Division.
6. Traffic Division verifies signatures and, if there's > 60% support, project will be READY.
7. Traffic Division finalizes plan details and selects contractor.
8. READY projects can be built when funds are available.

[Note: If more projects are READY than funds available, projects will be prioritized.]

The End