

DATA-DRIVEN APPROACHES TO CRIME AND TRAFFIC SAFETY (DDACTS)

CASE STUDY OF THE WASHOE COUNTY, NEVADA, SHERIFF'S OFFICE DDACTS PROGRAM



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BY

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DISTINGUISHING FEATURES

Experienced law enforcement managers are accustomed to periodic budget crises, but the national economic recession that began in 2006 is the most severe in many years and has affected some agencies more than others. The following pages describe how an agency that is particularly vulnerable to economic problems used a data-driven approach to crime and traffic safety as a force-multiplier to improve the quality of life for residents within its jurisdiction.

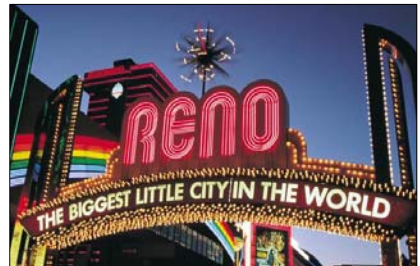
SETTING

Washoe County, Nevada, is nestled on the eastern slopes of the Sierra Nevada Mountains, extending 6,600 square miles from the rim of Lake Tahoe at Incline Village north to the juncture of the Nevada, California, and Oregon borders. Its mountainous terrain is a haven for skiing, fishing, hiking, and lake activities. The area includes part of Toiyabe National Forest and two wildlife refuges: Anaho Island in Pyramid Lake, which was set aside by Woodrow Wilson in 1913 and now shelters one of the two largest pelican colonies in the Western United States; and the volcanic plains of Sheldon National Wildlife Refuge, which hosts a large population of American mustangs like those featured on Nevada's state quarter.



“Washoe” is taken from the name of the Native American people who originally inhabited the area and means “the people from here.” John C. Fremont followed the Truckee River through what would become Washoe County in 1844, stopping at Pyramid

Lake. In the 1850s, Washoe became a gathering point for miners searching for gold, then silver after the discovery of the Comstock Lode. As the profitability of mining waned, people shifted to non-mining centers, among them Reno, then a growing railroad community. The nickname, “The Biggest Little City in the World,” was the result of a slogan contest in 1929 (the landmark arch to which it was added preceded it by three years). As a result of liberal marriage and divorce laws, in the 20th Century Reno became a destination for couples looking for a quick start or end to their marriages. Today, though, few people come to Reno for divorce, and even its burgeoning gambling industry is declining; gaming still is a major source of employment, and is augmented by other hospitality services and a manufacturing plant for the largest maker of gaming machines. Reno is an adaptive community and has diversified in recent years to become a major center for the distribution of goods by road and rail. The University of Nevada was established in Elko and then moved to Reno in 1885. Its alumni include six Pulitzer Prize winning journalists and the inventor of the laugh track, among others. The Reno campus also is where Washoe, the first chimpanzee to learn American Sign Language, was trained, which challenged the traditional claim to language as the uniquely defining human capability.



The population of Washoe County is estimated to be 424,000, with Reno, the county seat and the third largest city in the state (after Las Vegas and Henderson), accounting for 233,000 of the county total and Sparks another 93,000. The two cities are served by municipal police departments and the Washoe County Sheriff's Office (WCSO) is responsible for the surrounding unincorporated areas, with a population of approximately 100,000.

BACKGROUND

Sun Valley is an unincorporated area of Washoe County, lying just north of the city of Reno. The largely residential area is home to many law-abiding citizens, but also to criminal offenders and a large number of parolees, as well as a transient population that contributes to a locally high crime rate. Sun Valley, which is also known as Beat 3 by the WCSO, consistently leads the county in crimes and motor vehicle crashes. Table 1 lists the numbers of Part I crimes that were reported in each of the WCSO beats from 2005 through 2008; the four-year series of data shows that Beat 3 is consistently responsible for approximately 30 percent of all Part I crimes in the WCSO's jurisdiction. Table 2 lists the incidence of each type of Part I crime reported in Beat 3 during the same period.

