

MEMORANDUM

TO: Charles Blosten

FROM: Craig Faessler

DATE: December 22, 2005

SUBJECT: Traffic Calming Evaluation

I have completed an evaluation of our traffic calming program. As part of this evaluation, I compared "before and after" traffic volume and speed data at traffic calming devices. In addition, I surveyed residents who have been part of the traffic calming process to receive their input on the effectiveness of the traffic calming devices. The results of these analyses are discussed in this memo.

In 1999, the city council adopted the Neighborhood Traffic Management Program, also referred to as the Traffic Calming Program, to address citizens' concerns with neighborhood traffic issues, such as speeding on residential streets. Since 1999, the city has completed eight traffic calming projects, which have constructed circles, bumpouts, neckdowns, and chicanes. These projects are listed below, along with the approximate date of construction and the devices that were constructed.

Elati Street, Sterne Parkway to Ridge Road (September, 1999) - circles
Rangeview Drive, Windermere to Prince (August, 2001) - chicanes
Elati Street, Ridge Road to Fremont Drive (June, 2001) - circle and neckdowns
Caley Avenue, Windermere to Prince (September, 2003) - circle and neckdown
Powers Avenue, Windermere to Huron (September, 2003) - circles
Blue Sage Drive, Berry to Tule Lake (October, 2004) - circle and speed hump
Linden Drive, Belleview to Lowell (May, 2005) - chicane and neckdown
Gallup Street, Peakview to Ridge Road (November, 2005) - circles

In general, we have seen a measurable decrease in the average speed and daily traffic volume on streets that have utilized circles in the traffic calming plan. Table 5 at the end of this memo lists speed and volume information for the streets evaluated as part of this study. Table 1 summarizes the changes in average speed and daily traffic volume for a few of the streets listed above.

Table 1				
Street	Avg. Speed (miles per hour)		Volume (vehicles per day)	
	Before	After	Before	After
Caley, Windermere to Prince	29	25	2918	2680
Elati, Peakview to Ridge Road	32	30	1921	1484
Elati, Ridge Road to Geddes	28	25	3247	2911
Powers, Huron to Windermere	26	25	2013	1533

As you can see from the data listed in Table 1, there is, on average, a 2 mph to 3 mph reduction in the average speed and also, a reduction in the daily traffic volume on streets with traffic circles. The data listed in Table 1 does not, however, provide conclusive evidence that these reductions in speed and volume are sustainable. If you look closely at the data contained in Table 5, you will see that the average speed on some of the streets studied is actually starting to creep back up to the speed that was recorded before the circles were installed. This seems to indicate that motorists may get used to maneuvering around the devices after a period of time and consequently, feel more comfortable traveling at speeds they were driving prior to the installation of the devices. Also, while the residents who live on a street with traffic calming device support a reduction in traffic volume, other residents near a traffic calming project have voiced their concerns over the diversion of traffic to their streets because of the devices.

A summary of the speed and volume data collected for chicanes is included in Table 2. The data is limited for the evaluation of chicanes since we have only two locations that utilize chicanes. Regardless, the data does indicate that chicanes may be effective at lowering speed, particularly on the west end of Rangeview, and at lowering traffic volume, particularly on Linden where the daily traffic volume has decreased by 58.1 percent.

Table 2				
Street	Avg. Speed (miles per hour)		Volume (vehicles per day)	
	Before	After	Before	After
Rangeview, Windermere to Prince	34	28	3732	3596
Linden, Belleview to Lowell	N/A	N/A	2799	1173

N/A - Not Available

Chicanes are typically not the preferred traffic calming device since they require the complete reconstruction of a street in order to install the device, which can amount to several thousand dollars. Also, you will see later on in this memo that the public's perception on chicanes is that they may be a waste of taxpayer's money.

We also collected speed and volume data for neckdowns, which is included in Table 3. The neckdowns included in this analysis were installed to provide a safer crossing area for elementary-age students. The neckdown on Euclid was installed at Acoma for students trying to get to Whitman Elementary and the neckdown on Geddes was installed at the pedestrian signal for students trying to get to Runyon Elementary.

Table 3				
Street	Avg. Speed (miles per hour)		Volume (vehicles per day)	
	Before	After	Before	After
Euclid at Acoma	21	22	1914	1777
Geddes at Carbone Park	22	21	3168	3299

Our intention was to reduce the crossing width of the street for the students by constructing the neckdowns, which also provide a refuge area for students waiting to cross the street. The staff and PTOs at both schools are very happy with the devices but residents feel that the devices are not effective at lowering speeds and are a waste of taxpayer money, as you will see from the comments received from residents who completed the survey.

As I mentioned earlier in this memo, we conducted a postcard survey of all residents who live on a street where a traffic calming project has been completed since the adoption of the Neighborhood Traffic Calming Program. Residents received a stamped, self-addressed postcard in the mail and were asked to select "yes" or "no" on the effectiveness of each traffic calming device installed on their street and on the overall effectiveness of the traffic calming plan. A sample copy of a survey postcard is attached. We sent out a total of 247 postcards to the residents and 111 were returned, which equates to a 44.9 percent response rate. Table 4 summarizes the results of the postcard survey.

