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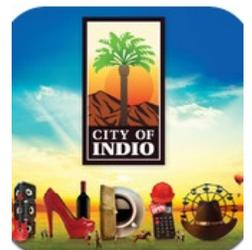
# Indio, California, Smart Policing Initiative

Reducing Burglaries through Predictive Policing and Community Engagement

July 2014

*Robert Nash Parker, Ph.D., Erika Martinez, MM*

Smart Policing Initiative  
Final Report



## **INDIO, CALIFORNIA, SMART POLICING INITIATIVE: REDUCING BURGLARIES THROUGH PREDICTIVE POLICING & COMMUNITY ENGAGEMENT**

*Robert Nash Parker, Ph.D., Erika Martinez, MM*

### **EXECUTIVE SUMMARY**

In 2009 the Indio Police Department and the University California, Riverside, formed a unique partnership to address the increasing commercial and residential burglary crime problem affecting the City of Indio, California. The project sought to explore the use of a hot spot and multivariate spatial modeling approach to better understand and predict burglary patterns in the city. The project was funded by a 2010 Smart Policing Initiative (SPI) grant from the Bureau of Justice Assistance (BJA).

This report covers the results of a three-year collaboration between the Indio Police Department and Dr. Robert Nash Parker, a criminologist from the University of California, Riverside. This collaboration led to the creation of a computer model that predicts, by census block group, where burglaries are likely to occur within the City of Indio. The report describes Indio's innovative approach to anticipate the spatial distribution of burglary using predictive modeling techniques and geospatial analysis, and then describes Indio's targeted response to reducing and preventing burglary through focused policing and community engagement.

The Indio SPI project identified truancy rates as a predictor of future burglary hot spots. Specifically, the mapping and statistical analyses identified a migration of truancy arrests from the southwest to the northeast side of the city, followed by a similar trend in burglary arrests a few years later. And in the summer of 2013, based on the research findings, the Department launched the following burglary prevention activities targeting predicted burglary hot spots in the city: 1) Deployment of a burglary prevention task force, 2) A focused media campaign and community outreach, and 3) Truancy intervention activities.

Indio's research partner evaluated the impact of this approach by examining the rate of burglary in the block groups identified as hot spots from the predictive model with those from the previous time period (prior to SPI interventions). Using the predictive model, the Indio Police Department was better able to anticipate hot spots of criminal activity and developed interventions to address the problem. Presently, the Department reports a 44 percent drop in burglary crime and 11 percent reduction in theft, compared to the same period last year. Overall, the Indio Police Department has seen a 26 percent drop in property crime as of July 2014.

Valuable lessons learned from the Initiative include the importance of police leadership support to successfully carry out a comprehensive, multi-year initiative like SPI. First and foremost, this type of initiative requires an agency's commitment to the success and sustainment of the project. Similarly, this project also proved the value in the use of additional data sources (e.g., data from school districts, Census data, etc.) not traditionally examined by police agencies to test a hypothesis regarding a specific crime problem affecting a jurisdiction. Agencies interested in implementing a similar research project should also be receptive to what the data

analysis may reveal. Such was the case with IPD in the way data analysis showed a link between truancy and daytime burglaries. Another important lesson learned from this project was the innovative role of police-researcher partnerships. Specifically, SPI has allowed the Department to see significant, measurable benefits of using applied research to evaluate the effectiveness of policing strategies.

**TARGETED PROBLEM**

Incorporated in 1930, the City of Indio is the largest and most populated city in the Coachella Valley desert region of Southern California. The city’s estimated population is 81,393.<sup>1</sup> Nearly 68 percent of the city’s population is of Hispanic origin and approximately 33 percent of residents are 18 years of age or younger. The city’s public safety responsibility falls under the Indio Police Department (“IPD”)—a full-service law enforcement agency, with a total of 101 sworn and non-sworn personnel and over 100 volunteer staff. Over the years, Indio has garnered international recognition for its festivals, such as *Coachella* and *Stagecoach*, which attract nearly 100,000 thousand visitors to the city each spring.

The City of Indio was one of the cities hardest hit by the 2008 foreclosure crisis and economic downturn. In fact, the City of Indio was featured in *The Wall Street Journal*, in an article that included five U.S. cities and ways in which they were tackling home foreclosures, abandoned properties and related crime problems. Against this backdrop, the Indio Police Department was also reporting spikes in both commercial and residential burglaries. As shown in Table 1, from 2005 to 2009, the City of Indio reported a 16 percent overall increase in burglary rates.

**Table 1: Uniform Crime Report (UCR) Part I Crimes (Burglary) Summary for Indio, CA 2005-2009**

Burglary 2005	Burglary 2006	% Change	Burglary 2007	% Change	Burglary 2008	% Change	Burglary 2009	% Change	% Change 2005- 2009
802	908	+13.2	877	-3.0	897	+2.0	927	+3.3	+15.6

Given developments in the management of large-scale databases collected by modern law enforcement agencies and in the advances in statistical modeling in criminological research, is it possible to utilize ‘big’ data and sophisticated modeling techniques to predict where crime is most likely to occur? This was the question the Indio Police Department and their research partner, Dr. Robert Nash Parker from the University of California, Riverside, set out to explore in their 2010 grant proposal to the Bureau of Justice Assistance (BJA)-sponsored Smart Policing Initiative (SPI).

<sup>1</sup> This information was retrieved from the 2013 CA Dept. of Finance, Est. Population by City.

During the initial meet-and-greet conversations with Dr. Parker and subsequent project meetings involving command staff, the Indio SPI team was interested in increasing not only their understanding of what was driving burglary crime but also finding a best practice approach to address this problem. And the Smart Policing Initiative offered an evidence-based framework, which made it possible for the IPD to better understand and address this problem. So using burglary as a test case, the team collected and analyzed additional data to assess the risk of this offense in the places where it most frequently occurs.

Prior to SPI, the Indio Police Department conducted weekly CompStat meetings to focus on crime problems overall, as well as concentrate on issues related to burglaries. CompStat efforts led to more focused crime fighting tactics, but IPD was still missing “hot spotting” trends that needed to be further developed, in order to better predict and better apply strategies to deal with this significant issue.

