

# The Upside to Fiscal Challenges: Innovative Partnerships Between Public and Private Sector

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It's not even news any more—government budgets are overspent. The mayor of Detroit is proposing to shut down city services and serve a smaller population, and once thriving cities like Colorado Springs were temporarily in the dark as streetlights were turned off to save money. Many cities, including San Jose, California, are forecasting continued budget deficits due to pension obligations, suggesting that lack of cash, cuts in services, and the loss of bonding capacity will be present for years. Overseas, Britain is shutting off half of its street lights.<sup>1</sup> But this dismal situation has an upside for private companies: the rising attractiveness of long-term partnerships to provide public services, or what have come to be known as Public-Private Partnerships, or P3s.

P3s work when the following conditions come together:

- Investment capital can upgrade the infrastructure for lower cost of services.
- The contract horizon in the P3 is sufficiently long to recoup investment dollars and a rate of return.
- There is payment for the service provided, creating the revenue stream for private profits.
- The private partner in the P3 has a low cost of capital, often attributable largely to a large and sophisticated balance sheet.

This article uses examples of several P3 contracts to illustrate their role in shifting risk and increasing collaboration between the public and private sectors. Because of sustained budget woes over the coming years, we expect P3s to increase, and to provide significant business opportunities and steady financial returns. For the private sector, P3s are the upside of the government's fiscal strains.

## The Market for P3s

The first U.S. P3s began over 200 years ago. These contractual arrangements between government entities and private companies for the delivery of services or facilities have long been used for water/wastewater, transportation, urban development, and delivery of social services. Today, the average American city works with private partners to perform 23 out

of 65 basic municipal services. The use of such partnerships is increasing because they provide an effective tool for meeting public needs, maintaining a high level of public control, improving the quality of services, and increasing the cost-effectiveness of traditional delivery methods. According to a report published by the National Council for Public-Private Partnerships, studies have shown that governments traditionally realize cost savings of from 20 to 50 percent when the private sector is involved in providing services. There are now thousands of P3s in the U.S. and the number is growing quickly.<sup>2</sup>

How does a P3 differ from simply outsourcing to cut costs? P3s are a solution when public funds are not available. When funds are available, services can be performed in-house and improved as needed; or if funds for infrastructure investment are available, delivery of the service can be outsourced to reduce costs. But when public funds are not available to maintain the infrastructure, the private partner in the P3 provides the funding in exchange for a steady rate of return to the private company.

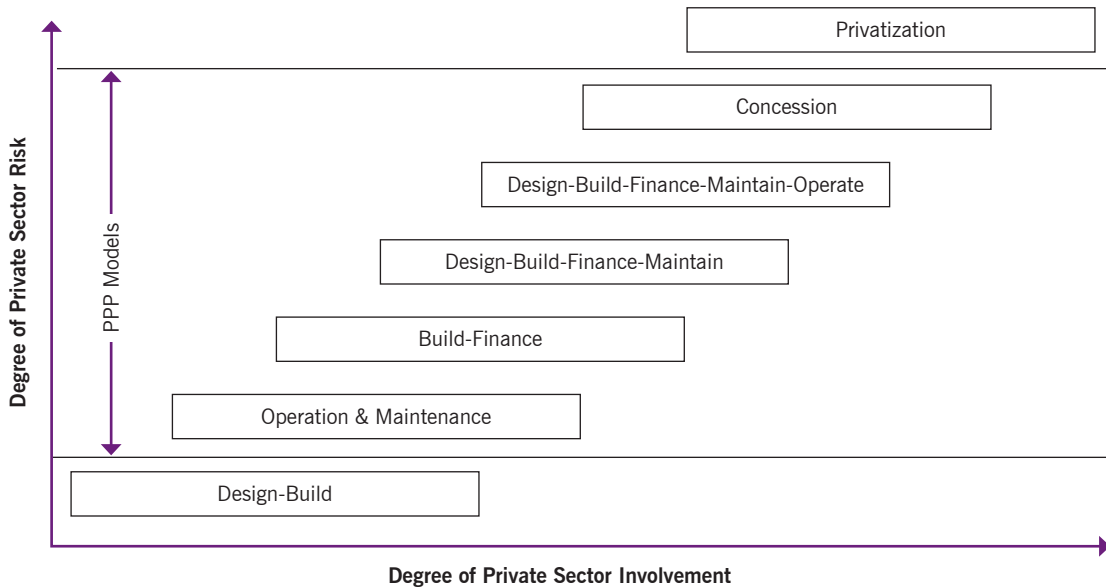
To provide this profit, P3s find ways to increase efficiency with new capital. Take the case of a city housing development with older heating technology. The P3 provider can upgrade the units and split the shared savings with the city while the invested capital serves to anchor the relationship over many years.

