

Low Cost vs. High Cost Traffic Calming Devices in Seattle

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Background

- Since 1973, Seattle has installed over 800 traffic calming devices
- Seattle's first devices were installed as demonstration projects
 - low cost materials such as barrels, boards, and ecology blocks were used
 - permanent devices were built after an evaluation
- Our first permanent devices were expensive
 - traffic circles included rebuilding all corners of the intersection with larger curb radii
- Over time, we found ways to cut the cost of permanent devices
 - Temporary materials are rarely used
 - Devices were designed to fit within existing intersections
 - Irrigation systems were eliminated
 - Maintenance & watering agreements made with residents



Traffic Circles

- **Cost Alternatives**

- \$66,000: First trial locations
 - Rebuilt entire intersection
- **\$6,000: Used on concrete streets**
 - Current design doesn't modify intersection
 - Community waters and maintains landscaping
- \$4,000: Used on asphalt paved streets
- **\$2,500: Low-cost “black button” circle**
- \$1,000: Temporary barrel cluster
 - no longer used in Seattle

- **Effectiveness**

- 94% reduction in collisions (119 locations)
- 98% reduction in injuries
- 3.4 mph reduction in mid-block speeds
- Little change in traffic volumes
- 85% support (compared to 60% needed to install)



Full Street Closures

- **Cost Alternatives**

- **\$120,000: Fully developed cul-de-sac**
 - Street widened for a turnaround
 - Sidewalks adjusted
 - Drainage modified
 - Landscaping and irrigation
- **\$1,500 Guardrail or New Jersey barricade closure**
 - Pavement could be removed for landscaping

- **Effectiveness**

- 98% fewer collisions on the route
- 80% less traffic beyond the dead-end block
- 85% - 90% community support to keep the street closed
- Aesthetics is the major difference between alternatives



Partial Street Closures

- Cost Alternatives

- **\$35,000: Fully integrate design into existing streetscape**

- Poured-in-place concrete curbs, modify drainage
 - Extend sidewalks, add curb ramps
 - Remove pavement and add landscaping

- **\$3,000: Asphalt curb bulb**

- Use pre-cast concrete curb
 - Avoid drainage modifications

- **\$1,000: Guardrail and barrel partial closure or paint, button, and signs**

- best for temporary use

- Effectiveness

- 43 to 74% reduction in collision rates (4 locations - low 'before' collision rates)

- 45 to 60% reduction in traffic volumes (8 locations)

(8)

- 75% - 85% community support



Diagonal Diverters

- **Cost Alternatives**

- **\$85,000: Landscaped diagonal**

- New curbing poured-in-place
 - Underlying pavement removed and landscaping added
 - Increase the curb radius on two corners
 - Relocate drainage inlets and adjust utility access

- **\$4,000: Low-cost temporary or permanent diagonal**

- Two rows of pre-cast curb with asphalt fill
 - Gap left between the diverter and existing curb for drainage

- **Effectiveness**

- 58 to 85% reduction in collisions (7 locations)
 - 36 to 46% reduction in volumes
 - 85 to 87% community acceptance



Community Involvement

- We found that traffic calming devices were effective, regardless of cost
- Cost (primarily landscaping) is a major factor in community acceptance
- SEATRAN's community involvement includes the following:
 - Work with the community to define specific issues to address
 - Help quantify the problem
 - Discuss alternative solutions
 - Identify impacts, impact area, and everyone who needs to be involved
 - Identify a funding source
 - Require a petition with a 60% support rate
 - Conduct 'before and after' studies
 - Do a follow-up opinion survey



Funding Programs

- **Neighborhood Traffic Control Program** - \$500,000 per year runs the program and constructs about 30 traffic circles, built using a priority of accidents, traffic speeds, and volumes.
- **Neighborhood Street Fund** - \$500,000 per year is divided between 13 community district councils. The district councils receive applications from their constituent neighborhoods and prioritize the projects, subject to City review of feasibility.
- **Neighborhood Matching Fund** - \$1.5 million per year. Program requires a 50% match from the community in dollars, labor, or materials. This fund can be used for any community priority project - about ten traffic calming devices are funded each year.
- **Other** - We are open to creative ways to fund community projects. These include scope adjustments to capital projects or mitigation for private developments.

