The Manzanita Report
& Alternatives Analysis
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City of Sunnyvale
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Bill Widmer, Mayor
Elizabeth Lewis, Councilmember
The Manzanita is an indigenous evergreen plant whose many species offer an important connecting layer within the Californian chaparral. Growing in clusters low to the ground with twisting red branches and edible flowers and berries, it sustains local life in abundance.

In 2019, a group of private industry and public stakeholders in the San Francisco Bay Area came together to explore how the region’s public transit pipelines could connect commuters to job centers in a nuanced way using existing transportation infrastructure.

Just as the Manzanita plant plays a supportive role in the understory of the grand oaks and redwoods, The Manzanita Talks considers how to grow networks of locally-informed structures that connect the on-the-ground realities within a growing commute shed.
A Dedication

The Manzanita Report and the energy behind the Manzanita Talks are dedicated to the hard working commuters and residents of the San Francisco Bay Area. We hope our efforts here have potential to improve your lives in a welcomed, tangible way.
“Transportation is not a solo act; it’s an intersectional problem. The problems don’t sit within political boundaries so jointly owning the problem from the start is key. Congestion on our roads is no longer about private sector interests or public sector interests—the public interest is all of it.”

Therese McMillan, Executive Director, Metropolitan Transportation Commission

“When we set out to create a community of technical scholars in Silicon Valley, there wasn’t much here and the rest of the world looked awfully big. Now a lot of the rest of the world is here.”

Frederick Terman, d. 1982 Professor and ‘Father of Silicon Valley’
The Bay Area is one of the world’s most vibrant and fastest growing economies. If our region were a nation unto itself our GDP would make us the world’s 18th largest economy.

Our growth continues unabated. The region added nearly 900,000 new jobs over the past decade, and as our companies move into promising new areas the pace is projected to increase.

But there are perils associated with growth and prosperity, and ours include the nation’s highest housing prices, income inequality, and a substantial portion of our labor pool forced to locate on the outskirts of our region and beyond. As a result, we have 90,000 megacommuters driving more than 90 minutes each way to their Silicon Valley opportunities. Our roadway congestion, already the nation’s worst, will only worsen.

The Manzanita Talks are a response to our transportation challenges.

At the invitation of Joint Venture Silicon Valley, and in conjunction with the Bay Area Council, government and business leaders sat down in 2019 for five directed conversations called “The Manzanita Talks.” The question on the table: is there an effective way for cities and companies to collaborate on Transportation Demand Management (TDM) strategies within our subregion?

The talks began with government and industry leaders simply getting acquainted, sitting side by side for the first time. They continued with a field trip to the Contra Costa Centre, an award-winning transit village which has reduced solo driving by 30 percent annually, using harmonized TDM strategies.

Subsequent meetings provided the direction for this, the Manzanita Report, a document which received extensive input from city planning staff and industry experts.

Now we deliver this report to the public. It is intended to provide the analytical background and conceptual literacy necessary for future planning and decision making. The report also articulates our belief that collaboration between public and private sectors will be vital to resolving this dilemma. As participants in these talks we believe the criteria and recommendations herein are a necessary foundation for moving forward.
Guest Opinion: Local Solutions For Traffic and Congestion³

By Nancy Shepherd, Palo Alto Weekly, March 8th, 2019

A few years after Joni Mitchell wrote “Pave paradise and put up a parking lot” (1969), the San Jose freeway expansion interchange was halted by then Governor Jerry Brown at highways 680 and 101, which created the iconic “Monument to Nowhere” structure. Who could forget the picture of three isolated, independent freeway ramps hanging stoically in the sky over the farmlands of San Jose, ready for yet-to-be-generated traffic.

This structure struck chords in me, a young college student born and raised in the Bay Area, who experienced the first Earth Day at Tamalpais High School in Mill Valley. Nobody knew what to do, so students flooded the Miller Avenue intersection yelling at drivers to get out of cars. It was unfocused and idealistic, not even aspirational — for environmental causes, this was yet to come.

So, the halted freeway project, in my idealist world view, was a testament that the Bay Area was saying “no” to building a Los Angeles car-culture future. In those days, northern Californians were proud to solve transit issues with ferries, buses, and rail to get workers from home to work. We thumbed our noses at southern California with its gridlocked traffic, smog and overpopulation sprawled deep into the desert. This was not good civic planning.

Saying “no” to building a car-culture future was short lived.

By the mid-1970s, “Silicon Valley” was officially coined, and the Palo Alto-Sunnyvale-Santa Clara economy began to compete with San Francisco’s and Oakland’s. Indeed, the Stanford experiment of building an innovation center to attract the brightest around the globe was firmly launched. Today, the then-stalled intersection structure is operational with double the lane capacity and filled with gridlock traffic every workday.

Silicon Valley has a love-affair with cars — just like Los Angeles.

Everyday my driving experience becomes more aggravating. I’ve concluded that either I need to learn to be happy sitting in traffic and stuck longer in my neighborhood during commute hours, or support city efforts that re-think mobility to reduce congestion. Sadly, technology alone cannot solve the problem of physically getting people from home to work — especially workers in the service and retail professions. The “Beam me up, Scotty” app has yet to be invented.

³ A resident of Palo Alto since 1984, former Palo Alto Mayor Nancy Shepherd served on the City Council between 2010 and 2014.

So in 2013, I along with other Palo Alto City Council members introduced the idea of establishing a transportation-management association (TMA) for the job centers of Palo Alto (downtown, California Avenue, Stanford Research Park) as part of a long-term effort to relieve neighborhoods from overflow worker parking and reduce solo-vehicle trips. We learned from the Contra Costa Centre Transit Village — a TMA established in the 1980s along the Pleasanton/Walnut Creek BART station — that using commuter subsidies like Clipper Card funding, gas cards, van pools, shuttles, taxis, flex (shared) cars and more, did reduce solo-vehicle trips by more than 30 percent. For over 25 years the Contra Costa TMA has delivered personalized counseling to workers on public-transit routes and a guaranteed ride home in emergencies.

Last fall I had a conversation with a California Avenue worker as she helped me update my passport at the copy shop. I learned that she commuted from Los Banos every day, three-hours each way on a good day. Another retail worker at Town & Country Village lived San Francisco. Connecting these commuters to public-transit pipelines — SamTrans, VTA, Caltrain, BART, ACE Train — needs to be more convenient and affordable. TMAs fill this gap. Just like in Contra Costa, we can do this too.

In an era where the state threatens removing local control from cities, a TMA can show us the benefits of working thoughtfully to create nuanced local programs and solutions that respond to conditions on the ground and in our neighborhoods. TMAs increase quality of life for everyone, one worker at a time by offering transit subsidies, commute routes, incentives and more to reduce solo-occupancy trips into job center areas. It solves the “first and last mile” commute conundrum and fills the gap between regional and county public transit, as we navigate not just how to get to work but how to move around our own cities.

Today, Palo Alto Transit Management Association (PATMA) is deployed and considering expanding into the California Avenue business district by piloting donor-funded transit passes with a determination to succeed. We need to support this effort. If done well, employers of all sizes that are struggling to recruit and retain employees will find relief as the TMA aids them with tailored programs and services instead of individual employers scrambling to come up with incentives on their own.

