

The Urban Future of Work



How denser, more urban workplaces will strengthen the Bay Area's economic competitiveness

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Executive Summary

The Urban Future of Work

As the Great Recession continues, what path does the Bay Area need to take in order to rebound?

High unemployment rates and slow employment growth continue to threaten our economy. Once-successful sectors are in decline. Even the workplace itself is in transition. New technologies and ways of working have disrupted everything from the speed of a typical product cycle to the amount of real estate a company needs.

But as our economy changes, the emerging story is also a positive one. While many formerly robust industries are struggling, the Bay

Area's innovative knowledge services sector is growing quickly, led by companies such as Google, Facebook and Twitter. And while technology allows us to work remotely, the role of the office is becoming even more important. Companies are finding that they need the vibrancy and density of an urban-style environment in order to collaborate, innovate and stay competitive.

How can we capitalize on the Bay Area's successful knowledge services sector and its trend toward density and interaction to strengthen our region's economy?

In this SPUR report, we make the case that there is a strong link between density and job growth. In fact, we believe that locating jobs closer to transit, and closer to one another, will be key to the Bay Area's long term economic growth.

We recommend 20 strategies for increasing density, strengthening the regional economy and promoting job growth.

SPUR's recommendations for increasing density, strengthening the regional economy and promoting job growth.

Strengthen economic competitiveness



1. Develop and update an economic plan at the regional scale.
2. Protect the growing knowledge sector as a key driver of our economic future.
3. Maintain a sufficient supply of industrial land in the urban core.

Respond to the changing workplace



4. Support a greater mixture of uses in traditional single-use employment centers.
5. Establish performance-based zoning that focuses on outcomes, not uses.

Reinforce employment density



6. Direct regional transportation funds toward current and planned dense employment centers through a regional grant program and an employment center policy.
7. Amend the Bay Area's transit-oriented development and expansion policies to include an employment focus.
8. Establish a transit-location policy for public-serving industries such as government offices and higher education.
9. Reduce regulatory barriers that restrict continued job growth in places of high employment density and/or strong job markets.
10. Eliminate parking minimums regionally and establish parking maximums.
11. Make dense, low-driving job centers more competitive and attractive relative to other types of job centers.

Strengthen alternatives to the single-occupant car commute



12. Improve the competitiveness of traditional transit by reallocating service from uncompetitive transit markets to competitive ones.
13. Treat regional employer shuttles as transit and expand them to serve smaller employers.
14. Replicate successful alternative commuting programs at major employers and university campuses.
15. Study the creation of dedicated bus lanes on highways for all regional buses, including employer shuttles.
16. Solve the "last mile" problem between transit and jobs by building a pedestrian and biking network and adding car-sharing opportunities at transit stations.

Adjust governance and financing mechanisms to the realities of the future



17. Move toward sharing a portion of local property and sales taxes.
18. Shift taxes away from work and toward waste.
19. Implement road pricing on Bay Area freeways.
20. Establish a regional gas fee.

Denser, more urban workplaces will strengthen the Bay Area's economic competitiveness

The future of our economy is at the center of our state and national policy debates. And it should be. High unemployment rates in California and the United States, coupled with slow employment growth, continue to threaten our economy. Most are uncertain about the exact ingredients to ignite growth.

The Bay Area is far from immune to these broader trends. Our overall job growth remains slow, and our complex regulatory environment makes it difficult for companies to expand or locate in dense urban centers and other existing communities. The region's traditional downtowns — San Jose, San Francisco and Oakland — and other transit-oriented employment areas account for a declining share of overall jobs, as many jobs have moved to low-density, auto-oriented settings.

Within the workplace, many companies are reducing costs by expanding virtual interaction, shifting employment to lower-cost regions, downsizing, outsourcing and/or increasing the percent of workers who are mobile (i.e., do not have a desk at work). Meanwhile, the emerging dominant companies are much smaller than those of the past. Twitter (more than 600 people) has fewer employees than Facebook (more than 2,000 people), which has fewer employees than Google (more than 28,000 people), which has fewer employees than Hewlett-Packard (more than 300,000 people).¹ While this means startups have increasing opportunities to succeed, it also means that the emerging dominant firms offer fewer jobs than the major firms of the past.

Making these dynamics even more challenging, the structure of our local and regional governments is ill suited to handle major questions of economic development. Local and regional governments lack the tools and proper incentives to encourage businesses to locate in the settings that would best stimulate new growth and new jobs. Instead, the principle of local autonomy persists — to the detriment of regional economic outcomes.

Despite these significant challenges, there is an emerging story that points to a different Bay Area future. Some companies are discovering that proximity is an important factor for economic growth. Dense settings allow people to better share ideas and information — and thereby help stimulate new company creation and further economic growth. In this report, we put forth a vision for using the principles of urbanism — density, walkability and public interaction — to

strengthen the Bay Area's economy. Doing so will enable our region to reach a tipping point where more than half of jobs are in dense and walkable settings, many of them near transit. This vision also includes getting more than half of workers to their jobs without driving. Changing this commute pattern will allow for an increase in employment density at existing job centers — which in turn will facilitate more idea sharing, more innovation and more growth.

Fortunately, many Bay Area companies are already making changes that point in this direction. These shifts may provide new models for growth and productivity both regionally and nationally.

First, the Bay Area remains the world's greatest innovation system and is home to the nation's most competitive knowledge services sector.² Firms like Facebook, Google, Zynga and Twitter are collectively adding thousands of jobs regionally. The knowledge sector is the only portion of our region's economy that is outpacing national growth. This sector is also where we are seeing the emergence of new ways of working and collaborating that will likely spread throughout the entire economy.

Second, companies in the knowledge services sector increasingly value collaborative work and encourage their employees to do this work wherever they are most productive, not necessarily in the traditional office. The corner office is going away, replaced by a collaborative and open work environment that starts inside the office and extends to coffee shops and parks in the surrounding neighborhood. This emphasis on interactivity is changing the approach some companies take toward where they locate their offices.

Third, while most people drive to work, there has been a slight shift away from drive-alone commuting. There is increasing awareness

¹ All numbers based on 2011 employment data.

² The Bay Area has three of the world's top 20 research universities and captures approximately 38 percent of the entire United States' investment by venture capital. See: Academic Ranking of World Universities 2010. <http://www.arwu.org/ARWU2010.jsp>; Dow Jones Venture Source (2011). "Venture Investment into U.S. Companies Levels Off in Second Quarter of 2011." <http://www.dowjones.com/pressroom/releases/2011/07222011-Q2USVC-0150.asp>; and Bay Area Council Bay Area Science & Innovation Consortium (2011). "Secret Sauce: Venture Capital." <http://www.bayareabasic.org/secret-sauce/bay-area-strengths/infrastructure/venture-capital/>

that expanding highways to continue to facilitate an auto-oriented commute pattern is both environmentally and fiscally unwise.

These trends point toward an increasing preference for the qualities of cities and urban environments. Companies want their workers bumping into other people to generate ideas. But today, many of them are located in places with fewer people to bump into. To remedy this, some companies are choosing to locate in traditional downtowns, where urban qualities are available right outside the office door. Others are re-creating these qualities by redesigning their suburban campus settings with greater density and more amenities.

SPUR argues that in order for the Bay Area to remain an economically competitive region, we need companies and individuals to come together to share ideas, talent, new market insights and tools that will increase productivity and innovation. This interactivity occurs naturally in great urban spaces. Consequently, the region's future economic and environmental prospects would be best served by focusing future work into more compact, transit-friendly locations, like downtowns, mixed-use neighborhoods and transit-served nodes throughout the region. In addition, lower-density office parks and corporate campuses, originally planned and built around automobile and highway access, should slowly transform into denser work centers integrated with new housing, as is currently planned for North San Jose and proposed for parts of Mountain View.

SPUR's spatial goal for Bay Area jobs is that we reinforce growth and investment in the region's urban core. This includes the V-shaped area that hugs the bay from San Francisco to San Jose to Richmond, as well as the transit corridors that stretch east to Pleasanton and Concord. This area coincides with our regional rail system and is where the vast majority of employment, office space and dense job centers are today. Some of these areas — like the downtowns of San Francisco, Oakland, Berkeley and Palo Alto — are dense, transit-oriented and walkable today. Others — like North San Jose and downtown San Jose — are not as dense but have transit and are ready and willing to grow in a denser pattern. Our recommendations are intended to support places that are planning for denser growth in transit-oriented settings, as well as those already-dense areas that seek to continue on this path.

We recognize that there is some tension between the two goals of expanding employment and reducing job sprawl. We want to reduce barriers to overall job growth yet also encourage more jobs to locate in denser settings and more commuters to get out of their cars.

This means we must propose some carrots as well as some sticks, particularly because we lack a strong regional land-use authority to prevent ongoing outward growth. The following recommendations try to balance these tensions. Our overall approach is to encourage what is working and change what is not.

This report is organized in five sections, each of which explores an important facet of strengthening our regional economy:

- Economic Competitiveness: Where Our Strengths Lie
- The Changing Workplace: How We Work Now
- The Geography of Jobs: Where We Go to Work
- Commuting: How We Get to Work
- Regulation and Financing: How Governments Can Help

We start each section with a series of observations on the changing world of work in our region, then analyze these trends for their potential to transform our economy for the better and finally propose a policy agenda to get us there.

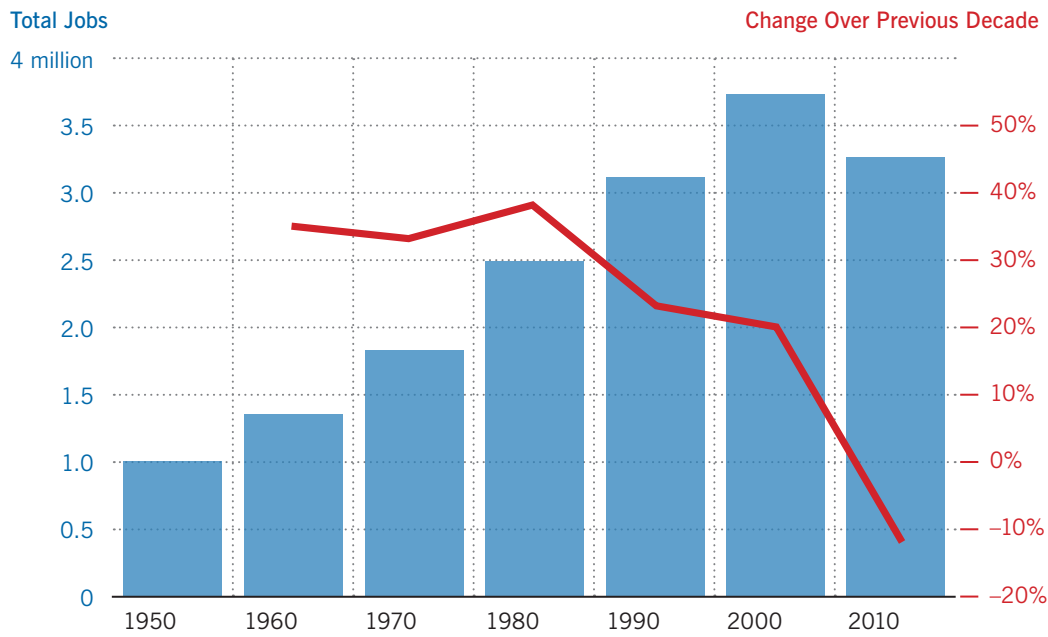
Economic Competitiveness: Where Our Strengths Lie



image courtesy of Flickr user lumiereff

Figure 1: Change in Regional Employment by Decade

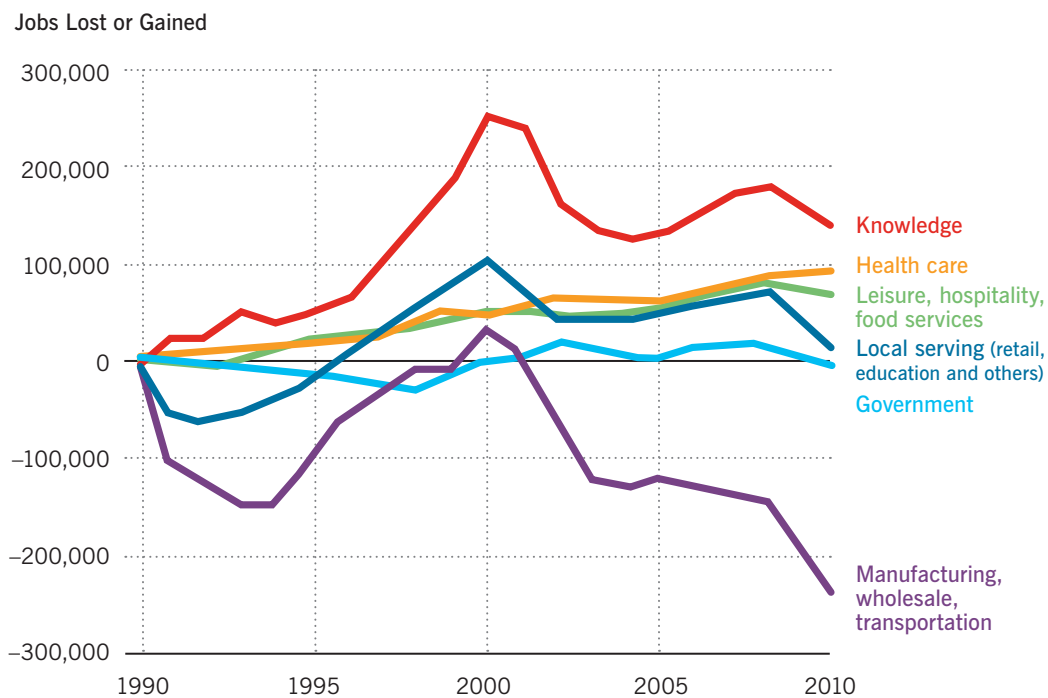
The rate of job growth in the Bay Area has slowed since the 1980s. After reaching nearly 3.8 million jobs in 2000, the region ended the past decade with under 3.3 million jobs, a decline of nearly 13 percent.



Sources: Bay Area Historical Census, Association of Bay Area Governments "Projections", US Bureau of Labor Statistics, <http://census.abag.ca.gov/bayarea50.htm>

Figure 2: Change in Bay Area Employment by Industry

Since 1990, knowledge services (which includes the declining financial services industry) is the only Bay Area sector to outpace national job-growth rates. It also remains the sector with the greatest share of national employment, a sign that the region is competitive and exports many of those services.



Source: California Employment Development Department, US Bureau of Labor Statistics, <http://www.labormarketinfo.edd.ca.gov/?pageid=166>

Economic Competitiveness: Where Our Strengths Lie

What's happening

Job growth has significantly slowed for the Bay Area since 1990. From the 1950s until 1980, the region's employment base grew by 33 to 38 percent each decade, higher than the national average. During the 1980s this slowed to 24 percent growth (closer to the state average). Since 1990, employment growth has been lower here than in the country overall, as total Bay Area employment growth dropped to single digits. (See figure 1.) During this time, the region weathered two major recessions (2000 to 2003 and 2007 to 2009). Many future projections assume job growth will remain slow.³

The fastest-growing portion of the regional economy is the highly specialized knowledge services sector. This category includes software developers, business consultants, financial analysts, technical writers, publishers, designers and researchers.⁴ While the region's manufacturing sector (including high-technology manufacturing) has lost more than 170,000 jobs since 1990, the knowledge sector — which includes professional services, software publishing and corporate management — has added nearly 170,000 jobs. Today, the number of Bay Area people employed in knowledge services is nearly double the national average, a sign that we export those services. It is the only major sector of the region's economy in which employment grew faster here than nationally. (While other sectors, like health care and tourism, are growing, that growth is not as concentrated in our region as is knowledge services.) (See figure 2.)

Some components within knowledge services have grown significantly. From 1990 to 2009, computer systems design added

3 The Association of Bay Area Governments' current projections assume an average of 33,000 new jobs per year over the next 30 years, totaling 4.26 million jobs by 2040 (an increase of about 1 million jobs). This growth is three times the average annual job growth of the past two decades but lower than the 40,000-plus jobs per year produced over the prior half century. At this rate of growth, the future jobs-to-household ratio would be 1 to 3 by 2040. See OneBayArea (2011). "Sustainable Communities Strategy: Alternative Land Use Scenarios." August 30. http://onebayarea.org/pdf/alternative/SCS_Alternative_Scenarios_Aug_2011.pdf

4 "Knowledge services" includes professional, scientific and technical services; information (software, telecommunications, publishing); finance; and management of companies. For the purposes of this analysis, we are including NAICS codes 51, 52, 54, 55 in the knowledge services sector. Companies in this sector include Google, Adobe, Pandora, Barclays and Accenture.

5 For example, the computer systems design sector is projected to grow 14,200 jobs (28 percent), and professional, scientific and technical service jobs are projected to grow 30,100 (14 percent) from 2008 to 2018. See State of California Employment Development Department, "Projections of Employment by Industry." <http://www.labormarketinfo.edd.ca.gov/Content.asp?pageid=145>

70,000 jobs to nearly 100,000 total jobs regionally. Management of companies grew by 45,000 jobs, and technical consulting and scientific R&D by another 45,000. These knowledge services industries are projected to be the cornerstone of future economic growth.⁵

Constant innovation has emerged as a key to ongoing success in a fast-changing knowledge economy. By innovation, we mean the creation of a product, service, technology or process that represents substantial improvement over past products or methods. While this is a high bar, companies are finding it increasingly important to reach for it — repeatedly. The life cycle of companies is shortening and, thanks to the declining cost of communications and increasing access to free software, new and very small startups can compete with large established firms and even disrupt entire industries.⁶ To keep up, companies of all sizes have to invest more in innovation lest they face new competition and risk being superseded by smaller rivals.⁷ Many large firms in fact benefit from close proximity to small businesses and startups as a way to remain more connected to new ideas.⁸

What it means

We cannot take economic growth for granted in the Bay Area. To guide the future, we need a better understanding of the region's economic assets and what to do about them. We also need to understand the dynamics of the knowledge sector to make sure its future growth is sustainable. At the same time, it is important to manage our expectations about job growth in the knowledge sector — particularly as gains in technology and productivity allow for fewer people to achieve the same outcome. Paul Krugman highlighted this concern in a 1996 New York Times article predicting the world in the late 21st century.⁹ Others are writing about the decline of administrative support staff as more people use mobile technologies and artificial intelligence to perform services such as scheduling, transcription and travel planning, which once were others' jobs.¹⁰

6 In the 1970s, the average life span of an S&P 500 company was more than 50 years; today it is fewer than 25 years.

7 Large organizations, historically, have been at an advantage due to economies of scale and ownership of resources. With the increasing democratization of both information and labor online, individuals can rely on a network of resources to rival the monopoly of the larger companies.

