

## Improving Traffic Safety and Reducing Crime: The DDACTS Approach in Shawnee, Kansas

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The city of Shawnee, Kansas, is a suburban community on the western edge of the Kansas City Metropolitan area. The Shawnee Police Department (SPD) employs 85 sworn officers and 22 civilians and serves a population of 62,290 residents.<sup>1</sup> Shawnee has typically experienced relatively low crime rates; however, between 2008 and 2010, the city experienced a 22 percent increase in violent crime at a time when violent crime rates in the United States dropped by 14 percent.<sup>2</sup> Traffic crashes have also been a perennial concern for SPD. In 2002, the SPD formed a Traffic Safety Unit (TSU) specifically tasked to investigate crashes and enforce traffic violations. Since the formation of the unit, the number of automobile crashes has trended steadily downward, but persistent hotspots of traffic problems continue to exist. Based on the combination of traffic problems and violent crime, SPD explored the implementation of Data-Driven Approaches to Crime and Traffic Safety (DDACTS) in its community.

### DDACTS in Shawnee

In early 2010, the SPD leadership attended a DDACTS presentation at the annual Kansas Department of Transportation Traffic Safety Conference and decided to implement it at SPD. The first National Highway Traffic Safety Administration (NHTSA)-sponsored implementation workshop was held in Shawnee in May 2010, and all officers in the department were trained in the DDACTS strategy and principles. Chief Larry Larimore believed the DDACTS principles would enable his department to be more data-driven in deciding where and when to efficiently and effectively deploy staffing resources during unassigned time periods. The DDACTS guiding principles, as described by NHTSA, are as follows:

1. **Partners and Stakeholder Participation:** Partnerships among law enforcement agencies and with local stakeholders are essential and provide opportunities and

synergies for improving the quality of life in a community.

2. **Data Collection:** Place-based, current crime, crash, and traffic-related data, which are coded for type of incident, time of day, and day of week, are the building blocks of DDACTS. The collection of crime data may include Part I and Part II crimes, as well as other data like citizen complaints, field interviews, dangerous driving behaviors, and other nontraditional data.
3. **Data Analysis:** The creation of integrated maps that overlay crime, crash, and traffic-related data lets agencies identify problem locations, or "hotspots."
4. **Strategic Operations:** Based on data analysis, agencies are able to identify hotspots on which to focus enforcement activities and counter-measures. Hotspot analysis guides the realignment of workflow and operational assignments to focus enforcement efforts and increase efficiency.
5. **Information Sharing and Outreach:** Built into the model are opportunities to share results, promote community participation, and document accomplishments.
6. **Monitoring, Evaluation, and Adjustments:** Data collection and analysis procedures allow for the monitoring, evaluating, and adjusting of field and internal operations. They also provide an opportunity to regularly assess crime and crash reduction, cost savings, and other outcome measures that define success.
7. **Outcomes:** Goals and objectives that emerge during problem area identification and strategic plan preparation are developed into outcome measures. These measures are used to assess effectiveness relating to reductions in crime, crashes, and traffic violations, and other outcomes.<sup>3</sup>

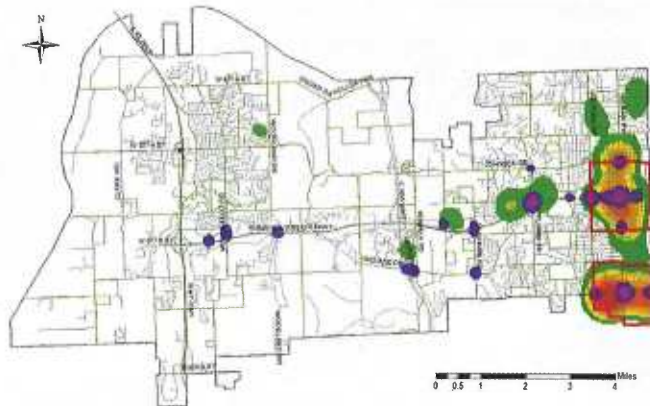
All SPD officers were trained on DDACTS within three months, and SPD formally began its DDACTS program in July 2010. In order to support the data collection and analysis principles, SPD's crime analyst for crime data began coordinating directly with the city's traffic engineer, who tracked crash data. These analysts worked together to mine the traffic crash locations (and causes) and to link those crash data with crime