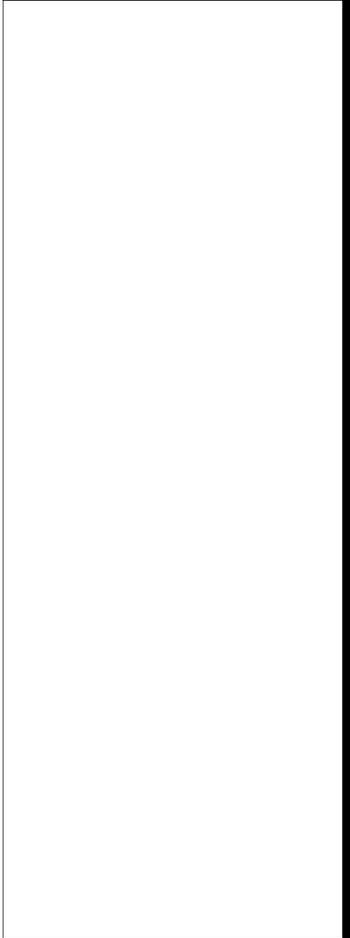
Indio’s research partner described the IPD hot spot model as both “effective and reactive,” that is, the Department mapped trends in city burglary patterns in real time and generated reports which were examined by command staff in order to react to any new hot spots, or a resurgence of previously recognized hot spots. The reactive nature of this process is constrained by the fact that the data law enforcement agencies use to map and analyze hot spots and crime patterns in time and space are generated by previous law enforcement activity.

## **DATA AND INTELLIGENCE**

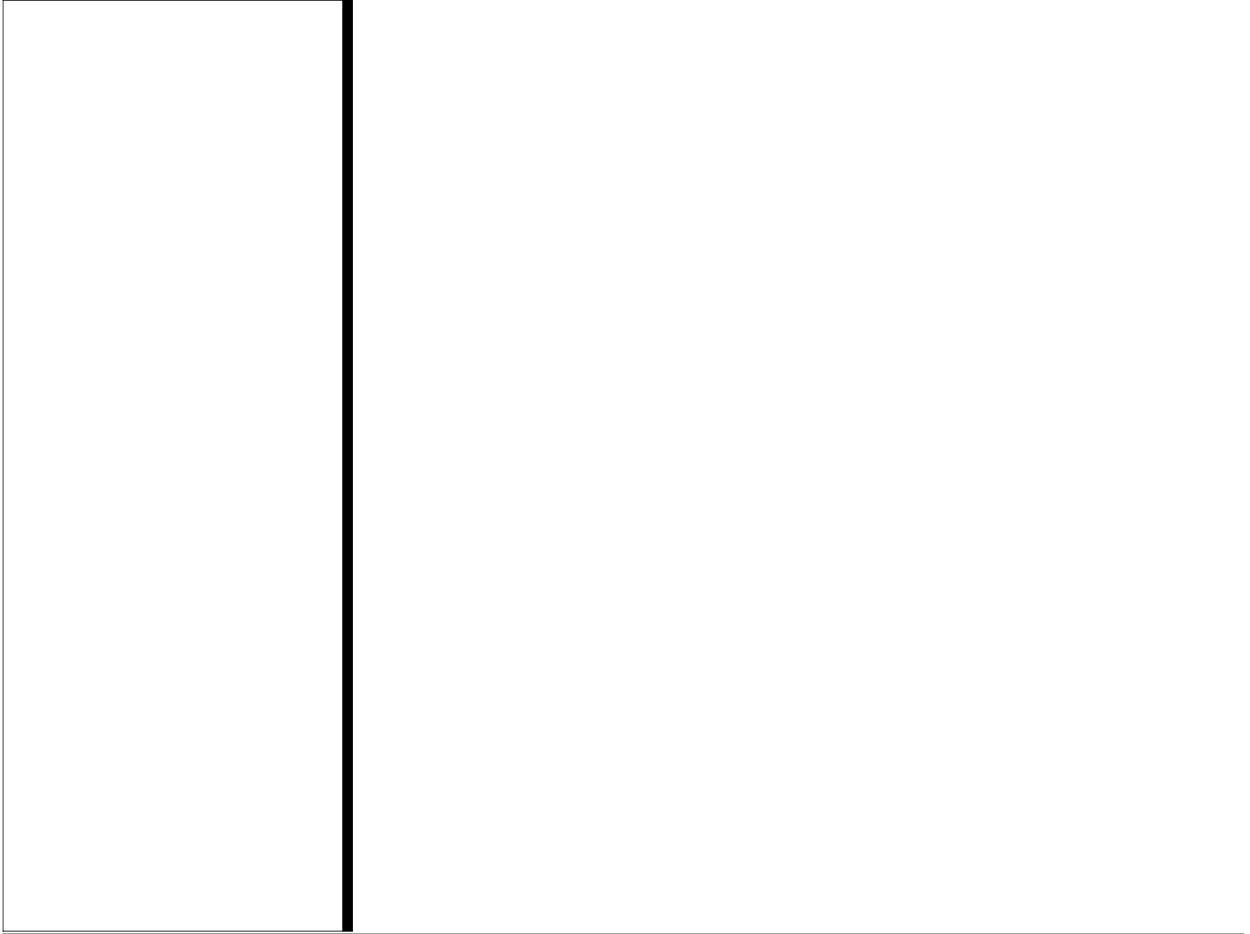
Indio’s SPI project tested the use of an enhanced hotspots approach with the addition of other sources of data (e.g., Census data, school attendance reports, socioeconomic data, etc.) not traditionally examined or included in IPD CompStat maps and reports. So beginning in 2011, the Indio SPI team compiled four datasets covering up to 10 years of historical data (2002 to 2009) to support the problem analysis. The data analysis incorporated 1) police data on burglary and truancy arrests 2) probation data, 3) school data on unexcused absences, and 4) U.S. Census data for years 2000 and 2010. The intent was to enhance the Department’s hot spot approach by incorporating these data sources in order to design a more robust hot spot analysis of burglary crime. This burglary database was then used to design a multivariate spatial modeling to create a predictive profile of potential burglary hot spots. The Indio SPI team discovered that as truancy arrests shifted geographically in the city, burglaries appeared to follow one or two years later. The data also showed a statistically significant correlation between daytime burglaries and truancy.