8 GE Global Barometer 2011, <http://files.gereports.com/wp-content/uploads/2011/01/GIB-results.pdf>

9 Krugman, Paul (1996). "White Collars Turn Blue." New York Times. September 29. <http://www.nytimes.com/1996/09/29/magazine/white-collars-turn-blue.html>

10 Lambert, Craig (2011). "Our Unpaid, Extra Shadow Work." New York Times. November 10. <http://www.nytimes.com/2011/10/30/opinion/sunday/our-unpaid-extra-shadow-work.html>

Most importantly, we should not take any steps that would preclude the development of industries that could be job producers in the future. All of the points above speak to the need to understand economic policy and begin establishing a Bay Area approach to regional economic development.

A basic tenet of economic policy is to build on the existing economic strengths of a region, not to import new industries that have no local competitive advantage. For the Bay Area, this means strengthening the research, financial and skill base that supports industries like software publishing, computer design, life sciences and many others. Understanding the needs of these and other growing industries is the key to enhancing our economic competitiveness. This approach to economic development also suggests that some industries are more important for regional competitiveness than others.

A second tenet of regional economic policy is distinguishing between the local-serving and export portions of the economy. By export we mean selling goods and services to people or companies beyond the boundaries of the region. That could mean tourists from Southern California, wine drinkers in Canada, businesses in Asia or Fortune 500 firms in New York. Only by selling goods and services beyond our region do we have net new wealth to expand employment in the local-serving sector (i.e., neighborhood businesses). The export sector is ultimately where we have our real competitive advantages. Regional and local policies therefore should make sure they do not inhibit otherwise positive growth in the export portion of the regional economy.

But instead of picking individual companies for targeted investments, we think that governments should focus resources on strengthening the competitiveness of broad sectors of the economy. This could mean establishing or expanding programs at community colleges that train students to work in growing export sectors. It could also mean investments that benefit the entire economy – such as building new transit to employment centers, improving urban amenities like streetscapes, expanding housing opportunities and making local government easier to work with. Overall, the role of policy in economic competitiveness should be to strengthen the inputs to economic growth and job creation: skills, infrastructure, access to capital and quality of life.

SPUR's recommendations to strengthen economic competitiveness

1. Develop and update an economic plan at the regional scale.

It is essential to understand the nature of the regional economy in

order to help shape it. The Bay Area has never produced a true regional economic plan and has no system in place for ongoing analysis and monitoring of the region's economic growth. For many years, subregions of the Bay Area have conducted and implemented their own economic development plans.¹¹ But these reports and projects have not coalesced into a full Bay Area-wide strategy. The region has yet to identify the industries most valuable for future growth, such as life sciences, information technologies, business services, tourism, wine and computer-hardware manufacturing. Given declining economic diversity and slow job growth, it is crucial to make sure the Bay Area remains competitive in sectors that are growing.

The Bay Area's business and government leaders, economic and workforce development professionals, and other civic entrepreneurs should support the creation and maintenance of a regional economic plan. This means funding such a strategy and making a commitment to participate in its development and implementation.

These leaders should also institutionalize economic development planning and thinking at the regional scale. One institutional form would be to establish a public-private economic development entity to produce and update an economic plan every four years, as a precursor to the ongoing Sustainable Communities Strategy. Because such a plan is expensive, funding would inevitably have to come from the private sector.¹²

2. Protect the growing knowledge sector as a key driver of our economic future.

Once the region identifies priority industries, it is essential to analyze policies and actions at all levels to make sure that they do not inhibit them. The region should eliminate policies that inadvertently do harm to industries that matter. This is particularly important for expanding firms.

We can assert at this point that the knowledge services sector is a priority sector and key to the region's future. Enabling this industry to expand must be a core regional priority. Knowledge services include professional services, information technologies, finance and life sciences. While we have referred to the knowledge industry as "services" elsewhere in this report, it is clear that the broader knowledge sector includes a manufacturing component, such as in biotech, semiconductors and computer hardware. Some of those

¹¹ See San Francisco Office of Economic and Workforce Development, "Economic Development Strategy," <http://www.oewd.org/About-MOEWD-Major-Initiatives.aspx>; Joint Venture Silicon Valley annual index, "A Message About the 2011 Index". http://www.jointventure.org/index.php?option=com_content&view=article&id=492&Itemid=182; East Bay EDA, <http://www.eastbayeda.org/>

¹² SPUR has already made similar recommendations for the creation of a public-private economic development entity in San Francisco. See SPUR (2010). "Organizing for Economic Growth." June 1. <http://www.spur.org/publications/library/report/organizing-economic-growth>

industries have declined while others are growing.

Protecting the growth of this industry involves national objectives (like making it easier to immigrate), statewide objectives (like increasing funding and support for public higher education) and local/regional objectives (like strengthening the links between Workforce Investment Board training programs and job opportunities in growing firms).

3. Maintain a sufficient supply of industrial land in the urban core.

A successful regional economy is one that maintains a diversity of industries. For the Bay Area, this means retaining and growing as much of our industrial base as possible. The Bay Area's explosive economic growth during and after World War II was fueled by industrial production, and the region has remained an industrial hub for decades (despite now being a global center for knowledge services).

It may seem counterintuitive to maintain industrial land when manufacturing employment has plummeted in recent decades. The justification is simple. First, the region will continue to produce technology-based innovations. Part of the success of Silicon Valley has always been the ability to closely connect initial manufacturing with the design and engineering of the product. And not all innovation comes from a computer. Depending on the types of innovation developed regionally, initial manufacturing could become more important again.

Second, industrial lands are key for the local-serving functions of any economy. Dense regions still need to maintain a place for commercial laundries, produce markets, lumber yards and distribution centers. While such industrial areas can somewhat densify over time, they cannot achieve the densities that are possible in areas primarily focused on knowledge services firms and should not be held to the same standards for density.

Third, maintaining industrial lands in the urban core can actually help densify nonindustrial land. The protection of industrial land acts as a supply constraint that forces densities to increase elsewhere (much like how an urban growth boundary can increase residential densities). As a result, there are policy reasons to try to preserve and maintain this land over time.

SPUR recommends an ongoing regional effort to monitor industrial land uses and local zoning changes to determine the current industrial land supply and demand. The goal would be to maintain a sufficient supply of land focused on industrial uses by subregion and region. Different jurisdictions could work together to develop and share model zoning ordinances to densify some industrial land over time while also maintaining the viability of other areas that are less appropriate for densification.

How Do We Develop a Regional Economic Plan?

A regional economic plan needs to identify which industries have the greatest potential for future growth. There are many ways to do this, including identifying which industries:

- Have the biggest multipliers, location quotients, exports or other metrics.
- Have the best career-ladder opportunities, so that workers can start at one position and move their way up the wage scale.
- Best match the skill set of the region's workforce.
- Best support the region's environmental policy goals.
- Best support social equity outcomes.
- Best reflect the comparative advantage of various subregions.

This means analyzing where the region's inputs (like finance, land, infrastructure, etc.) most support that particular industry's competitiveness.

There are valid aspects to each of these approaches and most would result in a similar set of priority sectors. Through a collaborative process, regional business and government leaders can convene to identify which combination of the above approaches best fits the Bay Area.

In addition, such a plan would include an analysis of the economic ecosystem that supports the priority industries, including:

- **Education and training:** Universities, community colleges and workforce training programs must be responsive to the needs of the economy and provide the right kinds of training.
- **Transportation:** Transit, roads and goods movement should increase efficiency, with a focus on alternatives to driving.
- **Business climate:** From the responsiveness of local government to the tax and regulatory environment, the Bay Area should compete on the quality of government service, not the cost.
- **Technology commercialization:** The Bay Area must remain a place where innovative ideas from the university or lab can turn into companies and reach the marketplace.
- **Finance:** The Bay Area's network of angel funders, venture capitalists and traditional financing sources is among the best in the world, but not all types of businesses have access to these resources. To maintain a competitive economy we must continually strengthen the connection between available finance and emerging industries and firms.
- **Quality of life:** The Bay Area's quality of life is high, yet housing is expensive and not everyone has access to the region's resources. An economic strategy should include focus on access to affordable homes, recreational amenities and other opportunities.

The Changing Workplace: How We Work Now



Razorfish office, San Francisco, CA. Courtesy Gensler 2010. Photo by David Joseph

The Urban Future of Work

The Changing Workplace: How We Work Now

What's happening

Companies are doing more with less, implementing dense, open, collaborative environments that require less space.

Over the last decade, most companies in the Bay Area have made their spaces more dense by reducing the size and number of offices and choosing smaller, more open workstations. Facebook decided, with its move to the former Sun Microsystems campus in Menlo Park, to fit 6,600 employees in a space that previously housed 3,400. To accomplish this, the company is retrofitting the buildings to focus on more open and team-oriented workspaces.

In the last few years, an increasing number of companies have further contracted their workplaces through mobility programs, which offer employee flexibility and reduce real estate costs. With rapidly evolving technologies, companies can maintain a connected workforce that relies on fewer desks for the same number of employees. When mobile workers do come to the office, they “hotel” at a generic workstation that any employee can use. By managing office space in this way, these companies maintain average ratios of one desk for each three to five employees.

Recognizing that workers are often not at their desks, companies are changing the way they organize their workplace.

From a real estate perspective, we consider office buildings “full” if they are leased, but the way they are occupied is often overlooked. Observational studies indicate that the typical office, with one dedicated workstation for each employee, is only 38 percent occupied at any given time.¹³ Employees are increasingly spending more time in conference rooms and team rooms, at off-site meetings or working from home. This trend indicates that they may spend even less time at their desks in the future.

¹³ Workplace Activity Observations, Gensler Consulting (internal report), 2011.

¹⁴ “When Groups Work,” Herman Miller, Inc. and Gensler (internal report), 2008.

¹⁵ This is in large part because their consultants’ work takes place predominantly out of the office at clients’ sites.

¹⁶ NextSpace began in Santa Cruz as an economic development strategy focused on keeping 200 one-person firms in that city instead of chasing a single 200-person firm.

¹⁷ Johnson, Steven Berlin (2001). *Where Good Ideas Come From* (New York: Riverhead).

¹⁸ According to Google’s Marissa Mayer, “The first key principle for innovation at Google is that ideas come from everywhere. We also encourage employees to share everything” (Bay Area Innovation Roundtable, April 5, 2007, <http://www.bayareaeconomy.org/media/files/pdf/BAInnovRoundtableFinalWeb.pdf>).

While the physical workplace is shrinking, it is also regaining a critical role as it evolves from a place for individual work to a place for collaboration.

Overall, shared spaces have grown as a portion of the workplace, from 27 percent in 1999 to 48 percent in 2005.¹⁴ One extreme example is the consulting firm Accenture, whose dedicated real estate is oriented to facilitate meetings and group work sessions. Consultants do not have dedicated desks and rely on client sites and co-work spaces to perform focused individual work.¹⁵

The rise of mobile devices that allow work to happen remotely at first seems to suggest a future in which many people could work entirely from home. But in fact, many mobile workers and self-employed individuals choose to work among others rather than alone. The popularity of co-work spaces offers one example. At these facilities, freelancers and entrepreneurs pay a subscription fee to have access to a shared, open work environment. Some include professional activities and social events in their services. Nearly 20 different co-working organizations — including the Hub Bay Area, NextSpace, PariSoma, Citizen Space and RocketSpace — have opened in the Bay Area since 2007.¹⁶

The attributes of the city are coming to the corporate campus.

While office interiors continue to evolve, the space just outside these buildings is undergoing its own transformation to facilitate interaction and exposure to different sights, activities, ideas and people. High-growth innovative companies are looking to urban-style experiences to increase the energy and engagement of their workforce. A full-service work environment that includes places of work, recreation, entertainment and relaxation is replacing the single-use campus. While some companies, such as Facebook, build a “Main Street” of their own within the corporate campus, others use the context of an urban environment to provide this range of uses and experiences. For its new 2-million-square-foot campus at Mission Bay, Salesforce has chosen to forgo a corporate cafeteria and instead will put public restaurants and retail at the ground level of its buildings. Meanwhile, Facebook and Google are both considering developing housing in the immediate areas around their campuses. While motivated in part by the local jurisdiction’s desire to balance job growth with new housing, these proposed developments speak to a shift from the single-use corporate campus towards a more mixed-use environment.

What it means

According to science writer Steven Berlin Johnson’s theory of “liquid networks,” informal networks and serendipitous interactions encourage discovery and the exchange of ideas, both essential components of innovation.¹⁷ Since ideas can come from anywhere, the more interaction, the more potential ideas.¹⁸ Companies are exploring these theories of innovation by allowing their workers an increasing degree of flexibility and by locating and designing their spaces to facilitate greater collaboration and interaction.

Since companies are already enacting these changes and do not need government support to make it happen, most of the observations in this section do not lead directly to policy recommendations. But they have important implications for where jobs are located, which we will discuss in the next section. The two recommendations we do make here focus on how to support current workplace changes through zoning and land-use policies.

There is a tendency in planning to try to control uses at a micro level. But with rapid changes taking place in the workplace, the organization of firms and the industries and competitive environment within which firms operate, some zoning and planning controls may become outdated and prohibitive to growth. For example, zoning that dictates the amount of space a firm devotes to office vs. industrial uses can be a crude and sometimes counterproductive way to shape industry growth — especially if the ratio no longer works for a quickly changing industry.

Given that there must be land-use regulation, we think it is important to begin shifting zoning towards a focus on outcomes — such as creating an appropriate mixture of uses, having active public spaces, enabling pedestrian and non-auto mobility, reducing nuisances from wildly incompatible uses — rather than trying to control the activities that take place within a building. For example, there is no need to distinguish between a stop-motion film animator who molds clay on a table and a digital film animator who adjusts bits on a computer screen. Both are participants in the growing knowledge services sector.

SPUR's recommendations to respond to the changing workplace

4. Support a greater mixture of uses in traditional single-use employment centers.

There are several Bay Area examples of proposals to shift single-use employment areas to become more mixed-use environments. The City of Mountain View, home of Google's corporate headquarters, has been updating its general plan to include retail, services and housing in some of its employment areas.¹⁹ Hacienda Business Park in Pleasanton is planning to add new housing throughout the park, in part to increase land values enough to enable greater commercial density.

Local governments and managers of privately owned single-use

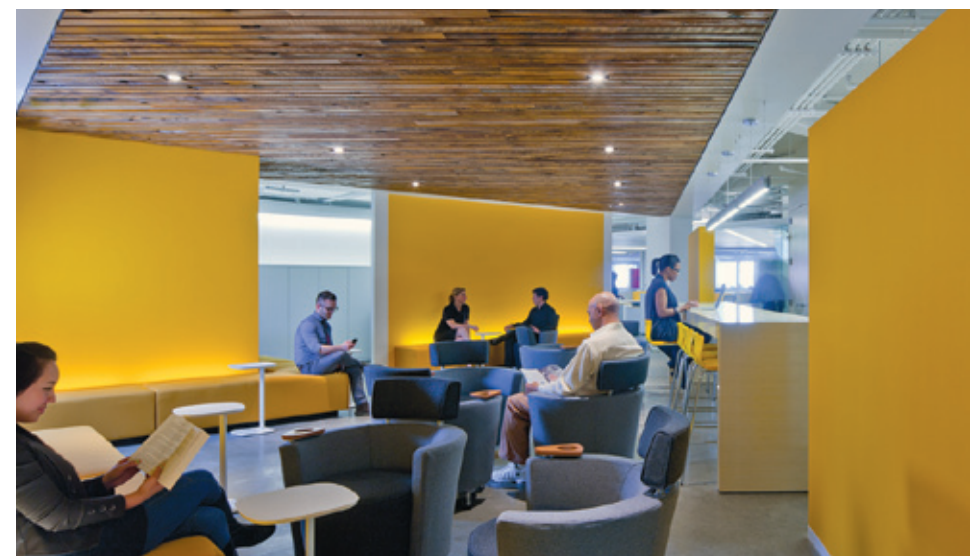
¹⁹ City of Mountain View (2008). "City of Mountain View 2008 General Plan Visioning Process." http://www.mountainview2030.com/docManager/100000245/City%20of%20Mountain%20View%202008%20General%20Plan%20Visioning%20Process_Chap%20V.pdf

employment centers and business parks should embrace this notion of a mixture of uses in employment areas and allow for greater variety within existing centers. To do so may require changing zoning to accommodate uses other than employment, such as housing and retail. It will also involve changes to density, such as the elimination of parking minimums, as we will discuss later in this report. Ultimately, we recommend that architects and office park managers focus efforts and investments on making their properties walkable and mixed-use. This will create opportunities for the kinds of amenities and interactions that companies increasingly want — and that boost the value of the location.

5. Establish performance-based zoning that focuses on outcomes, not uses.

Multiuse districts should permit a flexible mix of uses in their buildings, including conversions to alternative uses when the primary use has moved out or the market has realigned to support new uses. Some argue for a form-based code, which mandates the basic shape and orientation of buildings and not the uses within them. But that approach may be too prescriptive. Instead, it will be important to identify the most essential ingredients for urbanism (such as maintaining active ground-floor uses or preventing buildings from being set back from the street). Then other measures of zoning control can be adaptable as needs change.

