CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

City of San José
Operations Efficiency Diagnostic

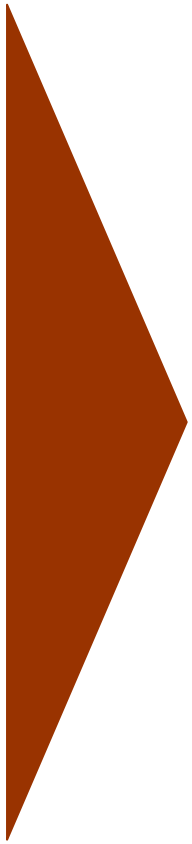
PUBLIC SECTOR IBM GLOBAL BUSINESS SERVICES

For Discussion Purposes Only

Local governments need to rigorously apply analytics to ensure that limited resources maximize policy outcomes

From GAO's State And Local Governments' Fiscal Outlook (April 2011 Update):

"Because most state and local governments are required to balance their operating budgets, the declining fiscal conditions shown in our simulations suggest the fiscal pressures the sector faces and foreshadow the extent to which these governments will need to ***make substantial policy changes*** to avoid growing fiscal imbalances."



How can local governments ***inject intelligence*** into decision making, business operations and infrastructure to improve performance and drive better outcomes?

The City of San José asked for an operations efficiency diagnostic of three major departments

Two major questions:

- How should the City determine how many personnel and other resources are required to achieve the outcomes these departments are chartered to deliver?
- What should the City do to ensure that the personnel and resources that it does choose to dedicate to these departments are being deployed in the most efficient and effective manner?

The presentation today is divided into three sections

1. A perspective on the future of local government finances and a view on what a fiscally sustainable business model for a local government will look like moving forward

2. Summary of findings from an assessment of the three departments under review

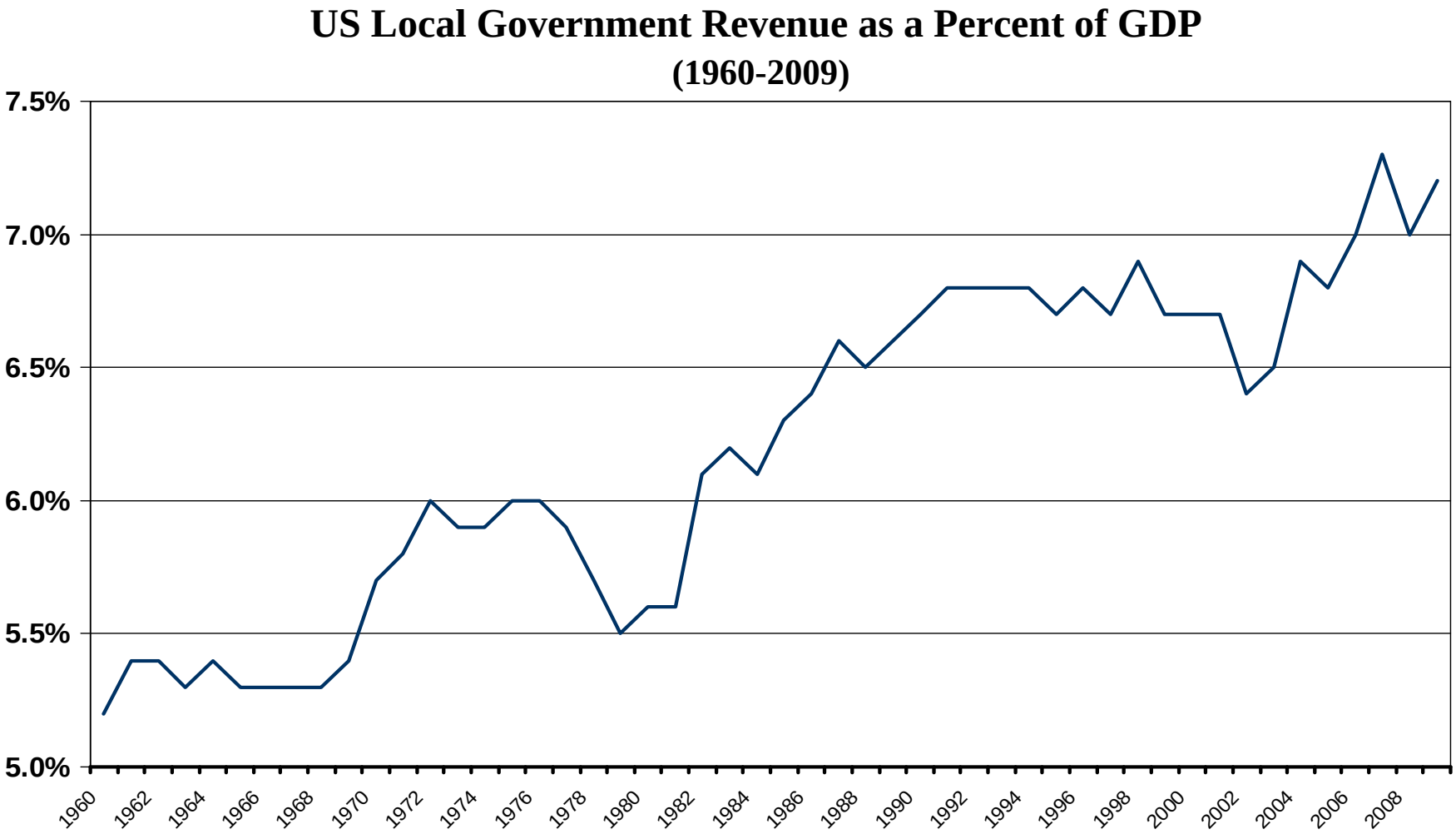
   - A summary of the strategic options we have analyzed

   - A summary of the operational improvements we have identified

3. Proposed next steps

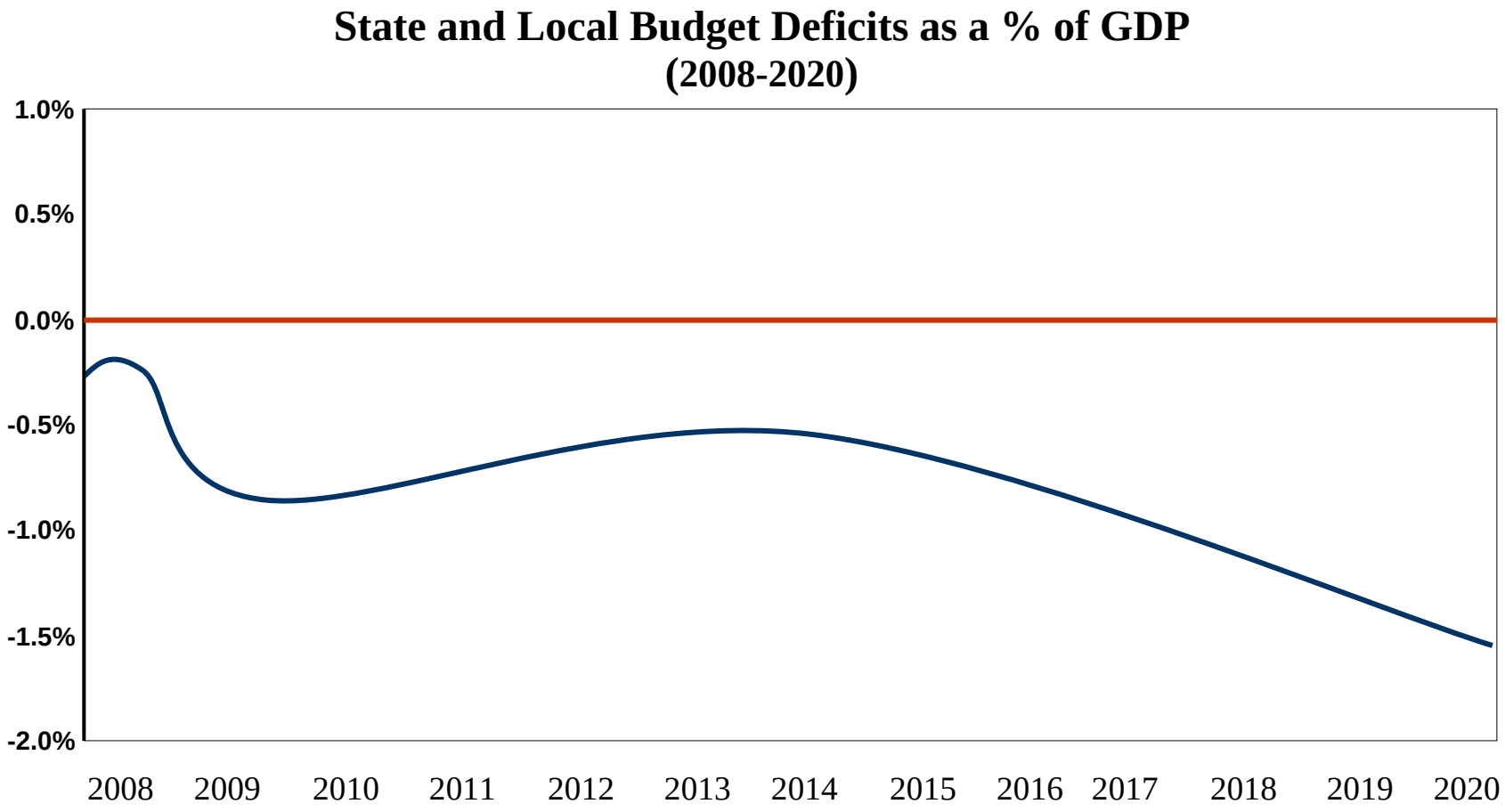
The Future Of Local Government Finances

Local government is growing…



Source: *State and Local Government Finances,* US Bureau of the Census

… but its business model is broken



Source: *State and Local Government Fiscal Outlook, April 2011 Update*, Government Accountability Office

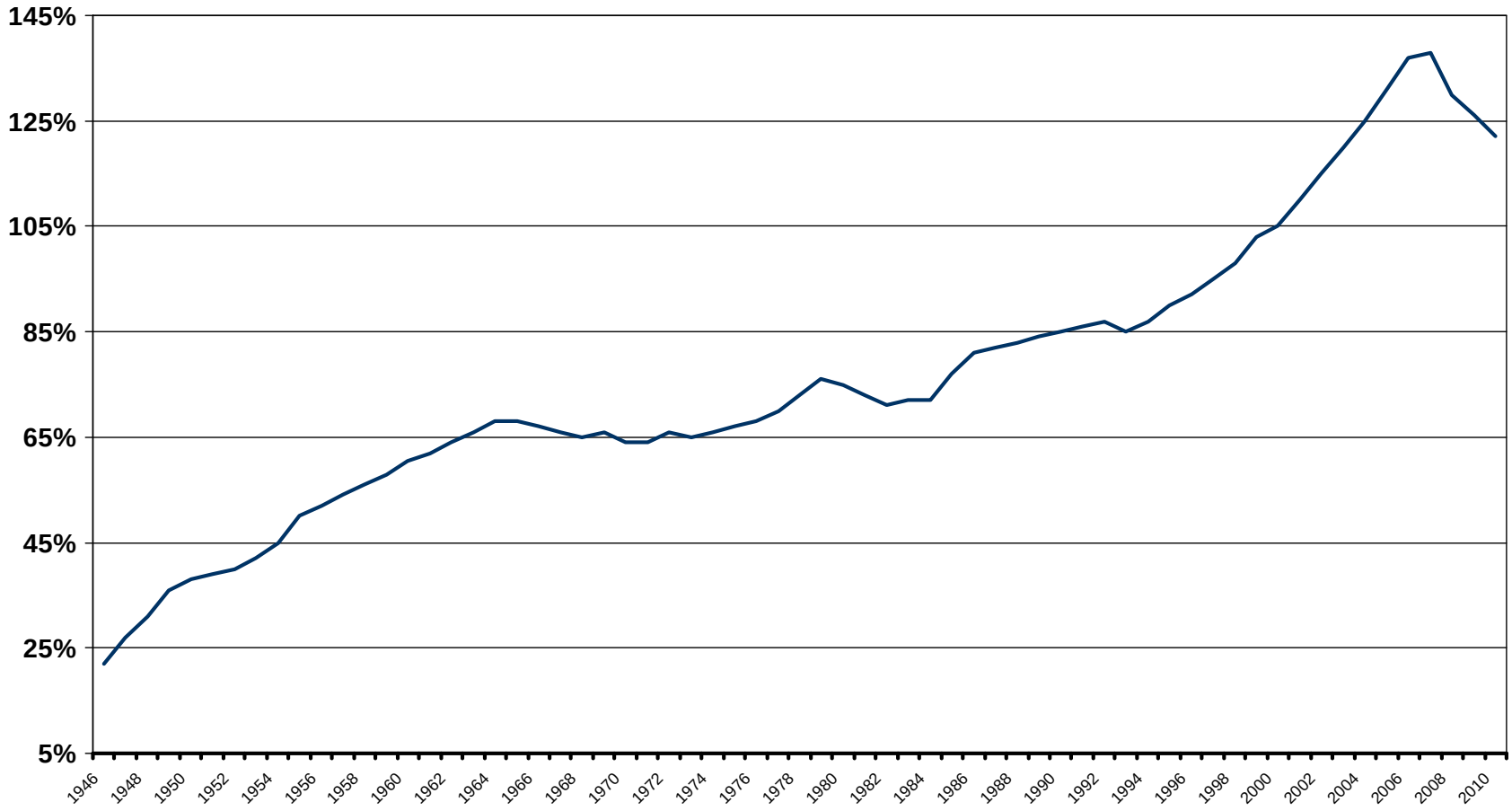
Local governments have problems on both sides of the ledger

- Revenues are flat

- Costs are increasing at a rate that exceeds anticipated revenue growth

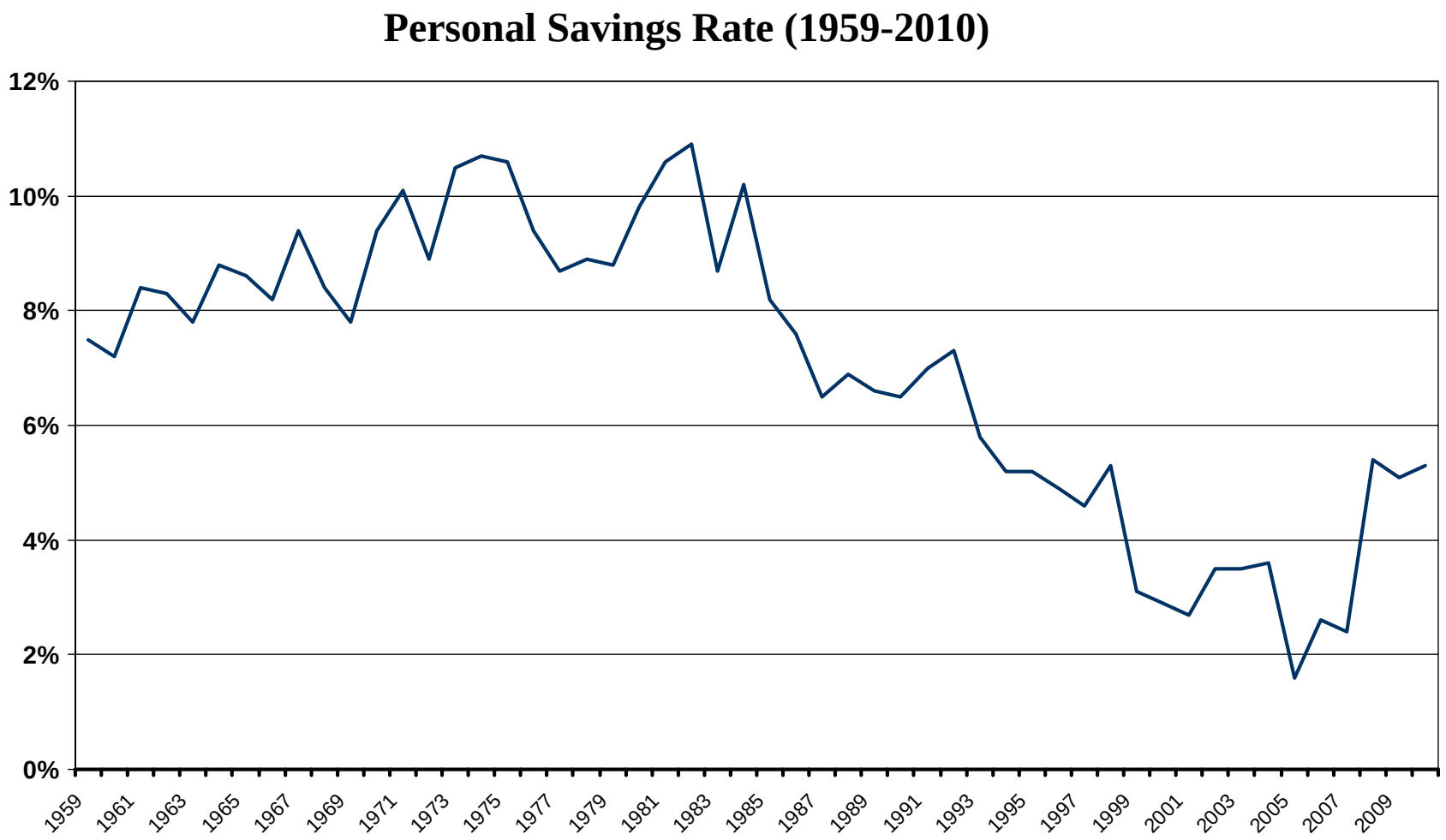
On the revenue side, households need to de-leverage…

US Household Liabilities as a Percent of Disposable Income
(1946-2010)



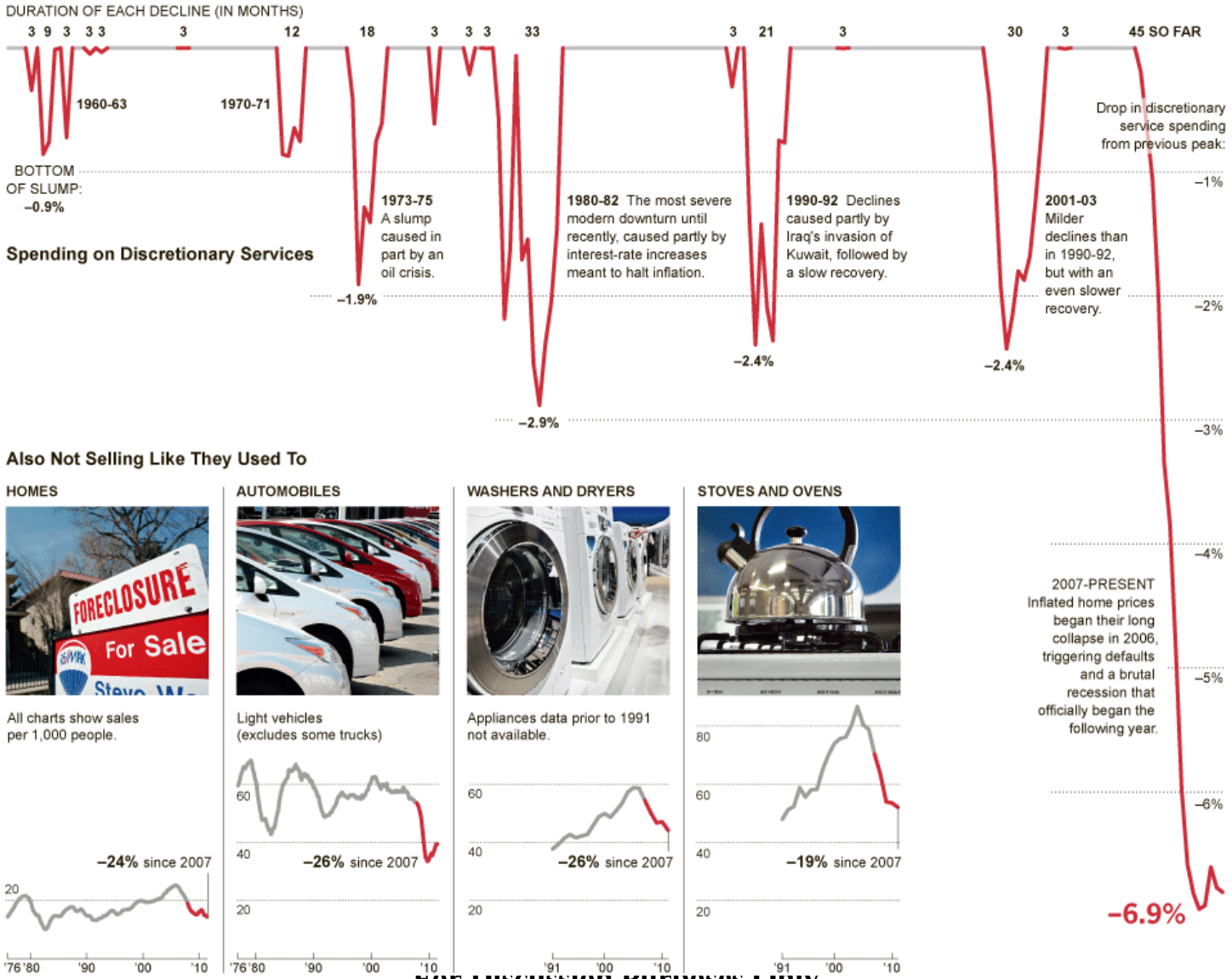
Source: United States Federal Reserve

…which means they need to save more and spend less …

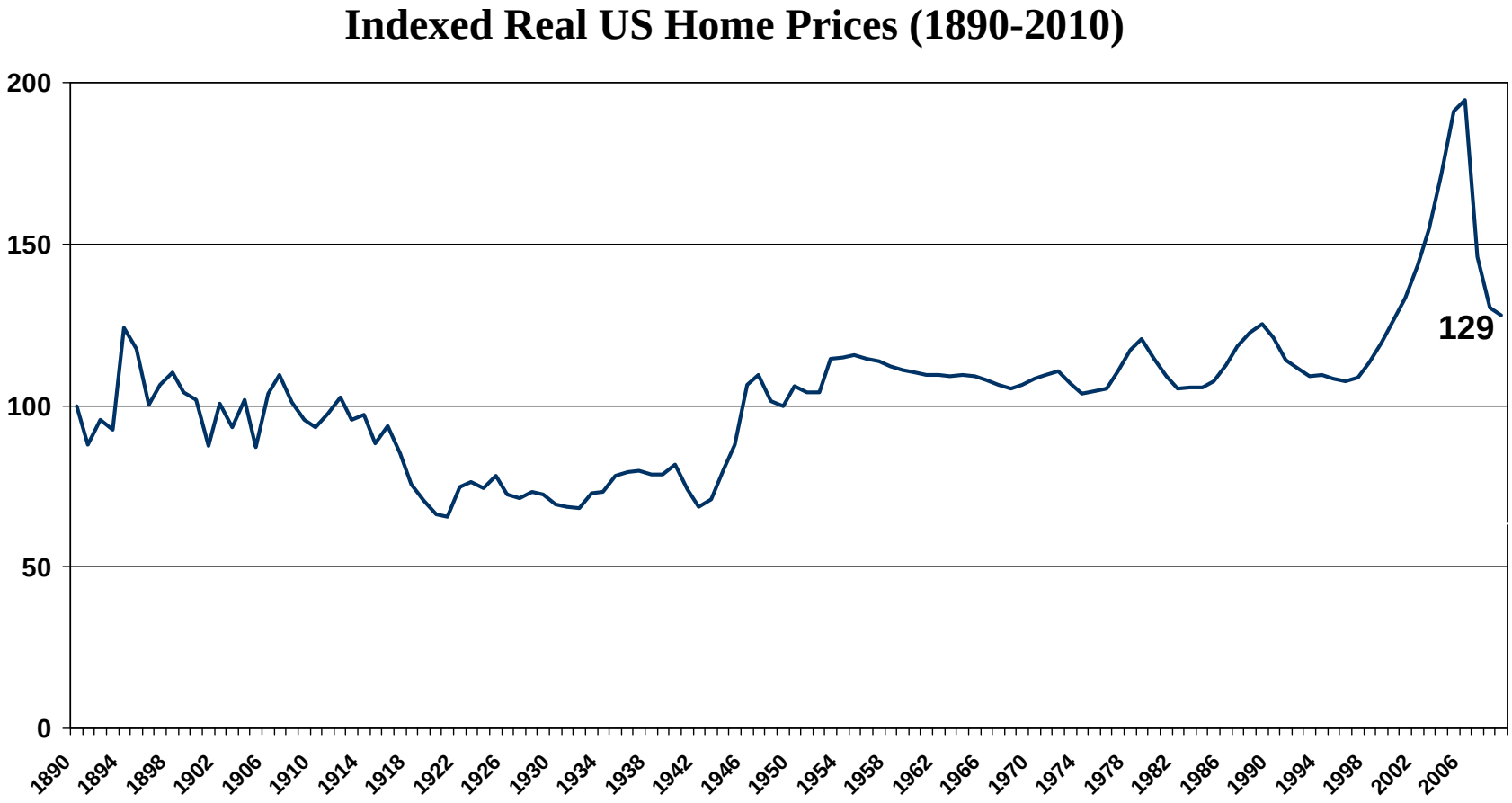


Source: US Bureau of Economic Analysis, *A Guide to the National Income and Product Accounts of the United States*