Using this baseline data, Dr. Parker, produced a database for identifying trends in residential and commercial burglaries. From this database, he conducted a mapping analysis that suggested truancy precedes burglary by one to three years in specific locations. Specifically, he identified a migration of truancy arrests from the southwest to the northeast side of the city, followed by a similar trend in burglary arrests a few years later.

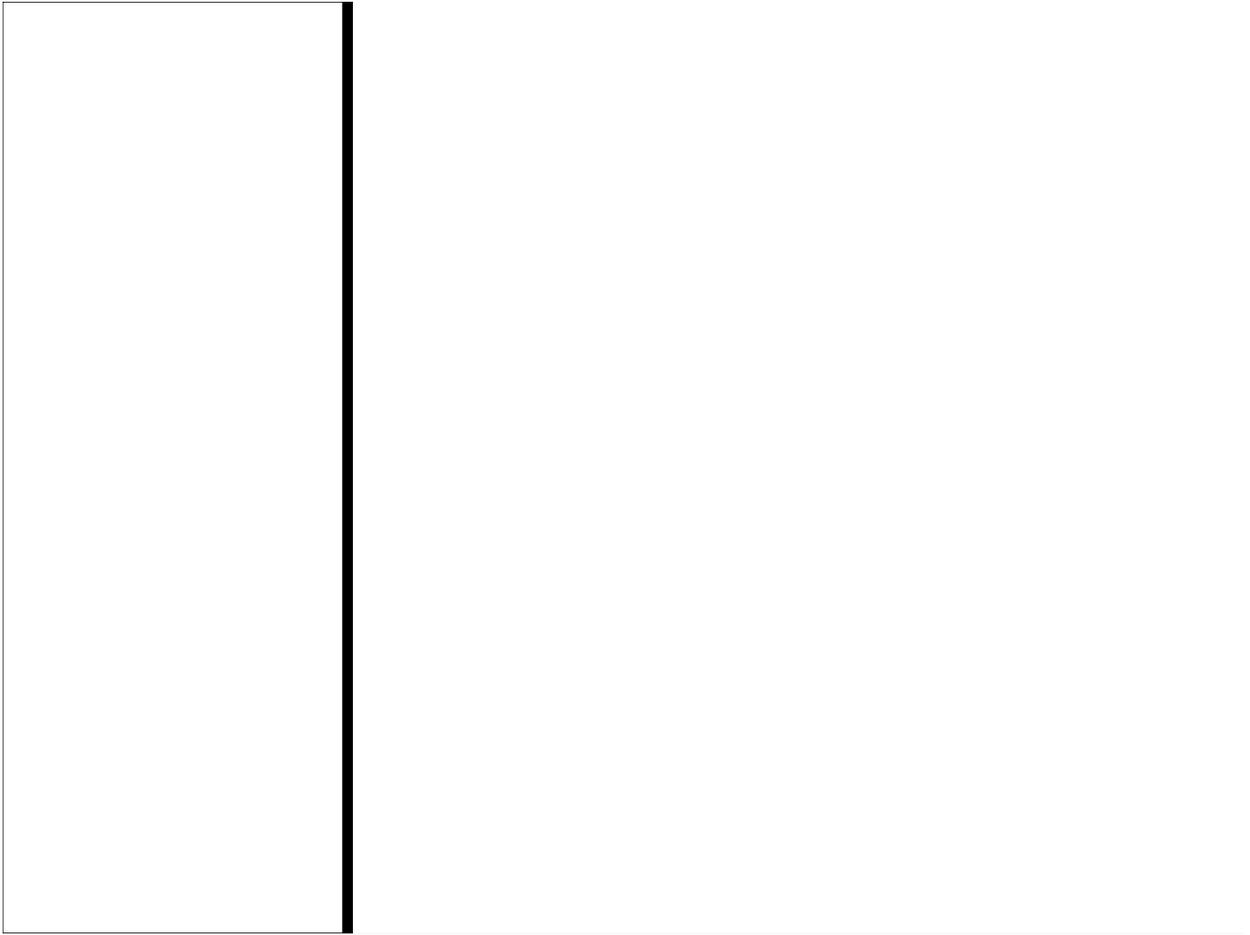
**FIGURE 1: BURGLARY AND TRUANCY, 2002**



**FIGURE 2: BURGLARY 2006 AND TRUANCY 2005**



**FIGURE 3: BURGLARY 2009 AND TRUANCY 2006**



These figures show a spatial and temporal drift, from the lower left of the figures here to the upper right, in burglary and in truancy, but with the former showing a lag of 1 to 3 years, so that by Figure 3, the lag is at three years. In other words, by 2009, truancy in 2006 was predicting higher burglary rates in the upper and central right parts of the map in 2009. This detailed mapping analysis led to the design of the predictive spatial and temporal model.

### **Predictive Model**

Based on the mapping analysis, the model was developed to examine the predictive ability in a multivariate framework of truancy, contemporaneous and lagged 1 to 3 years, to predict burglary rates at the US Census block group level. The notion was that first, basic demographic and housing variables needed to be included as a baseline for predicting burglary. Therefore the team gathered data from 2000 and 2010 decennial

censuses to measure poverty (female headed households); home ownership (owner occupied units); demographic composition (Latino population; population aged 15-29).