Local governments should establish land-use and zoning controls that enable uses to switch over time. In addition, planning departments should explore loosening requirements for ground-floor spaces or expanding the definition of traditional categories like "retail." For example, some co-work facilities and other quasi-public venues may not be classified as traditional retail, but they can perform the same desired function of activating the street. In San Francisco, the successful tutoring facility 826 Valencia installed a "pirate shop" in its storefront space as a way to meet zoning requirements for street-level retail. While this creative solution has resulted in an entertaining new type of retail service, it illustrates that the key metric for controlling use should not be the use but the social performance — that is, how effective is the space in achieving public-realm goals such as active streets and spaces?



At the Nokia office in downtown Sunnyvale (above), gone is the corner office — and even the dedicated workspace. Employees are organized into flexible "team neighborhoods" that can be reconfigured as team sizes ebb and flow.

At UBM's offices in San Francisco, employees work both individually and collaboratively in a café-style social meeting area with a pantry (left). A mural celebrating urban amenities and density (below) enlivens UBM's compact office environment.



Photos by Nic Lehoux

The Geography of Jobs: Where We Go to Work



The Geography of Jobs: Where We Go to Work

What's happening

Traditional downtowns and transit-accessible corridors represent a declining share of regional employment.²⁰

For decades, jobs have been spreading throughout the region, some following residential growth, others simply growing more quickly in locations far away from traditional downtowns. Companies are locating in suburban areas, where land costs are lower and political and regulatory hurdles are fewer.²¹ Though still more job-rich overall, the denser counties of San Francisco, San Mateo, Alameda and Santa Clara have in the past few decades added jobs at a far slower pace than their population growth, and far slower than small counties like Sonoma, Napa and Solano.²²

The Association of Bay Area Governments' FOCUS program has designated Priority Development Areas and Growth Opportunity Areas around transit stations and corridors and in existing downtowns to encourage infill development near transit. But despite these efforts, the priority areas have actually declined in their share of jobs over the past two decades, to less than half of all regional jobs.²³ At the same time, the share of the region's office and "flex" buildings (e.g., versatile one- to two-story buildings that can be used for offices, research and development or manufacturing) located near transit also declined.

Employment density is declining, even as residential density is increasing.

From 1990 to 2010, the share of jobs in downtowns and other dense

²⁰ In the last 10 years, downtown San Francisco and downtown Oakland lost overall employment while downtown San Jose grew only slightly (from a lower base). Significant job growth has taken place in newer employment centers such as Bishop Ranch, Hacienda Business Park, Oyster Point and others, while additional office development has occurred throughout the region disconnected from a traditional job center. See Terplan, Egon (2009). "Job Sprawl in the Megaregion." *Urbanist*. September. http://www.spur.org/publications/library/article/job_sprawl_megaregion

²¹ Clorox is shifting half its workforce to Pleasanton while Kaiser consolidated many of its inner East Bay offices into a new campus in Hacienda Business Park, also in Pleasanton. PG&E continues to shift functions to San Ramon from downtown San Francisco.

²² The greatest increase in job growth since 1990 took place in Napa, Sonoma and Solano counties. Over this time period, San Francisco technically lost employment while San Mateo, Santa Clara and the East Bay grew slowly. Much job growth follows residential growth, and thus as housing sprawled, so did jobs.

²³ These areas represent the bulk of the region's land adjacent to the transit infrastructure. Despite the intention to foster growth there, this transit-oriented portion of the region declined as a share of jobs from 53 percent of regional jobs in 1990 to 48 percent in 2010. See OneBayArea, "SCS Alternative Land Use Scenarios."

settings declined in most Bay Area counties, leading to an overall decline in the region's employment density.²⁴ During this same period, residential densities increased as most population growth took place within existing urbanized areas.

In recent decades, regional transportation and infrastructure decisions have reinforced an outward growth pattern.

Transportation investments like highways and transit lines do not entirely shape how a region grows, but they do facilitate it. Without highway investment in parts of Alameda and Contra Costa counties, office parks like Bishop Ranch in San Ramon would not have been possible.²⁵ Although there is a growing attempt to use a "fix it first" approach to transportation funds, one that focuses less on expanding highways and transit and more on strengthening existing systems, this remains difficult because political interests tend to line up behind new and expanded transportation projects rather than maintenance.²⁶

State and regional policy promotes transit-oriented housing to the exclusion of jobs near transit.

In a major statewide study, researchers determined that there was virtually no new job growth around new transit stations between 1992 and 2006. They attributed the lack of change in part to a policy environment that favored residential uses in transit stations and rarely considered employment. The Bay Area itself passed a transit expansion policy in 2005 that only required residential uses near transit.²⁷ While at the time some advocated to include an employment component in the transit-oriented development policy, many assumed that jobs "take care of themselves" since most communities would prefer jobs rather than housing. What the policy got wrong is that while communities may want jobs, they have little incentive to encourage or zone for those jobs in a transit-accessible location. Similarly, Senate Bill 375, passed in 2008 to reduce greenhouse gases from driving, includes a California Environmental Quality Act (CEQA) benefit for "transit-priority projects" but specifically requires that these transit projects must be at least half residential.

Major transit expansion projects will not do enough to connect job centers.

²⁴ The two exceptions were Santa Rosa and Napa, which both experienced robust job growth. In contrast, from 1990 through 2008, residential densities throughout California increased by 49 percent while remaining flat nationally. See Bedsworth, Louise, Ellen Hanak and Jed Kolko (2011). "Driving Change: Reducing Vehicle Miles Traveled in California." Public Policy Institute of California. http://www.ppic.org/content/pubs/report/R_211LBR.pdf

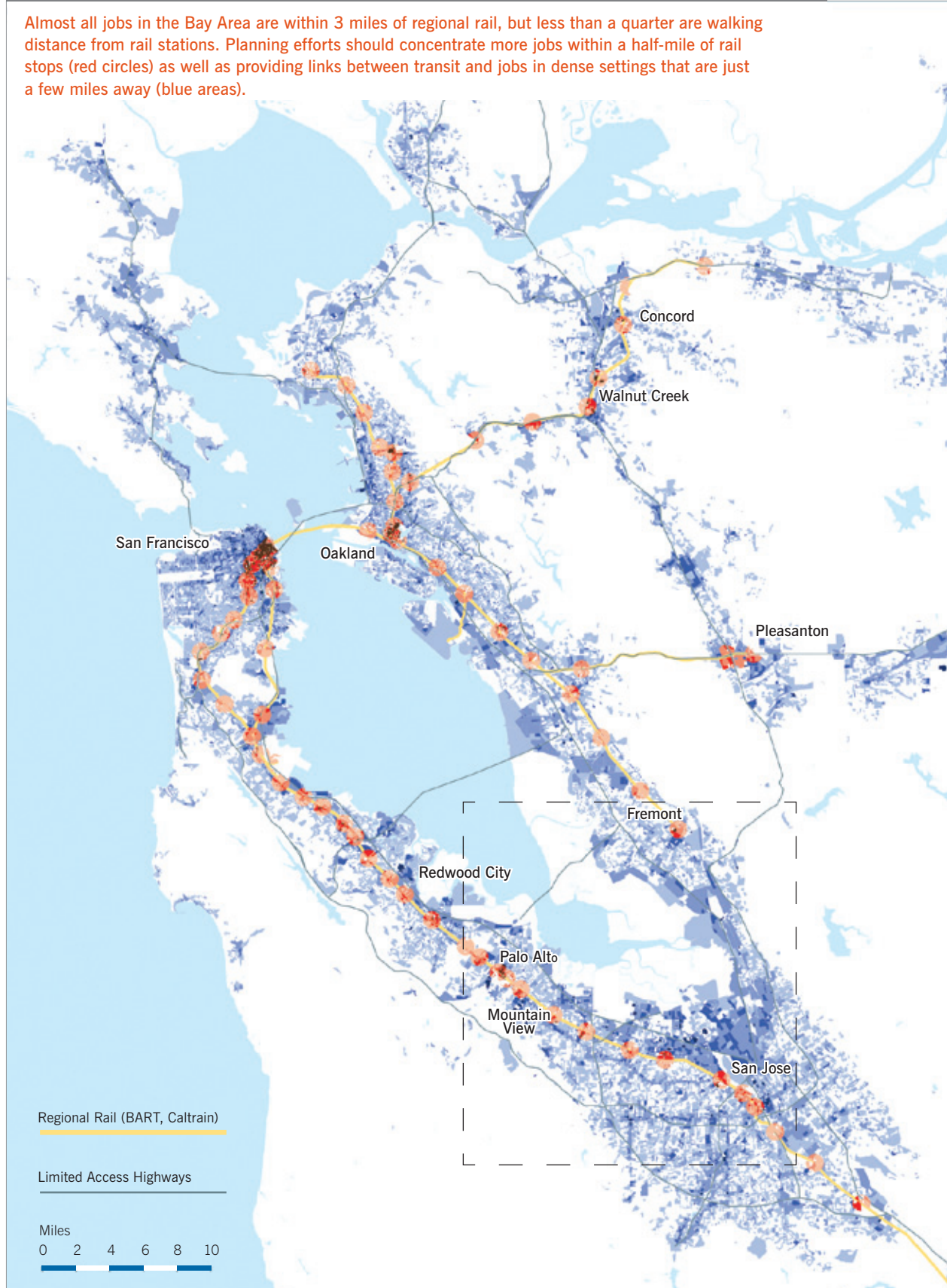
²⁵ Beginning in the 1950s, regional highway investment in eastern Contra Costa and Alameda counties opened up significant land to employment.

²⁶ The Metropolitan Transportation Commission (MTC) today focuses more than 80 percent of its resources on maintenance and 20 percent on expansion.

²⁷ See MTC (2005). "MTC Resolution 3434 Transit-Oriented Development (TOD) Policy for Regional Transit Expansion Projects." Adopted July 27. http://www.mtc.ca.gov/planning/smart_growth/tod/TOD_policy.pdf

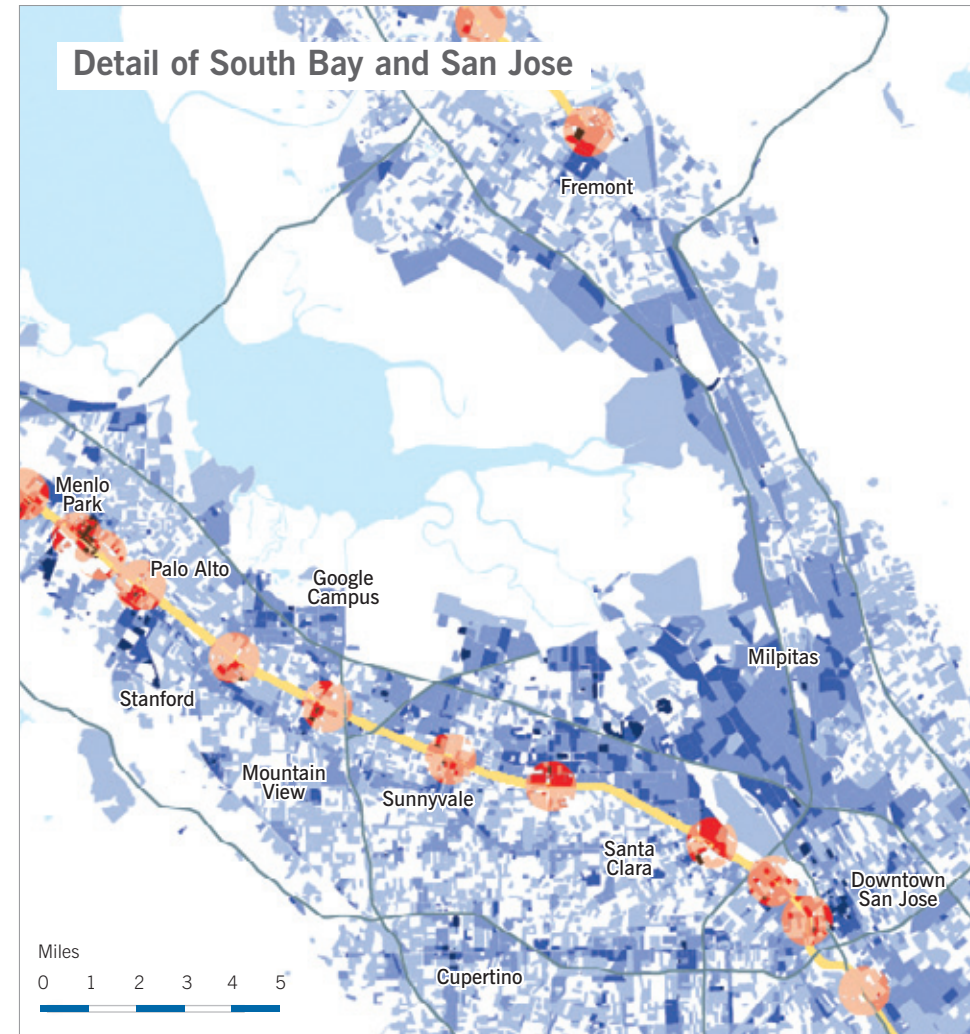
Figure 3: Bay Area Employment Density

Almost all jobs in the Bay Area are within 3 miles of regional rail, but less than a quarter are walking distance from rail stations. Planning efforts should concentrate more jobs within a half-mile of rail stops (red circles) as well as providing links between transit and jobs in dense settings that are just a few miles away (blue areas).



Source: Dunn and Bradstreet, Association of Bay Area Governments (ABAG). Data courtesy of Michael Reilly.

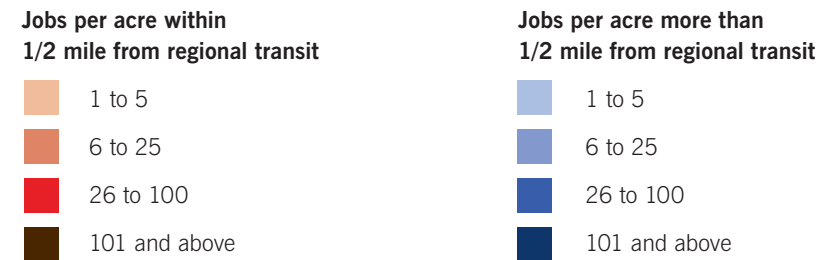
The Urban Future of Work



Despite the historic urban form of the South Bay, where Caltrain stations connect existing walkable downtowns, most of the Silicon Valley's highest employment densities (other than downtown Palo Alto) are not in these station areas. In many cases, the half-mile ring around these stations includes areas with fewer than 5 jobs per acre. Further, most planning policy has focused on putting additional housing, not jobs, in these station areas.

The station areas with the higher densities tend to be contiguous with other employment areas, such as Santa Clara Station and Sunnyvale's Lawrence Station.

At the same time, the high-density employment areas in Silicon Valley are located in a relatively contained areas – such as around Stanford University and Research Park, around Google in Mountain View, and throughout North San Jose.



Bay Area Employment Distribution

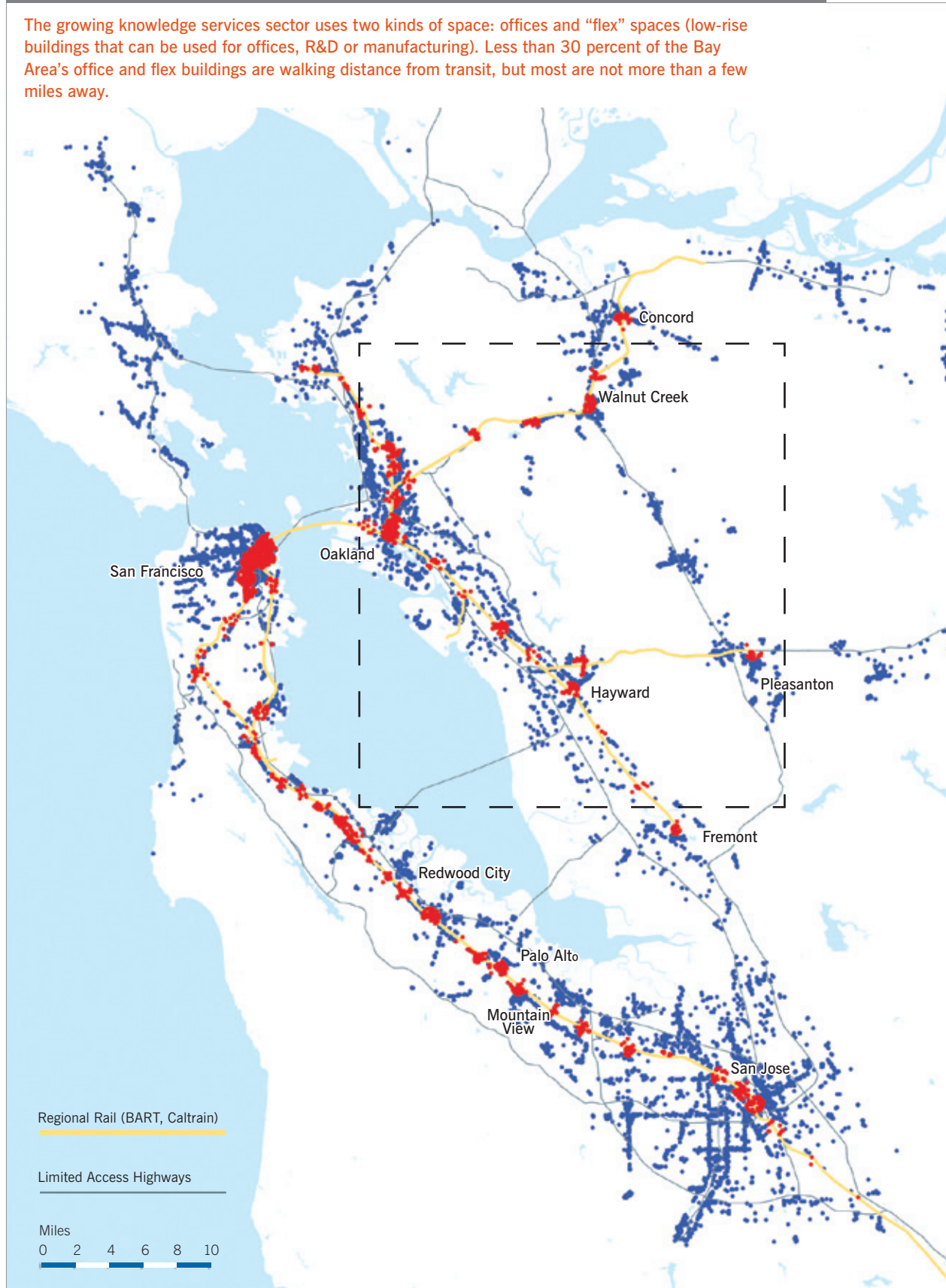
Location	Number of Jobs Regional Total	Percentage of Density	Average Gross Jobs (jobs/acre)*
Within 1/2 mile of regional transit	873,718	23%	45
More than 1/2 mile from regional transit	2,866,133	77%	20
Total	3,739,851	100%	