…which is leading to an historic decline in discretionary spending …



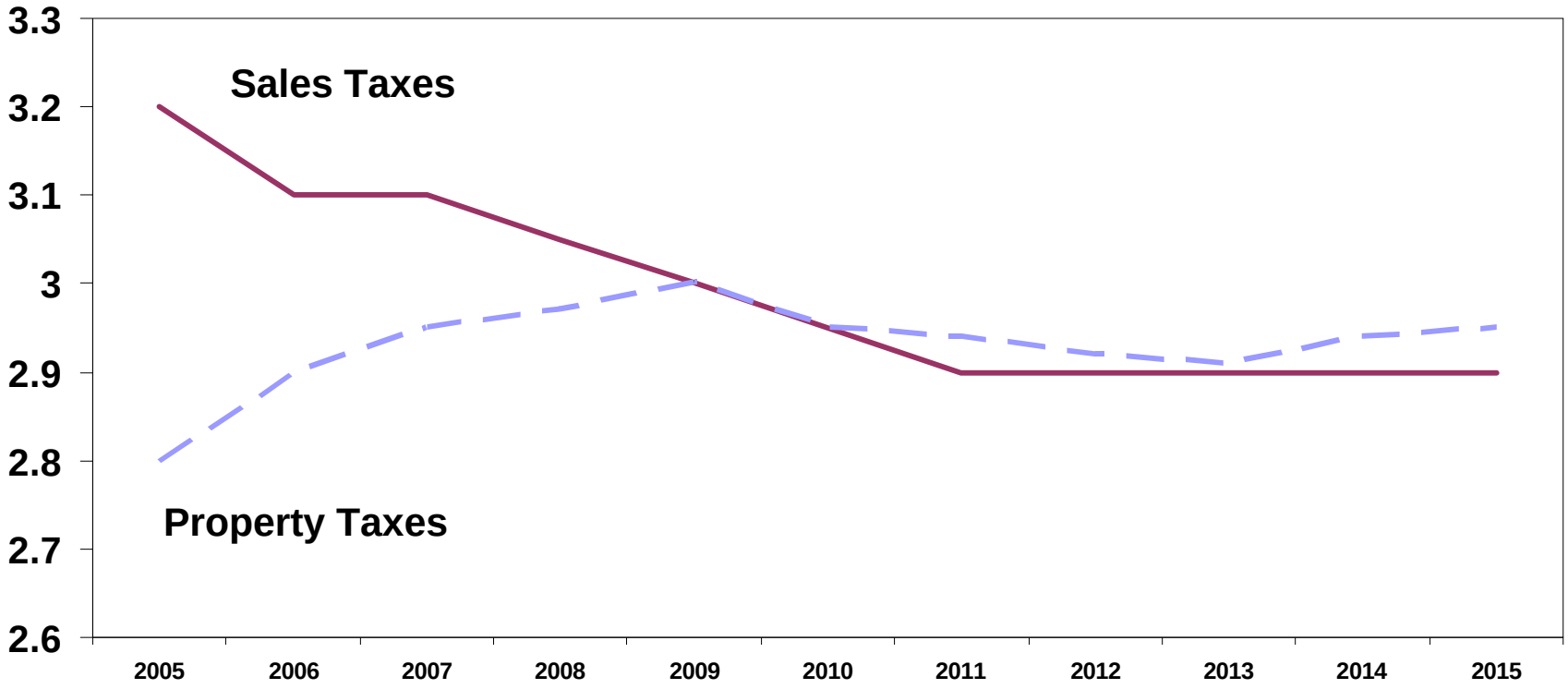
… and since housing prices have farther to fall…



Source: Robert J. Shiller, *Irrational Exuberance, Second Edition*

... growth in sales and property tax revenue will be flat at best

Sales and Property Taxes as a Percentage of GDP
(GAO Projection)



On the cost side, cities have made long-term obligations that exceed their capacity to finance them …

- Pensions
- Health care
- Economic development
- Infrastructure

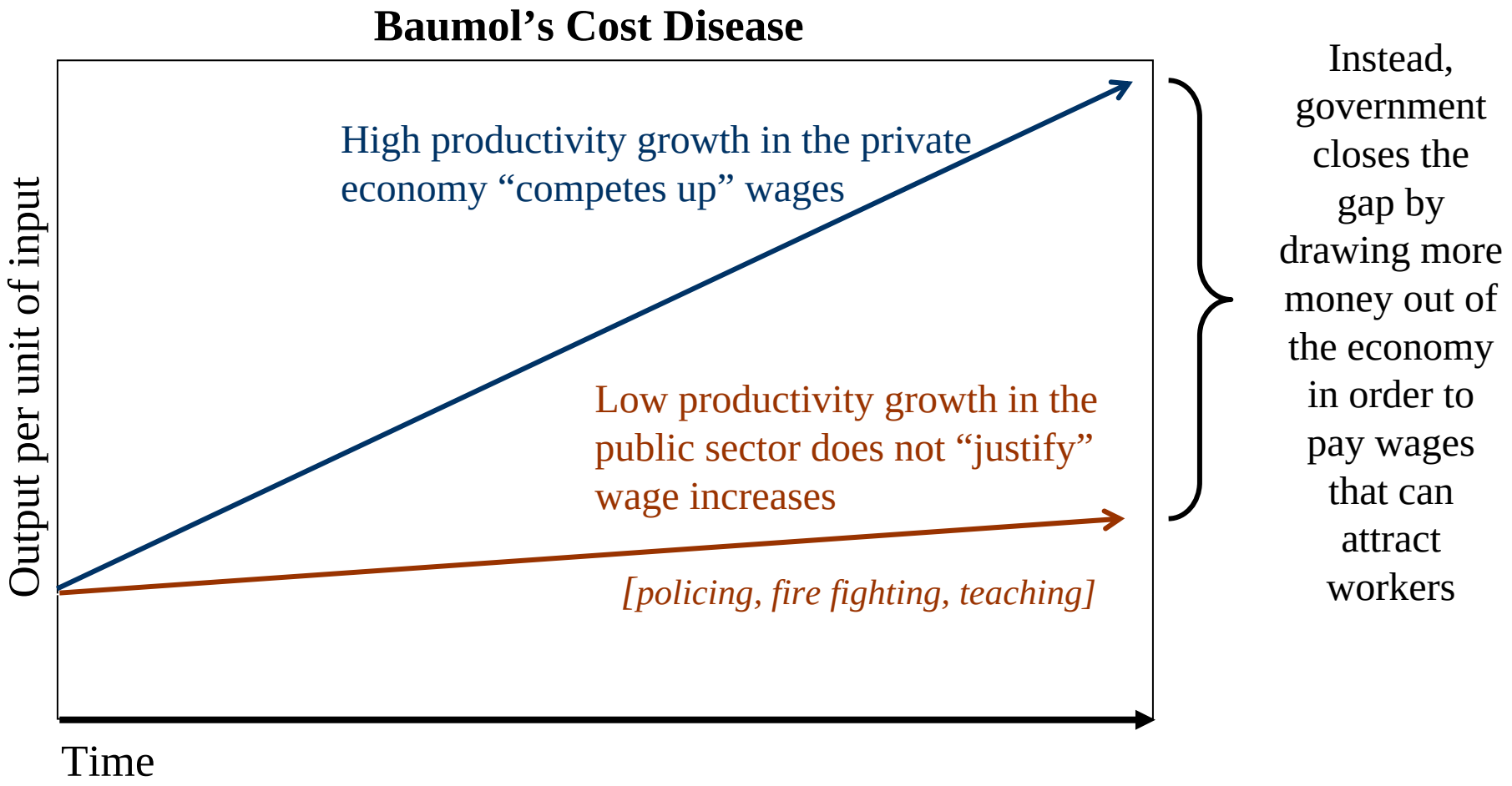
Unfunded Pension Liabilities Per Capita

1	Chicago	44,966
2	New York City	38,886
3	San Francisco	34,940
4	Boston	30,901
5	Detroit	18,643
19	San José	11,391

Source: *The Crisis in Local Government Pensions in the United States*, Rober Novy-Marx and Joshua Rauh, Kellogg School of Management, 2010

Note: The Rauh report's statistics are based on discount rates lower than those employed by the City. San Jose's unfunded liability (using the Boards' adopted discount rates) is about $3 billion or about $3000 per capita (Source: Internal Auditor)

… and they are in businesses that suffer from low long-term productivity growth …



The bottom line is that the structural deficits that San José is projecting could easily be understating the severity of challenge the City is facing

- For that reason, it makes sense to think as creatively as possible about how the City can reconstitute its strategic and operational profile to accommodate a future with significantly fewer resources
- The team has taken that challenge seriously, and has approached this effort from a "blank piece of paper" perspective
  - The City is not going to solve this problem by "squeezing costs" and "hunkering down"
  - The City should revisit its core mission and re-constitute its operations from the ground up

Cities need to focus on their core mission - to improve the quality of life of its citizens - while deploying an economic model that is fiscally sustainable

Local Government Economic Model

Local government invests in public infrastructure and municipal services …

… to provide water, greenspace, mobility, public safety, education, recreation, arts, etc…

…that create the conditions needed for thriving neighborhoods, rich culture, and other desirable urban attributes…

… that attract private investment, business investment, job growth, and new residents …

… which generates revenue, primarily in the form of property and sales taxes, which…

To achieve long-term fiscal sustainability, local governments need to focus on four strategic priorities

1. ***Stimulate revenue growth*** by pro-actively encouraging revenue-generating activities and monetizing public assets

2. ***Adopt a return-on-investment approach to resource allocation*** to ensure that spending is directed in a way that optimizes future revenue generation (by stimulating economic development and expansion of the tax base)

3. ***Improve the operating productivity of labor and capital*** by adopting new technologies and services delivery models and by ***recalibrating service levels as outcomes are achieved***

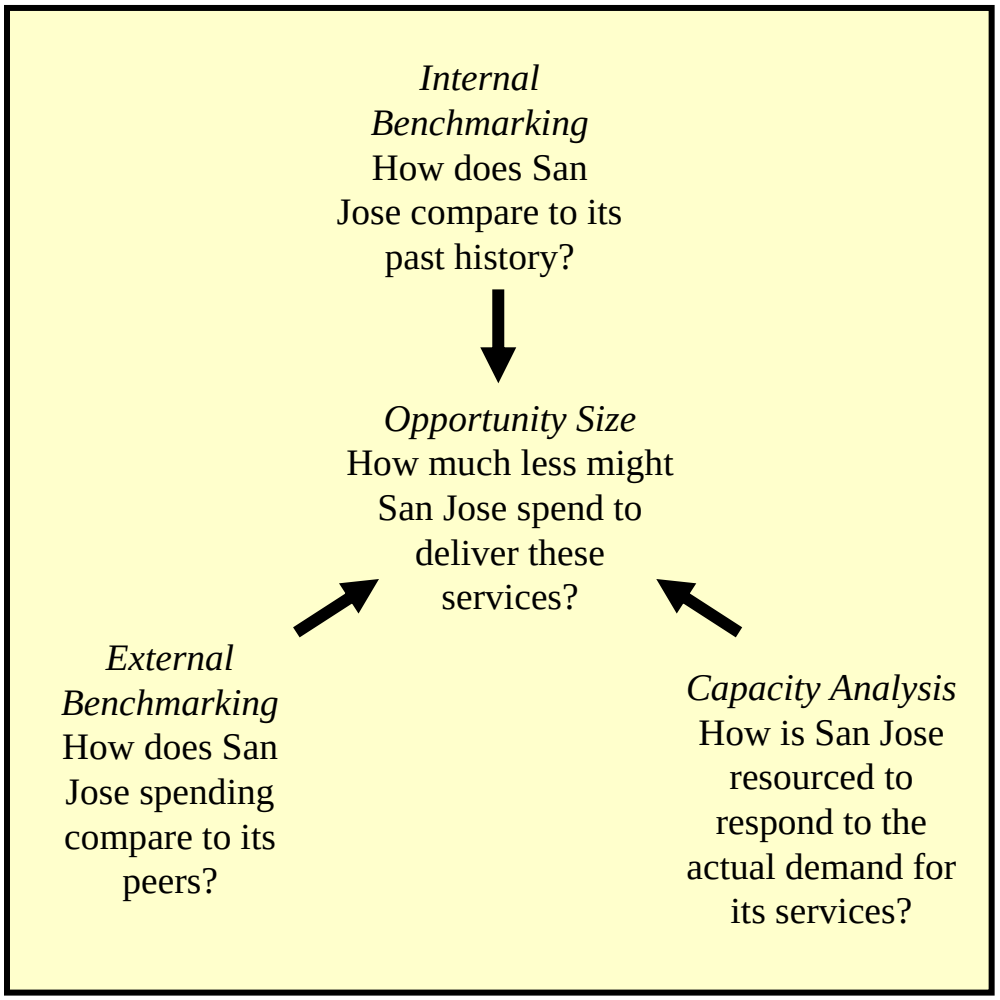
4. ***Eliminate infrastructure deficits and invest in capital and economic development*** that encourages growth in the residential population and attracts private investment

The approach is data and analysis driven

- Identify alternative *strategic* choices that can improve economics
  - What services does the City provide?
  - To whom?
  - At what level?
- Develop alternative *operational* choices that can improve economics
  - How will those services be provided?
  - Using what business processes?
  - Using what mix of capital and labor?
  - Deploying which technologies?
  - Using what organizational structure?
  - Sourced from where?
- Data Sources
  - Interviews with City of San José personnel
  - Financial and operating data from City of San José operating departments
  - Third party research
  - IBM propriety municipal operations benchmarking data
  - Input from IBM subject matter experts

The objective of the study is to identify and size the opportunity to reduce spending in these operating departments

- The team has tried to "triangulate" by assessing spending in three dimensions
  - Internal benchmarking (comparing San Jose's spending over time)
  - External benchmarking (comparing San Jose's spending to peer cities)
  - Capacity analysis (assessing San Jose's capacity to deliver services relative to the actual demand for those services)
- The goal is to "size the opportunity", not to recommend specific savings reductions
  - We provide a roadmap for next steps



Cost reduction opportunities may be available

- Outcomes in public safety have improved dramatically during the past several decades, which suggests that a re-calibration of force levels is overdue and alternative force deployment models should be considered
  - Both the San José Police Department and the San José Fire Department have significant excess capacity to handle the workload they currently encounter
  - Both departments are [generally] deploying standard models of force deployment –which emphasizes geographic coverage and response time – rather than deployment models focused on predicting public safety events and engaging in "problem solving" activities
    - These new models can be greatly informed by new analytics and technology, neither of which are currently being deployed to their fullest potential
- In general, the Department of Parks, Recreation and Neighborhood Services should not be reducing services or shutting programs
  - However, there are revenue and cost savings opportunities in DPRNS
- From a city-wide perspective, there are several opportunities to improve efficiency
  - IT systems rationalization and consolidation
  - Increased focus on performance measurement, particularly in the area of outcomes to drive resource allocation and in the area of efficiency metrics

These opportunities can generate significant value for the City

Value Creation Opportunities	Estimated Value ($M)
Police	
Aligning police staffing with changes in crime conditions and adopting new policing model	56-60
Capture promised savings from AFR/RMS implementation ($3M)	3
Rationalize 911 call center staffing	1-5
Implement auditors recommendations on span of control and civilianization	10
Police subtotal	**70-78**
Fire	
Reduce fire stations and personnel to align resources with fire risk	36
Adopt dynamic staffing model	6
Move to three person companies	19 (27*)
Improve labor cost structure by either moving to locally competitive labor rates or outsourcing	32 (55*)
Fire Subtotal	**60-80**
PRNS	
Implement cost savings initiatives	4.5-5.5
Implement revenue generation opportunities	10.5-17.5
PRNS subtotal	**15-23**
Total Opportunity	**145-181**

* Stand alone value (that is, savings opportunity if station reduction and dynamic staffing not adopted)

San José Police Department

The analysis of the San José Police Department (SJPD) begins with the following observations

- The number of police personnel deployed by large cities in the United States (and therefore the amount of money those cities spend) varies enormously *even after controlling for crime rates*
  - The differences in police resourcing (i.e. per capita spending and staffing) cannot be explained by population density, geographic size, per capita income, labor conditions, or other operational or demographic factors for which we have tested
- Crime in the United States is down by over 30% since its peak – and in San José is down by 70% since its peak in 1980 – yet resourcing has not changed significantly
  - San José has the same number of police officers per capita today than it had in 1974, *when the crime rate was three times higher*
- Third party research concludes that *crime is largely driven primarily by exogenous variables* mostly unrelated to policing strength
  - Cities with the highest number of police officers have the highest crime rates
  - Concentration of poverty (neighborhood health) and demographics are the most significant predictors of crime according to the academic research
  - There is evidence that targeting policing resources in areas of high crime ("hot spots") can have localized impacts on public safety

The team's challenge is two-fold

- How should a city determine how many police personnel and other resources SJPD requires to achieve its mission?
- What should a city do to ensure that the personnel and resources that it does choose to dedicate to SJPD are being deployed in the most efficient and effective manner?

The mission of SJPD – like most urban police forces – is to reduce the risk to residents from criminal acts

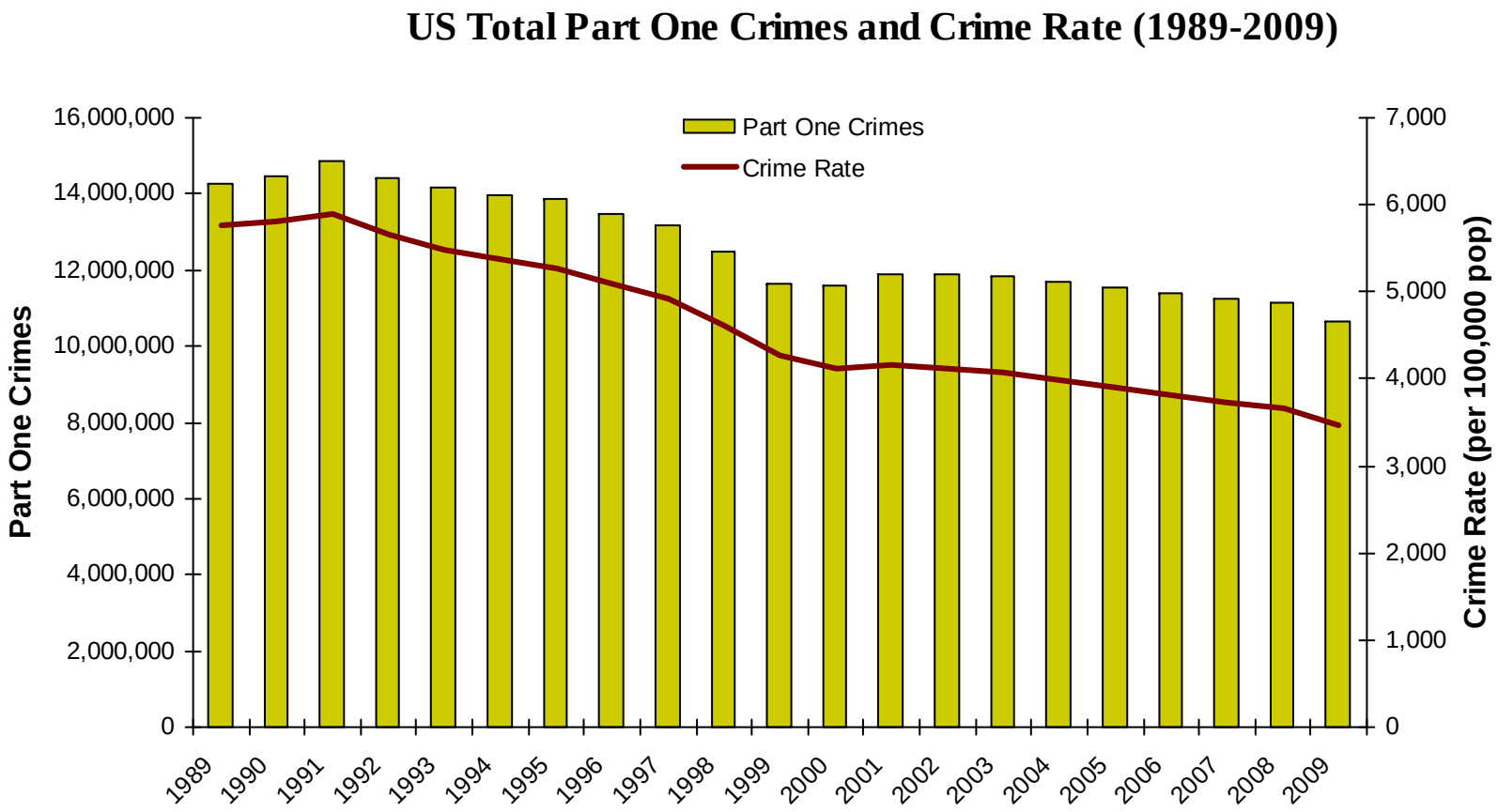
- Police forces accomplish this mission by providing a set of specific services
  - Emergency response to calls for help, primarily delivered through a 911 call center (measured by response time)
  - Criminal investigations, arrest and prosecution support (measured by closures rates on reported crimes)
  - Community policing and patrolling (measured by self-initiated incident response and community touch points)
- Police also provide a set of other services including traffic enforcement, special events management and licensing

