Transportation

Transportation solutions can be good for our planet, our economy and our communities

Alternative Transportation Incentives

Improve employee health and cut emissions by encouraging carless commutes

The Impact

Cash incentives can encourage employees to walk, bike, take public transportation and carpool to and from work. By reducing the number of employees commuting to work in single-occupancy vehicles, employers can slash transportation-related greenhouse gas emissions and significantly reduce their emissions.

Active forms of transportation such as biking and walking are much healthier than driving and can lead to greater workplace productivity, reduced absenteeism and/or employer health care costs. Transportation incentives also make employees feel valued, which helps employee recruitment and retention. A further benefit is a reduction in parking infrastructure costs if most employees elect to commute without a car.

Description

Employers can offer alternative transportation incentives to encourage employees to try carless commutes. Incentives can be offered after an employee has commuted for a set number of days in a given time period, and these incentives can be administered through commute tracking platforms such as RideAmigos and Luum. These platforms verify that commuters are actually using alternative transportation modes and also offer insightful data and analytics. Program managers can easily see what modes of transport are the most popular and get a breakdown of the estimated, corresponding environmental impacts and cost savings.

Where It's Been Implemented

The SLAC National Accelerator Laboratory (SLAC), located in Menlo Park, Calif., is a Stanford-affiliated national lab that conducts cutting-edge scientific research. The roughly 1,600 employees at the lab are mostly scientists and researchers. At SLAC, Jane Davaransky spearheaded the SLAC Active Commuting Healthy Work Environment group to encourage alternative commutes by offering quarterly $120 incentives to employees who walked, biked, carpooled or rode public transit to work 15 times in that time period (roughly 1.2 times a week).

In its first year, the program prompted participants to collectively log 3,900 alternative trips to and from work, which reduced 16.3 tons of carbon dioxide emissions and saved the participants an estimated $24,000. A 2020 analysis showed 45 percent of the logged commutes were bike commutes, with the rest of the commutes evenly split between work-from-home, carpool/vanpool and public transit. Many

participants reported less-stressful commutes and appreciated the chance to get to know other commuters in the program.

Commute.org supports employers in San Mateo County in finding ways to encourage employees to switch to more sustainable transportation methods. The organization offers two commuter support services. They provide a free, first-last mile service to transit stations (BART, Caltrain, and SF Bay Ferry), workplaces, hospitals, schools, and residential areas throughout San Mateo County. The shuttle schedule and trip planner are available online. Commute.org has also started its own Rewards program, which allows San Mateo County residents to earn up to $100 per year in e-gift cards by logging sustainable mode commutes (carpool, vanpool, or bike).

Commute.org is a joint powers agency (JPA) located in San Mateo County, Calif. The JPA comprises 19 cities and towns as well as San Mateo County. Funding for Commute.org programs is provided by the San Mateo County Transportation Authority (TA), C/CAG of San Mateo, Bay Area Air Quality Management District, and public/private sector contributors to the shuttle program.

Key Factors for Success

A group of employees who are already commuting without cars can serve as great "ambassadors" for others who might be interested in trying an alternative commute if given the right incentives.

Key Obstacles

The lack of convenient, reliable and safe alternative transportation modes can severely limit the effectiveness of an incentive program. Reliable and fast public transit, convenient shuttle services and safe bike lanes are just some of the conditions that are fundamentally needed to make alternative commutes viable and a great alternative to solo driving. However, by providing meaningful commute incentives and recognition, employers can help increase demand for such services and lead to greater community investment in alternative transportation options.

Timeline to Implementation

It took Jane Davaransky three years to start the program on her own at SLAC. After conceiving of the idea for the program in 2014, Jane had to get approval from her superiors, the human resources department and the legal department. She managed to secure funding from the Stanford employee health benefits program and launched the initiative in 2017. The timeline to implementation will vary widely for others depending on existing commuter benefit infrastructure and support from high-level executives.

References and Resources

Jane Davaransky, former leader of SLAC Active Commuting Healthy Work Environment group, jddavaransky@fb.com

Rohendra Atapattu, cofounder of SLAC Active Commuting Healthy Work Environment group, Sustainability & Energy Program Manager at SLAC National Accelerator Laboratory, rohendra@slac.stanford.edu

Video explaining SLAC's active commuting program (5:27)

Commute.org

Anti-Idling Ordinance

Discouraging vehicle idling cuts dangerous emissions.

The Impact

In Palo Alto, it was predicted that implementing an anti-idling ordinance (AIO) would reduce transportation emissions by 600 to 1200 tons/year, the equivalent of permanently taking 120 to 240 cars off the road annually. Using the same estimates, an anti-idling ordinance implemented throughout San Mateo County would reduce CO_2 by 7,000 to 14,000 tons per year, the equivalent of taking 1,400 to 2,800 cars off the road.

Toxic auto fumes can aggravate asthma and decrease lung function, especially in vulnerable populations including children and elderly adults. Since considerable idling occurs in school zones, an anti-idling ordinance can create a healthier environment for children.

Where It's Been Implemented

In 2018, the City of Palo Alto passed an anti-idling ordinance that requires drivers to shut off their engines after three minutes if they are not in active traffic. Enforcement focuses on educating the community about the environmental and health impacts associated with idling. The City of Santa Cruz also has an anti-idling ordinance, and Cupertino's climate action plan aims to partner with schools and the Chamber of Commerce to reduce idling.

Description

Currently, the State of California has idling regulations for commercial heavy-duty diesel vehicles (13 CCR § 2485) and school buses (13 CCR § 2480) that stipulate that these vehicles cannot idle for more than 30 seconds if they are within 100 feet of a school, and they cannot idle for more than five

minutes anywhere else. However, these regulations exclude passenger vehicles such as cars, SUVs, vans and pickup trucks, which make up more than 85 percent of vehicles in California.

A local anti-idling regulation can expand this California regulation to all types of vehicles that are idling without reason. A city can exclude emergency situation conditions such as the need to operate equipment to prevent a safety or health emergency. The Palo Alto ordinance imposes fines on offenders who allow cars to idle more than five minutes, with a written warning for the first violation, a $100 fine for a second violation and a $150 fine for all subsequent violations. Successful implementation of this policy is aided by partnering with local schools and community organizations to educate people about the health impacts of idling. In Palo Alto, signs were posted in school pickup zones to discourage idling.

Key Drivers

Idling is an unnecessary and easily avoidable behavior that causes considerable negative health and environmental impacts. The parked idling of all motor vehicles in California is estimated to emit 3 million tons of CO_2 annually. Since transportation amounts to 41 percent of California's greenhouse gas emissions, it is a key sector that needs to be addressed with emissions reduction policies.

Idling also is bad for air quality and health. Although most vehicles have advanced considerably over the years to reduce their toxic exhaust, they still emit pollutants that can cause or aggravate asthma, lung cancer, bronchitis, acute respiratory infections and emphysema.

In addition, idling is also economically wasteful, as it consumes unused energy and causes engine wear. It can also create costs related to medical care due to pollution-related illnesses.

Key Factors for Success

Support from parents, teachers, students, schools and community groups will be key to effective implementation of an ordinance aimed at cars idling near schools. Their involvement in education campaigns will help people change their behavior.

Key Obstacles

The infeasibility of enforcement calls into the question its purpose. However, if the focus is to educate, an anti-idling ordinance can still be effective if implemented correctly. As it mainly has the effect of protecting students, such an ordinance should not face major opposition.

References and Resources

Christine Luong, Palo Alto Sustainability Manager, christine.luong@cityofpaloalto.org

Office of Sustainability, Palo Alto, sustainability@cityofpaloalto.org

Palo Alto Anti-Idling Ordinance Staff Report

Idle-free California.org

Eliminate Off-Street Parking Minimums

Changing parking minimums, especially in locations close to public transit, can encourage more sustainable development and transportation.

The Impact

Parking minimums, the local zoning laws that require private businesses and residences to provide at least a certain number of off-street parking spaces, contribute to the overreliance on cars as the primary form of transportation in American communities. By eliminating off-street parking minimums, the creation and maintenance of streets will fall into the hands of the markets, creating a more efficient parking distribution. As a result, the number of parking spaces will be reduced to an economically optimal level, freeing up land for more effective uses, including housing and small businesses.