* Includes census block groups with at least 1 job per acre

Source: National Establishment Time Series (NETS), Data courtesy of Michael Reilly

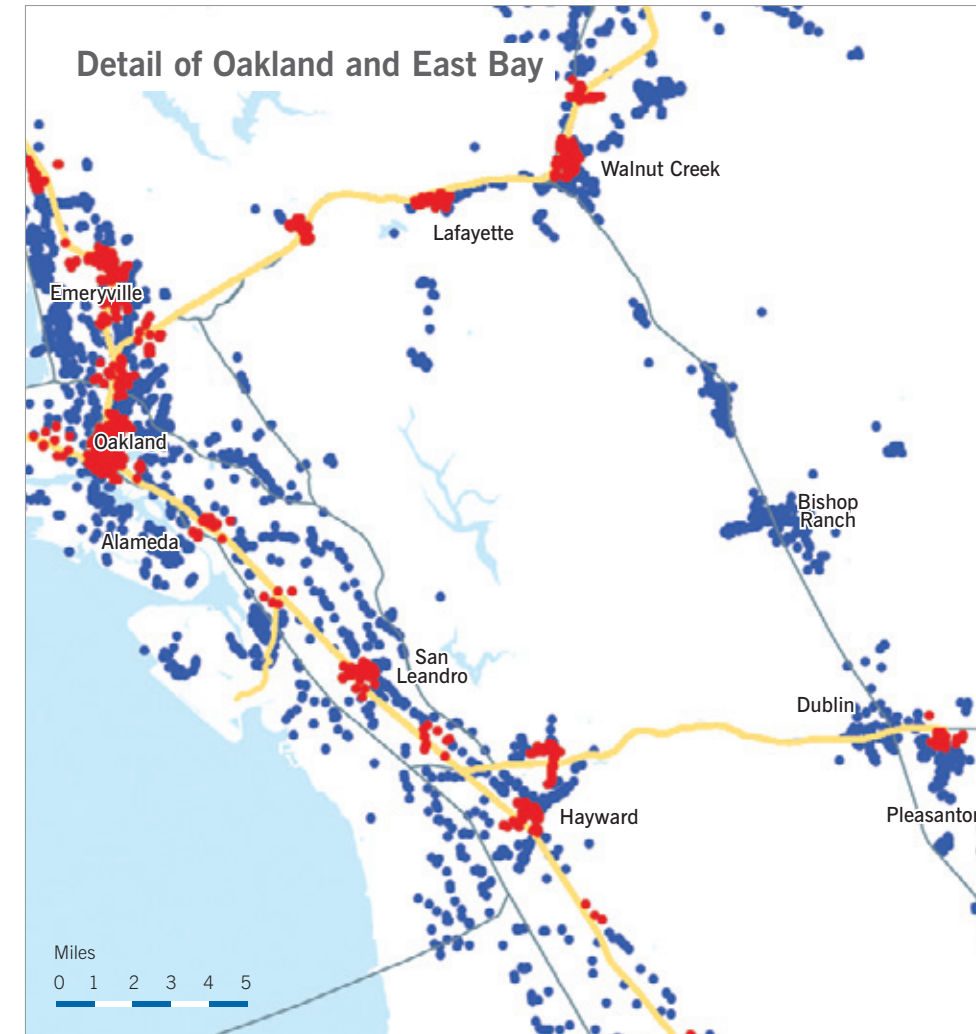
Figure 4: Location of Bay Area Office and “Flex” Buildings

The growing knowledge services sector uses two kinds of space: offices and “flex” spaces (low-rise buildings that can be used for offices, R&D or manufacturing). Less than 30 percent of the Bay Area’s office and flex buildings are walking distance from transit, but most are not more than a few miles away.



Source: CoStar, Data courtesy of Michael Reilly.

The Urban Future of Work



Office and flex buildings that are located

- Within 1/2 mile of regional transit
- More than 1/2 mile from regional transit

Bay Area Office and Flex Building Floorspace Distribution

Location	Number of Buildings	Square Feet	Percentage of Regional Total
Within 1/2 Mile of Regional Transit	4,158	153,940,444	28%
More than 1/2 Mile from Regional Transit	16,125	396,924,586	72%
Total	20,283	550,865,030	100%

Across the region, the single biggest concentration of transit-oriented office buildings is in downtown San Francisco. Overall, office space is more concentrated around transit than jobs are (28 percent versus 23 percent). Some suburban BART stations, particularly Walnut Creek and Concord in central Contra Costa County, begin to approximate the Rosslyn-Ballston corridor outside of Washington, D.C., whose driving rates to work are among the lowest in the country. To achieve that level of success, those communities must become more supportive of additional growth adjacent to their rail stations.

Along other corridors, there is significant opportunity for nearby office development. In particular at BART stations in southern Alameda County and along BART’s extension to San Jose, planning in station areas should shift to further emphasize work, particularly office development, in order to achieve higher transit ridership.

Many proposed transit expansions, such as eBART in eastern Contra Costa County and SMART in Sonoma and Marin counties, will not connect to existing job centers and will have a limited impact on the overall use of transit to work. Important projects like BART to Silicon Valley will bypass North San Jose, which is where most of the proposed job growth will take place. By avoiding North San Jose on its route to downtown San Jose, this project misses an opportunity to truly promote the densification of employment and significantly reduce drive-to-work rates.

Despite this decentralizing trend and a lack of incentives to add jobs near transit, the region's employment geography remains relatively concentrated.

One quarter of Bay Area jobs are within half a mile of a BART or Caltrain station, and more than 40 percent are considered transit accessible if high-capacity local transit such as buses and light rail are counted. Most of the region's office and flex buildings — the kind of spaces used by knowledge services firms — are located within a few miles of regional rail. This geography coincides with the highway infrastructure. For example, Caltrain runs parallel to Highway 101 through the Peninsula, where the bulk of jobs are between one and three miles away from transit stations. The East Bay has a similar configuration, with jobs concentrated alongside Highway 880 from Berkeley south to Fremont while the BART stations are one or more miles inland. The East Bay, however, has a greater concentration of employment around existing stations in Berkeley, Oakland, Walnut Creek, Pleasant Hill, Concord and Dublin/Pleasanton.

There is growing evidence that some companies are looking to stay in or move to transit-oriented urban centers.

Internet radio provider Pandora chose downtown Oakland for its headquarters. Gaming developer Zynga and mobile-payment startup Square are expanding in San Francisco's South of Market neighborhood. Twitter is moving to a larger office on Market Street rather than leave San Francisco. And Salesforce is building a 2-million-square-foot campus in the Mission Bay neighborhood. In the late 1990s, Adobe moved its headquarters into three buildings in downtown San Jose. Today, Oracle is taking three floors in a downtown San Jose office tower, while videoconferencing company Polycom has announced a move from Pleasanton to North San Jose. In 2010, Nokia located the majority of its Bay Area operations in downtown Sunnyvale, adjacent to a Caltrain station. For the technology firms that typically located in low-rise buildings in corporate campuses, these examples are a welcome change. They are also taking place despite several real obstacles: Taxes and rents are often higher and office vacancies lower in downtown areas near transit.

What it means

The Bay Area faces a major challenge: Work is spread out, often not near transit and declining in density. SPUR and others have referred

to this pattern as “job sprawl” and argued that its consequences are dire:²⁸

- It increases driving and raises greenhouse gas emissions;²⁹
- It expands the “commute shed” for workers, allowing them to live farther away from traditional urban centers and³⁰ facilitating residential sprawl;³¹
- It raises equity and job access issues, since jobs in non-transit accessible areas are not available to low-income people and others who don't own a car³²; and
- It facilitates a type of urban design that prevents transit from being a viable option in the future.³³

The opposite of job sprawl is job concentration and increased job density. As job density helps solve the environmental and social equity problems noted above, it also strengthens overall economic growth. Dense regions are more economically successful, and workers in dense places are more productive.³⁴ That means density — in both employment and residential patterns — is a key attribute in economic growth, as it enables variety and interaction and supports the generation of new jobs-producing ideas.³⁵

Why? Density means proximity. In business this means there are many other nearby companies in related industries, what is often called agglomeration. Research on the benefits of business agglomerations finds that proximity can benefit businesses in three ways: by increasing productivity, by fostering innovation and by stimulating business formation.³⁶ Productivity is enhanced because

28 See SPUR (2009). “The Future of Downtown.” Adopted January 1. http://spur.org/publications/library/report/future_downtown; and Terplan, Egon (2009). “Job Sprawl in the Megaregion.” *Urbanist*. September. http://www.spur.org/publications/library/article/job_sprawl_megaregion

29 Ewing, R., R. Pendall and D. Chen (2002). “Measuring Sprawl and Its Impacts.” *Smart Growth America*. <http://www.smartgrowthamerica.org/sprawlindex/MeasuringSprawl.PDF>

30 Alonso, W. (1964). *Location and Land Use* (Cambridge, MA: Harvard University Press).

31 Brueckner, J.K. (2000). “Urban Sprawl: Diagnosis and Remedies.” *International Regional Science Review* 23(2): 160–171.

32 Nechyba, T.J., and R.P. Walsh (2004). “Urban Sprawl.” *Journal of Economic Perspectives* 18(4): 177–200.

33 Frank, L.D., and G. Pivo (1994). “Impacts of Mixed Use and Density on Utilization of Three Modes of Travel: Single-Occupant Vehicle, Transit, and Walking.” *Transportation Research Record* 1466: 44–52.

34 Ciccone, Antonio, and Robert E. Hall (1996). “Productivity and the Density of Economic Activity.” *The American Economic Review* 86(1). http://www.crei.cat/files/filesPublication/87/090505103655_productivity20and20the20density20ciccone%5B1%5D.pdf

35 Avent, Ryan (2011). “One Path to Better Jobs: More Density in Cities.” *New York Times*. September 4. <http://www.nytimes.com/2011/09/04/opinion/sunday/one-path-to-better-jobs-more-density-in-cities.html>

36 Porter, M.E. (1998). “Clusters and the New Economics of Competition.” *Harvard Business Review* (November/December): 77–90.

companies have greater access to employees, suppliers, specialized information, institutions, public goods, and complementary firms and services. Innovation is fueled by competitive pressure from nearby firms and facilitated by having a better window on the market. New business formation takes place as a result of these other benefits: Individuals working within a dense network of businesses can more easily understand gaps in products or services, and barriers to entry are lower because financing, assets and staff are easier to come by.

Properties adjacent to fixed-rail transit stations are able to offer these agglomeration benefits due to the local and regional connectivity that transit provides. As evidence that companies value locations near transit, land costs and rents are usually higher.³⁷ Facilitating dense clustering in job centers, as envisioned around San Francisco's new multimodal Transbay Transit Center, is key to creating a more robust business environment for existing and new firms, and should be seen as key to a region's economic development strategy.

Dense regions are also less resource intensive and need less overall infrastructure. Concentrating workers in job centers reduces both unneeded driving and the costs of extending infrastructure (water, roads, transit, sewers, electricity). Dense job centers are easier to serve with transit and other nondriving modes, and firms can save on transportation costs.

Dense job centers also offer quality-of-life benefits such as shopping, entertainment, restaurants and public spaces, as the high number of people can support those amenities. This improves the desirability of a job center while also reducing midday trips as workers do not have to drive to an off-site restaurant or retailer.³⁸

SPUR's recommendations to reinforce employment density

6. Direct regional transportation funds toward current and planned dense employment centers through a regional grant program and an employment center policy.

A region's urban form is mostly based on the dominant transportation mode at the time of greatest expansion. The Bay Area's dominant urban form was produced in the period from World War II through the 1970s. During that time, the car was the primary transportation mode, and regional investments reinforced auto-oriented growth. In particular, investments in highways such as 580 and 680 opened up development opportunities in the rural lands surrounding the core communities of the Bay Area and facilitated both housing and job sprawl.

Today, transportation remains one of the strongest tools to shape future urban development because economic activity

and growth depends on accessibility, and accessibility depends on transportation.³⁹ Continued expansion of highways, or even inefficient transit expansions, could yet again open up new areas to development and further shift people and jobs out of the region's core.

But despite an urban form mostly built around the automobile, the Bay Area's workplaces also happen to be located along our transit corridors. Most office and flex spaces are within a few miles of transit, and many job centers have the potential to densify. In short, we have the bones for a more compact and connected region. Future transportation funds should be used to help reinforce the existing urban core that hugs the San Francisco Bay and push growth into a more compact pattern.

The region's Sustainable Communities Strategy and Regional Transportation Plan, updated every four years by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC), offer the best opportunity to focus on infrastructure investment and provide a related policy framework to reinforce a denser pattern of employment. Further, both regional agencies acknowledge the need to increase employment growth in existing job centers and to densify existing office parks.⁴⁰

ABAG and the MTC should establish an employment center investment policy. This policy would commit a portion of our transportation funds to reinforcing the region's dense core and better connecting job centers. A priority investment policy would direct a specific portion of regional transportation funds to employment centers located around regional and high-capacity transit. The investments could include:

- Better connecting commuters to existing dense transit-oriented employment areas;
- Funding infrastructure to support densifying transit-oriented job centers; and
- Funding local streets and roads in existing dense and densifying employment centers.

The agencies should use a combination of performance and policy to prioritize which employment centers to fund. For example, performance metrics could include the share of commuters not arriving by car, the amount of employment within a half mile of

37 Cervero, R. (1997). “Transit-Induced Accessibility and Agglomeration Benefits: A Land Market Evaluation.” Working Paper 691. Institute for Urban and Regional Development, Berkeley, CA.

38 Cervero, R. (2001). “Integration of Urban Transport and Urban Planning.” In M. Freire and R. Stren, eds., *The Challenge of Urban Government: Policies and Practices* (Washington, DC: The World Bank Institute).

39 Cervero, “Integration of Urban Transport and Urban Planning.”

40 See OneBayArea, “SCS Alternative Land Use Scenarios,” p. 5: “Provide the appropriate transit, affordable housing, and urban amenities to support the new wave of industries at urban locations and densified office parks.”



Google Campus



Downtown Berkeley

All aerial views are at the same scale, taken at 1,500 meters.

The yellow rule illustrates a distance of 1/2 mile, commonly accepted as a comfortable walk.



Hacienda Business Park



Facebook Campus



Downtown San Francisco



Contra Costa Centre



Pixar



Downtown San Jose

high-capacity regional transit nodes, total employment in the job center (particularly the amount of employment in sectors that rely on a regional labor force) and job performance over the past two decades. In order not to penalize places that are planning for denser transit-oriented job growth but haven't achieved it yet, it would be appropriate to also use a metric of the amount of planned growth at particular levels of density (as measured by floor-area ratio and proximity to transit). The policy approach would also analyze where growth is projected and where local policy measures (such as parking pricing, urban design, ride-sharing programs, minimum densities and other policies) would result in lower rates of driving alone to work and higher employment densities.

MTC and ABAG should also establish a grant program and invest the large majority of these funds in existing Priority Development Areas (PDAs) throughout the region. As part of the Sustainable Communities Strategy planning process, ABAG and MTC are already pursuing funding support for PDAs as a flexible grant program that would combine existing programs such as local street and road funding, transit station-area planning resources, and bicycle and pedestrian funds.⁴¹ These investments would signal a higher level of certainty about a Priority Development Area's future and could encourage new private development.

A single grant program could provide competitive funding for priority development areas not only to undertake station-area planning but also for critical infrastructure such as streetscape and circulation improvements, as well as affordable housing. Applicants for the grants would need to demonstrate supportive local policies to leverage these investments, including policies for locating major public facilities such as schools within transit zones.

Grants would not be distributed uniformly to all PDAs. Specific kinds of grants would be provided to PDAs within half a mile of frequent regional transit service, and others would be available to PDAs that are within half a mile of frequent transit service and promote employment-generating development.

41 MTC, "OneBayArea Grant Program," <http://mtc.ca.gov/funding/onebayarea/>

42 Cervero, R. (2002). "Built Environments and Mode Choice: Toward a Normative Framework." *Transportation Research D* 7: 265–284.

43 See BART, "Station Area Plans," <http://www.bart.gov/about/planning/station.aspx>; and MTC, "Transit-Oriented Development: Transit Villages, Policies and Studies," http://www.mtc.ca.gov/planning/smart_growth/tod/

44 Kolko, J. (2011). "Making the Most of Transit: Density, Employment Growth, and Ridership Around New Stations." *Public Policy Institute of California*. http://www.ppic.org/content/pubs/report/R_211JKR.pdf

45 See MTC (2011). "MTC's Resolution 3434 Transit-Oriented Development Policy: Interim Evaluation." July. http://www.mtc.ca.gov/planning/smart_growth/tod/TOD_Policy_Evaluation.pdf

46 See Kolko, "Making the Most of Transit."

The grants could also help support improvements in urban design elements that would encourage safe and convenient access to and from transit stations. This is essential in making transit-oriented job centers successful. Urban design features such as sidewalks, bicycle infrastructure, pedestrian-scaled development and street trees make for pleasant connections between transit stations and the surrounding developments and increase the likelihood that commuters will use transit.⁴² Careful consideration in urban design will be essential in creating new transit-oriented job centers and retrofitting existing suburban employment centers.

