

Brookfield Traffic Calming Guidelines

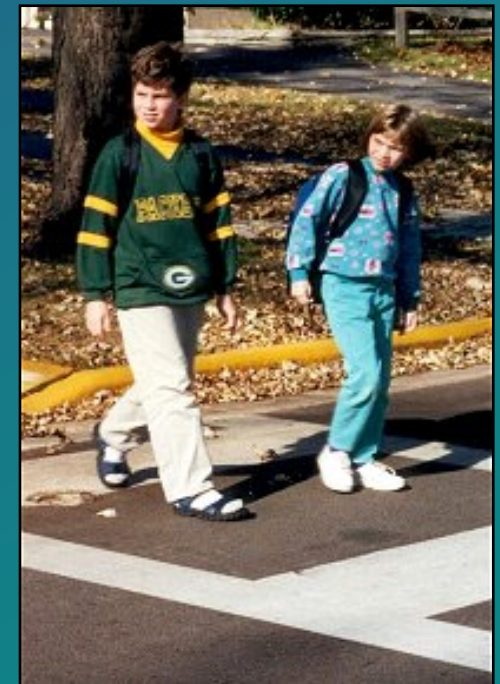
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Definition

- 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.

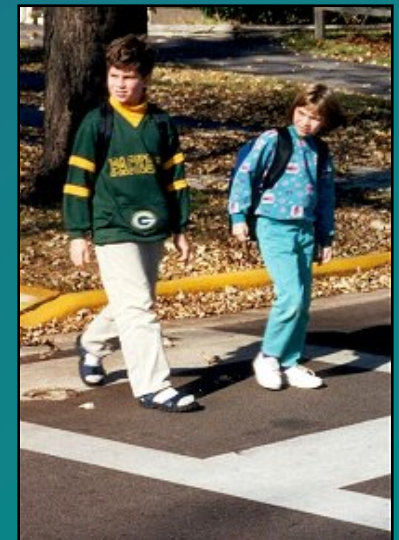
Traffic Calming

- Characteristics and Criteria
 - Community based and supported
 - Self-enforcing (driver comfort level)
 - Improve safety for vulnerable users -- pedestrians, children, elderly, cyclists



Purpose

- Reduce the speed and volume of traffic to acceptable levels
- Reduce noise, vibration and air pollution
- Reduce accidents
- Provide a safer environment for pedestrian and children



Issues that must be addressed

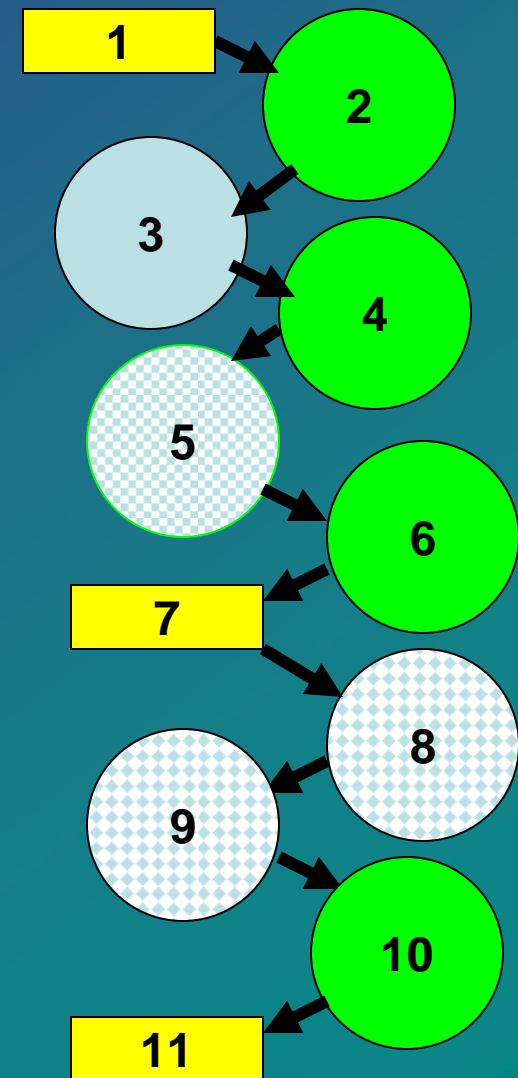
- Which measures are included?
- Installation - permanent or temporary?
- How do you communicate with public?
- How to judge community support?
- How to set priorities & time schedule?
- Who pays, who maintains?
- How is program organized?

