Proposal for the Reduction of Auto Theft in Berkeley

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I. Background

Auto theft has increased in Berkeley to the point where it is a significant issue in many neighborhoods. More than 1,000 cars are stolen in Berkeley every year. Berkeley has seen the number of auto thefts increase by more than 11% per year from 2000 to 2003. Almost 25% of Berkeley's neighborhoods saw increases of over 40% per year over that same time frame. (see Auto Theft by Census Tract Table in Appendix 1)

Berkeley's problem is much worse than the surrounding community. Our rate in 2003 of 1315 cars stolen per 100,000 population is 50% worse than Alameda County and almost 100% worse than the State of California as a whole. The value of the cars stolen in Berkeley in 2003 was well over $3.5 million. Our worst neighborhoods are more than 50% above the rate for Berkeley as a whole. (see Auto Theft Tables in Appendix 2 and Auto Theft Rate per 100K Table in Appendix 3) Since the cost of insurance in California is based on your zip code, areas with excessive auto theft penalize all vehicle owners with higher insurance premiums.

There are no statistics available for the specific type of cars that are stolen in Berkeley, but the top 10 stolen vehicles in California for 2004 average 12 years old and have a value of approximately $2,750. Such cars may not seem like they warrant much investment in protective systems, but these cars are likely the main means of transportation for their owners. The permanent, or even temporary, loss of that vehicle can put extraordinary pressure on already tight incomes. (see Top 10 Stolen Vehicle Table in Appendix 4)

Often when the owner gets their car back after its stolen, there is a significant cost to cover the damage that was done to the car in the theft, or its subsequent stripping. It's not uncommon for the damages to be enough for the insurance company to declare the vehicle a total loss even where the person carries comprehensive insurance.

There are also new, or nearly new, vehicles stolen in Berkeley. Just as quickly as manufacturers come up with new solutions aimed at deterring auto theft, such as the RF ID key that will not let a car start without the key present, auto thieves learn that they can use a Taser to scramble the computer for a few seconds and start the car.

Alameda County faces problems prosecuting auto theft given its other pressing crime problems. The clearance rate for auto theft in Alameda County has averaged approximately 8% during the period 2000 to 2001. This is slightly lower than the clearance rate for burglary, but more than 75% below the combined clearance rate for violent crimes. (see Clearance Rate Table in Appendix 2) Nationally the rate for clearance was 13.8% in 2002, almost 60% greater than in Alameda County.

II. Other Communities Solutions

From paper by IAN AYRES AND STEVEN D. LEVITT in The Quarterly Journal of Economics, February 1998

One solution that other communities have tried is the introduction of Lojack, a GPS based system that can be turned on after a car is stolen and whose signal can be tracked by the police – to the car, often to the thief still in possession of the car and in numerous cases to the chop shops that dismember cars for the parts market. Lojack reports 90% of the cars equipped with their system are recovered within 24 hours of their being stolen.

A side benefit of the quick recovery is that the loss per stolen vehicle for cars not equipped with Lojack, based on self-reported losses in the National Crime Victimization Survey, is roughly $4000 per vehicle. According to company estimates, vehicles equipped with Lojack sustain slightly less than $1000 worth of damage on average. That is a huge savings and could well mean the difference between having their car repaired through an insurance claim and having the car declared a total loss by the insurer. In California insurers offer up to a 33% reduction in comprehensive premiums for vehicles equipped with Lojack.

Cities across the country have seen significant drops in auto thefts with even small penetrations of Lojack in the market. Boston (5% penetration) has experienced a 50 percent decline in auto theft rates since the introduction of Lojack, going from nearly twice the rate for large cities to only slightly higher than average. Newark (- 35.0 percent) and Los Angeles/Long Beach (- 19.6 percent) both had substantially less penetration and have seen substantial declines since the introduction of Lojack. In both cases, the post-Lojack decline represent a break from past trends.

The cities initially targeted by Lojack were perennially high auto theft cities. In 1973, for instance, almost two decades before Lojack entered most of these markets, per capita auto theft rates were 64 percent higher than average for big cities. It is clear from these statistics that Lojack affects criminal behavior, even at low penetration rates.

There are various reasons why the presence of Lojack makes auto theft riskier and less profitable, leading to a reduction in the number of such crimes. First and foremost, Lojack disrupts the operation of ‘‘chop-shops’’ where stolen vehicles are disassembled for resale of parts. In Los Angeles alone Lojack has resulted in the breakup of 53 chop-shops. Second, data collected in California suggest that the arrest rate for stolen vehicles equipped with Lojack is three times greater than for cars without Lojack (30 percent versus 10 percent).

If there is a subset of professional auto thieves who steal large numbers of vehicles with virtually no likelihood of being caught in the absence of Lojack, then the introduction of Lojack may have a dramatic impact on their activities. For example, a professional thief stealing 100 cars a year who has only a three-tenths of 1 percent chance of arrest per theft without Lojack, but a 10 percent chance of arrest when Lojack is installed in the car that is stolen. That thief sees the annual chance of arrest increase from 26 percent to 45 per cent based on a 5% penetration rate of Lojack in the community.

Small increases in the percentage of Lojack-equipped vehicles are associated with

substantial declines in auto theft. According to estimates, one auto theft is eliminated annually for every three Lojacks installed in high-crime central cities. In addition there is little evidence that the reductions in auto thefts are simply being displaced either geographically or to other categories of crime.

From the perspective of the car owner who installs Lojack, the decline in the overall rate of auto thefts is of little direct benefit. Because Lojack is unobservable, auto theft rates are affected by thieves' perceptions about the use of Lojack in the entire community. Combining this externality with the direct benefit of an increased likelihood of successful vehicle recovery for those with Lojack, the estimated marginal social benefit of Lojack installation has been roughly fifteen times greater than the marginal social cost.