There are several active P3 markets around the world, including those in Canada, India, Australia and the U.K. What tends to distinguish the leader countries is that P3 activity is conducted through a comprehensive government program rather than, as in the U.S., on an individual case-by-case basis. The options available for delivery of public infrastructure range from design-build to outright privatization, where the government transfers all responsibilities, risks, and rewards for service delivery to the private sector. Within this spectrum, public-private partnerships can be categorized based on the extent of public and private sector involvement and the degree of risk allocation. A simplified spectrum of public-private partnership models used in Canada is presented here.

1. <http://www.dailymail.co.uk/news/article-2012755/Street-lights-switched-HALF-Britain.html>. Street lights switched off in HALF of Britain | Mail Online 08/04/2011.

2. The National Council of Public Private Partnerships ([www.NCPPP.org](http://www.NCPPP.org)) 2010.

Figure 1 **The Scale of Public-Private Partnerships: Risk Transfer & Private Sector Involvement**



Sources: The Canadian Council for Public-Private Partnerships

### The Benefits of P3s

P3s allow the private sector to make a profit for providing specified services to the public under long-term contracts.

In the past, many governments have outsourced services using relatively short-term contracts with private entities invited through “Request For Proposals” (RFPs) to compete in an auction-like system. Such a system is intended to keep contractors competitive and reflects the wariness many city employees and citizens feel about the possibility for abuse with a P3 contract. But when properly designed, in fact, P3s provide benefits for both partners. Agreements rest on the strengths of each partner by recognizing the distinctive capabilities and comparative advantages of each. In most cases, the public sector has a predictable service need that allows the private partner to confidently predict revenues. The private partner can provide the financial engineering and balance sheet that leverages the low-risk annuity into an investment opportunity with a profitable revenue stream. Typically revenues are generated from shared savings because the private partner is able to perform equal or greater services for a lower cost.

Other important benefits of a P3 include:

- *Improved services.* Private sector expertise and focus almost always provide better services to the public. In a P3 contract, the private partner brings efficiency to capital investment, maintenance, and services as nimble companies are able to implement systems, products and strategies more quickly and efficiently because their own profitability depends upon it.

- *Predictable performance.* A P3 aligns interests to meet schedules and budgets. In a P3, the public partner is committing to accomplish its service or facility within a certain period of time and with limited or no financial input from the public sector. The private partner is keen to remain on track to meet deadlines so that it may begin collecting the revenues from its new project. Without the private sector’s involvement, government might shift funds from one area of its budget to another, leading to underfunded or neglected facilities and services.

- *Targeted risks.* The P3 contract is fairly broad in scope, allowing for important risk shifting. For example, Dave Zelenok, Public Works Director for the city of Centennial, Colorado, reduced risk associated with the city’s snow removal process by outsourcing to a private contractor. “On the government side, we have been released from the need to manage employees themselves, so we set the performance standards and the contractor is responsible for temporarily staffing up.” As a result, the city was able to improve its snow removal process, while incurring less risk and lower costs overall for the city.

- *A steady stream of innovation.* A major benefit of P3 contracts is the creativity the private sector brings to the partnership. To remain a successful bidder, companies must consistently innovate to bring low-cost, sustainable solutions, new technologies, and smart business practices to drive out risk and costs. The public sector partner gains a modernized infrastructure—more quickly and with less bureaucracy.