To test the impact of truancy on burglary net of these background predictors of burglary, the research partner included truancy lagged at two years and three years, and burglary lagged at three years, given the time series nature of the data and to control for excluded variables that we could not identify, empirically or theoretically. Dr. Parker then extrapolated the census variables between 2000 and 2010 to create an annual time series for each block group. In Indio burglary and truancy were measured each year, thus the research partner constructed a data base of 232 cases; 8 years times 29 block groups. The resulting model was estimated:

**FIGURE 4: POOLED CROSS SECTION TIME SERIES (PANEL) MODEL;  
ADJUSTED FOR SPATIAL AUTOCORRELATION <sup>2</sup>**

- Predicted Burglary Rate 2010=
- $1.64 + (21 * \text{Percent aged 15-29}) + (-53.99 * \text{Percent Female Headed Households with Children under 18}) +$
- $(-8.86 * \text{Percent of Housing Units Owner Occupied}) + (.349 * \text{Truancy (including lags at 2006 and 2007)}) + (3.47 * \text{Percent Latino}) + (.942 * \text{Lagged Burglary 2006})$

Figure 5 shows the application of this prediction equation to the year 2010. Comparing actually 2010 burglary rates to the predicted rates based on the above equation, Figure 5 shows that in the five “off pink” areas, the prediction equation designated the same high burglary rates as the actual 2010 data did. These areas became the targeted areas for the interventions described in this report.

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<sup>2</sup> Parker, R. N., & Asencio, E. K. (2008). *GIS and spatial analysis for the social sciences: Coding, mapping and modeling*. New York: Routledge.

**FIGURE 5: Actual and Predicted Burglary Rates in Indio, CA, 2010**



**COMMUNITY OUTREACH AND COLLABORATION**

Community outreach has been an integral component of Indio’s SPI project from the beginning. In addition to the University of California, Riverside, Indio’s initial SPI collaborative partners included the Riverside County District Attorney’s Office, the Riverside County Probation Department, the Desert Sands Unified School District (DSUSD), and the California Department of Corrections and Rehabilitation. These four agencies were specifically identified in order to collect the required data sources (e.g., school data, burglary offender data, etc.) to build the database used during the mapping analysis. Table 1 lists these partnerships and their respective role in the project. It is important to note that this initial partnership coalition has grown to dozens of cross-sectorial SPI partnering agencies. For a more comprehensive list, please refer to Appendix A.

**Table 2: Indio SPI Initial Collaborative Partners**

	Type of Collaboration
<b>University of California, Riverside</b>	Data Analysis and Evaluation; Research Partner; Planning & Research Capacity Building.
<b>DSUSD</b>	Information Sharing, Community Outreach, Cross-Sector Partnership Building.

<b>Riverside County Probation Department</b>	Information Sharing.
<b>CA Dept. of Corrections and Rehabilitation</b>	Information Sharing.
<b>Riverside County District Attorney’s Office</b>	Information Sharing, Enforcement and Prosecution.

During the initial data collection phase, which started in mid-2011, the Indio SPI team reached out to key management staff from the partnering agencies shown in Table 2. Staff also scheduled several roundtable meetings so that these agencies had a better understanding of SPI, the overall goal of project and the type of data that would be needed to build the burglary database. Staff, for instance, requested truancy and unexcused absence data from DSUSD. Although the school district facilitated records of thousands of truancy notification letters that had been mailed out to parents and legal guardians, this agency was not tracking specific truancy data for local schools. This initial challenge was later overcome when staff learned that an Indio Police Records Specialist had been tracking truancy data dealing with a multi-year project involving the IPD and the local District Attorney’s Office.

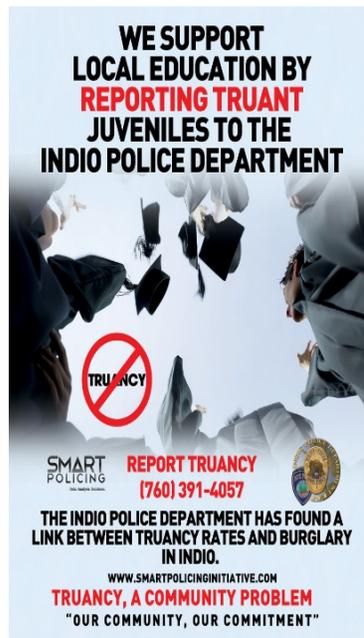
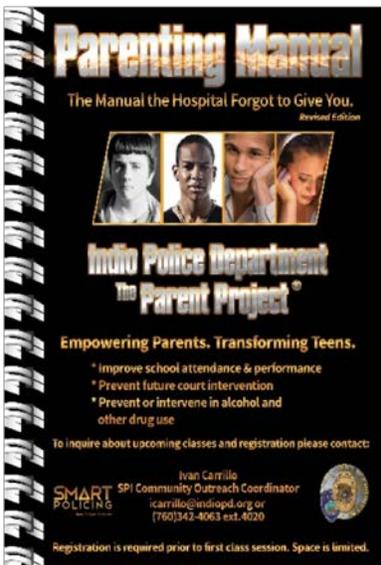
The team later encountered other data collection challenges when they reached out to the Riverside County Probation Department and the Department of Corrections and Rehabilitation. Initially, Dr. Parker was interested in reviewing cases involving both juvenile and adult offenders with prior records of burglary and who may be on parole or probation. He was also interested in examining the home address on file for these cases. At the time, these two agencies were still recovering from the economic downturn. Although they were in full support of Indio’s project, it was not feasible for them to retrieve the required data due to recent layoffs in their organization and also due to technical problems with their records management systems. Consequently, the Indio SPI team was unable to incorporate probation and parole data into their analysis.

Once the data analysis and predictive burglary model was completed, the Indio SPI team developed a comprehensive community-based strategy to increase community awareness, “buy in” from local community leaders, and overall community support for the SPI efforts in the target area. This was a critical step because IPD was predicting that burglaries would increase in neighborhoods that at the time were not experiencing high burglary rates. Key to the community outreach strategy was the hiring of the SPI-funded, Community Outreach Coordinator in March 2013. With great enthusiasm and a fresh outlook on the project, Mr. Ivan Carrillo played a key role in designing Indio’s cross-sector community outreach strategy.

