

Did Cut-Through Traffic Prevention Measures Help or Hurt?

Big Data Analyzes Turn Restriction and Ramp Meter Performance

With the rise of GPS apps, drivers began cutting through this small city to bypass traffic on the highway. This “Waze effect” caused severe congestion on local roads.

The city implemented turn restrictions and ramp meters, but this resulted in long queues at highway on-ramps. Residents weren’t convinced these tactics were helpful.

EXECUTIVE SUMMARY

Planners weren’t sure restrictions were effective.

Big Data showed 25% cut-through traffic decrease on ramps.

Neighborhood traffic decreased by 33%.

Results earned widespread support.

Mission: Measure Policy Effectiveness

Traffic engineers needed empirical data to determine whether or not their policies were decreasing city congestion.

Placing sensors on the affected highway ramps would have captured increased traffic flow, but not the origin and destination (O-D) of those vehicles. With StreetLight InSight®, the city could capture O-D to identify movements of cut-through traffic, and also “go back in time” to compare past commute patterns.

The city’s “before-and-after” study used *StreetLight InSight’s* O-D analyses to measure cut-through trip volumes and travel times. Planners were able to pinpoint the true origins and destinations of trips, and also the roads **where trips started diverging** and cutting through neighborhoods.

“StreetLight Data’s platform was the best way for us to get real-world evidence that new traffic policies reduced smartphone-driven traffic jams. The analytics helped build public buy-in, too.”

– PUBLIC WORKS DIRECTOR



Analysis: Go Back In Time for Comparisons

First, the city used *StreetLight InSight* to validate their assumption about the source of the traffic jams. An O-D analysis confirmed that commuters were indeed traveling through the city, from an affordable residential area in the south to jobs up north.

Next, by choosing specific dates, engineers traveled back in time. They measured the “before and after” performance of each turn restriction and ramp meter.

In all, city planners ran over 35 different analyses for one fixed fee, with an **average analysis run time of eight minutes**. This saved thousands of dollars (and untold hours) compared to outfitting the same scope of the city with sensors. Running the analysis online also meant the team did not have to send staff into harm’s way.

Results: Unexpected Insights Redirect Funds

While mitigation tactics did indeed create long queues to enter highways, the analysis showed marked change after the restrictions:

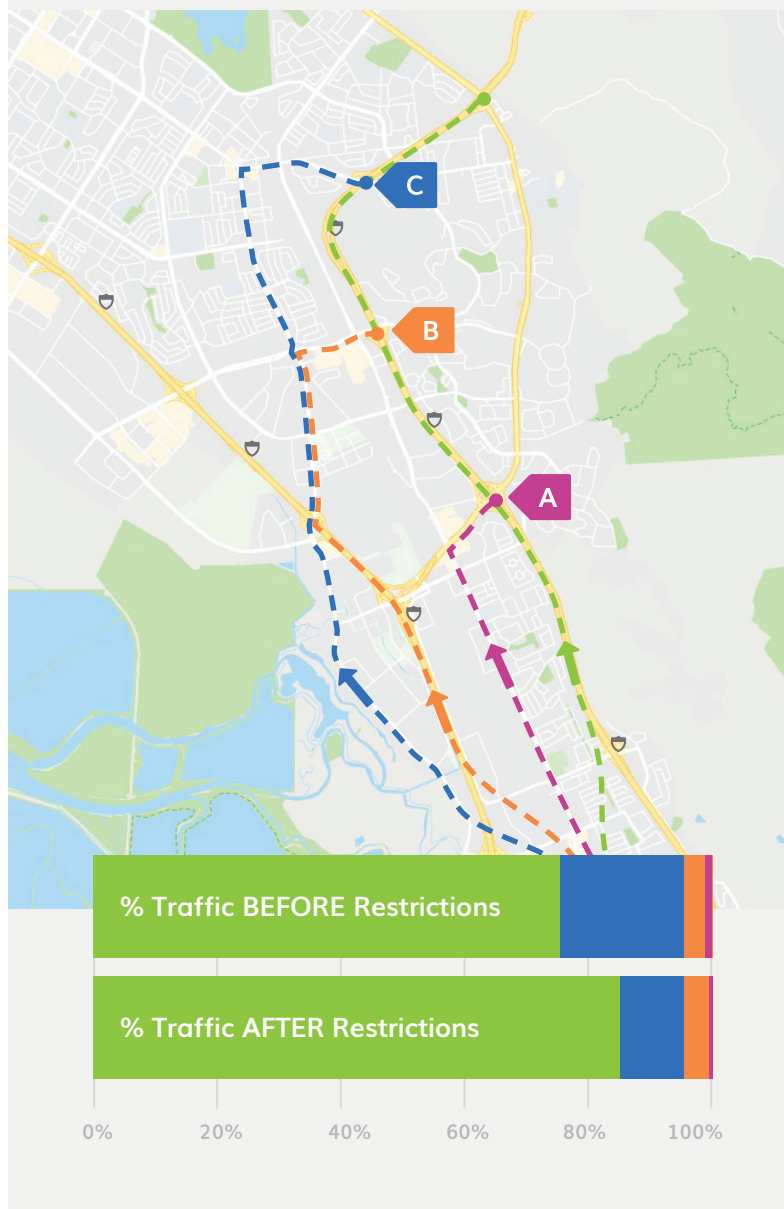
- 25% more trips stayed on the highway during peak hours
- Cut-through traffic on four highway on-ramps decreased by more than 25%
- Volume on local roads decreased by 33% overall

The analysis helped planners gain city council and public support for these policies. Armed with data, key stakeholders realized that the pros outweighed the cons.

This city plans more anti-congestion projects, and *StreetLight InSight*’s performance analysis will help inform future cost-benefit studies. Analysts were also able to reuse the data for other economic and financial planning applications, saving the county additional time and resources.

The before-and-after study revealed that after restrictions, drivers stayed on the highway instead of cutting through the city for ramps A, B, and C.

- Stays on highway
- Cut-through to onramp B
- Cut-through to onramp C
- Cut-through to onramp A



What to Expect In a StreetLight Cut-Through Study

Validate where cut-through causes congestion

Analyze restrictions to measure impact

Share data-backed results with constituents

