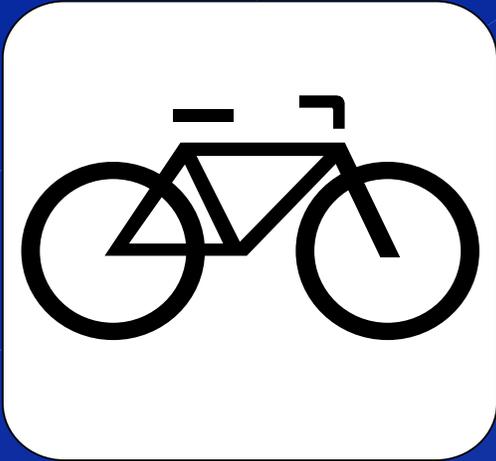

Neighborhood Traffic Calming: Seattle's Traffic Circle Program



Moving People in a Dense Urban Environment



Seattle Biographical Information

- **533,000 residents**
- **Rated in the Top 10 for worst congestion nationwide**
- **Grid street pattern with 25 foot wide streets**
- **25 mph residential speed limit**
- **Most non-arterial intersections are uncontrolled**



Seattle's Experience

- **Inspired by programs to improve deteriorating neighborhoods**
- **Transportation was identified as a major priority**
- **Program started with demonstration projects**



Public Process

- **Initial contact**
 - Requests investigated
 - Appropriate devices (least amount of control)
- **Neighborhood support**
 - Neighborhood meetings
 - 60% petition for each affected block



Public Process (cont.)

- **Installation**
 - Trial period
- **Devices removed if neighborhood is not satisfied**
 - Over 600 traffic circles installed
 - Only two removed
- **After studies (survey)**



Types of Devices

- **Education**

- Neighborhood Speed Watch
- Signing
- Enforcement

- **Devices that slow traffic**

- Traffic circles
- Chicanes
- Speed Humps



Types of Devices (cont.)

- **Devices that restrict traffic -- require a neighborhood plan**
 - Diagonal diverters
 - Street closures
 - Partial street closures



Neighborhood Speed Watch Program

- **Three-phase program focused on education**
 - Loan radar gun to neighborhood, and send letters to speeders
 - Speed watch trailer and signing
 - Police enforcement
- **Low cost, “self help”**
 - Educates residents on actual speeds



Traffic Circle Program

- **Receive approximately 700 requests per year**
- **Install 30 traffic circles per year**
- **Have installed over 600 traffic circles**



Priority Formula -- Accident History

Points	Accidents/year
1	.5-.875
2	.876-1.25
3	1.251-1.625
4	1.626-2.0
5	2.001-2.375
6	2.376-2.75



Priority Formula -- Traffic Speeds

Points	85 Percentile
.5	26-29
1	29.1-32
1.5	32.1-35
2	35.1-38
2.5	38.1-41
3	41.1-44