In the following sections we provide three detailed examples of P3 contracts that illustrate the enormous range

## The Western Cooling Challenge at the UC Davis Energy Center

Universities often tout their innovation centers, where they develop and then license emerging technologies. The UC Davis Energy Center takes a different approach. The recent Western Cooling Challenge and the Western Cooling Efficiency Center illustrate their novel balance between public and private interests.

Cooling loads are 30% of California's energy demand, and California is one of the nation's largest markets. Despite this considerable scale, cooling systems have been designed and built for the humid East Coast environment. They are suboptimal for California's dryer heat and cooler nights. To address this issue, UC Davis held an "X Prize" type of contest in which they solicited manufacturers to design and make ready for manufacture cooling units that would be significantly more efficient in the West. Twelve manufacturers participated. The winner, Coolerado Corp. of Denver, produced a cooling unit that is 80% more efficient than conventional units

and was to start production of the product in 2010.<sup>3</sup> The Energy Center provided important visibility to the innovation and a national big box retailer planned to use it in their stores.

What is different about this approach is that public funds used were fairly small compared to those from the private sector to develop and purchase the technologies. Instead of building another research lab, the Center used its technical expertise to design the contest and certify the winners. Instead of developing technologies on-site, private companies used their own resources to compete. The Center helped to get attention for the winning technology and accelerated the first customer adoption. The Center has drawn a cluster of major utilities, energy companies, manufacturers and retailers together to support its agenda of commercialization of energy saving technologies, leveraging their shared interests and serving as a catalyst for the common agenda.

3. See the press release "UC Davis Challenge Produces a Better Air Conditioner," August 2009. [http://www.news.ucdavis.edu/search/news\\_detail.lasso?id=9200](http://www.news.ucdavis.edu/search/news_detail.lasso?id=9200), and

the website for the Western Cooling Efficiency Center, <http://wcec.ucdavis.edu/index.php>

of solutions they provide, and how the risk/return profile was shaped by the design of the partnership contracts.

### Supporting Our Troops: Military Housing Privatization Initiative (MHPI)

After many years of study and process, the Department of Defense (DOD) awarded its first P3 contract for on-base housing in July 1996. The goal of this privatization effort was to renovate or replace the existing housing inventory on U.S. military bases, much of which was considered functionally obsolete and in dire need of extensive repair or replacement. Many of the homes were built in the late 1950s, and tight federal budget constraints caused military leaders to shift funds away from housing to cover more critical defense needs. The result was rapidly declining communities and poor social morale among families.

In looking for a funding alternative, DOD wanted to keep the military focused on its core mission, and use the private sector's capital and expertise to improve housing services. DOD estimated that using the Pentagon's traditional appropriation channels would take 20 years and \$16 billion dollars to complete the required renovations and improvements. In contrast, the P3 contract was a vehicle for quick action.

The structure of the P3 contract is as follows. Fifty-year leases of land and residential assets were signed over to the private companies that won the RFPs in exchange

for a predictable revenue stream, the service members' Basic Allowance for Housing (BAH). BAH is a monthly allowance to service members to cover the costs of rent and utilities. In the past, the BAH payment by DOD for service members living on a military installation was retained by DOD instead of being distributed to individuals in their paycheck (which was the case for colleagues living off the bases). Since about 30% of service members live on base, the BAH represents considerable cash flow. But when the BAH was retained by DOD, it was often redirected to other base needs, leaving an investment gap in housing. Under the P3 contract, the BAH payments flow to private sector companies in exchange for revitalized and well-maintained communities. The length of the partnership, 50 years, allows the private company to achieve full investment return on their up-front capital to improve housing. A replacement and upgrade schedule for each base is included in the P3 contract, with a large wave of construction occurring early on.