The Calming Process

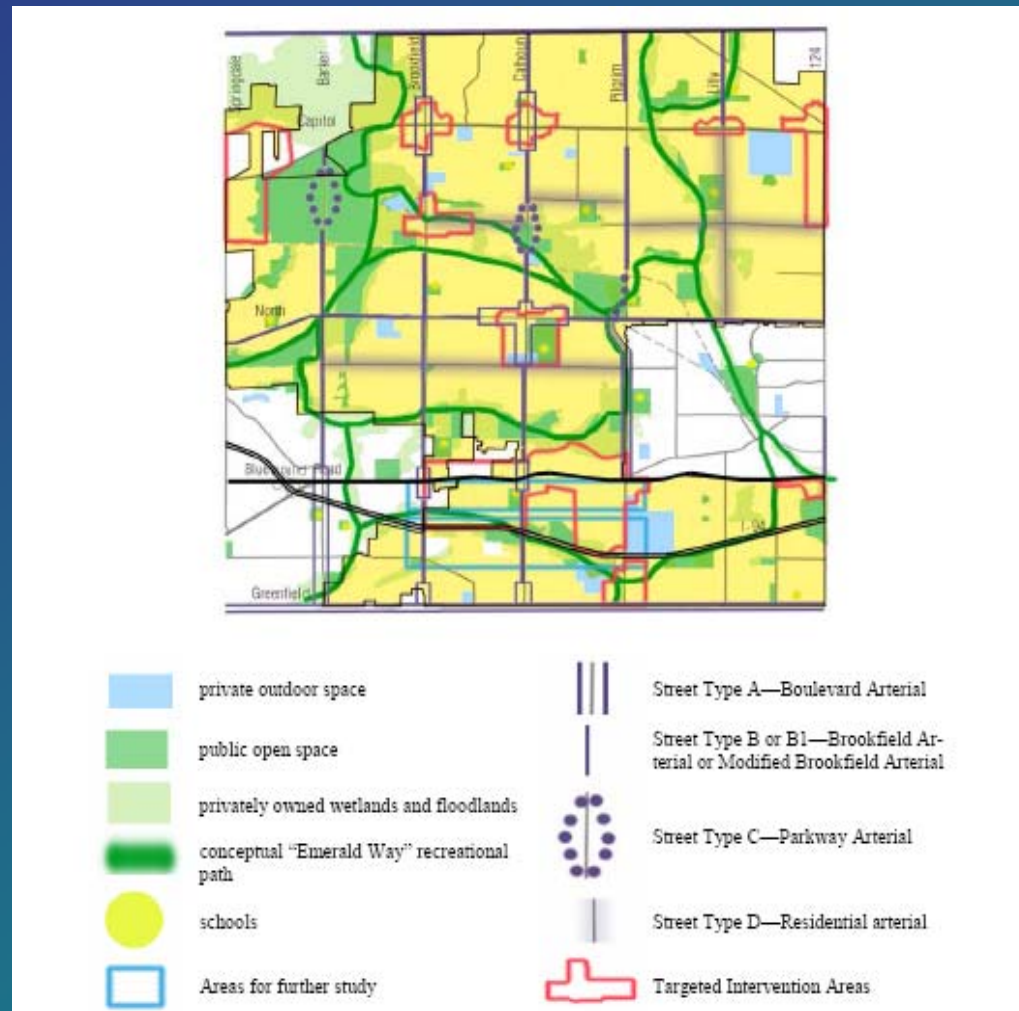
(public participation based)

Traffic Calming Guideline Process

1. Receive Request/Complaint
2. Determine Eligibility
3. Application Meeting
4. Confirm Impact Area
5. Data Collection
6. Confirm Problem
7. 3E Solutions
8. Solution Effectiveness
9. Neighborhood Workshop/Ballot
10. Project Scoring Criteria
11. Implement



2020 City Master Plan



Calming Program Eligibility

1. On residential or collector street ?
2. Traffic volume between 300 to 5,000 vpd ?
3. On primary emergency route ?
4. Posted speed limit 30 mph or less ?
5. Not a cul-de-saced street ?
6. Street length greater than 1,000 feet ?