The community outreach strategy was enhanced by a focused media campaign. Staff reached out to local media outlets and also partnered with a local graphics designer. This designer created Indio’s Burglary and Truancy Prevention marketing posters and flyers. The message the team sought to convey to the public was simple: *Indio’s link between truancy rates and burglaries had public safety, fiscal and social implications.* The use of strong and vivid imagery on the posters, such as people behind bars and graduation caps thrown in the air,

promoting school success, communicated the intent of Indio’s SPI project. These posters were continuously displayed at the Indio Teen Center, Boys & Girls Club, YMCA, middle schools, high schools, churches, and businesses throughout the city. The IPD encouraged Indio residents and business owners to be active participants in truancy and burglary prevention. Presently, local media outlets continue to use these posters when running any Indio SPI-related news clips or articles.

**Indio SPI Posters:**



Moreover the Indio Police Department partnered with local business owners to conduct a series of Home Security Fairs. At these fairs, Indio residents were able to view home security products through vendor expositions and also receive assistance in finding adequate products to fit their specific security needs. The Indio SPI team also initiated a streak of “Cops and Kids” sports events. These community games provided an opportunity for Indio Police Department officers to interact with at-risk youth, community leaders, community-based groups, and residents. In addition, Indio’s Chief of Police and some of his Division Commanders and members of partnering law enforcement agencies played basketball and football games alongside Indio youth.

The Indio SPI team recognized the value of community fairs as a way to increase the public’s “buy in” and understanding of the Initiative. An example of this effort is a cross-sector community fair held in August 2013, where sixteen Coachella Valley agencies whose mission is to serve children and at-risk youth participated and interacted with parents and their children. During these community fairs, parents and youth learned about factors that may contribute to

juvenile crime, such as school truancy. These discussions launched a conversation regarding Indio’s SPI research findings, which suggested a link between truancy and burglaries and the need to bring back local juvenile crime prevention programs to the city.

With this in mind, in October 2013, the Indio Police Department hosted the Parent Project classes at the Indio Teen Center, using SPI funds. *The Parent Project* is a nationally recognized parenting skills program specifically designed for parents raising difficult or out-of-control adolescents. The primary goals of this program are to reduce family conflict, juvenile crime, recidivism and improve both school performance and attendance. The Indio Police Department’s participation in this program sought to provide families the skills and strategies needed to deal with out of control students. In March 2014, twenty-two families successfully completed this program. During the graduation ceremony, a parent who participated in the classes thanked the Indio Police Department for hosting this program and for their commitment to juvenile crime prevention efforts.

Indio’s SPI team also sought the support from private sector organizations, such as the local Home Depot and Target Corporation. In the summer of 2013, IPD, in partnership with the local Home Depot store and Indio Fire Department, hosted several community safety fairs. During these events, residents learned about Indio’s SPI project and also received burglary and truancy prevention tips from Indio’s SPI Burglary Prevention Task Force and from School Resource Officers (SROs). The IPD also partnered with the local Target store during the annual National Night Out, bringing community safety resources and information to Indio residents.

**Table 3: List of Indio SPI Community Outreach & Cross-Sector Partnership Events, April 2013- March 2014**

	Number of Events	Estimated Number of Attendees <sup>3</sup>
Community Outreach Events (e.g., Cross-Sector Safety Fairs, SPI Presentations, Community Games, etc.)	32	10,461
The Parent Project Classes (Bilingual in Spanish/English)	2	40
Distributed SPI Awareness Material (flyers, posters, etc.)		500 <sup>4</sup>

<sup>3</sup> Several SPI events were hosted in collaboration with Indio’s cross-sectorial partnerships. This chart does not include a regional SPI event on May 6, 2014 held at UC Riverside with more than 80 attendees.

<sup>4</sup> The Indio SPI team printed and distributed approximately 500 posters and flyers starting in May 2013 through March 2014.

## **OTHER STRATEGIES EMPLOYED**

Noted earlier in this report, in mid-2013 the IPD implemented a series of targeted burglary and truancy prevention strategies. The previous section described the community outreach and focused media campaign strategy. This section focuses on the burglary and truancy interventions. The primary goal of these two strategies was to promote school attendance among youth and simultaneously improve the quality of life of Indio residents by addressing burglaries.

Recent studies have shown that truancy is often an adolescent's first step in a series of lifetime problems, leading to trickle-down effects that impact entire communities. The California Attorney General's 2013 *Report on California's Elementary School Truancy & Absenteeism Crisis* found that truant children are at-risk of engaging in future criminal activities, or may become the victims of crime.<sup>5</sup> Following the release of the Report, in December 2013, *The Desert Sun* newspaper conducted an investigative report on the impact of chronic absenteeism and truancy in Coachella Valley schools. This report found that school absenteeism in Coachella Valley schools costs local school districts an estimated \$20 million in annual funding.<sup>6</sup> Additionally, the report states that the truancy average during the 2011-2012 school year in Coachella Valley schools was 36 percent, compared to the statewide average of 27 percent. These statistics support Indio's SPI project findings.

A team of five School Resources Officers (SRO's) are currently assigned to Indio's three high schools and one community school. These SRO's also have collateral duties, which give them a daily presence at Indio's four middle schools, twelve elementary schools and two private schools. In total, IPD SROs serve approximately 16,000 students. During the implementation phase of the project (and presently), these officers worked closely with Indio's local school districts: The Desert Sands Unified School District (DSUSD) and the Coachella Valley Unified School District (CVUSD) to reduce truancy rates within the city. As mentors, trainers, counselors and law enforcers, SROs played a crucial role in Indio's SPI project described below.

In September 2013, IPD established a Truancy Prevention Task Force, which consisted of one to two police officers patrolling the City of Indio, focusing on the recognized SPI burglary and truancy hot spots. The detail team conducted daytime enforcement during schooldays, with varying days of the week and varying hours of the school day. Task force officers conducted daytime curfew enforcement sweeps, supported by Indio's Day Time Curfew Ordinance. Truants were issued a citation, which was an infraction violation of Indio City Code. These students were then taken to the respective school, released to the SPI SRO, or released to the parent or legal guardian (they were notified regardless). Task Force officers also worked with the School Resource Officers to enforce truancy and conduct any follow-up or assistance outside of the respective schools (e.g., Home visits, "Ditch" parties, etc.). Furthermore, the officers responded

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<sup>5</sup> Office of the California Attorney General, 2013 Report on California Elementary School Truancy & Absenteeism Crisis, (available at <http://oag.ca.gov/>).