The private company partners earn a bonus based on a resident satisfaction score as determined by an annual independent survey. The bonus structure provides incentives for the private partner to increase amenities and subsidized social activities, which have the effect of increasing the satisfaction score. Overall, the bonus structure creates a self-reinforcing mechanism for performance success.

Since the first P3 MHPI award in 1996, the DOD has

planned to form P3s to privatize over 190,000 homes across the U.S. There are only a handful of developers that have specialized in MHPI P3 projects to date. One company, Balfour Beatty Communities (BBC), has a P3 contract portfolio spanning 43 military bases located in 20 states and the District of Columbia with an initial development budget of over \$4.5 billion.

Thanks to the use of these P3 contracts, the government avoids the long-term operation and maintenance costs, so government dollar savings over the long-term are estimated to be about 10 percent of total costs over the 50-year life of the project. Leverage of public funds in these contracts has been consistently over 10:1, as measured by the total cost of the project divided by appropriated dollars to support the P3 partnership.

The biggest advantage of privatization to the military bases is not monetary, but rather *the speed at which these homes can be renovated and constructed* by the private sector, and the quality of the housing and housing maintenance that the residents receive almost immediately. Currently over 125,000 residents live in Balfour Beatty's renovated garden apartments, townhouses, restored historical homes, and modern single-family homes.

Another gain from the P3 contracts with DOD are the innovation spillovers. Solar developments, zero energy homes, comprehensive sustainability planning, waste and water reduction strategies, as well as resident education programs, are all an integral part of successful operations for the privatized housing provider and have been used by these companies in other off-base communities across the U.S.

In sum, the MHPI P3 contract has leveraged a stable long-term revenue stream from the government (the BAH payment) into a contract that provides funds for capital investments in accordance with a front-loaded schedule.

### **Connect Roads: A P3 Contract for Street Lighting**

Balfour Beatty has six large city P3 contracts for street lighting in the U.K. The revenue stream is the predictable concession payments from the government, and under the P3 contract the city has revitalized lighting, signs, and bollards within a short period of time. This "Connect Roads" initiative has proven successful for both the government and its private sector partner by accelerating response times, introducing new technology, reducing carbon emissions, reducing electricity consumption, and providing cleaner and clearer air.

The city of Coventry, England wanted to upgrade its public street lighting and signage with a goal of improving public safety and reducing light pollution. In addition, the city believed the program could also encourage walking and cycling, and improve the vitality of the city with more after-dark walking and commercial activity. In an innovative move, the city used a 25-year P3 contract to gain street

lighting and signage services. Balfour Beatty is the single P3 partner and will be investing \$10.3 million that will be leveraged and injected to fund the initial construction program.

During the first five years of the project, 33,000 lighting units will be installed together with 6,000 existing highways signs, bollards (posts to control vehicle or pedestrian traffic), and subway lights. The P3 program will maintain the infrastructure for the entire contract in accordance with a specified design standard and timeline. Effective operations and maintenance will be critical to the private company's ability to maximize program effectiveness by keeping city costs predictable through a long-term service agreement and providing the annuity stream necessary for private sector partner returns.

The contract will introduce a number of new technologies to achieve energy savings safety and light pollution goals. These include:

- a centrally controlled dimming system to allow light levels to be reduced when streets are quiet;
- lanterns with a "white light" source, improving light efficiency and face recognition;
- dimming of bollards or their replacement by solar-powered units, resulting in zero energy consumption for all bollard types; and
- de-illumination of signs or their replacement by low wattage LEDs.

Meanwhile, in the U.S. P3 contracts for street lighting are drawing interest from major U.S. companies: Johnson Controls, Honeywell, Ameresco and Balfour Beatty. Unfortunately, the ownership structure of street and highway lights differs by regional utility, distributor, and in some cases by municipality. The complicated ownership structure has delayed adoption of P3s in the U.S. In addition, U.S. cities are reluctant to be first adopters, and there may need to be a concerted effort to clear regulatory and political hurdles.