TABLE 1
NUMBER OF PART I CRIMES IN WASHOE COUNTY BY WCSO BEAT: 2005 - 2008

Beat	2005	2006	2007	2008	Total
1	132	182	197	243	754
2	170	157	168	161	656
3	483	464	549	481	1977
4	180	229	293	219	921
6	216	286	270	247	1019
7	186	204	209	161	760
8	113	163	154	161	591
<i>WCSOTotals</i>	<i>1480</i>	<i>1685</i>	<i>1840</i>	<i>1673</i>	<i>6678</i>

Source: Washoe County Sheriff's Office

TABLE 2
NUMBER OF PART I CRIMES IN SUN VALLEY (BEAT 3): 2005 - 2008

Type	2005	2006	2007	2008	Total
Murder	0	1	0	0	1
Sexual Assault	15	17	20	10	62
Robbery	10	5	4	6	25
Assault	33	34	33	34	134
Burglary	184	180	218	219	801
Larceny Theft	149	130	172	145	596
Vehicle Theft	88	95	102	66	351
Arson	4	2	0	1	7
<i>Totals</i>	<i>483</i>	<i>464</i>	<i>549</i>	<i>481</i>	<i>1977</i>
<i>Change in Burglary</i>	<i>n/a</i>	<i>-2%</i>	<i>+21%</i>	<i>+.5%</i>	

Source: Washoe County Sheriff's Office

Table 3 lists the numbers of injury crashes that occurred in each of the WCSO beats during the years 2005 through 2008. The data show that Beat 3 again is disproportionately represented and accounts for approximately 25 percent of all serious crashes within the WCSO's jurisdiction.

TABLE 3
NUMBER OF CRASHES IN WASHOE COUNTY BY WCSO BEAT: 2005 - 2008

Beat	2005	2006	2007	2008	Total
1	68	62	60	45	235
2	58	75	61	52	246
3	143	167	133	117	560
4	90	85	57	67	299
6	82	73	66	83	304
7	149	149	125	105	528
8	37	60	32	42	171
<i>WCSOTotals</i>	<i>627</i>	<i>671</i>	<i>534</i>	<i>511</i>	<i>2343</i>