From the SJPD Website:

Mission

- *To Promote public safety*
- *To prevent, suppress, and investigate crimes*
- *To provide emergency and non-emergency services*
- *To create and maintain strong community partnerships*
- *To adapt a multidisciplinary approach to solving community problems*
- *To develop and promote a diverse, professional workforce*

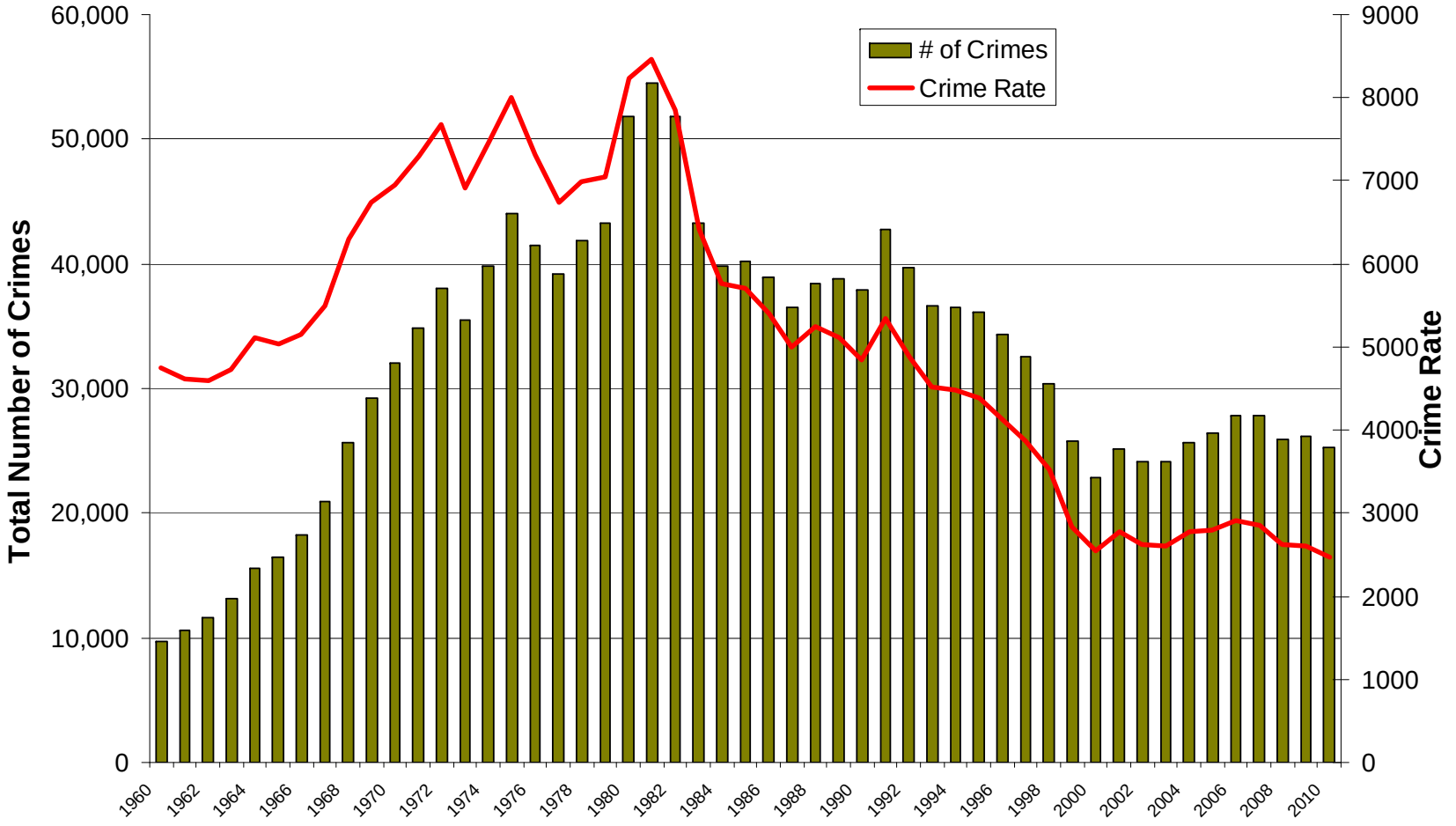
The crime rate in the United States has declined by 40% since 1989; crime risk has not been this low since the mid-1960s



Source: FBI UCR Database

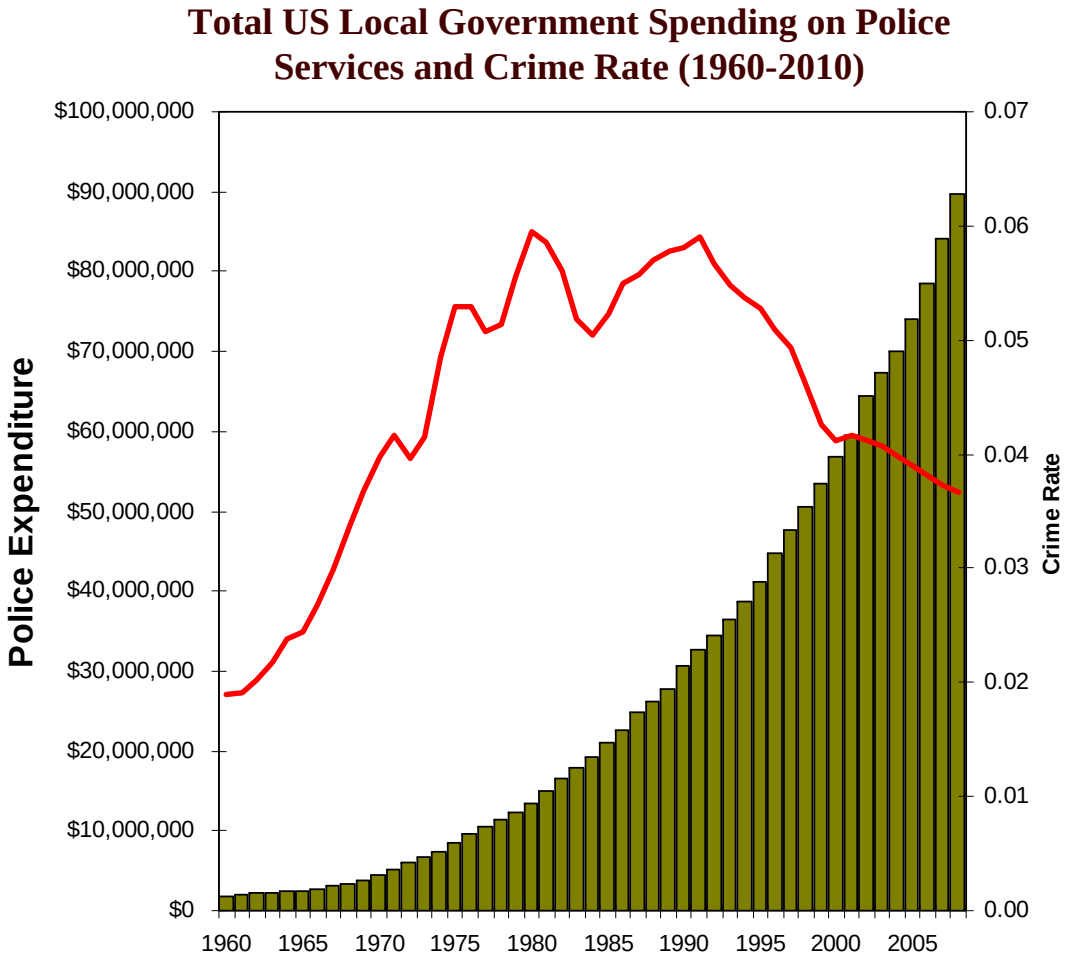
This is particularly true in San José where crime is down by 70% since its peak in 1980 and is now at lowest point since records have been kept

Crimes and Crime Rate in San José (1960-2010)



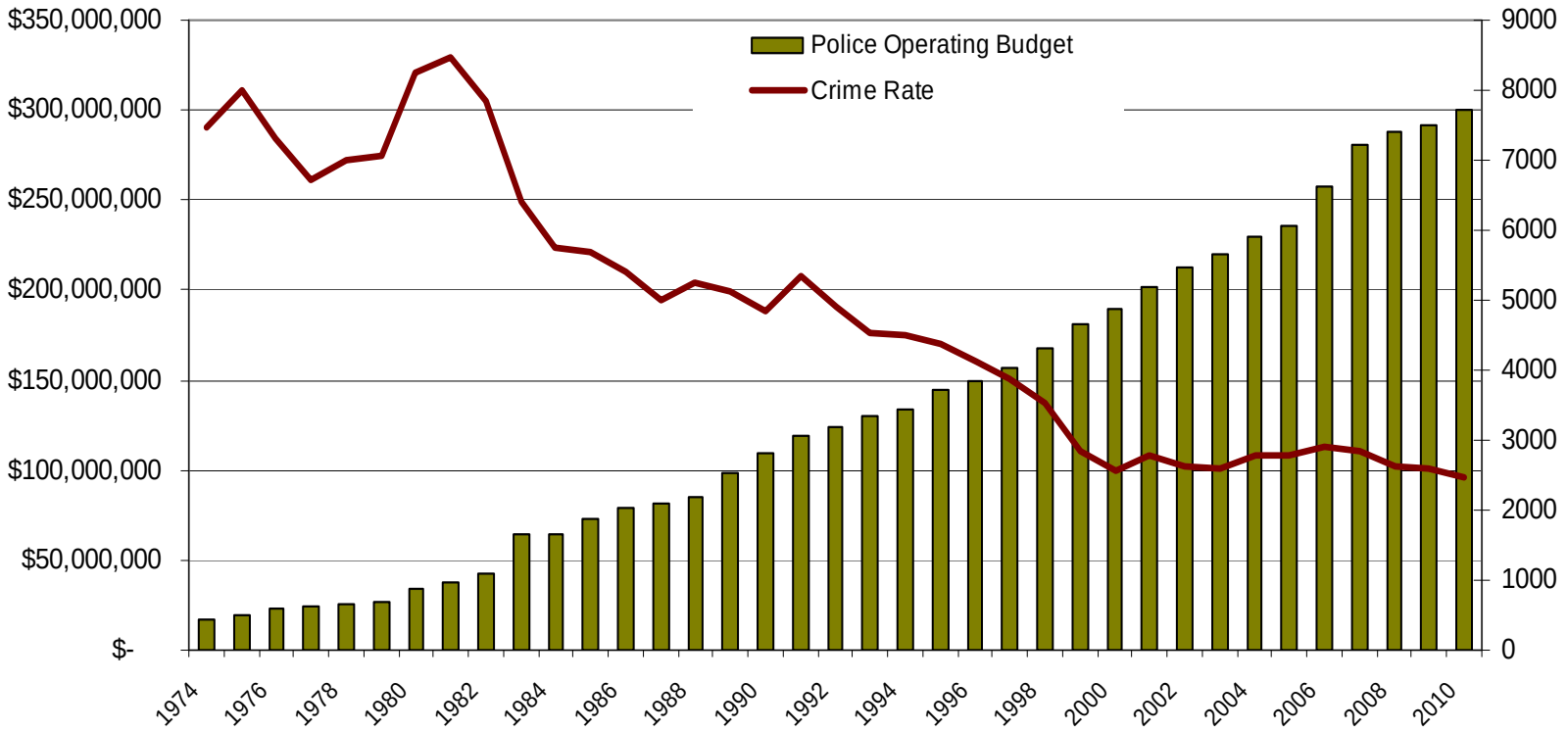
And yet spending on police services does not seem to adjust to reductions in crime

- Between 1960 and 1990, the crime rate increased at a rate of 3.8% annually and police spending increased at a rate of 9.8%
- Between 1990 and 2010, crime decreased by a rate of 2.6% annually, while police spending increased at a rate of 6.1%
- What changes in public safety circumstances would justify reductions in police spending?



And as in the national case, San José's spending on police services has increased despite steep reductions in crime

San José Spending on Police Services and Crime Rate (1974-2011)

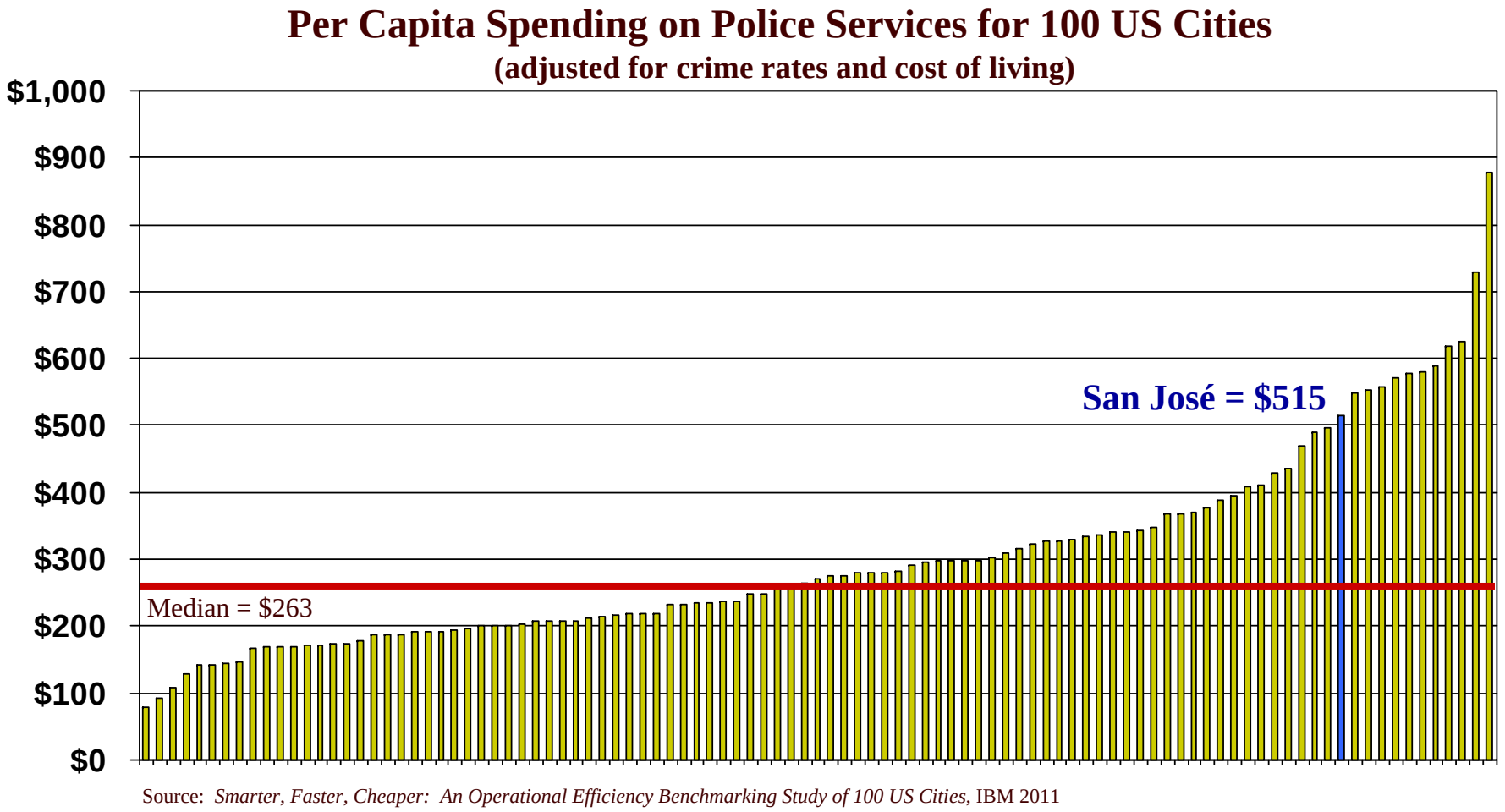


Comparing San José to peer cities can be a useful place to begin the evaluation of the City's spending on police services

- How do other cities resource their police departments compared to San José?
- Do they get better or worse outcomes that San José?
- Is the city receiving comparable value for its spending?
- Are its police officers as "productive"?

- While we acknowledge that every city is different in one way or another, comparisons can nevertheless be a useful place to start the analysis
- Important to note: the following slides compare police spending after controlling for cost of living and crime rates
  - We control for crime rates because we know that crime volumes drive police resourcing (
  - What we are trying to isolate is how *policy choices* regarding spending on police services varies across cities assuming they are facing identical public safety environments (i.e., crime levels)
    - After controlling for crime, variations in spending and personnel would have to be explained by factors other than the risk of crime

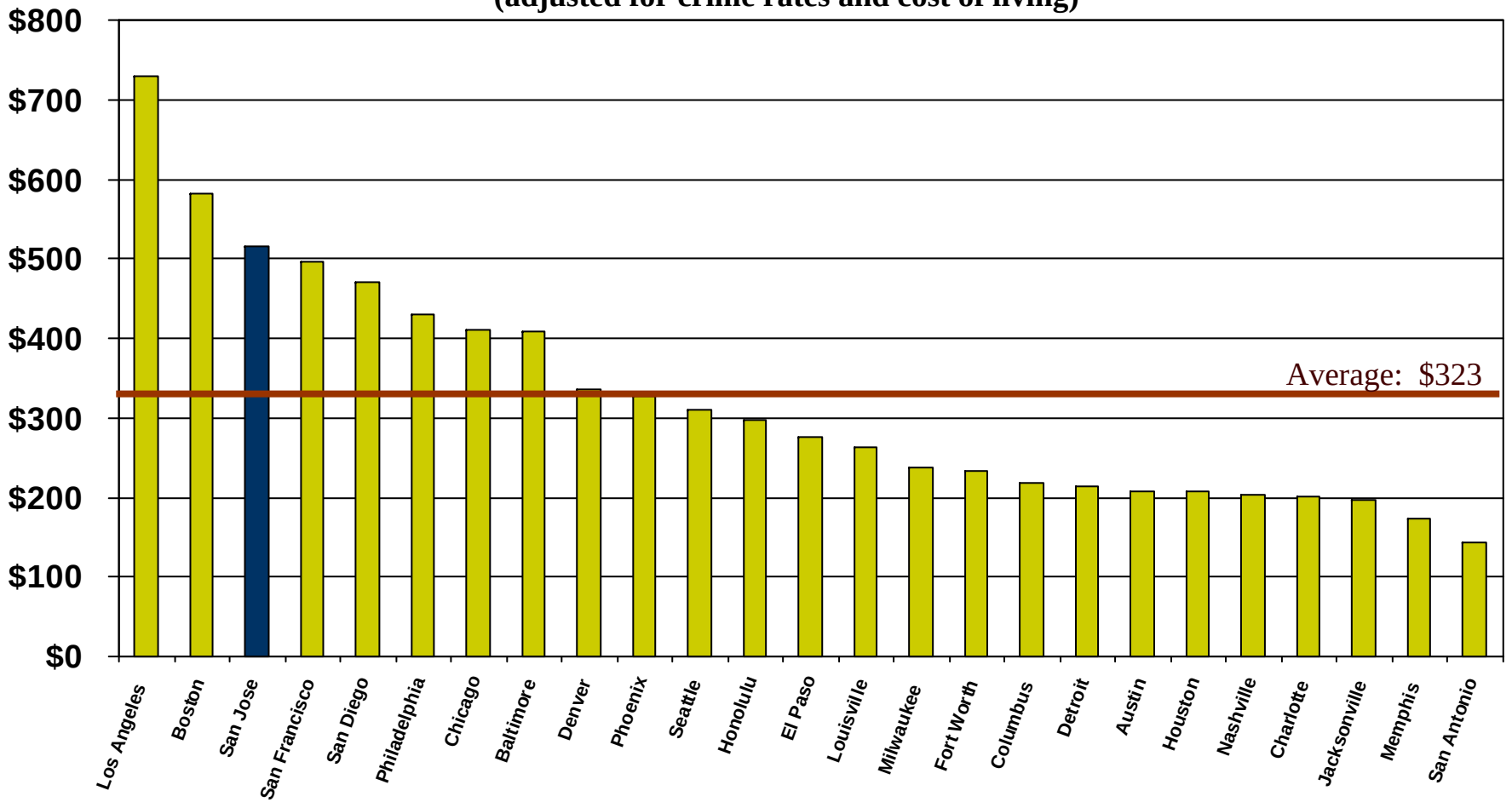
Large US cities spend $263 per capita on police services on average; San José spends 96% more than the median



Source: *Smarter, Faster, Cheaper: An Operational Efficiency Benchmarking Study of 100 US Cities*, IBM 2011