Table 4								
Project Device(s)	Perceived Effectiveness							
	Circle		Neckdowns		Chicane		Overall	
	Yes	No	Yes	No	Yes	No	Yes	No
Circles only	24	11					21	14
Circles and Neckdowns	31	18	25	24			25	24
Chicane only					18	5	17	6
Chicane and Neckdowns			3	1			4	0

The public's perception of traffic calming appears to support the use of traffic circles and chicanes. The residents are not convinced that neckdowns are effective at slowing traffic; however, several residents commented on their survey postcard that the use of neckdowns at crossspans is very effective at keeping motorists from driving down the gutter pan to avoid the crossspan. Quite a few residents also commented that, while motorists are forced to slow down at a device, the motorists have a tendency to speed up between devices, or in the case of the chicanes, motorists shortcut the chicane by crossing the double-yellow stripe.

Based on the "overall" data in Table 4, approximately 60.4 percent of the respondents support their respective traffic calming project. As you may recall, the toolkit requires 75 percent of the residents

to support a project before it can be implemented. Perhaps, this statistic may indicate that some of the projects would not have been implemented based on the residents post-construction perception could have influenced their decision of whether to support the traffic calming plan or not.

Regardless, I feel the program has been effective at slowing traffic, but more particularly, eliminating the very high, dangerous speeds on residential streets. However, I would like to recommend that the toolkit be modified to not include the use of neckdowns to slow traffic at midblock locations. I do encourage the use of neckdowns at school crossings, but based on the public's perception and my own personal observations of the use of midblock neckdowns, I do not feel that neckdowns are an effective device for slowing traffic.

Please let me know if you have any questions regarding the information provided in the memo.

Table 5

Traffic Calming Before and After Data

Street	Location	Date	Device	Volume Data ADT (cars/day)	Speed Data			
					Speed Limit	Avg	85th Percentile	% > 5mph over SL
Caley	Hill-Spotswood	June '99	None	3225	25	29	36.3	--
Caley	Hill-Spotswood	May '02	None	2918	25	29	36.6	55.3
Caley	Hill-Spotswood	June '02	Circle	2680	25	25	33.3	29.4
Caley	Hill-Spotswood	May '04	Circle	2589	25	27	34.8	45.4
Caley	Hill-Spotswood	Mar '05	Circle	2417	25	28	35	49.7
Elati	Arapahoe-Brianwood	Oct '98	None	1485	30	33	41.3	--
Elati	Arapahoe-Brianwood	Nov '99	None	1921	30	32	40.1	--
Elati	Arapahoe-Brianwood	Sep '01	Circles	1484	30	30	37.8	--
Elati	Arapahoe-Brianwood	Mar '05	Circles	1382	30	28	35.6	16.4
Elati	Bradbury-Meadowbrook	Feb '01	None	3247	25	28	37.3	49.1
Elati	Bradbury-Meadowbrook	May '04	Circle	2911	25	25	32.6	24.6
Elati	Bradbury-Meadowbrook	Mar '05	Circle	3076	25	25	32.5	23.7
Euclid	Acoma	May '00	None	2070	30	24	29.3	--
Euclid	Acoma	Sep '01	None	1914	30	21	27.5	--
Euclid	Acoma	May '04	Neckdown	1777	30	22	29.9	4.1
Euclid	Acoma	Apr '05	Neckdown	1749	30	20	29.1	2.8
Geddes	Carbone Park	Sep '01	None	3168	30	22	27.8	--
Geddes	Carbone Park	Apr '05	Neckdown	3299	30	21	27.9	1.8
Powers	Greenwood-Hickory	Apr '99	None	2049	25	27	33.8	--
Powers	Elmwood-Foresthill	Nov '02	None	2013	25	26	34.2	36.2
Powers	Elmwood-Foresthill	May '04	Circles	1533	25	25	33.4	27.8
Powers	Elmwood-Foresthill	Mar '05	Circles	1458	25	27	34	39.9
Rangeview	E. of Graham Ln	Mar '97	None	2343	30	36	43.9	--
Rangeview	E. of Graham Ln	Nov '99	None	3363	30	36	44.1	--
Rangeview	E. of Graham Ln	Sep '00	None	3824	30	34	42.7	--
Rangeview	E. of Graham Ln	May '04	Chicane	3017	30	32	39.8	45.1
Rangeview	E. of Graham Ln	Mar '05	Chicane	3431	30	34	42.1	55.9
Rangeview	W. of Shadycroft	Apr '00	None	3732	30	34	42	--
Rangeview	W. of Shadycroft	Mar '05	Chicane	3596	30	28	34.8	13.3
Linden	Lowell-Bellevue	Oct '02	None	2799	30	--	--	--
Linden	Lowell-Bellevue	Sep '05	Chicane	1173	30	--	--	--

Neighborhood Traffic Management Program Residential Survey

The City of Littleton is in the process of evaluating the Neighborhood Traffic Management Program and the effectiveness of the traffic-calming devices that have been installed. Since your street was included in this program, we would like to hear from you in regards to your perception of the program's effectiveness. Please check the response next to each question that indicates your position, include any additional comments and return this self-addressed, stamped postcard by no later than **September 12, 2005**. Thank you for you participation.

☐ Yes ☐ No

Do you feel the chicane has been effective at slowing motorists?

☐ Yes ☐ No

Do you feel the bumpout islands have been effective at slowing motorists?

☐ Yes ☐ No

Do you feel the project, as a whole, has accomplished its objective of slowing motorists?

Comments _____