Lojack appears to be one of the most cost-effective crime reduction approaches documented in the literature, providing a greater return than increased police, prisons, jobs programs, or early educational interventions.

III. Analysis for Berkeley

Its clear that auto theft in Berkeley is a crime that hits the poorest in our community the hardest. Its not just that the type and value of the cars stolen reflects a poorer demographic, there is a direct link between the average income in a census tract and the rate at which cars are stolen from it. In Berkeley's top 7 census tracts for income, the rate of theft is approximately 1 in 1,000. For the bottom quarter of the census tracts, the rate is 35% higher. (See Graph in Appendix 5)

This is born out when you look at the geographic distribution of auto theft per 100,000 residents. (See Map in Appendix 6) The highest rate of occurs in the South Campus area and along the Shattuck Ave. and University Ave. corridors. All of the census tracts in those areas fall below the average income level for the city as a whole.

This geographic distribution shown in Appendix 6 is also clearly apparent in the most recent crime statistics available from the Berkeley Police Department. The Map in Appendix 7 shows relative incidence of auto theft across Berkeley in 2005 with the hot spots indicated by the darker coloring. Both of these maps showing more car thefts along transportation corridors bolster the analysis of the Berkeley Police Department that the majority of the cars that are stolen are used for local transportation and then abandoned.

The Berkeley Police Department has a very high rate of recovery of stolen vehicles. They estimate that over 93% of the vehicles are recovered within 5 to 6 weeks. That rate of recovery compares favorably with the rate of recovery from unobservable vehicle protection systems. The difference is that with the unobservable systems, the time between the theft and the recovery of the vehicle is often less than 24 hours.

When measuring the impact of an auto theft on the owner's life, the difference between 5 weeks and one day is immense. This is especially true for those who are making minimal incomes, for those driving 12 year old cars whose value is $2,750 and almost any damage will result in the vehicle being declared a total loss. The issues of finding alternate transportation to work and thinking of needing to replace the vehicle could well create a major financial or family crisis. The reduction of the effects of having their auto stolen is a goal Berkeley can achieve while providing a general benefit to the entire community.

Furthermore there is an impact on the entire community for auto theft. Insurance companies base their rates for comprehensive coverage on the incidence of auto crime in a particular zip code. When Berkeley's auto theft rate is so much higher than the surrounding communities, that translates directly into higher auto insurance premiums. A reduction in the rate of auto theft will benefit all Berkeley resident through a lowering of their insurance.

Many forms of victim protection, such as highly visible car alarms or steering wheel immobilizers, don't reduce the overall rate of auto theft in the community. They simply move the crime down the block. However, these systems are inexpensive when compared to unobservable vehicle protection systems and the effectiveness of offering a large number of steering wheel immobilizers at a very low price would be a good first step in implementing a community based program to reduce auto theft.

The real value of an unobservable vehicle protection system is that when criminals cannot

identify who has installed a vehicle protection system, they must begin to think that any vehicle could have the protection. This unobservable action by some members of the community provides benefits to all potential victims in the community. This is the real basis for establishing a community wide system that reduces the rate of auto theft.

There are a number of systems in the marketplace that should be considered as part of the implementation process. (See List of Manufacturers in Appendix 8)

LoJack is the original creator of the positive unobservable vehicle protection system and as such has a proven track record in terms of reliability and effectiveness. It is the most expensive to install because the cost is a one time only fee. The cost per unit would be approximately $350 per unit based on the installation of 1,000 units per year.

The advantages of the LoJack system are: 1) once a unit is purchased there are no additional charges due on the unit so that over time the system penetration will increase with no additional charges for existing units; 2) the LoJack unit communicates directly with the police department tracking unit so they can immediately respond to the location of the vehicle; 3) the LoJack unit operates via an RF signal that can be turned on only in the case of vehicle theft; and 4) the RF signal does not need line of sight to a satellite to operate.

# of units	Price for base system	Early Warning system additional cost	Extras
1	695	$300	
100+	395		
1000	345	Possible break based on guaranteed volume	Additional police vehicle trackers

Quoted by Kathy Curran, LoJack Inc. 877-775-6522

Using a GPS/internet/telephony based system, The Witness offers the ability to both locate and track your vehicle over the internet, via cell or land based telephone. When an alert is generated by the device you can choose to receive an information alert by telephone or over the internet. In addition you can control some vehicle functions remotely such as disabling the starter motor or unlocking the doors. The annual cost would be approximately $80 plus an installation fee of $235.

The advantages of The Witness system are: 1) the lower cost of installation and low monthly fee means that more units can be installed for the same funding allocation; 2) you can get immediate notification via your phone or computer if your car is stolen – you don't need to see the car is missing; 3) you can disable the vehicle remotely so that it cannot be moved; and 4) you can test the unit at any time using your phone or computer.

# of units	annual cost	Installation cost	hardware	
1	$79+$19 trans	$100	$500	
1,000	$80	$35 – track only	$200	

Randy Parker 818-784-8555 x228

IV. Proposal for Berkeley

Berkeley should implement a five-part plan that makes clear the City is seriously looking at whole new strategies for reducing property crime, and reducing auto theft will be the first target. The approach proposed here is the installation of currently available technology to fight auto theft with unobservable changes to vehicle protection. The implementation is designed so that action by individual Berkeley residents is encouraged and the benefits of those actions accrue to the entire community.

1) Berkeley should establish as City policy, and widely publicize, the subsidizing of the installation of unobservable vehicle protection systems in existing vehicles in Berkeley.

The perception in our community, and surrounding communities, that Berkeley is on the offensive to combat property crime is just as much of a deterrent to thieves looking for an easy place to steal vehicles as is the actual installation of the systems themselves.