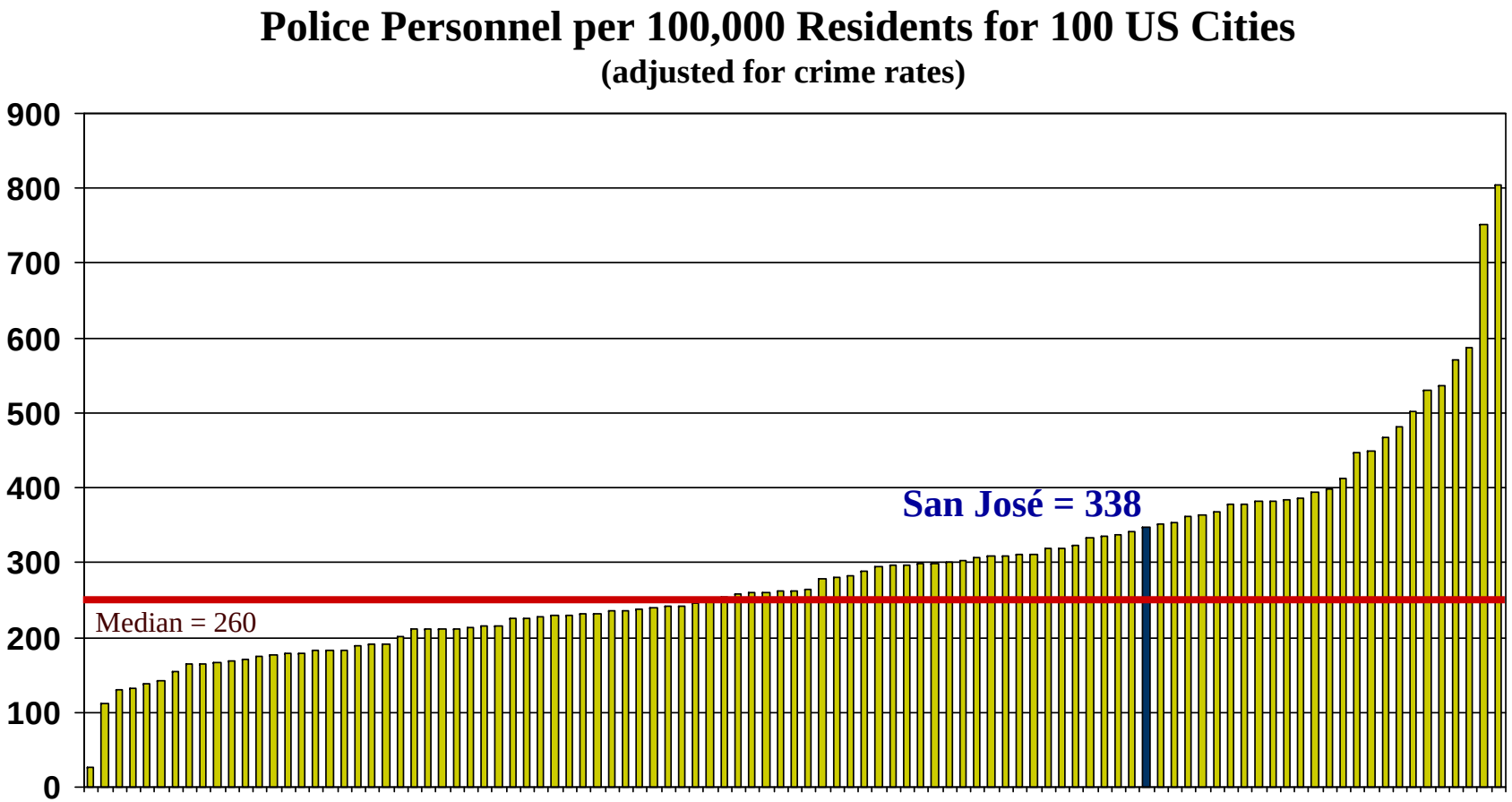
Among the largest US cities* San José spends nearly 60% more on police service than the average city

Per Capita Spending on Police Services
(adjusted for crime rates and cost of living)



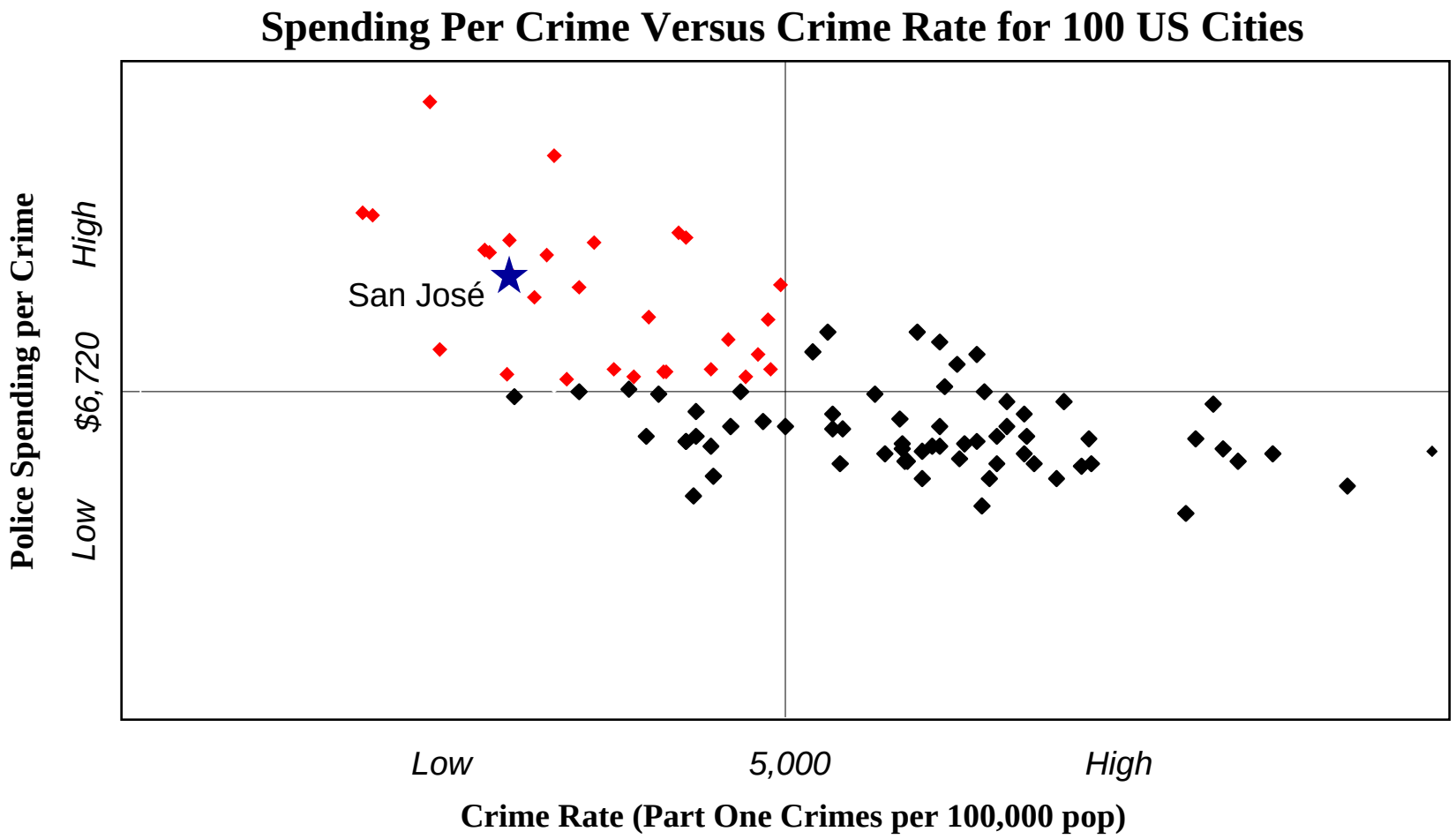
*Excludes certain cities due to data availability, organizational incompatibility, or non-conforming budgeting practices
Source: *Smarter, Faster, Cheaper: An Operational Efficiency Benchmarking Study of 100 US Cities*, IBM 2011

Large US cities employ approximately 260 police personnel per 100,000 residents on average; San José employs 30% more



Source: *Smarter, Faster, Cheaper: An Operational Efficiency Benchmarking Study of 100 US Cities*, IBM 2011

San José is among 31 cities in the study with below average crime rates and above average spending per crime

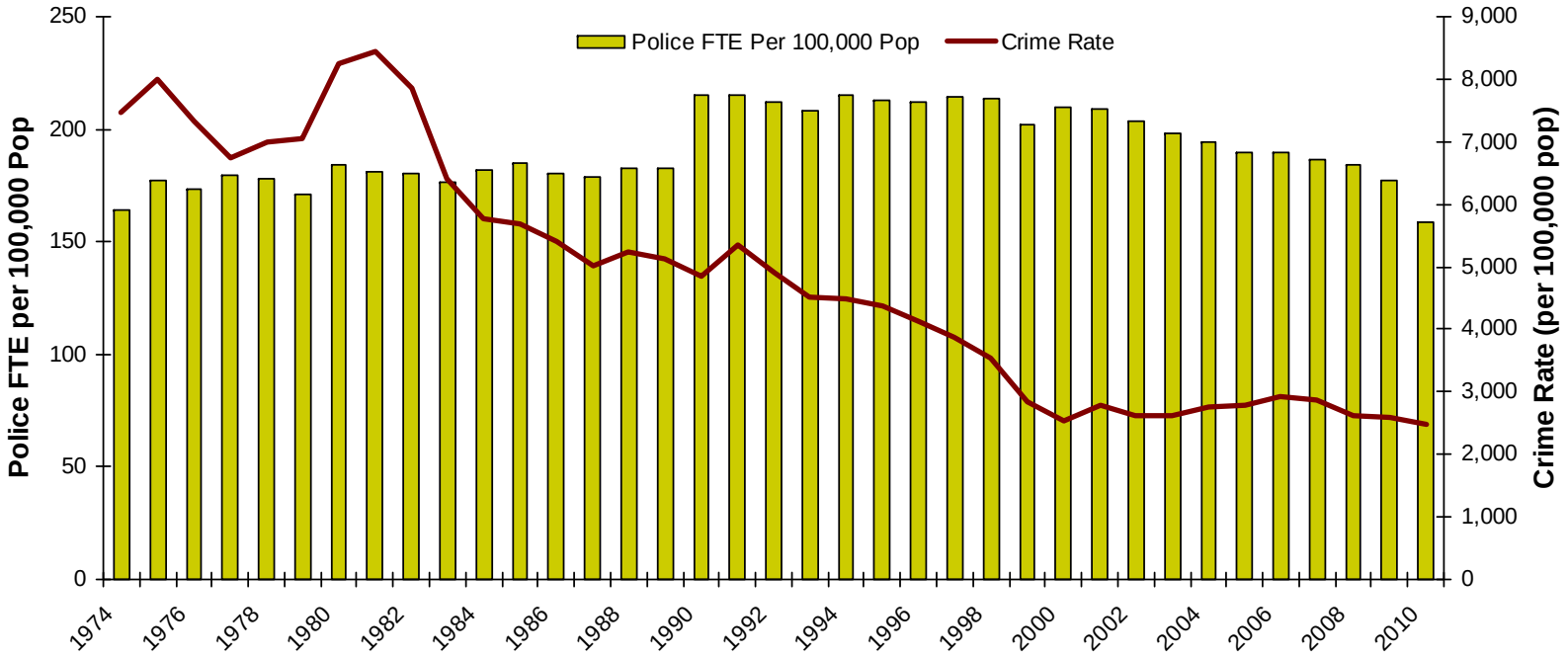


Source: *Smarter, Faster, Cheaper: An Operational Efficiency Benchmarking Study of 100 US Cities*, IBM 2011

San José's above average spending is largely a consequence of the City maintaining policing personnel levels despite a deep decline in crime

- San José has the same number of police personnel per capita as it did in 1974 when the crime rate was more than three times higher

San José Police Personnel per 100,000 Pop and Crime Rate (1974-2010)

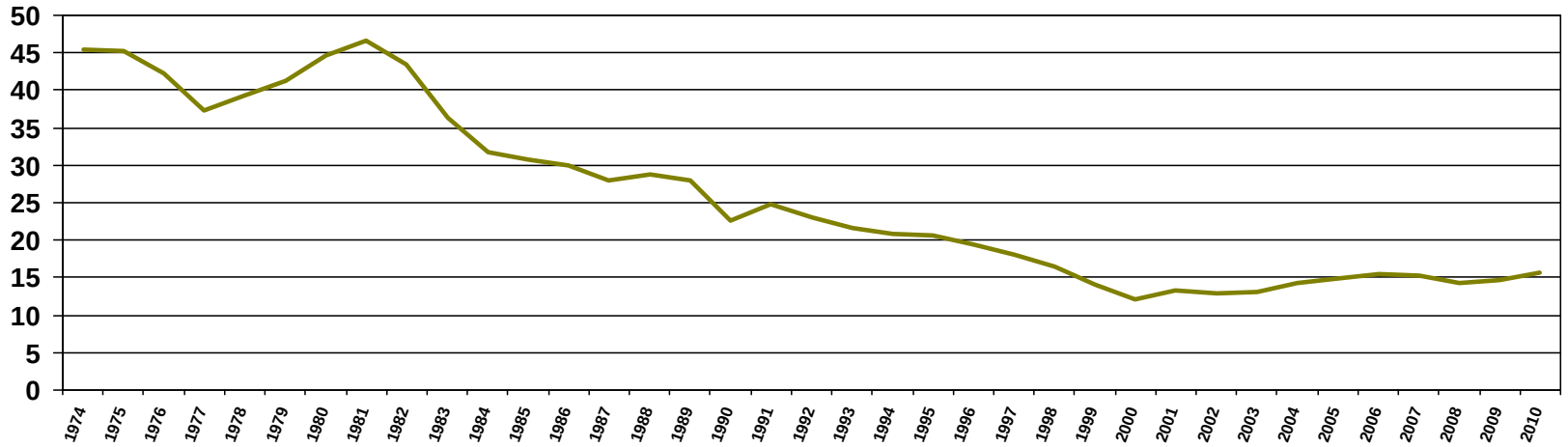


Source: *FBI UCR, City of San Jose historical budgets*

San José's "crime fighting capacity" - the resources it has available to prevent, respond to and solve crimes - has more than tripled since 1981

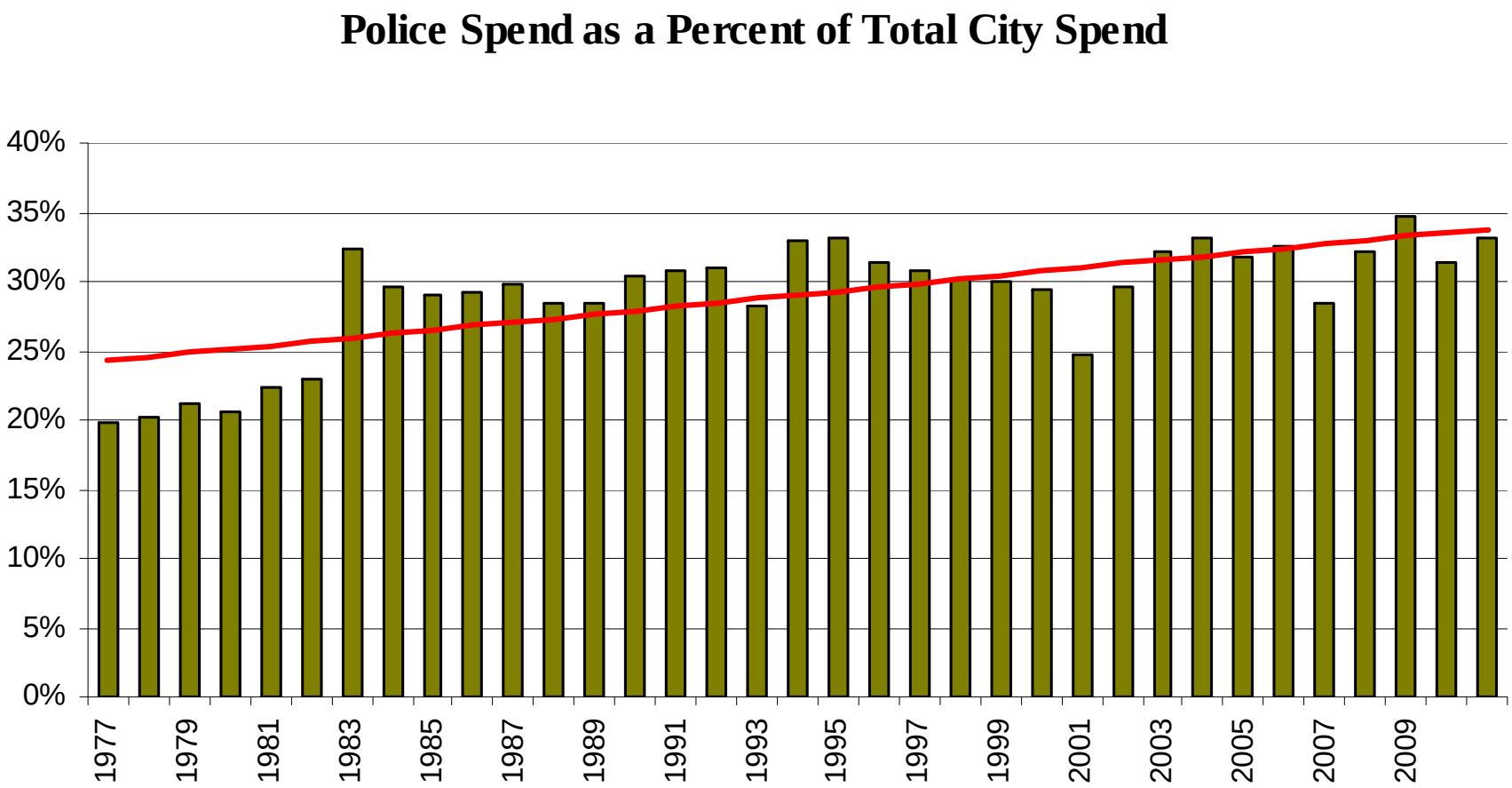
- In 1981, San José had 47 crimes for every police FTE; today it has 15
- Important to note that this increase in capacity is experienced within virtually all police functions, including response, investigation, records management, evidence and property storage, etc.

Crimes per Police FTE (1974-2010)



Source: *FBI UCR, City of San Jose historical budgets*

During this period, SJPD's share of General Fund spending has increased by over 50%, squeezing spending on other city services



Source: *City of San Jose historical budgets*

If police productivity (crimes per police FTE) returned to the level it was in the not-so-distant past, significant savings could be generated

- Between 1986 and 1994, SJPD averaged 25.3 crimes per police FTE; this ratio declined to 14.1 in the 1999-2010 time frame
- If police productivity (crimes per police FTE) returned to the 1986-1994 average level, the city would employ 374 fewer police personnel, resulting in a cost reduction of over $56 million
- Adjustments have been made to takes into consideration changes in violent crime rates and increased density, both of which impact police productivity

	Average (1986-1994)	Average (1999-2010)
Part One Crimes per 100,000 Population	4,985	2,704
Crimes per Police FTE	25.0	14.1
Violent Crime Rate	625	422
Violent Crime Composition Adjustment Factor		-15.3%
Adjusted productivity level by % of Violent Crime =Benchmarking Productivity/(1 - Adjustment Factor)		21.7
Population Density Adjustment Factor		-1.9%
Adjusted productivity level by population density =Benchmarking Productivity/(1 + Adjustment Factor)		22.1
Police FTEs in 2010 if staffed at 1986-1994 levels		1,249
Actual Police FTEs in 2010		1,623
Potential FTE Reduction		**- 374**
Total SJPD Personnel Cost (2011)		269,246,498
FTE Unit Cost		150,699
Potential Personnel Savings		**56,331,140**

If staffing levels were aligned to the same productivity level (crimes per police FTE) as 20 peer US cities, even greater savings could be achieved

- US cities with population between 500k and 1 million average 19.1 crimes per police FTE; San José has 15.6 crimes per FTE
- If police productivity (crimes per police FTE) were moved to the average of the peer cities, then the city would employ 401 fewer police personnel, resulting in a cost reduction of over $60 million
- Adjustments have been made to takes into consideration changes in violent crime rates and increased density, both of which impact police productivity

	Peer Cities 2010	San José 2010	
Police FTE per 100,000 Population	323	159	
Part One Crimes per 100,000 Population	5851	2473	
Crimes per Police FTE	18.1	15.6	
Violent Crime Rate	871	314	
% of Violent Crime	14.9%	12.7%	
Violent Crime Composition Adjustment Factor			10.9%
Adjusted productivity level by % of Violent Crime			20.3
Population Density Adjustment Factor			-1.9%
Adjusted productivity level by population density			20.7
Total FTEs required if staffed at the level of peer cities			1,222
Actual FTEs (2010) (from Budget Report 2011)			1,623
Potential FTE Reduction			**- 401**
Total Personnel Cost (from Budget Report 2011)			269,246,498
FTE Unit Cost			150,699
Potential Personnel Savings			**60,411,916**

Reductions at this level can be accommodated given current police staffing utilization

Patrol Officer Time Breakdown

Total hours	Weeks	Hours	
hours worked per week	40		
weeks worked per year	52		
hours per year		2,080	
vacation weeks per year	4	160	
holiday weeks per year	2	80	
sick weeks per year	2	80	
active weeks	44		
Total active available hours (annual)		1,760	85%

Active hours allocation	1,760	
Unavailable time	264	15%
briefing/deployment	176	10%
training	35	2%
admin (reports/meals)	176	10%
respond to calls for service	669	38%
proactive patrol/community	440	25%
	1,760	100%

Source: SJPD, CAD data

- On average, patrol officers have 1,760 hours available for on-duty work (2,080 hours each working year adjusted for vacation, sick leave, etc)
- Of those 1,760 on duty hours, 63% or 1,108 hours are available for patrolling and service calls (remaining hours are used for training, briefings, report preparation, meals, etc)
- SJPD policy is to dedicate approximately 40% of patrol time to “community policing” activities; as a result, patrol personnel have 669 hours available for call response, which is 38 % of their active hours and 32% of their total annual hours

By estimating the amount of a patrol officer's time each service call requires, we can estimate the demand on the field operations workforce

Patrol hours required per event by priority

Capacity Demand in hours by Priority

By priority	# of POs involved	Travel Time	Service Time	Total Patrol Time per event
1	3	0:03:40	1:25:19	4.45
2	1.75	0:05:42	0:46:02	1.51
3	1.25	0:06:40	0:40:41	0.99
4	1.25	0:03:13	0:54:36	1.20

*Average # of patrol officers attached to an event: P1: 1*100% + 2*75% + 2*25%; P2: 1*100% + 1*75%; P3/4: 1*100% + 1*25%*
To be validated with additional data request

Weekly demand in patrol hours for Priority 1-4 calls (Total: **5328 Hours**)

By Day	Demand for Patrol Hours
Monday	717
Tuesday	706
Wednesday	710
Thursday	716
Friday	819
Saturday	863
Sunday	799

By Time Zones	Demand for Patrol Hours
1	260
2	211
3	175
4	125
5	88
6	69
7	73
8	123
9	170
10	198
11	216
12	216
13	234
14	246
15	249
16	254
17	284
18	305
19	308
20	300
21	293
22	308
23	326
24	296

Division	By Beat	Demand for Patrol Hours
Western	L1	65
	L2	77
	L3	62
	L4	104
	L5	60
	L6	64
	F1	42
	F2	65
	F3	66
	F4	69
	F5	98
	N1	41
	N2	53
	N3	58
	N4	59
	N5	91
	N6	60
	S1	80
	S2	65
	S3	61
	S4	64
	S5	58
	S6	64

Source: SJPD, CAD data

For Discussion Purposes Only

By comparing demand to the actual capacity of the workforce, we can determine which shifts and beats have excess capacity