Moreover, without the off-street parking requirements, many new developments will be much cheaper, leading to the expanded growth of vibrant, livable communities with reduced commute distances. This market-based approach encourages other forms of transportation, such as transit, walking and biking, prompting residents to get out of their cars and get around their communities in more sustainable ways that reduce vehicle miles traveled (VMT), traffic congestion and harmful greenhouse gas emissions.

Description

In many cities, current zoning codes require private businesses and residences to provide a minimum number of off-street parking spaces. This number varies by the type and size of the development (for example, two parking spaces per apartment unit).

Planning commissions and city councils can enact changes to local zoning laws to strike parking minimums. These changes can be as simple as making them apply to all commercial and residential developments in the jurisdiction, or as complex as having them apply to only buildings within a certain distance (such as 500 feet) of frequent public transit service.

Where It's Been Implemented

Hartford, Conn., is a well-known example of a city that successfully eliminated its parking minimums. In 2014, the city realized that "free parking" in downtown Hartford cost the city $50 million annually in lost tax revenues because the parking consumed so much land. Hartford revised its zoning codes to allow developers to build new projects without any legal parking requirements. As a result of this policy change, it became easier for developers to renovate downtown buildings, thus improving the overall quality of their community. City officials expect this reform will continue to lower housing costs, reduce traffic and lessen harmful runoff.

Another example is Sandpoint, Idaho. In 2009, the City Council took steps to eliminate off-street parking requirements in the downtown area. As a result, many local businesses avoided being demolished for the construction of new parking structures, and millions of dollars have been invested in new developments. Many jobs, renovations and expansions by local businesses would not have been possible without this policy change. This change ended up creating a more vibrant and walkable community, leading Sandpoint to eliminate off-street parking requirements throughout the rest of the city in 2018.

After learning that constructing a single parking space costs between $30,000 to $100,000 in their city, depending on the location, San Jose City Council members voted unanimously in June 2022 to create a policy to eliminate the city's minimum parking requirements for new developments and incentivize alternative modes of transportation, like biking and public transit.

Key Drivers

UCLA Professor Donald Shoup says parking is one of the largest government subsidies for Americans. He estimated the value of the national free-parking subsidy to cars is between $280 billion and $795 billion in 2021. Many people aren't aware that each surface parking space costs an average of $5,000 to $10,000 and each structured parking space costs $25,000 to $50,000.

Parking minimums force developers to pay these costs to create enough spaces or face having to pay tens of thousands of dollars per missing spot in in-lieu fees. In-lieu fees are fees that developers pay into a municipal parking or traffic mitigation fund instead of providing the required parking. These costs are often passed on to consumers and might even prevent new developments. In 2016 a study found that parking minimums added $1,700 a year in rent to the average American tenant. Everyone ends up paying for the parking spaces, even if they do not drive.

Many cities have an excess of available parking spaces. In September 2022, the GreenTrip parking database by TransForm showed that across 80 parking sites in the San Francisco Bay Area, 28 percent of spaces were unused. These unused spaces equal $198 million in construction costs. This parking surplus encourages more driving rather than less because people can park easily at no cost. As more people are incentivized to use cars to travel, community leaders feel compelled to build more streets and parking lots — a vicious cycle. As a result, many American communities are excessively

spread out and unwalkable. Parking minimums encourage driving, even in communities that are working to reduce transportation emissions.

Key Factors for Success

It is crucial to have an on-street management plan in place when eliminating parking minimums. Maintaining free parking without any demand-responsive pricing mechanisms can lead developers to take advantage of these government-subsidized parking spaces. Doing so can create friction between existing residents and developers seeking new buildings, as they will compete over limited free parking, and it will disincentivize private sector development of parking in response to market need.

Another factor for success is easy access to well-functioning, integrated public transit, or the potential for more transit options to be easily created. Reduced parking spaces can spur the development of more public transit infrastructure, and some existing groundwork can help this policy to be widely accepted.

It may make sense in some situations to start by eliminating parking minimums in downtown regions, then expanding the regulation citywide for all uses. Starting in a location that might have more access to public transit can better illustrate the positive effects of eliminating parking minimums. As positive data is gathered from the implementation of this policy in denser areas, it may become politically easier to expand it citywide.

California legislators took a different approach in September 2022, when they passed a bill giving a tax credit to residents who don't own a car. The law provides a $1,000 tax credit for single filers making up to $40,000 per year and $60,000 for joint filers.

Key Obstacles

Eliminating parking minimums may elicit a knee-jerk reaction from community members who fear that the amount of available parking spaces will drastically decline and that they will no longer be able to drive anywhere. To overcome this issue, cities need to engage community members and show them that these changes will result in positive effects for all parties involved. For example, when savings are invested in public transportation, more residents will have a true alternative that is cost-effective, safe, fast, reliable and convenient.

References and Resources

Ramses Madou, San Jose Department of Transportation, ramses.madou@sanjoseca.gov

StrongTowns.org. More Cities Than Ever Are Removing Parking Minimums (with map)

StrongTowns.org. "One Line of Your Zoning Code Can Make a World of Difference" (about Sandpoint, Idaho's experience)

Donald Shoup. Cutting the Cost of Parking Requirements

Donald Shoup. Parking Reform Will Save the City

Slate. San Francisco Eliminates Parking Minimums

StreetsBlog. "Hartford Eliminates Parking Minimums Citywide"

Santa Rosa, Calif. Progressive Parking Management Strategy Report

TransFormCA.org. GreenTrip parking database

ReinventingParking.org. Demand-responsive parking price setting

Encouraging Employee Bike Use

End-of-trip facilities and services and a company fleet can boost bike ridership

The Impact

Biking is a clean method of transportation that can help businesses reduce their carbon footprint. It reduces absenteeism, contributes to better employee health and lowers health care costs. Bicyclists report arriving to work with less stress than those who commute by car, which in turn can increase workplace productivity. All of these benefits allow bike programs to be used as an effective employee recruitment and retention tool.

With widespread bike adoption, employers can also reduce parking costs — sometimes quite significantly, given that the cost of a parking space in a paved lot can cost about $2,500 and often as much as $50,000 in a parking structure. Comprehensive bike programs and amenities can also contribute to LEED points and help fulfill commuter benefit requirements.

We examine both end-of-trip facilities and company bike fleets.

End-of-Trip Facilities

Description

Potential bike commuters look first for easy access to secure locations to store their bike during the workday. Indoor bike racks can give cyclists the peace of mind that their bikes won't get stolen. In addition, the availability of shower and locker facilities makes employees more likely to bike to work. Showers, lockers and towel service allow employees to clean up after bike rides or jogs and to store their "active wear" clothes during the day. Do-it-yourself bike repair stations and/or staffed repair clinics are other highly desired services a business can add to further promote the use of bikes. Businesses can mix and match features and scale appropriately to meet their own specific needs.

Where It's Been Implemented

Many employers have constructed end-of-trip facilities. For example, SunPower has built a bike room with parking for 200 bikes and a do-it-yourself repair station. The company also offers showers, lockers and towel service. Tableau employees have access to secured, ventilated bike rooms that come

with fix-it stands and benches. These services, together with a complete suite of services around biking, have resulted in 14 percent of Tableau employees choosing biking as their primary commute mode.

Pembroke Real Estate sought to transform its historic high-rise in downtown San Francisco into a "bike commuter's paradise" by building end-of-trip facilities. The company worked with a consultant to study city data, consult with experienced developers, and design a state-of-the-art bike facility fitted with bike racks, showers, lockers and towel-drying rooms.

Key Factors for Success

Suitable indoor space is vital to creating well-functioning bike facilities. There may be extra space near workstations, under stairwells, in storage spaces or in underused hallways. Salesforce was able to turn a long, narrow storage space into an attractive and useful bike storage room. Offering a suite of comprehensive services, including bike safety training, repair clinics, loaner programs and rebates make these programs more likely to succeed.

Key Obstacles

In many buildings, creating end-of-trip facilities can require some reconfiguration, which can be costly and cumbersome. Sometimes a reconfiguration is not possible or is difficult to achieve and might compete with other requirements such as safety regulations and egress requirements.

Return on Investment

Bike facilities encourage biking, which can unlock greater productivity among employees. The return on investments in bike facilities is hard to quantify because many benefits are indirect, but surveys have shown employees appreciate them.