<sup>6</sup> Kelman, B. (2013, December 15). iSun Investigation: The high cost of skipping school. *The Desert Sun*.

to any calls-for-service regarding truants in residential neighborhoods or at businesses during school hours. Task force officers also assisted and assumed any crime investigations from patrol that involved juveniles who were truant.

With regards to the background on Indio's curfew ordinance, this ordinance was adopted as a proactive effort to reduce and eliminate juvenile crime. Minors eighteen years of age or younger are prohibited from loitering in the City of Indio on days when school is in session as required by Indio City Code 130.001 (c). Prior to the implementation of these sweeps, the Indio SPI team held several conversations with their city attorney, the partnering District Attorney's Office, Juvenile Division, and local juvenile court. The purpose of these discussions was to ensure that these three agencies not only supported Indio's burglary and truancy prevention efforts but also had the processes and mechanisms in place to effectively deal with any increased juvenile citations filings with the local court, resulting from Indio's task force activities.

The third intervention strategy was the roll out of a Burglary Prevention Task Force. This task force consisted of two Street Crimes Unit (SCU) Detectives, who assumed any crime investigation from the Department's Patrol Unit that involved juveniles who were truant (during the school week and during school hours) that was not handled by an detail officer (working in an overtime capacity), especially complex or comprehensive cases (burglaries with multiple victims, large amounts of property, significant follow-up investigation required, writing search warrants, etc.). Detectives also tracked criminal cases through the courts that involved truant juveniles involved in crimes within the City of Indio. For example, one SCU Detective specifically investigated and tracked 58 burglary cases involving juvenile offenders in order to determine if they were ordered to serve any jail time for their offenses. In fact, this same detective was involved in the original arrest of a 17-year-old juvenile responsible for three burglaries and auto theft cases in 2013. And validating the research findings, the SCU Detective noted that this juvenile was consistently skipping school.

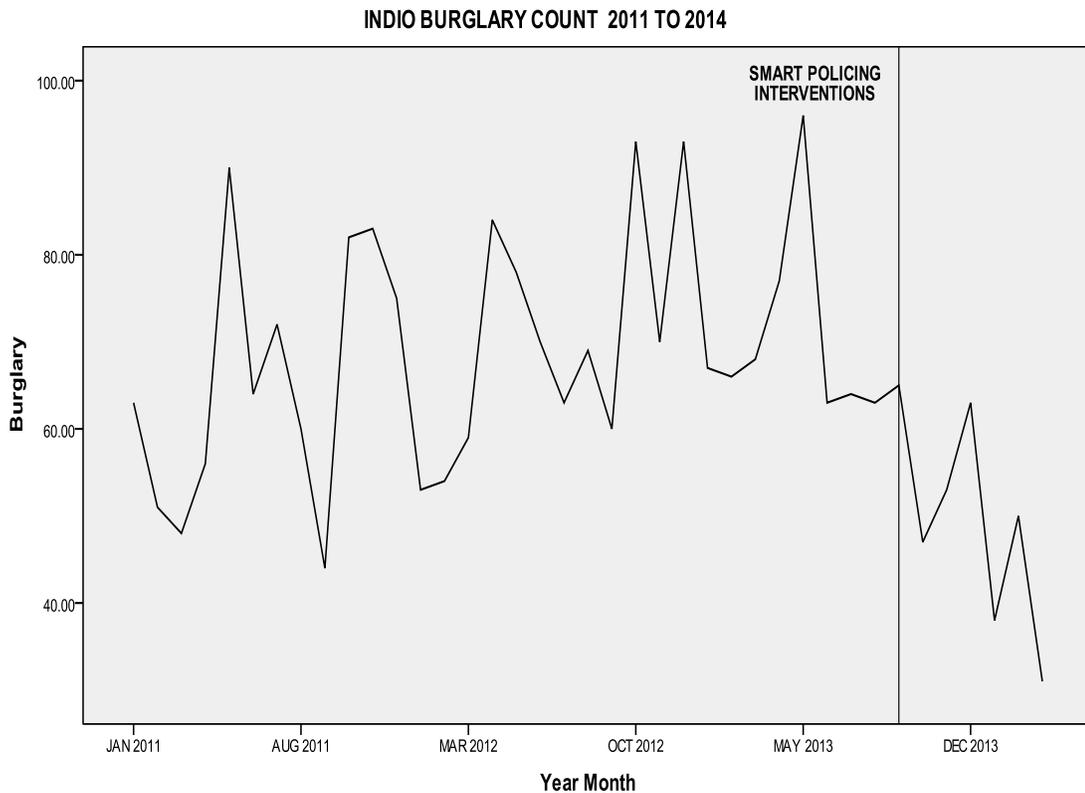
In addition, the SCU and Indio's SPI team worked with theft victims in order to address opportunities of crime by educating them regarding the effective use of Crime Prevention through Environmental Design (CPTED) concept, which incorporates the idea of "target hardening." Target hardening is making changes in the physical condition of the house that discourage burglary, especially from the truant teenager who may be less skilled in the techniques and not possess the tools necessary for successful breaking and entering. Indio's SPI Community Outreach Coordinator reached out dozens of residents who had been victims of theft by making personal telephone calls, home visits, and by sending out invites to attend the "Target Hardening" community meetings. Several public events were staged where residents received discounts on the purchase of "target hardening" devices such as locks, window bars, improved front doors, and other such improvements.

## **ANALYSIS AND EVALUATION**

It would be highly unlikely that an interrupted time series model using the data described in this paper would not show a significant decline in burglary post intervention. Indeed, the

results of such a model show that the post intervention series is significant different and lower than the pre-intervention series shown in Figure 6. Examination of the differential by block group within and external to the targeted area was not completed by the time the grant was concluded, but even if the differential pre and post intervention is not confined to the targeted area, it is still reasonable to assume that the activities of the project generated enough publicity and diffusion to suggest that SPI project is at least somewhat responsible for the decline in burglary rates observed.