No direct cost to the City of Berkeley.

2) Berkeley policy should also encourage the purchase of unobservable self protection systems as an option when a new vehicle is purchased.

The cost of the system can be financed as part of the purchase and over a few years the savings an owner can receive on the comprehensive portion of their auto insurance may cover a substantial portion of the installation cost. In addition, it has been shown that this is a cost effective solution to vehicle recovery especially for new cars that may be stolen for parts or for export, cutting the damage to stolen vehicles by an average of 75%.

Only a limited number of vehicles are purchased new each year by Berkeley residents. If the encouragement of the City and the Police department can add 200 vehicles with LoJack each year, this will help provide almost 1% penetration over 3 years.

No direct cost to the City of Berkeley

3) For those residents of Berkeley who have had their vehicle stolen, offer a substantial subsidy toward the installation of an unobservable vehicle protection system. Its important to offer those who have been victimized a way for them to quickly recover their vehicle if it were stolen a second time.

Vehicles that are equipped with unobservable vehicle protection systems are recovered sooner and with less damage (nationally 68% of stolen cars are eventually recovered but often with substantial damage). Installing the unobservable vehicle protection system clearly is an advantage to the vehicle owner if some way is provided to overcome the expense of the system.

In addition, putting the vast majority of newly equipped vehicles into the geographic area where auto theft is highest will increase the penetration in those areas much more quickly and should have an observable effect almost immediately. It likewise means that if the problem were to migrate to areas where there currently is less auto theft, the installation of new unobservable vehicle protection system equipped vehicles will follow that new trend automatically.

The subsidy would be a sliding scale with a means test to determine the amount of the subsidy. The following table is based on the implementation of the LoJack unobservable vehicle protection system with a minimum of 1,000 units per year.

LoJack is used here for demonstration purposes since it appears to be the most cost efficient system of those surveyed. The choice of the actual unobservable vehicle protection system to be installed in Berkeley should be determined by staff based on their evaluation of the merits of all available technologies.

Family Income	% off list	Discount off list price	Owner pays	City of Berkeley subsidy
Under $15,000	100%	$700	$0	$350
$15K -- 25K	93%	$646	$49	$301
$25K -- 35K	86%	$598	$97	$253
$35K -- 45K	79%	$549	$146	$204
$45K -- 55K	72%	$500	$195	$155
$55K -- 65K	65%	$452	$243	$107
$65K +	58%	$403	$292	$58

Based on 80% of the 1,300 stolen vehicle owners (approximately 1,000) taking part in the program and that the median family income for those with a vehicle stolen is $36,000, the cost to the City of Berkeley would be $210,000.

4) Berkeley should offer a smaller subsidy to all other residents of who chooses to install an unobservable vehicle protection system. The number of vehicles subsidized can be limited to a lottery of potential vehicles in order to maintain a cost ceiling on this portion of the program.

Only a limited number of vehicles would be added in this manner each year. If the encouragement of the City and the Police department can add 300 vehicles with LoJack each year, this will help provide 1.2% penetration over 3 years.

Family Income	% off list	Discount off list price	Owner pays	City of Berkeley subsidy
Under $15,000	95%	$665	$35	$350
$15K -- 25K	90%	$626	$70	$281
$25K -- 35K	80%	$556	$139	$211
$35K -- 45K	70%	$487	$209	$142
$45K -- 55K	60%	$417	$278	$72
$55K -- 65K	50%	$348	$348	$3
$65K +	40%	$278	$417	-$67

Based on a higher median income being willing to pay for the LoJack system without the deeper discounting of the stolen car subsidy, the City should allocate an average subsidy of $150 over 300 vehicles, or $50,000 for this portion of the proposal. The lottery should take place quarterly with those not selected being held over into the next drawing.

5) Once the funding for the lottery portion of this proposal is used up, Berkeley should install LoJack in any resident's vehicle for $450. This cost is still a $250 discount off the list price of the system and any payment over the negotiated price of the LoJack units would help underwrite the entire program.

A very limited number of vehicles would be added in this manner each year. It would however insure that any resident who wanted to take advantage of the price savings achieve by the bulk purchase of the

There would no direct cost to the City of Berkeley

V. Cost for Proposal

Major funding for this program is meant to be three years in duration.

If the subsidy that we propose is attractive enough and most of those who have had their vehicles stolen take advantage of this offer, and an additional 500 cars have unobservable vehicle protection systems added to them either at the dealership when purchased or as part of the City's subsidized program each year, it will produce an immediate penetration of 2% the first year, and approximately 6% gross penetration rate over three years.

	FY 2007	Cost to CoB	2007 % Penetration	FY 2008	Cost to CoB	% pen	FY2009	Cost to CoB	% pen
New Dealership installation	200	$0	0.3	200	$0	0.3	200	$0	0.3
Stolen Vehicle Installation	1,000	$210,000	1.4	900	$190,000	1.4	800	$170,000	1.3
Lottery Vehicle Installation	300	$50,000	0.4	300	$50,000	0.4	300	$50,000	0.4
Yearly Total	1,500	$260,000	2.1	1,450	$240,000	2.1	1,375	$220,000	2.0
Cumulative Total	1,500	$260,000	2.1	2,850	$500,000	4.2	4,225	$720,000	6.2
Net Penetration	1,350		1.9	2,520		3.6	3,505		5.0

The estimated costs are based on 30% reduction in auto thefts over three years. This is a very conservative reading of the data on other communities with significant penetration of unobservable vehicle protection systems.

There will be some reduction to the rate of penetration as cars are sold or their owners relocate out of Berkeley. If 10% of the cars equipped with unobservable vehicle protection systems leave Berkeley each year, then we should see a net penetration rate in Berkeley of approximately 5% at the end of the third year of the program.