References and Resources

Bikes Make Life Better online forum on end-of-trip facilities

Bikes Make Life Better guide to bike parking for employers and developers

Bikes Make Life Better online forum on end-of-trip facilities

Company Bike Fleets

Description

Company bike fleets offer employees a way to traverse sprawling suburban worksites or urban downtown settings. These bikes are free for employees to use and can drastically cut down on intra-campus travel time. They can also be useful for biking to nearby locations for lunch breaks or errands, reducing the need to use a car. Company bike fleets might also include loaner bikes that allow employees to try bike commuting before committing to a bike purchase. Loaner bikes can include e-bikes for harder or longer commutes and folding bikes for commuters who use public transit.

Where It's Been Implemented

Kaiser Permanente offers a fleet of 25 bikes that can be checked out of its health center. Each comes with a helmet and a lock, and they are used to travel between buildings, run errands or exercise on a nearby scenic trail. A total of 95 percent of employees say that the bikes offer a nice break during the day.

At Facebook, the campus bike shop operates a fleet of loaner bikes that employees can reserve for up to a week at a time. This allows employees to try bike commuting without committing to buying a bike. Facebook has seen this loaner system transform employees into passionate bike riders.

Key Factors for Success

Company bike fleets are more useful when the bikes are durable and easy to access. Excessive barriers to rental and use limit the number of people who will go out of their way to use a bike. The number of bikes also needs to be scaled relative to the needs of the workforce. Offering a suite of comprehensive services, including bike safety training, repair clinics, loaner programs and rebates makes these programs more likely to succeed.

Key Obstacles

Theft can make it costly to continually operate a bicycle fleet. To overcome this obstacle, company bikes should be equipped with GPS tracking so that the fleet can be managed from a phone, tablet or laptop. A GPS system makes corralling and locking bikes at the end of the day easier as well. At LinkedIn, the GPS bike system reduced the loss rate from 70 percent to 4 percent. LinkedIn also uses the system to better understand bike use habits in order to continually improve their fleet. However, some employees might have privacy concerns related to the use of GPS tracking that could prevent them from using their company's bikes.

Return on Investment

Bike fleet advocates and consultants agree that biking between buildings translates into productivity gains. Although individual results vary, biking generally cuts travel time by two-thirds when compared to walking. Biking also increases brain function. A recent study in the Journal of Clinical and Diagnostic Research found that those who spent 30 minutes spinning on a stationary bike scored higher on memory and reasoning tests than those who didn't.

References and Resources

Silicon Valley Bicycle Coalition. Bike-Friendly Development Guidelines

BikesMakeLifeBetter.com. Guide to company bike fleets

"Physical Exercise Keeps the Brain Connected," Journal of Clinical and Diagnostic Research

"Biking Can Sharpen Your Thinking and Improve Your Mood," Psychology Today

Expanded Teleworking Options

Flexible work options offer many benefits

The Impact

Teleworking has positive benefits for businesses, employees and the environment. The flexibility it affords can help attract and retain good employees, saving considerable replacement costs. A study by the American Management Association in 2020 found that teleworking reduced unscheduled absences by 63 percent. Global Workplace Analytics found that telecommuting reduces real estate costs by $10,000 per employee teleworking full time. In addition, a Federal News Network survey concluded that many teleworkers are more productive when they work from home, due to fewer distractions and reduced commute times. And employees save on commuting costs and enjoy greater flexibility with their work-life balance.

Another benefit is that teleworking drastically reduces commute trips and vehicle miles traveled. Studies have documented a link between working fewer hours and lower emissions. Large-scale trials in Iceland found a four-day workweek reduced stress and increased the well-being of employees.

Description

Teleworking is a voluntary work arrangement that allows employees to work off-site on an agreed-upon schedule. Robust and permanent teleworking policies set clear, objective expectations and requirements, and they allocate the necessary resources to ensure effective implementation. Formal policies also include adequate training for teleworkers.

Formal policies can outline the telework options offered to employees depending on the type of work they do. These options can range from occasional work-from-home days (such as once a week) to full-time telework. Other options include altered work weeks such as 9/80 or 4/10 schedules where employees work 80 hours in 9 days or 40 hours in 4 days, respectively. Teleworking and alternative work schedule eligibility can factor in metrics such as employee performance reviews or attendance history. Another option for employers is to designate “core” days when all staff are required on-site.

Where It's Been Implemented

Even before the pandemic, many employers had implemented telework policies to reduce costs and boost productivity. For example, Dell established a "Connected Workplace" program in 2009 that offers flexible work plans. Before the pandemic, 65 percent of Dell workers engaged in teleworking. The county also encourages teleworking, offering all eligible employees the option to create a flexible work plan.

Key Drivers

Due to increased access to technology, barriers to teleworking have largely disappeared. Teleworking is also driven by environmental concerns. From 2015 to 2019, 67.8 percent of those employed in San Mateo County drove alone to work on a regular basis. By early 2023, this had decreased to 61.5 percent (significantly less than the national average, 73.2 percent).

Key Factors for Success

In order to assure success, a teleworking program should be supported by adequate human resources to plan an effective pilot program, train employees and managers, and continually evaluate the effectiveness of the program.

Key Obstacles

There are many misconceptions about teleworking and flexible work schedules that can hinder their implementation. One is that employees are not working when they are not being observed in the office. In reality, many teleworkers get more work done at home than when in the office. Another is that it is difficult to manage employees without face-to-face contact. Managers can communicate expectations and manage their workers through online platforms. Finally, some employers worry about never seeing their employees, but teleworking need not be full time. Many teleworkers split their time at home and the office, allowing employers to benefit from both teleworking and in-office interaction.

There are also other obstacles that aren't misconceptions. For instance, teleworking can result in isolation of employees as they lack in-person conversation and impromptu meetings. Virtual lunches or coffee breaks and frequent check-in meetings can help provide space for interaction and innovation. In addition, teleworking can make it difficult to separate work and personal life.

Timeline

San Mateo County recommends allowing six to 10 months to implement a solid telework program. Here is a sample schedule:

Phase 1: Planning Phase (One-Three Months)	
• Obtain top-level support	• Establish measurable telework program goals
• Establish a cross-functional project team	• Develop an implementation plan
• Designate a telework coordinator	• Determine what resources will be required
• Gather baseline data	• Develop telework policy and agreement
Phase 2: Implementation Phase (Four-Six Months)	
• Provide training/orientation for employees and managers	• Launch program
• Select participants	
Phase 3: Evaluation Phase (One Month)	
• Conduct post-implementation assessment (interviews, surveys, and/or focus groups)	
• Compile and analyze results, prepare reports/briefing materials	
• Communicate results	
• Determine next steps (phased expansion or termination)	

Table 1: From the San Mateo County Telework and Flex-Schedules Toolkit

Return on Investment

Global Workplace Analytics has developed an online calculator that estimates potential benefits from telework. Its models are based on extensive research of more than 5,000 workplace studies and reports. The calculator shows that 10 employees earning $80,000 who work remotely for three days a week would save the employer about $136,000 a year.

References and Resources

John Ford, Executive Director, Commute.org, john@commute.org

Telework savings calculator by Global Workplace Analytics

San Mateo County Telework Guide

Remote Work Policy Clearinghouse by Bay Area Air Management Quality District (state and local policies and guides)

Virtual Telework Fundamentals Training Courses

Chiu, Allyson. "How a Four-Day Workweek Could Be Better for the Climate." Washington Post, August 8, 2022.

Villegas, Paulins, and Hannah Knowles. "Iceland Tested a Four-Day Workweek," Washington Post, July 7, 2021

Local Commuter Benefits Ordinance

Expand the reach of the Bay Area Commuter Benefits Program by requiring employers with 10 to 49 employees to offer similar commuter benefits

The Impact

A commuter benefits ordinance supports the San Francisco Bay Area Commuter Benefits Program, which encourages clean transportation choices for employees, reduces greenhouse gas emissions and helps relieve traffic congestion during peak hours. By requiring more employers to offer benefits, cities can make alternative commute options accessible and attractive to more people, thus helping the entire community's transportation ecosystem.

Depending on the benefits offered, this program can also help employers save on corporate and/or payroll (FICA) taxes. It can help employees pay fewer transit, vanpool or bicycling costs. Employer-provided commuter benefits are also a cost-effective method to satisfy, recruit and retain employees.

Description

In 2014, the Bay Area Air Quality Management District implemented a rule that requires all Bay Area employers with 50 or more employees in the region to register and offer commuter benefits to their employees. Employers have the choice of offering (1) a pre-tax benefit of up to $270/month to pay for transit or vanpool expenses, (2) employer-paid benefits through a monthly subsidy for transit or vanpool (at least $75/month), (3) employer-provided transportation such as a free company bus service or (4) some combination of other benefits such as telework and bicycling benefits.