As we have already noted, the P3 contract structure is designed to produce both savings for cities and profit for private partners that are less likely under other common arrangements, even outsourcing. For example, many cities have considered outsourcing lighting under contracts that split the energy savings or cost savings between a private company and the city. These are known as Energy Savings Performance Contracts (ESPC), and are hard to pull off in areas with low energy costs. But because P3 contracts have a longer term, they can often bring in more expensive energy-saving technology that offers larger, long-run savings. One Southeast city we studied could immediately save \$600,000 per year by replacing current fixtures with LEDs. And even though the city's cost of electricity, at approximately \$0.07 per kilowatt-hour, is significantly less than the U.S. average of \$0.10, the P3 project would still be financially feasible without subsidies.

Figure 2 Design of a Solar Energy Project for the U.S. Navy

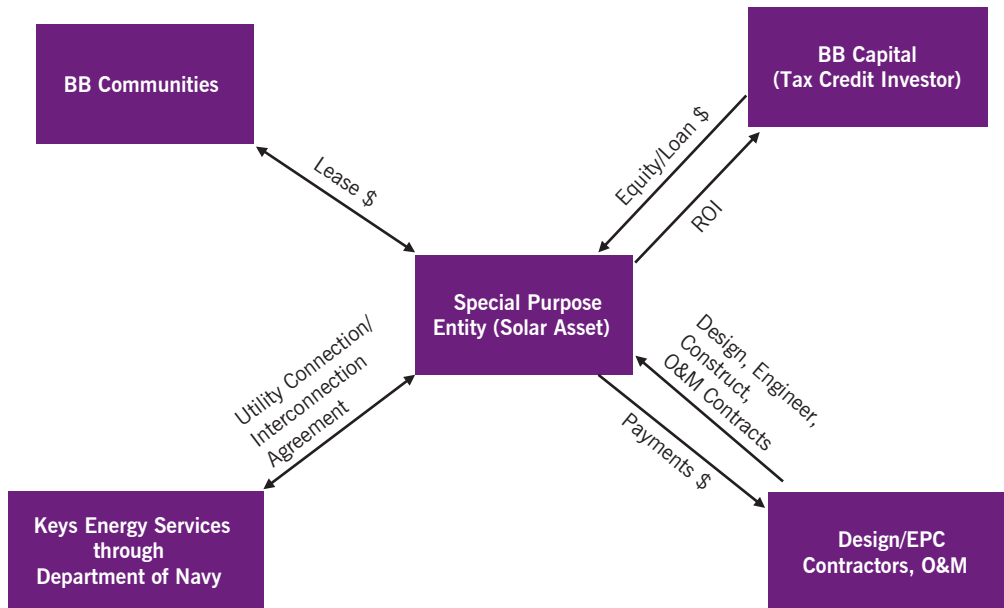
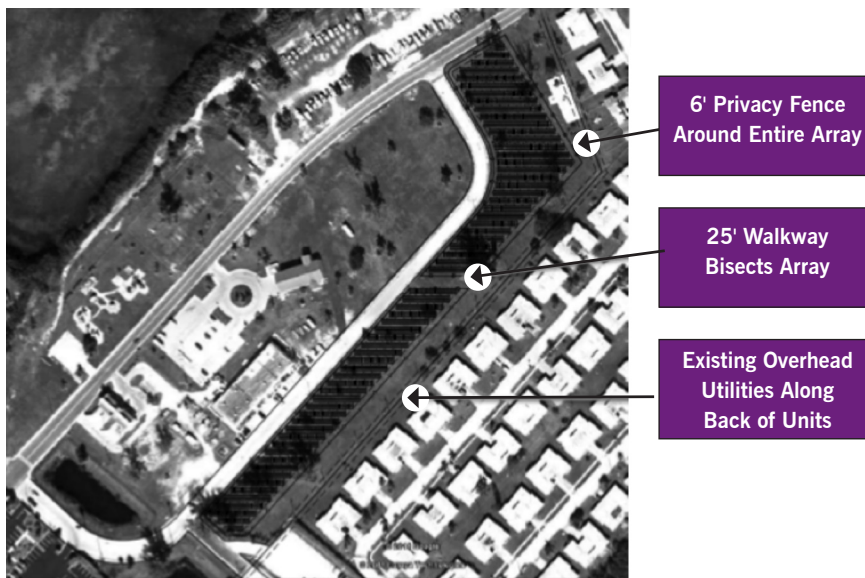


