"Bait Vehicle" Technologies and Motor Vehicle Theft Along the Southwest Border

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Abstract

In 2005, over 33% of all the vehicles reported stolen in the United States occurred in the four southwestern border states of California, Arizona, New Mexico, and Texas, which all have very high vehicle theft rates in comparison to the national average. This report describes the utilization of "bait vehicles" and associated technologies in the context of motor vehicle theft along the southwest border of the U.S. More than 100 bait vehicles are estimated to be in use by individual agencies and auto theft task forces in the southwestern border states. The communications, tracking, mapping, and remote control technologies associated with bait vehicles provide law enforcement with an effective tool to obtain arrests in vehicle theft "hot spots." Recorded audio and video from inside the vehicle expedite judicial proceedings as offenders rarely contest the evidence presented. At the same time, law enforcement is very interested in upgrading bait vehicle technology through the use of live streaming video for enhanced officer safety and improved situational awareness. Bait vehicle effectiveness could be enhanced by dynamic analysis of motor theft trends through exploitation of geospatial, timeline, and other analytical tools to better inform very near-term operational decisions, including the selection of particular vehicle types. This "information-led" capability would especially benefit from more precise and timely information on the location of vehicles stolen in the United States and found in Mexico. Introducing Automated License Plate Reading (ALPR) technology to collect information associated with stolen motor vehicles driven into Mexico could enhance bait vehicle effectiveness.

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In 2005, over 33% of all the vehicles reported stolen in the United States occurred in the four southwestern border states of California, Arizona, New Mexico, and Texas, which all have very high vehicle theft rates in comparison to the national average.

This report describes the utilization of "bait vehicles" and associated technologies in the context of motor vehicle theft along the southwest border of the U.S. More than 100 bait vehicles are estimated to be in use by individual agencies and auto theft task forces in the southwestern border states. The communications, tracking, mapping, and remote control technologies associated with bait vehicles provide law enforcement with an effective tool to obtain arrests in vehicle theft "hot spots." Recorded audio and video from inside the vehicle expedite judicial proceedings as offenders rarely contest the evidence presented. At the same time, law enforcement is very interested in upgrading bait vehicle technology through the use of live streaming video for enhanced officer safety and improved situational awareness.

Bait vehicle effectiveness could be enhanced by dynamic analysis of motor theft trends through exploitation of geospatial, timeline, and other analytical tools to better inform very near-term operational decisions, including the selection of particular vehicle types. This "information-led" capability would especially benefit from more precise and timely information on the location of vehicles stolen in the United States and found in Mexico. With the introduction of Automated License Plate Reading (ALPR) technology to collect information and associate it with stolen motor vehicles being driven into Mexico, the effectiveness of bait vehicles can be enhanced.

The use of bait vehicle technology in the prevention, disruption and investigation of cross border motor vehicle thefts may be enhanced in the following ways:

- Timely deployment of bait vehicles that match the types of automobiles and trucks targeted for cross border theft.

- Dynamic analysis of motor vehicle theft trends through the use of geospatial, timeline and other analytical tools to better inform very near term operational decisions including vehicle type selection and area of deployment.

- Expanded information acquisition and sharing to include the precise location of recovered vehicles inside Mexico as well as the reported date and time of recovery.

- Deployment of live streaming video from inside bait vehicles in order to maximize offender generated information available to law enforcement and investigators as well as minimize threats to officer safety.

- Proper sizing of bait vehicle "fleets" in areas where cross border motor vehicle theft is especially chronic.

Acronyms

AATA Arizona Automobile Theft Authority

ALPR Automated License Plate Reading Information

ARJIS Automated Regional Justice Information System

ASF-SMV Automated Search Facility-Stolen Motor Vehicle

ATV all terrain vehicle

BATIC Border Auto Theft Information Center

CHP California Highway Patrol

FEAR Foreign Export and Recovery (CHP operation)

GPS global positioning satellite

IAATI International Association of Auto Theft Investigators

IMPACT Integrated Municipal Provencal Auto Crime Team

ISO Insurance Services Office

MSA Metropolitan Statistical Area

MVT motor vehicle theft

NCIC National Crime Information Center

NICB National Insurance Crime Bureau

NLECTC National Law Enforcement and Corrections Technology

NMVTIS National Motor Vehicle Title Information System

OCR optical character reading

OCRA-AMIS Coordinating Office of Insured Risks the Mexican Association of Insurance Companies

PERF Police Executive Research Forum

POP Problem Oriented Policing

RATTLER Regional Auto Theft Team Law Enforcement Response

SWB southwest border

TXDPS Texas Department of Public Safety

UCR Uniform Crime Reporting

WRC-IAATI Western Regional Chapter of International   Association of Auto Theft Investigators

1. Introduction

1.1 Overview

In considering an examination of Bait Vehicle Technologies and motor vehicle theft along the southwest border of the United States, the National Institute of Justice (NIJ) encouraged the Justice Public Safety Center (JPSC) at Eastern Kentucky University to work with the Border Research and Technology Center (BRTC), which is supported by Sandia National Laboratories. The BRTC has expertise in working with southwest border law enforcement agencies and applicable technology.

The collaborative effort involved undertaking a 120-day review (commencing in May 2007) of technical and related issues that could be identified in the use of bait vehicles[1] in addressing the problem of motor vehicle theft in the southwest border states. Work on this project included a site meeting in Arizona and numerous communication exchanges with individual practitioners, analysts, academics, and technology suppliers to information this report. This work was conducted with the participation of many law enforcement/practitioner subject matter experts, crime analysts' investigative associations, academic institutions and organizations, and technology suppliers. Of critical help was the National Insurance Crime Bureau, whose activities across a broad area of public education and law enforcement support include providing "bait vehicles" to many law enforcement agencies and statewide vehicle theft authorities throughout the country.

1.2 Objective

The objective of this project was to identify lessons learned through the use of bait vehicle technology in dealing with cross-border MVT within the context of national, state-wide, and southwest border region trends and statistics. This project investigated the use of "bait vehicles" by law enforcement groups as a method to prevent and mitigate automotive thefts in the southwestern border states.

1.3 Method

The principal method used in obtaining information for this report was the identification of and collaboration with practitioners and experts on the use of bait vehicles and the problem of cross-border auto theft from each of the Southwest Border States. The key event in this process was a meeting of subject matter experts in Tempe, AZ, June 28-29, 2007. This meeting also included technology companies that have delivered configured vehicles or components to law enforcement in the operation of bait vehicle programs. Throughout this project, the objectives and outline of this report were shared with these and other subject matter experts, including crime analysts who had conducted special analysis into vehicle theft in their particular part of the

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[1] A "bait vehicle" is a specially modified vehicle for use by law enforcement agencies to thwart motor vehicle theft. Modifications may include global positioning system (GPS) tracking, concealed cameras, or other features. Police can monitor the vehicle and some vehicles can be immobilized by a remote device that can shut down the engine.

border. Regular internet searches provided timely information on recent published research and current initiatives that informed this work.

1.4 Background

In 2005, over 33% of all the vehicles reported stolen in the United States occurred in the four southwestern border states of California, Arizona, New Mexico, and Texas, which all have very high vehicle theft rates in comparison to the national average.

More than 100 bait vehicles are estimated to be in use by individual agencies and auto theft task forces in the southwestern border states. The communications, tracking, mapping, and remote control technologies associated with bait vehicles provide law enforcement with an effective tool to obtain arrests in vehicle theft "hot spots." Recorded audio and video from inside the vehicle expedite judicial proceedings as offenders rarely contest the evidence presented. At the same time, law enforcement is very interested in upgrading bait vehicle technology through the use of live streaming video for enhanced officer safety and improved situational awareness.

1.5 Bait Vehicle Technologies

Technologies to cope with the problem of motor vehicle theft (MVT) have advanced significantly since the introduction of the first "bait vehicles." In addition, the steady level of motor vehicle thefts each year both in the United States and abroad constantly challenge law enforcement to exploit advancing technologies and techniques to prevent and investigate a class of crime the financial cost of which is estimated at over $50 billion per year worldwide [Stauffer and Bonfanti].