A local ordinance can expand the benefits of the Bay Area program by requiring more businesses to comply. Many workers in San Mateo County are employed by businesses that have fewer than 50 employees in the Bay Area. A local ordinance can stipulate that employers in a city with more than 10 employees nationwide but fewer than 50 employees in the Bay Area must also offer commuter benefits. The ordinance can apply to many small businesses, as well as the few large national businesses with small branches in the area. It can define the enforcement mechanism, establish a reporting platform and designate staff to work with businesses to encourage proper compliance.

Where It's Been Implemented

San Francisco has a local ordinance that requires employers with 20 to 49 employees to offer commuter benefits. The city's Department of the Environment has staff available to field questions and help businesses determine which benefit package works best for them. Although the city does not strictly enforce the ordinance or require yearly compliance reports from businesses, the department maintains this ordinance by checking up on businesses that have been flagged as noncompliant through whistleblower forms submitted on its website. The cities of Berkeley and Richmond have similar ordinances that require employers with more than 10 employees to comply.

Key Drivers

By 2015, a year after its implementation, the Bay Area Commuter Benefits Ordinance saw 3,910 employers (out of an estimated 10,000 eligible employers) register online to confirm that they were offering commuter benefits. Through survey data, they estimated that 44,000 employees switched from driving alone to an alternative commute mode because of this program. The result was an estimated reduction of 35,778 tons of CO_2 emissions during the first year, equating to 2.7 percent of the total reductions needed to achieve the Bay Area's 2020 greenhouse gas reduction target.

With this program's success, there is opportunity to expand its reach within San Mateo County. In 2019, 67.8 percent of those employed in San Mateo County drove alone to work on a regular basis. The average passenger vehicle in the U.S. emits 4.60 metric tons of CO_2 a year; for perspective, about 5.6 acres of U.S. forest would be needed to remove that amount of CO_2 from the atmosphere. These emissions can be reduced by encouraging alternative commutes for more employees. In San Mateo County, 15 percent of employers have between 10 to 49 employees, accounting for 24 percent of all workers in the county. Thus, many employees in the county are not offered commuter benefits under the Bay Area program, inviting local action to expand its reach.

Key Factors for Success

Coordination with the Bay Area Air Quality Management District and Metropolitan Transportation Commission to harmonize the implementation of the regional program and the local ordinance is crucial. Reporting guides, employer implementation guides and other resources can be adapted from the Bay Area program and 511.org. Coordination will ensure that employers report to the right agency.

Key Obstacles

Businesses may push back on this additional regulation, believing that it creates an extra burden. However, the Bay Area program and San Francisco's ordinance show that compliance is relatively simple and cost-effective. In many cases, offering benefits like the pre-tax benefit saves the employer on payroll and corporate taxes. The San Francisco program has proven that there are no scalability issues for smaller businesses to implement such benefits. The local ordinance might not require yearly reports, making compliance with the ordinance a simple one-time action that shows employers the many positive effects of offering commuter benefits.

Proper enforcement is also an obstacle, as it will take considerable resources to track and police all employers. Instead, cities can operate similarly to San Francisco's Department of the Environment, using an online whistleblower form or a policy of enforcement upon complaint to determine which businesses to check up on. These outside reports are particularly useful because data on which employers should be required to comply with the ordinance might be difficult to collect.

Timeline to Implementation

City councils will have to adopt an ordinance to implement this program, then notify all businesses in the city of the new requirements. Notification can be achieved with mailers and emails. To allow adequate time for outreach, a city may choose to have the ordinance go into effect one year after it is adopted.

References and Resources

San Francisco Commuter Benefits Ordinance 2015-2016 Annual Report

San Francisco Commuter Benefits Ordinance (Environment Code Section 247)

San Francisco Commuter Benefits Website

Bay Area Commuter Benefits Program website

Bay Area Commuter Benefits Program Employer Guide

Bay Area Commuter Benefits Program 2016 Report to the California Legislature

Plastic Roadways

Paving roads with asphalt strengthened by waste plastic keeps plastic out of landfills.

The Impact

Although many single-use plastic bans are underway, an effective solution is needed to address waste plastic that is increasingly difficult to recycle and is clogging our landfills. Plastic roadways put waste plastic to good use in strengthening local infrastructure.

Where It's Been Implemented

As of February 2021, around 60,000 miles of plastic roadways had been paved in India with land sanctioned by the national government for use as plastic roads. Similar roads are beginning to spring up all around Europe, Africa and Asia.

MacRebur is a company from the U.K. that specializes in plastic-paved roadways. The company has constructed these roads all over the U.K., Australia, Estonia and Slovakia and, in 2018, helped a team at the University of California at San Diego install the first road utilizing recycled plastic in the U.S. Additionally, MacRebur has a supplier in Southern California that is trying to break into the California market.

In 2020, the California Department of Transportation (Caltrans) attempted to pave a stretch of State Highway 162 between Feather River and Christian Avenue in Oroville with recycled plastic as a pilot project. Although the project encountered a few complications, Tom Pyle, Chief of the Office of Asphalt Pavement, and his team at Caltrans are still committed to making plastic highways a solution to the plastics problems.

Description

Currently, in California, most roads are paved with asphalt, a substance that is obtained primarily from oil refining. A plastic-paved road adds plastic composites from recycled plastic waste into the binding mixture of the asphalt, decreasing the total asphalt needed and strengthening the road. Asphalt

roads are both weaker and less flexible than plastic roads and have an average lifetime of about 18 years, thus increasing carbon emissions. On the other hand, plastic roads have an estimated lifespan of 50 years and therefore require less maintenance.

There are many ways to incorporate plastic into an asphalt road, and the technology is rapidly advancing. These roads must address environmental protection while being strong enough to hold up to the crushing loads of trucks and buses. One method being explored is to add plastic from recycled fishing net fibers by melting the nets into the hot asphalt.

Key Drivers

Using polymer-enhanced binders for road pavement can make roadways more resilient than regularly paved roads. Plastic-paved roads contract less in colder weather and maintain more of their strength during extreme heat than traditional asphalt roads. They contribute to solving worldwide plastic pollution while reinforcing existing infrastructure using an eco-friendly solution.

Plastic Oceans estimates that humans produce 380 million tons of plastic annually, with a significant portion entering our oceans. Plastic roadways reuse lots of plastic otherwise destined for landfills and can repurpose plastic in existing landfills. For example, the Caltrans pilot project on State Highway 162 recycled 150,000 plastic bottles for each one-mile segment, and MacRebur's patented polymer binder uses up to the equivalent weight of 740,541 single-use plastic bags in each kilometer of road paved.

Key Factors for Success

Financial support for paving recycled plastic roadways is critical. Since the technology is in an early phase, measures are needed to make construction as cost-effective as possible. It is also important that education concerning recycling plastics and roadways is provided to ensure plastic roads are seen as an effective solution to the existing plastic problem and not as an excuse to increase plastic usage.

Key Obstacles

Just as in traditional road paving, toxic material may be released from the melting of polymers during construction of plastic roadways that may be harmful to the road workers. Measures must be taken to ensure safe work conditions. Plastic roads also must be studied over the long term to make sure that microplastics don't leak out of the roads. Resistance to the initial costs of paving these roads must be met with education on the necessity and benefits of plastic roadways.

Resources

Cathrina Barros, Supervising Transportation Engineer for Caltrans, cathrina.barros@dot.ca.gov

California Department of Transportation (Caltrans.). "Caltrans Repaves Roadway with Recycled Plastic Bottles"

Caltrans. "Use of Recycled Plastic in Asphalt and Concrete Pavement Applications"

Journal of Engineering Science and Technology, May 2012. "Use of Waste Plastic in Construction of Bituminous Road"

Quick-Build Street Design

Quick-build projects can spur the development of more walkable and bikeable streets

The Impact

Quick-build projects make streets safer for all users, including cyclists, pedestrians and scooterists, by immediately encouraging more sustainable, carless modes of transportation. These developments are a cost-effective way to gather data and community feedback. They allow community members to physically experience temporary street changes before funding infrastructure improvements.