Source: Washoe County Sheriff's Office

PLANNING PROCESS

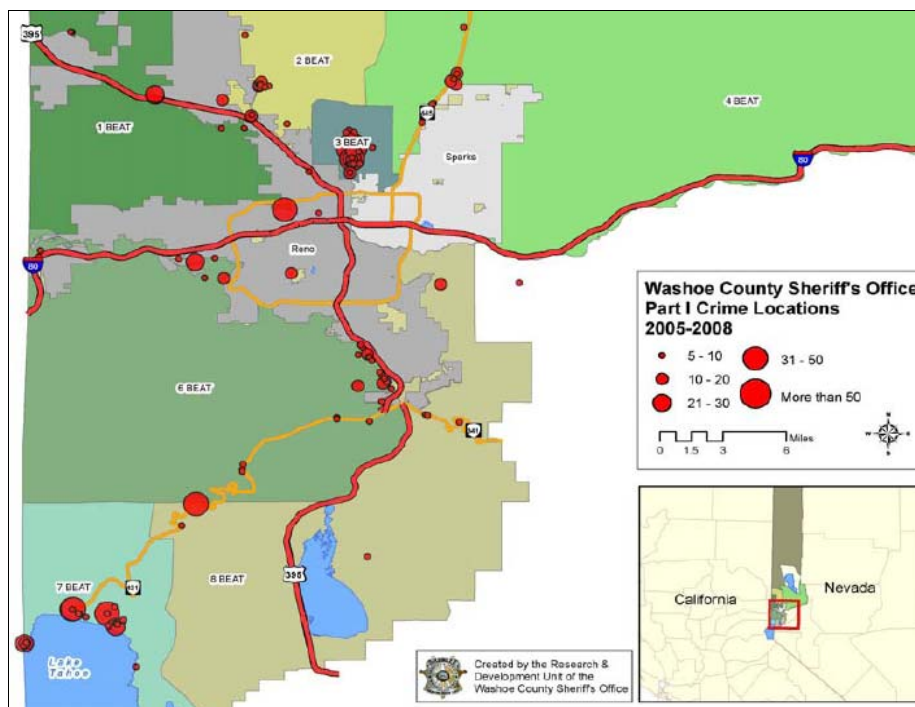
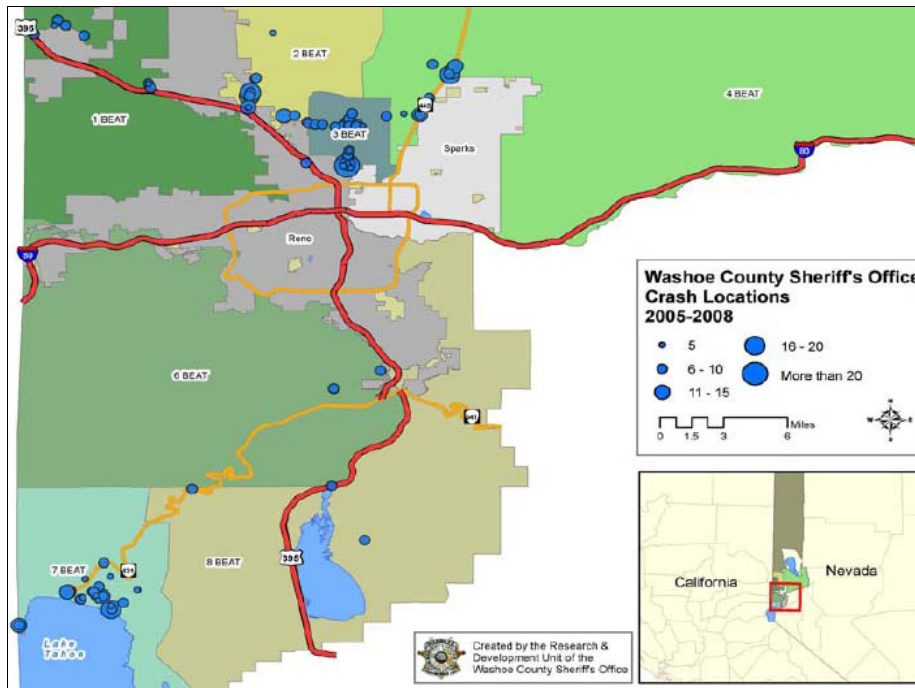
The WCSO managers had Sun Valley in mind when they accepted the challenge to plan and implement a data-driven approach to crime and traffic safety (DDACTS). They already were aware of Beat 3's status from the data summaries that are presented at the weekly Compstat-style ACES (Area Crime Evaluation System) meetings and in annual reports. Sheriff Michael Haley has earned the sincere respect of WCSO personnel during his 29 years with the agency and has served in the full range of leadership roles, including undersheriff for four years before his recent election to sheriff. He is known for his innovative approaches to law enforcement issues, which include his pioneering adoption of hand-held computers for issuing traffic citations. His ACES meetings are well-run reviews of the preceding week's crimes and crashes that are punctuated by spontaneous suggestions for improving performance and occasional humor that temporarily relieves the tension generated by the grim topics that are central to law enforcement work. The agency supports its reviews with sophisticated mapping and statistical capabilities and has developed a small cadre of deputies who also are skilled analysts.¹ The National Highway Traffic Safety Administration (NHTSA) / Department of Justice (DoJ) DDACTS initiative presented an opportunity to use those resources to help solve persistent problems within the constraints imposed by the current budget crisis.

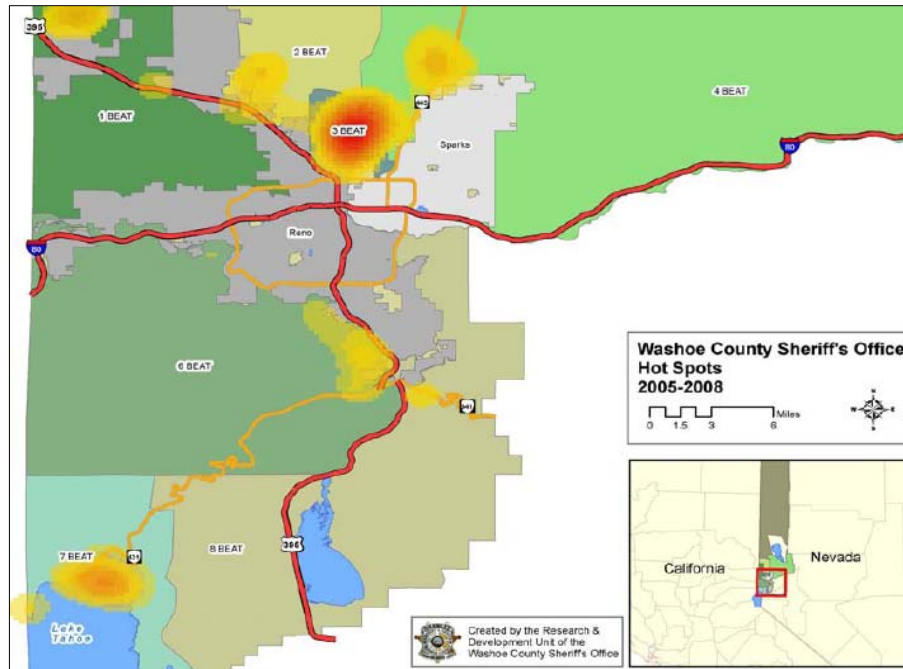
Note: The national economic recession has been accompanied in Washoe County by increases in daytime residential burglaries, nighttime strong-arm robberies, and suicides with notes indicating despondence concerning personal financial conditions; suicide interventions by the WCSO jumped from 124 to 338 during the past two years.