Bait vehicle technologies combine improvements in communications, tracking, and remote operation to provide law enforcement with a powerful tool that is utilized in areas where MVT is chronic. Of the 1,244,525 vehicle thefts reported through the FBI's 2005 Uniform Crime Report, a total of 413,864 thefts occurred in the four southwest border (SWB) states of California, Arizona, New Mexico, and Texas, an increase of 3,975 over 2004. (Note that preliminary 2006 data may show an overall reduction in MVTs.) This accounts for one-third (33.25%) of the total number of thefts reported in the remainder of the country. Of these 413,864 thefts occurring in SWBs, 249,798 occurred in "border regions." Preliminary figures for 2006 indicate a slight increase in this particular part of the country.

2. Motor Vehicle Theft: Scope and Scale of Problem

The $50 billion estimated annual economic loss due to MVT worldwide is based on 3.8 million records of reported stolen motor vehicles contained in the Interpol General Secretariat's Automated Search Facility-Stolen Motor Vehicle (ASF-SMV) database. This website reports that "…close to 146 countries use the database regularly. Of these, 115 countries have shared their national stolen vehicle database records with Interpol…"[2]

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[2] http://www.interpol.int/Public/Vehicle/Default.asp [last accessed August 7, 2007].

While the United States experienced the largest number of reported MVTs, the United Kingdom, France, Italy, Canada, Mexico, and Brazil combined for more than 1,358,780 report thefts, slightly exceeding the total of 1,226,457 for the United States in 2003 in statistics compiled by Interpol [Stauffer and Bonfanti]. Importantly, Canada reported 170,213 thefts for 2003 and Mexico reported 153,233.

In addition, the expanding worldwide pace of vehicle thefts suggests concerns beyond the financial value of a high-end automobile and its parts or the use of the car or truck in the commission of a violent crime or transport of contraband. As the website above notes:

> "…Vehicle crime is a highly organized criminal activity affecting the whole world. It has been clearly established that it is often linked to organized crime and terrorism. The vehicles are not only stolen for their own sake; sometimes they are trafficked to finance other crimes. They can also be used as bomb carriers or in the perpetration of other crimes…"

Motives for vehicle theft include insurance fraud, resale for export of the vehicle, resale and export of the vehicle parts, "commuter" theft or simply "joyriding," or use of the vehicle to support the commission or other crimes or ongoing criminal activities. Juveniles comprise a disproportionate number of offenders committing this crime and more than 50% of those arrested in auto theft are also involved in narcotics. In 2004, according to the Uniform Crime Reporting (UCR) program, 26.5% of all those arrested for motor vehicle theft were under the age of 18 and almost 59.9% of all arrestees were younger than 25 years old.

2.1 MVT: Rates, Recoveries, and Clearances

Studies of MVT readily acknowledge that while these crimes may be classified as a property crime, they are not victimless. Considerable economic hardship is generated with loss of the automobile or truck that provides transportation to and from employment. Theft that occurs at gunpoint in the case of "carjacks," high-speed pursuits, and utilization of the vehicle to commit violent crimes may result in serious injury or death.

To better understand the overall context in which MVT occurs and how measures of effectiveness are developed (including but not limited to the use of "bait vehicles"), it is important to consider the definitions of motor vehicle theft, recovery rates, and clearance rates.

2.1.1 MVT and Theft Rates

MVT is classified as a property crime and defined as "…the theft or attempted theft of a motor vehicle." A motor vehicle is further defined as "…self propelled and runs on the surface, not on rails." The offense and definition includes the stealing of automobiles, trucks, buses, motorcycles, snowmobiles, etc.[3] Nationally, more than 1.2 million motor vehicles were reported stolen in 2005. While substantial, this statistic represents a significant decline from 1,661,700

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[3]   http://bjsdata.ojp.usdoj.gov/dataonline/Search/Crime/definitions.cfm [accessed August 27, 2007]

thefts in 1991. Since 1999, when reported thefts were 1,152,075, the number of MVTs has apparently stabilized.

Theft rates are of particular importance and are measured in terms of number of thefts *reported* per 100,000 inhabitants. Statistics from the UCR show that over the very long term (1960 to 2005), these rates increased by 227% (183 in 1960 compared to 416.7 in 2005). However, since 1991 these rates have shown a steady decline nationwide from 658.9 in that year with 93.3% of this crime occurring in Metropolitan Statistical Areas (MSA). These rates provide some sense of trend in terms of resources and time directed at this particular crime.

In terms of rates per *registered vehicle* these numbers are slightly higher with 499 per 100,000 vehicles registered for 2005. The total number of registered vehicles for 2005 was 247,421,120.[4]

Theft rates by vehicle type are also important for selecting measures such as the type of "bait vehicle" to be deployed in a certain area. As indicated later in this report, such information requires timely collection, reporting, and analysis to enhance its value to operators in the field.

For 2005, the UCR program estimated the cost of MVT to be $7.6 billion, averaging $6,173 per stolen vehicle. However, in addition to any dollar figure calculated, consideration should also be given to the cost in anticipation of crime, cost as a consequence of crime, cost in response to crime, and emotional and physical impact. [Alain G. Barbier, pp. 545-546, in Stauffer and Bonafanti]

2.1.2 Recovery Rates

Recovery rates refer to finding vehicles reported as stolen and comparing that number to the total number of vehicles *reported* stolen. Recovery rates do not necessarily inform analysts as to the condition of the vehicle. However, the location of the recovered vehicle as well as the date and time of recovery combined with the date, time, and location of its reported theft is of increasing value to law enforcement as part of "recovered vehicle mapping" [Jerry Ratcliffe, Chapter 21, pp. 534-35, in Stauffer and Bonafanti]. As with theft rates, recovery rates of stolen vehicles provide gross trend information. Another important expert observation is that globally "…the number of thefts in absolute terms has fallen since the mid-1990s, whereas the proportion of unrecovered vehicles has slightly risen (from 45% to 60%) in most industrialized countries." [Barbier, in Stauffer and Bonafanti] International treaties and other procedures regulate the actual return of the vehicle to the custody of the owner or insurance company.

2.1.3 Clearance Rates and Definitions

Clearance rates and definitions refer to "closing" cases of reported crimes, but the UCR program is very specific as to what can constitute a clearance:

1. Clearance by arrest,
2. Clearance by Exceptional Means, and

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4   http://www.albany.edu/sourcebook/pdf/t31472005.pdf

3. Clearances involving only persons under 18 years of age.

This latter category is significant in the consideration MVT since a high number of offenders are 18 years old or younger.

Clearance by arrest requires <u>all</u> of the following conditions to be met for at least one person:

- Arrested
- Charged with the offense
- Turned over to the court for prosecution

The arrest of one person may lead to the clearance of more than one case, or, the arrest of many persons can clear a single offense. Clearances reported for one year may also relate to offenses committed in past years.

Clearance by Exceptional Means refers to cases cleared by means other than arrest, as in a situation involving the death of the offender. <u>One</u> of the following conditions must be met:

- Identify the offender
- Gather enough evidence to support an arrest, make a charge, or turn the offender over to the court for prosecution
- Identify the exact location so that the suspect can be taken into custody immediately
- Circumstances outside the control of law enforcement that prohibit arrest, indictment, and prosecution of the offender

The recovery of property does not clear an offense.

Clearances Involving Only Persons Under 18 Years of Age refers to offenders in this category who have been cited to appear in juvenile court or before other juvenile authorities. Such citation is considered a "clearance by arrest" even though a physical arrest may not have occurred. The UCR website notes: "…When clearances involve both juvenile and adult offenders, those incidents are classified as clearances for crimes committed by adults." Clearance percentages for crimes committed by juveniles include only those instances where no adults are involved.

Of the MVTs reported in 2005, the following percentage of offenses (Table 1) were reported as cleared by arrest or Exceptional Means by motor vehicle type.