Description

It can take years to add Complete Streets elements to street improvement projects. Complete Streets is an approach to planning, designing, building, operating and maintaining streets that enables safe access for all people who need to use them, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. On its website, CalBike says, “From conception to inclusion in a community plan, project planning, community engagement, grant application, grant award, additional engagement and project amendment, grant expenditure (often many years after the award) and, finally, project construction, a project can easily take more than 10 years.”

Quick-build street design tackles high-priority street improvement projects with low-cost measures. Using materials such as paint, plastic bollards, planters and signs, cities can construct facilities such as pedestrian bulb-outs and protected bike lanes within weeks. Due to their low cost and reversible nature, these installations offer community members a chance to physically experience street improvements in use, rather than just trying to visualize them from computer renderings.

These temporary installations also help cities gather information on changes to traffic flow and transportation demand. The temporary elements can be continually modified (for example, by moving a bollard or restriping a lane) in response to public feedback. Eventually, these temporary improvements can be turned into more permanent fixtures, although many quick-build facilities can last for years with the proper maintenance.

Here is a progressive plan for a bike lane in San Mateo, Calif.

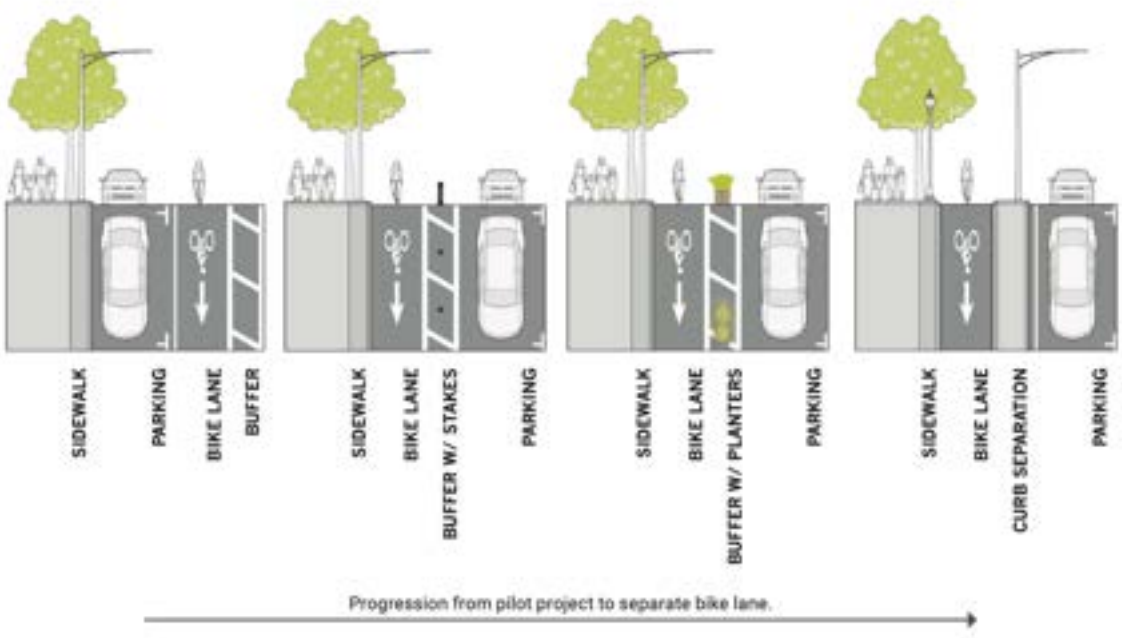

Figure 1: City of San Mateo Bicycle Master Plan

Another example of quick-build street design is a temporary transit-only lane. These lanes, reserved for use by buses only, have served as a quick and effective method for cities looking to speed up bus service with limited driver pushback. To facilitate faster MUNI bus lines during the COVID-19 pandemic, a period with little congestion and thus fewer angered drivers, the San Francisco Metropolitan Transportation Agency (SFMTA) built multiple stretches of transit-only lanes on nine different popular segments, including parts of Geary, Mission and California streets. Planning and installation only took a few months — a giant difference when compared to the multiple years it has taken to construct a Bus Rapid Transit line on a busy street like Van Ness.

While quick-build temporary lanes haven't been marked by the distinctive red paint assigned to permanent transit-only lanes, they still have been a hit among transit riders, and drivers have followed the rules pretty well. The lanes were found to reduce overall trip time and led to a higher average bus speed. Due to this success, the SFMTA board decided to turn some into permanent lanes instead of turning them back into regular lanes, perhaps incentivizing other cities that want to test out bus lanes to implement this temporary fix.

Where it's Been Implemented

In May 2014, Seattle Mayor Ed Murray issued a mayoral mandate declaring that Second Avenue would get a protected bike lane by the fall. Within four months, the Seattle Department of Transportation conducted community outreach and created a bidirectional buffered bike zone. Subsequent evaluations revealed that this tripled bike usage on that street.

The City of San Mateo plans to use quick-build projects to create a new bike network, according to its Bicycle Master Plan.

Key Drivers

Many cities are incorporating Complete Streets elements in their communities. However, 90 percent of projects are long-term, high-capital projects that can take 10 or more years to realize. The demand for Complete Streets has continued to grow, but construction projects often fail to keep up. Moreover, due to the COVID-19 pandemic, there was an immediate demand for more streets that allow walkers and bikers to be safely distanced. Quick-build projects can rapidly implement the needed street improvements.

Key Factors for Success

Cities with successful quick-build programs have established interdepartmental working groups that analyze potential projects and implement them in accordance with local transportation master plans.

By involving local groups, this model empowers the community to champion quick-build projects. This community-driven approach ensures that projects face minimal public opposition. Cities can create a process that makes space for community members to inspire and guide the development of quick-build improvements. For example, the City of Fayetteville, Ark., offers a “Tactical Urbanism” permit application that invites residents to take an active role in improving their own neighborhoods. Residents with an idea for a quick-build development can apply for a permit and, if approved, can rally the community to implement these ideas using cones, plants, signs, etc.

In most cases, cities rely on local funding to pay for these improvements. Federal funds are available for cycling and pedestrian improvements, but the long approval and allocation process often makes this funding incompatible with the rapid pace of quick-build projects. Quick-build projects are often inexpensive, especially when it is possible to repurpose existing construction and event infrastructure. In a time of tight budgets, repurposing items such as cones, planters and signs from other city departments reduces their cost.

To do quick builds, cities often find themselves unable to rely on traditional bidding processes. Instead, many cities use on-call IDIQ (Indefinite Delivery, Indefinite Quantity) contracts to maintain project flexibility. Some cities also utilize volunteer work to complete projects such as filling in crosswalks with paint, further reducing project costs.

Key Obstacles

Outspoken NIMBY (“not in my backyard”) advocates can be a barrier for quick-build projects. Even with their low cost and reversible nature, quick-build projects can be opposed by community members who find these developments undesirable. However, once the improvements have been made, many residents ultimately realize that these changes are not harmful.

Timeline to Implementation

In Redwood City, Calif., city staff identified Vera Avenue as an excellent candidate for a quick-build bike boulevard as part of the citywide transportation plan. The city issued a Request for Proposal (RFP) in October 2019 for design, community outreach support, construction support and post-construction evaluation. The conceptual design was completed in February 2020. The construction bid opened at the end of June 2021, and construction was estimated to finish in October or November 2021. It was finished in April 2022.

References and Resources

Sue-Ellen Atkinson, Principal Transportation Planner, City of San Mateo, seatkinson@cityofsanmateo.org

NACTO. Quick Builds for Better Streets

Burlington, Vt. Quick Build Design Materials and Standards

Metropolitan Transportation Commission (MTC) of the San Francisco Bay Area. Accelerating Quick Build for Complete Streets

Street Plans Initiative for MTC. Quick Build video seminar by Tony Garcia (58 minutes)

Redwood City, Calif. Conceptional Design for Vera Street

San Mateo, Calif. Bicycle Master Plan

Fayetteville, Ark. Tactical Urbanism Permitting Process, Application and Materials Guide: A Guide to Community-Led Placemaking Projects

Seamless Transit Principles

Endorsing Seamless Bay Area's seven guiding principles can improve regional transportation

The Impact

By supporting the Seamless Transit Principles, cities can be a part of a coalition of San Francisco Bay Area transit agencies, employers, advocacy groups and community members calling for a better transit system. A local resolution expressing support will build greater public awareness and support for reforms that enact the necessary changes. It will prove to the decision-makers throughout the 27-agency system that transit integration that aligns with the seven principles has broad support.