Program planning was conducted in a four step process: 1) Crime and crash data were assembled from the WCSO's entire jurisdiction; 2) Analyses were performed to identify the locations of crimes and crashes; 3) WCSO deputies then met with community representatives and asked for their participation in the planning of the proposed high-visibility special enforcement program; and 4) Outcome data and other measures were collected and analyzed to identify any effects of the effort. Information about the program was shared with the public periodically to maintain transparency and community support for the operation.

¹ The WCSO had intended to hire a dedicated analyst to perform the data collection and analytical tasks necessary to plan and evaluate the DDACTS program, but recruitment has been delayed by the current budget limitations.

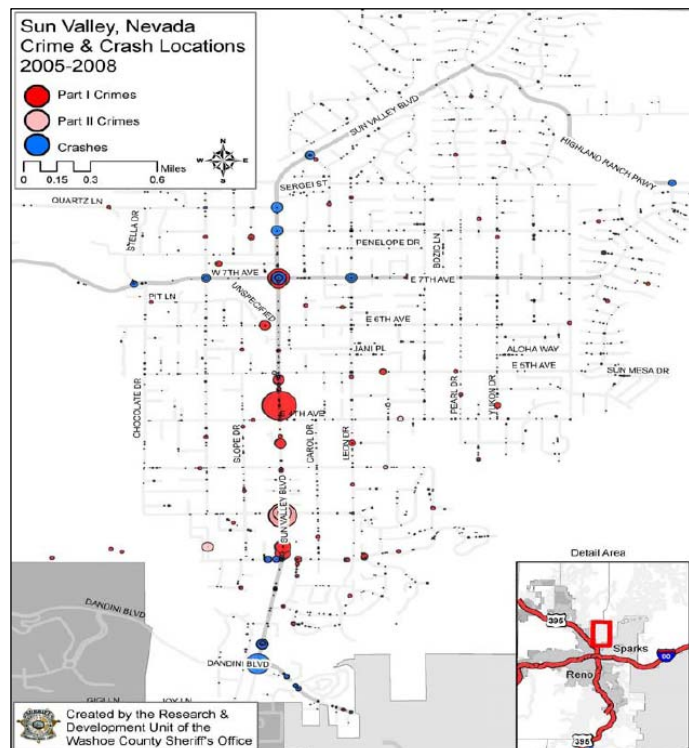
Sergeant Eric Spratley led the effort to extract crime data from the WCSO's records management system and obtain crash data from the Nevada Highway Patrol (NHP). Then Deputy John Beck, the WCSO's "map guru," used geographic information system (GIS) software to plot the locations of crimes and crashes separately, at first, and then together to identify areas where high crime and crash incidence overlapped. This process showed Sun Valley to have the greatest potential for a combined special enforcement program, as expected, but also identified specific "hot spots" within the area to focus the effort. The following four maps illustrate the results of this analytical and mapping process.





The analysis showed that Sun Valley Boulevard between 7th Avenue and Dandini Boulevard would be an appropriate target for the DDACTS special enforcement deployment. A total of 560 motor vehicle crashes and 1,977 Part I crimes occurred in Sun Valley between 2005 and 2008. The intersections of Sun Valley Boulevard and 7th Avenue, 5th Avenue, Gepford Parkway, and Dandini were identified as hot spot locations; 222 of the Part I offenses during the four-year period were violent crimes that were committed in the neighborhoods surrounding these intersections and 3,791 Part II crimes also occurred in those area.