Table 1. MVTs Cleared by Arrest, 2005

	Autos	**Trucks/Buses**	**Other Vehicle**
Offenses known	745,304	174,409	88,159
Percent cleared by arrest (or exceptional means)	13.3	11.1	10.6

Overall property crime clearance rates (of which MVT is part) reported for 2005 were 12.7%, indicating a clearance rate slightly lower for autos, but higher for trucks and other vehicles.

3. Forensics

Motor vehicle theft now requires a separate multi-disciplinary approach to its investigation. Evidence of this approach is the recent publication of the comprehensive study edited by Eric Stauffer and Monica S. Bonfanti on *Forensic Investigation of Stolen-Recovered and Other Crime-Related Vehicles*. [Stauffer and Bonafanti] This work provides:

- extensive discussion on the problem of auto theft and general crime scene procedures
- documentation and discussions of narcotics, explosives, and gunshot residue detection
- vehicle identification
- recoveries of burned and underwater vehicles

Of particular interest for this paper were the treatment of vehicle crime mapping, vehicle tracking technologies, and international collaboration. The importance of forensics in MVT is underscored by the fact that stolen cars and trucks are often used in the commission of other crimes, including violent acts resulting in death or serious injury.

4. National Trends

For the United States, the motor vehicle theft statistics show a slight reduction over the past few years and a significant reduction in the theft rate since the early 1990s. The UCR program reported that MVT fell slightly between 2004 and 2005 from 1,237,114 thefts to 1,235,226 or 0.2%. (In terms of offenses charged, however, this number actually increased by 0.2%.) The MVT rate likewise fell from 421.3 thefts per 100,000 inhabitants to 416.7. These statistics also indicate significant improvement over the 1991 figures for both total thefts of 1,661,700 and a theft rate of 658.9. The current national numbers are still very much above the 1960 theft rate of 183 per 100,000 inhabitants. As indicated, the national rates are well below MVT rates in proximity to the southwest border. As theft rates fell on a national level, the southwest border states experienced an increase in total number of thefts.

4.1 Southwest Border States

A high percentage of the MVTs in 2005 occurred in the southwest border states of California, Arizona, New Mexico, and Texas. Total vehicle thefts in these four states increased from 409,889 to 413,864, accounting for approximately one third of all MVTs in the United States. Trends between from 2003 and 2005 varied within each state. See Table 2.

Table 2. MVT Trends in Southwest Border States, 2003 to 2005

	2003	**2004**	**2005**
California (rate per 100,000 inhabitants)	222,364 (633.2)	252,604 (703.8)	257,543 (712.8)
Arizona	57,668 (1,056.9)	55,306 (962.9)	54,905 (924.4)
NM	7,437 (400.9)	7,902 (415.2)	7,993 (414.5)
TX	102,680 (471.4)	94,077 (418.3)	93,423 (408.7)
SWBS Totals	390,149	409,889	413,864
U.S. Totals	1,260,471	1,237,114	1,235,226
SWBS Pct of U.S.	30.9	33.1	33.5

4.2 Southwest Border Regions

Definitions of the southwest border "region" can vary depending upon some government definitions. This study constructed a definition based on discussions with auto theft investigators. In addition, the statistics used for the vast majority of MVTs occurring in this region were taken from MSA-reported data. One advantage of this approach is that it provided 2006 as well as 2004 and 2005 data. The 2006 data was provided by the National Insurance Crime Bureau (NICB) that "mirror images" the UCR program database.

This MSA data was categorized as either those areas physically located on the border with Mexico or those areas in a "border region" within 5 hours driving time to the border. This temporal consideration was made in response to information received at the subject matters experts' meeting in Tempe, AZ, from June 28 to 29, 2007.

Organized in this way, the following information in Table 3 was obtained.

Table 3. MVTs by State from 2004 to 2006

MVTs	2004	2005	2006
CA Border and Border Region MSAs	146,331	141,383	139,411
AZ Border and Border Region MSAs	48,703	49,605	49,300
NM Border and Border Region MSAs	5,944	6,168	7,558
TX Border and Border Region MSAs	52,536	52,642	55,195
Totals	253,514	249,798	251,464

While relatively small in absolute terms, New Mexico has experienced a 27% increase in MVTs (when measured in terms of MSAs) and Texas, an increase of 5.1%. However, it should be noted that the MSA statistics do not include additional information covering non-MSA areas (as shown in Table 2), although MVTs in these areas tend to be less than the national average.

Theft rates for these areas should also be noted in terms of range. The highest MVT rate for the "Border Region MSAs" within California was 982.73 (San Diego-Carlsbad-San Marcos) 2005 for this period; for Arizona 1,123.61 (Phoenix-Mesa-Scottsdale) in 2004; for New Mexico 881.52 (Albuquerque) in 2006; for Texas 601.93 (Houston-Sugarland-Baytown) in 2004.

In a national ranking of the 21 MSAs reviewed to compile this data, 13 MSAs saw an increase in their national ranking in MVT rates from 2004 to 2006; six showed a decline, and one remained the same. In terms of actual increases in theft rates between 2004 and 2006, 11 MSAs showed an increase while 10 showed a decline. Seven of the 11 MSAs with increased MVT rates were located on the southwest border.

Related information may be found in Appendices B and C.

4.3 Theft Rates within Border Counties

These statistics can also be supplemented with "hotspot" reports where police jurisdictions have conducted such analysis. In San Diego County, an analysis performed by the Chula Vista Police Department showed motor vehicle theft rates ranging from 2.72 to 17.46 per 1,000 inhabitants for particular jurisdictions. The San Diego Police Department Southern Division (adjacent to the Mexican border) had a rate of 17.45. These rates are more than four times that for the nation (1746.0 vs. 416.7) and more than double that for California in 2005 (1746.46 vs. 712.8) when expressed in thefts per 100,000 inhabitants. See Appendix D.

There is a strong positive correlation between the rate of motor vehicle theft and proximity or access to the southwest border.

4.4 International Aspects

Internationally, the United States is the single largest source of stolen motor vehicles each year and accounts for about one third of annual vehicle thefts. According to information posted in the Interpol Vehicle Crime Website[5], "At the end of June 2007, the Automated Search Facility-Stolen Motor Vehicle (ASF-SMV) database….held more than 3.8 million records of reported stolen motor vehicles…"

This data point is consistent with the estimate discussed by Barbier that "…every year at least 3.4 million vehicles are stolen…" [Barbier, p. 545, in Stauffer and Bonafanti] Mikel Longman with the Arizona Department of Public Safety has also provided discussion of international comparative aspects of motor vehicle thefts and theft rates citing 2003 Interpol statistics showing that nations in the Western Hemisphere account for 1,772,045 stolen vehicles, close to 50% of stolen vehicles worldwide. [Longman, p. 9, in Stauffer and Bonafanti] For that year, the combined thefts reported by the United States (1,226,457), Canada (170,213), and Mexico (153,233) equal 1,549,903. Most of the Mexican thefts occurred in and around Mexico City, according to the practitioner experts who participated in this project.[6]

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[5] http://www.interpol.int/Public/Vehicle/DeFault.asp
[6] Notes: Tempe, AZ Meeting – June 28-29, 2007.

While motor vehicle theft is significant in the Western Hemisphere, flows of stolen vehicles appear to be increasing from developed to developing nations. "Perhaps half a million or more cars each year are transported from developed to less developed nations, hidden in containers or driven across national borders." [Clarke and Brown] Since the fall of the Berlin Wall, vehicle theft in Europe has increased steadily.

An area for additional research identified by Clarke and Brown concerns analysis of linkages between immigration and stolen vehicle trafficking patterns among other areas involving cross-border movement of people in association with other transnational crime. As will be shown, categories of stolen vehicle recovery information identified and discussed later in this paper will help underscore the utility of further work, as indicated by Clarke and Brown.