The cost effectiveness of the program goes down as more cars in the community are equipped with unobservable vehicle protection systems. Boston had a very significant reduction in auto theft with a penetration rate of 5%. Once a 5% penetration rate is reached in Berkeley (approximately 3,500 vehicles) the subsidies should be reduced in order to maintain that 5% level.

Some additional funding needs to be maintained past the initial three year time period to keep the penetration level at 5%. The amount of funding to hold the penetration rate at 5% should be approximately $50,000 per year, leaving the vast bulk of the funds to be applied to other crime reduction programs.

Appendix 1

Auto Theft by Census Tract

Tract	Pop	2003	2002	2001	2000	03 Rate Change	02 Rate Change	01 Rate Change	Ave. % Change
11	2,055	16	15	17	9	7%	-12%	89%	28%
12	3,635	29	31	26	21	-6%	19%	24%	12%
13	3,973	41	38	27	15	8%	41%	80%	43%
14	1,639	14	10	9	8	40%	11%	13%	21%
15	3,526	52	44	21	20	18%	110%	5%	44%
16	3,735	42	30	33	22	40%	-9%	50%	27%
17	2,898	45	35	20	25	29%	75%	-20%	28%
18	2,045	26	24	18	10	8%	33%	80%	41%
19	3,619	42	51	33	31	-18%	55%	6%	14%
20	1,872	161	169	184	143	-5%	-8%	29%	5%
21	2,528	55	46	54	38	20%	-15%	42%	16%
22	3,169	48	43	36	29	12%	19%	24%	18%
23	2,962	40	50	38	28	-20%	32%	36%	16%
24	3,333	44	58	45	40	-24%	29%	13%	6%
25	3,744	46	44	24	16	5%	83%	50%	46%
27	4,466	51	33	11	21	55%	200%	-48%	69%
28	6,407	45	55	79	42	-18%	-30%	88%	13%
29	2,104	41	44	52	36	-7%	-15%	44%	7%
30	3,983	47	45	27	46	4%	67%	-41%	10%
31	3,785	42	49	49	19	-14%	0%	158%	48%
32	2,491	42	69	53	60	-39%	30%	-12%	-7%
33	3,324	29	49	29	36	-41%	69%	-19%	3%
34	4,517	34	58	37	25	-41%	57%	48%	21%
35	2,938	39	45	37	43	-13%	22%	-14%	-2%
36	7,483	95	105	72	55	-10%	46%	31%	22%
37	3,767	46	51	18	21	-10%	183%	-14%	53%
38	3,199	31	26	20	17	19%	30%	18%	22%
39	3,308	43	46	51	42	-7%	-10%	21%	2%
40	5,105	50	61	78	82	-18%	-22%	-5%	-15%
Berkeley	101,610	1,336	1,424	1,198	1,000	-6%	19%	20%	11%

from http://www.ci.berkeley.ca.us/police/crimestats/crimestatmap.html

Appendix 2

Auto Theft

Who	Year	incidence	rate per 100K	% change in rate
State of CA[1]	2004	251,747	688	2.7
	2003	240,798	670	6.7
	2002	221,780	628	8.6
	2001	201,074	578	10.2
Alameda Co[2]	2003	12,491	902	0
	2002	13,440	902	6.7
	2001	12,481	845	15.6
Berkeley[3]	2004[4]	1,128	1,128	-8.5
	2003	1,336	1,315	-6
	2002	1,424	1,401	19
	2001	1,198	1,179	20

Alameda County Clearance Rate[2]

	2001	2002	2003
Violent Crime	40.0	35.1	33.9
Homicide	38.0	39.6	50.4
Forcible Rape	43.2	35.8	37.8
Robbery	18.0	15.9	19.3
Agg. Assault	56.7	51.7	45.7
Property Crime			
Burglary	8.0	8.3	8.0
Auto Thefts	8.6	7.8	7.6

1 from Crime in California 2004 published by Calif. Dept. of Justice, Div. Of Justice Information Services.

2 from http://stats.doj.ca.gov/cjsc_stats/prof03/01/1.htm and from http://stats.doj.ca.gov/cjsc_stats/prof03/01/1A.htm

3 from http://www.ci.berkeley.ca.us/police/crimestats/crimestatmap.html

4 from Crime in 2004 January through December published by Calif. Dept. of Justice, Div. Of Justice Information Services.

Appendix 3

Auto Theft per 100,000 population by Census Tract
Ranked by Rate per 100K in 2003

Tract	Pop		2003	2002	2001	2000	03 Rate per 100K	02 Rate per 100K	01 Rate per 100K	00 Rate per 100K
20		1,872	161	169	184	143	8,600	9,028	9,829	7,639
21		2,528	55	46	54	38	2,176	1,820	2,136	1,503
29		2,104	41	44	52	36	1,949	2,091	2,471	1,711
32		2,491	42	69	53	60	1,686	2,770	2,128	2,409
17		2,898	45	35	20	25	1,553	1,208	690	863
22		3,169	48	43	36	29	1,515	1,357	1,136	915
15		3,526	52	44	21	20	1,475	1,248	596	567
23		2,962	40	50	38	28	1,350	1,688	1,283	945
35		2,938	39	45	37	43	1,327	1,532	1,259	1,464
24		3,333	44	58	45	40	1,320	1,740	1,350	1,200
39		3,308	43	46	51	42	1,300	1,391	1,542	1,270
18		2,045	26	24	18	10	1,271	1,174	880	489
36		7,483	95	105	72	55	1,270	1,403	962	735
25		3,744	46	44	24	16	1,229	1,175	641	427
37		3,767	46	51	18	21	1,221	1,354	478	557
30		3,983	47	45	27	46	1,180	1,130	678	1,155
19		3,619	42	51	33	31	1,161	1,409	912	857
27		4,466	51	33	11	21	1,142	739	246	470
13		3,973	41	38	27	15	1,032	956	680	378
16		3,735	42	30	33	22	1,124	803	884	589
31		3,785	42	49	49	19	1,110	1,295	1,295	502
40		5,105	50	61	78	82	979	1,195	1,528	1,606
38		3,199	31	26	20	17	969	813	625	531
	Alameda County						902	902	845	
33		3,324	29	49	29	36	872	1,474	872	1,083
14		1,639	14	10	9	8	854	610	549	488
12		3,635	29	31	26	21	798	853	715	578
11		2,055	16	15	17	9	779	730	827	438
34		4,517	34	58	37	25	753	1,284	819	553
28		6,407	45	55	79	42	702	858	1,233	656
Berkeley		101,610	1,336	1,424	1,198	1,000	1,315	1,401	1,179	984