Speed studies were conducted by the Washoe County Engineering Division at key intersections in the special enforcement area. Speed measuring equipment was deployed at the intersections of Sun Valley Blvd and W 5th Ave, and at Sun Valley Blvd and W 7th Ave during the week of May 15-22, with the intention of measuring speeds before and after the enforcement period.



Mission Statement and Goals

The WCSO's DDACTS program was planned and implemented with the goals of deterring criminal activity, identifying criminals, reducing motor vehicle crashes, and increasing the quality of life for the residents of Sun Valley.

Operational Plan

The WCSO's operational plan is summarized in the following numbered statements.

1. Identify specific intersections with high incidents of crash and crime data.
2. Gather pre-deployment crime, crash and speed-related data in the identified area(s).
3. Deploy high visibility traffic enforcement resources.
4. Consistently enforce traffic laws in the deployment area.
5. Identify crimes and criminals, and interdict contraband.
6. Reduce crashes and crime in Sun Valley.



ENFORCEMENT METHODS

High visibility traffic enforcement and neighborhood saturation patrols with multiple-vehicle stops and maximum numbers of subject contacts are the tactics used during WCSO DDACTS deployments.

FREQUENCY OF OPERATIONS/DURATION OF PROGRAM

Primary enforcement activities were scheduled from May 26th through May 28th 2009 with the following guidelines. Five deputies and two supervisors from the WCSO and seven troopers and one supervisor from the NHP deployed on each of the three scheduled days.

Personnel were to be at their assigned locations at 0700.

Target enforcement periods were from 0700 to 1000 and from 1600 to 1900.

Secondary enforcement periods were those hours between the listed target enforcement periods.

Personnel were advised to avoid leaving the enforcement area during target enforcement periods and to schedule breaks during secondary enforcement periods if possible.

Personnel were instructed to maintain high visibility in the enforcement area during secondary enforcement periods.

Weekly enforcement activities were reduced from May 29th through June 2nd to normal shift times, yet increased presence was maintained as staffing levels allowed.

PARTICIPATION

The WCSO obtained the cooperation of the Nevada Highway Patrol, which provided crash data for planning and evaluation of the DDACTS program and additional motor officers for the special enforcement deployment. WCSO organizers understand that it is difficult for law enforcement managers to consider implementing special programs in the context of budget cuts and lay-offs. However, subsequent to the initial DDACTS program, the WCSO developed partnerships with several agencies within the county.

PUBLIC AWARENESS/PROGRAM VISIBILITY

A formal announcement about the operation was made at the weekly ACES meeting to which local media outlets were invited. Local businesses as well as the media were informed in advance of operations in Sun Valley by flyers that explained the DDACTS program that were distributed to the businesses, and by media releases and interviews by reporters. Several local TV stations covered the Sun Valley deployment during evening news programs.

FUNDING

The WCSO diverted its motor unit and both marked and unmarked patrol cars from the deputies' normal duties to staff the DDACTS deployments. Neither grant nor overtime funds were used to support the extensive planning effort and special enforcement patrols.

LESSONS LEARNED

Sergeant Spratley and Deputy Beck report that obtaining data, plotting crime and crash locations, identifying hot spots, and planning the first special enforcement deployment was an arduous process. However, the months that they devoted to performing the tasks can be viewed as an investment as less time and effort will be required to prepare for and evaluate subsequent DDACTS deployments.

OBSTACLES

The WCSO has modern facilities and excellent equipment, and is accustomed to supporting its operations, in part, with a portion of the generous donations made by gamblers to state and local tax revenue. However, the banking/real estate crisis and resulting national economic decline have reduced discretionary spending generally and affected Washoe County's hospitality industry and its employees, in particular, during the past three years. Budgets are tight for all law enforcement agencies, but some, such as the WCSO, are affected more than others by economic perturbations. It was a difficult decision for the agency to proceed with a special enforcement effort during the current period of diminished resources. The planning, implementing, and evaluating of a DDACTS program in this context exemplifies the WCSO's tradition of innovation and demonstrates the agency's sincere commitment to fulfilling its mission.