If the TMA leadership is thinking long term, it will build relationships with other TMAs in the subregion like Mountain View, or emerging TMAs in Menlo Park and Redwood City, as solutions cross city and county lines.

Let’s stop the temptation to do nothing, hoping someone else can figure this out because, “Don’t it always seem to go, that you don’t know what you’ve got till it’s gone” and take this moment to exercise local control and build a “Monument to Somewhere” instead. We need this for Palo Alto, our region and the Bay Area.
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Manzanita Report: Executive Summary

The automobile, once a symbol of freedom, has become a necessary inconvenience for many, trapping people on highways, away from their families and communities. Residents look to government leaders to address this issue, while local employers struggle to recruit and retain employees who spend more time in traffic than ever before. The Manzanita Talks were convened recognizing that local government officials, private employers, and engaged residents are having separate yet similar discussions about how to relieve traffic congestion. Eight cities and nine private sector entities from the Mid-Peninsula participated in the Manzanita Talks, all bringing a unique perspective and expertise.

Cities and employers spend a significant amount of time and effort on transportation issues. Cities design and build the local transportation infrastructure, and set transportation demand management standards through policy documents and development approvals. Employers offer extensive transportation benefits, including transit incentives and a network of last-leg and long haul shuttles. Furthermore, many cities and employers participate in local Transportation Management Associations (TMAs), which coordinate transportation programming for multiple employers, commuters, and residents, typically within defined geographic areas.

Despite these efforts, traffic congestion remains a complicated issue to solve. The causes of traffic congestion date back decades. And while traffic concerns are usually voiced at the local level, it is a regional problem that cannot be solved in isolation. With this in mind, the Manzanita Report (Report) addresses the overarching problem that, "there are too many cars in too little space in Bay Area highways and roadways." The report also addresses dozens of related sub-problems discussed during the Manzanita Talks. Finally, the Report also asks the question, "What is the most effective way for cities and companies to collaborate to provide Transportation Demand Management (TDM) services within our subregion?"

Using case studies of other TDM approaches from other regions in the United States, and specific criteria for determining the most effective approach in this region, the Report analyzes several different scenarios to answer the TDM question. The primary take-away from this analysis is that TDM services could be most effectively provided when cities and employers work together across jurisdictional and sectorial boundaries. At the same time, the approach will only work well if it starts small and focuses on local issues while being inclusive of populations that currently do not currently have access to TDM services.

The Report recommends that the cities and companies that participated in the Manzanita Talks continue the conversation around TDM services. If cities and employers need TDM services in the future, or if a new TDM organization is established, the recommendations in Chapter 7 should be used and tailored to meet the needs of that specific situation. These recommendations include making equity a foundational principle, focusing on local problems, and establishing an approach to trip sharing of shuttle buses in all directions. Chapter 7 includes over a dozen additional recommendations for the provision of TDM services or the formation of a new TDM organization.
What is Transportation Demand Management (TDM)?

The Problem
There are too many cars in too little space on Bay Area highways and local roads.

The Question
What is the most effective way for cities and companies to collaborate to provide Transportation Demand Management (TDM) services within our subregion?
Chapter 1
Background, Definitions & Stories to Learn From
Bay Area traffic is at record levels, creating gridlock on our freeways, expressways and local streets. Since coming out of the Great Recession, traffic counts have increased as much as 56% in some areas. There are simply too many cars in too little space, particularly during the peak commute hours. The symptoms of the “too many cars in too little space” problem are everywhere, from super-commutes to crowded trains to cut-through traffic in once-quiet neighborhoods. While the next recession may bring temporary relief to certain pockets of traffic congestion, the subregion has grown for generations and is expected to continue to grow.

Cities, companies, transportation providers, and local transportation management organizations are working hard on improving our transportation infrastructure and implementing transportation demand management solutions within their defined geographic boundaries. While there is no doubt that this work has improved the lives of residents and employees, there are limits to the transportation solutions when applied within a single organization and constrained boundaries.

Overcoming the limitations of siloed TDM services, and exploring whether there are advantages to cross-jurisdictional collaboration and deployment of TDM services, is the focus of The Manzanita Report and Alternatives Analysis. The Report describes the many transportation-related challenges in our region. It also identifies the solutions that organizations have established in response to those challenges, and what other regions are doing to tackle similar problems. Finally, the Report explores various organizational structures to determine the best fit providing TDM services across the subregion. Ultimately, this document can be used as a guide for cities and companies to work together across sectors and jurisdictional boundaries to harmonize TDM efforts and reduce the number of vehicles on our roadways.

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*Caltrans Traffic Census Program; Dumbarton Toll Plaza Peak Hour Traffic Counts (2010 v. 2017); https://dot.ca.gov*
The Problem
There are too many cars in too little space on Bay Area highways and local roads.

The Question
What is the most effective way for cities and companies to collaborate to provide Transportation Demand Management (TDM) services within our subregion?
Key Definitions

**Commute Shed:** The area that workers might or are known to commute to for employment, assuming maximum travel time or distances⁵.

**Complete Streets:** “Complete Streets” are streets that are designed, built and operated to enable safe access for all users, in that pedestrians, bicyclists, motorists and public transportation users of all ages and abilities are able to safely move along and across the street right-of-way.

**Equity:** Just and fair inclusion into a society in which all can participate, prosper, and reach their full potential. It is the antidote to inequality. Equity is a superior growth model, as it unlocks the promise of the region by unleashing the promise in us all. Innovating for the most vulnerable is not a zero-sum game, and will benefit everyone. For the purposes of Manzanita Talks, equity will focus on the transportation efforts and inclusion of employees and residents who have historically been excluded from benefiting from transportation demand management programs.⁶

**First and Last Leg (First and Last Mile):** A commuter’s trip is understood as the entire journey from origin to destination. Individuals may use a number of modes (types) of transport to complete the journey – they may walk, drive, ride a bicycle, take a train, or - in many cases - combine a number of modes. Bus and rail services often form the core of a trip, but users complete the first and last leg on their own. For example, they must first walk, bike, drive or roll themselves to and from the nearest station. This is often referred to as the “first and last mile” of a trip. Given that actual distances vary based on the commuter’s circumstances, this document uses the term “first and last leg”.

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⁶ Definition based on PolicyLink’s “Equity Manifesto” (policylink.org)
⁷ Based on LA Metro’s definition of First and Last Mile (metro.net)
General Plan (Comprehensive Plan): A General Plan is a City’s long-term blueprint for the community’s vision of future growth. The “Land-Use Element” and “Transportation Element” are critical chapters of a City’s General Plan. General Plans contain hundreds of policies that guide future decision-making within a City. In some cities, the General Plan is referred to as a Comprehensive Plan. General Plans are time sensitive, and updated every 10-20 years with an Environmental Impact Report process. Mitigation to anticipated growth is identified and approved by cities for development guidance. State and regional agencies (Caltrain, Caltrans, etc.) are guided by local policy within these plans.