analysis products. Once these data were analyzed concurrently, one area stood out for both traffic and crime problems—an area known as the 75th Street corridor. This area makes up only 2 percent of the city's total land area and houses only 7.5 percent of the city's population, but, in 2009, it accounted for 10.3 percent of the violent crime in the city. The 75th Street corridor also included several locations (e.g., intersections) that generated a disproportionate number of automobile crashes. Figure 1 shows these locations, and the sections chosen to be the treatment and control areas for the DDACTS evaluation are outlined in red.

SPD officers were assigned to conduct high-visibility traffic enforcement activities in the targeted area during specific days of the week and times of day. These assignments were made by shift supervisors using normal staffing capacities, not overtime. Officers assigned to DDACTS activities for their shifts were not available to dispatch to respond to routine calls, and, in addition to the dedicated officers, other officers were encouraged to use discretionary time to patrol the DDACTS enforcement area. They were able to access information related to the DDACTS hotspots using their in-car systems.

### Outcome of the Shawnee DDACTS Intervention

In 2011, SPD received funding from the Bureau of Justice Assistance's Smart Policing Initiative (SPI) to support the continued implementation of DDACTS and conduct a rigorous evaluation of the impact of the DDACTS model on crime and traffic safety outcomes. The assessment also included a qualitative assessment both inside the department and within the community, which is described in detail in the *SPI Shawnee Spotlight Report*.<sup>4</sup> The quantitative analysis focused on comparing trends in crime over a six-year period (three years pre-implementation and three years post-implementation) in the target area and a comparison (control) area. Ultimately, the DDACTS area experienced substantial declines in both traffic-related incidents and targeted crime compared with the non-intervention area and with the city of Shawnee as a whole. Automobile crashes dropped 24 percent (from 314 crashes between July 2007 and July 2010 to 238 crashes between July 2010 and July 2013) in the intervention area following the application of the DDACTS strategy.



DDACTS Hotspots in Shawnee, Kansas

Also in the DDACTS area, target crimes dropped by nearly 40 percent after implementation of the model, including a 70 percent reduction in robberies. This decline in overall target crime (from 291 offenses to 176) is statistically significant.<sup>5</sup>

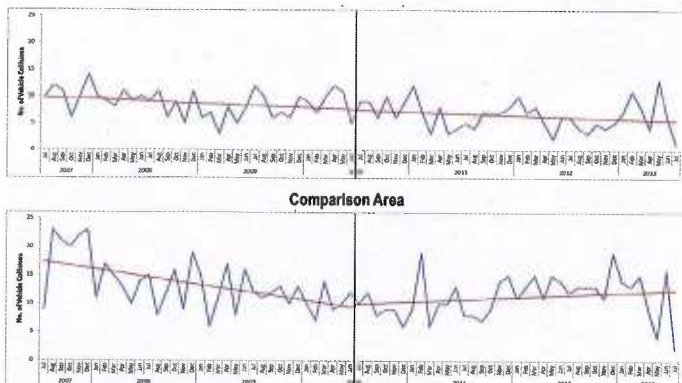
More sophisticated analysis reinforced the findings of significant declines in traffic safety problems and crime due to DDACTS. Vehicle crashes in both the DDACTS and comparison areas were declining in the pre-intervention period. However, post-intervention, the declining trend continues in the DDACTS area (24 percent reduction), while the comparison area experiences an upward trend in crashes, as shown in Figure 2. Similarly, the analysis found an 88 percent decrease in robberies and 84 percent reduction in commercial robberies in the intervention area after the intervention.