PROGRAM STRENGTHS

The WCSO's DDACTS deployments demonstrate that law enforcement agencies can employ a data-driven approach to crime and traffic safety even when resources limit the level of effort to relatively brief, but intense and highly-visible deployments.

SUGGESTIONS FROM THE PROGRAM ORGANIZERS

Sergeant Spratley intends to devote considerable effort to explaining the DDACTS method to the deputies and supervisors who will participate in future deployments. Intimate knowledge of the reasons for conducting the special enforcement patrols will likely enhance deputies' performance.

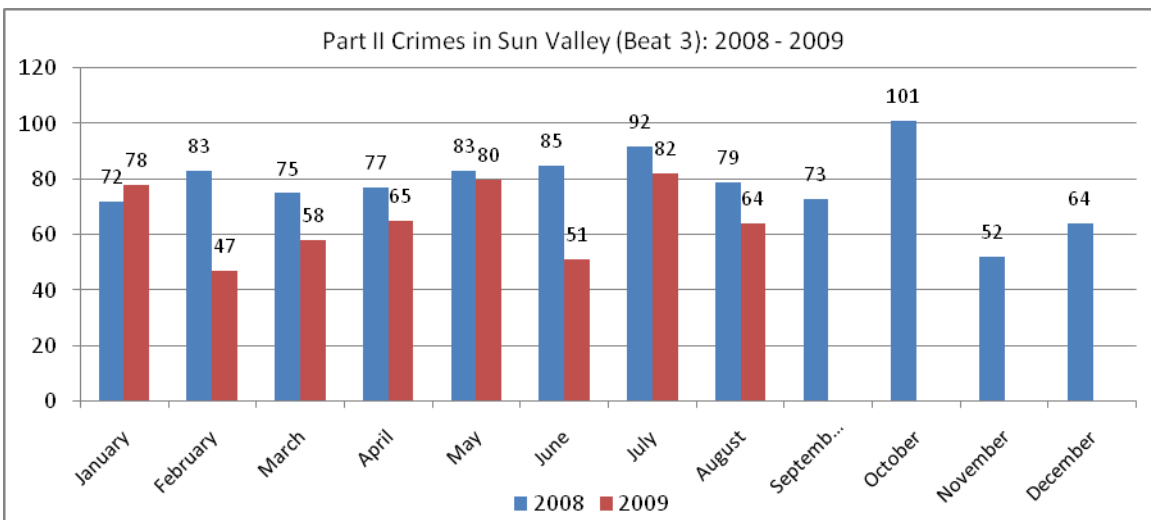
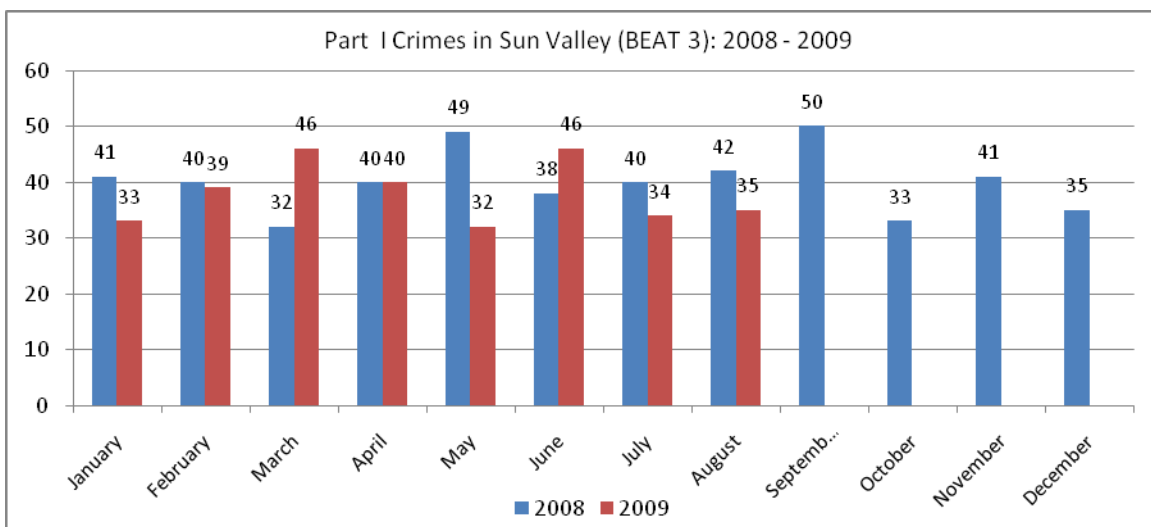