5. Bait Vehicle Technologies and Acquisitions

The main reason police departments acquire "bait vehicles" is to make arrests and take vehicle thieves off the street. Initially, the technology involved the installation of a video camera inside and the vehicle and physical surveillance of the vehicle that, depending upon the period of surveillance, could be personnel-intensive. The sophistication of this technology has grown with the introduction of remote vehicle engine shut-down switches, improved quality of audio and video, and alerting and tracking technologies. These improvements have allowed departments to expand the application of bait vehicles and their associated technologies into broader vehicle theft investigations.

Global positioning system (GPS)-enabling technologies have been introduced and provide a new dimension of capability so that the bait vehicle has its own geospatial awareness. These types of tools allow "geo-fencing" within specified areas of operations controlled by engine shut-down mechanisms.

While bait vehicle-associated technologies have steadily improved in terms of performance (often at lower costs) law enforcement agencies must still also acquire the appropriate vehicle for these operations. In many cases, the insurance industry will provide assistance.

In addition, governmental organizations such as Automobile Theft Authorities or Automobile Theft and Insurance Fraud Prevention Authorities operating in several states will make grants available to local law enforcement agencies for the acquisition of this technology. In other cases, state highway patrols, county sheriffs, and municipal police departments will make such investments, usually in coordinating with regional auto theft task forces. Applications for bait vehicles through state-wide authorities require very detailed information supporting the need for such technology, previous assessment experience, and detailed plans for utilization.

5.1 Concepts of Operations

Two principal concepts of operations are used in fielding bait vehicles:

- Arizona's bait vehicle program utilizes a public awareness campaign that states: "Bait Vehicles are Everywhere: Steal One and Go to Jail." Police departments within Arizona also post signage in parking lots and other areas where the goal is deterring even attempted theft or car prowls.
- Other agencies conduct operations to maximize the chances of taking criminals suspected of violent offenses off the street, particularly in the case of gang members, and undertake less publicized use of bait vehicles. Steps are taken to maximize operational security through the selection of vehicle types that may support operations aimed at curtailing "joy rides" or "commuter crimes."

The more controlled and less publicized concept of operations applies to those instances where agencies may have developed information that will enable the stolen bait vehicle to guide them to chop shops or points where contraband may be picked up.

5.2 Technologies

Companies supporting bait vehicle technologies and operations report that these types of vehicles are in use by over 300 agencies in the United States with fleets of between one and more than 50 vehicles. Battery life, communications, control, mapping, and tracking are the technology areas important to bait vehicle operations. Of these, the practitioner group participating in this report identified live streaming video capability as an important potential improvement in the operation of bait vehicles. Technologies improving battery life (e.g., enabling the vehicle to remain unattended for several days, control, mapping and tracking) were considered important as well, but clearly available.

At least two sources for "turn key" bait vehicle technologies exist as follows:

- the Stinger bait vehicle system by BSM Wireless (www.bsmwireless.com)
- the ST200 Sentry system offered by Cobham-Orion (www.orion.ns.ca).

In addition, because communications, video-audio recording, tracking, mapping, and control systems are available separately, some companies offer police departments to custom install these features on vehicles to enable them to be remotely monitored and tracked.[7] Many of these capabilities resemble those available to consumers in the purchase of cars and trucks as embedded anti-theft, roadside and distress assistance devices. Bait vehicle technologies offer multi-vehicle monitoring systems that provide evidentiary information through audio and video recording, including:

- Detailed digital street-level maps and "reverse geo-coding" to provide accurate location and address of vehicle position.

- Multiple wireless network support and seamless switching between wireless networks to make sure the system is always on.

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[7] www.acglobalystems.com

- Multiple inclusive/exclusive geographic fence capabilities providing set up for several pre-determined areas or zones. Should the vehicle leave a pre-determined zone, notification will be provided. These and other user-defined events can be communicated via text messaging, email, or cell phone.

A technology demonstration of live streaming video was provided to practitioners at the June 28-29, 2007, Subject Matter Expert group meeting in Tempe, Arizona. Bandwidth and other limitations on the transmission of live video and audio from inside the bait vehicle still remain in the commercial development stage. However, it was clear that this capability was a specific area where technology advancement would be useful.

5.3 Bait Vehicle Deployments

5.3.1 California

Bait vehicle technologies are not new to states, cities, and counties along the southwest border. On July 20, 1995, then-Chief of Police (of San Diego) Jerry Sanders recommended his northern division to receive a Police Executive Research Forum (PERF) award as a result of success reported using a "VARDA" Car. At that time, through a Problem Oriented Policing (POP) project, it was determined that Volkswagen Jettas and similar vehicles were a prime target of "car prowls." Technology at that time did eliminate the need to perform physical surveillance and with the vehicle's location know, a radio message to units was sufficient for a response. Technology also permitted remote engine shut down. Working with the National Insurance Crime Bureau, the officers working on this project were able to obtain a vehicle as well as a "bait radio" and $1500 in insurance coverage during the six-month operation. The insurance aspect of bait vehicle operation is especially important because of damage that occurs to the vehicle as the result of "prowls" or its operation.

A surge in motor vehicles thefts in 2001 prompted the San Diego Police Department to expand their bait vehicle efforts. Introduction of these units also reflected improved technologies and increased participation by insurance companies [Higgins].

Personnel with the San Diego County Sheriff have also operated bait vehicles in various parts of the area. As indicated in the discussion concerning concepts of operation, these vehicles have reported good success in covert operations intended to quickly arrest car thieves, who may also be gang members.

Reports of bait vehicles used by San Diego law enforcement indicate that these vehicles on occasion have been driven into Mexico [Repard].

Bait vehicles are also part of the operations of the California Highway Patrol (CHP) Foreign Export Recovery Team (FEAR) that work northern and southern parts of California. This program is based on a California statute that funds CHP to implement an ongoing, statewide motor vehicle theft program with a focus on the exportation of stolen motor vehicles. [CHP. "Southwest Border Vehicle Thefts," Briefing, 2007.]

California law enforcement personnel providing information for this report emphasized the importance of rapidly acquiring the right kind of bait vehicle to quickly and effectively respond to changing motor vehicle theft preference. In the California area, during the time period that this research was conducted, there appeared to be an emphasis on high-end vehicles for large resale profit across the border. Many such motor vehicle thefts were indicated to be "custom ordered" through large, well-organized, compartmented, and disciplined criminal organizations also dealing in human and narcotics trafficking.

5.3.2 Arizona

The Arizona Automobile Theft Authority (AATA) has a mission to "…deter vehicle theft through a statewide cooperative effort by supporting law enforcement activities, vertical prosecution, and public awareness/community education programs." Bait vehicles are playing a significant role in Arizona where motor vehicle theft is very high, albeit showing a reduction in the Phoenix-Mesa-Scottsdale MSA from 2005 to 2006 while increasing in the Tucson and Yuma border MSAs.

Like the California FEAR program, the AATA has an effort specific to cross-border automobile theft, including performance measures to decrease the number of stolen vehicles crossing into Mexico, increasing intelligence capabilities of law enforcement to achieve this goal, and increasing recoveries of stolen vehicles abandoned in Mexico.

The Arizona bait vehicle program began statewide in 2003 with an emphasis on prevention as evidenced by the message that "Bait Cars are Everywhere…Steal One and Go to Jail."[8] The National Insurance Crime Bureau (NICB) and 13 insurance companies make this program possible within the state. Bait vehicles are operated in many jurisdictions in the Phoenix areas including Tempe and Scottsdale as well as in coordination with the Arizona Regional Auto Theft Team Law Enforcement Response (RATTLER) program.

The introduction and operation of more than 30 bait vehicles in Arizona since January 1, 2003, when compared to the overall statistics reported in previous years, may appear to be a factor in both a surge in stolen vehicle recoveries and arrests from 2001 to 2003 as shown in Table 4.