Specific Plan: Specific Plans are optional documents that are created to implement the General Plan. They are a flexible planning tool often used for larger areas, such as a downtown or a major transportation corridor, to encourage comprehensive planning. A specific plan may present broad policy concepts, focus on a particular planning or development issue, or provide detailed direction as to the type, location, intensity or design, financing, infrastructure or transportation requirements needed for development. While not part of the general plan, a specific plan must implement and be consistent with the General Plan. Some cities use the terms “Precise Plan” or “Area Master Plans” for documents similar to Specific Plans. Furthermore, the term “Community Plans” or “Focus Plans” are for Specific Plan like sections found within the General Plan. Like the General Plan, it will be finalized with an Environmental Impact Report process, and certified by the City Council.

Subregion: For the purposes of this document, the term “subregion” refers to the geographic area comprised of the eight participating “Manzanita Talk” cities (Redwood City to Sunnyvale). The term “region” refers to the San Francisco Bay Area.

Transportation Management Association (TMA): A TMA is an organized group applying carefully selected approaches to facilitating the movement of people within an area. TMAs are often legally constituted and frequently led by the private sector in partnership with the public sector to solve transportation problems. In practice, TDM is a key tool that TMAs utilize for managing the system. TMAs may also be referred to a Transportation Management Organizations (TMOs). Furthermore, there are “Multi-Employer TDM program organizations”. These organizations play the role of a TMA without forming a formal TMA. Employers control their own internal TDM programs and commuter benefits, while larger organization coordinates shuttle buses, organization wide programs such as carpool programs.

Transportation Demand Management (TDM): Transportation Demand Management (TDM) means the use of strategies to inform and encourage travelers to maximize the efficiency of a transportation system leading to improved mobility, reduced congestion, and lower vehicle emissions. TDM programs and policies aim to provide commuters with a mix of reliable and affordable transportation options, in order to reduce the percentage of Single-Occupancy Vehicles. Supported with effective marketing and advanced technologies, commuters can make informed choices to meet each trips unique needs, while considering cost, time, and convenience.

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8 Based on the State Office of Planning and Research (OPR) General Plan definition
9 Based on definition in the Institute For Local Government’s (ILG) “Guide to Local Planning”
10 Based on the ACT’s Definition in the Guide to TMA Handbook
11 Based on the Association for Commuter Transportation (ACT) Definition https://actweb.org/what-is-tdm/
The Manzanita Talks: Why We Convened

Local policymakers throughout the Bay Area have identified traffic congestion, increasing transportation choices, and improvement of the overall transportation system as a top priority. Generations of development patterns have created clustered job centers disconnected from the areas where people live. The automobile, once a symbol of personal freedom, has become a necessary inconvenience for many, trapping people on highways, away from their families and communities.

Residents, fed up with sitting in traffic and lack of convenient transportation choices, are looking to government leaders to help solve this problem. Employers are struggling with the same issue, as employees travel farther and spend more time on the road than ever before. Lower-income service workers are the most affected as they travel from less expensive regions to the job centers, spending a disproportionate share of personal income and time on transportation. Getting employees to and from work safely and conveniently is consuming an ever-increasing amount of time, energy, and money.

Private sector companies, public leaders and involved residents from throughout the mid-Peninsula are having separate, yet similar conversations about how to create further mode shift (e.g., reducing the percentage of solo drivers and cars on the road) to and from employment centers. Recognizing that these separate yet similar conversations were taking place, the Manzanita Talks were convened to determine how to best work together and find solutions to transportation challenges.

The Manzanita Talks brought together a consortium of public and private sector entities (Table 1) from the Peninsula in a series of five roundtable sessions that began in April 2019 and concluded in October. All participants are heavily invested in transportation policy and brought considerable experience to the table. Elected officials represented the cities and the public process. Transportation leads represented private sector companies. In addition, the process included a public sector technical staff working group and private sector working group. There were a total of five Manzanita Talks that began in April 2019 and ended in October 2019.
The purpose of the Manzanita Report and Alternatives Analysis is two-fold. First, it “reports out” on the topics addressed during the Manzanita Talks, and lists the many transportation-related issues within our subregion (Redwood City to Sunnyvale). It also describes the policies and programs that organizations have established in response to those issues, as well as what other regions are doing to tackle similar problems. Finally, the document explores various organizational structures to determine the key qualities of each organizational structure when deploying TDM services. Ultimately, the report can be used as a resource guide for existing programs and a guiding document for cities and companies to work together across sectors and jurisdictional boundaries. The goal, of course, is to reduce traffic congestion, increase transportation choices, and free up space on the roadways.

Table 1: Manzanita Talks Participants

<table>
<thead>
<tr>
<th>Public Sector Entities</th>
<th>Private Sector Entities</th>
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<tbody>
<tr>
<td>City of Redwood City</td>
<td>Facebook</td>
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Convener: Joint Venture Silicon Valley
Stories to Learn From

**Story #1: The Tragedy of the Commons**

A 19th-century economic theory that translates to the 21st century of “Too Many Cars, Too Little Space” problem. William Foster Lloyd introduced his hypothesis about the overuse of a public space in 1833 titled, “Tragedy of the Commons.”

Lloyd described a situation where shepherders accessed a common piece of land to raise their herds. An individual herder would receive an additional benefit if he placed one more sheep on the pasture. However, if every herder added one more sheep to the land, overgrazing would occur, depleting the resource for all.

Today the commons are the highways and roadways - a shared public infrastructure. For a century, cars have been attractive because they are a convenient way to get from point A to point B, yet, as the economy and region grow, become less and less usable. Over time, our individual decisions combined with limited commute infrastructure has created overly crowded roads, to the detriment of all, and have eliminated the key quality of the automobile – convenience.

**Story #2: Urban Planning Conference of 1894 (Too Many Horses, Too Little Space)**

Motor vehicles weren’t a 19th-century problem, yet major transportation problems existed. In the latter half of the 19th century, cities were dealing with transportation issues associated with the most popular transport choice of the time, horses. By the early 1860s, New Yorkers were making more than 30 million horse trips per year. By the start of the next decade, the local economy, population, and workforce grew, and the number of horse trips tripled. In addition to horses carrying people to and through the City, horses also carried an increasing amount of freight. By 1880, 1.8 million people were living in New York City, and there were more than 150,000 horses.
Having this many horses within one city presented many challenges, from overcrowded streets to storage issues. Horses could only work in four hours shifts and needed a place to rest. However, the most critical and unsolvable problem was horse manure. Each horse produced 22 pounds of horse manure per day. Collectively, millions of pounds each day and over 100,000 tons per year. Commenters in New York predicted horse manure would reach the level of Manhattan’s third-story windows by 1930. Manure was such a problem in most major cities that it was the primary focus of the first international urban-planning conference in 1894. Attendees cut the conference short, however, as they could not agree on solutions, nor could they believe cities could function without horses.