EVIDENCE OF PROGRAM EFFECTS

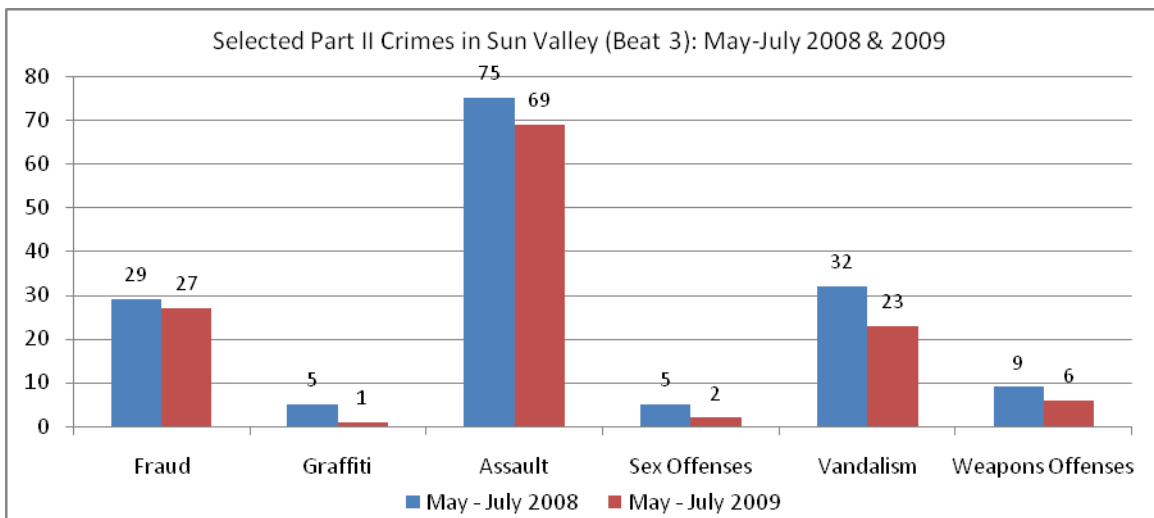
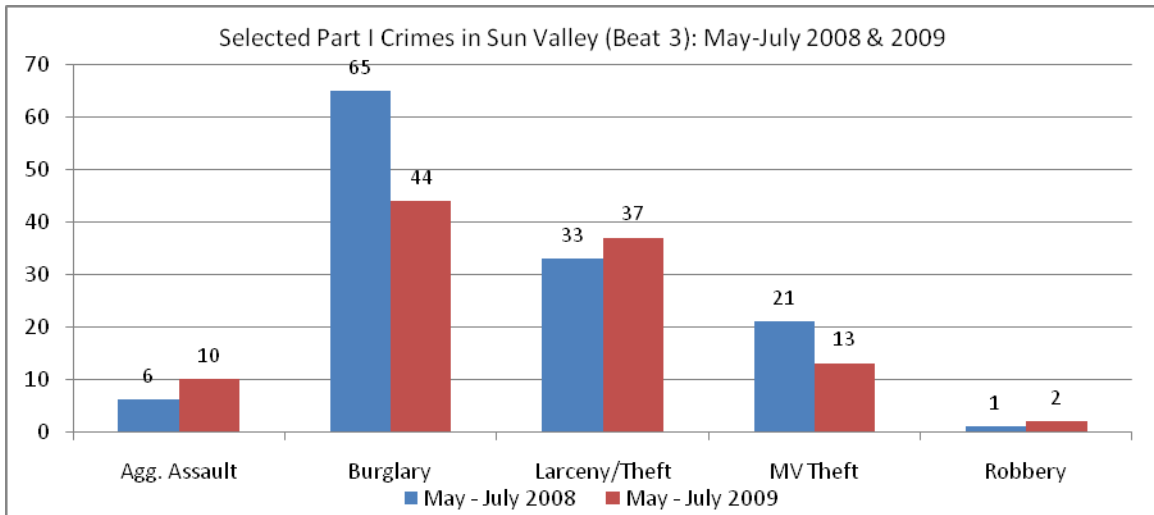
The WCSO's special enforcement program consisted of three-days of high-tempo, high-visibility patrols at the end of May 2009. The deployment was preceded by several days during which deputies conducted radar speed surveys and observed driving behavior at intersections while preparing for the special enforcement patrols.

