How Much Traffic Is Too Much for a Neighborhood Street

Of all our roads, neighborhood streets have the highest accident rate. And these accidents involve a substantially higher percentage of pedestrians and cyclists when compared to those occurring on other roads. **Excessive cut-thru traffic is a key factor jeopardizing the safety and health of our neighborhood streets.** As main roads become more congested, cut-thru traffic increases. **Main road congestion is a result of poorly managed growth.** There are a number of measures for making neighborhood streets safer by reducing cut-thru traffic. Other measures can then prevent future growth from threatening safety and health once again.

As main roads become increasingly congested, drivers seek out ways for getting around traffic jams. Unfortunately, the alternative usually involves a neighborhood through residential streets. This cut-thru traffic makes neighborhood streets noisier and more dangerous.

While every through-street will carry traffic from one main road to another, neighborhood quality of life suffers when the volume crosses a certain threshold.

Where is that threshold?

The table below is from a paper that appeared in the **Institute for Transportation Engineers Journal**. **The term "environment" in the table is defined as: "one where residents can live, work and move about in freedom from the hazards of motor traffic."**

Environment	Vehicles Per Minute	Vehicles Per Day
Excellent	0.5	300
Good	0.5-1.0	300-600
Acceptable	1.0-2.0	600-1200
Poor	>2.0	>1200

To put these numbers in perspective, each single-family detached home generates one peak-hour trip and ten trips per day. This includes not just the cars and SUVs driven by residents but delivery trucks and all other traffic entering-exiting a neighborhood. One would anticipate that those who live on a residential street prefer that traffic volume remain in the good to excellent range or less than 600 vehicles per day. In other words, land use decisions should not cause traffic volume to exceed 600 vehicles per day on a neighborhood street.

Best Options for Reducing Congestion

Much of neighborhood cut-thru traffic is a result of drivers using streets to bypass main road congestion. **Federal law requires that local governments and states develop Long Range Transportation Plans (LRTP) to ensure that funds are spent on projects that will be most effective in reducing congestion.** Transportation projects are supposed to be rated against a number of performance measures such as congestion-delay, accident rates, etc. The plans are developed by agencies known as a Metropolitan or Transportation Planning Organization, a Transportation Planning Board, etc.

Reducing Existing Cut-Thru Traffic

If traffic on your street exceeds the good to excellent range (300-600 vpd) given above, then consider calling for one or more of the many measures listed proven to reduce both cut-thru speed and volume. The permanent measures given below are more effective and long-lasting..

Effectiveness of Neighborhood Traffic Management Techniques

This table appeared as Table 5 in Comprehensive Engineering Approach to Achieving Safe Neighborhoods

Category	Technique	Primary Measure of Effectiveness	Percent Reduction In…		
			Volume	Speed	Collisions
Route Modification Devices	Full closures (1 to 4 blocks away)	Volume reduction	44%		
	Half closures (1 to 4 blocks away)	Volume reduction	42%	19%	
	Diagonal diverters	Volume reduction	35%	4%	
Traffic Calming Devices	Speed humps	Speed reduction	18% to 22%	23%	13% to 40%
	Speed tables	Speed reduction	12%	18%	45%
	Raised intersections	Speed reduction		1%	
	Traffic circles	Speed reduction	5%	11%	28%
	Roadway narrowing	Volume reduction	10%	4%	
	Chokers	Volume reduction	20%	14%	
Regulatory Measures	Speed trailers	Speed reduction	9%	7%	10%
	Speed limit signs and markings	Speed reduction	4%	7%	3%
	Increased enforcement	Speed reduction	8%	28%	28%

Main point is that **Quality-of-Life focuses on outcomes in user's lives, rather than infrastructure or Levels-of-Service**.

Responsible growth management seeks to prevent congestion from reaching the threshold (Level of Service D-E or F) where cut-thru traffic harms neighborhood quality of life.

Ironically, increasing main road congestion seems to create pressure on public officials to engage in two practices that exacerbate neighborhood cut-thru traffic:

- Allowing cul-de-sacs to be converted into through streets, and
- Resisting calls for speed humps and other measures that would slow cut-thru traffic speed-volume.

Traffic noise slows children's memory development, study finds

The research found that children exposed to about three times more traffic in the street than other pupils had memory development that was 23% slower and attention ability development 5% slower over a year.

https://www.theguardian.com/environment/2022/jun/02/traffic-noise-slows-childrens-memory-development-study-finds

Traffic-related air pollution and lung cancer

Conclusion
Exposure to traffic-related air pollution significantly increased the risk of lung cancer.

Traffic-related air pollution and lung cancer: A meta-analysis - PMC (nih.gov)

EPA: Traffic Emission Impacts on Child Health and Well-being

Consistent and compelling scientific evidence suggests prenatal and childhood exposures to primary traffic emissions can cause onset and exacerbation of asthma, delayed lung function development, and childhood leukemia.

https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=CEMM&dirEntryId=348269

Road traffic noise linked to premature death

Living close to noisy road traffic over a long period of time could reduce life expectancy, according to new research which is the largest study of its kind to date to link road noise to death.
They found that deaths were 4% more common among adults and the elderly in areas with daytime road traffic noise of more than 60 decibels (dB) compared to areas with less than 55dB.

Road traffic noise linked to premature death (newsweek.com)

Note: FL PK DR Traffic Study 64 dB