We know now that new technologies would soon “solve” the public health crisis and quality of life issues associated with horses. By 1912, vehicles outnumbered horses. Electronic trolley lines also became a popular form of urban transportation in many US cities. In 1917 the New York City horse-drawn streetcar was no longer in service. Of course, people did not realize that manure-less technologies would create new public health and quality-of-life problems. In other words, no matter what technological solutions may be around the corner, there is no panacea. As long as people need to be transported from one place to another, there will always be challenges.
Story #3: The Columbus Day Effect

Most of us work on Columbus Day. However, a small number of people do take the day off, resulting in 3-5% reduction in traffic volume on our roadways. In 2014, the Metropolitan Transportation Commission (MTC) published a study showing the effect Columbus Day had on traffic delays on our roads. The study showed that 3% to 5% lower traffic demand on Columbus Day yields 50% to 70% less delay. In other words, small improvements to the number of vehicles on our roadways can lead to significantly improved traffic conditions. Anecdotally, it is similar during the summer months. Although not everyone takes the same week of vacation during summer (or can take a vacation at all), enough people are taking time off to notice a difference in our commute times. The following chart illustrates the differences on two Bay Area freeways.12
Alameda I-80 Eastbound

I-80 EB
Traffic Volume vs. Delay

Volume (Vehicles)
Delay (Minutes)

Vol†Typical Weekday (2013)
** Volume: I-80 EB @ Carlson Blvd (Richmond)

Delay: PM Peak (3-7PM)

Volume: AM Peak (5-10AM)

Volume: PM Peak (3-7PM)
Volume: AM Peak (5-10AM)

San Mateo US-101 Northbound

U.S. 101 NB
Traffic Volume vs. Delay

Volume (Vehicles)
Delay (Minutes)

** Volume: U.S. 101 NB at Cesar Chavez St (S.F.)

* Travel Time: From SR-92 to I-80 (Total Length = 19 Miles)
** Volume: U.S. 101 NB at Cesar Chavez St (S.F.)
Chapter 2

Problems, Causes & Symptoms (Issues)
The Problem

There are too many cars in too little space on Bay Area highways and local roads.

The Question

What is the most effective way for cities and companies to collaborate to provide Transportation Demand Management (TDM) services within our subregion?
Overarching Causes

While traffic has certainly increased over the past decade, the reasons why traffic congestion exists are decades in the making. The following list is not exhaustive, but does summarize the primary reasons why traffic congestion exists and continues to get worse.

- **Land Use Patterns:** For about the last 70 years, the region has developed in a separated manner. Specifically, where people live is not where people work. Moreover, many residential and commercial areas can only be accessed via the automobile. In the last decade, cities have started to develop new in-fill communities near existing job centers, yet the existing land-use patterns remain and continue to present a challenge. In addition, the provision of ample, free parking required by zoning codes encourages automobile use.

- **Freeway Focused Infrastructure Investment:** Since the 1950s, transportation funding has been disproportionately directed towards maintaining and expanding the region’s highway system. Much of this spending is needed to connect and maintain the isolated Bay Area regions. However, by expanding our freeway system, we further induce demand for driving, and support additional developments on the outskirts of the region. Furthermore, due to the large number of single-occupancy vehicles, there is generally a lack of freeway throughput for very high occupancy vehicles. It is important to note that over the past decade, local, state, and federal agencies have started to prioritize “complete streets” infrastructure in recognition that a freeway focus policy is not sustainable. Nonetheless, with limited funding, and local resistance to many complete streets measures, a disproportional amount of funding continues to be directed to freeways.
• **Fragmented and Underfunded Transit System:** There are over 20 Bay Area transit agencies, making it difficult to coordinate and schedule a commute. With limited transportation funds, and much of these funds going to our roadway system, transit agencies struggle financially, particularly for the costs to operate and maintain service systems.

• **Driving Culture:** Our region has become a drive-first culture due to the above-mentioned land-use patterns and transportation funding issues. While younger generations appear to be more open to non-drive-alone options, a cultural shift may be necessary to accomplish SOV reductions, and encourage the use of public transportation. In general, a traveler’s cost of driving alone does not internalize negative externalities, which further promotes and subsidizes a drive-first culture.

• **Distributed Transportation Planning:** Generally, every city, company, transportation management organization, and transit agency develops transportation policies and benefits for residents and/or employees within its borders. This makes it difficult to develop policies and programs across (public/private) sectors and city boundaries, despite the regional nature of transportation issues. Furthermore, while TDM services can be very effective, most companies do not have access to or are unaware of TDM services.
Symptoms & Sub-Problems

During the Manzanita Talks, dozens of sub-problems were discussed related to the overarching problem. Table 2 identifies these sub-problems (see Appendix A for detailed descriptions), most of which are symptoms of having too many cars in too little space.
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<tr>
<th>Relationship and Communication Issues</th>
<th>The Pace of Public Sector Decision Making (Related to Transportation Policy)</th>
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<td>Operating and Maintaining Resident-Focused Local Shuttle Programs</td>
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<td>Transit Provider Limitations</td>
<td>Caltrain Capacity</td>
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<td>Caltrain Baby Bullet Stop Limitations</td>
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<td>“Peak-Focus” Transit Schedule</td>
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<td>Transit Agency Requirements</td>
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<td>Bus Service</td>
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<td>Commuter Shuttle Service Limitations</td>
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<td>Lack of Ferry and Hovercraft Service</td>
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<td>Poor Financial Performance</td>
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<td>Human Resource Department Limitations</td>
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<td>Long-Haul Shuttle Program Management</td>
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<td>Aggregation of Demand</td>
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<td>TMA Funding</td>
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<td>Establishing or Modifying a TMA</td>
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<td>Retaining Shuttle Drivers and Bus Mechanics</td>
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<td>Bicycle, Scooter and Pedestrian Challenges</td>
<td>Lack of Bike Path Connectivity</td>
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<td>Bike Share Limitations</td>
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<td>Leadership Gap</td>
<td>Incremental Approach</td>
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<td>Currently No Comprehensive Strategy</td>
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<td>No Climate Emergency</td>
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Chapter 3
Policy Setting, City Requirements & Expectations
In addition to designing, constructing, and maintaining our local vehicle, bicycle and pedestrian infrastructure, state and local government sets transportation expectations and regulations as noted in this chapter. While each City within our subregion has different transportation policies, all have TDM related language in policy documents and/or have applied TDM requirements during the development review process. Furthermore, many of the participating cities have adopted language related to Transportation Management Associations.
State Level Requirements Bay Area Air Quality Management District: Per State Law, the Bay Area Air Quality Management District (BAAQMD) created the Bay Area Commuter Benefit Program requirements for certain Bay Area employers. The purpose of this rule is to improve air quality, reduce emissions of greenhouse gases and other air pollutants, and decrease traffic congestion in the San Francisco Bay Area by encouraging employees to commute to work by transit and other alternative commute modes. The Bay Area Commuter Benefits Program, therefore, requires all employers in the Air District’s jurisdiction with 50 or more full-time employees to offer commuter benefits to workers. This Program requires that qualified employers provide pre-tax transit benefits (for transit and vanpool), employer-paid benefits (for transit or vanpool) or employer-provided transportation, typically accomplished by vanpool or shuttle. The program guidelines also note that a TMA can provide the required benefits on behalf of an employer.

Local Ordinances and Policy Documents: As noted through this chapter, many of the participating the cities have General Plan, Specific Plan, or other policies documents that layout a TDM vision, as well as detailed specific requirements. The concept and requirements may apply citywide, or to a particular area. Also, several cities currently have TDM Ordinances that layout these requirements in greater detail. Other cities are presently drafting citywide TDM ordinances.
Conditions of Approval/EIR Mitigations Measures: Development projects are subject to numerous conditions of approval. While many of these conditions apply during the construction phase, others are valid for the life of the project. TDM conditions are commonly applied to commercial projects, and are increasingly applied to high-density residential projects. Environmental Impact Report mitigation measures frequently contain TDM requirements as well.