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[8]   http://www.azwatchyourcar.com/programs.html

Table 4. MVT Trends in Arizona, 2001 to 2003

	2001	**2002**	**2003**
Stolen Vehicles Recovered	2295	2486	2883
Estimated Value of Recoveries	$20.7m	$23.8m	$32.4m
Felony Arrests	303	299	335
Theft Rates	974	1039	999
Source: http://www.azwatchyourcar.com/january_december_2001.html;_2002.html _2003.html			

On April 11, 2005, the AATA and NICB announced the hundredth arrest for motor vehicle theft through the use of bait vehicles, which occurred in Scottsdale, Arizona.

During this period, the National Law Enforcement and Corrections Technology (NLECTC) Border Research and Technology also assisted the Pima County, AZ, Sheriff in the configuration of a bait vehicle that also resulted in a number of arrests.

At the project meeting in Tempe, AZ, on June 28-29, 2007, personnel supporting the Arizona program indicated that vehicle type was an important part of conducting bait vehicle operations in the immediate border areas. Here the emphasis appeared to be on trucks or vans that can be used to carry contraband and migrants crossing the border illegally. For example, in one six-day period in the Sells (Tohono O'Odham Nation) and Casa Grande, Arizona, area, as many as 32 utility trucks were stolen, principally the Ford FT250 type.

5.3.3 New Mexico

The Albuquerque Police Department is in the process of acquiring and configuring bait vehicles. Initial bait vehicles were acquired in 2005 as part of the "Changes and Key Initiatives," which is part of a county-wide auto theft task force with the Bernalillo Country Sheriff's Office and the New Mexico State Police. As noted in the discussion of the motor vehicle theft statistics, the State of Mexico as well as the MSAs of Las Cruces and Albuquerque have experienced an increase in auto thefts. It may be important to understand how the newly formed operations of the Albuquerque/New Mexico bait vehicle program generate and share information with the other southwest border states.

5.3.4 Texas

Texas border MSAs have experienced a somewhat significant increase in the number of stolen vehicles in the past three years from 8,472 in 2004 to 9,570 in 2006. Agencies within these areas are acquiring bait vehicles as part of a response to this trend.

In addition, the Houston Police Department has been operating a robust bait vehicle program for some time with as many as 100 assigned to that agency and reports of more than 1,000 thefts of these bait vehicles in a single month. Importantly, the Highway 59 corridor leading into Mexico appears to be a heavily traveled, two-way route for narcotics, money, and illegal migrant flows.

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In contrast to the "high-end" or "special order" vehicle thefts reported along the California/Mexico border, more than 640 Ford trucks were stolen in Texas in April 2007 with more than 240 stolen from the Houston area.[9]

5.3.5 International (Canada)

Canadian law enforcement uses bait vehicles as part of ongoing vehicle theft prevention programs.[10] Seven police departments in the greater Vancouver, British Columbia, area operate the bait vehicle fleet as part of the Integrated Municipal Provincial Auto Crime Team (IMPACT). In addition, the Vancouver Police Department operates its own fleet of bait vehicles. The "bait vehicle" concept applies to motorcycles, snowmobiles, all terrain vehicles (ATV), and watercraft.

This level of program deployment was motivated by the chronic level of vehicle thefts in the British Columbia area, estimated to be as many as 20,000 per year with 180 people reported killed as the result of crashes involving stolen vehicles. The Provincial Ministry of Solicitor General provides funds for bait vehicles and the overall vehicle theft reduction effort in British Columbia. This funding has enabled British Columbia to operate the largest fleet of bait vehicles in North America and has helped reduce vehicle theft in that part of Canada by almost 20%, according to the www.baitcar.com website.

6. Reporting and Sharing Information on MVT

6.1 Collection of Information

The collection of MVT information originates with a stolen vehicle report, which includes the vehicle registration, the owner, the insurance company, the location, time, and date of the theft. Time (and in some cases, the date) of the theft may be subject to estimation unless an eyewitness or the owner was actually present during the theft.

Reliable title information is key to timely exchange of information between state jurisdictions to verify legality of ownership and safety of the vehicle as well as sharing information on titles of stolen vehicles. The National Motor Vehicle Title Information System (NMVTS) allows an electronic means to verify and exchange titling, brand, and theft data among motor vehicle administrators, law enforcement officials, prospective purchasers, and insurance carriers. Of the Southwestern Border States, Arizona is currently fully online, Texas is participating in the program through "batch" implementation providing regular updates to the NMVTS central files, and New Mexico is developing online participation. Roughly 60% of the United States vehicle population is in the system with 30 states currently participating.[11]

In addition to the information collected at the time of the incident, Automated License Plate Reading (ALPR) technology is being used in the detection of license plates of stolen vehicles.

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[9]   e-mail from Sgt. Joseph Smith, Houston Police Department to BRTC; May 17, 2007.
[10]   Website on operational experience with bait vehicles in British Columbia: http://www.baitcar.com.
[11]   See: www.ojp.usdoj.gov/BJA/nmtvis.html

ALPR operates by "reading" the license plate with optical character reading (OCR) technology that is in turn compared against a database that contains license plate numbers for reported stolen vehicles. This and other types of databases, e.g., parking violation warrants, etc., are updated regularly. ALPRs may operate from a fixed location (such as on the border at a Port of Entry or a highway checkpoint), a mobile platform (in the case of a police car where the technology is sometimes mounted in the light bar), or as a hand-held unit. Importantly, ALPR is capable against both moving and stationary vehicles.

6.2 Recoveries

Stolen vehicles are considered "recovered" when they are found and their owners and insurance carriers have been notified. The national recovery rate has declined since 1987 from more than 80% in 1987 to about 60%. Recoveries of stolen vehicles worldwide are now less than 40%. In many cases, recoveries can occur within hours of the vehicle reported as stolen. In other instances, a vehicle may never be recovered or it is located in a remote location or its condition makes it extremely difficult for owners or insurance carriers. International agreements and liaison mechanisms with other countries define procedures on recovering vehicles stolen in the United States and later found in another country.

Detailed recovery information is critical to understanding patterns associated with MVT in general and cross-border vehicle theft in particular. However, there appears to be relatively little information that is being systematically analyzed at the present time.

"To establish with any degree of accuracy what routes are used by the criminals, a certain amount of basic information is required. The data we have at the present time relates to the places where vehicles are found (not conclusive given the relatively small number of vehicles recovered for financial gain as far as theft is concerned, the places where vehicles are intercepted at some stage in the process (too rare), and the qualitative information resulting from operational analyses (too infrequent)." [Barbier, p. 547, in Stauffer and Bonafanti]

Information of recoveries of vehicles stolen in the United States and recovered in Mexico is a primary mission of the Border Auto Theft Information Center (BATIC) in El Paso, TX. Although located in Texas, BATIC provides assistance to law enforcement agencies in other states. The Texas Department of Public Safety (TXDPS) created BATIC in 1994 with a grant from the Texas Automobile Theft Prevention Authority. BATIC's main purpose is "to provide information on vehicles reported stolen in the United States and Mexico to any law enforcement official who is authorized to receive this information."

In order to accomplish this,

> "…BATIC has the capability to check the records of the National Crime Information Center Computer (NCIC) and the Texas Crime Information Center Computer (TCIC). BATIC also has the ability to correct errors in Vehicle Identification Numbers through a VIN EDIT program and have access to purged stolen vehicle files. BATIC will contact Mexican agencies on request from

> United States agencies on Vehicle Identification Numbers, License Plates, Driver's License, [and] Criminal Histories if obtainable."

BATIC has processed more than 1.3 million calls since its operation began in 1994. More than 60,000 stolen vehicles have been identified through inquiries to BATIC. Of the stolen vehicles identified to BATIC, 20,454 have been recovered. The value of these recoveries is estimated at $256,201,340, or more than one quarter of a billion dollars.

In the course of this project, it was suggested to BATIC that analysis of routes of cross-border vehicle theft might be improved if GPS coordinates could be reported as part of the information obtained from Mexican authorities in the reporting of vehicles recovered in Mexico. Information was also requested on sorting both the types of vehicles stolen in the United States and recovered in Mexico as well as the origin of the vehicle theft. These additional data elements are viewed could aid further analysis of cross-border auto theft and inform deployments of bait vehicles.