Description

The Seamless Transit Principles are a set of seven guiding principles designed to guide local, regional and state leaders to pursue a well-integrated transit system. These principles were compiled by Seamless Bay Area, a nonprofit group that advocates for world-class public transit. The seven principles are as follows, taken directly from seamlessbayarea.org:

1) Run all Bay Area transit as one easy-to-use system

Public transit should work as one seamless, connected, and convenient network across the San Francisco Bay Area and beyond. Getting around on transit should be as fast and easy as driving a car. Coordinated bus, rail, and ferry routes and schedules should encourage effortless transfers. Consistent and clear customer information, branding, and maps should make using transit simple and dignified.

2) Put riders first

Riders should feel comfortable when using transit and be treated like valued customers. Public transit agencies must do more to listen to riders and continuously improve service. They must prioritize riders' needs above all else, and overcome all operational, political and bureaucratic barriers to provide an excellent and seamless customer experience.

3) Make public transit equitable and accessible to all

People of all income levels, ages, abilities, genders, and backgrounds should have access to world-class public transit. People who are the most reliant on transit are best served by a universal, inclusive, regionally integrated, connected system that is used by all. People with limited means to pay for transit should be provided with discounts.

4) Align transit prices and passes to be simple, fair, and affordable

Transit should provide good value for money. Fares across the region's 27 public transit agencies must be aligned into a consistent, fair, and affordable system that encourages using transit for all types of trips and doesn't punish riders for transferring. Cost-effective monthly passes should work across the Bay Area and should be widely available to individuals, employers, and schools.

5) Connect effortlessly with other sustainable transportation

A person's journey does not end when that person gets off a bus or exits a station. Excellent pedestrian, bicycle, and other pollution-free transportation options should seamlessly connect public transit to communities and destinations, supporting door-to-door trips that don't require a car.

6) Plan communities and transportation together

High quality public transit should be at the heart of communities across the Bay Area. Transportation should be closely aligned with our region's land use, promoting a connected network of transit-oriented, walkable communities that expands access to affordable housing and job opportunities, and reduces car travel and greenhouse gas emissions.

7) Prioritize reforms to create a seamless network

A regionally integrated, world-class transit system won't happen on its own — it will take leadership, unprecedented levels of cooperation, and changes to existing local, regional, and state policies. The cities, counties, public transit agencies, regional authorities, business leaders, advocacy groups and elected representatives of the San Francisco Bay Area and Northern California megaregion must prioritize the broad public interest and urgently work together collaboratively to advance critical reforms. Our future depends on it!

Where It's Been Implemented

A total of 24 public entities in the San Francisco Bay Area, including the cities of San Mateo, Millbrae, East Palo Alto, Menlo Park, Redwood City, Burlingame, Millbrae, Half Moon Bay and Pacifica in San Mateo County, have all adopted a resolution endorsing the Seamless Transit Principles. Other entities that have endorsed the principles include the County of Alameda, Berkeley, the Cities Association of Santa Clara and the San Francisco County Transportation Authority.

In addition, California State Senator Josh Becker introduced Senate Bill 917 (sponsored by Seamless Bay Area), which would have mandated that transit agencies in the Bay Area implement elements of the Seamless Transit Principles. The bill would have required Bay Area transit agencies to integrate transit fares and create a connected network plan to improve schedule coordination and service. Finally, it would have also required transit agencies to develop a standardized map and wayfinding system.

The bill overwhelmingly passed the State Senate in May 2022 (31-3), showing broad support for the Seamless Transit Principles; however, it died in the State Assembly as it was held in committee. While the bill failed, Ian Griffiths, Seamless Bay Area's Policy Director, argued that it created political pressure to advance those initiatives.

Key Drivers

Although billions of dollars have been invested in Bay Area transportation infrastructure during the past 50 years, only 12 percent of the population uses public transit for commute trips. By contrast, 75 percent of people use cars. As transit in the Bay Area is managed by 27 transit agencies with little coordination, users often struggle with paying separate fares and navigating unpredictable transfers. The slow transit commute times and the high cost currently mean driving cars is more desirable.

Fragmentation of Bay Area transit has also led to shortsighted planning for new infrastructure development with a "silo" approach, leading to high overhead operating costs. Without an integrated transit system, the Bay Area will not meet its targeted greenhouse gas reductions due to increased vehicle miles traveled and declines in transit ridership.

Key Factors for Success

A resolution expressing support for the Seamless Transit Principles will be easier to adopt if the principles are already consistent with local transportation policies and priorities.

Key Obstacles

Even if a local city council agrees broadly with the Seamless Transit Principles, there may be some specific points of contention. For example, San Francisco County Transportation Authority (SFCTA) directors expressed concern that they would not have adequate representation, relative to their high ridership, on a future seamless transit task force. They worried that their interests would be drowned out by suburban communities if each jurisdiction had an equal say. They also expressed concern over how certain fare changes could inadvertently harm the operability of some transit systems. SFCTA addressed each of these concerns in its resolution, which still broadly endorsed the Seamless Transit Principles.

Resources and References

Adina Levin, Seamless Bay Area, adina.levin@friendsofcaltrain.com

Seamless Transit Principles Sample Resolution

Seamless transit report by SPUR

Seamless Transit Principles

San Francisco County Transportation Authority resolution and report

Shuttles for Employee Commutes

Shuttle services help employees commute more sustainably

The Impact

Employer-sponsored shuttles can drastically reduce traffic congestion and carbon emissions by reducing solo driving, especially during peak commute hours. First- and last-mile shuttles support public transit and change employee commute habits. Employers can have a variety of motivations to provide a shuttle service to their employees, from reducing their indirect greenhouse gas emissions from commuting, to attracting and retaining valuable employees, especially younger workers who don't own cars. Shuttles also help employers by reducing the need for costly parking infrastructure.

Employees benefit from employer-sponsored shuttles because they save money on gas and car maintenance and can use their commute time to work, read, socialize or sleep. Moreover, commuting on shuttles and public transit has been shown to lower employee stress compared to driving in congested traffic, and it can lead to workplace productivity.

Description

Employer-sponsored shuttle services come in two major forms: long-haul service (private coaches) and first- and last-mile shuttles. Long-haul coaches are typically point-to-point services that transport employees from pickup locations throughout a region to work sites, eliminating the need for employees to drive or use public transit. These coaches motivate employees to get out of their cars and use public transit. Since long-haul service is costly, only a small percentage of employers may find it financially feasible to offer it.

First- and last-mile shuttles offer short-distance trips that transport employees from public transit stations (such as a bus, subway or train station) to the workplace and back. By providing this key

connectivity, shuttles make commuting on public transit a viable alternative to driving alone. Some large employers find it financially feasible to deploy their own private shuttles for first- and last-mile services, but others find more value in participating in a shared shuttle service.

Shared shuttle services can be jointly funded by a consortium of employers and/or residential and commercial property managers, offering operational efficiency and cost-effectiveness. One way this collaboration can be managed is by forming a transportation management association (TMA), a nonprofit that collects dues and facilitates all components of a shuttle system on behalf of its members.

Employers in San Mateo County, Calif., can use Commute.org to coordinate a shared shuttle system with other interested parties. Commute.org manages route planning, shuttle and driver procurement, performance analysis and customer service for groups of neighboring employers and property managers. It also uses grants from the San Mateo County Transportation Authority to cover up to 75 percent of the operational costs, making this arrangement a less costly alternative than a business independently arranging shuttle service. Commute.org actively works with employers, business groups and property managers to develop new routes and/or expand participation in existing routes.

Where It's Been Implemented

There are numerous private, public and private/public shuttle programs throughout the San Francisco Bay Area. Facebook, Google, Apple, Genentech, Yahoo and many other large employers in the region offer long-distance shuttle services for their employees. Many of these employers also provide private first- and last-mile shuttle service to and from transit stations near their campuses. Genentech has a fleet of 60 coach buses, including some electric buses, which serves 45 stops throughout the Bay Area. The company also offers a transit connector service that shuttles people from BART and Caltrain stations to their offices and back. These transportation options have been crucial in getting 40 percent of Genentech's workforce to use alternative commute modes.

The Harbor Bay Business Park Association, located in Alameda, Calif., provides a shuttle bus connection to East Bay BART stations through a contract with the California Department of Transportation (Caltrans). The Stanford Research Park, a large industrial park in Palo Alto, has a robust shuttle system that helped reduce the share of employees who drive alone from 73 percent in 2016 to 63 percent in 2019. Commute.org manages more than 20 routes in San Mateo County, including one in Brisbane, Calif., with 25 contributing employers.