7. Amend the Bay Area's transit-oriented development and expansion policies to include an employment focus.

Both MTC and BART have transit-oriented development policies that were adopted in 2005. MTC's policy (Resolution 3434) sets housing targets along transit corridors that local communities need to meet in order to receive regional funds for transit expansion.⁴³ However, 3434 does not take into account employment-generating development, and some cities have adopted plans that do not consider the role of employment in creating a successful transit corridor and regional transit network.

Significant evidence demonstrates that job density and proximity to transit are more important in increasing transit ridership than housing density and proximity to transit.⁴⁴ Put simply, people are willing to travel farther from their home to transit than from transit to their workplace. This suggests that focusing on creating dense mixed-use destinations — much like successful downtowns — should be the overall goal of transit-oriented development.

MTC should amend Resolution 3434 to include standards related to commercial development densities for regional hubs along the corridor. This is in contrast to an approach that would measure employment densities along the entire corridor based on the analysis that there will be higher transit ridership when jobs are concentrated at key hubs rather than dispersed along a corridor.⁴⁵ Resolution 3434 should therefore establish commercial development thresholds for key station-area plans (not corridor-level thresholds) that will support future job growth. These standards would not apply to distribution, repair and warehousing functions taking place in station areas.

While the focus of this recommendation is on changes at the regional scale, it is important to note that a state planning law, SB 375, also overemphasizes residential development near transit at the expense of employment.⁴⁶ Under SB 375, projects within half a mile of a major transit stop will receive CEQA benefits as "transit priority projects" only if they are at least half residential. That means that a mixed-use office tower next to a rail station would only qualify if half the floors were residential — a use that would lower the building's overall density and most likely result in an increase in the amount of parking required.

8. Establish a transit-location policy for public-serving industries such as government offices and higher education.

Locating government jobs around transit would help create the critical mass necessary for vibrant station areas and help spur private development. Meanwhile, siting services and cultural facilities near transit would provide many families with affordable access to these amenities. Both would result in greater total employment near stations, which would increase transit access and reduce household transportation costs.

Local governments and public educational institutions should agree to locate important new facilities in transit-served areas in their respective geographies. For example, the County of Sonoma is evaluating its entire real estate portfolio and looking to consolidate many of its leases into fewer buildings. They are considering locating in downtown Santa Rosa near the proposed SMART rail station.

This approach could be replicated throughout the region and become codified into a transit-location employment policy for jurisdictions, counties and public higher education institutions (including University of California, California State University and the community college system). Such a policy could be written as:

New public sector development should, if feasible, locate within half a mile of existing or planned frequent regional transit service (i.e., rail) or a quarter of a mile of local transit service (i.e., buses and light rail) when the local service is a 10-minute or shorter ride from frequent regional service.⁴⁷ The policy could apply to the following entities and building types:

- State, regional, county and city offices greater than 25,000 square feet
- Major public facilities such as universities, community colleges, central libraries, public hospitals and social services facilities

These facilities would be built to the same density standards as other station-area development, encouraging the co-location of public facilities with each other and with private development. A city or county would be exempt if no such transit service exists in its jurisdiction.

This proposal is similar to a federal government executive order relating to the location of future federal office buildings. According to the executive order, all federal agency heads shall enhance regional planning by “ensuring that planning for new federal facilities or new leases includes consideration of sites that are pedestrian friendly,

47 To implement this policy, frequency standards would need to be established. Preliminary standards could be 12 minutes or less during peak hours and 20 minutes or less during off-peak hours.

48 See Executive Order 13514—Federal Leadership in Environmental, Energy, and Economic Performance, <http://edocket.access.gpo.gov/2009/pdf/E9-24518.pdf>

near existing employment centers and accessible to public transit, and emphasize existing central cities and, in rural communities, existing or planned town centers.”⁴⁸

9. Reduce regulatory barriers that restrict continued job growth in places of high employment density and/or strong job markets.

While a number of desirable employment centers exist around regional transit nodes — including the downtowns of Berkeley, Oakland, Palo Alto, San Francisco and San Jose — developers face varying hurdles in adding space in these locations. For example, CEQA reviews and complex permitting requirements add considerable time to completing projects around regional transit stations. Streamlining regulations and permit processes for areas with frequent transit service can encourage developers to build in these areas. Regionally sponsored master development plans that show the benefits of transit-oriented, mixed-use development can reduce local resistance to these relatively dense new developments. Developers often cite the need for streamlining regulation as more important than increasing subsidies or tax incentives.⁴⁹ Since the financial resources to establish subsidies and tax incentives are limited, streamlining regulations for development may be low-hanging fruit that can easily be accomplished.

Tools for streamlining planning should include the following:

- Establish regional requirements for “as of right” zoning within half a mile of regional, and potentially local, transit stations. As of right zoning increases the reliability and speed of the development process by setting transparent requirements applicable to all projects within a station area, eliminating the need for negotiation on a project-by-project basis. Ideally, this is established through a specific or area plan with substantial community input. At the end of the planning process, the plan translates the community’s vision into consistent requirements for density, height, mix of uses and other characteristics that can immediately act as the basis for development proposals.
- Support implementation of specific and area plans. In concert with station-area specific and area plans, local communities should adopt programmatic or “plan level” environmental impact reports (EIRs) that take into account the potential environmental impacts of all future projects permitted by the plan. Following adoption, projects that comply with the plan can be exempted from EIRs or have expedited reviews. This adds certainty for reviews and reduces resistance from the community by establishing prior engagement and buy-in.⁵⁰ To support implementation, projects in transit areas can receive priority status for permits and city

49 Transit Cooperative Research Program (TCRP) (2004). “Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects.” Report 102. Transportation Research Board. http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_102.pdf

50 TCRP, “Transit-Oriented Development in the United States.”

Combating Sprawl: It’s About Jobs, Not Just Housing



image courtesy of Panoramio user highhacking

For decades the smart growth movement has focused on stopping housing sprawl, with little attention paid to job location and job sprawl. But planning for jobs near transit has many economic, environmental and spatial benefits over transit-oriented housing. Here are four key reasons why planning efforts must start to focus on locating jobs near transit:

1. Most work locations, particularly offices, are denser than housing and make for a more efficient use of valuable transit-adjacent land.

Land around transit stations is scarce, which leads to a price premium for buildings with transit access.¹ It makes sense to use this land in the most productive and efficient way possible, and office developments have two major benefits. First, there is greater acceptance of workplace density than housing density. In terms of achievable densities in downtown areas, job densities typically exceed the highest residential densities by a factor of five or greater.² Secondly, workers require less space per person than residents. The average size of new homes is approximately 2,400 square feet.³ Given an average household size of 2.6 people,⁴ each person uses just over 900 square feet. In contrast, industry standards recommend about 175 square feet per office worker.⁵

2. People are more willing to work (and shop) in dense, transit-served places than to live in them.

People’s tolerance for working and shopping in dense, transit-served areas is high, even if they prefer to live in low-density neighborhoods. This preference (at best) or indifference (at worst) for dense work environments should serve as a policy window to advocate for dense, transit-served employment

centers. Residents (including those living in dense transit-oriented developments) are all too often opponents of new growth; employees are rarely opposed to increased development near their workplace.

3. People are more likely to take transit if their job is right near transit than if their home is.

Recent research has found that people’s willingness to walk from transit to work is significantly lower than their willingness to walk from transit to their home (500 to 1,000 feet compared to between a quarter and a half mile).⁶ The policy implication of this reality is that we should be zoning to place jobs and other destinations such as entertainment immediately adjacent to transit (particularly rail) and putting housing a little further away.

4. It is easier to change jobs than change homes, so shifting job locations is a faster societal change than changing housing locations.

The number of Americans who move residences is declining. Some statistics show that an average of 1 in 6 Americans (16.8 percent) move residences each year. Others show that this figure has dropped to nearly 1 in 10 (down from 1 in 5 during the 1950s and 1960s). Yet nearly 1 in 4 Americans (23.4 percent) change jobs each year. Together, these statistics show that home locations are relatively fixed compared to work locations. As people shift jobs, creating more transit-accessible jobs is important for increasing the percentage of people who commute by transit.

1 Leinberger, C. (2008). *The Option of Urbanism: Investing in a new American dream*. Island Press: Washington, DC.

2 Center for Transportation Studies. (2001). *Population and employment density and travel behavior in large U.S. cities*. St. Paul, MN: Barnes, G. (2001).

3 U.S. Census Bureau. *Median and Average Square Feet of Floor Area in New Single-Family Houses Completed by Location*. Accessed 3 January 2011. www.census.gov/const/C25Ann/sfttotalmedavgsqft.pdf

4 U.S. Census Bureau. *American Community Survey, 2005-2009 5-Year Estimates*.

5 Elford, M. (2004, February 16). *Determine the right amount of square footage for your office*. San Fernando Valley Business Journal. Retrieved from <http://www.allbusiness.com/operations/facilities/757828-1.html>

6 Dittmar, H., and G. Ohland, eds. (2004). *The New Transit Town: Best Practices in Transit-Oriented Development* (Washington, DC: Island Press).



image courtesy of Flickr user Loozrbey



image courtesy of Flickr user frankenschulz

planning staff time.⁵¹ This can decrease the time for project completion, especially for large or complicated developments.

- Upzone to accommodate additional job growth in places with high current employment density.

10. Eliminate parking minimums regionally and establish parking maximums.

Currently, cities impose mandatory requirements for developers to provide minimum amounts of parking on-site, so that new development will not add spillover parking to nearby streets. However, parking minimums assume high levels of automobile

51 Transit Cooperative Research Program (TCRP) (2002). "Transit-Oriented Development and Joint Development in the United States: A Literature Review." Research Results Digest 52 (October).

52 Shoup, D. (1999). "The Trouble with Minimum Parking Requirements." Transportation Research Part A 33: 549; Cervero, et al. "Are TODs Over-Parked?" UCTC Paper No. 882, UC Berkeley.

53 Actual parking use varies based on factors such as demographics, income, tenure and transit accessibility. An example is providing less parking for developments near transit, as commuters may not need to drive, thus encouraging transit use. See Litman, Todd (2011). "Parking Management: Strategies, Evaluation and Planning." Victoria Transport Policy Institute. http://www.vtpi.org/park_man.pdf

54 Shoup, D. (1995). "An Opportunity to Reduce Minimum Parking Requirements." Journal of the American Planning Association 61(1): 14.

55 Millard-Ball, A. (2002). "Putting on Their Parking Caps." Planning (April): 16–21. http://www.stanford.edu/~adammb/Publications/Millard-Ball_2002_Putting_on_Their_Parking_Caps.pdf

56 Manville, M. (1995). Parking Requirements as a Barrier to Housing Development: Regulation and Reform in Los Angeles. Institute of Transportation Studies, UCLA; and Willson (1995) as cited in Litman (2011).

57 Franco, S. et al. (2010). "Do Parking Requirements Significantly Increase the Area Dedicated to Parking? A Test of the Effect of Parking Requirements Values in Los Angeles County." Draft. http://mpira.ub.uni-muenchen.de/20403/1/MPRA_paper_20403.pdf

use, so parking is often overbuilt. Many cities derive their parking minimums from methods that assume free parking⁵² and require supply of such parking in excess of actual demand. Current parking requirements may vary based on land use, but they do not consider vehicle ownership or actual driving.⁵³ Parking becomes an assumed cost of development that property owners don't try to recover, which results in massive amounts of free parking. Free parking leads to a higher rate of driving, and thus to greater requirements for more free parking.⁵⁴ The result is a cycle of overprovision, encouragement of auto ownership and higher percentages of people driving to work.⁵⁵

Parking requirements negatively impact development densities. They increase development costs and decrease the amount of office space available. This is especially true in inner cities, where land is more expensive and parking must be placed either underground or in free-standing structures. This limits both infill development and the renovation of existing buildings, leaving buildings or lots vacant.⁵⁶ Minimum requirements also decrease the potential of office and

58 An examination of the Adaptive Reuse Ordinance in Los Angeles found deregulation of parking requirements resulted in less parking in some residential developments than would have been required previously. See: Manville, Parking Requirements as a Barrier to Housing Development

59 The Los Angeles ordinance removed the requirement that parking must be on-site. Results show some developments providing less parking on-site and leasing some spaces off-site, and some developments providing all parking off-site. This allows for joint or public parking, freeing up land for more development. See Mukhija, V., and D. Shoup (2006). "Quantity versus Quality in Off-Street Parking Requirements." Journal of the American Planning Association 72(3): 296.

60 Deregulation allows adaptive reuse and historic preservation of buildings because of lower costs. Not requiring on-site parking allows developers to do infill development without assembling large parcels for parking. Requirements and higher cost shifts development to lower-priced suburban locations. With deregulation, the lower cost will encourage development in centralized locations.

61 See SPUR (2004). "Parking and Livability in Downtown San Francisco." http://www.spur.org/publications/library/report/parkingandlivabilityindowntownsf_010105

commercial density in downtowns, which is counter to increasing agglomeration economies.⁵⁷ The requirement, combined with high construction costs, shifts development to suburban locations, where land prices are cheaper.

Deregulation can result in less parking, lower costs and more development.⁵⁸ Removing the requirement that parking must be provided on-site allows for off-site or shared parking,⁵⁹ which could potentially affect travel behavior. Less parking can also free up money for building more commercial or residential space. In addition, deregulation would permit better adaptive reuse of existing buildings.⁶⁰

SPUR has previously adopted policy on parking that recommends eliminating parking minimums for new housing, separating parking costs from the cost to lease or buy property and implementing parking cash-out programs, where employers cannot offer free parking unless they provide an alternate option of cash for those who don't drive.⁶¹

11. Make dense, low-driving job centers more competitive and attractive relative to other types of job centers.

Regional and state agencies should establish policies that reduce the barriers to infill development in transit-oriented settings while making it more expensive and difficult to develop in more remote places. Taxes or fees could establish incentives for job-related commercial investment near transit hubs. Some of these policies could take the new revenue and use it to support job growth near transit.

There are several options here:

1. Implement an indirect source review rule.

An indirect source review (ISR) rule is a type of air quality regulation that pertains to emissions from new development. An ISR may

cover one or more air pollutants, such as particulate matter or carbon dioxide, and effectively caps allowable emissions that may be attributable (hence "indirect") to a new project within the ISR's geographic area. In California, ISRs have been implemented by air quality management districts in regions with poor air quality, such as the San Joaquin Valley.

To comply, a developer must assess how the design and location of a project will affect its indirect emissions, such as a building's use of electricity and natural gas or the number of miles the prospective occupants are expected to drive. Developers submit applications indicating how much pollution the project will produce to the air district before final building permits are approved. The developer must then reduce or mitigate the emissions that exceed thresholds established by the air district. Developers can make various changes to the project to reduce the emissions to meet the threshold, such as reducing the amount of parking or providing transit service. In some cases, a developer may be allowed to pay a fee to the air district to offset emissions that it cannot reduce on-site.

An ISR could shift development to areas with lower emissions potential, such as transit hubs. The requirement to reduce emissions or pay a fee increases the costs of new development and would encourage new buildings to locate in places that can lower these costs, such as transit-served areas.

Implementing an ISR would provide additional funds, through mitigation fees, that can be directed at programs to reduce emissions and change commuter behavior. For example, developers may decide to reduce the amount of parking and associated driving to meet the emission threshold requirement. Developers of large employment centers may also be willing to fund shuttle services, encourage carpooling or develop other transportation-demand management programs to meet the requirement.

Although an ISR can be used to encourage development in locations served by transit, it may stifle growth throughout the region. It could

also encourage on-site changes that reduce emissions but do not affect travel behavior or location choice for the development, such as improving lighting efficiency. While effective at reducing air pollution, an ISR alone may not affect the location of employment in the long run, so additional tools may be needed to achieve the desired outcome.

2. Establish a vehicle miles traveled fee on new office development.

MTC should explore establishing a fee for each new square foot of commercial development in high-driving parts of the region. The fee would be set on a sliding scale, based on the likely vehicle miles traveled (VMT) by workers coming to the new facility. The source for this information could include projections in the Environmental Impact Report, the amount of parking provided for in the plan and the planned availability of high-frequency transit. New developments locating in areas not served by transit and with higher predicted VMT would pay a higher fee. New commercial development in transit-served areas could potentially receive a subsidy financed by the fees on high VMT properties. Companies locating in traditionally high driving areas could get out of paying the fee by establishing effective transportation-demand management programs (see our commuting recommendations in the following section). In this way, the fee could be performance-based. If a company demonstrates its ability to reduce VMT through means other than location, it would not have to pay the full fee. This approach would be particularly effective for companies that are looking to expand and have already demonstrated a track record in reducing per capita driving.

3. Explore “split-roll” property taxes that would assess commercial property separately from residential property, yet exempt transit hubs from reassessment.

A split-roll tax would increase the tax rate on commercial and industrial properties but keep residential rates unchanged.⁶² The California state constitution currently does not distinguish between residential and commercial property, so the same tax rate and the same rules for value assessments apply to both types of property.⁶³

⁶² Institute on Taxation and Economic Policy (2011). “Split Roll Property Taxes.” Talking Taxes.

⁶³ Alberro, J., and W. Hamm (2008). “The Economic Effects of California Adopting a Split Roll Property Tax.” California Business Properties Association. http://www.cbpa.com/documents/split_roll_final_report.pdf

⁶⁴ Dye, R., and R. England (2010). “Assessing the Theory and Practice of Land Value Taxation.” Lincoln Institute of Land Policy; Litman, “Smart Growth Reforms.”