On July 17, 2007, LoJack Corp. announced that its recovery location system would be available to CarMart Mexico through licensing to share key technologies that will permit system activation on either side of the border. In its press release announcing this decision, LoJack cited "reports we receive from California, Arizona, and Texas indicated that nearly 20,000 stolen vehicles are driven across the U.S/Mexico border annually. In Arizona…the number could be as high as 12,500 vehicles."

Information-sharing resources are being improved to better track vehicles stolen in Mexico and driven into the United States. On March 15, 2007, it was announced that the Insurance Services Office (ISO) Automobile-Property Loss Underwriting Service (A-PLUS) database will cross-check for cars stolen in Mexico and driven into the United States through an agreement with the Coordinating Office of Insured Risks and the Mexican Association of Insurance Companies (OCRA-AMIS).

Of special note is the BATIC response to information requested for this project on recent recoveries in Mexico of motor vehicles stolen in the United States. Data were provided on vehicle type and the location where the theft was reported to police. For the period of 2006 to August 2007, this data search showed a total 7,437 motor vehicles reported through BATIC as recovered in Mexico. While the vast majority of these thefts occurred in California, Arizona, New Mexico, and Texas, a significant number of vehicles had been stolen from Nevada and Colorado. This information also disclosed that thefts of vehicles ending up in Mexico were reported to police in at least 38 states, including Washington and Maine. For a complete listing of the states and vehicles categorized by type, see Appendix E.

While the location of the vehicle at the time of its theft is often associated with an address, recoveries in Mexico seldom have an associated address. An opportunity for improved analysis exists if Mexican authorities were to report the address of the recovery or even the GPS coordinates. This data could help crime analysts to perform more in-depth geospatial analysis when combined with the date and time of theft as well as the date of recovery.

6.3 Analysis

Analysis of the cross-border vehicle thefts utilizing ALPR data and geospatial analysis tools can yield important information on the vehicle types stolen as well as the time and day of their crossing into Mexico. The San Diego County District Attorney's crime analysis section has performed such work and the following information would appear to be of value especially in the determination of those types of vehicles most frequently stolen and taken into Mexico.

Using information from 3,385 cases, a preliminary analysis of ALPR data matched against license plates of vehicles reported stolen and confirmed going into Mexico for 2006 showed extremely high numbers of pick-up trucks, especially 1997, as well as 2001 to 2005 model years. Honda Civics, Honda Accords, and Nissan Sentras also made a up a large number of the San Diego County stolen vehicles in data reviewed from ALPRs along with information from National Crime Information Center (NCIC) and Automated Regional Justice Information System (ARJIS).

In addition to providing information on vehicle stolen by type, this work also was able to show a pattern of occurrence in terms of when the license plates of the San Diego County vehicles reported as stolen actually crossed the border in data examined from most of 2005 (except October) and 2006. Comparing the time of southbound crossing to the time of the reported theft may also provide important information.

Appendix F contains information on stolen vehicle types and patterns of border crossing.

7. Bait Vehicles as a Tool in the Prevention and Investigation of Cross Border Vehicle Theft: Lessons Learned

The relationship between the deployment of bait vehicles in areas along the southwest border and the reduction of cross-border vehicle theft can only be inferred at this point. However, several trends have been previously identified, e.g., AATA introduction of bait vehicles in 2003 and increases in felony arrests and vehicle recoveries for that year would suggest a positive correlation. Reported recent acquisition decisions by agencies along the U.S. southwest border would also suggest as much.

An area for potential further analysis is the relationship of arrests obtained through the use of bait vehicles and information received from the arrestees for use in clearances of other vehicle thefts or crimes. Because the primary purpose of bait vehicle deployments is to thwart car thieves, the subsequent information supporting investigative leads produces conclusions in this area would require additional work. This may facilitate additional recoveries of other vehicles, should the offenders provide useful information. However, the difficulties here are severe, given the reported compartmented nature of large cross-border vehicle theft operations, as well as other than law enforcement sanctions facing informants.

More dynamic analysis of cross-border vehicle theft trends may be an area of important further effort in the selection of the most promising bait vehicle, given the introduction of ALPR

technology combined with geospatial analytical tools. This would complement expanded information sharing for law enforcement purposes not only with Mexico but with any nation where vehicles stolen in the United States are recovered. Combined with information on vehicle types recovered in Mexico, the location of these recoveries could also enhance route mapping in order to help inform the placement of bait vehicles.

Implementation of live streaming video as identified as the key technology area for further effectiveness of bait vehicles as well as enhancing officer safety should be considered the key technology finding in the improvement of bait vehicle operations.

The use of bait vehicle technology in the prevention, disruption, and investigation of cross-border motor vehicle thefts may be enhanced in the following ways:

- Timely deployment of bait vehicles that match the types of automobiles and trucks targeted for cross border theft

- Dynamic analysis of motor vehicle theft trends through the use of geospatial, timeline, and other analytical tools to better inform very near-term operational decisions, including vehicle type selection and area of deployment

- Expanded information acquisition and sharing to include the precise location of recovered vehicles inside Mexico as well as the reported date and time of recovery

- Deployment of live streaming video from inside bait vehicles in order to maximize offender-generated information available to law enforcement and investigators as well as minimize threats to officer safety

- Proper sizing of bait vehicle "fleets" in areas where cross-border motor vehicle theft is especially chronic

8. Organizations and Programs

Arizona Automobile Theft Authority (AATA) – Arizona's program to reduce vehicle theft through a statewide cooperative effort by supporting law enforcement investigation, prosecution and public awareness programs. www.aata.state.az.us

Border Auto Theft Information Center (CHP) – A program of the Texas Auto Theft Prevention Authority to exchange information on cross border vehicle theft and facilitate recoveries of stolen vehicles recovered in Mexico. www.txdps.state.tx.us/criminal_law_enforcement/motor_vehicle_theft/index.htm

California Highway Patrol-Foreign Export and Recovery – Ongoing program implemented through CHP to prevent and investigate vehicle theft with emphasis on the exportation of stolen motor vehicles.

International Association of Automobile Theft Investigators (IAATI) – World-wide organization formed in 1952 of more than 3800 investigative agencies to improve communication and coordination between professional auto theft investigators. www.iaati.org/aboutiaati.asp

National Crime Information Center (NCIC) – NCIC is a computerized index of criminal justice information (i.e., criminal record history information, fugitives, stolen properties, missing persons). It is available to Federal, state, and local law enforcement and other criminal justice agencies and is operational 24 hours a day, 365 days a year. http://www.fbi.gov/hq/cjisd/ncic.htm

National Insurance Crime Bureau (NICB) – "The National Insurance Crime Bureau is a not-for-profit organization that receives support from approximately 1,000 property/casualty insurance companies. The NICB partners with insurers and law enforcement agencies to facilitate the identification, detection and prosecution of insurance criminals." www.nicb.org

National Motor Vehicle Title Information System (NMVTIS) – The NMVTIS is a system that allows an electronic means to verify and exchange titling, brand, and theft data among motor vehicle administrators, law enforcement officials, prospective purchasers, and insurance carriers. It is implemented through a partnership between the USDOJ Bureau of Justice Assistance and the Federal Bureau of Investigation (FBI). www.ojp.usdoj.gov/BJA/grant/nmvtis.html

To view the NMVTIS's Executive Summary that describes its state participation, associated legislation, benefits, and funding, go to the following website:

http://www.ojp.usdoj.gov/BJA/grant/NMVTISExecSum.pdf

Participating states are shown in a graphic created by the American Association of Motor Vehicle Administrators and found at the following web site: http://www.aamva.org/TechServices/AppServ/NMVTIS/JurisdictionParticipation.htm

North American Export Committee (NAEC) – The mission of the NAEC is to bring together those entities that share a common goal of combating the exportation of stolen vehicles and to facilitate contacts for the exchange of information and ideas to achieve that goal." http://www.naexportcommittee.org/mission.asp