Key Drivers

According to the EPA, the average passenger vehicle emits 4.6 metric tons of CO_2 every year. In the Bay Area, transportation accounts for 40 percent of total emissions, of which 70 percent are from passenger vehicles. As housing becomes more expensive, employees are being pushed farther out from their workplaces and forced to make longer and longer commutes to work. Studies have shown that those who commute longer distances are twice as likely to experience pain, dizziness, exhaustion and sleep deprivation. The same studies show that long-distance commuters, especially those who drive alone, experience considerably more stress, which can lead to reduced workplace productivity and an increase in absenteeism and sick days.

Many employers recognize that employees are looking for alternative commute options and that supporting this shift has numerous benefits for the business. Currently, inadequate first- and last-mile transportation options make public transit expensive and unappealing.

Key Obstacles

Shuttle programs often require significant upfront costs. To address this issue, employers should focus on shared shuttle systems. Employers in San Mateo County can also benefit from grants by the San Mateo County Transportation Authority.

Another key obstacle is the common fear employees have of being “stranded,” i.e., unable to return home in the case of an emergency and/or changed plans. One way to address this problem is by offering a flexible ride home. Commute.org’s Guaranteed Ride Home program is available to anyone who works or attends college in San Mateo County. The program reimburses employees and students up to $60 per trip when they experience a qualifying emergency (such as sickness or family emergency), provided they sign up in advance for an online account. Employers in San Mateo County can work with Commute.org to make sure that their employees are aware of the program.

In situations where long-haul coach shuttles or public transit, even with first and/or last-mile shuttles, is not a feasible option for employees, employers might sponsor vanpools to offer an alternative mode of shared, sustainable transportation. Vanpools work best for employees who live in locations where public transit is not a viable option to get to their worksite. Employers can contribute to their employees’ vanpools or simply provide participants to use pre-tax dollars to pay for their vanpools. Additionally, vanpool participants can offset their costs with rebates from the Metropolitan Transportation Commission and other local agencies.

Key Factors for Success

Beyond cooperation with neighboring employers, cooperation with city and transit agencies can make shuttle programs more effective. These agencies can help businesses by giving permission to use existing bus stops, giving access to safe stops and shelters, providing layover and storage for shuttles, and providing access to transportation technology to make trips more efficient.

Resources

John Ford, Executive Director, Commute.org, john@commute.org

Wendy Silvani, Bay Area expert on shuttle services and other transportation demand management programs, w@silvanitransportationconsulting.com, 510-465-0724

Commute.org’s shuttle services

Southern Alameda Spare the Air Resource Team. 2014 Webinar on Shuttles

Wendy Silvani. “Shuttle Diversity, Flexibility Are Keys to Success”

Palo Alto Online. Stanford Research Park Gains Traction in Effort to Shift Workers' Commute Habits

Slow Streets

Closing some streets can encourage more sustainable and healthy modes of transportation.

The Impact

Closing certain streets to through traffic can make neighborhoods safer from high-speed vehicles, offer more space for residents to move about outside their homes and encourage alternative forms of transportation, such as biking and walking, due to the reduced danger of traveling alongside cars. Street closures are a viable long-term change that encourages sustainable modes of transportation, thus reducing greenhouse gas emissions and creating healthier communities.

Description

Due to the COVID-19 pandemic and local shelter-at-home orders, many cities implemented Slow Streets that limit car traffic by closing the street to through traffic, allowing people to use the street for walking, biking, scootering, etc., all while safely distanced from others. Slow Streets are created by blocking street entrances using physical signs that explain what uses are allowed (for example, drivers who live on the street, parking, deliveries and emergency vehicles). In many cities, Slow Streets are requested by residents and community organizations. Volunteers are sometimes tasked with helping to deploy road signs and notifying the community of the changes.

At the onset of COVID-19, cities creating Slow Streets focused on rapid deployment using cheap materials. Later, as the virus continued and the benefits of Slow Streets became clear, cities began using more durable materials for long-term implementation, replacing cones and temporary signs with K-rails (concrete, steel-reinforced barriers) and planters that are more attractive yet still relatively inexpensive.

Cities without Slow Streets can carefully examine which areas might benefit most from this change. After community engagement and traffic studies, they can roll out temporary changes and see how local residents respond before deciding whether to make them permanent.

Where It's Been Implemented

Oakland, Redwood City, Los Angeles, San Francisco and Pasadena are among California cities that have implemented Slow Streets since the start of the pandemic. Slow Streets Oakland now covers 21 miles. City officials are examining their existing network of Slow Streets and deciding which ones to remove and which ones to maintain on a more permanent basis. Oakland leaders are considering using K-rails, planters and street art to demarcate the city's Slow Streets.

In Los Angeles, the city council approved a motion in November 2021 instructing the city's Department of Transportation to make recommendations for a permanent Slow Streets program after residents praised Slow Streets in many neighborhoods. However, some residents pushed back because they feel it simply moves traffic to other streets.

In San Francisco, the nearly 30 Slow Streets created during the pandemic were met with mixed reviews and, as of May 2022, city leaders were debating whether to keep many of them.

Key Drivers

Since Slow Streets have been implemented throughout the nation, many cities are finding that residents really enjoy the neighborhood safety that they provide, along with space for safe recreation, walking, riding bikes and scooters.

Key Factors for Success

Slow Streets programs will be the most successful when they are community driven through outreach, support and advocacy. For community outreach, cities can establish a procedure for residents to request Slow Streets and even "adopt" a Slow Street, which might entail maintaining the barriers and ensuring that the neighborhood is aware of the rules. In Los Angeles, residents can request a Slow Street via an online form, an example of how these programs can start with community input. Social media can also be used for community outreach, in addition to community-based communication that leverages existing networks such as neighborhood associations, churches, health clinics and school districts.

For community support, it is important to maintain a positive relationship between advocates and city staffers to facilitate the consistent communication needed. Building community support also means giving people an easy way to provide feedback. In Oakland, the city invites people to give input via surveys, calls and reports to 311 to ensure that these programs adequately serve community interests.

Community advocacy benefits the development of Slow Streets and reduces the need for extensive community engagement prior to deployment. In Oakland, the development of the Slow Streets program was in large part due to strong advocacy by a community that lobbied for the needs of bicyclists and pedestrians. When activists apply pressure, staffers and elected leaders may develop and create Slow Streets from a more thoughtful, community-based perspective.

Beyond the importance of community engagement in the development process, there are several key elements in the design process that should be considered. According to CalBike, the term "Slow Streets" is the favored name for branding as opposed to "Open Streets" or "Safe Streets." The name "Slow Streets" helps people understand that these streets are not completely closed to cars but, rather, to faster through-traffic. Furthermore, calling them "Slow Streets" can provide opportunities for a permanent network of greenways for safe and low-stress biking.

Saving resources and staff time is also critical in the design process. Cities should be willing to save resources and some funding to implement needed changes and adjustments. These projects do not have to be expensive. In Oakland's case, the city kept their design simple and cheap, using barricades and signage to mark Slow Streets.

When creating a Slow Street, other traffic-calming methods can be introduced, too. Using quick-build street design, treatments such as chicanes (serpentine curves in a road, often with landscaped barriers) can be easily added at a low cost to reduce vehicle speeds.

Key Obstacles

Slow Streets do not work well on streets where the vehicle count is high and/or where no other pass-by alternatives exist nearby. Cities often need to conduct traffic studies before closing a street to through traffic, which can take considerable time and resources. Another obstacle is the perception that Slow Streets are inequitable and do not help low-income neighborhoods. Extensive outreach is needed to understand the best way Slow Streets can be helpful. Community outreach and surveys can help address the equity concern.

Timeline to Implementation

The pandemic drastically accelerated the scope and speed of implementing Slow Streets programs, prompted by the emphasis on safety for residents, as well as the desire for more outdoor dining areas.