### Lessons Learned and Final Thoughts

**There is a fundamental connection between crime and traffic problems.** The idea that crime and traffic problems are related makes sense. Offenders will often use a vehicle at some point when committing a crime, either directly or as a means of transportation. In some cases, the crime actually involves an automobile (e.g., auto theft). Like crime, traffic crashes do not occur evenly across a city or community; rather, they occur disproportionately in a small number of high-risk areas. The DDACTS model applies 21st-century policing principles to target those areas where both crime and traffic problems co-occur.

**The implementation of DDACTS requires line officer buy-in, adequate training, and continued monitoring to ensure program fidelity.** DDACTS is not designed as a short-term initiative or crackdown on crime and vehicle crashes. Rather, the model requires a philosophical shift in how a police department views its role, particularly with regard to improving quality of life and reducing social harms.

Chief Larimore notes, "DDACTS is not a 'program.' Programs are usually associated with start and end dates. For us, DDACTS is an on-going



Vehicle Crashes in Shawnee, Kansas, Before and After DDACTS in the Targeted and Intervention Areas

operational philosophy. It is one of our crime and social harm reduction strategies that is ingrained in our everyday policing model."<sup>6</sup>

SPD learned a very valuable lesson through its implementation of DDACTS. Chief Larimore says that if they had to do it all over again, they would spend more time up front with their operational staff and their managers explaining why they were introducing this cultural change in operations.

*We made the mistake of thinking that DDACTS was going to be easy to implement because of the resources available to us inside and outside of the department and because it is a simple concept to understand. In the end, the pushback from our operational staff was not because we were implementing DDACTS; it was because we were implementing cultural change too fast and with little engagement of our staff.*<sup>7</sup>

**Increased police presence and high-visibility traffic enforcement can effectively reduce crime and traffic collisions.** The results from the Shawnee SPI evaluation demonstrate that the DDACTS model can effectively reduce certain types of crime, as well as vehicle crashes. When applied correctly, DDACTS reduces social harms, enhances citizen safety, and improves quality of life.

In an era of budget constraints and limited staffing, Chief Larimore points out, "We achieved these positive results without additional staffing or additional budget funds, and we can sustain this approach into the future. We have captured officers' unassigned time to achieve departmental goals, and we are policing with a purpose."<sup>8</sup> ♦

Chief **Larry Larimore** (ret.) began his career in the Shawnee Police Department in 1985 and moved steadily through the ranks to attain his position as chief of police in 2011. He supported the Smart Policing Initiative DDACTS work during his tenure as chief.

**Greg Collins** is Research and Analysis Manager for the Shawnee Police Department and served as key personnel on the Smart Policing Initiative team.

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### Notes:

<sup>1</sup>U.S. Census Bureau, "Shawnee, Kansas," State & County QuickFacts, <http://quickfacts.census.gov/qfd/states/20/2064500.html> (accessed May 11, 2015).

<sup>2</sup>Kevin M. Bryant, Gregory M. Collins, and Michael D. White, *Shawnee, Kansas, Smart Policing Initiative: Reducing Crime and Automobile Collisions through Data-Driven Approaches to Crime and Traffic Safety (DDACTS)*, Smart Policing Initiative Spotlight Report (Arlington, VA: CNA, 2015), ii, <http://www.cna.org/sites/default/files/research/Shawnee-Site-Spotlight.pdf> (accessed May 13, 2015).

<sup>3</sup>National Highway Traffic Safety Administration, *Data Driven Approaches to Crime and Traffic Safety (DDACTS): Operational Guide*, Report No. DOT HS 811 185 (Washington, D.C., March 2014), [http://www.nhtsa.gov/staticfiles/nti/ddacts/811185\\_DDACTS\\_OpGuidelines.pdf](http://www.nhtsa.gov/staticfiles/nti/ddacts/811185_DDACTS_OpGuidelines.pdf) (accessed May 11, 2015).

<sup>4</sup>Bryant, Collins, and White, *Shawnee, Kansas, Smart Policing Initiative*.

<sup>5</sup>Ibid., 11.

<sup>6</sup>Larry Larimore (chief of police, Shawnee Police Department), email to author, April 14, 2015.

<sup>7</sup>Ibid.

<sup>8</sup>Ibid.

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