from http://www.ci.berkeley.ca.us/police/crimestats/crimestatmap.html

Appendix 4

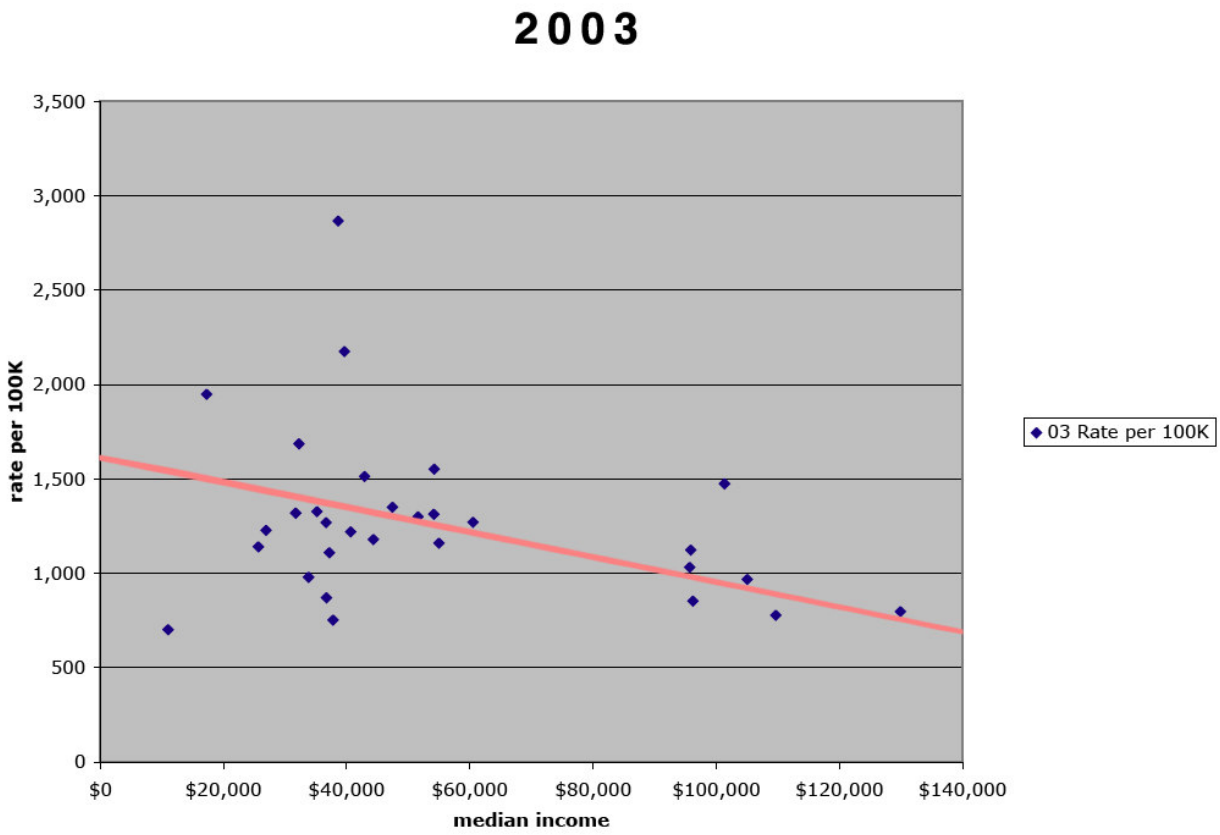
2004 top 10 stolen vehicles in CA

Rank	Vehicle	Year	Value
1	Toyota Camry	1989	$2,130
2	Honda Accord	1991	$3,160
3	Honda Civic	1995	$3,955
4	Toyota Pickup	1988	$2,000
5	Nissan Sentra	1991	$1,475
6	Acura Integra	1990	$2,190
7	Saturn SL	1993	$1,175
8	Toyota Corolla	1987	$1,200
9	Chevrolet Full Size C/K 1500 Pickup	1992	$3,935
10	Ford Mustang	2000	$6,345
	Average Year/Value	1992	$2,757

from
http://www.nicb.org/public/newsroom/hotwheels/top10.cfm?state=ca&areaid=3#3
and
from
http://www.kbb.com/kb/ki.dll/ke.kb.sp?kbb.CA;;CA001;&94704&&usedCars;slp&
price based on middle range for make/model