Application/Meeting

- Explain Calming Guidelines
- Define traffic concern
- Identify location/nature of concern
- Identify time of day, week, or seasonal
- Require 50 % of street signatures
- Explain next steps



Traffic Calming Criteria

- 85th % Speed
 - exceeds posted speed by 5 mph
- Excessive Speed
 - 10% greater than posted speed
- Traffic Composition
 - 10% or greater cut-through traffic
- Daily Volume
 - exceeds 800 vpd on neighborhood street or 1,500 vpd on residential collector
- Crashes
 - averages 2 or more over three year time period

Education

- Speed trailer
- Brochures/Pamphlets
- Signs
- Speed watch program



Education Tools

- Speed Watch
 - Neighborhood project
 - Pogo-- “We have met the enemy...”
 - Focused enforcement
 - It’s not so different or its not so bad
- Building Neighborhood Support
 - Meetings, newsletters, peer pressure
- Teach “Safe Routes to School”

Education -- Speed Watch

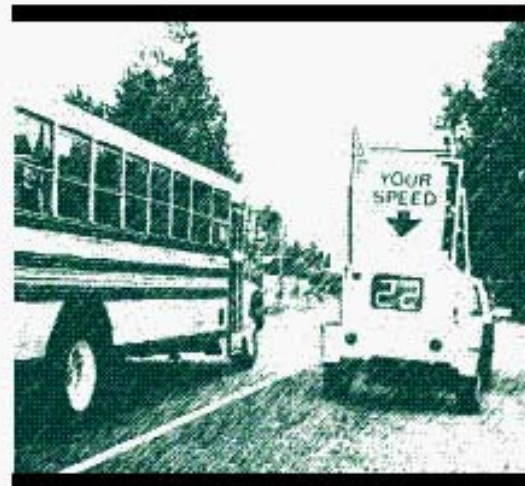
Seattle Department of Transportation

Neighborhood Speed Watch Program

Working Together for a Safer Neighborhood

Let's All Work Together!

We all want to discourage speeding in our neighborhoods, especially on the street where we live. The Neighborhood Speed Watch Program offers a



The program consists of three phases and combines the collaborative efforts of Seattle Transportation, Seattle Police, and the residents, all working together to discourage speeding in our neighborhoods.

Enforcement

Neighborhood Workshop

- 3 to 10 residents
- Neighborhood Charter (goals & activities)
- Review Issues
- Develop potential solutions
- Ballot (67 % of Neighborhood supports recommendation)



Engineering

Project Scoring Criteria

1. 85th % speed
2. Excessive speeds
3. Daily traffic volume
4. Traffic composition
5. Crash history
6. Distance to park or school
7. Critical location
8. Pending road construction
9. City plan

Critical Locations

- Multiuse trail crossing
- Bicycle route intersections
- Crossing guard intersections
- High ped/bike volume intersections
- High ped/bike demand (unmet)
- School zone

Types of Tools in the Traffic Calming Tool Kit

- Education
 - “Understanding”
- Enforcement
 - Regulate and enforce
- Traffic Calming
 - Change (improve) driver behavior by using mostly physical measures
- Traffic Management
 - Change the path of travel

Traffic Calming Tools

- Vertical Deflection
- Horizontal Deflection
- Constrict the Traveled Way
- Narrow the Pavement
- Gateway Features

Neighborhood Streets

- Speed Tables
- Circles
- Narrowing
- Diverters
- Other

Speed Tables



Speed Cushions



Approximate 85th Percentile Speeds at Speed Humps/Tables

- 12 Foot Speed Hump
 - 15 to 20 mph
- 14 Foot Speed Hump
 - 18 to 23 mph
- 22 Foot Speed Table
 - 25 to 30 mph