Priority Formula -- Traffic Volumes

Points	Vehicles/day
.5	500-1100
1	1101-1700
1.5	1701-2300
2	2301-2700

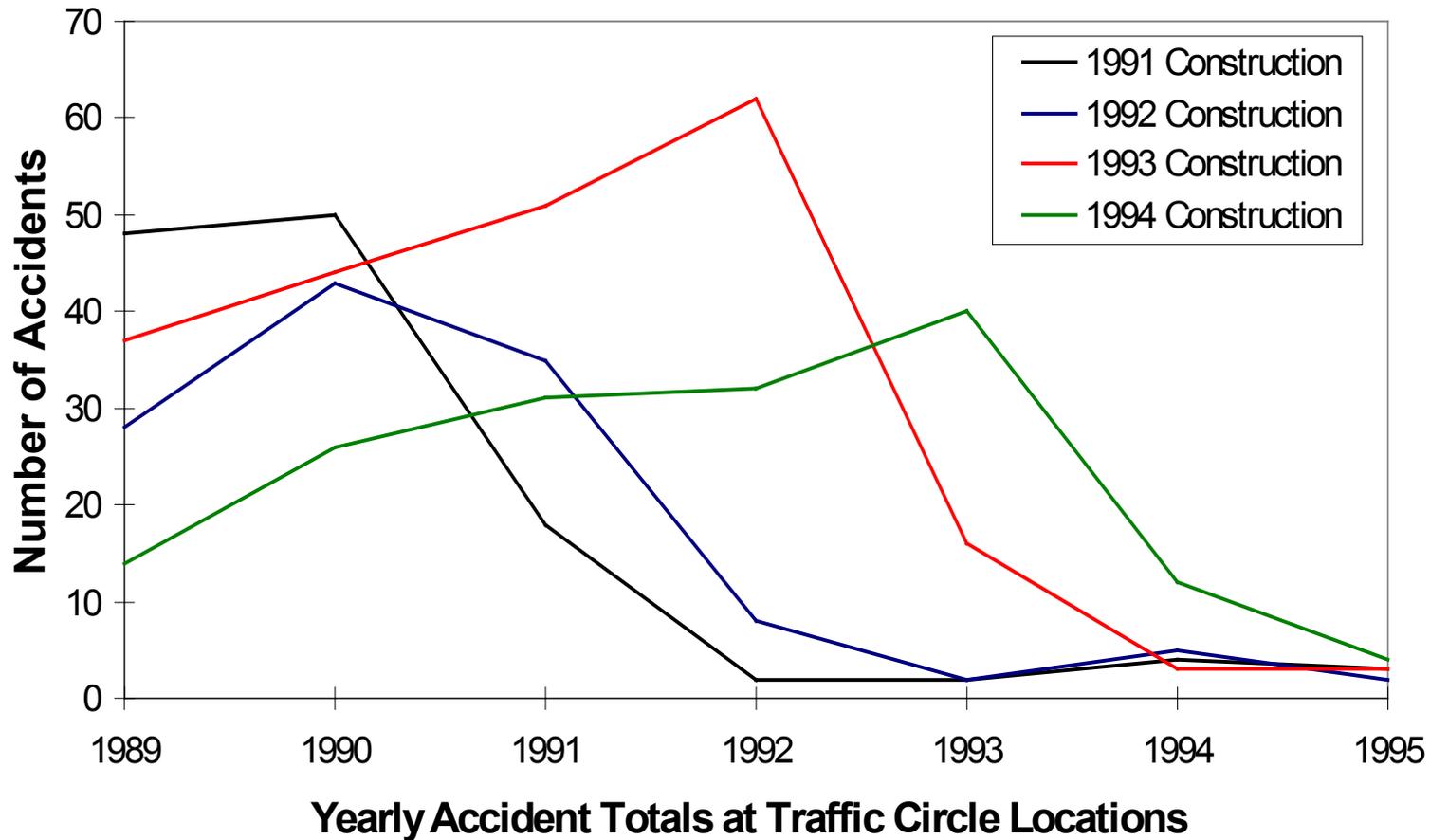


Landscaping

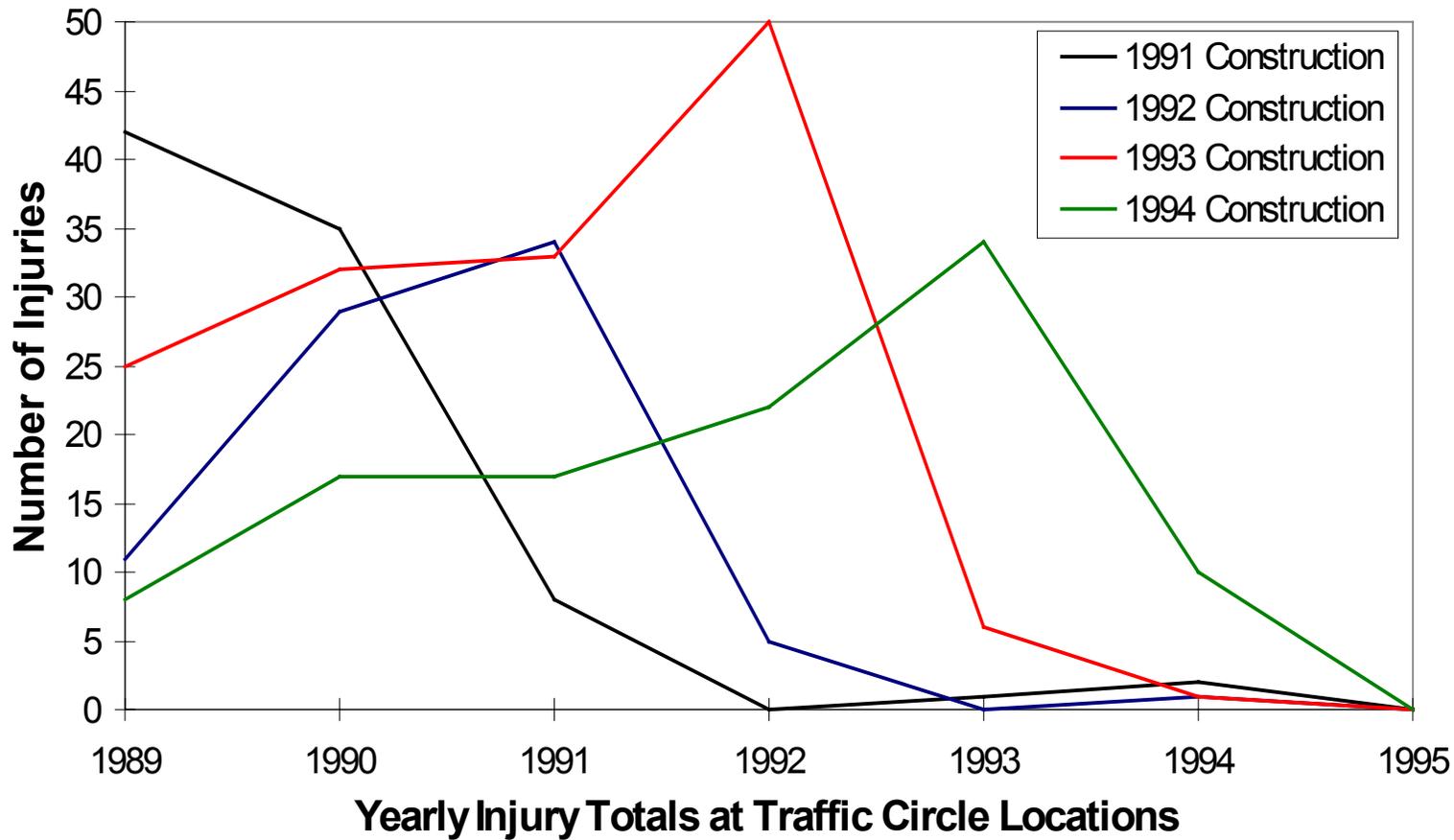
- **Changes character of street**
- **Adds greenery and reduces pavement**
- **Neighborhood required to maintain landscaping**
 - **Trees are set back 3 feet from inside curb**
 - **Tree limbs are trimmed above 6 feet**
 - **Shrubs are trimmed lower than 30 inches**



Accident Reduction



Injury Reduction



Accident Reduction

	1991 N=30	1992 N=29	1993 N=31	1994 N=29	4 Year Total
Before Construction	50	35	62	40	187
After Construction	2	2	3	4	11
Percent Reduction	96.0%	94.3%	95.2%	90.0%	94.1%



Injury Reduction

	1991 N=30	1992 N=29	1993 N=31	1994 N=29	4 Year Total
Before Construction	35	34	50	34	153
After Construction	0	0	1	0	1
Percent Reduction	100.0%	100.0%	98.0%	100.0%	99.3%



Accident Reduction at Previously Signed Intersections

	1991 N=10	1992 N=7	1993 N=9	1994 N=6	4 Year Total
Before Construction	11	11	21	6	49
After Construction	1	0	3	1	5
Percent Reduction	90.9%	100.0%	85.7%	83.3%	89.8%