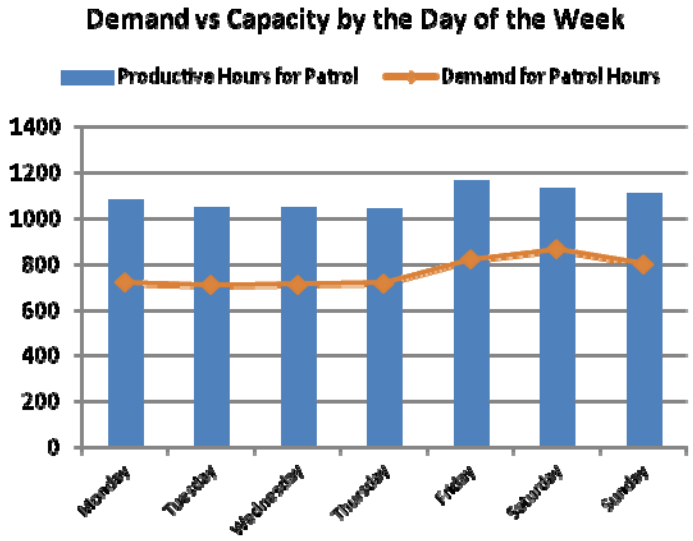
Weekly Service Call Response Capacity

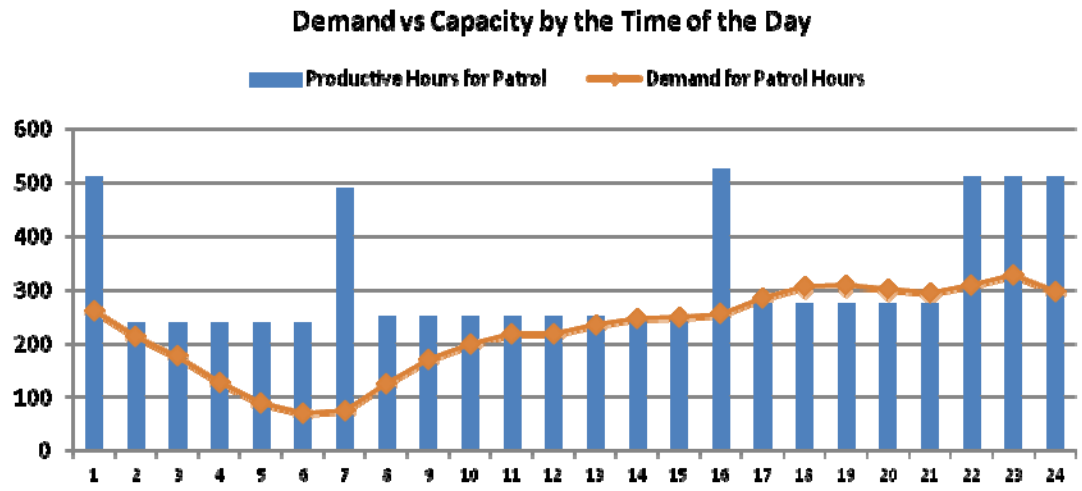
Staffing By Day	Person Hours	Productive Hours for Patrol Productive Hours for Patrol
Monday	2877	1080
Tuesday	2788	1047
Wednesday	2784	1045
Thursday	2768	1039
Friday	3096	1162
Saturday	3014	1131
Sunday	2953	1108

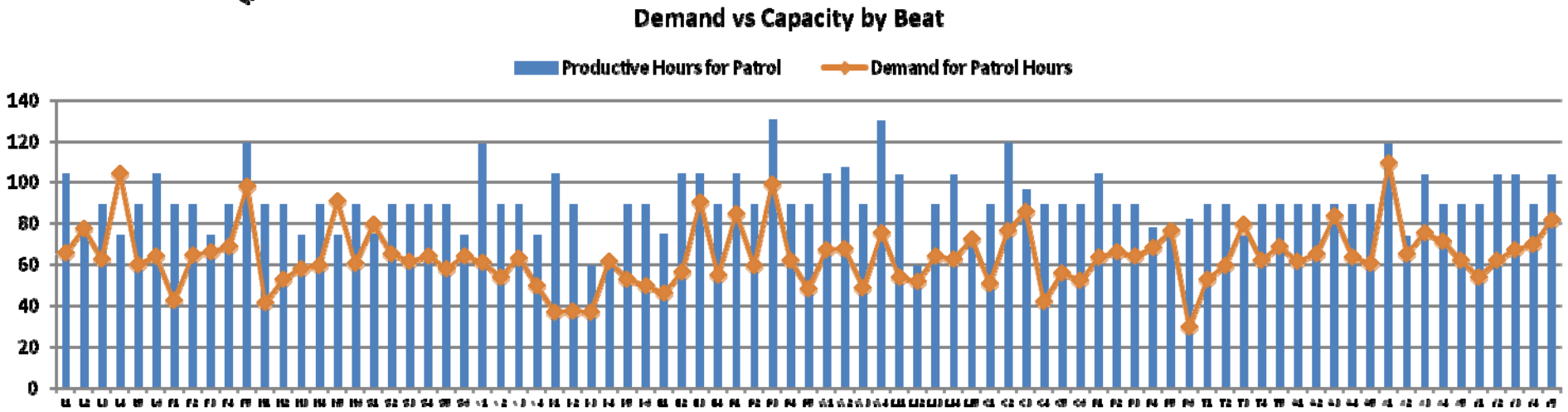
Staffing By Time Zones	Person Hours	Productive Hours for Patrol Productive Hours for Patrol
1	1360	511
2	632	237
3	632	237
4	632	237
5	632	237
6	632	237
7	1300	488
8	668	251
9	668	251
10	668	251
11	668	251
12	668	251
13	668	251
14	668	251
15	668	251
16	1396	524
17	728	273
18	728	273
19	728	273
20	728	273
21	728	273
22	1360	511
23	1360	511
24	1360	511

Division	Staffing By Beat	Person Hours	Productive Hours for Patrol Productive Hours for Patrol
Western	L1	278	104
	L2	198	74
	L3	238	89
	L4	198	74
	L5	238	89
	L6	278	104
	F1	238	89
	F2	238	89
	F3	198	74
	F4	238	89
	F5	317	119
	N1	238	89
	N2	238	89
	N3	198	74
	N4	238	89
	N5	198	74
	N6	238	89
	S1	199	75
	S2	238	89
	S3	238	89
	S4	238	89
	S5	238	89
	S6	198	74
Central	V1	316	119
	V2	238	89
	V3	238	89
	V4	198	74
	K1	278	104
	K2	238	89
	K3	158	59
	K4	159	60
	K5	238	89
	K6	238	89
	E1	199	75

Patrol is over-resourced *every* day of the week, at *most* times of the day and in *most* beats, with a excess capacity of 2,245 hours or 42% on a weekly basis







The team also estimated "crime fighting capacity" assuming that community policing hours were available for call response

Patrol Officer Time Breakdown

Total hours	Weeks	Hours	
hours worked per week	40		
weeks worked per year	52		
hours per year		2,080	
vacation weeks per year	4	160	
holiday weeks per year	2	80	
sick weeks per year	2	80	
active weeks	44		
Total active available hours (annual)		1,760	84.6%

Active hours allocation	1,760	
Unavailable time	264	15%
briefing/deployment	176	10%
training	35	2%
admin (reports/meals)	176	10%
respond to calls for service	1,109	63%
proactive patrol/community	0.00	0%
	10.00	100%

Source: SJPD, CAD data

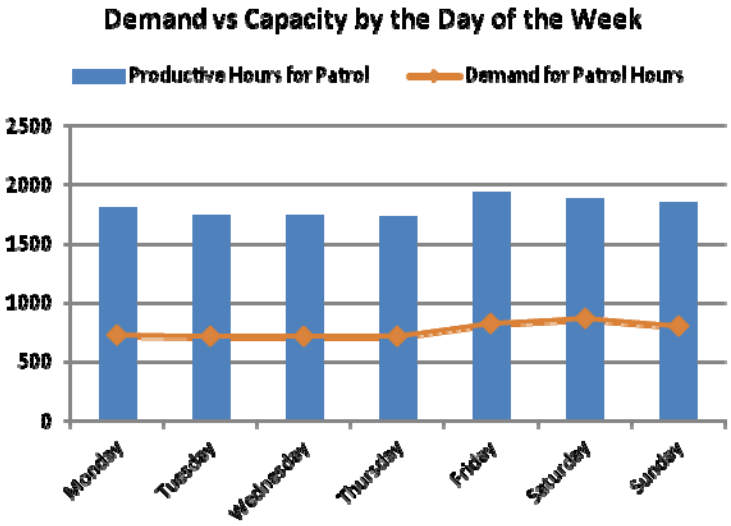
Weekly Capacity in patrol hours for Calls for Service

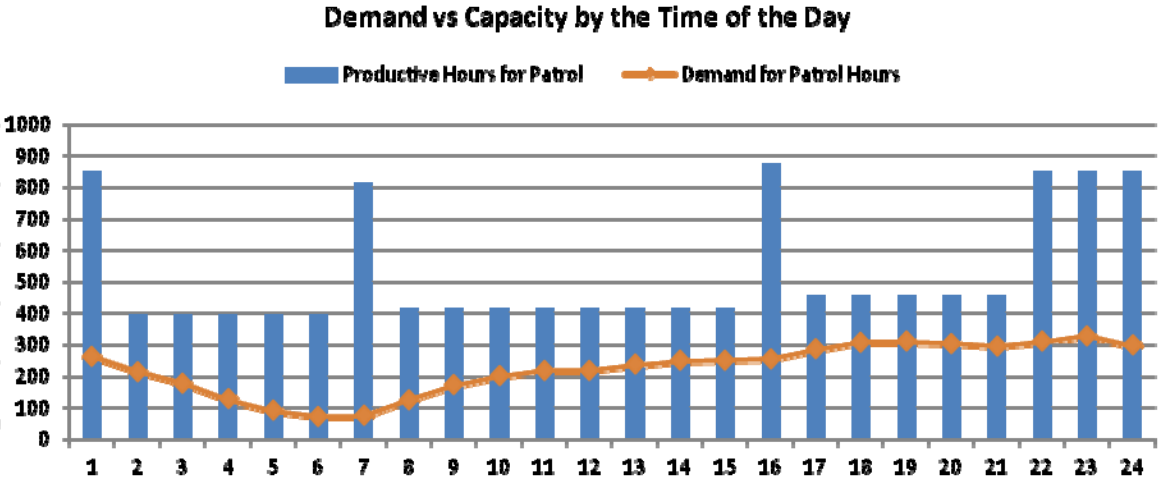
By Day	Person Hours	Productive Hours for Patrol
Monday	2877	1800
Tuesday	2788	1744
Wednesday	2784	1742
Thursday	2768	1732
Friday	3096	1937
Saturday	3014	1886
Sunday	2953	1847

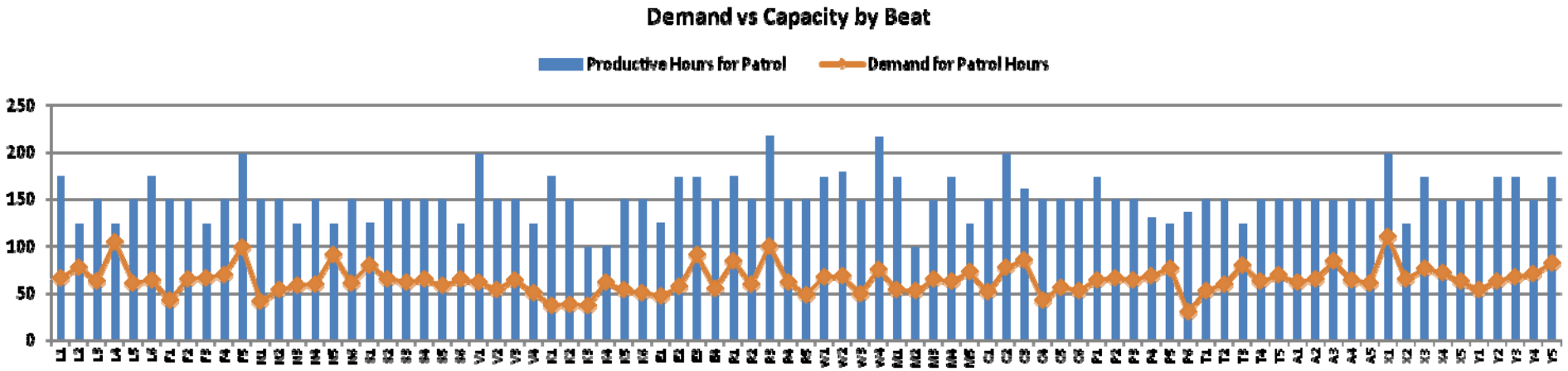
By Time Zone	Person Hours	Productive Hours for Patrol
1	1360	851
2	632	395
3	632	395
4	632	395
5	632	395
6	632	395
7	1300	813
8	668	418
9	668	418
10	668	418
11	668	418
12	668	418
13	668	418
14	668	418
15	668	418
16	1396	873
17	728	455
18	728	455
19	728	455
20	728	455
21	728	455
22	1360	851
23	1360	851
24	1360	851

Division	By Beat	Person Hours	Productive Hours for Patrol
Western	L1	278	174
	L2	198	124
	L3	238	149
	L4	198	124
	L5	238	149
	L6	278	174
	F1	238	149
	F2	238	149
	F3	198	124
	F4	238	149
	F5	317	198
	N1	238	149
	N2	238	149
	N3	198	124
	N4	238	149
	N5	198	124
	N6	238	149
	S1	199	124
	S2	238	149
	S3	238	149
	S4	238	149
	S5	238	149
	S6	198	124

When time allocated for community policing is included as available for call response, there is a weekly excess capacity of 7,270 hours or 136%







For Discussion Purposes Only

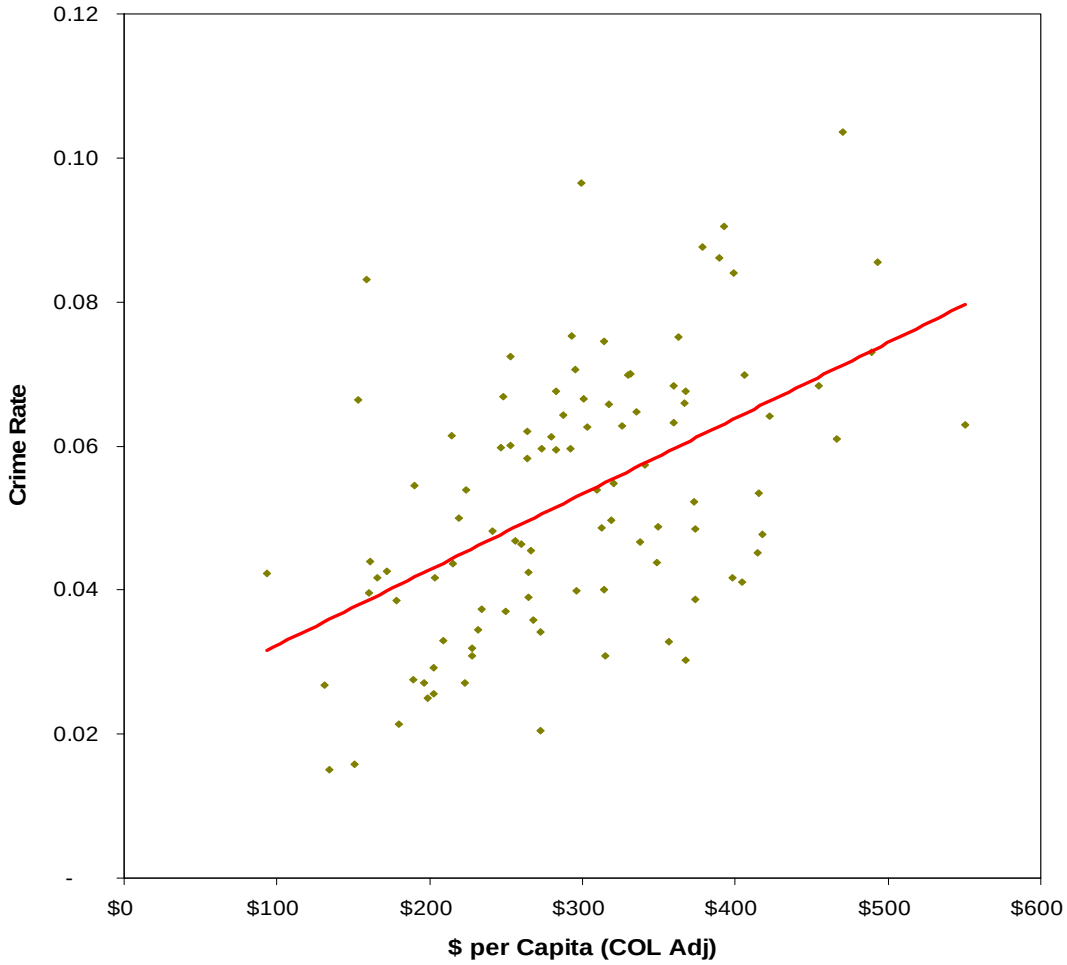
Clearly SJPD's capacity to respond to crime exceeds significantly the demand for those resources

- Depending on how you categorize community policing hours, SJPD has over-capacity in the range of 40-130%
- In other words, SJPD could reduce its sworn officer ranks by 40% and still have significant capacity to perform community policing activities
- Given the large decline in crime in the City, this excess capacity should come as no surprise
- Given this excess capacity, this may be the time to consider moving from the "standard model" of policing to alternative approaches that improve the efficiency and effectiveness of policing services

More spending on police does not appear to improve outcomes

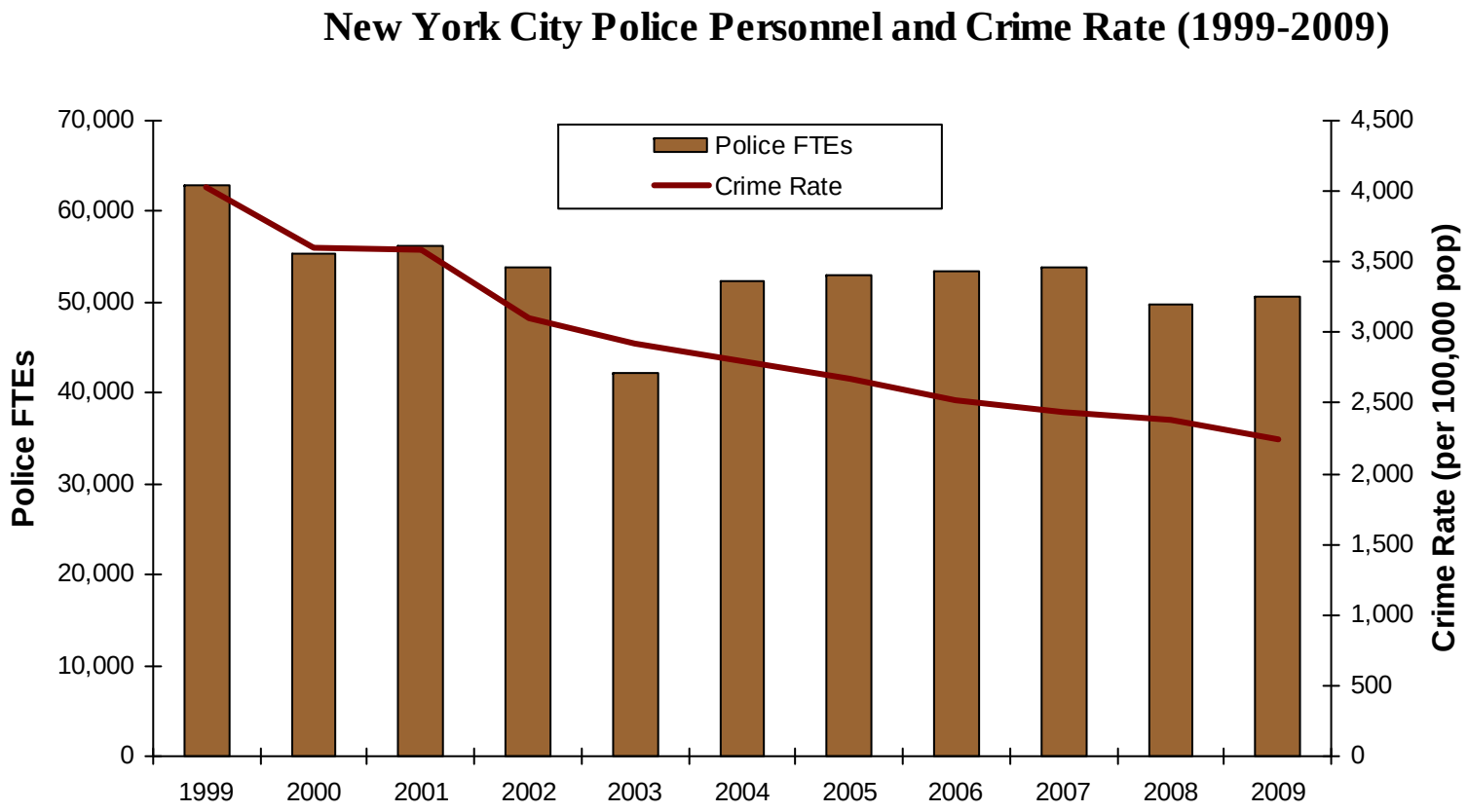
- The more a city spends on police services, the higher the crime rate
  - This is a consistent finding over the past 40 years of research
- Supports the notion that police spending is driven by crime volumes
  - Primarily due to a desire to maintain response times
  - Volumes also drive staffing for support services such as 911 call processing, records managements, crime lab resourcing, etc.

Per Capita Spending on Police Services and Crime Rates for 100 US Cities



Source: *Smarter, Faster, Cheaper: An Operational Efficiency Benchmarking Study of 100 US Cities*, IBM 2011

As one example, New York City reduced police personnel by 20% between 1999 and 2009 and the crime rate declined by 44%



Source: *"FBI — Uniform Crime Reports." FBI — Homepage. Web. 25 Mar. 2011. <http://www.fbi.gov/about-us/cjis/ucr/ucr>.*

Academic research regarding the relationship between police staffing and generally concludes that more policing does not reduce crime

- There is general consensus that simply adding or subtracting police personnel will not impact crime
  - Studies conducted over the past three decades struggle to find a conclusive relationship between increases in police staffing and declining crime rates
- There is evidence, however, that changes in demographics, economic conditions, and shifts in the drugs trade have had significant impacts on crime
- There is also evidence that how police personnel are deployed can make a difference
  - Focused efforts on "hot spots" for example appears to have an impact

"The panel [The National Research Council] reaffirmed the findings of the 1970s and 1980s that the standard practices of policing — employing more sworn officers, random motorized patrolling, rapid response and criminal investigation — failed to reduce crime when applied generally throughout a jurisdiction."