⁶⁵ Further study would also have to explore the extent to which a general increase in the commercial property tax would provide its own incentive to use land more intensively everywhere and thus privilege places near transit where density increases do not necessarily require new investments in added parking. The alternative outcome would be if the general increase in commercial property taxes would simply encourage more sprawl-type development as communities see the added fiscal benefit of continued commercial development and developers intensify development to generate revenue to pay off the higher taxes.

Additionally, California has placed limits on residential property taxes with Proposition 13, leading cities to adopt regressive sales taxes and compete for big-box retailers in order to capture tax revenue.⁶⁴ Current limits on property-tax assessments are inequitable, as the assessment is based on the purchase date.

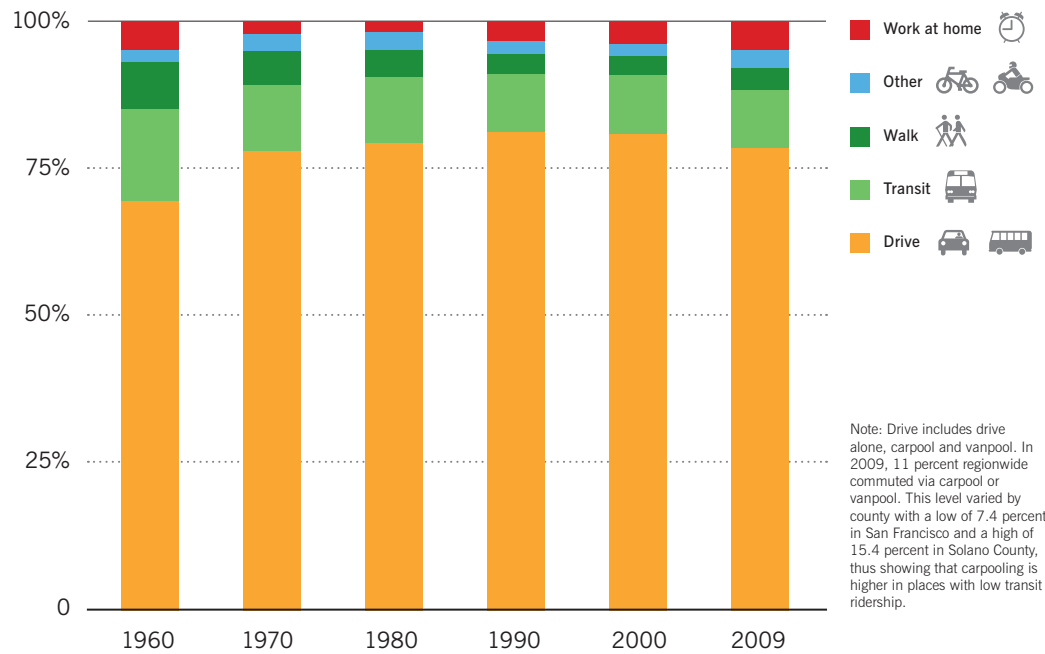
SPUR recommends further study of how to apply different rules to transit areas under a potential split-roll commercial property tax in California. For example, one option would be to allow commercial property taxes to increase to market levels everywhere except for in transit hub zones. Under this scenario, the increase in commercial rates elsewhere could be used to finance needed infrastructure in the transit hub zones. Further study of this policy concept would inevitably also explore the extent to which the property owners in the transit hub area would capitalize on the new infrastructure investment through increases in rents, thus negating the financial benefit of locating in a transit hub area.⁶⁵

Commuting: How We Get to Work



Figure 5: Trends in Bay Area Commuting

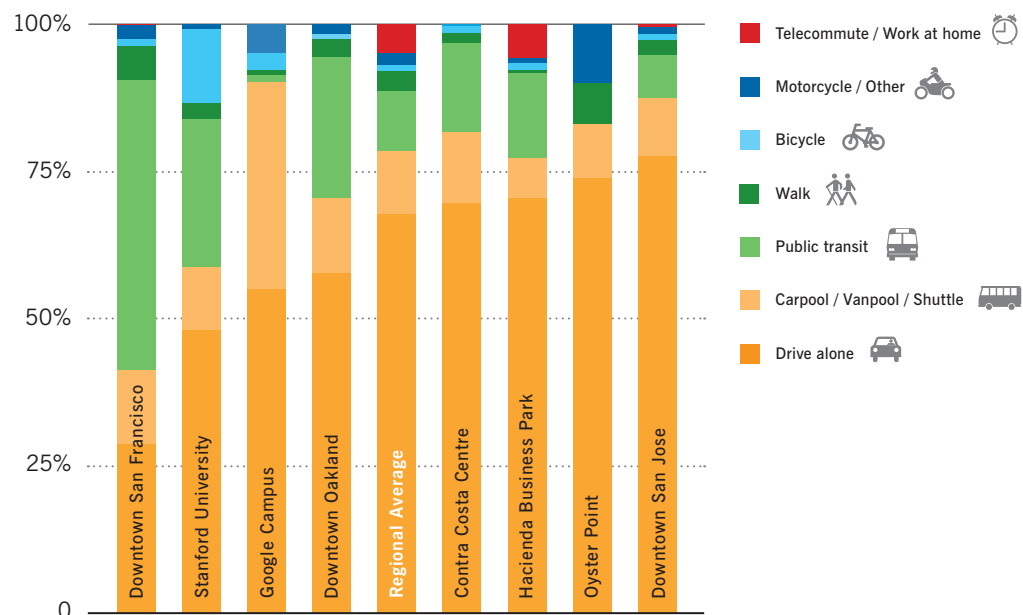
Since 1990, there has been a slight decline in driving as a share of all commuting as transit and other alternatives increase. Yet for over half a century, most people have always driven to work.



Source: US Census Bureau, American Community Survey 2009 and Metropolitan Transportation Commission. http://www.mtc.ca.gov/maps_and_data/datamart/census/dp234/Means19602000.htm <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>

Figure 6: Variation in Commute by Job Center

While most transit ridership to work takes place in dense downtowns, some job centers far from transit have successfully used shuttles and incentive programs to lower their driving rates.



Source: San Francisco Planning Department, Metropolitan Transportation Commission, Office park surveys, Company data, American Community Survey. <http://www.contracostacentre.com/commuterprogram.php> http://www.sf-planning.org/fip/files/Citywide/Downtown_Annual_Report_2010.pdf http://www.spur.org/publications/library/report/future_downtown

The Urban Future of Work

Commuting: How We Get to Work

What's happening

For the past half century, the share of Bay Area commuters who drive has always been more than 70 percent — but this number has started to decline.

After reaching a peak of 81 percent in 1990, drive-alone rates declined to 78 percent in 2009, with more than 10 percent of all commuters now taking transit.⁶⁶ Working at home is up, reflecting an increase in both telecommuting and self-employment. Knowledge services workers are more likely to take transit to work than the regional average, and nearly 10 percent of them work at home.⁶⁷

Older traditional downtowns like San Francisco's and Oakland's have the lowest driving rates.

SPUR has written extensively about the success of downtown San Francisco as the job center with the lowest drive-to-work rate in the region. More than 70 percent of commuters there take transit to work.⁶⁸ Downtown Oakland overall does not have the same low driving rates, though areas right near BART achieve close to 50 percent alternative commuting.

Some suburban job centers are reducing their drive-to-work rates.

Stanford University gets half its employees to work without driving. Its strategy is simple: If you forgo a parking space, you get access to a range of benefits including free Caltrain passes, taxi rides at night and extra health benefits. In the East Bay, Contra Costa Centre (the area around the Pleasant Hill BART station) and Hacienda Business Park (south of the Dublin/Pleasanton BART station) have both achieved a 30 percent rate of employees who do not drive alone to work, far higher than surrounding areas. Google's successful shuttle program has led to a decline in car commuting to its main campus in Mountain View; the drive-alone rate there is now close to 50 percent of all commuters.⁶⁹ Google's approach to alternative

66 While slight, this decline is also combined with a slight increase in transit commuting since 1990, from 9.5 percent to 10.1 percent (after declining from 15.4 percent in 1960). See US Census (2009). "American Community Survey 1-Year Estimates." http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=ACS&_submenuid=&_lang=en&_ts=

67 Overall, 13 percent of knowledge sector commuters take transit, higher than the regional average of 10 percent but lower than the transit share in the leisure, hospitality, food services and government sector. The knowledge sector has the highest percentage of workers who work at home of any sector, 9 percent compared to 5 percent for the entire Bay Area.

68 See SPUR, "The Future of Downtown."

69 Google is one of several major firms that have extensive shuttle programs. In addition to helping facilitate densification, the shuttles reveal the importance of spending extra for employee retention and productivity.

commuting is all carrot with no stick. The firm offers a wide array of free programs for employees that include bike sharing, car sharing, taxi rides home, shuttles and on-site amenities that reduce the need to leave the campus for basic errands. In general, the alternative-commute programs (such as shuttles) at suburban job centers are also necessary to increase employment densities. At many campuses, such as Genentech, there is simply not enough parking to accommodate the number of workers, which helps make shuttles and programs that pay workers a small amount not to drive more effective.

What it means

While the car is still the dominant mode of commuting, car commuting has negative externalities — such as congestion, pollution and productivity loss — that affect regional growth. Shifting away from car commuting has both environmental and economic benefits. There are also social equity benefits for those who do not have to own a car.

While commute trips account for only one-fifth of all trips taken (a trip includes each time one goes shopping, to school, out to dinner, etc.), commuting has a disproportionate impact on overall travel, since it is a trip taken five days a week, on average, and is often the one that organizes our decisions about other trips taken throughout the day.

The most likely trip to change from a single-occupant car to another mode is the commute trip. This is particularly true when reviewing transit data: 60 percent of transit trips are work-related.⁷⁰ For many people, the only time they take transit is to and from work.

To get more commuters using transit or other alternative transportation modes, it is more important to concentrate jobs near transit than housing near transit. Transit ridership is more strongly associated with employment density than is residential density.⁷¹ Transit is successful for commute trips where demand is concentrated, where transit connects directly to job centers and where parking is limited.⁷² Dense employment centers are the natural destination for transit systems, and connecting transit to these centers will increase the share of commuters who do not drive to work. Overall, transit ridership is highest in places where jobs are heavily concentrated in a dense center (typically a downtown central business district) yet where residential population is more dispersed.⁷³

70 American Public Transit Association (2010). 2010 Public Transportation Fact Book. <http://www.apta.com/resources/statistics/pages/transitstats.aspx>

71 Kolko, "Making the Most of Transit."

72 Center for Transit-Oriented Development (2008). "Transit and Employment: Increasing Transit's Share of the Commute Trip." Federal Transit Administration.

73 See Kolko, "Making the Most of Transit," Appendix, p. 2.

Where one works is more important than where one lives in determining whether or not one will take transit to work. Many factors influence people's mode choice decisions. Recent research has found that an employee's willingness to walk from transit is significantly lower than a resident's willingness to walk from transit (500 to 1,000 feet compared to between a quarter and a half mile).⁷⁴ Therefore, in order to maximize land adjacent to transit stations, workplaces should be sited closest to transit and surrounded by residential and other uses. A study of commute-choice decisions for residents who lived in close proximity to rail transit revealed that the destination was the second strongest impact on travel mode choice behind the availability of parking at the destination.⁷⁵ Rail transit is also particularly important to have near employment, as those who work near rail service are three times as likely to take transit.⁷⁶

We should note that the environmental imperative to reduce greenhouse gases from driving will not necessarily result in the best outcomes for urbanism. For example, clean cars solve the pollution problem but still enable a lower-density pattern of working and living. And further-off concepts like driverless cars may even solve congestion and parking problems as they can drive close to other cars on highways and can even find their own far-away parking space.

SPUR's recommendations to strengthen alternatives to the single-occupant car commute

12. Improve the competitiveness of traditional transit by reallocating service from uncompetitive transit markets to competitive ones.

Transit agencies are in a financial crisis. Costs are increasing far faster than revenues. Since labor costs are a major portion of the transit budget, many agencies will renegotiate their labor contracts, or have already. This situation of scarcity is forcing some innovations in transit operations, such as the Transit Effectiveness Project's recommendations to restructure some of the least effective transit routes in San Francisco.

Transit agencies throughout the Bay Area should apply the notion of transit competitiveness in their planning for transit routes.⁷⁷ With

⁷⁴ Dittmar, H., and G. Ohland, eds. (2004). *The New Transit Town: Best Practices in Transit-Oriented Development* (Washington, DC: Island Press).

⁷⁵ Certero, R. (2004). "Transit-Based Housing in California: Evidence on Ridership Impacts." *Transport Policy* 1(3): 174–183.

⁷⁶ Certero found that about 20 percent of those who worked in office buildings close to rail stations in the suburbs took transit to work, approximately three times more than people that worked in offices without nearby rail service. Certero, R. (2006). "Office Development, Rail Transit, and Commuting Choices." *Journal of Public Transportation* 9(5): 41–55.

limited resources, the region must recognize that it cannot put transit everywhere and should instead focus on competitive markets. A competitive transit market is typically one that pairs an origin (such as a neighborhood) and a destination (such as a job center) where transit is highly competitive to automobile travel and other modes of transportation. These competitive markets are the ones where transit service is most effective and efficient.

Factors such as volume of travel, land-use density, parking costs, congestion, automobile availability and trip purpose determine if a transit corridor is competitive. Agencies can create frequent service in a corridor, but if commuters have access to automobiles, encounter no congestion and park for free at work, transit will not compete well with driving.

Once agencies identify competitive markets, they can decide how to reallocate their service to increase the percentage of trips that are made using transit. Many service factors influence the decision to choose transit, such as trip time, frequency of service, access time, number of transfers, comfort and convenience, and service reliability.⁷⁸ Agencies have many options to improve service, but on-time performance and reliability has been shown to have a more significant impact on ridership than the supply of services or changes in fares.⁷⁹ A commuter might live and work in a transit-competitive market, but if transit is infrequent or unreliable, the commuter might choose driving with consistent (and known) amount of congestion.

To make transit more competitive, transit agencies can eliminate some of their worst-performing transit lines and reallocate that service to their best-performing lines. For example, an agency might shift service on a lightly used bus line to a nearby street that is more competitive in order to increase frequencies to every 10 minutes (from every 15 or 20 minutes). This would likely result in higher overall transit ridership.

MTC has an important role in encouraging transit competitiveness. As the agency that acts as the gatekeeper for significant regional transportation funds, MTC could restructure how it disperses transit funds to provide a greater incentive for operators to shift resources toward the most competitive transit lines. For example, MTC could pay transit agencies a bounty per passenger and/or passenger mile.

⁷⁷ A current tool to identify transit competitiveness is the "Transit Competitiveness Index" produced by Cambridge Systematics. The TCI has been further developed under contract with MTC. See http://apps.mtc.ca.gov/meeting_packet_documents/agenda_1685/2011-06-20_TSP_Steering_Committee_TCI_Roll-Out_final.pdf

⁷⁸ Transit Cooperative Research Board (TCRP) (1997). "Building Transit Ridership: An Exploration of Transit's Market Share and the Public Policies That Influence It." TCRP Report 27. Transportation Research Board http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_27.pdf

⁷⁹ Taylor, B., and C. Fink (2003). "The Factors Influencing Transit Ridership: A Review and Analysis of the Ridership Literature." UCLA Dept. of Urban Planning Working Paper. <http://www.reconnectingamerica.org/assets/Uploads/ridersipfactors.pdf>

More passengers means more money; fewer passengers means less.

13. Treat regional employer shuttles as transit and expand them to serve smaller employers.

Shuttle services are a growing part of the Bay Area commute. They move large numbers of commuters over long distances and reduce commuter traffic and single-occupancy vehicle usage. Large companies such as Google, Genentech, Apple and Yahoo run private shuttles to bring employees to their suburban campuses and office centers, many of them operating over distances of 10 miles or more. Some public transit commuter services work similarly; for example, AC Transit's Transbay buses pick up passengers along neighborhood routes in the East Bay and then runs express across the Bay Bridge to San Francisco's Transbay Terminal. There are also shuttles that bring workers from transit stops to their workplaces, like Emery Go-Round or San Mateo's Alliance Shuttle Program. And some private shuttle and bus operators offer premium bus service for long-distance commuting, such as Bauer's Wi-Drive, which offers routes from San Francisco to Milpitas or Vacaville to Fremont via Pleasanton.⁸⁰

Regionally, private shuttles perform a critical function that traditional public transit is unable to perform by going directly to a worksite. Many large company campuses are located several miles away from rail stations, and sometimes even from freeways and public transit. Providing regional public transit to these locations is impractical because it would require regular stops at multiple campuses along a corridor. The result would be very ineffective and attract few riders. Free company shuttles, or discounted private shuttles, offer door-front access that is not possible with most fixed-route transit.

Regional employer shuttles benefit companies by improving recruitment and retention, because shuttles offer employees an alternative to driving congested freeways. Shuttles also allow companies to attract employees from a wider area due to the long distance they can travel. Finally, shuttles allow employers to reduce parking congestion and demand, which can allow companies to spend fewer resources on parking.

Employer shuttles benefit commuters by allowing them to more freely choose where to live (assuming a shuttle goes to their desired neighborhood). They also allow commuters to reduce their transportation expenses, or even the need for a second automobile, as well as avoid the stresses of highway congestion.

⁸⁰ See <http://bauerswi-drive.org/> and <http://www.bauersit.com/Public/individual.php>

⁸¹ See Bay Area Air Quality Management District, "Shuttle/Feeder Bus Service and Regional Ridesharing," <http://www.baaqmd.gov/Divisions/Strategic-Incentives/Alternative-Transportation/Shuttles-and-Ridesharing.aspx>

⁸² See California Environmental Protection Agency Air Resources Board, "California's Parking Cash-Out Law," <http://www.arb.ca.gov/planning/tsaq/cashout/cashout.htm>

Currently most private employer shuttles are offered by large companies that have thousands of employees and the financial means to support a shuttle fleet. Many medium- and small-sized companies cannot access the benefits of shuttles because they are only available to employees and do not stop near smaller company locations. But if small companies collaborated with each other or partnered with large firms, they might be able to offer a similar shuttle benefit to their employees and provide the region with the benefit of reduced congestion and driving emissions.