Cost/Benefit

- **At an average of \$6500 per accident, and \$30,000 per injury**
- **Total average benefit is \$5,704,000**
 - 119 traffic circles cost \$537,000
 - 32 had stop or yield signs



Funding Sources

- **Neighborhood Traffic Control Program**
- **Neighborhood Matching Fund**
- **Neighborhood Street Fund**
- **“Opportunity” Funds**

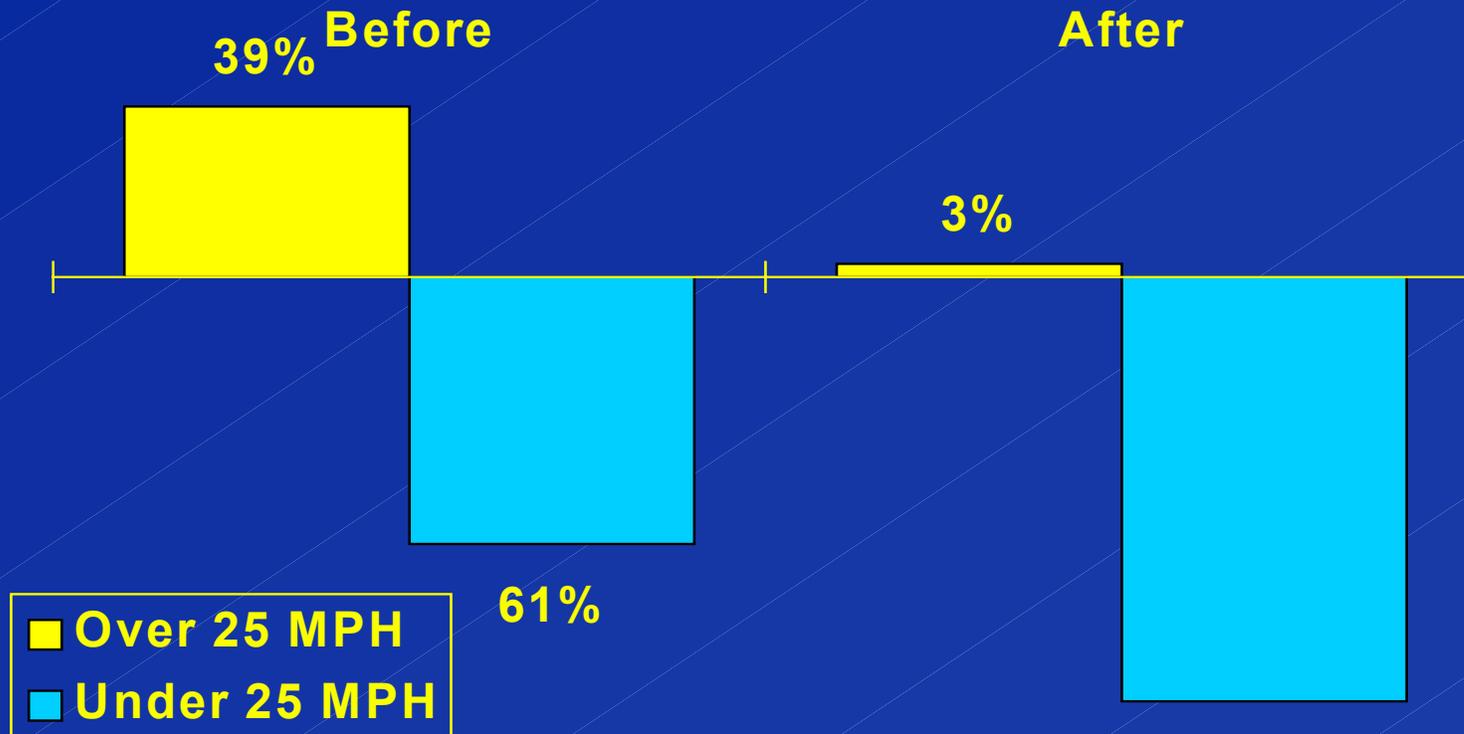


Traffic Circles

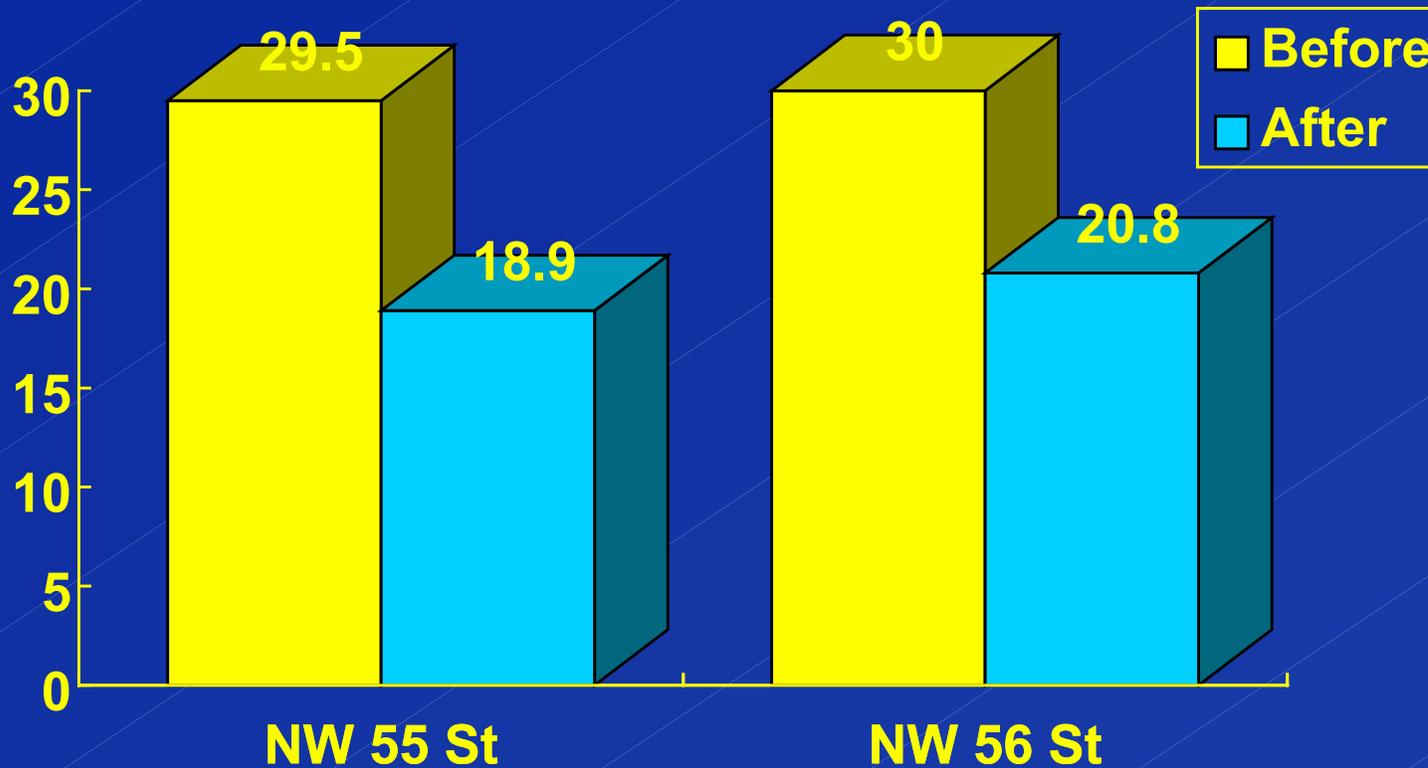
- **Highly effective in reducing intersection and mid-block collisions**
 - Does not divert traffic onto other residential streets
- **Landscaping makes them more effective**
 - Perception is a quieter, safer neighborhood