Appendix 5

Graph
Rate Auto Thefts per 100,000 versus Average Median Income

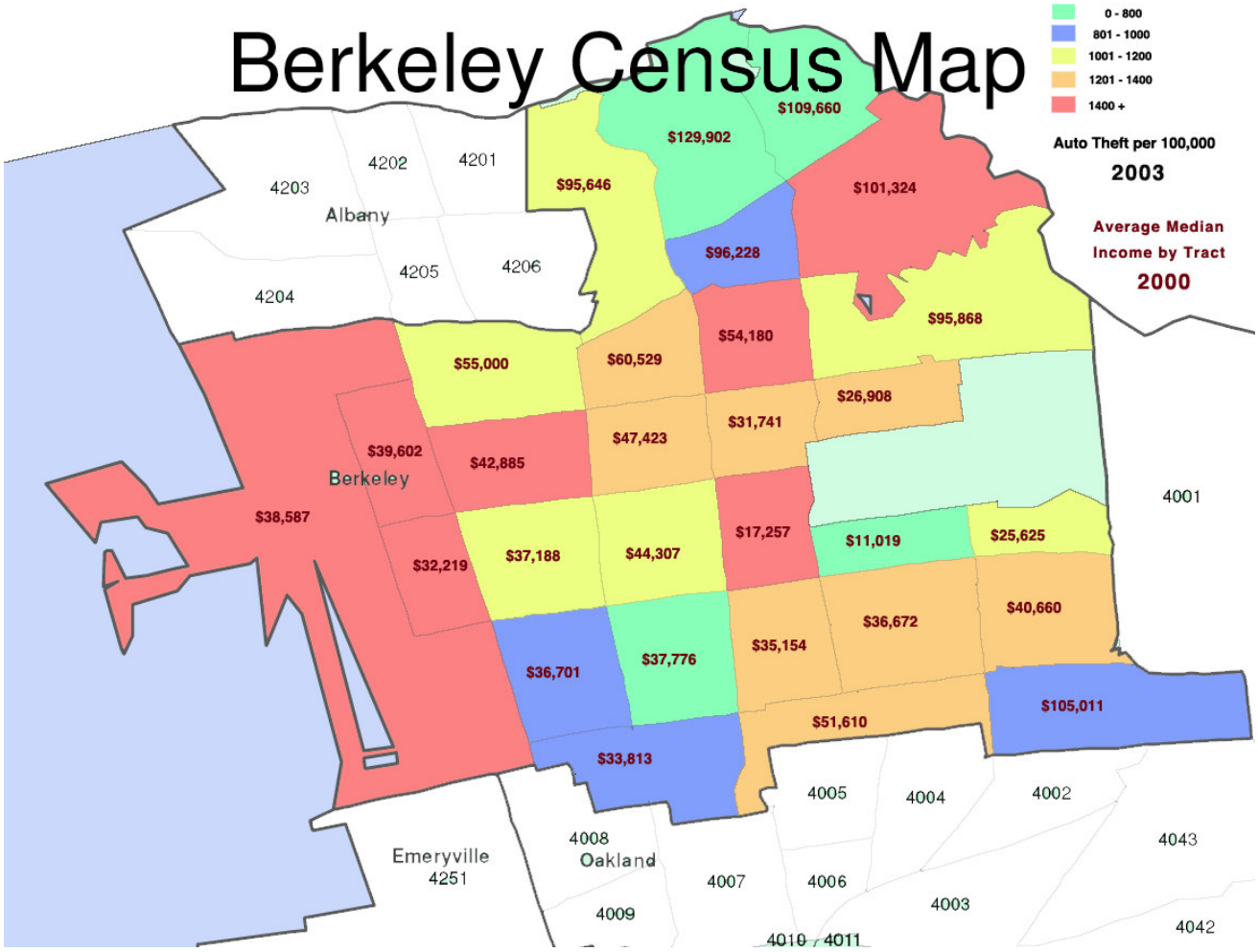


from http://www.ci.berkeley.ca.us/police/crimestats/crimestatmap.html

from 2000 US National Census

Appendix 6

Geographic Distribution
Rate Auto thefts per 100,000 with Average Median Income

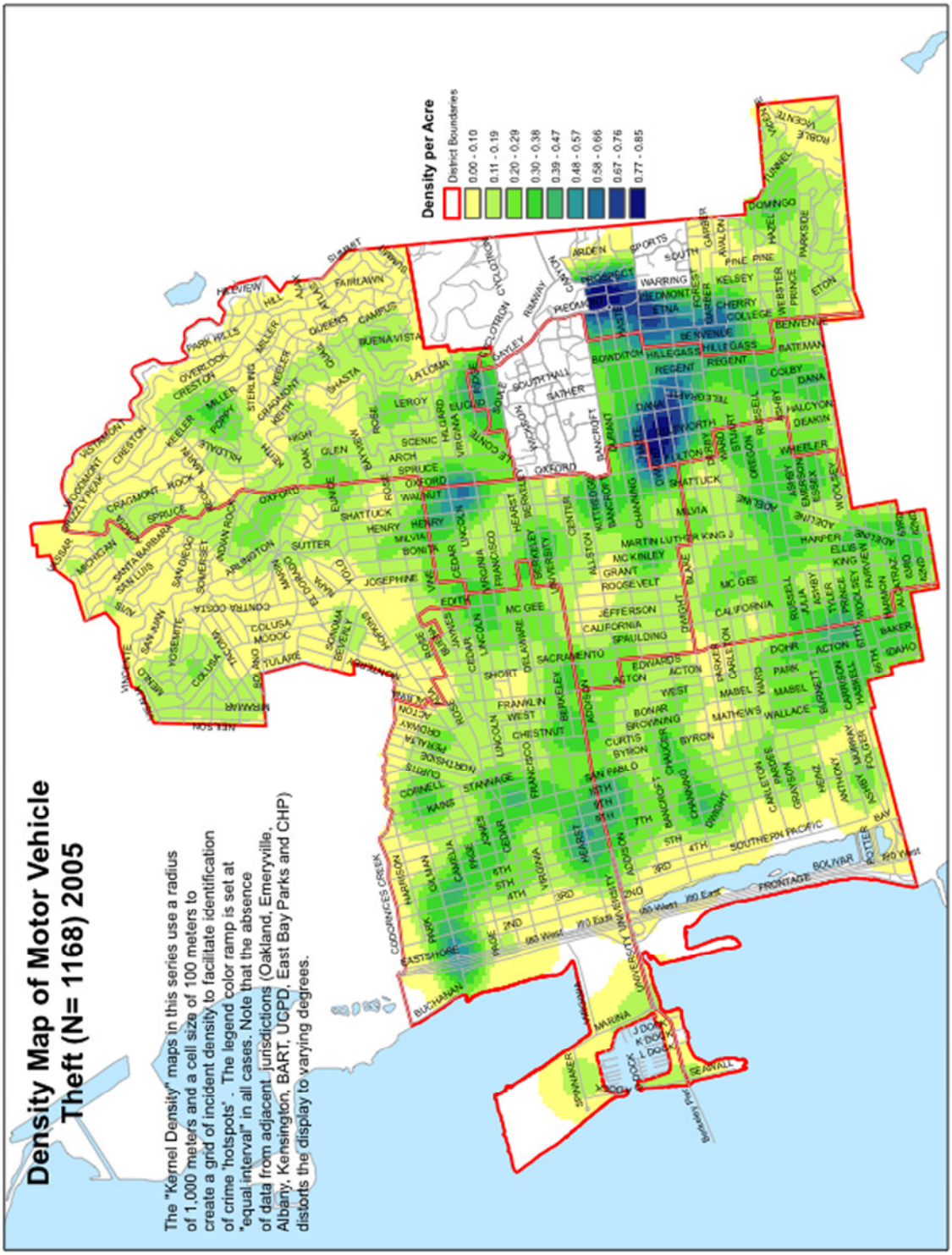


from http://www.ci.berkeley.ca.us/police/crimestats/crimestatmap.html

From 2000 US National Census

Appendix 7

Geographic Distribution
Auto Thefts in 2005



Appendix 8

Companies in the vehicle tracking / protection business

1) Lojack -- Stolen Vehicle Recovery System

LoJack is a stolen vehicle recovery system that allows police to track and recover your stolen vehicle. A LoJack unit is hidden in your vehicle by a certified technician and registered in the LoJack database. When you file a stolen vehicle report with the police, police computers send a silent radio signal to your car, automatically activating the hidden LoJack transmitter in your vehicle. Police can then track the signal and locate the vehicle.

LoJack is the only stolen vehicle recovery system operated by police. It is based on wireless radio frequency technology. From ground or air, police can track the silent signal from your LoJack -whether it is in an underground parking facility, in a warehouse, or in a container on a ship. Most GPS-based tracking systems requires direct line-of-sight to the sky.

Police use special LoJack-provided tracking computers to receive the silent, coded signals coming from your vehicle. Those signals quickly pinpoint the vehicle's location and lead police to a rapid recovery.

Your LoJack is always in receiving mode, ready to be activated by a silent signal from police computers. The LoJack unit constantly draws a very small amount of power from your vehicle's battery. Should your battery be disconnected, LoJack's back up battery will provide power.

The LoJack unit is very small - about the size of a deck of cards - so it can be hidden in as many as 20 to 30 different places in your vehicle. This makes it very difficult for thieves to find your LoJack.

If your vehicle is stolen, report the theft immediately to the police in the town or city where it was stolen. Once you've completed a stolen vehicle report, the police will automatically activate the LoJack in your vehicle. After you contact the police, call a LoJack Customer Service Representative. LoJack will provide you with information on insurance company reporting requirements that will save you time.