From *The Changing Environment for Policing, 1985-2008*
David H. Bayley and Christine Nixon

The "standard model" of policing does not appear to be an effective means for fighting crime; nor for that matter does "community policing"

- Studies suggest that the "standard model of policing", which relies on fixed patrolling beats distributed across all areas of the city and focused on the rapid response to high priority calls, is an ineffective means for delivering police services

"Rapid response to calls for service has not been shown to reduce crime or even to lead to increased chances of arrest"

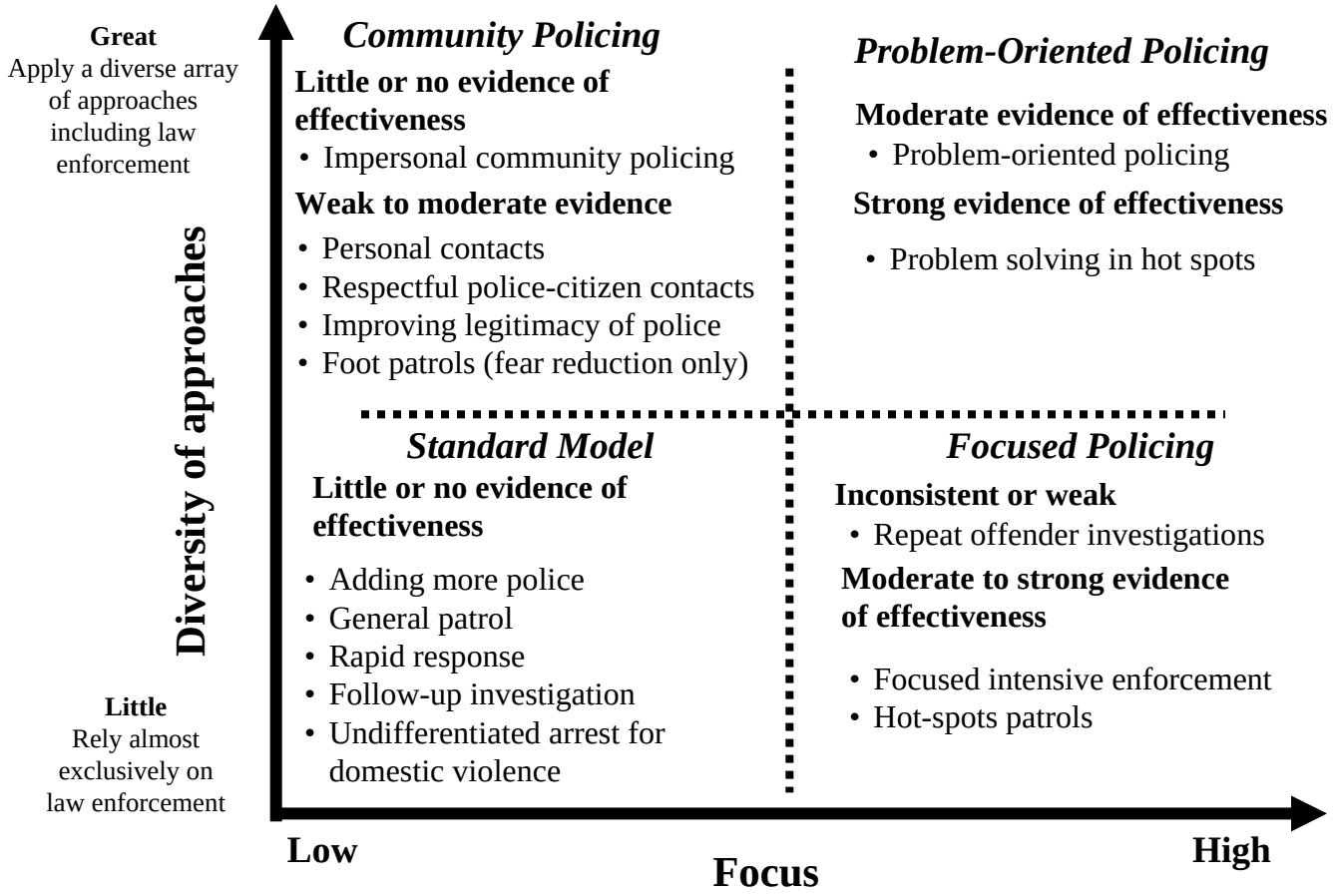
What Can Police Do to Reduce Crime, Disorder, and Fear?
David Weisburd And John E. Eck
ANNALS, *AAPSS*, 593, May 2004

"As a general strategy, community policing has not been found to be effective in preventing crime (Mastrofski, 2006). The available research shows that unfocused community-oriented tactics such as foot patrol, storefront offices, newsletters, and community meetings do not reduce crime and disorder (Weisburd and Eck, 2004; Skogan and Frydl, 2004"

The Effectiveness of Community Policing in Reducing Urban Violence
John M. MacDonald
Department of Criminology and Criminal Justice, University of South Carolina
May, 2007

- Studies further indicate that "community policing" also has no impact on crime rates
- Mehmet Alper Sozer, in his 2008 study *"Assessing The Performance Of Community Policing: The Effect Of Community Policing Practices On Crime Rates"* did not find any evidence to justify the crime reduction effect of community policing

The general consensus in the literature is that cities should adopting more diverse forms of crime fighting focused on problem solving and "hot spots"



Adapted from National Research Council (2003), Fairness and Effectiveness in Policing: The Evidence. Committee to Review Research on Police Policy and Practice. Edited by Wesley Skogan and Kathleen Frydl. Washington, DC: The National Academies Press. Figure 6.1 and Table 6.1, pp. 248-249.

However, there is evidence that "hot spot" policing and problem-solving strategies can impact crime in targeted urban geographies

- Applying police resources in a targeted way - informed by the sophisticated use of analytics - has shown to be an effective means for reducing *localized* crime
- A legitimate concern is that these efforts may simply "move crime around"
  - Little compelling evidence has yet surfaced to support or refute this concern

> "The effectiveness of the hot-spots policing approach has strong empirical support."
>
> *What Can Police Do to Reduce Crime, Disorder, and Fear?*
> David Weisburd And John E. Eck
> ANNALS, *AAPSS*, 593, May 2004

- The concept is to direct policing resources in areas where crime is most likely to occur
- Crime is not random, but can be attached to certain geographies
  - In Minneapolis, 3% of its geography generates 50% of its calls for service; 5% of its 115,000 addresses produced 100% of its calls for predatory crimes
  - In Chicago, 85% of shootings and homicides occur in less than 9% of its 227 square miles
- Crime also occurs in seasonal, weekly and daily patterns
  - San Jose has 75% fewer calls at daybreak than it does around midnight

Analytics and dynamic staffing are currently used by police departments across the country

- In 2005, Richmond was the 5th most dangerous city in the U.S. and violent crime was increasing at a rapid rate
- The Richmond Police Department needed an efficient and cost-effective way to analyze crime data, assess public safety risks and make intelligent decisions about personnel deployment
- The City applied predictive analytics that enabled them to exploit the wealth of data (50 million records) spread across several databases
- This capability enabled the City compile and search records, identify complex relationships in the data, and predict the likelihood of crime

"There were real benefits to be gained by using this type of technology to give us insight into where to put officers to get the biggest impact…

The big performance boost has been for my new guys on the streets… it essentially does the work that is gained only from experience."

– Stephen Hollifield, *CIO, Richmond Police Department*

SJPD should consider shifting hours currently dedicated to community policing and focusing those resources on "hot spots" policing

- Rather than having all patrols dedicate a fixed percentage of their time to community policing activities, SJPD could focus resources on problem solving activities
  - Use analytics to identify areas of concerns, crime patterns, etc.
- SJPD could adopt "dynamic" beat designs that are based on predictive analytics
  - These could vary on a daily basis, directing patrol resources to where crime is likely to occur
  - One obvious benefit is that dynamic beat design will improve response times, which can partially offset impact on response times of a reduced sworn force
- By applying video surveillance technologies, SJPD can also improve the productivity of field operations
  - Has proven to be an effective means for "hot spot" policing in Chicago, London, New York and Atlanta

Important to note that **SJPD is already engaged in many of these activities**; however, they are being applied as ancillary to the standard model, as opposed to a substitute for it

The analysis suggests that the City should consider restructuring its policing operations

- The risk associated with crime in the City of San Jose has declined dramatically
  - Crime is down by 70% since its peak in 1980
  - This decline is consistent with national trends
- This decline in risk has created excess capacity within SJPD
  - Crimes per police FTE has declined from 47 to 15 since 1974
- Given its public safety environment, San Jose has significantly more policing resources than its peers and more than it has had in its (relatively) recent history
  - The City has 30% more police personnel than the average of peer cities (when adjusted for crime)
- The standard model of policing – general patrolling on fixed beats – has not proven to be an effective means to fight crime
  - Dynamic beat designs informed by predictive analytics can significantly improve the productivity of the police force and generate better outcomes
- By recalibrating its policing operations to reflect changes in the public safety environment, the City can save significant money
  - We estimate that the City could reduce SJPD staffing by 23-36%, yielding $60-80 million in savings

These are not easy changes

- Implementing a plan of this magnitude needs to be well thought out
  - An execution plan should be designed in conjunction with the SJPD leadership team
  - It should have extended implementation schedule over a period of several years
- The plan will require investments in operational design, organization, and technology
  - A portion of the operating savings associated with force reductions can be used to invest in these areas; should be able to implement in a “budget positive” manner
- Intense communication with the community is critical
  - Public education - particularly within the context of a comprehensive city plan for public safety – will be essential
  - How the City will redeploy the savings will be an important part of the public education plan

The team also identified several opportunities for operational savings

- Staff call center more efficiently
- Capture promised savings from AFR/RMS implementation
- Update on Auditor's recommendations:
  - Increase civilianization of the workforce
  - Increase span of control

Efficiently staffing call center staffing could yield $1M - $5M in savings

						Scenario 1		Scenario 2	
Time Zone	Avg. Incoming Calls	Target Svc. Time (s)	Target Wait Time (s)	Target Service Level (%)	Erlang Staffing	Current Staffing (Call Takers)	Capacity Overage (Under)	Current Staffing (Call Takers+5% Dispatch Time)	Capacity Overage (Under)
1	153	110	2.5	89	9	11	2	12	3
2	120	110	2.5	89	8	5	(3)	7	(1)
3	99	110	2.5	89	7	5	(2)	7	0
4	72	110	2.5	89	6	5	(1)	7	1
5	53	110	2.5	89	5	5	0	7	2
6	41	110	2.5	89	4	5	1	5	1
7	45	110	2.5	89	4	9	5	12	8
8	77	110	2.5	89	6	9	3	12	6
9	107	110	2.5	89	7	9	2	12	5
10	124	110	2.5	89	8	9	1	12	4
11	133	110	2.5	89	8	12	4	15	7
12	132	110	2.5	89	8	14	6	17	9
13	141	110	2.5	89	9	14	5	17	8
14	148	110	2.5	89	9	14	5	17	8
15	148	110	2.5	89	9	14	5	17	8
16	152	110	2.5	89	9	11	2	14	5
17	167	110	2.5	89	10	11	1	14	4
18	184	110	2.5	89	10	11	1	14	4
19	183	110	2.5	89	10	11	1	14	4
20	177	110	2.5	89	10	11	1	14	4
21	171	110	2.5	89	10	11	1	14	4
22	178	110	2.5	89	10	11	1	14	4
23	189	110	2.5	89	10	11	1	14	4
24	173	110	2.5	89	10	11	1	14	4
					196	241	**45**	304	108
						% OVER	**19%**	**% OVER**	**36%**
						Savings (high)	**$ 2,651,742**		**$ 5,036,592**
						Savings (low)	**$ 1,033,365**		**$ 1,962,724**

Assumptions: Call center staffing is comprised of 69 call-takers and 91 dispatchers with average costs of $80,000 and $95,00 respectively. Supervisory costs are included. High savings represent staffing reductions across entire call center, low savings represent staffing reductions in call-takers only. Target Service Level is SJPD's own target of 89% of calls picked up before 10 seconds.

According to this review, AFR/RMS will not yield gains previously estimated, but SJPD should capture approximately $3M in annual productivity savings

AFR/RMS ROI Analysis					
discount rate		2.50%			
Project Costs (10-year totals)				**IBM estimated NPV**	**Previous NPV**
	Total 10-year legacy system costs			$ 4,022,875	$ 5,066,831.48
	Total 10-year AFR/RMS costs			$ 30,304,372	$ 33,626,643.98
		Total incremental project costs		**$ 26,281,497**	**$ 28,559,812.50**
Direct Benefits (10-year totals)					
	Report writing			$ 7,863,813	$ 17,682,284.26
	Report routing, distribution, data entry and retrieval			$ 6,051,850	$ 6,829,238.49
	Investigations			$ 13,595,819	$ 21,515,405.34
	Crime analysis/reporting			$ 1,933,740	$ 3,099,813.60
	Reduction or elimination of shadow systems			$ 3,621,093	$ 5,730,238.51
		Total project benefits		**$ 33,066,315**	**$ 54,856,980.20**
Net Benefit (Cost)				**$ 6,784,819**	**$ 26,297,167.70**
10-year ROI				**26%**	**92%**
Project payback (years)				**7.95**	**5.20**

Source: URL Integration AFR/RMS ROI study, February 2009. Model updated to reflect BFO staffing actuals (980 to 924) and correction of 260 active work days per employee instead of 365.

Changing the SJPD's workforce mix through civilianization and increasing span of control will have significant impact on costs

Civilianization

SJPD civilianization efforts, as per recommendations from the City Auditor's office, have begun but further savings remain.

Department	Positions Recommended (Audit)	Savings	Positions Civilianized or Eliminated (FY11-12)	Savings (Adopted)	Outstanding*
Bureau of Administration	20	$ 1,053,500	3	$ 158,025	$ 895,475
Bureau of Field Operations	38	$ 2,621,500	15	$ 1,034,803	$ 1,586,697
Bureau of Investigations	21	$ 880,000	5	$ 209,524	$ 670,476
Bureau of Technical Services	1	$ 14,500	3	$ 43,500	$ (29,000)
Office of the Chief	8	$ 508,000	3	$ 190,500	$ 317,500
TOTAL	88	$ 5,077,500	29	$ 1,636,351	$ 3,441,149

*Remaining savings estimate based on Jan. '10 City Auditor report after 15 positions were civilianized (FY11-12) and 14 eliminated.

Span of Control

Span	Supervision Costs	Savings if positions are eliminated	Number of Officers	Number of Sargents	Numbers of Lieutenants	Number of Captains	Total	Cost if positions shifted to Officers	Savings if positions shifted to Officers
Current (1 sgt : 4.3 officers)	$ 46,638,950	0	924	216	47	9	1196	0	0
1 to 6	$ 31,299,858	$ 15,339,092	924	154	26	4	1108	$ 10,526,256	$ 4,812,835
1 to 8	$ 22,257,301	$ 24,381,649	924	116	14	2	1056	$ 17,476,987	$ 6,904,662
1 to 10	$ 17,254,822	$ 29,384,128	924	92	9	1	1027	$ 21,362,062	$ 8,022,065

Data source: SJPD Authorized Staffing, 2010 – 2011 (Updated), City Auditor's Report on Civilianization Opportunities, Jan. 2010.

San José Fire Department

We start with the following observations

- The number of fire personnel deployed by large cities in the United States (and therefore the amount of money they spend) varies enormously
  - There is no obvious explanation for this variation (i.e., per capita spending and staffing of fire operations does not correlate with population density, geographic size, labor conditions, per capita income, or other operational or demographic factors that we have tested for)
- The number of fires in the United States is down by 60% since 1977
  - On a per capita basis, the risk of dying in a fire has dropped by 75% during this period
  - In San José, the number of fires has dropped by 45% since 1999 (the earliest date for which we have reliable data)
- This reduction in demand for fire response and suppression services means that significant excess capacity has been created in fire departments
  - Much of this capacity has been shifted to delivering EMS services

The team's challenge is two-fold

- How should a city determine how many fire personnel it requires to achieve its core mission of fire prevention and suppression?
  - And to what extent, if any, should EMS services be delivered using those resources?
- What should a city do to ensure that the personnel and resources that it does choose to dedicate to fire prevention and suppression are being deployed in the most efficient and effective manner?

The mission of the fire department is to minimize the risk of loss of life and property due to fire

- Cities have fire departments because fire represents a threat to life and property
- Cities typically provide two types of services: prevention and response
  - Prevention services include the development of building codes, code inspections, public education, and smoke detector distribution
  - Response services typically involve a network of fire companies housed in stations that can deploy an array of equipment to respond to fire calls
- The effectiveness of these services should be measured by the degree to which the risk of loss of life or property due to fire is impacted over time

From the City of San José Fire Department Website:

The San José Fire Department is committed to serving the community by protecting life, property and the environment through prevention and response.

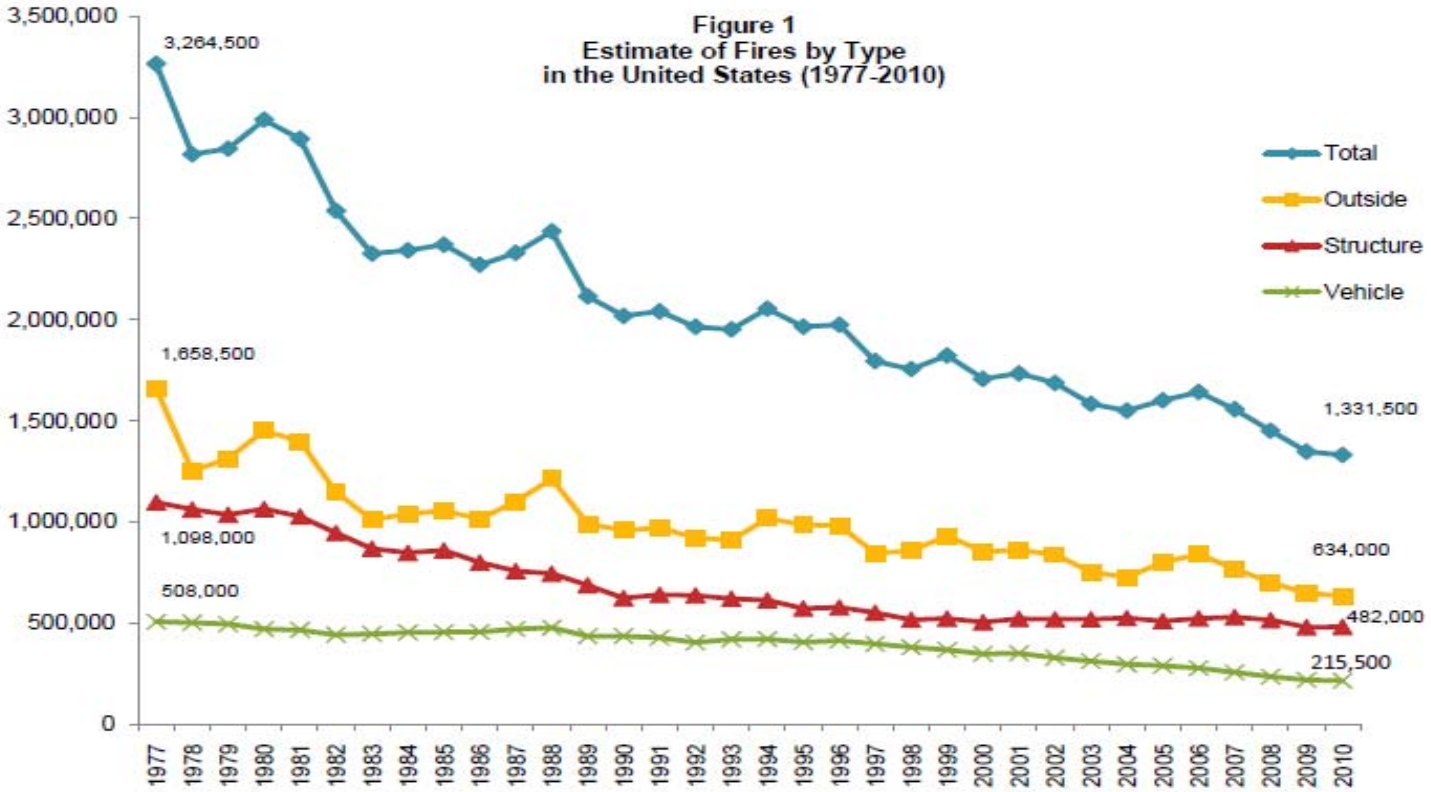
Over the last 30 years the risk of loss of life and property as a result of fire has decreased significantly

US Fire Incidents and Losses Since 1980

		Compared To		
Reported to Fire Departments	2010	2000	1990	1980
Fire Incidents	1,331,500	Down 22%	Down 34%	Down 55%
Civilian Deaths	3,120	Down 23%	Down 40%	Down 52%
Firefighter Deaths	72	Down 30%	Down 33%	Down 48%
Civilian Injuries	17,720	Down 21%	Down 38%	Down 41%
Direct Property Damage Adjusted for Inflation	$11,593,000,000	Down 18%	Down 11%	Down 30%
Civilian Deaths per Million Population	10.1	Down 29%	Down 51%	Down 65%

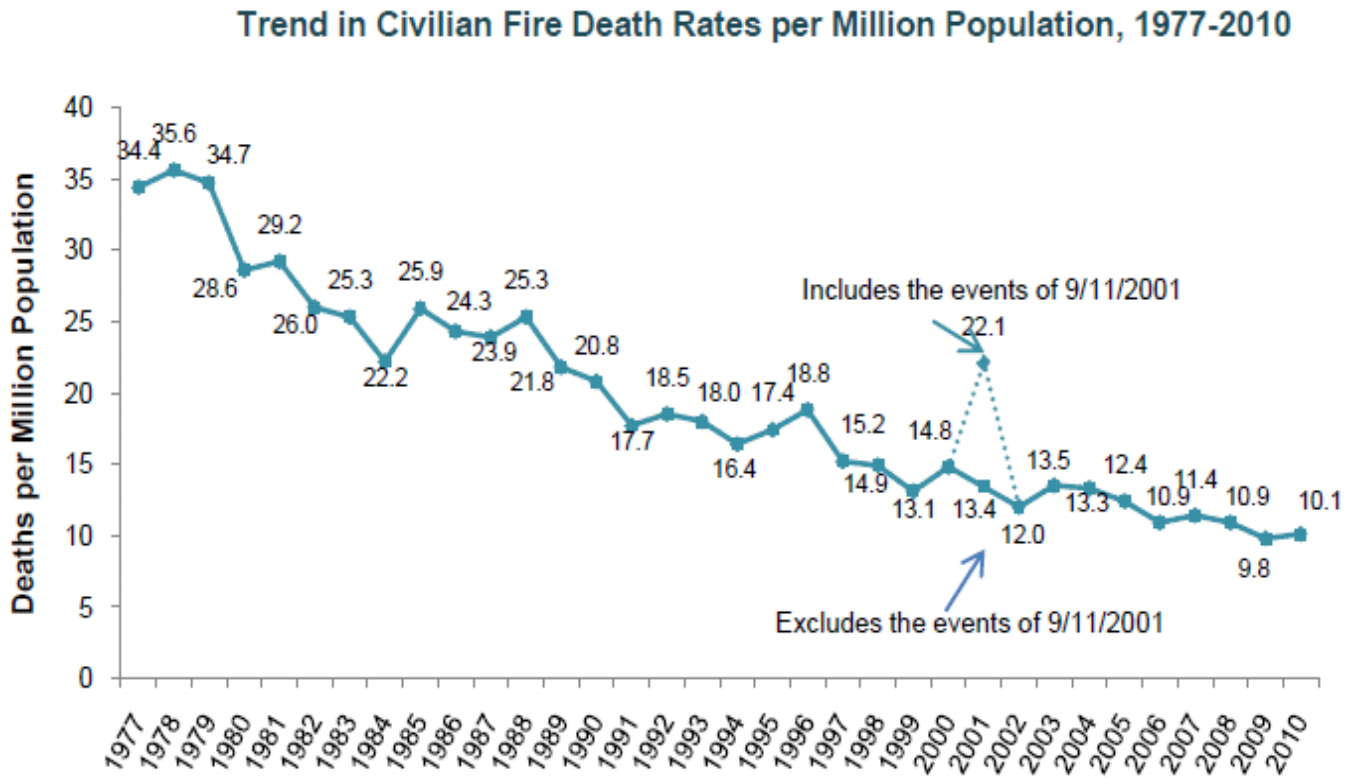
Source: NFPA Trends and Patterns of U.S. Fire Losses in 2010