One option would be to have existing shuttle operators coordinate or consolidate operations with each other at pick-up locations and with transit agencies and congestion management agencies. For example, Google and Genentech shuttles could pick up riders at combined stops, as well as at former Muni stops.

A second option would be to establish a funding program to aggregate demand from various employers and encourage long-haul shuttle bus commuting to small employers. This is under consideration in the Peninsula. The Bay Area Air Quality Management District has funding for public agencies to pilot shuttle/feeder bus projects.⁸¹

14. Replicate successful alternative commuting programs at major employers and university campuses.

Creating incentives for commuters to get out of their personal vehicles and onto transit or bikes or into carpools is not a simple task. However, a well-designed menu of site-specific incentives can make a very successful commuter program at any employment location. When offering a commuter program to employees who drive alone to work, addressing the critical needs, questions and concerns most commuters have is vital.

Most commuters are motivated by cost, reliability, convenience, time and flexibility. Much like when a person buys a new car, they want to make sure it is a good value, runs well for many years, provides the conveniences they expect and can get them to and from work and to other locations reliably. An effective commuter-benefits program addresses all of these issues and provides a bonus for switching from driving alone. For example, at companies with parking cash-out programs, commuters receive a cash payment if they choose not to drive. Under current California law, most employers who offer free or subsidized parking must provide a cash allowance or payment in lieu of a parking space for employees who choose alternative ways to commute.⁸² Such programs could also impose a fee to park and use those funds to pay others not to drive. Other incentives include a contest-oriented bonus, in which those who participate in the program have a chance to win a gift certificate, cash prize or vacation package. Other programs donate to a nonprofit if employees reach a certain number of days per month of not driving alone to work. Addressing commuters' concerns and needs is equally critical.



image by Sapihan (Jan Pesula) CC BY-SA 3.0

The shift away from auto-reliant commuting involves many strategies. In Guatemala City (above), dedicated buses bypass street traffic. Planning for mopeds, bicycles and other modes is an important piece of the alternative-transportation puzzle. While North American cities will not likely achieve the density of Tokyo (below, right), prioritizing pedestrian crossings would increase safety and encourage more people to leave their cars behind.



image courtesy of Flickr user thirstycactus



image courtesy of Flickr user ElvertBarnes



image courtesy of Flickr user tunnelarm

Programs should provide employees who do not drive to work with a way to get to medical appointments or get home in case of an emergency, or simply allow some flexibility so employees can go out to lunch or occasionally drive to work on a day when their circumstances call for it. Emergency ride home programs, car sharing, rental car credits and parking vouchers all address these concerns.

The best incentive-based model is to give commuters access to a menu of benefits if they do not take a parking space (i.e., do not drive alone to work). One example is Stanford University's Commute Club Program, where members who vow not to drive alone to work are rewarded with a series of benefits such as car-sharing credits, rental car vouchers and reserved parking for emergencies. This system acknowledges that employees need to drive on some days but provides an incentive to make the normal commute one that does not require an individual parking space.

When employees consider the switch to transit, biking, walking or carpooling, the program must create an environment that educates employees about the best ways to take transit, or how to find others interested in carpooling to work. A good regional example is the Commute.org programs managed by the Peninsula Traffic Congestion Relief Alliance. There are also emerging tools like dynamic ride sharing, built around a combination of mobile technologies and the trust engendered by social-network communities. Just as NextBus has reduced the uncertainty of waiting for transit, dynamic ride sharing could reduce some of the uncertainties of carpooling. Employers should take the company and regional benefits of a successful alternative commuter program seriously. If they offer a range of incentives to encourage commuters to leave their cars at home (starting with pre-tax commuter checks), over time they will save by not having to pay as much for parking.

In addition to the benefits of the alternative commuting programs listed above, employers should increasingly incorporate commuting as part of their sustainability metrics and greenhouse gas reduction goals. For example, the federal government has taken the lead by incorporating commuting as part of its greenhouse gas emissions calculations. In an executive order from 2009, the General Services Administration targets an overall reduction in greenhouse gas emissions connected to the agency by 2020. In addition to looking at emissions from vendors and contractors, the GSA encourages "implementing strategies and accommodations for transit, travel, training and conferencing that actively support lower-carbon commuting and travel by agency staff." SPUR encourages Bay Area firms to take the federal government's lead of including low-carbon commuting in corporate climate change goals.

15. Study the creation of dedicated bus lanes on highways for all regional buses, including employer shuttles.

Regional commuter transit has grown tremendously over the past 20 years. The challenge for this form of transportation is that peak-period freeway congestion slows down shuttles and buses just as it slows down personal vehicles. The same challenge plagues local transit on busy urban streets like San Francisco's Geary Boulevard or Oakland's International Avenue. The solution is a dedicated right of way that offers buses their own lane unhindered by personal vehicle traffic. Much like creating a dedicated bus right of way for Bus Rapid Transit, creating transitways on the Bay Area's major freeways will allow buses to provide faster, more convenient and more reliable ways for employees to reach work. In fact, transitways will allow buses to reach their destinations faster than personal cars.

Two forms of transitways can be built: new transitway lanes, much like carpool lanes, or contraflow lanes.

Option A: Expand contraflow lanes

A contraflow, or reversible, lane is one in which traffic may travel in either direction depending on the time of day, to improve traffic flow during rush hours. Contraflow lanes already exist on the Golden Gate Bridge. Midday traffic is given three lanes in each direction, but during the morning peak period, four lanes are southbound and two lanes are northbound. The middle two lanes on the bridge act as contraflow lanes. The major benefits of contraflow lanes are the increase in speeds and time competitiveness for transit, particularly for routes longer than 20 minutes.

Contraflow transitways could be established along many of the Bay Area's congested freeways to allow buses to move faster and more freely than regular auto traffic. For example, along the I-580 corridor, most of the morning traffic is heading westbound, while the eastbound traffic is much lighter. Reversing the direction on one of the eastbound lanes would create a new westbound contraflow transitway. Possible locations include:

- I-580 between I-205 and I-680
- I-80 between the Carquinez Bridge and the Bay Bridge
- U.S. 101 between CA-37 and the Golden Gate Bridge
- U.S. 101 between I-280 in San Francisco and I-880 in San Jose
- I-80 on the Bay Bridge between the Maze and the Fremont Street exit
- CA-4 between Antioch and I-680
- I-880 between I-238 and CA-237

A nine-month pilot project could be created on some highways to encourage shuttle use during peak days such as Tuesdays, Wednesdays and Thursdays. Creating such a project could demonstrate that transitways offer a faster and more convenient transport option, while the limited scope of the project (three days a

week for nine months) would avoid the complicated environmental review process.

Option B: Establish new transitway lanes

A second option would be to build new transitway lanes along segments of freeways, by adding a lane to an existing center median, widening the freeway or building new elevated transitways above the normal freeway level, much like San Diego County's I-15 and Los Angeles County's Harbor Transitway carpool lanes on I-110. Both of these solutions would require multiple entry and exit points along the transitway to serve the most job centers and residential areas.

Similar to contraflow lanes, new transitway lanes increase transit speeds and reduce transit times, especially for routes longer than 20 minutes. The difference is that transitways often have a more significant capital requirement and cost.

16. Solve the “last mile” problem between transit and jobs by building a pedestrian and biking network and adding car-sharing opportunities at transit stations.

One way to make regional transit a more viable commute mode is by making the connection between destination station and workplace easier. As noted earlier, most of the region's office and flex space is located within a few miles of a regional rail station. This distance is ideal for a bicycle trip, particularly as much of the region's office space is in the relatively flat areas near the bay. Some offices are located within a mile, a distance that is possible for some commuters to walk.

While most research shows that commuters' willingness to take transit is extremely low if they have to transfer to a different mode or walk more than a quarter or half mile, an increasing number of commuters are bringing their bicycles onto transit (such as Caltrain) and then biking the final mile or more to work. SPUR recommends several options to make transit plus another mode more viable.

First, local communities, in partnership with developers and transit agencies, should build safe, clearly marked walkways and bicycle routes from rail stations to nearby employment centers. Even blocks from some Caltrain stations in Silicon Valley, there are streets that entirely lack sidewalks, thus making walking to work from transit dangerous and undesirable. Remediating this would require county transportation planners to dedicate a portion of local streets and roads money to creating walkways and bicycle lanes.

Second, developers and managers of commercial real estate should provide secure bike parking at job sites. Secure bicycle parking is typically located in a locked area (such as a basement or garage). For new buildings, this could be codified as a requirement of the local jurisdiction or even as a regional alternative commute program incentive. For existing buildings, secure bicycle parking could be incorporated into existing garages (if present). For buildings

with surface parking, bicycle racks located near highly visible building entrances could also serve as reasonably secure bicycle parking. Regional entities such as the MTC or the Bay Area Air Quality Management District could provide incentives to meet new requirements through matching funds or a loan program.⁸³ Since bike infrastructure is cheaper to build and maintain than auto infrastructure, these matching funds will easily justify themselves over time.

Third, transit stations should also offer a range of car- and bike-sharing opportunities for people who need to access destinations in the surrounding area. Providing these services will be up to private car- and bike-sharing companies, but transit agencies will need to dedicate space adjacent to the station for parking and storage. Local firms could further support this effort by committing to company car- and bike-sharing accounts for employees and visitors.

⁸³ The Bay Area Air Quality Management District currently implements various programs to reduce emissions, including grants for bicycle facilities as well as shuttles. See http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/Rules%20and%20Regs/reg%2003/0300_req_031809.ashx?la=en

Regulation and Financing: How Government Can Help

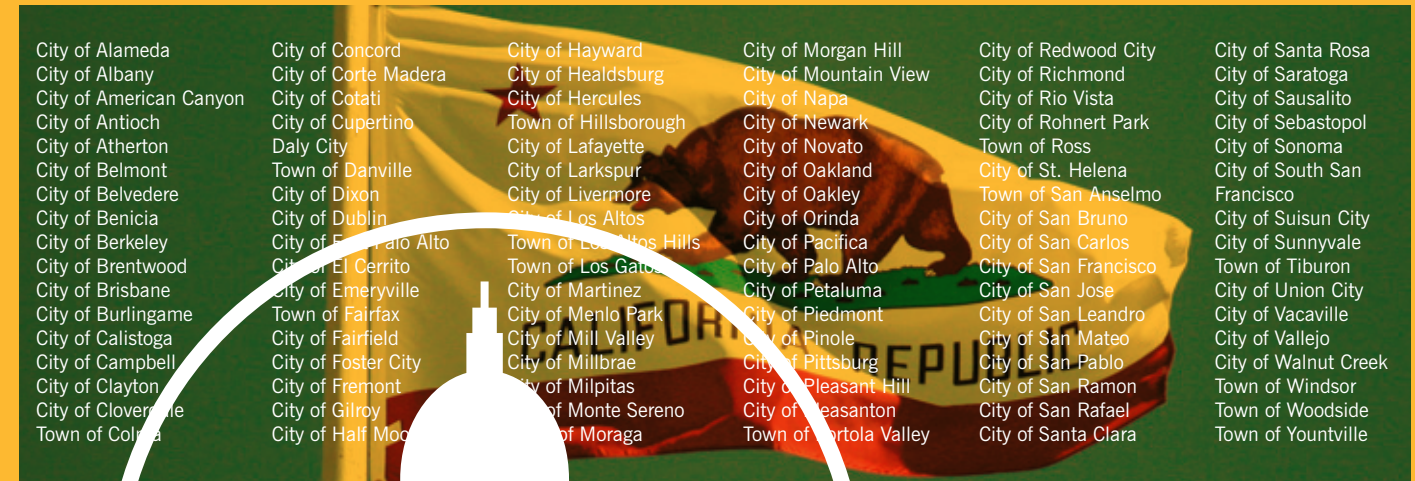


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Regulation and Financing: How Government Can Help

What's happening

It is harder for companies to expand near transit stations in the region's urban core, where there is less available land and where land costs and political opposition are higher.

Some of the densest and most successful job centers restrict growth, such as San Francisco with its payroll tax and annual cap on new office space.⁸⁴ Other desirable job centers like Berkeley and Palo Alto often make it difficult for companies to expand.

Using fees to finance local government makes dense development more difficult.

When development fees are used to fund basic services, this creates added costs that make infill development even more difficult. In addition, a fee-based approach to local government financing can also result in worse development, particularly during a recession. For example, when the economy is weak, cities are often willing to accept any kind of development — even land-speculation ventures like storage facilities — simply to collect some fees from new development.

There are few incentives for local governments to collaborate on economic development. Because of the structure of local finance, cities are forced to play a zero-sum game where the jurisdiction that lures the next startup or company expansion gets all the tax benefits, while the city next door just gets the traffic congestion. Cities spend resources trying to attract firms from elsewhere in the region, even though this has no effect on total job growth. How many jobs the Bay Area has is based on how well we collectively compete with other global regions, not how well local cities compete with each other. This problem becomes cyclical as the wealthier jurisdiction has more tax revenue to continually invest in making its community more attractive for businesses, resulting in greater and greater fiscal disparities between neighboring jurisdictions.

Local governments are struggling to pay for basic services. Some cities have begun consolidating functions with other communities or going out of the business of providing them. For example, fire services are shared between several communities in San Mateo County.⁸⁵ And in a well-publicized 2009 action, the City of Petaluma

⁸⁴ The office cap is 1986's Proposition M, which limits the amount of new office space each year. San Francisco also has a payroll tax of 1.5 percent on payrolls over \$250,000. See SPUR, "The Future of Downtown."

⁸⁵ See "City Fire Department Consolidations Merger," http://www.sanmateocourt.org/documents/grand_jury/2009/fire_dept.pdf

⁸⁶ See Mullins, R. (2009). "Testing the Limits." *The Registry* (October). http://www.theregistrysf.com/200910_petaluma_planning.html

outsourced its entire planning department to a private contractor.⁸⁶

Financing options for local and regional transit and roads are limited. San Francisco's Transportation Plan proposes \$54 billion in projects for a plan with a budget of \$25 billion. All the proposed projects are worthy investments. This discrepancy between need and available funding is not new. But with declining federal and state investment in transportation, as well as growing needs (for example, BART has never replaced its cars since it opened in 1972), there is a need for regional sources of revenue. In addition to the \$3 billion to \$5 billion needed to replace BART's aging car fleet, Caltrain lacks a dedicated funding source, and Muni and AC Transit suffer from long-term budget deficits.

What it means

The Bay Area has more than 100 local governments, each with its own land-use approval process, and each struggling to balance its budget. While this system preserves a degree of local autonomy, it undermines broader regional outcomes such as total job growth or increasing the share of employment near transit. Cities compete with each other for companies, and often zone and approve development based solely on the fiscal benefits. This might be different if we had regional mechanisms to share some local tax revenues across jurisdictional boundaries.

Instead of maintaining the current system of fiscal rewards for communities that compete with one another, we should instead look for new and more regional sources of revenue to support investments that will strengthen our overall competitiveness. The future Bay Area described in this report will require new resources to support it.

SPUR proposes the following recommendations to solve the above challenges. These recommendations would also reinforce other ideas in this report, such as increasing employment densities regionally and shifting commuter behavior away from the single-occupant automobile.

SPUR's recommendations to adjust governance and financing mechanisms to the realities of the future

17. Move toward sharing a portion of local property and sales taxes.

There are insufficient incentives for cities to support dense transit-oriented employment, even if this increasingly becomes an important

regional objective. In particular, each city faces what is referred to as a "prisoner's dilemma" (a choice where the outcome usually makes everyone worse off). Cities could support regional objectives and focus all of their community's future office development around transit stations, but risk losing out on future tax revenues to cities that promote auto-oriented commercial development. For cities with limited regional transit service and without high property values, an especially strong incentive exists to permit and promote as much commercial development as possible — regardless of its location relative to regional transit. As a result, most cities choose to permit auto-oriented commercial development even though this leads to a declining share of regional jobs located near regional transit (which means more people have to drive and local communities struggle with increasing car traffic).

Bay Area cities, in collaboration with regional and state agencies, should explore a subregional or regional sharing of the fiscal benefits of economic growth. For example, communities with a high concentration of jobs and related sales taxes would be required to share some of their tax receipts with surrounding communities. This approach would offset related housing and other costs borne by neighbor communities, while jobs centers would still retain a large part of the taxes to underwrite attendant infrastructure costs. The approach proposed here could also put conditions on the communities receiving the shared taxes — such as approval of new housing — to ensure that they, too, are supporting important regional objectives and are not free riders on the economic success of their neighbor.

How does tax-base sharing work? Collective tax revenues — property, sales, business or all taxes — of a region or subregion are distributed among the cities that make up the region or subregion. Revenues can be distributed on the basis of population size or other metrics such as current fiscal condition. Revenues can also be distributed to equalize the services available to provide schools, health care and police services. Shared revenues could be used to improve amenities in a densifying residential area or to support job growth in a transit-served community (such as Oakland or San Leandro) with infrastructure needs.

Tax sharing is important to reduce some of the inequities that result from where growth occurs, as well as to encourage greater political support for a regional investment approach that would prioritize transit-oriented job centers. If a dense job center gets more of the infrastructure funding, but a nearby jurisdiction gets a share of the fiscal benefits, there is likely to be more support for prioritized transportation investment.