**Figure 6: Indio Burglary Count, 2011-2014**



**Figure 7: Indio SPI Interrupted Time Series Model Results, May 2014**

**INTERRUPTED TIME SERIES MODEL RESULTS  
SMART POLICING INTERVENTION**

ARIMA MODEL	PARAMETER TYPE	PARAMETER ESTIMATE	STANDARD ERROR	T TEST	SIGNIFICANCE
BURGLARY	AR, LAG 3	-.495	.168	2.585	.014
DIFFERENCE	LAG 1	---	---	---	---
BURGLARY	MA, LAG 1	.816	.144	5.674	.000
SPI INTERVENTION	INTERRUPTED LAG 0	-4.987	1.219	4.091	.000
R-SQUARE: .509		LJUNG BOX CHI SQUARE		13.799; 14 DF; SIG: .465	




Overall, the evaluation demonstrated that the predictive model does a significantly better job of predicting where burglaries will occur a year in advance compared to common sense practices, such as by only looking at hot spot maps of observed burglary rates. Using this model, the Indio SPI team was better able to anticipate hot spots of criminal activity and developed interventions to address the problem. It is important to note that as of July 2014, the IPD is reporting a 44 percent decline in burglary crime compared to the same period last year.

## INTEGRATION AND SUSTAINABILITY

The Indio Police Department is committed to sustaining the successful SPI interventions and to the integration of research-based policing throughout the organization. These efforts are supported by Indio’s police and local government officials, community leaders, policymakers, residents and other stakeholders. Additionally, the Department has set aside funding to implement the summer 2014 burglary and truancy suppression activities in the SPI target area. Staff have also identified local and federal funding to sustain the Indio SPI Community Outreach Coordinator position on a part-time basis for the next fourteen months. The Department sees the value of this position and hopes to obtain the necessary local funding to support this position full-time in the near future.

Indio’s successful partnership with Dr. Parker and the University of California, Riverside continues. Recently, the Department established an Office of Community Safety (OCS) as a violence reduction strategy. This initiative includes community outreach, enforcement and data analysis and evaluation. The project planning meetings with Dr. Parker are slated to start in August 2014. The Department is also actively seeking new funding opportunities to enhance Indio’s evidence-based crime prevention efforts. Additionally, Dr. Parker’s collaboration with

the Indio Police Department became part of the 2014 Presley Center Colloquium Series at the University of California-Riverside. Dr. Parker's talk, titled, "*Can We Predict Crime? The Case of Burglary in Indio, CA, and the Smart Policing Initiative*," discussed the Indio SPI project and the role of predictive policing in reducing burglary crime in Indio.

Another example of this on-going partnership is the May 6, 2014, regional Smart Policing Initiative symposium held at the University of California Palm Desert Center in Palm Desert, Calif. Featured topics included the Indio Smart Policing Initiative (SPI) research project, the use of applied research in the criminal justice field and the truancy crisis in California schools. Keynote speakers included representatives from the Bureau of Justice Assistance (BJA), CNA, the University of California, and the California Office of the Attorney General. Symposium attendees consisted of more than 80 policymakers, educators, government officials, community leaders, and representatives from law enforcement and criminal justice agencies from Northern and Southern California and Nevada.

Lastly, cross-sector partnership building will continue to play a role in the sustainment of Indio's SPI project. In August 2014, the Indio Police Department will start a Youth Court Program, in partnership with the Riverside County District Attorney's Office. This juvenile crime prevention initiative is being supported by the Coachella Valley-based Clinton Health Matters Initiative (CHMI) and by the Regional Access Project Foundation (RAP). Indio's participation in the Youth Court Program will support and enhance the Department's on-going truancy prevention efforts. And in September 2014, the Indio Police Department and the Riverside County Juvenile Probation Department are hosting a regional youth fair. Guest speakers have been lined-up, such as a nationally-recognized boxing champion. Event coordinators are expecting hundreds of attendees and well over 50 participating governmental agencies and community-based organizations that serve at-risk children and youth. This will be yet another opportunity for the Indio Police Department to share the SPI message.

## **LESSONS LEARNED**

Indio's case study underscores the important role of 'big data' in predicting crime. Over the span of two-and-a-half years, the team painstakingly collected and analyzed large data files maintained in-house and also data not traditionally examined by the Department. Some of the unstructured data files received from partnering agencies were so massive that required the design of an algorithm, in order to sort and pull out irrelevant records. Project staff were also fairly new to the concept of applying statistical models to better understand criminogenic problems, such as burglary, not to mention that fact that sorting through the data and preparing it for statistical analysis would be a challenging endeavor. In order to help staff better understand the type of effort at hand, Dr. Parker compared the data collection and analysis process to the metaphor of a funnel—first the Indio team would start with large-scale data sets from various sources and would then methodically move through the funnel until only the 'clean' data files remained for the predictive model.

Secondly, the project demonstrated that it is possible for law enforcement agencies to target prevention activities to disrupt the causes of crime before the crime happens. And the research findings made it possible for the Department to validate the primary intent of the Indio's SPI proposal—to forecast burglary crime and implement comprehensive intervention activities in hot spot areas. The focused media campaign efforts, along with the deployment of the Burglary and Truancy Prevention Task Forces are credited for increasing community awareness in burglary and truancy prevention practices. Equally important, the Department is currently reporting a significant drop in burglary crime. Police staff attribute many of the positive results to SPI.

Early into the project, the Indio SPI team had to adapt to a series of organizational changes brought about by the economic downturn. Some of these changes posed a direct impact to the timely completion of the SPI project. Mid-way through the project, for example, the Indio SPI team faced attrition-related staffing and leadership changes at the police executive level. The remaining SPI core group had to adapt to these changes by sustaining the project momentum and by ensuring that new project staff were brought up-to-date. The team was also challenged with the inability to obtain certain data and intelligence information from outside agencies, due to both structural and systemic issues with data mining. Overall, these changes delayed the completion of the project by almost a full year.