Between 1977 and 2010 the number of fires decreased nearly 60% from 3.2 million to 1.3 million



Source: NFPA Survey of Fire Departments 1977-2010

An individual's risk of dying from a fire has decreased by 75% since 1977



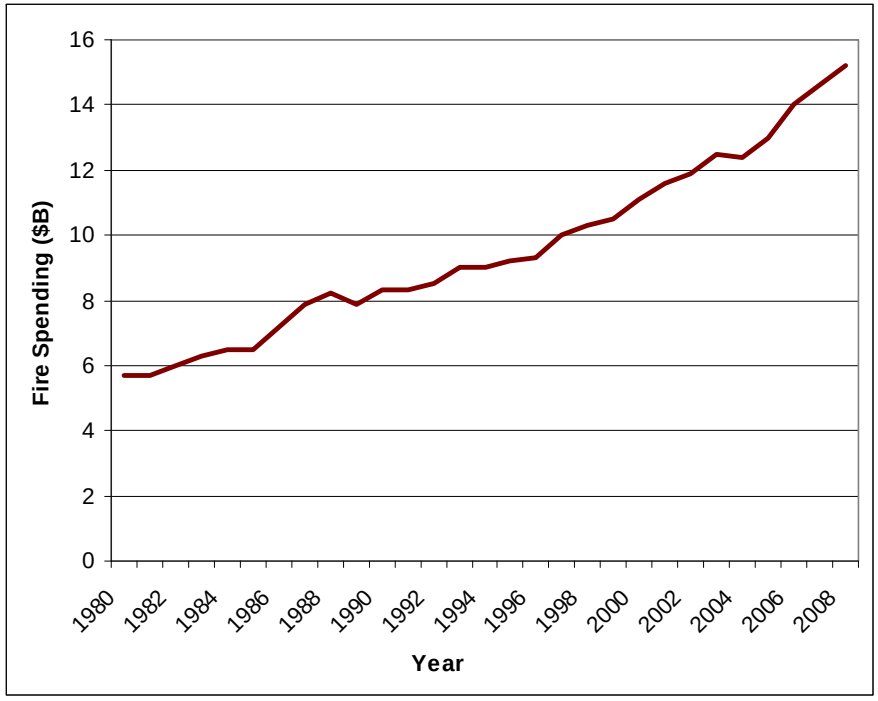
Source: NFPA Trends and Patterns of U.S. Fire Losses in 2010

This reduction in fires can be attributed to a wide variety of factors, some public and some private

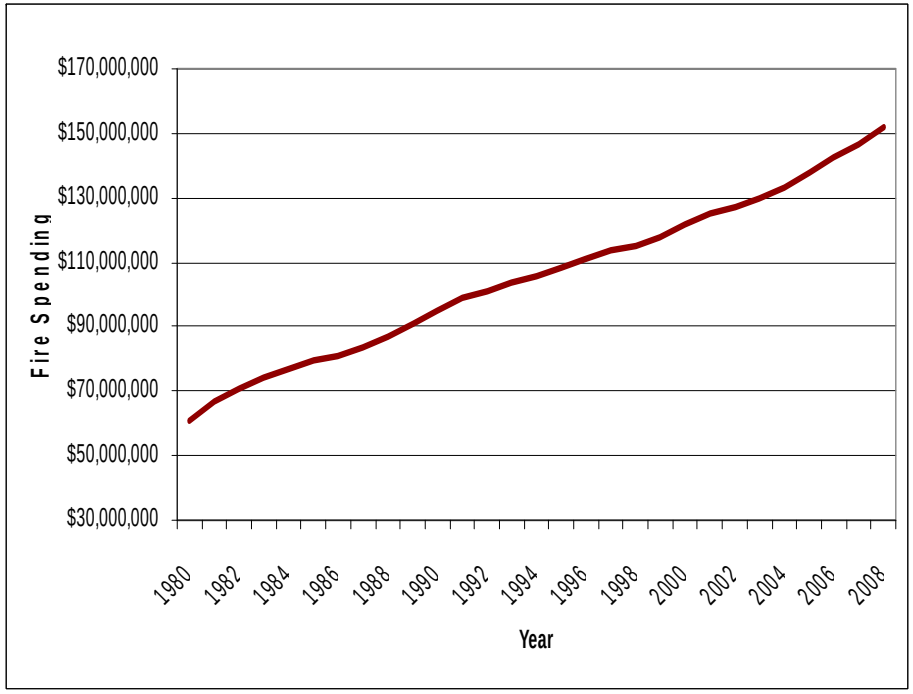
- Public interventions
  - Tougher fire codes and enforcement
  - Public distribution of smoke detectors
  - Deployment of public awareness campaigns and fire prevention education
- Private behaviors
  - Decreased use of fire for heating and cooking
  - Improved safety engineering of household appliances
  - Reduction in smoking
  - Nearly universal usage of smoke alarms (coverage increased from 22% in 1977 to 95% in 2003)
  - More frequent sprinkler installation
  - Improvement in quality of building stock and materials

Despite the reduction in fire risk, the *inflation adjusted* national spending on fire services increased by ~260% between 1980 and 2008; San José has followed a similar spending trajectory

Local Government Spending on Fire Services (1980-2008)



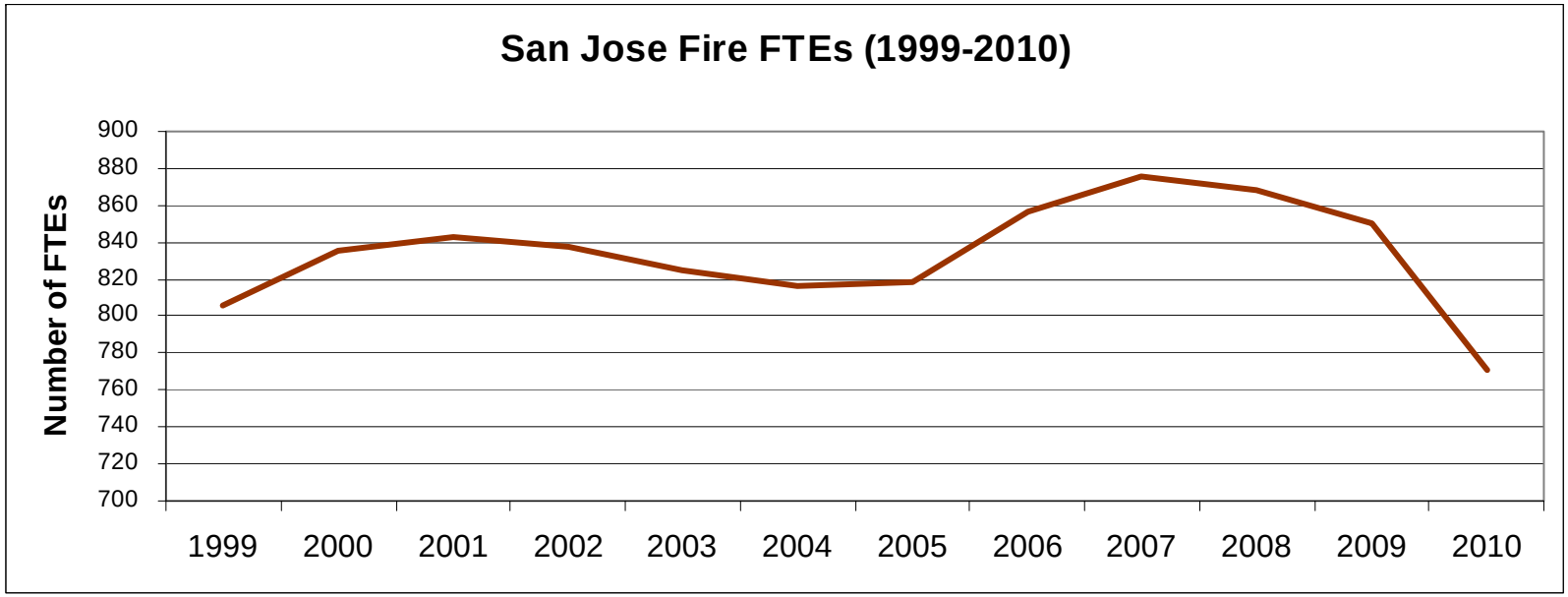
San José Spending on Fire Services (1980-2008)



Source: NFPA U.S. Fire Department Profile Through 2009

Much of the increase in San José's spending can be attributed to increases in pay and benefits

- The number of fires in San José decreased from 605 in 1999 to 338 in 2010—a 45% decrease
  - Fire data for years prior to 1999 is either not available or unreliable; however, we have no evidence to suggest that fire trends in San José have differed significantly from national trends
- The number of fire personnel has decreased by 18% over this period



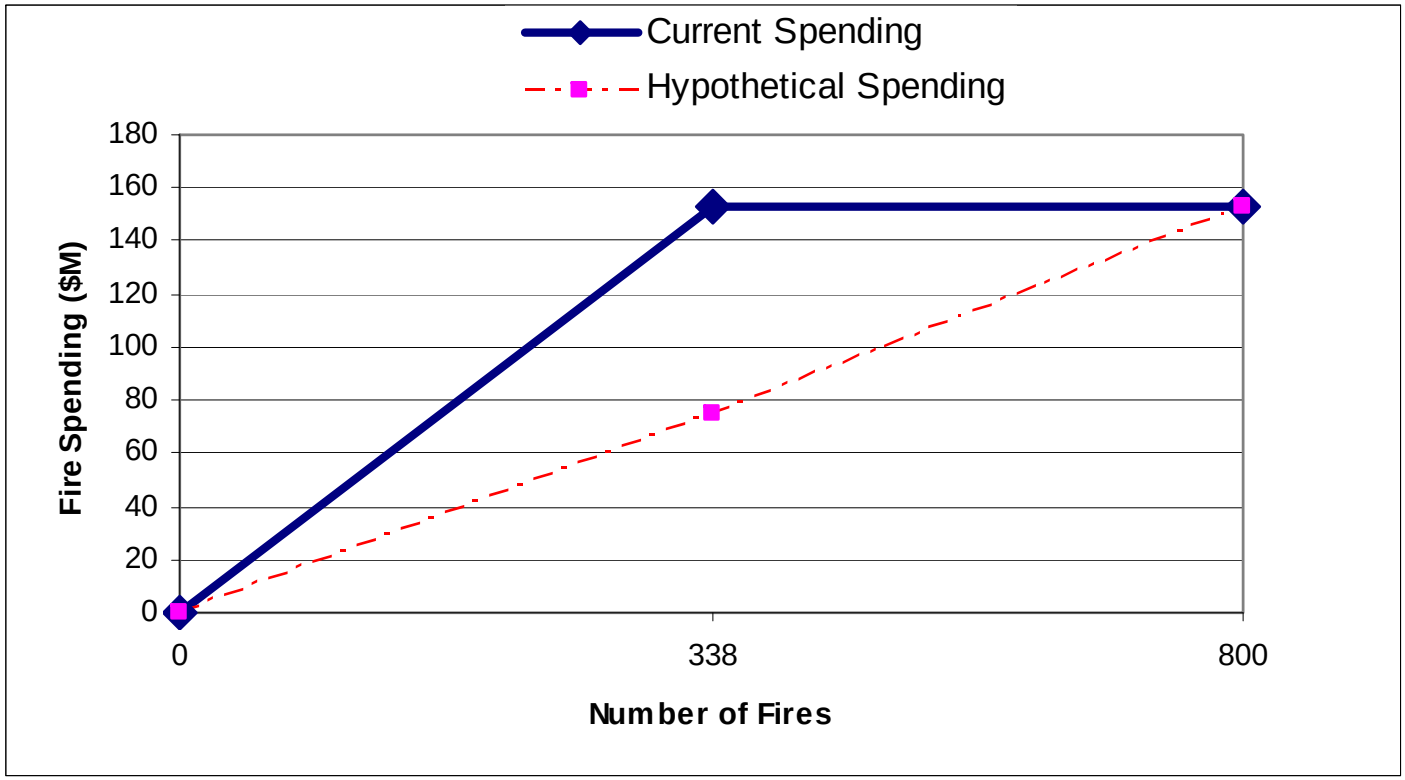
The challenge is that fire spending has not been linked to the *outcome* (the risk associated with fires)

- Fire spending has traditionally been driven by a single key performance *output*: response time
- Response time standards largely dictate the number of fire stations that the City maintains and staffs
- This strategic choice – that is, delivering a service based on a quality of service level (response time) rather than on the outcome (risk of loss due to fire) – has obvious cost implications

Should spending on fire services be linked to the risk of fire?

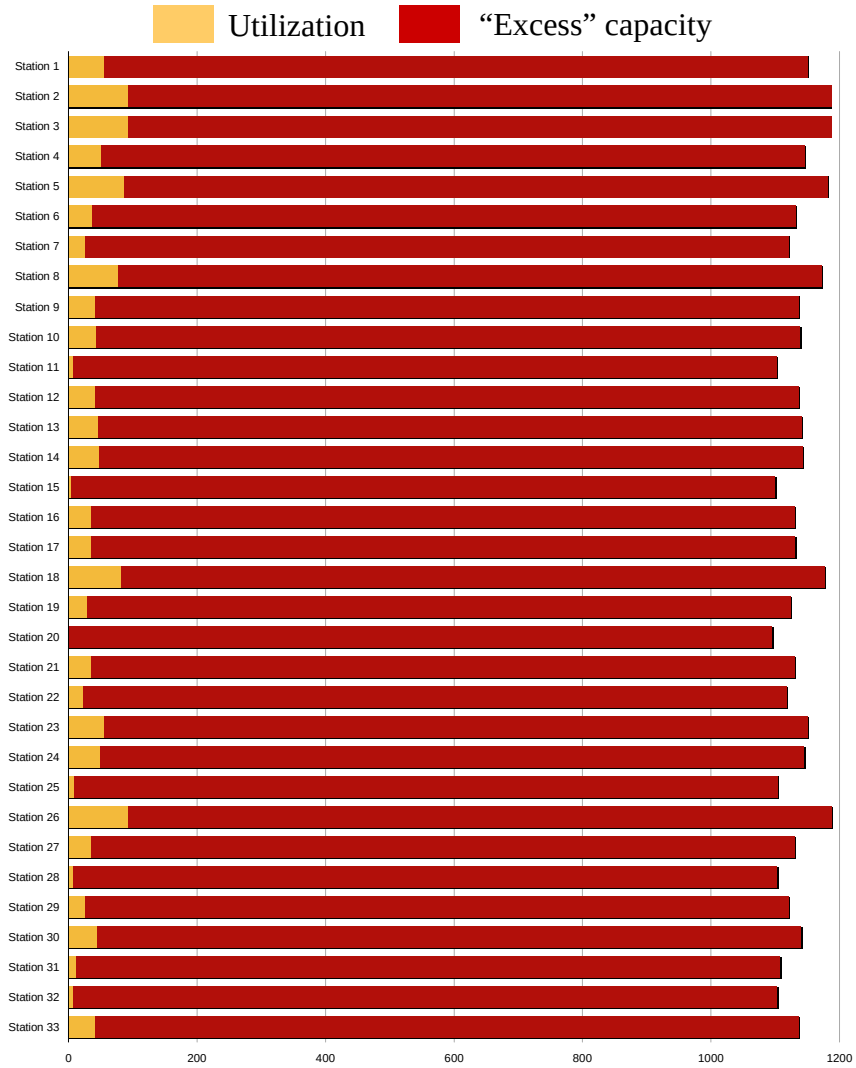
In 2010, the San José spent $154 million on its Fire Department, and there were 338 fires that year

- How much would San José spend on fire service if there were 800 fires? How much would San José spend on fire service if there were 0 fires?



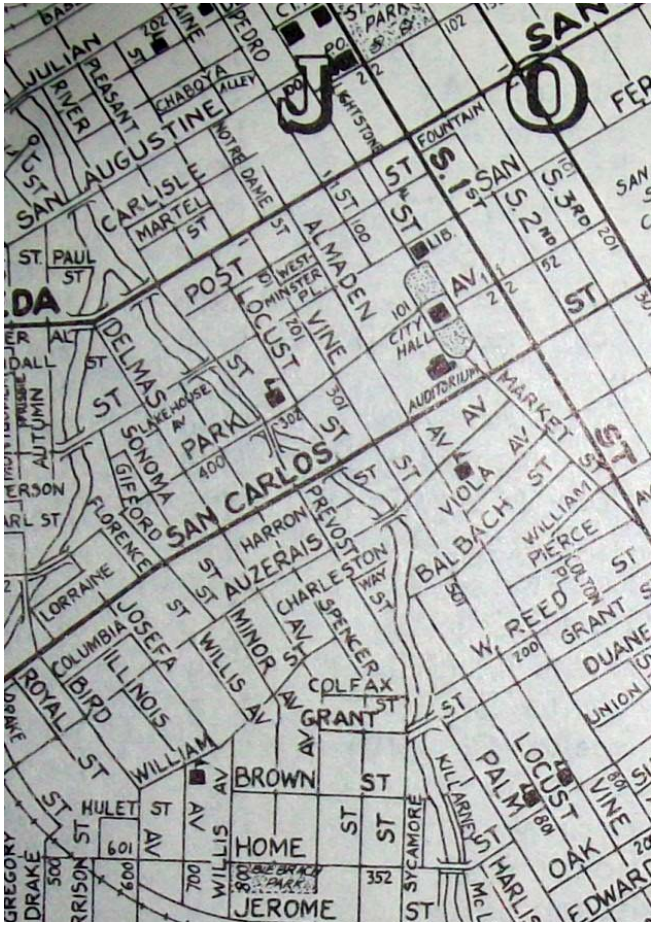
Since the number of fires has declined by 45% since 1999, fire stations have a significant level of excess capacity to fight fires

- On average, a fire station has the capacity to respond to three fire calls per 24 hour shift
  - This means each station has the capacity to respond to 1,095 calls per year
  - Across the network of 33 stations, the City has the capacity to respond to 36,135 fire calls per year
- In 2010, there were 1,581 fire calls and 338 structure fires
  - San Jose has an excess capacity of 96 percent to respond to fire calls
- The average firefighter currently spends the majority of his/her time responding to EMS calls



This overcapacity is the natural result of developing staffing requirements based on response times rather than fire risk

- Most cities build and staff fire stations based on accreditation standards that dictate response times
- In order to achieve the standard eight minute response time, San José:
  - Employs 770 personnel in the department
  - Operates 33 fire stations
  - Staffs each of its fire companies in the same way 24/7



However, there is little evidence that achieving the eight minute response time impacts fire outcomes

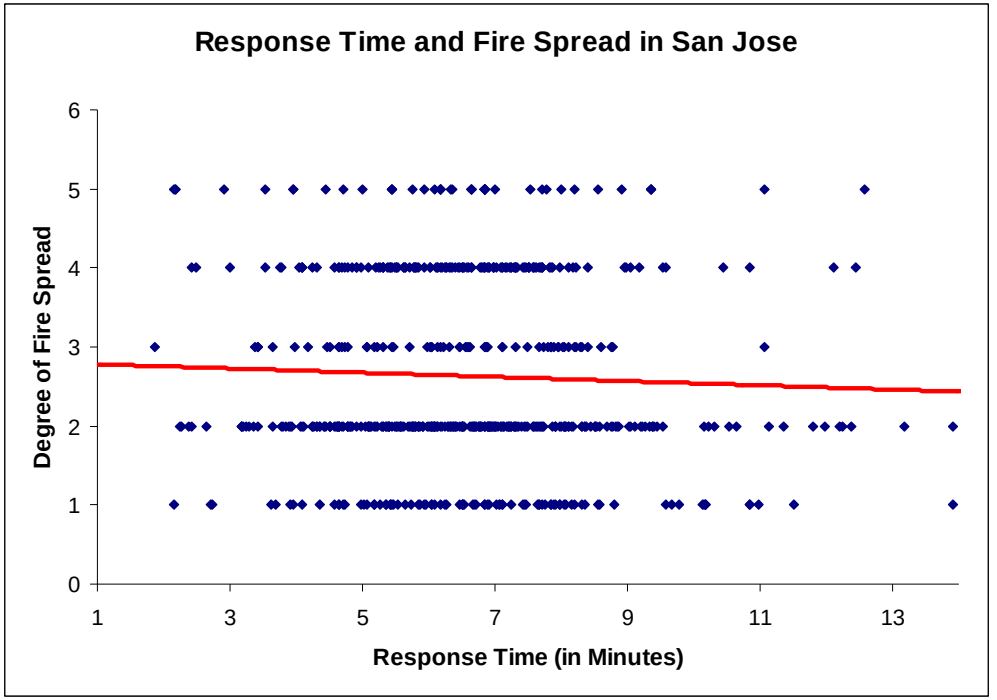
- An analysis done by Deloitte for the City of Memphis found no statistical relationship between fire loss and response time for calls responded to under 15 minutes (Deloitte 2007)
- Analyzing data from London, Sardqvist and Holmstedt (2000) found that the interval between fire detection and the arrival of a fire company was generally 5 to 10 minutes. However, there was no indication that fast arrival times result in smaller fires
  - A potential reason for this is that fire dynamics are often determined before the fire apparatus arrives due to varying differences in structure layout and access to both air and fuel.
- Cortez (2001) suggests that even with longer response times of 10-12 minutes (because of delays in detection of fire events, additional delays in notification, and normal dispatch, turnout, and response times) the incidence rate of flashover is still low

Within reasonable ranges, response times do not seem to matter substantially

- A study by Challands (2009) suggests that property damage is not impacted significant by response times
  - Found no relationship between response time and structural damage for fires that were responded to between 4 and 8 minutes
  - Also found no correlation between response time and number of fire-related injuries and deaths
- A study conducted by the United Kingdom's Department for Communities and Local Government (2007) found no correlation between response time and loss of life and property
  - This suggests that increased response times to fires have been more than offset by other factors that have decreased the risk of fire
- A preliminary analysis of fire data for San José suggests that *there is no correlation between fire or property loss* and the 1st company reaching a structural fire in 8 minutes.
  - There is also no correlation between fire or property loss and the 2nd company reaching a structural fire in under 10 minutes

An analysis of fire data for San Jose over the last two years did not find any relationship between response time and fire outcomes