An important note to the TDM requirements listed in this chapter: cities are not only required to create regulations but must also track and report compliance. This ongoing role is problematic as TDM requirements apply to a higher number of projects, and City staff size remains the same. In addition, developers who construct the buildings may struggle to achieve compliance in the future. Tenants occupy the premises, but the building management has little TDM experience. For example, commercial buildings may have multiple tenants, some of which do not have transportation benefits programs. Residential tenants may live in one place but work throughout the region. Therefore, coordinating an effective residential TDM program that meets City requirements can be challenging and time-consuming over the long-term.
Town of Atherton is primarily comprised of low-density, single-family homes. TDM efforts typically aren’t focused on this type of suburban development. However, the Town of Atherton has applied TDM requirements to several private schools. For example, Sacred Heart School has a required TDM program with a goal to reduce congestion in nearby intersections, and it has a positive impact beyond those intersections.

The 2012 Use Permit for Sacred Heart School contains the following requirements:

- Expanded upon an existing voluntary TDM Program and made the program a requirement.
- Requires shuttles to Caltrain and SamTrans buses at the Menlo Park Caltrain station, staggered school start and dismissal times, reconfigured drop-off and pick-up areas, carpool, bike and walk-to-school encouragement and other similar measures.
- Requires new off-site parking, additional carpool matching, an increased education campaign about parking and commute alternatives, and additional parking enforcement.
- Requires that an independent consultant annually monitor compliance with the TDM program standards. Compliance with the rule has been certified each year since the approval of the amended Conditional Use Permit.
The City of East Palo Alto has TDM requirements outlined in the City Municipal Code (Chapter 10.32). The City initially adopted the ordinance in 1990 in conjunction with the San Mateo County Transportation Authority which created a countywide Transportation System Management (TSM) plan. As noted below, the current ordinance may soon be replaced with updated and stronger TDM requirements, which will be reviewed and considered by the City Council later this year.

The existing ordinance outlines three overall goals, which also referred to the TSM Plan:

- To reduce peak hour traffic congestion in the city, county and surrounding region by reducing the number of vehicular trips and vehicular miles traveled related to work travel;

- To reduce vehicular emissions, energy usage and ambient noise levels as a result of fewer vehicle trips, fewer vehicle miles traveled and reduced traffic congestion;

- To achieve, as an initial goal, a twenty-five (25) percent participation rate by employees who work in the county in alternatives to single-occupancy vehicle commuting during weekday peak hours. The county will periodically reevaluate this goal in conjunction with the countywide TSM program and will revise it upward when warranted by traffic conditions and demonstrated results of the TSM program.

The Ordinance sets up programs to achieve these goals, including City and employer coordination. The ordinance also allows the City to assess annual fees on all public and private employers to contribute toward the costs of the city’s TSM program.
To resolve local traffic issues, the City is considering amending this ordinance and is reviewing additional policies and programs. It is important to note that the City Council has not approved proposed policies and programs below. However, a recent staff report outlined the programs and policies below, which the City Council will review in detail in Fall 2019.

- Increasing transit and enhanced transit opportunities. For example, extending the loop on the Marguerite shuttle to East Palo Alto.
- Creating toll roads to enter and exit East Palo Alto.
- Increased investment in pedestrian and bicycle facilities.
- Signalization that could improve impact traffic flows on University Avenue. Traffic calming and physical and regulatory barriers to cut through traffic.
- Improving the jobs/housing balance in East Palo Alto by generating more commercial development so residents have more options to work in East Palo Alto. (Recently adopted General Plan projects more balanced growth.)
- Updating the Transportation Demand Management (TDM) policy for new development.

The updated TDM policy and ordinance is in the final draft stages and will be presented to Council for a detailed review and decision, along with other Mobility Study recommendations. The staff report notes that if adopted, the proposed TDM ordinance would be the most progressive in the Peninsula.
If adopted, the draft ordinance would:

- Incorporate new metrics for assessing developer and business responsibilities to decrease vehicle commute trips by setting a target Average Vehicle Occupancy (AVO) of 1.54 persons per vehicle. This standard is an equivalent of reducing commute trips from affected work sites by 40% over existing conditions.
- Focus on peak-hour Average Vehicle Occupancy
- Require large developers to include facilities that will support TDM policies
- Strengthens employer requirements
- Identify in-lieu fees for non-compliance (these must be studied with a nexus to the impacts determining costs), and minimizes staff resources to administer program

The staff report recognizes that establishing and tracking these TDM measures will take a considerable amount of time and effort. In the short term, this could be completed by staff with additional consultant assistance. However, over the mid to long term, staff suggested the City track regional TMA efforts, to provide TDM related services.

Related Resident Feedback: A recent East Palo Alto resident survey found that residents’ top three transportation priorities were: congestion pricing, increased parking and cut-through traffic enforcement, and exploring a Residential Permit Parking (RPP) program.
The City of Los Altos places TDM requirements on projects during the review process. For example, the City set TDM requirements on the Packard Foundation as part of their development approval (adopted via development agreement). Los Altos also has a detailed Neighborhood Traffic Management Plan. The City adopted the Neighborhood Traffic Management Plan to reduce speeds and cut-through traffic in residential neighborhoods, as well as improve pedestrian and bicycle safety. Traffic calming measures include:

- Chokers and bulb-outs
- Forced-turn channelization
- One way entrances and/or exits to two-way streets
- Speed humps
- Street closings (cul-de-sacs)
- Chicanes (a series of artificial curves in an otherwise straight street)
- Traffic circles/Roundabouts/Islands
The City of Menlo Parks has several policy documents that set forth TDM regulations and expectations. These documents include the Menlo Park General Plan (Circulation Element), the El Camino Real and Downtown Specific Plan. The City also adopted regulations that apply to development in the Bayfront area, including a trip cap. Finally, the City has adopted TDM guidelines that apply to all new development within the City. The Menlo Park General Plan Policies and the Citywide TDM guidelines are detailed below. The City of Menlo Park’s website has additional details regarding the Specific Plan and Bayfront regulations.

**General Plan (Circulation Element)**

The Circulation Element of the General Plan (2016) has several policies that specifically relate to TDM requirements and the establishment of a TMA as follows:

**TDM Guidelines:** The General Plan states that the City’s TDM Guidelines should be updated. The updates should require new non-residential, mixed-use, and multi-family residential development to provide facilities and programs that ensure a majority of associated travel can occur by walking, bicycling, and/or transit. Furthermore, approved developments should include vehicle trip reduction reporting goals, requirements, and monitoring and enforcement mechanisms.