Figure 3 Aerial Overlay of Proposed Solar Array



**Cheaper Power:  
Solar Energy for Planned Communities**

Using an innovative project capital structure, Balfour Beatty has proposed a long-term contract to develop a 893 kW solar photovoltaic array at the Naval Air Station (NAS) Key West housing community. The solar installation will provide

about 12% of the energy used by the 521 homes in the area. The project has been structured so that Balfour Beatty Capital provides electricity to the homes on the base at a rate that is lower than the current cost of power from the Navy and Keys Energy. The Secretary of the Navy has set a goal that 50% of the energy used by the Navy and Marines should

come from renewable energy sources by 2020, and this project is viewed as an important step in that direction.

In this case, solar power will be delivered at lower cost than current electricity using an innovative capital structure. A special purpose entity (SPE) will be created for this project—one whose structure is outlined in Figure 1. Balfour Beatty Capital will provide the project funding and Balfour Beatty Communities, the on-base privatized housing provider, will lease the equipment. By overlaying the SPE structure on the 50-year P3 housing contract, Balfour Beatty is able to leverage their first long-term P3 contract into another long-term investment.

Under the SPE, Balfour Beatty Communities leases the solar installation under a 25-year agreement, a length that is seldom available from utilities for power generation of this size. This creates the time horizon needed for investors to earn an acceptable total return. Balfour Beatty Capital uses its balance sheet and tax incentives to provide a low-cost source of capital.

Overall, then, the SPE uses financial engineering to bring the cost of solar energy down below that of the utility; and, as noted, the key to this arrangement is the duration of the contract, which allows sufficient time for returns to accrue. The energy cost savings to the housing provider are expected to start at \$2,000 per year and increase to \$400,000 per year, or more than \$3.7M over the 25-year contract life. The photo in Figure 3 shows the proposed solar array installation and neighboring homes.

### **Municipal Infrastructure REITs: A Portfolio of P3 Contracts**

REITs, or real estate investment trusts, have been a terrific vehicle for bringing capital to the real estate market. They offer investors property diversification and steady income streams. Similarly, a portfolio of P3 contracts can be securi-

tized into a REIT structure, allowing investors to diversify across services or cities. Because so many city services are based on aging infrastructure, there is an opportunity for new technologies to significantly lower costs, saving money for cities and creating a profit stream for private investors. We expect that the emergence of a REIT-type structure will lead to standardized P3 contracts, cheaper and more readily available capital, and a rapid rate of new P3 contracts signed.

P3s are the beginning of a new wave of financing our nation's infrastructure and provide a ready alternative to cutting back services in a time of fiscal crisis. As the case studies have shown, the key requirements for a successful P3 contract are a steady, low-risk stream of payments from consumers, a source of low-cost private capital, a contract length for capital and services that allows a competitive return on that capital, a gap between current infrastructure and current best practices, and a lack of funding to fill that gap. The gap creates the private profit opportunity—and in the spirit of finding the upside in the current fiscal crisis, there are plenty of gaps available. Securitizing P3s into REITs will further enhance the investment opportunity.

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## Citizen Input into the Hard Choices Facing Cities

It is difficult for cities to get responsible and broad input into budget decisions during times of steep budget cuts. Small groups of citizens will advocate strongly for their needs, but nothing about the process forces them out of the advocacy role and into the dialogue about making necessary trade-offs. A Silicon Valley start-up, Innovation Games, has developed a “game” that significantly increases the role for citizen input. It was used recently by the city of San Jose in January 2011, early in the budget process.