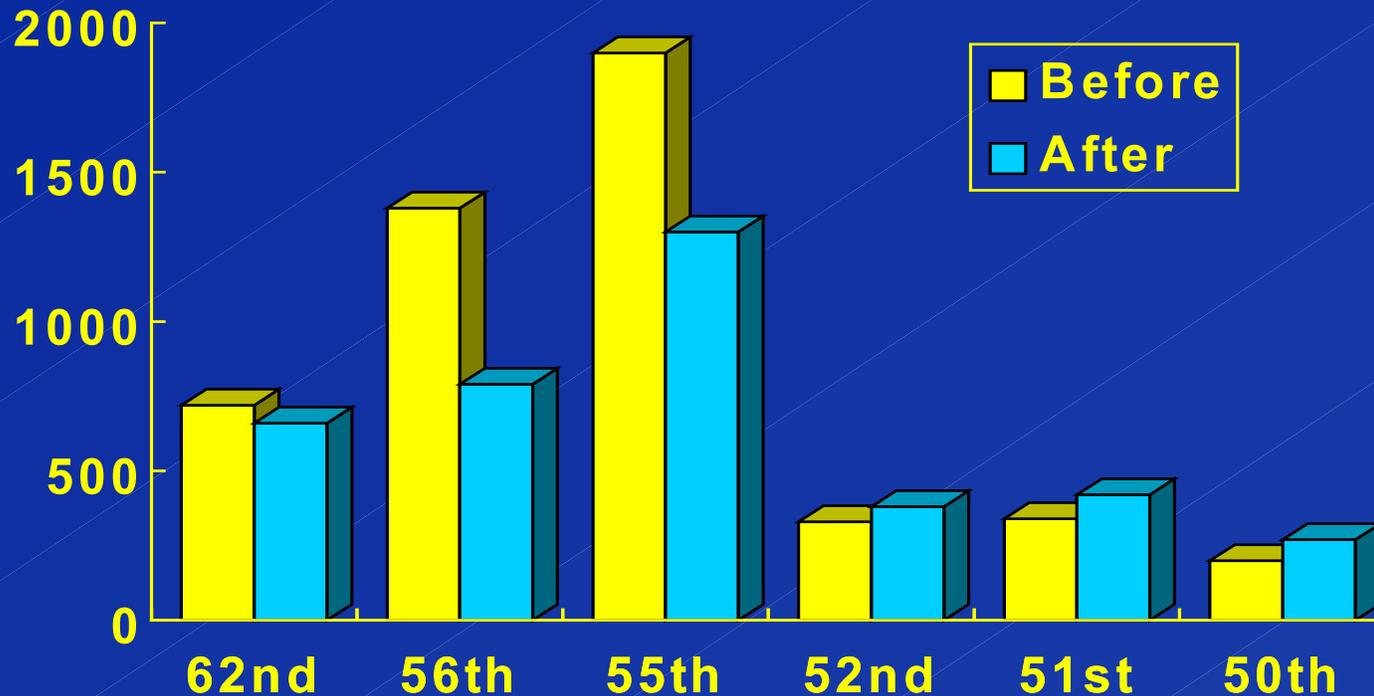
Speeds On NW 56 Street (outside chicanes)



Speeds Within Chicanes



Traffic Volumes in the Neighborhood



Chicanes

- **Reduce mid-block speeds**
- **Reduce volume and leaves street open**
 - If used carefully, may not divert traffic onto other residential streets
- **Landscaping helps make them effective and attractive**
 - Perception is a quieter and safer neighborhood
- **Reduce on-street parking**



Speed Humps

- **Mid-block speed control device**
- **Slows 85th percentile speed by 5-6 mph**
- **Fire Department does not like them**
- **Affects various wheel bases differently**



Diverters

- **Installed as a last resort**
 - Decreases neighborhood cut-through traffic
 - Diverts traffic to other streets
 - Affects emergency vehicle access
- **Install only as part of a neighborhood plan**



Recommended Guidelines

- **Involve the whole community**
- **Use care in choosing “appropriate devices”**
- **Manage traffic in place rather than divert it to another street**



Conclusion

Seattle Transportation has found that traffic circles effectively:

- Involve the community and are popular with residents**
- Reduce accident rates**
- Reduce vehicle speeds**
- Help make our neighborhoods a safer and better place to live**