**TMA:** The General Plan states that the City should participate in the formation of a TMA. The TMA will assist residents, employees, students, and other community members in identifying and taking advantage of travel options between employment centers and rail connections, downtown, and nearby cities. The General Plan also specifies that the City require new commercial and residential development to participate in the TMA. Finally, the City should establish goals for the TMA, such as those for mode share, vehicle trips, or VMT by geographic areas in the City. The General Plan encourages the City to collaborate or partner with adjacent cities’ TMAs to ensure regional consistency.
Commute.org: Currently, Menlo Park is not a member of Commute.org. However, they do have an application pending. This pending application is consistent with the General Plan policy that states that the City should consider joining the Peninsula Traffic Congestion Relief Alliance (“commute.org”) to assist local employers with increasing biking and walking, transit, carpool, and vanpool and shuttle use for their employees.

Trip Reduction Goals: The General Plan states that the City maintain an adopted vehicle trip reduction goal in the Zoning Ordinance. The purpose of this policy is to encourage transportation demand management programs and reduce vehicle traffic and update the goal with significant changes in transit service, every five years, or as needed.

TDM Guidelines

The City of Menlo Park adopted the most recent version of their TDM Guidelines in 2015 as part of a congestion management policy. The policy requires that City staff and developers meet during the application process to decide which TDM measures will reduce project impacts most effectively. Furthermore, for certain projects, an EIR process may be avoided if the TDM measures minimize project impacts to a less than significant level.

The guidelines refer to a list of recommended potential Transportation Demand Management Measures and their associated trip credit maintained by C/CAG as part of the San Mateo County Congestion Management Program. The most current C/CAG list is attached to Appendix B of this report. The City required many of these measures as part of the approval of recent Facebook developments and other office developments in the City.

The City of Menlo Park also recently released a Request for Proposal (RFP) for consultant services to provide an options analysis for establishing a Transportation Management Association (“TMA”). Menlo Park released this RFP in conjunction with the City of Foster City. The RFP states that “the goal of a TMA is to reduce congestion with transportation demand management ("TDM"). TDM includes promoting the use of non-single occupant vehicle trips, including but not limited to transit, transit benefits, shuttles, carpools, vanpools, bicycling, and incentives/rewards. TDM programs exist at many companies already in various forms. However, a TMA could expand the available programs by coordinating and leveraging partnerships between government and employers/organizations (both large and small).” The City recently selected a consultant to work on this effort, and feasibility study is expected to be completed in 2020.
The City of Mountain View has placed TDM requirements on developments for many years now and has adopted plans that contain effective TDM policy. The City also has an established TMA operating within its borders. The North Bayshore Precise Plan, which was most recently approved by the City in December 2017, provides an example of the type of requirements that cities can place on developments and employers.

The North Bayshore Precise Plan implements the City of Mountain View’s General Plan, which allows both office and residential land uses. The General Plan recognized the area as already congested, and additional development could lead to further congestion unless the City requires specific mitigation measures. The City prepared the related Shoreline Regional Community Transportation Study, which set forth the following Mode Share targets:

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<thead>
<tr>
<th>Mode</th>
<th>Existing (2013)</th>
<th>Targets</th>
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<tbody>
<tr>
<td>Single-Occupancy Vehicle</td>
<td>61%</td>
<td>45%</td>
</tr>
<tr>
<td>Rideshare Vehicle</td>
<td>6%</td>
<td>10%</td>
</tr>
<tr>
<td>Transit</td>
<td>26%</td>
<td>35%</td>
</tr>
<tr>
<td>Walking and Biking</td>
<td>7%</td>
<td>10%</td>
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The North Bayshore Precise Plan also builds upon the Community Transportation Study, and provides standards, guidelines, infrastructure improvements, and transportation demand management programs and policies to help reduce single-occupancy vehicle trips and increase the share of trips made by other transportation modes. Essential standards, improvements, and TDM policies and programs include:
**North Bayshore Trip Cap:** A district-wide trip cap was established based on the “practical vehicle capacity” at the gateway locations. Annual trip counts are required, and the City posts the results on their website.

**Street and Right-of-Way Improvements:** The City prioritized specific improvements for roads and right-of-way depending upon the primary role of the street, and the surrounding land-uses. The Precise Plan also emphasizes a complete street network and requires public access to private property (in some cases) so pedestrian and bicyclists can make the most direct connections through the North Bayshore area. The Precise Plan generally prioritizes bicycle and pedestrian improvements and connectivity.

**Transit Priority:** The Plan stresses that transit service is key to the area’s expansion. It outlines the physical improvements which would accommodate increased transit service. It also recognizes that increased VTA, Caltrain, and private shuttle service is necessary to accommodate growth. Most importantly, the Precise Plan states that it is essential that the “last mile” connection between Mountain View Transit Center and North Bayshore be improved. The Precise suggests that the City work with the Mountain View TMA and regional transit providers to strengthen these connections. 

The City is in the process of acquiring land for and designing a reversible bus lane on Shoreline Boulevard. The reversible bus lane will allow buses and shuttles to service the area more frequently during both the AM and PM peak commute times while allowing for the right-of-way necessary for bicycle improvements.

**Parking:** The Precise Plan encourages shared, unbundled, and managed parking. It recognizes that the TMA can assist with parking management programs. The plan sets parking maximums because they are one of “the best insurance policies against excessive traffic.”

**Balanced Land Uses:** By allowing both residential and commercial growth (retail and office) in this area, there will be a natural “internalization” of travel habits, leading to fewer automobile trips. Internalization of trips means fewer people will need to commute to the area and travel to the area because they will already be there. Reductions include peak commute trips (home to work) and mid-day trips (work to lunch, retail, etc.).

**Carshare, Vanpools, and Carpools:** The Precise Plan details car share standards, and requires priority parking for vanpools and carpools.
TDM: To achieve the aggressive, 45% SOV goal, the plan lays a TDM framework at the employer/property owner and district levels. TDM goals include:

- Expanding TDM requirement to existing buildings when new development is approved.
- Establish a district-wide vehicle trip cap based on the capacity of the three entry points to North Bayshore during the a.m. peak period.
- Utilize the Transportation Management Association to coordinate services among employers and to offer services to those employees who do not have employer-sponsored TDM programs and services.
- Monitor ongoing efforts and results at the district-wide level. Review information on transportation choices, traffic congestion, parking availability, transit ridership, and bicycle access.
- Requiring the submittal of Project Level TDM Plans.
- Congestion Pricing: Though not required initially, the City reserved the right to implement congestion pricing when companies do not meet the trip caps.
- TDM plan baseline requirements. The TDM plan shall include the following measures and describe the provision of these services.
- The TMA could offer some of these programs:
  - Priority parking for carpools and vanpool
  - On-site employee transportation coordinator to serve as a liaison between the employer/property owner and the TMA and to oversee the TDM program
  - Bicycle parking and shower and changing facilities
  - Shared bicycles, if a bikeshare service is not available in North Bayshore
  - Telecommute/flexible work schedule program
  - Guaranteed ride home program
  - Membership in the TMA
  - Carpool matching services
  - Shuttle services to connect employees to local transit services
  - Marketing of TDM programs to employees

TMA: The Plan notes the importance of the Mountain View TMA in achieving mode-share goals. Most importantly, it requires the TMA to implement the goals the Precise Plan and mandates that new residential, office/research and other development projects join the TMA in perpetuity.
Policy Document (Comprehensive Plan (2017), Transportation Element)

The Palo Alto Comprehensive Plan (Comp Plan) creates the “policy framework to reduce reliance on single-occupant vehicles, address congestion and reduce through traffic and non-resident parking in Palo Alto neighborhoods, leading to an integrated transportation system that serves local, regional and intercity travel”. The Comp Plan further notes that “TDM is a critical component of a comprehensive strategy to reduce traffic congestion, single-occupancy vehicles, and parking demand.”