Here’s how the game worked: city leaders were invited to a three-hour meeting in the large Rotunda meeting area of San Jose’s City Hall. Placed into groups, each group had to decide what programs to fund and which to cut. Participants were given “money” and used these funds to support their favored programs. But the game was artfully designed so that each participant did not have enough money to act alone, and each group did not have enough money to avoid compromise. These budget constraints forced dialogue

and collaboration. Money was a tool to reveal intensity of preferences and priorities. Table 1 shows a sample of the 18 program cuts of \$14 million total under discussion:

The results of the session were surprising. Almost all groups wanted to save money by delaying the opening of a police substation, saving several million dollars. Many groups wanted to cut fire protection, saving \$5 million. These choices are difficult for politicians, yet there was a broad citizen consensus. A follow-on survey found that 67% of the participants favored outsourcing city services when it was cheaper. There were many positive emotions during the day, no shouting, and a lot of dialogue. The mayor, after observing the session, deemed the program a success.<sup>4</sup>

By June 2011, the city had faced down a \$115 million deficit by laying off hundreds of police staff, reducing crew size on fire engines, and more.<sup>5</sup> The final cuts made were in line with the results of the budget prioritization games.

Table 1 **A Sample of the Hard Choices Facing Staff and Citizens in San Jose, CA**

### Funding Proposals for 2011-2012 San Jose City Budget

*These are hypothetical proposals intended to generate discussion. What City programs are important to you? And WHY?*

Proposal	If you fund this...	If you do not fund this...	Cost
<b>1. Anti-graffiti:</b> Maintain 6 positions to keep 16 total	<b>Current staffing level would continue: 16 positions.</b> 3,500 volunteers are involved in the Anti-Graffiti program. Performance targets for abatement of gang graffiti are removal within 24 hours and all other graffiti removal within 48 hours. If staffing is reduced, the percentage of time those goals are met would decrease. Calls to the graffiti hotline averaged 166/week in 2008-2009 and 200/week in 2009-2010.	<b>Staffing would decrease to 10 positions.</b>	<b>\$ 600,000</b>
<b>2. Branch Libraries:</b> Maintain 1 day (8 hours) of service to keep 4.5 days total	<b>Branch libraries would remain open 4.5 days (39 hours) per week.</b> In 2009-2010, all branches were open six days per week, for a total of 47 hours (with the exception of the Tully branch, which was open seven days until July 2010). In 2010-2011, hours of operation were reduced to 39 hours per week (4.5 days of operation).	<b>Branch libraries would be open only 3.5 days (31 hours) per week.</b>	<b>\$ 2,000,000</b>
<b>3. Children’s Health Initiative:</b> Maintain \$700,000 to keep \$2.1 million total	<b>Current funding level would continue: \$2.1 million.</b> The goal of the Children’s Health Initiative is to provide access to comprehensive medical, dental, and vision care to all eligible children in the county whose family income is 300 percent or less of the federal poverty level (\$66,150 for a family of four living in Santa Clara County). Funded entirely through local public and private sources, the county Healthy Kids program provides comprehensive medical, dental, vision, and mental health coverage.	<b>Funding would decrease to \$1.4 million.</b>	<b>\$ 700,000</b>
<b>4. Christmas in the Park:</b> Provide \$200,000 to outside organization to produce the event	<b>An outside organization would produce the 2011 edition of Christmas in the Park with City sponsorship support.</b> This proposal guarantees the event occurs. Christmas in the Park has been in operation downtown for the past 31 years. On average, 450,000 visitors attend the event every year during the four weeks it is open.	<b>An outside organization would try to raise private donations or other revenue to produce the 2011 edition of Christmas in the Park.</b> If sufficient revenue is not raised, the event may not occur.	<b>\$ 200,000</b>

4. See “Residents Try Their Hand at Budget Cuts,” San Jose Mercury News, January 29, 2011. <http://innovationgames.com/wp-content/uploads/2011/07/Mercury-News.pdf>

5. <http://sanfrancisco.cbslocal.com/2011/05/03/san-jose-budget-plan-details-deep-cuts/>