Spacing Makes a Difference

- 200-250 feet between 12' humps
 - 20 mph is 85th Percentile Midpoint Speed
- 400-450 feet between 12' humps
 - 25 mph is 85th Percentile Midpoint Speed
- 800-850 feet between 12' humps
 - 30 mph is 85th Percentile Midpoint Speed
- Top Speeds Reduced in All Cases

Traffic Circles



Narrowing



Chicanes



Bump Outs



Gateways



Traffic Management Half Closure



Traffic Management Diverters



Left-in Only Diverter

Source: ITE Pedestrian Council



Right-in/Right-out Diverter

Source: Dan Burden

Traffic Management Diagonal Diverters



Average Crash Reduction

- 12 ft. Humps - 13 %
- 14 ft. Humps - 40 %
- 22 ft. Tables - 45 %
- Circles - 71 %

85th Percentile Speed Reduction

- 12 ft. Humps - 22 %
- 14 ft. Humps - 23 %
- 22 ft. Tables - 18 %
- Raised Intersections - 1 %
- Circles - 11 %
- Narrowings - 4 %

Average Volume Reduction

- 12 ft. Humps - 18 %
- 14 ft. humps - 22 %
- 22 ft. Tables - 12 %
- Circles - 5 %
- Narrowings - 10 %
- Full Closures - 44 %
- Half Closures - 42 %
- Diagonal Diverters - 35 %

Sample Cost Estimates (\$)

- Speed Humps 2,000
- Tables 2,500
- Raised Intersections 12,500
- Circles 3,500 - 15,000
- Chokers 7,000 - 10,000
- Half Closures 35,000
- Diagonal Diverters 85,000
- Full Closures 120,000

My Observations

- This takes time and money
- There is no substitute for facts
- Often there are no easy answers
- Proposed change can cause conflict & bad blood, but cool heads win the day
- Political support is essential
- Today's subdivision may be tomorrow's neighborhood traffic problem

3 E's

- Education
- Enforcement
- Engineering

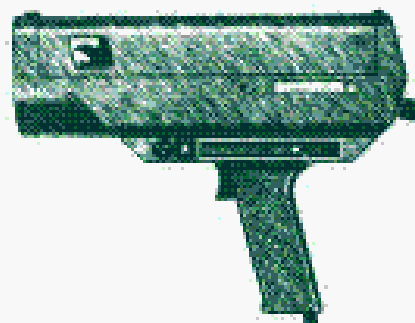


Education -- Speed Watch

Phase One

Seattle Transportation loans out a radar unit, at no cost, to one designated person responsible for the pick-up and return of the equipment.

At the time the equipment is picked up, a loan and usage agreement is signed, and the designated person will be trained to properly operate the radar equipment. The equipment may be used up to three calendar days. Seattle Transportation provides forms to record information about the speeding vehicles, such as make, model, and license number.



Residents check speed and identify of speeders

Education -- Speed Watch

Phase Two

After letters are sent out to the registered owners of the speeding vehicles, Seattle Transportation uses a trailer equipped with a radar display board on the street. The radar display board flashes the speeds of the vehicles so that drivers can see how fast they're travelling, in relation to the legal speed limit. The radar display board is operated during a time specified by the residents as having the worst speeding problem.

Seattle Transportation staff will also distribute traffic safety campaign flyers to motorists using the street, depending on the traffic conditions at that time.



The Seattle Police Department assists during the radar display by assigning a Police Officer to provide enforcement. The Police Officer may cite anybody violating any traffic regulation. Their presence during this phase of the program has proven to be valuable in emphasizing the City's partnership with the residents in combatting the problem of speeding on neighborhood streets.

Registered letters sent to speeders, followed by speed trailer, information, and enforcement

Education -- Speed Watch

Phase Three

We will ask the Police Department to provide follow-up enforcement. Police observations during the radar display operation (Phase 2) will be helpful in follow-up enforcement decisions.

If the residents are interested, Seattle Transportation will provide traffic safety campaign flyers for distribution by the local residents within the problem area.

In some cases, some neighborhoods opt to repeat Phase 1 and Phase 2 at a later time, depending on neighborhood needs.



Periodic follow-up enforcement by police

<http://www.ci.seattle.wa.us/td/swatch.asp>