CRIME DATA

The numbers of Part I and Part II crimes reported in the Sun Valley area of Washoe County during 2008 and 2009 are listed, by month, in the following two figures. The figures show that there were substantially fewer Part I crimes during the month in which the WCSO conducted its DDACTS deployment, compared to the same month of 2008, and fewer Part I crimes again two and three months later. There also were fewer Part II crimes during the deployment month than during the same month of the preceding year and substantially fewer Part II crimes in the three months following the deployment. The differences cannot be attributed to the program with certainty because there were fewer Part I crimes in two of the four months preceding the deployment and fewer Part II crimes during three of the four preceding months. That is, an overall decline in crime in Sun Valley might have started while the DDACTS program was being planned.

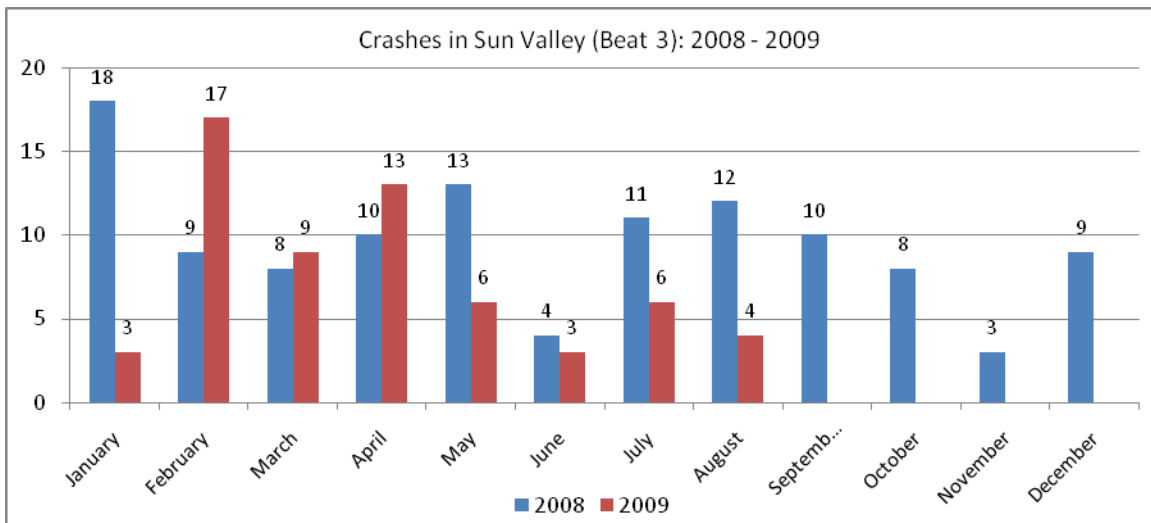


The following figures compare the numbers of specific Part I and Part II crimes that were reported during May, June, and July (combined) in 2008 and 2009. The substantial differences in the incidence of burglary, motor vehicle theft, and vandalism are particularly noteworthy because they are the criminal activities that are most likely to be deterred by highly visible traffic enforcement.



TRAFFIC SAFETY DATA

The numbers of injury crashes reported in the Sun Valley area during 2008 and 2009 are listed, by month, in the following figure. The figure shows a period of three months preceding the DDACTS deployment in May 2009 during which the numbers of crashes were greater than during the same months of 2008. The figure also shows that there were fewer crashes during the deployment month and the three following months than during the corresponding period of the previous year. The numbers are too small for statistical analysis, but the results are encouraging. WCSO managers are eager to conduct additional deployments and to continue assembling the information necessary to implement the agency's data-driven approach to crime and traffic safety.



FINAL NOTE



The Washoe County Sheriff's Office intends to conduct two additional DDACTS special enforcement deployments in the Sun Valley area and three similar deployments at a second location that has been identified as a candidate for the treatment because of its geography and concurring incidents of traffic crashes and crime. Evaluations will be performed after these operations have been concluded to assess the effectiveness of the special enforcement efforts. Future DDACTS operations will require dedi-

icated involvement from line personnel and supervisors. Training regarding the DDACTS method is currently being developed.

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