References and Resources

Noel Pond-Danchik, Transportation Planner, City of Oakland, npond-danchik@oaklandca.gov

CalBike. How to Create Slow Streets During the Pandemic

Oakland Slow Streets program

SFMTA Slow Streets program website

Los Angeles form for requesting a slow street

Transportation Management Associations

A nonprofit TMA offers incentives such as transit passes for low-income commuters

The Impact

Transportation Management Associations (TMAs) that offer incentives for certain kinds of transportation, especially to low-income earners, can drastically reduce the number of commuters who rely on single-occupancy vehicles (SOVs). They can reduce congestion and commute time, increase transit ridership, help businesses attract customers and employees, and cut greenhouse gas emissions.

Description

TMAs are nonprofit, member-controlled organizations that coordinate and implement transportation demand management (TDM) strategies in a particular area, such as a commercial district or a business park. They are often public-private partnerships funded through dues paid by member businesses and government grants. To establish a TMA, an organizer needs to involve local businesses and transit providers, set up a board of directors, and often provide seed funding. The organizer can be a group of regional or local governments, chambers of commerce or a major facility such as a mall or hospital. Then, the TMA can register for nonprofit status and start implementing various programs. To be successful, these TMAs need to coordinate with regional agencies (such as Commute.org in San Mateo County) to offer effective free and/or complementary services.

One effective TDM strategy is to offer transit passes for low-income workers. In downtown areas near public transit on the San Francisco Peninsula, pre-loaded Clipper cards can significantly incentivize workers to use Caltrain, SamTrans, Santa Clara Valley Transportation Authority (VTA) or AC Transit to get to work. These passes can be limited to people earning less than a certain income under the condition that they commit to commuting by transit a certain number of days a week.

Other TDM programs include subsidies from GPS navigation software app vendors like Waze Carpool and rideshare discounts. Waze offers an app-based carpool system that allows commuters to drive or ride with people going the same direction. An after-hours rideshare program offers Uber or Lyft subsidies for people working late hours without transit options to get home.

Where It's Been Implemented

The Palo Alto TMA (PATMA) is an excellent example of an efficient and effective TMA. It grew out of the city's effort in 2013 to develop TDM strategies to address its transportation concerns, especially in the downtown area. The city initially funded PATMA with $499,880 in 2016 and has continued to fund it, often using parking revenues. PATMA is also funded via private contributions and board dues, which totaled $240,000 in 2018.

PATMA's flagship program is its full-subsidy transit pass program for low-income earners. In 2020, PATMA offered monthly passes to employees who earned less than $70,000, worked downtown, and commuted via transit at least three times a week. PATMA registers and preloads hundreds of Clipper cards, provides them to the program enrollees and tracks their monthly usage. In 2019 demand for transit passes was so high that PATMA exhausted the $750,000 earmarked for this program. Its other programs include a Waze carpool subsidy and a Lyft after-hours program.The Waze program allows commuters going to and from downtown to pay just $3 per trip. The Lyft subsidy program offers commuters who work later than normal transit operating hours a $10 discount on Lyft rides 15 times a month.

PADMA's programs are designed to serve the downtown area. This small geographical area makes it easier for PATMA staff to conduct targeted, door-to-door outreach. This focused outreach helps the employers and employees in downtown Palo Alto become aware of all the incentives offered by the TMA. From October to December of 2019, PATMA took the equivalent of more than 330 cars off the road (221 from its transit pass program, 105 from its carpool program, and 7.3 from its Lyft program).

In 2020, PATMA was about halfway to its goal of a 30 percent reduction in downtown commutes. Due to this success, PATMA recently piloted a similar program along California Avenue. This pilot program showed that there is sufficient demand in areas with lower transit service than downtown and that PADMA's transit pass program can easily scale to other locations.

Key Factors for Success

PATMA found in-house surveys to be effective as both a data collection and an outreach strategy. They helped shape the city's TDM programs. For example, PATMA used the surveys to better understand which types of employers (e.g., service or light retail) to target.

Another factor for success is doing physical, door-to-door outreach to make more employees aware of available incentives. Most TMAs typically work with larger employers, which reduces the need to conduct intensive on-the-ground outreach. However, in-person outreach, albeit labor intensive, can drastically increase participation numbers, particularly from low-income commuters.

Key Obstacles

The main barrier to the implementation of a TMA is the lack of support among stakeholders, which include regional and local government agencies, transit providers, businesses and nearby residents. There might also be the perception that the short-term benefits afforded by TDM programs are minimal if there is no immediate congestion/parking problem.

Return on Investment

TDM strategies, such as transit pass subsidies, are considerably cost-effective. This is particularly evident when compared to the cost of structured parking spaces. The chart below from PADMA's 2018 annual report shows cost comparisons.

For Comparison: TDM Program Efficacy	Annual Cost of Non-SOV Commute
"Stanford-like" TDM: $3 SOV fee yields 50% SOV	$0
Self-motivated bike or carpool	$0
Go Pass for downtown TechCo at 35% Caltrain mode	$814
Transit Pass Subsidy – pass overlay	$1,605
Waze Carpool	$1,638
Lyft Program	$2,088
Go Pass for an employer with 10% mode share	$2,850
Private express bus service from SF, 25 riders	$3,508
New structured parking space (SOV commute)	$3,908
Employer housing stipend to live close to work	$10,000

Timeline to Implementation

Given support from stakeholders, appropriate seed funding and an engaged board of directors, a TMA can potentially offer programs within three months.

References and Resources

Kruti Ladani, TDM Program Manager, kruti@paloaltotma.org

Steve Raney, Palo Alto TMA Executive Director, steve@paloaltotma.org

Palo Alto TMA

Guide to Transportation Management Associations by Victoria Transport Policy Institute

Association for Commuter Transportation, a nonprofit supporting TDM Programs

City of Palo Alto's TMA Low Income Transit Pass Program presentation video, 2020

City of Palo Alto's TMA 2019 Annual Report, May 26, 2020

Most recent TMA source: Palo Alto TMA Three Year Strategic Plan FY 23-25.pdf

Other Solutions to Explore

Banning New Gas Stations

With the need to mitigate the effects of catastrophic climate change, cities worldwide have been working on reducing their dependence on gasoline-powered vehicles. As a result of policies shifting the public to use public transit, battery electric vehicles, and other forms of active mobility like walking or biking, the need for gas stations will decrease dramatically in the coming years. Because of those trends, in 2021, Petaluma, California, became the first city in the world to completely ban new gas stations, and since then, five more cities in Sonoma County have joined Petaluma. Other cities in California, including. auto-centric Los Angeles, are considering bans as they recognize the need to reduce dependence on fossil fuels. Up to 80 percent of gas stations will be unprofitable within 15 years due to the rapid modal shifts currently occurring in California and beyond. However, gas stations cause significant environmental degradation, meaning that remediation costs could be upwards of $2 million.

While banning new gas stations may not have a sizable real-world impact, it could still send a powerful message that cities and towns are taking climate change seriously and could bolster further action in the future.

References and Resources

The Guardian, "Cities Are Banning New Gas Stations. More Should Join Them"

Los Angeles Times, "Editorial: Ban New Gas Stations? There Are Better Ways for L.A. to Ditch Fossil Fuels"

Aaron Gilbreth, "Ban on Building Gas Stations Is Emerging as New Policy Goal." Capitol Weekly, September 27, 2022.

Shared Micromobility

In recent years, shared micromobility options have proliferated widely across the country as part of the growing "Sharing Economy." The shared-use fleets of bikes, e-bikes and scooters, both dockless and docked, offer convenient short travel options. They are particularly useful as a first- and last-mile solution that makes it easier for people to use public transit. These novel services, enabled by advancing

technology, increase the number and type of available alternative transport modes. They can help reduce our reliance on cars, thus making our communities cleaner and healthier.

There are many micromobility service providers. Local governments can establish carefully considered regulations and partner with service providers to bring the best micromobility options to the community. When dockless scooters first appeared in American cities, there was swift backlash over the clutter they caused, and people clamored for regulation. When some cities imposed draconian micromobility standards, service providers were pushed out. Fortunately, through trial and error, sound design thinking, and the involvement of key stakeholders and the community, best practices to achieve a middle ground have been established.

Cities that currently do not have shared micromobility will need to prepare transparent regulations and communicate a willingness to work with service providers if they wish to have shared micromobility services. By establishing clear standards and procedures, cities can make it easier for micromobility vendors to come in and operate in the city.

To reduce costs and administrative time, some cities are partnering on micromobility programs. For example, Burlingame and Millbrae (both in Calif.) are jointly operating an e-bike lending program that connects with a major transportation hub in Millbrae.

References and Resources

Guidelines for Regulating Shared Micromobility by NACTO.org