The most prominent U.S. example of tax sharing is in the Twin Cities region, where, since 1971, communities have put 40 percent of the growth in their commercial and industrial property tax base into a regional pool that is then redistributed to jurisdictions based on population and property values.⁸⁷ The result of this sharing has been a reduction in the fiscal disparities between jurisdictions.⁸⁸

18. Shift taxes away from work and toward waste.

SPUR has long called for exploring environmental tax shifts, which focus on reducing taxes on behaviors we want more of, such as job creation, and increasing or establishing taxes on things we want less of, like pollution or traffic congestion. In our 2008 article, "More Work, Less Waste" we studied a revenue-neutral tax shift in San Francisco and determined that revenue from the city's payroll tax could be replaced by revenue from a menu of new "green" taxes and fees such as a residential utility user tax, residential parking permits, parking price increases and other mechanisms.⁸⁹

Research in the past three decades has found that the impacts of state and local taxes on metropolitan area growth are large enough to make a difference in the policy decisions of businesses looking to move or expand — or of cities and regions looking to promote economic growth. Current business taxes have the unintended consequence of driving successful, growing companies away from the region's urban centers toward outlying areas.

While there is no comparable regional business tax that could be replaced by green taxes and fees, the three cities with the highest local business taxes in the Bay Area are San Francisco, Oakland and Berkeley — three transit-oriented cities in the urban core with dense job centers. San Francisco's payroll tax is far larger than the other two cities, so shifting taxes in San Francisco would produce the biggest overall change to the local taxation of businesses regionally.⁹⁰

These cities and others with local business taxes should explore a tax shift away from business taxes and toward green taxes or fees. While this could be done at the jurisdictional level, it could also be done regionally as part of a broader regional tax-sharing program where new regional fees are used to replace lost business taxes while jurisdictions with high employment and corresponding property and sales tax revenues share a portion of these revenues with surrounding tax-poor communities.

⁸⁷ For more information on the the Minnesota Fiscal Disparities Act of 1971, see Orfield, Myron, and Nicholas Wallace (2007). "The Minnesota Fiscal Disparities Act of 1971: The Twin Cities' Struggle and Blueprint for Regional Cooperation." *William Mitchell Law Review* 33(2). <http://www.wmitchell.edu/lawreview/Volume33/documents/4.Orfield.pdf>

⁸⁸ See New Rules Project. "Tax Base Sharing—Metropolitan Revenue Distribution, MN." <http://www.newrules.org/retail/rules/taxbase-sharing/taxbase-sharing-metropolitan-revenue-distribution-mn>

⁸⁹ See Bell, Lisa, and Egon Terplan (2008). "More Work, Less Waste." *Urbanist* (September). <http://www.spur.org/publications/library/article/moreworklesswaste09012008>

⁹⁰ San Francisco's payroll tax is an impediment to job growth, particularly for larger firms that provide the bulk of the middle-income private-sector employment. The payroll tax is also an issue for the expansion and retention of local startups as they evaluate the cost of business in the urban core versus other regional locations.

19. Implement road pricing on Bay Area freeways.

Increasing the price of highway driving serves multiple goals: It provides needed funds for new infrastructure and transit, encourages commuters to get out of their cars and makes dense job centers and areas near transit more valuable and competitive.

Motorists are accustomed to tolls on Bay Area bridges. Road pricing is similar and is essentially a monetary charge for driving on a particular road.⁹¹ This approach is common throughout the world, including on turnpikes and other roads in the United States.⁹² Tolls could vary based on time of day and on demand for road usage, encouraging commuters to switch to other modes, travel at less congested times or change routes.

State and regional governments should implement full road pricing on key regional highway corridors as an initial step towards broader pricing of all major highways in the Bay Area. While true road pricing would place a toll for driving on all roads, that would require costly GPS systems in all vehicles to track and price vehicle miles traveled (VMT). Instead, SPUR recommends tolling freeways at entrances and exits using the existing FasTrak system and license plate cameras.

As a starting point, the best corridors for pricing are highways with significant traffic congestion, strong transit alternatives and relatively few entrances and exits. By this metric, state and regional agencies should test a pilot road-pricing project on the I-80 corridor from the Carquinez Bridge to the Bay Bridge. This corridor has only 26 entrances and exits and has a parallel BART line. A second corridor that is worth exploring is the U.S. 101 corridor between San Francisco and San Jose. This corridor also has parallel transit with Caltrain, but it is less desirable as a pilot given the more than 50 entrances/exits as well as a parallel highway (I-280) that would likely be a non-priced alternative. Pricing both 101 and 280 would add significant costs to the system given the combined 110 exits and entrances. These issues should be further explored and analyzed based on the outcome of a pilot on the I-80 corridor.

SPUR's recommendation is different from two other forms of road pricing currently being pursued in the Bay Area. First, we are not advocating for cordon pricing schemes that focus on central business districts, such as the one in London and the one the San Francisco County Transportation Authority has proposed for San Francisco.⁹³ Second, we are not advocating for the single-lane pricing scheme that MTC is pursuing as part of its regional high-occupancy toll (HOT)

91 See TDM Encyclopedia (2011). "Road Pricing: Congestion Pricing, Value Pricing, Toll Roads and HOT Lanes." Victoria Transport Policy Institute. <http://www.vtpi.org/tdm/tdm35.htm>

92 See U.S. Department of Transportation, Federal Highway Administration (2011). "Interstate System Toll Roads in the United States (in operation, under construction, and financed as of January 1, 2011)." <http://www.fhwa.dot.gov/policyinformation/tollpage/t1part3.cfm>

lane network. In the HOT lane approach, MTC only prices one lane, thereby eliminating the majority of the potential revenue stream and the ability to have pricing affect all drivers. In addition, SPUR also has concerns that the HOT lane approach could actually result in more driving, not less, because the unpriced lanes will have less congestion and could actually become more desirable than priced lanes.⁹⁴

Some of the benefits of road pricing are:

- The impact on commute behavior is likely to be high. Road pricing puts more of the true costs of driving (like pollution and congestion) onto the motorist, not broader society. Pricing can affect commute choice, time of travel or route of travel. It also has the potential to reduce the number of vehicle trips.⁹⁵ The higher cost of driving and use of revenue to fund transit can encourage mode shift. Transit can also benefit with faster speeds and less congestion.⁹⁶
- It can reduce congestion and thus keep freeways for regional traffic. Tolls can be distance-based, discouraging local travel on freeways. For example, a motorist traveling from Richmond to Oakland might exit I-80 closer to Berkeley because of the higher toll and higher congestion, freeing up capacity for motorists who may be heading across the Bay Bridge.
- Revenue from pricing can be used for many regional projects. The toll revenue can be used for maintenance and operation of the tolled road or to fund transit service in the corridor as an alternative commute choice. Although London and Singapore have cordon pricing systems, they use the revenue to expand transit service.⁹⁷
- Pricing of freeways is less costly than cordon or zone pricing, does not ignore regional travel and can address congestion. Cordon pricing requires extensive infrastructure to monitor multiple entry/exit points, leading to high cost for enforcement. Freeways have limited access, making payment and enforcement easier. Cordon pricing is focused on travel to the central business district, so ignores travel between suburbs. Cordon pricing only tolls motorists for entering the zone, but does not discourage further driving within the zone once motorists have paid.

93 See SFCTA, "Mobility, Access, and Pricing Study," <http://www.sfcta.org/content/view/302/148>

94 See SPUR's analysis of MTC's HOT lanes proposal: SPUR (2009). "Expand High Occupancy Toll Lanes throughout Bay Area." In *Critical Cooling*. http://www.spur.org/publications/library/report/critical_cooling/option24

95 TDM Encyclopedia, "Road Pricing."

96 Levinson, D. (2010). "Equity Effects of Road Pricing: A Review." *Transport Reviews* 30(1): 33–57.

97 See Litman, T. (2006). "London Congestion Pricing." Victoria Transport Policy Institute. <http://www.vtpi.org/london.pdf>; BBC London (2006). "Congestion Charge: Where Has the Money Gone?" November 21. http://www.bbc.co.uk/london/content/articles/2006/11/21/congestion_update_feature.shtml; Federal Highway Administration (2010). "Reducing Congestion and Funding Transportation Using Road Pricing in Europe and Singapore." <http://international.fhwa.dot.gov/pubs/roadpricing/roadpricing.pdf>

We recognize that pricing is more likely to have an impact on employee commuting than on business location choices. Pricing all lanes of the freeway will also raise equity concerns. Drivers that cannot afford the toll are priced off the road or use alternative routes or modes that may be more time-consuming. Low-income motorists who have no alternative will pay the toll, but may not value their time savings more than the toll.⁹⁸ One mitigation for these equity concerns would be to offer qualifying drivers access to a certain number of free trips per year on the highways. This could be managed through FasTrak (which currently manages the electronic toll collections where there is no corresponding free crossing for low-income drivers).

Another concern is about diversionary traffic on local streets as some leave the highways to avoid the toll. One mitigation would be to provide a portion of the road-pricing revenues to help pay for maintenance and enhancements of local streets and roads (including pedestrian safety).

20. Establish a regional gas fee.

Similar to road pricing, increasing gasoline prices serves multiple goals described in this paper. Most important, it provides needed revenue streams for new investments in transit and other infrastructure. Higher gas prices also encourage an overall shift in work and commuting towards denser and transit-oriented settings.

Gas or fuel taxes in the United States are low relative to other industrialized countries.⁹⁹ The federal gas tax is 18.4 cents per gallon and state taxes range from 8 cents in Alaska to 49.6 cents in Connecticut (California is 49.1 cents).¹⁰⁰

For many years, these taxes have remained flat as the economy has grown and the transportation infrastructure has deteriorated. Because of this reality and the need for new revenues for transportation investments, SPUR has long endorsed higher gas taxes and fees in numerous policy papers, such as our first paper on high-speed rail, our report on saving Caltrain, our paper on saving Muni and our policy paper on reducing our impact on climate change.¹⁰¹

In short, a regional gas tax could provide the funds necessary to improve transit and overall transportation in the Bay Area. The gas tax could also function as a proxy for a regional carbon tax. According to many economists, carbon taxes are the most direct way reduce emissions associated with global warming by putting a price on pollution.¹⁰²

SPUR calls on MTC to place a regional gas user fee on the ballot in each of the nine Bay Area counties. In 1997 Assembly Bill 595 gave the Metropolitan Transportation Commission the authority to introduce a regional gas user fee of up to 10 cents per gallon within its nine-county jurisdiction.¹⁰³ Such a fee requires approval by two-thirds of the voters in the nine counties during a general election and would require reauthorization after 20 years. MTC began polling

for a 10 cent increase in 2011 to determine the viability of placing a measure on the ballot in November 2012. Should voters approve this measure, SPUR suggests indexing the fee to inflation as well as pursuing additional increases in future years.

Some might argue that gas taxes are more appropriate to raise at the state or national level. Yet, for the last 20 years, the fees levied at the national and state level have failed to keep pace with national infrastructure needs. Since 1993 the federal gas tax has been stalled at a flat 18.4 cents per gallon, though as far back as 1990 experts from across the political spectrum have advocated raising the tax, some by as much as one dollar. The decades-long failure to raise revenues has depleted the federal Highway Trust Fund to the point where we no longer have the capital to maintain the functionality and safety of our nation's infrastructure.

Further, metropolitan areas are often short-changed in the dispersal of federal gas tax revenues, as rural or lower density areas receive a disproportionate share of transportation funds. For Bay Area residents, a regional gas tax offers an advantage over national and state taxes: The proceeds would be restricted to transportation improvements in the nine Bay Area counties. The benefit of tasking the MTC with collecting and spending a regional gas tax is that the agency would be legally bound to spend 100 percent of the funds locally on transportation improvements approved by the voters. The authorizing law requires that "prior to placing a gas tax measure before the voters, the MTC must adopt a regional transportation expenditure plan for the revenues derived from the tax."

98 Gómez-Ibáñez, Jose (1992). "The Political Economy of Highway Tolls and Congestion Pricing," *Journal of Transport Economics and Policy* 46(3): 343–346.

99 See TDM Encyclopedia (2011). "Fuel Taxes: Increasing Fuel Taxes and Fees." <http://www.vtpi.org/tdm/tdm17.htm>

100 See: http://www.api.org/statistics/fueltaxes/upload/July2011_gasoline_diesel_summary.pdf

101 See SPUR (1999). "California High Speed Rail Project." SPUR newsletter. http://www.spur.org/publications/library/report/californiahighspeedrailproject_110199; SPUR (2009). "Implement Climate Fee on Gasoline (AB 2744 (2008))." In *Critical Cooling*. http://www.spur.org/publications/library/report/critical_cooling/option26; SPUR (2011). "Saving Caltrain—For the Long Term." http://spur.org/files/Saving_Caltrain_SPUR.pdf; SPUR (2006). "Muni's Billion Dollar Problem." <http://www.spur.org/documents/20060228-MunisBillionDollarProblem.pdf>

102 Mankiw, N. Gregory (2008). "Smart Taxes: An Open Invitation to Join the Pigou Club." Based on a talk given at the Eastern Economic Association, March 8. http://www.economics.harvard.edu/files/faculty/40_Smart%20Taxes.pdf

103 AB 2181. ftp://leginfo.public.ca.gov/pub/01-02/bill/asm/ab_2151-2200/ab_2181_cfa_20020617_085804_sen_floor.html

Plan of Action



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Plan of Action for Local, State and Regional Agencies




Shaping the future of work and the workplace will be difficult. We have noted the tension between an approach to job growth that focuses on reducing barriers and one that shapes where jobs can go. Our priority of focusing jobs in dense or transit-oriented job centers inevitably involves setting up some barriers to growth in auto-oriented or lower-density places. The combination of sticks and carrots outlined in this report will push the region toward greater employment density and help our economy in the long run. We cannot assume that outward growth is as affordable as it currently appears. And we cannot ignore the evidence that density and interaction support innovation and economic growth.



We also recognize that there are market, spatial and governance realities today that challenge immediate implementation of some recommendations. Some transit-oriented job centers, like downtown Oakland, are having a difficult time attracting new employment. Many jobs in successful industries are already located in places that are not accessible by a transit commute, such as Silicon Valley. And local governments at the region's edge can invariably offer lower-cost land with fewer hurdles to new development.

As a result, some of the options we have described respond to the region as it is now. For example, transit investments that increase rider capacity to existing job centers would serve the region today. But we are also arguing for a long-term approach that changes the way the region grows over the coming years and decades. These are policies to shape the future. In particular, by changing the tax, zoning and investment framework, we might be able to shift the location of some jobs as well as make existing employment centers denser. The past decade's focus on locating housing nearer to transit has resulted in some significant changes to our region's urban fabric. Perhaps a decade or more of focus on locating jobs near transit could achieve important results.

The ideas presented here can be acted on by the Bay Area's local communities, employers, developers, architects and others who shape the landscape of work. We need local governments to change zoning and land-use approvals, regional agencies to set policy and funding criteria, transit operators to put transit service where it will be best used, companies to consider neighborhood context and employee commute patterns when they make business-location decisions, developers to consider the long-term value of building closer to transit and architects to integrate office buildings with their surrounding areas in workplace redesigns. Each has a leadership role in supporting a different pattern of work.

While no single concept is a sure-fire solution to the complex and interrelated issues of job growth, job distribution, commuting and the future workplace, the ideas described here are primarily ones that we have yet even to try. That must change if we are serious about igniting job growth, reinforcing what is working and moving toward a more interconnected Bay Area.

Recommendation	Implementing agencies
 Strengthen economic competitiveness	
1. Develop and update an economic plan at the regional scale.	City and county government economic development entities, workforce investment boards, regional, subregional and local business organizations, regional government agencies such as the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG)
2. Protect the growing knowledge sector as a key driver of our economic future.	Local economic development entities and workforce investment boards, regional and local business organizations, regional government
3. Maintain a sufficient supply of industrial land in the urban core.	Local governments, ABAG, MTC
 Respond to the changing workplace	
4. Support a greater mixture of uses in traditional single-use employment centers.	Local governments, office park managers
5. Establish performance-based zoning that focuses on outcomes, not uses.	Local governments
 Reinforce employment density	
6. Direct regional transportation funds toward current and planned dense employment centers through a regional grant program and an employment center policy.	MTC, ABAG
7. Amend the Bay Area's transit-oriented development and expansion policies to include an employment focus.	MTC, ABAG
8. Establish a transit-location policy for public-serving industries such as government offices and higher education.	District boards (school, university, community college), local governments (city and county for their office sites as well as key public services)
9. Reduce regulatory barriers that restrict continued job growth in places of high employment density and/or strong job markets.	Various local governments, relevant state agencies such as the Office of Planning and Research
10. Eliminate parking minimums regionally and establish parking maximums.	Local governments, MTC, state legislature
11. Make dense, low-driving job centers more competitive and attractive relative to other types of job centers.	Bay Area Air Quality Management District (BAAQMD), MTC, state legislature

Recommendation	Implementing agencies
 Strengthen alternatives to the single-occupant car commute	
12. Improve the competitiveness of traditional transit by reallocating service from uncompetitive transit markets to competitive markets.	MTC, transit agencies such as the San Francisco Municipal Transportation Agency, the Santa Clara Valley Transportation Authority, AC Transit, BART and SamTrans
13. Treat regional employer shuttles as transit and expand them to serve smaller employers.	California Department of Transportation (Caltrans), MTC, individual employers, local business organizations
14. Replicate successful alternative commuting programs at major employers and university campuses.	BAAQMD, MTC, individual employers, managers of business parks
15. Study the creation of dedicated bus lanes on highways for all regional buses, including employer shuttles.	MTC
16. Solve the "last mile" problem between transit and jobs by building a pedestrian and biking network and adding car-sharing opportunities at transit stations.	BAAQMD, MTC, local governments
 Adjust governance and financing mechanisms to the realities of the future	
17. Move toward sharing a portion of local property and sales taxes.	Local governments, ABAG, state legislature
18. Shift taxes away from work and toward waste.	Local governments, MTC
19. Implement road pricing on Bay Area freeways.	MTC, state legislature
20. Establish a regional gas fee.	MTC, voters



The mission of the San Francisco Planning and Urban Research Association is to promote good planning and good government through research, education and advocacy.

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