- The team did not find a correlation between property loss and the first company reaching a structural fire in under 8 minutes.
  - There was also no correlation between property loss and the second company reaching a structural fire in under 10 minutes
- The team did not find a correlation between the time the first/second/third unit arrives and fire spread.
  - There was no indication of a statistical or substantive relationship between arrival time and fire spread



- Given that the team is still adding additional data to the model that can impact fire spread and damage (e.g., time between when the fire started and when it was reported to the fire department), the San Jose specific results presented here should be considered as preliminary

For Discussion Purposes Only

In preventing life and property losses due to fire, other strategies are arguably more important than response time

- Environmental conditions and the deployment of protective systems may have a bigger impact on property loss due to fire than response time
  - Jennings (2000) found that each minute of response time results in $500 in additional losses but that working smoke detectors reduce loss by $3600—this is the equivalent of the amount saved by reducing response time by 7 minutes
  - According to this calculus, three inspectors/educators going door to door installing/maintaining smoke detectors at a cost of <$400,000 could avoid losses equivalent to opening one fire company and reducing 3 minutes of response time to 3,000 households at a cost of > $1 million
- Moreover, the Building and Fire Research Laboratory at the National Institute of Standards and Technology estimates that:
  - When fire sprinklers alone are installed, the chances of dying in a fire are reduced by 69%
  - When smoke alarms alone are installed, the chances of dying in a fire are reduced by 63%
  - When both smoke alarms and fire sprinklers are present, the chances of dying in a fire are reduced by 82%

At the very least, this suggests that the costs to provide certain levels of response times should be assessed relative to the benefits those response times deliver; *this is analyzable*

Important to also recognize that fires are not entirely random events

- Fires tend to align with certain types of risk factors
  - Quality of the building stock
  - Individual behavior patterns
  - Deployment of fire prevention resources
- Fires are not evenly distributed geographically
  - Industrial areas, low income neighborhoods more prone to fires
- Fire are more likely to occur at different times of day
- These patterns can be understood by applying fire predictive analytics
  - By combining historical fire data, demographic data, building permitting and other sources of data, the City can more effectively predict how the risk of fire will change over time
- Using these types of analytics, the City can optimize the physical deployment of its fire response resources

The analysis suggests that the City should restructure its fire response capabilities

- The risk associated with fire in the City of San Jose has declined dramatically
  - This decline is likely to continue as the private and public behaviors driving this decline continue to proliferate
- As fire risk declines, the City's excess capacity within the Fire Department will continue to increase
  - Fewer fires mean fewer fire calls
- Response times do not seem to be a major factor in reducing the risk due to fire
  - At least not within reasonable ranges (8-15 minutes)
- The application of predictive analytics can improve the allocation of fire response resources
  - Staffing should be done according to the level of risk—not minimum staffing requirements
  - For example, companies should be staffed according to demand at different times of day—this could mean that some companies are not fully staffed at night when demand for fire services is typically low
- This suggests that the City should consider re-structuring the field operations of the fire department
  - Reassess the geographic distribution of fire stations with an eye toward moving to 10 or 12 minute standard response times
  - Adopt a dynamic staffing model that reflects how the risk of fire varies based on predictive analytics
  - Increase investments in fire prevention activities that demonstrably reduce fire risk
- It is important to maintain fire fighting safety standards regardless of any changes in staffing

The team estimates that the deployment of a new field operations model could generate at least $42 million in operating savings

	Estimated Savings
Increasing response times to 10-12 minutes will permit the closing of approximately 1/3 of existing fire stations	$36 million
Adopting dynamic staffing model informed by predictive analytics will reduce staffing requirements of the remaining stations by around 7%	$6 million
Total	**$42 million**

Given its "excess capacity" in fire, the department has taken on Emergency Medical Response duties

- The City is not required by charter to provide EMS services, although it has *voluntarily* taken on that responsibility
  - In Santa Clara County, the County is chartered to provide EMS services
  - The City entered into a contract with the County to provide first responder services
- Excess capacity in fire response resources has been used as a justification for providing EMS services
  - Since the fire fighters are out there, it appears logical to use them to respond to medical emergencies
- Two obvious questions emerge:
  - If the City were to rationalize its fire response field operations to reflect the declining risk of fire, should it remain in the EMS business?
  - If the City does remain in the EMS business, how should it be compensated?

The City should determine what level of EMS services (if any) it should provide only *after it has rationalized its fire prevention and response operations*; EMS *should not be used to justify the maintenance* of excess fire response capabilities

Fire prevention & response and EMS are really two different lines of business

- These operations have been integrated as a result of a faulty premise: namely, that excess capacity in fire response operations that can be "leveraged" into EMS at relatively low incremental cost
  - As we have demonstrated, much of this "excess capacity" should be shed due to the decline in the risk of fire
- There have also been added costs associated with entering the EMS business
  - Training and equipment
  - Personnel costs (premium pay for paramedics)
- In addition, EMS services degrade fire response services
  - Every time a company responds to an EMS call, its capacity to respond to a fire call is diminished

If fire response operations were to be re-calibrated to efficiently deliver the core service – *fire response* – based on its core mission – *reducing risk due to fire* – the City would want to reconsider its involvement in the EMS business

San Jose should consider either exiting the EMS business, and if it chooses to stay, it should fully recover its cost for providing the service

- We estimate that the annual cost for the city to provide EMS services is $16.5-21.5 million
  - This equates to $210-260 per call
- The City receives ~$2.3M annually from the County
  - The city responds to 60,000 EMS related calls annually. This means that the City receives $38 per call
- Absent adequate compensation for providing EMS services, the City should consider whether or not there is a compelling business case for exiting (partially or entirely)
  - One option might include only responding to high priority calls where timely response is critical to the preservation of lives (<5% of annual calls) and/or only providing coverage in areas that the private provider cannot reach in a reasonable timeframe

Net Cost to Provide EMS Service
($ millions)

Costs	
Fuel and maintenance	3.0-6.0
Premium pay & training expenses	3.5-4.5
Direct labor	10.0-11.0
Total Costs	**16.5-21.5**
Revenues	
From County	2.3
Net Cost	**14.2-19.2**

Operationally, San José should also seek ways to reduce its labor cost structure

San José spends significantly more per fire FTE than cities of similar size

City	Population	Total Fire Spend	FTE	Fire Spend/FTE
San Jose	964,679	$ 155,493,582	770	$ 201,940
Los Angeles	3,831,880	$ 768,091,645	3,941	$ 194,898
San Diego	1,306,228	$ 199,911,076	1,236	$ 161,736
San Francisco	815,358	$ 220,248,553	1,532	$ 143,742
Phoenix	1,593,660	$ 274,923,000	2,066	$ 133,057
Columbus	773,021	$ 207,059,092	1,600	$ 129,412
Fort Worth	731,588	$ 121,382,817	950	$ 127,771
San Antonio	1,373,677	$ 224,597,612	1,762	$ 127,467
Jacksonville	813,518	$ 166,217,806	1,327	$ 125,258
Austin	790,593	$ 120,238,063	1,074	$ 111,954
Detroit	910,848	$ 151,896,028	1,424	$ 106,669
Houston	2,260,918	$ 433,137,801	4,268	$ 101,475
Philadelphia	1,547,297	$ 240,762,000	2,403	$ 100,192
Chicago	2,850,502	$ 479,000,000	4,907	$ 97,616
Honolulu	907,574	$ 100,696,129	1,161	$ 86,732

One potential cost saving option is to move to three person companies

- Cities such as Nashville, San Francisco, Long Beach and Atlanta either use or are considering moving to three person companies; Cal Fire also uses three person companies
- Evidence in the literature regarding whether three person companies complete tasks slower than four person companies is mixed (NIST 2010, Cortez 2001)
  - The evidence suggests that the effect of extra manpower on speed is context dependent
- One argument for maintaining four person companies is that the "2 in-2 out" rule requires four people to present for an internal attack
  - However, San Jose's existing protocols do not allow for an internal fire attack until at least two companies are present—this means that moving to three person companies would not result in any delays in terms of entering a structure
  - We have found no reason to believe that shifting to three person companies will impact fire fighter safety, but it is critical that this be confirmed prior to any policy change
- We estimate that the city could save ~$27M by moving to three person companies under its current salary scale
  - The savings would be $19 million if the City moved to 22 stations and dynamic staffing model

The City should also consider bidding out fire services staffing

- A major contributor to the City's relatively high fire costs is its labor costs
- Cal Fire utilizes a more cost efficient staffing and scheduling model than San José currently uses
- Cal Fire's proposal to the city of San Carlos would have allowed the city to realize savings in the range of 35-45%
  - The proposal also assumed that all employees were at the highest salary step. To the extent that is not the case, actual costs to the City would have been lower and potential savings would increase
- As Cal Fire does not actively solicit new business, the city would have to approach them to obtain an assessment of the actual costs associated with providing fire services in San José
- We estimated that the outsourced its fire services to Cal Fire it could potentially save $55-$71 million
  - The savings would be $37-42 million if the City moved to 22 stations and dynamic staffing model

Substantial savings might also be achievable if the city contracted out fire services to a private company

- Private companies provide municipal fire services in some portions of the United States and many parts of Europe
- One advantage of private companies is that they provide a predictable cost structure over time
- San José's auditor estimated that the city could have saved 40-50% by outsourcing fire services at the airport to a private provider
- Similar levels of savings might be achievable if fire services at the city level were contracted out to a private provider
  - A proposal submitted to the city of San Carlos would have resulted in savings of 40-50%

The options presented in this section encompass both policy and operational issues and represent a very different approach than the status quo

- The City needs to determine what its standards and level of service should be in the realm of fire and EMS and make policy decisions accordingly
  - A data-driven approach can help provide the basis for making public policy changes
- A shift in the way that fire services are delivered will require investments in operational design, organization, and technology
  - A portion of the operating savings associated with force reductions can be used to invest in these areas; should be able to implement in a "budget positive" manner
  - The City should work with the SJFD to generate a roadmap for promoting the changes required to shift to alternative model
- Intense communication with the community is critical
  - Public education - particularly within the context of a comprehensive city plan for public safety – will be essential
  - How the City will redeploy the savings will be an important part of the public education plan

San José Department of Parks, Recreation and Neighborhood Services

San Jose Department of PRNS manages over 3,400 acres of parkland

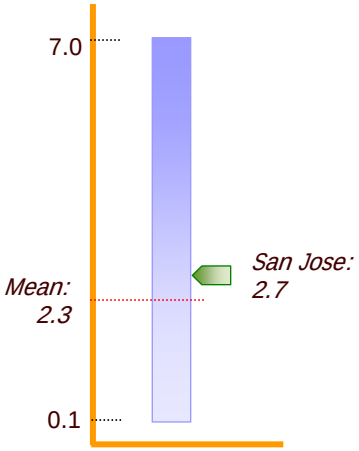
- Population of city 964,695
- Land area (acres) 111,910
- PRNS maintained parkland acreage 3,449
- Other open space within city boundaries 12,533

City	Population	Land Area (acres)	Park Acreage Within City Limits
San Jose	964,695	111,910	15,982
Don Edwards San Francisco Bay National Wildlife Refuge (within city of San Jose)			6,800
Santa Clara County Parks and Recreation (within city of San Jose)			3,910
San Jose Department of Parks, Recreation and Neighborhood Services			3,449
Santa Clara County Open Space Authority (within city of San Jose)			1,823

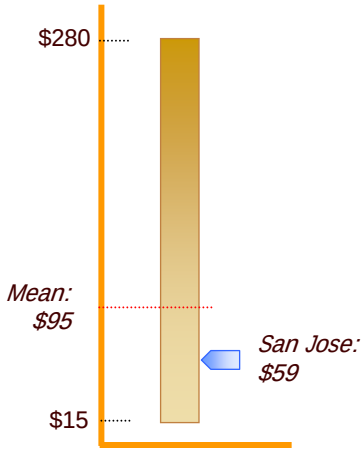
Source: 2011 City Park Facts, The Trust for Public Land

Among the 100 most populous US cities, City of San Jose has relatively low spending on parks

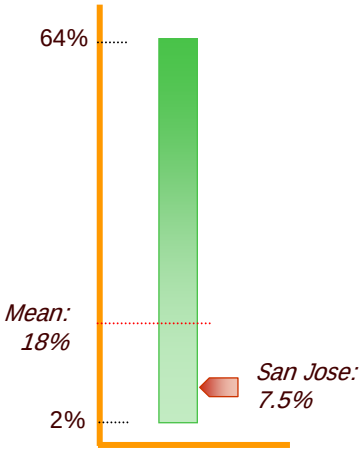
Playgrounds per 10,000 residents



Total spending per resident



Administrative spending as a % of the budget

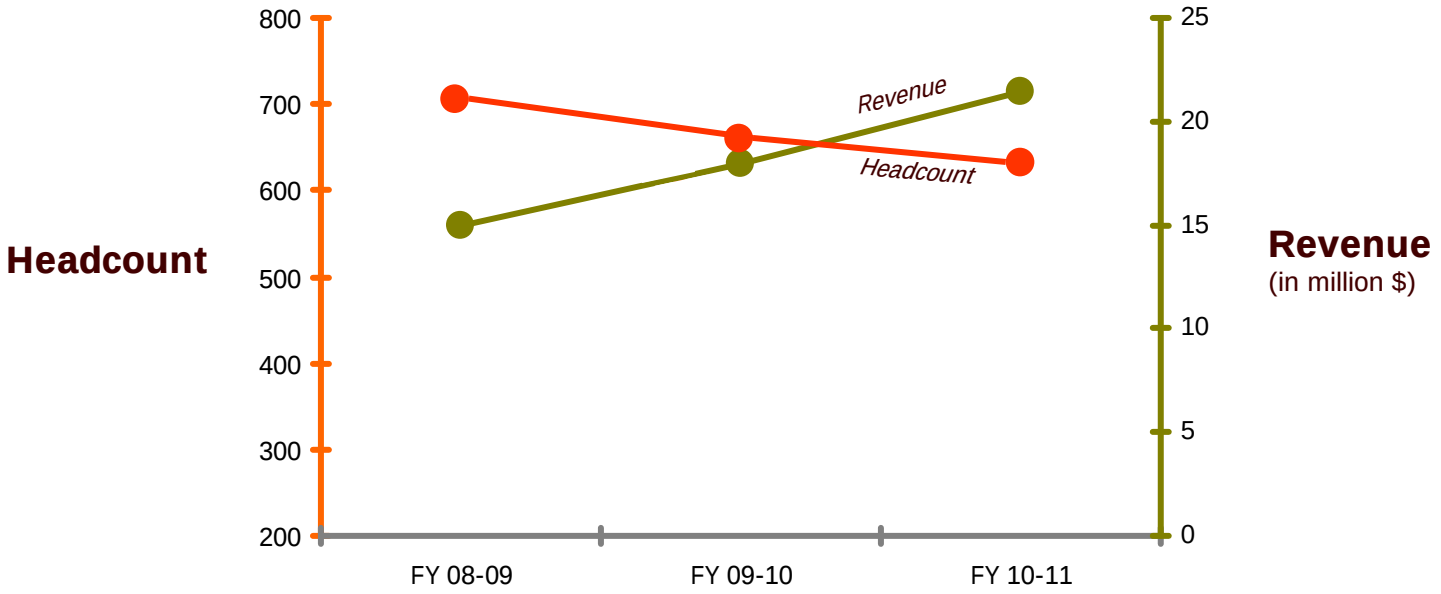


Source: 2011 City Park Facts, The Trust for Public Land

Note: Numbers are a combination of 2009 and 2010 figures and are meant to provide indicative position of San Jose with respect to other cities

PRNS has absorbed significant budget cuts in recent years

- Headcount has been declining every year, but the department has continued to deliver more revenue to cover portion of its costs



Overall, San Jose should be investing additional resources in parks due to their ability to attract growth and private investment

- According to third-party research, the presence of urban parks increase surrounding property values by 15-20%
- Parks (and other forms of public infrastructure) are instrumental to improving the quality of life in distressed neighborhoods
  - Improving quality of life in these neighborhoods will attract private investment and improve other key urban outcomes, such as crime and the quality of the built environment (leading to fewer code enforcement issues and fires)
- Although parks should be receiving additional investment (particularly in the form of operating and maintenance) they also should be run as efficiently as possible
  - Outsourcing of parks maintenance activities have been successful thus far and should continue to be assessed
- Significant revenue enhancing opportunities exist that could help reduce/eliminate the budget gap
- Focused efforts and specialized skills are needed to fully unlock the revenue potential of the department's assets
  - Business planning and project management
  - Specialized marketing

The team has identified a set of options for the City to consider

- Streamline Costs
  - Transition away from programs not aligned with the mission of PRNS
  - Adopt shared services approaches across city departments for back office operations
- Improve Revenue Performance
  - Adopt and aggressive concessions program
  - Explore additional uses, traditional and non-traditional and aggressively market of current revenue generating programs
  - Charge fees consistent with costs and demand
  - Create a Municipal Marketing Program focusing on sponsorships and naming rights
- Sell unusable/surplus parks or park acreage, or lease land to create annuity structure
- Explore additional outsourcing opportunities
  - Move from being a provider of services to managing the provision of services
  - Contract with external entities for specialized skills, business development and fund-raising on a commission basis
  - Leverage volunteers for tasks beyond field-based activities (bundle tasks that can be done by tech-savvy citizens remotely)
- Explore investments into park facilities that will provide long-term benefits
  - Package offerings that are attractive to private investments for development, operations and maintenance
  - Make doing business with the City easier by modifying cumbersome contractual terms and conditions
  - Explore ways to make more O&M funds available by leveraging capital funds

The City has successfully outsourced programming in most of its recreation centers; it could outsource the remaining

- Several activities at recreation centers are fee-based and several private enterprises or non-profit organizations would be willing to operate the centers
- Reduce the number of staff on city payroll by transitioning them to the private facility operators
- In addition to reduced payroll and pension obligations, this provides the city flexibility to add or reduce staff easily and as needed
- The City could (conceivable) charge rent for the use of the physical building and facilities, although it is not clear that there is sufficient demand

- Estimated Cost Savings: $2M - $3M per year
- Estimated Revenue: $0.5M per year

PRNS does operate programs that might be considered “peripheral” to its core mission; those programs could be eliminated

- Eliminate programs that are not aligned with the mission of PRNS
  - Lunch for senior citizens
  - Grace Community Center – services for adults with mental disabilities

- Estimated Cost Savings: $0.5M per year

The shared services opportunity is one that could benefit all departments across the City

- Several City departments perform common functions such as invoicing, bill payments, procurement, etc. Some of these are done using paper-based processes
- Several of this functions can be automated and shared across agencies for significant cost savings
- PRNS could take on grounds maintenance of additional City facilities and charge for services provided (currently PRNS does some of these services but does not charge other departments for services provided)

- This benefit needs to be analyzed and considered across all city agencies, not confined only to PRNS

- Estimated Cost Savings to PRNS: $1M per year (can vary significantly based on extend to adoption of shared services)

Concessions and vending opportunities should be more aggressively pursued

- Private vendors could operate on P&R properties in areas that promote an active and healthy lifestyle - seen as a positive by citizens
- Short Term
  - Food Cart
  - Fruit and Vegetable Cart
  - Mobile Food Trucks
  - Catered events
  - Parking Lot
- Medium Term (may need policy/regulatory changes)
  - Restaurants
  - Snack Bars
  - News/Book Stand
  - Gas Station

- Potential new revenue : $3M - $5M per year (permits, fees and leases)

The City should ensured that it is creating and collecting all fees that might be available to it

- Several types of fees could be considered
  - Entrance
  - License/Permit
  - Rental
  - Differential fees - City residents vs others
  - Membership
- Fees consistent with actual cost
  - Some initiatives already under way (soccer fields usage charges)
- Fees varying by demand
  - Some initiatives already under way
- Fines
- Charge for services performed for other city departments (grounds maintenance)

- Potential new revenue: $1M - $2M per year

Marketing parks space for additional uses could also generate significant revenue

- Concerts
- Movie at the park
- Food festivals
- Art festivals
- Trade shows
- Sporting events
  - Extreme sports, others

- Potential new revenue: $1M - $2M per year

Cities around the country are adopting Municipal Marketing programs to help monetize public assets

- Actively market existing facilities and programs (City wide, not just in PRNS)
  - San Diego, Dallas, New York and other large cities have successful programs in place
- Develop cross promotions with other agencies (e.g., convention center)
- Significant potential for sponsorships of various types
  - Events, facility maintenance and naming rights for prominent PRNS assets
- This effort may require specialized and focused marketing skills
  - External organizations have specialized skills needed to identify and unlock significant revenue opportunities
  - These services can either be procured through direct payments or on a commission basis
    - As an example, a company called CivicSponsor plans to raise $13.5 million for select schools in the region, and will keep a portion of funds raised, as a fee
  - The PRNS department needs to dedicate a position to develop guidelines, coordinate efforts to develop new revenue generating business opportunities and monitor efforts, both internal and external, related to revenue generation, sponsorships, etc
  - May need additional marketing budgets upfront, although the program should pay for itself

- Estimated Revenue: $2M – 4M per year (could be a lot higher, depending on effort and focus)

Although the City's experience with revenue generating programs is mixed, there may be additional opportunities worth exploring

- There are certain types of facilities that can be net revenue generating:
  - Golf driving ranges
  - Water parks
  - Camp sites (at city parks)
- City also has [some] flexibility on how park land is used
- City may be able to package a portfolio of revenue-generating facilities that would make it attractive for private investment
- We would encourage the City to assess these opportunities, but we would recommend that they be pursued in conjunction with private partners willing to take on the operating risk
  - City contribution should be the physical asset
  - City should not take on any operating role
  - City's policies may need to be modified to make doing business with the City easier. Current contractual terms and conditions are seen as unfriendly for business, as evidenced by a lack on interest in operating the restaurant in Happy Hollow

- Estimated Revenue: $3-4M per year

City governments are increasingly using volunteers to perform tasks once performed by paid staff

- Marketing and promotion (e.g., celebrity spokespersons)
- Create small bundles of tasks that can be conveniently done by volunteers without having to being at a physical location at a specific time
  - Website
  - Mobile app
- Gifts/Grants
  - Need not be monetary
- Maintain a website with volunteer and other needs for individuals and organizations to sign up for

- Expected savings: $0.5M per year

The combination of these efforts could create significant value

	Potential Cost Saving	Potential Additional Revenue
Outsource Remaining Recreation Centers	$2M-$3M	$0.5M
Eliminate “Peripheral” Programs	$0.5M	-
Share Functions Across Departments	$1M	-
Expand Concessions and Vending	-	$3M - $5M
Enhanced Fees	-	$1M - $2M
Additional Uses	-	$1M - $2M
Marketing, Sponsorships and Naming Rights	-	$2M - $4M
Develop Revenue Generating Programs	-	$3M - $4M
Leverage Volunteers	$0.5M	
Totals	$4.5M - $5.5M	$10.5M - $17.5M