Uniform Crime Reporting (UCR) program – The Uniform Crime Reporting (UCR) Program was conceived in 1929 by the International Association of Chiefs of Police to meet a need for reliable, uniform crime statistics for the nation. In 1930, the FBI was tasked with collecting, publishing, and archiving those statistics. Today, several annual statistical publications, such as the comprehensive *Crime in the United States*, are produced from data provided by nearly 17,000 law enforcement agencies across the United States. http://www.fbi.gov/ucr/ucr.htm

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Appendix A: SME Meeting Participants: Law Enforcement and Technology Companies

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Appendix B: Motor Vehicle Thefts – Southwest Border State Trends – 1990 to 2006

MVT SWB States - 1990 to 2006	1960	2004	2005	2006
Total Thefts SWB States: CA, AZ, NM, TX		409,889	413,864	
Total Thefts: SWB States - Border and "Border Region" MSAs		253,554	249,798	251,464
% total thefts of SW Border State Totals		61.85	60.35	
Total Thefts: U.S.	328,200	1,237,851	1,235,226	
% total thefts of SW Border States of U.S.		33.11	33.5	
% MVT Border and "Border Region" MSAs of U.S.		20.48	20.22	
CALIFORNIA				
Thefts	53,453	252,604	257,543	
Rate per 100,000 inhabitants	340.1	704.8	712.8	
MSA-San Diego-Carlsbad-San Marcos (on border)				
Thefts		27,402	28,845	26,732
Rate…		938.07	982.73	911.28
MSA- El Centro (on border)				
Thefts		1,047	1,169	1,195
Rate		702.74	767.34	766.9
MSA-Riverside-San Bernadino-Ontario (near border)				
Thefts		31,564	34,017	31,800
Rate		865.88	898.52	813.31
MSA-LA-Long Beach-Santa Ana (near border)				
Thefts		86,318	86,564	79,714
Rate		673.47	671.07	616.81
CA "Border Region" MSA's				
Thefts		*146,331*	*141,383*	*139,411*
% of Total Thefts for State		*57.9*	*55*	
ARIZONA				
Thefts	4,406	55,306	54,905	
Rate….	338.4	963.5	924.4	
MSA - Tucson (near border)				
Thefts		7,436	7,569	8508

MVT SWB States - 1990 to 2006	1960	2004	2005	2006
Rate…..		835.08	834.93	920
MSA -Yuma (on border)				
Thefts		936	1,036	1,257
Rate…..		548.92	589.88	693.41
MSA - Phoenix-Mesa-Scottsdale (near border)				
Thefts		40,371	41,000	39,535
Rate…..		1,123.61	1,104.14	1,022.88
AZ "Border Region" MSAs				
Thefts		*48,743*	*49,605*	*49,300*
% of Total Thefts for State		*88.13*	*90.34*	
AZ BORDER MSAs				
Thefts		*8,372*	*8,605*	*9,765*
% of Total Thefts for State		*15.13*	*15.67*	
NEW MEXICO				
Thefts	2,505	7,902	7,993	
Rate…	263.4	415.2	414.5	
MSA - Las Cruces (on border)				
Thefts		359	447	524
Rate…..		196.67	237.1	276.6
MSA - Albuquerque (border "region")				
Thefts		5,585	5,721	7,034
Rate….		728.35	732.17	881.52
NM Border MSA				
Thefts		*359*	*447*	*524*
% of Total Thefts for State		*4.5*	*5.5*	
TEXAS				
Thefts	15,975	94,077	93,423	
Rate…	166.8	418.6	408.7	

MVT SWB States - 1990 to 2006	1960	2004	2005	2006
MSA-El Paso (on border)				
Thefts		2,715	3,145	3,590
Rate….		386.47	441.33	497.51
MSA-Laredo (on border)				
Thefts		1,418	1,329	1,608
Rate….		666.75	607.39	715.64
MSA-McAllen-Edinburg-Mission (on border)				
Thefts		2,960	3,035	2,910
Rate……		465.87	461.73	429.03
MSA-Brownsville-Harlingen (on border)				
Thefts		1,379	1,327	1,462
Rate		380.77	357.85	386.45
TX Border MSAs				
Thefts		**8,472**	**8,836**	**9,570**
% of Total Thefts for State		**9.00**	**9.4**	
MSA-Austin-Round Rock (3.5 hrs to border-Laredo)				
Thefts		3,978	3,845	3,873
Rate		289.1	272.46	266.64
MSA-Corpus Christi (2.5 hrs to border-Laredo)				
Thefts		1,383	1,398	1,219
Rate		340.71	341.27	294.76
MSA-Houston-Sugarland-Baytown (5 hrs to border-Laredo)				
Thefts		30,543	30,202	31,459
Rate		601.93	583.43	595.81
MSA-Midland (3.3 hrs to Marfa)				
Thefts		164	216	238
Rate		138.1	180	196.09
MSA-Odessa (3 hrs to Marfa)				
Thefts		300	257	327
Rate		244.01	207	260.89
MSA-San Angelo (2.6 hrs to Del Rio)				
Thefts		214	229	186
Rate		202.53	217	176.53

MVT SWB States - 1990 to 2006	1960	2004	2005	2006
MSA-San Antonio (2.3 hrs to Laredo)				
Thefts		7,244	7,424	8,086
Rate		399.04	400.75	427.88
MSA-Victoria (est. 3 hrs to Laredo)				
Thefts		238	235	237
Rate		210.69	207.50	209.08
TX "Border Region" MSAs				
Thefts		*44,064*	*43,806*	*45,625*
"Border Region" + Border MSAs thefts		*52,536*	*52,642*	*55,195*
% of total thefts for State		*55.84*	*56.35*	
United States				
Rate…	183	421.5	416.7	

Appendix C: NICB "Hot Spots" Report for 2004–2006 Organized by Border and Border Region MSAs

NICB — NATIONAL INSURANCE CRIME BUREAU

Updated 4/27/07

Rank 2006	Rank 2005	Rank 2004	MSA	MSA Name	2006 Thefts	2006 Rate	2005 Thefts	2005 Rate	2004 Thefts	2004 Rate	Rate trend	Change
*	*	*	38060	Phoenix-Mesa-Scottsdale, AZ Metropolitan Statistical Area	39,535.00	1,022.88	41,000.00	1,104.14	40,371.00	1,123.61	down	none
10	15	13	46060	Tucson, AZ Metropolitan Statistical Area	8,505.00	920.00	7,569.00	834.93	7,436.00	835.09	up	up
11	8	8	41740	San Diego-Carlsbad-San Marcos, CA Metropolitan Statistical Area	26,732.00	911.28	28,845.00	982.73	21,402.00	938.00	down	down
13	20	16	10740	Albuquerque, NM Metropolitan Statistical Area	7,034.00	881.52	5,721.00	732.17	5,585.00	728.35	up	up
15	12	11	40140	Riverside-San Bernardino-Ontario, CA Metropolitan Statistical Area	31,800.00	813.31	34,017.00	898.52	31,564.00	865.93	down	down
18	17	20	20940	El Centro, CA Metropolitan Statistical Area	1,195.00	766.90	1,169.00	767.34	1,047.00	702.74	up	up
22	32	23	29700	Laredo, TX Metropolitan Statistical Area	1,608.00	715.64	1,329.00	607.39	1,418.00	666.75	up	up
23	33	40	49740	Yuma, AZ Metropolitan Statistical Area	1,257.00	693.41	1,036.00	589.88	936.00	548.92	up	up
30	22	21	31100	Los Angeles-Long Beach-Santa Ana, CA Metropolitan Statistical Area	79,714.00	616.81	86,564.00	671.07	86,318.00	673.47	down	down
32	37	32	26420	Houston-Sugar Land-Baytown, TX Metropolitan Statistical Area	31,459.00	595.81	30,202.00	583.43	30,543.00	601.93	down	none
51	81	98	21340	El Paso, TX Metropolitan Statistical Area	3,690.00	497.51	3,145.00	441.33	2,715.00	386.47	up	up
79	76	66	32580	McAllen-Edinburg-Mission, TX Metropolitan Statistical Area	2,910.00	429.03	3,035.00	461.73	2,960.00	465.87	down	down
81	99	96	41700	San Antonio, TX Metropolitan Statistical Area	8,086.00	427.88	7,424.00	400.75	7,244.00	399.04	up	up
99	119	103	15180	Brownsville-Harlingen, TX Metropolitan Statistical Area	1,462.00	386.45	1,327.00	357.86	1,379.00	382.77	up	up
149	128	129	18580	Corpus Christi, TX Metropolitan Statistical Area	1,219.00	294.76	1,398.00	341.27	1,383.00	340.71	down	down
161	200	244	29740	Las Cruces, NM Metropolitan Statistical Area	524.00	276.60	462.00	249.02	359.00	196.60	up	up
170	173	167	12420	Austin-Round Rock, TX Metropolitan Statistical Area	3,873.00	266.64	3,845.00	272.46	3,978.00	289.10	down	down
178	239	197	36220	Odessa, TX Metropolitan Statistical Area	327.00	260.89	257.00	206.77	300.00	244.01	up	up
222	238	231	47020	Victoria, TX Metropolitan Statistical Area	237.00	209.08	235.00	207.43	238.00	210.69	down	up
238	268	302	33260	Midland, TX Metropolitan Statistical Area	238.00	196.09	216.00	179.98	164.00	138.10	up	up
265	231	237	41660	San Angelo, TX Metropolitan Statistical Area	186.00	176.53	229.00	216.98	214.00	202.53	down	up