Additionally, when the Indio SPI team developed the initial staffing plan for this project, staff didn't anticipate the personnel needs to implement the community outreach component of this initiative. Since community outreach is a core component of SPI, staff recommends other sites to assess the need for this type of positions during the concept paper preparations. Notwithstanding, the team effectively addressed these challenges by modifying certain components of their action plan, the hiring of the coordinator position and through the support of their new leadership team.

From the perspective of line police officers, support personnel, executive and command staff at the Indio Police Department, the Indio SPI experience helped solidify the notion that law enforcement agencies can successfully participate in predictive policing as an innovative way to enhance community policing practices. Staff members also note that this project increased their understanding of the role of information technology and applied research in policing, specifically, the importance of an effective collaboration with an academic institution. As described by Police Chief, Richard Twiss, "This is the wave of the future. It is my hope this relationship with Dr. Parker will continue throughout my tenure with this department, not only on this project but with others as well." Last but not least, staff recognized the importance of identifying and cultivating organizational champions to carry out new research projects and sustain best practices such as SPI.

## ABOUT THE AUTHORS

**Robert Nash Parker, PhD** is a Professor of Sociology and Senior Researcher at the Robert Presley Center for Crime and Justice Studies at the University of California, Riverside; previously he held professorial appointments at the University of Akron, Rutgers University, and the University of Iowa. Between 1991 and 1996, Parker was a Senior Research Scientist at the Prevention Research Center in Berkeley, CA. His main research interests include alcohol and violence, youth violence and gangs, Geographic Information Systems (GIS) and Spatial Modeling, and the study of the causes of homicide. He recently co-edited special issues of *New Directions in Evaluation* (vol. 110) on failed evaluations, and *Contemporary Drug Problems on Alcohol Policy and Harm Reduction* (2007); Parker is also the author of *Alcohol and Homicide: A Deadly Combination of Two American Traditions* (SUNY Press, 1995) and *GIS and Spatial Modeling for the Social Sciences* (Routledge, 2009). His most recent articles deal with alcohol availability and youth violence, and the impact of single serve alcohol containers in retail settings on neighborhood violence; these were published in September, 2011 in the *Drug and Alcohol Review*. His newest book is called *Alcohol and Violence: The Nature of the Relationship and the Promise of Prevention*, published in 2013 by Lexington Books.

**Erika Martinez** is a Senior Management Analyst at the Indio Police Department. She oversees the Department's Administrative Services Unit and is the Indio SPI site project manager. From 2002 to 2005, Ms. Martinez worked at the California Policy Research Center—a program in the Office of the President of the University of California (UC) that seeks out and applies the extensive research expertise of UC faculty to the analysis, development and implementation of state policy, as well as federal policy on issues of statewide importance. Ms. Martinez holds a Bachelor's degree in Political Science, with an emphasis in Public Policy, from the University of California Berkeley and a Master in Management degree from the University of Redlands. She was selected as a 2012 Research Fellow at the Banta Center for Business Ethics & Society at the University of Redlands and was also appointed as the 2010 Desert Region Chair for the Municipal Management Association of Southern California (MMASC).

## **APPENDIX A: INDIO SPI PARTNERING AGENCIES**

### **Government Agencies**

Bureau of Justice Assistance (BJA)  
California Office of the Attorney General  
City of Indio (Fire Dept., Teen Center)  
Juvenile Justice and Delinquency Prevention Commission (JJJPC)  
Riverside County District Attorney's Office  
Riverside County Fourth District-Youth Advisory Council  
Riverside County Mental Health Department  
Riverside County Probation Department

### **School Districts/Local Universities**

Coachella Valley School District  
Desert Sands Unified School District  
Riverside County Office of Education  
University of California, Riverside

### **Community-Based Organizations**

Arbor Win Youth Opportunity Center  
Boys & Girls Clubs of Coachella Valley  
Big Brothers Big Sisters of the Desert  
CASA for Riverside County, Inc.  
Center for Employment Training  
Clinton Foundation Health Matters Initiative (CHMI)  
Coachella Valley Housing Coalition  
Coachella Valley Rescue Mission  
CNA  
Desert Recreation District  
El Sol Neighborhood Educational Center  
Esperanza Youth & Family  
Indio Chamber of Commerce  
Safe House of the Desert

### **Faith-Based Organizations**

First AME Church  
First Baptist Church  
Trinity Baptist Church  
Our Lady of Perpetual Help

### **Business Partners**

Alliance Protection  
Servpro  
The Home Depot

## APPENDIX B: INDIO SPI TEAM MEMBERS

<b>Participants</b>	<b>Role</b>
Daniel Bojorquez, School Resource Officer Classes	Anti-Truancy Task Force/The Parent Project Classes
Ivan Carrillo, SPI Comm. Outreach Coordinator	Comm. Engagement & Develop./The Parent Project Classes
Benjamin Guitron, Administrative Officer/PIO	SPI Media Relations/Comm. Outreach
Jesus Gutierrez, School Resource Officer Classes	Anti-Truancy Task Force/The Parent Project Classes
Gilbert Lopez, Detective	Burglary Prevention Task Force
Jesse Marin, Detective	Burglary Prevention Task Force
Erika Martinez, Sr. Management Analyst	Project Manager
Forest Meadows, Commander	Truancy Prevention Task Force
Rene Mendez, School Resource Officer	Anti-Truancy Task Force/The Parent Project Classes
Kathy O'Keefe-Weeks, Crime Analyst II	SPI Crime Analysis
Joel Osmond, School Resource Officer	Anti-Truancy Task Force/The Parent Project Classes
Robert N. Parker, Research Partner	Research design, data analysis & evaluation
Anita Parks, Records Specialist II	SPI SRO and Truancy Data Collection
Henricus Peeters, Commander	Project Oversight/Task Force Development
London Pickering, Sergeant	Truancy Prevention Task Force
Johnny Romero, Commander	Burglary Prevention Task Force
Robert Stroud, Detective	Burglary Prevention Task Force
Richard P. Twiss, Chief of Police	Executive Oversight/SPI Project Presenter