If you are buying LoJack for a vehicle you already own, you can purchase directly from Lojack. We will schedule an installation at your home or office.

One time only cost of a single unit is $695

http://www.lojack.com/lojack-faqs/index.cfm

2) Pegasus Technologies – Vector Trac

The VectorTrac Stolen Vehicle Recovery System is a highly effective and versatile stolen vehicle monitoring, tracking, and recovery system. Unlike most other vehicle tracking technologies in use today, the VectorTrac system has been designed to operate without the use of the Department of Defense's Global Positioning System (GPS). By not utilizing GPS and instead employing state-of-the-art radio-location technology, outfitting vehicles with the system becomes very affordable. This affordability allows for much wider market penetration than with any other technology. The VectorTrac system and its associated infrastructure may be installed in phases and is ideal for anything from small towns to the largest cities. VectorTrac will support a virtually unlimited number of vehicles.

Full-Service Monitoring Center

By installing a Vehicle Locator Unit (VLU) with the integrated Code Key reader into your client's vehicle, not only will you be able to track and locate the vehicle when it's stolen, but you will be notified of the theft, automatically, before your client even knows their vehicle is missing. Furthermore, VectorTrac is not limited to just tracking. Remotely controlled outputs allow you to offer services such as instant door unlock, invaluable to clients prone to locking their keys in their vehicle. While one input is reserved for vehicle ignition monitoring, two other inputs may be individualized for each customer. This will allow the implementation of services such as a roadside assistance button or automatic airbag deployment notification. By using your imagination, you will be able to tailor a one of a kind service package that will insure your clients continued happiness and your continued success.

Safe and Effective Recovery

Since the VectorTrac Monitoring Center will know that a vehicle is stolen within 30 seconds of the initial theft, the recovery effort can begin before the thief ever has time to get to where he wants to go, let alone get out of your coverage area. Once the vehicle is located, the vehicle's engine may be remotely disabled allowing for a safe recovery of the vehicle and apprehension of the thief. Your client will get his vehicle back with absolute minimal damage and the personal satisfaction that he beat the bad guys.