Source: National Insurance Crime Bureau

Appendix D: San Diego County – MVT Thefts and Recoveries per 1,000 Residents
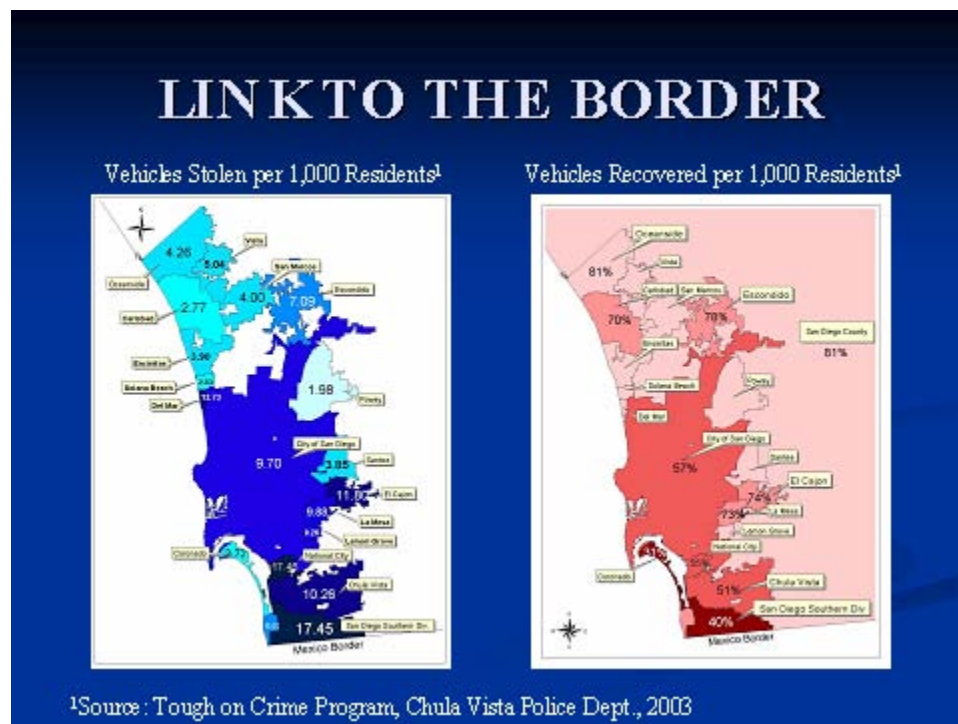
Appendix E: U.S. MVTs: Recovered in Mexico: 2006 to August 2007 Source: BATIC

State	Sedan	LL Multi	Trucks	Vans	Other
AL	2	1	1		1
AR		1	2		1
AZ	310	303	588	17	33
CA	1111	884	941	89	119
CANADA	1	1			
CO	32	136	27	3	13
CT	1				
FL		15	31	3	2
GA	1	7	13		1
IA			1		
ID			1		
IL	4	9	5		3
IN		2	1		
KS	1	4		1	
LA	1		3		1
MA	3		3		1
MD	2	1	2		
ME	1				
MI			1		
MN	3	1	2		
MO	2	2	5		
NE		1	2		
NC	2	3	2		
NJ	3	3	2		1
NM	559	36	117	1	20
NV	44	41	147	8	
NY	1	8	1		
OH	2	2			
OK	5	8	10		
OR	1	2			
PA		1	1		
RI	1	1	1	1	
SC			2		
TN	3	3	3		
TX	505	664	855	92	116
UT	3	7	4	4	1
VA		1			
WA	4	3	3		
WI	1	1			
WY	1				
USNAVY			1		
Ontarion				1	

Appendix F: San Diego County – License Plate Reader-Vehicle Theft Analysis for 2005 and 2006

SD County Veh Thefts - LPR Crossing
2005 - 2006 (except Oct. 2005)

CASES: 3,385

SD County Stolens - LPR 2006

38
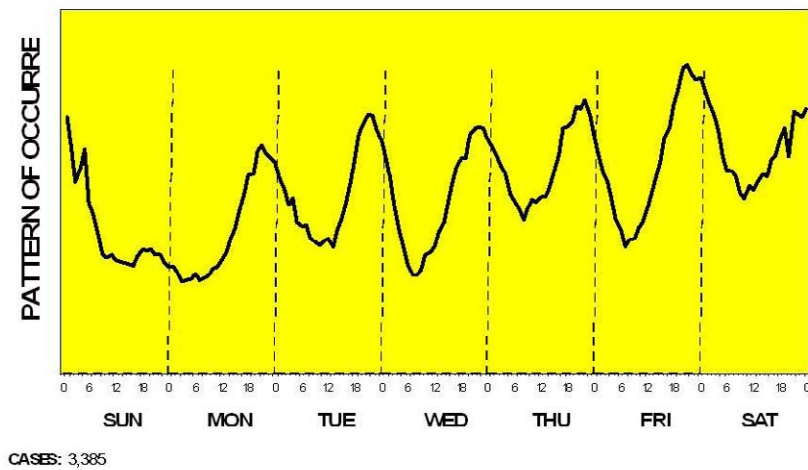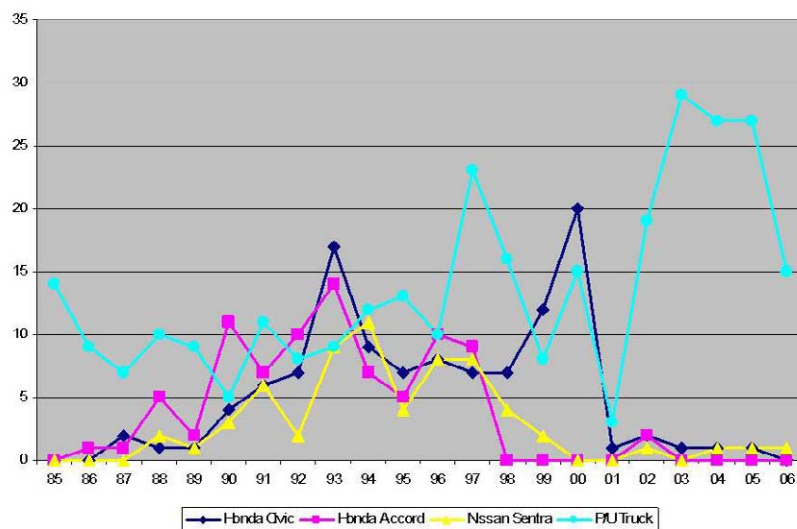
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