Tools and Requirements with the Transportation Element

The Transportation Element includes several policies that specifically speak to reducing the reliance on SOV, and specifies SOV targets.

Relevant policies include (from Goal T-1 in Transportation Element):

- **Collaboration**: Collaborate with Palo Alto employers and business owners to develop, implement, and expand comprehensive programs like the TMA to reduce SOV commute trips, including through incentives.

- **Education**: Create a long-term education program to change the travel habits of residents, visitors, shoppers, and workers by informing them about transportation alternatives, incentives, and impacts. Work with the PAUSD and with other public and private interests, such as the Chamber of Commerce and Commuter Wallet partners, to develop and implement this program.

- **Advocacy**: Advocate for improved connectivity to transit to serve workers who live in the South Bay and work in Palo Alto.
• **TDM Ordinance:** Formalizing the TDM requirements by ordinance and require new developments above a certain size threshold to prepare and implement a TDM Plan to meet specific performance standards. Require regular monitoring/reporting and provide for enforcement with meaningful penalties for non-compliance. The ordinance will include:

- Establishing a list of effective TDM measures that include transit promotion, prepaid transit passes, commuter checks, car sharing, carpooling, parking cash-out, bicycle lockers, and showers, shuttles to Caltrain, requiring TMA membership and education and outreach to support the use of these modes.
- Allow property owners to achieve reductions by contributing to citywide or employment district shuttles or other proven transportation programs that are not directly under the property owner’s control.
- Provide a system for incorporating alternative measures as new ideas for TDM are developed.
- Establish a mechanism to monitor the success of TDM measures and track the cumulative reduction of peak-hour motor vehicle trips. TDM measures should at a minimum achieve the following reduction in peak hour motor vehicle trips, with a focus on single-occupant vehicle trips. Reductions should be based on the rates included in the Institute of Transportation Engineers’ Trip Generation Manual for the appropriate land use category and size:
  - 45 percent reduction in the Downtown district
  - 35 percent reduction in the California Avenue area
  - 30 percent reduction in the Stanford Research Park
  - 30 percent reduction in the El Camino Real Corridor
  - 20 percent reduction in other areas of the city
- Require new development projects to pay a Transportation Impact Fee for all those peak-hour motor vehicle trips that cannot be reduced via TDM measures. Fees collected would be used for capital improvements aimed at reducing vehicle trips and traffic congestion.
- Ensure a stable, sustained funding source to support implementation of TDM measures.
- Evaluate the performance of pilot programs implemented Program T1.2.4 by the Palo Alto Transportation Management Association and pursue expansion from Downtown to California Avenue and other areas of the City when appropriate.

• **TMA Expansion:** Pursue full participation of Palo Alto employers in the TMA.

**Related Notes**

City staff notes that the City is currently in the process of creating a TDM Ordinance to implement the Comp Plan policies. That said, the City has historically placed TDM requirements on new developments.
Policy Document: Redwood City Moves (A Citywide Transportation Plan)

Adopted in 2018, this ambitious plan “serves as a guiding document for the City as it seeks to improve transportation in Redwood City.” It is a planning and policy document that includes transportation infrastructure prioritization, a Vision Zero policy statement, and several other related objectives and goals. It is also a detailed policy document for the TDM program and the framework for the establishment of TMAs.

The following are relevant objectives and guiding policies in the Citywide Transportation Plan (CTP):

- The collective goal is to meet the City’s goal of reducing drive-alone trips by 50% by 2040.
- A 1% decrease each year in the drive-alone mode share throughout the City would result in approximately a 50% mode share by 2040.
- However, the CTP recognizes this will take a more aggressive mode share standard for new development is required. The following table details the targets:

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<tr>
<th>Land-Use</th>
<th>Existing SOV Mode Share</th>
<th>New Project Target</th>
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<tbody>
<tr>
<td>Downtown Apartment</td>
<td>50%</td>
<td>33%</td>
</tr>
<tr>
<td>Suburban Apartment</td>
<td>66%</td>
<td>44%</td>
</tr>
<tr>
<td>Downtown Office</td>
<td>49%</td>
<td>33%</td>
</tr>
<tr>
<td>Suburban Office</td>
<td>78%</td>
<td>52%</td>
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The overarching TDM goals are as follows:

- Partner with private developers and communities to reduce the drive-alone mode share.
- Prioritize non-driving modes at new developments.
- Increase the accessibility and convenience of alternatives to driving-alone options for RWC residents, employees, and visitors.
- Increase awareness of all transportation choices and costs.
- Provide high-quality and financially sustainable TDM services to RWC residents, employees, visitors, and businesses.
- Monitor and report on progress in support of the Citywide Transportation Plan.
- Encourage use of innovative programs and new technologies to reduce driving-alone.

The CTP recommends a number TDM measures that could be applied to projects or citywide programs:

**Required TDM Measures for all sites:**

- Preparation of Site TDM Plan
- Provide on-site information
- Offer employees pre-tax deduction
- Annual commute survey
- Participation in area- and city-wide monitoring and promotional activities
- Bike racks for customers or employees
- Indoor bike parking for residents or employees
- Well-lit pedestrian paths to transit

**Additional Requirements for Larger Sites:**

- New/improved bus service or shuttle open to the public (can be met through participation in TMA-operated service)
- Transit passes for TMA to distribute in TMA area
- Land/facilities for transit stops, hubs, program administration, bike share, etc.
- Ongoing real time displays in shared or public spaces
- On-site amenities that reduce trips
- Shared parking among multiple uses (if site is multi-use)
- Local hiring, housing subsidies or other incentives
Information and Marketing Measures:
• New employee/resident orientation
• New tenant information
• Designated on-site boards or kiosks with TDM and transit information
• Real time transportation information
• Info on website prioritizing directions via alt modes
• Annual promotion
• Quarterly promotion
• Signage for TDM features

Physical Facilities Measures:
• Preferred parking for carpools
• Car-share spaces
• Showers, lockers for cyclists
• Drop off area (TNC, pools, shuttles)
• EV plug-in stations
• Reserve parking for occasional drivers (instead of permit holders)

Programs and Policies:
• Flex time/telecommuting
• Transit subsidies
• Transit passes for all employees/households
• Car/bikeshare memberships or subsidies
• Unbundled parking
• Parking cashout
• Rideshare/vanpool ride matching service

The CTP also sets up a detailed plan for policy and enforcement and notes that the implementation of the TDM Program may involve setting up one or more TMAs. It states that the “TMA can be the primary liaison for initial review of Site TDM Plans (before submittal to City), confirm pre-Certificate of Occupancy conditions have been met, and conduct annual surveys. If no TMA is established, the City must perform these functions (or hire a consultant or other organization to do so). As such, it is strongly recommended that the City encourage or require the early formation of the TMA to establish monitoring systems. If penalties are to be imposed, the City must be the enforcing agency.”
Sunnyvale has numerous TDM related policies in the General Plan and specific plan documents. The City also applies TDM requirements to new development projects. Additionally, the City of Sunnyvale has an established TDM service provider (Moffett Park Business Association) and a requirement that a new TMA be established in the Peery Park Specific Plan area.
Sunnyvale General Plan (Land Use and Transportation Element, Updated 2017)

The Land Use and Transportation Element of the Sunnyvale General Plan specifies goals and policies that relate to TDM policy and transportation coordination within the City and throughout the region.