System Operation

Sold to the public and installed in the client's vehicle, the Vehicle Locator Unit (VLU) remains hidden and silent until the vehicle is stolen. In most installations the VLU will be installed with a Code Key reader and the vehicle owner will be given two coded key tags. The key tag contains a unique code that must be read by the VLU prior to the vehicle being started. If the vehicle is started without the code being read, the VLU will begin honking the horn. After one minute, if the code is still not read, the horn will silence and the VLU will begin transmitting its homing signal.

Once the VLU is activated, it will transmit a silent coded homing signal containing its identification number and input status, revealing its location, reason for activation, ignition status, and identity to Remote Triangulation Receivers and Sector Activation Transceivers located throughout the coverage

area. The Remote Triangulation Receiver will calculate the radial bearing of the incoming signal and forward that information along with the vehicle's ID number and input status to the Monitoring Center via an integrated radio data link system. Sector Activation Transceivers receiving the signal will also forward the vehicle ID and status to the Monitoring Center. At the Monitoring Center, a computer communicating with all of the Remote Triangulation Receivers in the system will display the RTR Bearings on a digital map. The bearings will intersect on the map, indicating the general location of the stolen vehicle. Data from the SATs will also be displayed on the map, indicated by circle drawn around the SATs receiving the signal. This indicates the general area, or Sector, of the stolen vehicle. The vehicle's unique ID number will also be displayed on the computer screen along with the ignition and input status.

Vehicles equipped with Mobile Tracking Receivers may then be directed to the area to locate the stolen vehicle. The System operator can, at any time, send a command to the stolen vehicle to kill the engine, lock the doors, honk the horn, etc. Once the vehicle is recovered, the Sector Activation Transceiver will transmit a cancellation signal that will reset the vehicle's VLU and place it back into its stand-by mode.

Under development for deployment in the United States
Currently deployed in Pakistan, Kenya and several West Indian islands

http://www.pegtech.com/vrecovery.htm

3) Global Location Systems, Inc. -- The Witness

The Witness ® Vehicle Protection System is a state-of-the-art safety and security system for you and your vehicle. Harnessing the technology of satellite GPS tracking, wireless communications and the Internet, The Witness gives you complete control of your vehicles from almost anywhere. Using any telephone or Internet connection, you can track your vehicle and perform a variety of useful functions.

The Witness is always watching, protecting your vehicle and family. If an important event occurs, such as your alarm going off, or a low battery, The Witness's advanced notification system automatically alerts you on the telephone, email or text messaging device of your choice.

The Witness's wireless coverage area includes 98% of populated areas Canada to Mexico inclusive.

Custom Alert Notifications

Set up custom notifications for each of your alert types. Notifications can be sent to a phone or up to two email addresses for each alert.

Locate on Demand

Send a command from our secure web site, or any telephone, and The Witness will respond with the vehicle's current location, including street address, vehicle speed and heading.

Door Unlock

Never get locked out again. Unlock your doors by sending a command from any telephone or Internet connection.

Immobilize

Remotely disable the starter motor and prevent the vehicle from starting. Vehicle will remain secure until starter is re-enabled by a command from the system. Won't impact a vehicle that's running until it's turned off.

Unauthorized Movement Alert

When the vehicle's ignition is turned off, The Witness will report any movement of the vehicle beyond a minimum security threshold and will generate an alert to the user.

Service plans for The Witness have two components: Service Term and Transactions.

The Witness's service plans are designed to give you the optimum in flexibility, convenience and affordability.

Cost

Less than $6 per month (USD)

Hardware and Installation of a single unit $600

Guaranteed Transactions
You only pay for successful communications with your vehicle

No Expiration
Transactions in your account never expire as long as you have Service Term remaining

Shared Transactions
Transactions can be shared with all the vehicles in your account.

Service Term is the subscription period for which you will have access to The Witness system.

Transactions are the individual metered communication events between The Witness system and your vehicle.

http://www.thewitness.net/features.htm

4) Direct Electronics -- Python® 210P GPS Tracking

Python GPS - Alerts

Security System Trigger (Early Theft Warning):

Obtain early indication of a possible vehicle theft by knowing when your car alarm is triggered and receive the location of the violation.

Unauthorized Movement (Early Theft Warning):

Automatically know when your vehicle has moved while the ignition is turned off (i.e., when being towed) and receive the location of the violation.

Battery Disconnect (Early Theft Warning):

Know your vehicle's battery has been tampered with, indicating a possible theft, and receive the location.

Border Crossing:

Know when your vehicle has crossed the Canada-US or US-Mexico borders, indicating a possible theft, and receive the location, speed and direction.

Python GPS - Actions

Locate On Demand:

Locate your vehicle (i.e., late, missing, stolen, etc.) and receive its location, speed and heading.

Door Unlock:

Unlock the driver door of your vehicle and receive its location.

Starter Disable (Immobilize):

Disable your vehicle's starter if it is stolen and receive its location, speed and heading. The next time your vehicle's ignition is turned off and then on, it will not start.

Service Plan

Python® GPS Service Plans	Silver
Annual Fee per Vehicle	$99
One Time Activation Fee	$25
Service Terms (Months)	12
Plan Includes:	
Connections to Python® GPS	100
Python® DLX Warranty (Months)	12
Extra Connections (100)	$49

http://www.directed.com/security/python/

5) RASTRAC.net offers everything you need to begin tracking your valuable mobile assets. We provide active and passive GPS tracking systems for fleets of all sizes.

RASTRAC.net provides the system that will ID your vehicles location. First you will need compatible hardware installed in your vehicles. Second, you'll need a RASTRAC.net Subscription

What if I need to know asset position right this instant?
This in known as asset "polling". You may instantly locate a mobile or fixed asset anywhere in North America. You simply select "Get Vehicle Position" from your secure web browser and within a few seconds your RASTRAC.net solution pinpoints the asset. If this is a mobile asset that is on the move you receive location, speed and heading!

Individual quotes available by phone.

http://rastrac.net/index.html