Key goals or policies within the General Plan include:

**TDM Policy:** The City recognizes that it has partial influence over transportation choices. With that in mind, the General Plan notes that the City will need to utilize TDM, including parking management, as a tool to reduce automobile trips in peak hours. The General Plan states that reductions in peak-hour and total daily single-occupant vehicle trips can be accomplished by expanding the use of TDM programs in the City. Related steps include creating mixed-use zones, creating car-free zones, and designing roadways in a manner that emphasize non-auto-motive modes.

**TDM Requirements and Tracking:** The General Plan requires that large developers be mandated to develop and maintain TDM programs to reduce employee vehicle trips. The General Plan also states that the City should work with large employers to develop appropriate target trip reduction goals by company size, create a system to track results, and establish penalties for noncompliance.

**Regional Perspective:** The General Plan recognizes that maintaining a regional perspective and participating in and leading regional land-use and transportation planning efforts will help protect the quality of life enjoyed by its residents. Related policies emphasize that the City should contribute to regional efforts to respond to transportation problems caused by economic growth to improve the quality of life and create a better environment for business to flourish.

**Intergovernmental Coordination:** The General Plan encourages active monitoring and participation in intergovernmental activities with federal, state, and regional agencies related to regional and sub-regional land use and transportation planning. Furthermore, the General Plan states that the City should participate in transportation demand management programs and other ride-sharing programs countywide.
Peery Park Specific Plan

The City of Sunnyvale adopted the Peery Park Specific Plan in 2016. This 450-acre area is in North Sunnyvale, close to Downtown Sunnyvale and the Downtown Sunnyvale Caltrain Station. The Moffett Park and VTA Light Rail Green Line stations are also nearby. The document creates a vision and regulatory framework for future development. Future developments in this area are subject to the TDM requirements detailed in the Plan. The Plan also requires the establishment of the Peery Park TMA. The Peery Park Specific Plan is another excellent example of a City setting aggressive, but realistic TDM standards for future developments and companies.

Peery Park TDM Requirements

Future developments will be subject to the following TDM requirements:

• All projects shall prepare a TDM plan, which the City will review. TDM plans must also be coordinated with the Peery Park TMA.

• The TDM trip reduction requirements range from 20% to 35% depending on the size of the development. More significant developments are subject to more aggressive goals.

• The Specific Plan recommends the following TDM measures:
  
  • **Alternative Transportation Options:** Private shuttle bus, carpool, and vanpool parking, loading zones, administration, & assistance, Bikeshare/Lease program, Guaranteed ride home program, and Carshare spaces.
  
  • **Programs & Resources:** Information, education, & promotion (kiosks, website, smartphone apps), alternative transportation options, Transit information, and flexible work schedules.
  
  • **Financial Incentives:** Transit pass subsidies and/or parking cash-out (i.e., a stipend for choosing alternatives to driving), Unbundled parking (separation of parking cost from rent cost), Reduced Parking Requirements, & encourage shared parking, and mobile amenities (food trucks, dry cleaning, mail service, personal care, etc.)
As noted, the Plan requires that property owners fund and participate in a TMA. It lists numerous TMA responsibilities, including TDM monitoring and reporting, the provision of various TDM services, and creation and maintenance of transportation informational website.

Finally, the Plan takes a proactive approach to increase transit service to the area. It recognizes that while transit agencies decide where to provide transit service, the Specific Plan encourages transit agencies to increase service by establishing a land use/development pattern that supports existing and future transit services. The Plan identifies goals and strategies to promote transit use, thereby increasing the possibility the transit providers will improve service to Peery Park.
Chapter 4

Local TMAs & Private Sector TDM Efforts
While cities construct local transportation infrastructure and set policy expectations as outlined in Chapter 3, local TMAs, TDM service providers and companies have been providing an increasing amount of transportation programming, including TDM services. The following section provides a summary of several TMAs and TDM service providers within the region, including organizational objectives and current program focus. The chapter also outlines what local companies are doing to support TDM efforts.
Existing TMAs Within Our Subregion

**Commute.org (San Mateo County) (Public Entity)**

Commute.org is San Mateo County’s Transportation Demand Management (TDM) Agency, which functions as a Transportation Management Organization (TMO). Commute.org is a joint powers agency, managed by a Board of Directors that includes elected officials from each of the 17 cities or towns that are members of Commute.org as well as one representative from the San Mateo County Board of Supervisors. The Commute.org organization has been in its current form since 2000.

Commute.org is funded through a variety of local government sources (80%) and contributions from public and private employers supporting the shuttle services program (20%). The San Mateo County Transportation Authority (SMCTA), the City/County Association of Governments (C/CAG) of San Mateo County, and the Bay Area Air Quality Management District (BAAQMD) provide most of the funding for all non-shuttle programs.
Commute.org’s strategic plan focuses on five program areas:

Program Area 1: Working with employers to develop and manage innovative partnerships to reduce peak period commute trip. The Commute.org work plan notes that there are over 4,000 private employers in San Mateo County. Commute.org works with employers of all sizes and types, including private companies, non-profits, schools, and government agencies. The Employer Programs team identifies willing employers and provides no-cost consulting and support services for the employers’ transportation coordinators, HR departments, and facilities managers. Commute.org’s TDM experts provide employers with the information needed to develop, implement, and sustain employee participation in commute alternative programs. The team also works with San Mateo County employers to ensure compliance with local, countywide and regional TDM measures including the Bay Area Commuter Benefits Program.

The following chart from their work plan shows how effective coordinated TDM programs can be:

**Mode Splits for employers who provide assistance to their employees verses those who do not**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Employer doesn’t offer assistance</th>
<th>Employer offers assistance</th>
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<tbody>
<tr>
<td>Drive Alone</td>
<td>89%</td>
<td>68%</td>
</tr>
<tr>
<td>Carpool or Vanpool</td>
<td>8%</td>
<td>6%</td>
</tr>
<tr>
<td>Transit</td>
<td>20%</td>
<td>68%</td>
</tr>
<tr>
<td>Other</td>
<td>4%</td>
<td>2%</td>
</tr>
</tbody>
</table>

0% 25% 50% 75%
Program Area 2: Working with employers, commuters and partners to provide first and last mile shuttles services during peak commute hours. The Commute.org shuttle program operates as a mini-transit agency that provides first/last mile transportation services during peak commute hours linking commuters and residents to transit stations throughout the county. The Commute.org shuttle program is part of a larger, county-wide shuttle system. The vast majority of Commute.org shuttle passengers are employees who use the service between BART or Caltrain stations and their places of work. Additionally, the shuttles provide “reverse commute” service to residents that live near shuttle routes.

Program Area 3: Working with commuters to explore and utilize alternative transportation. Educating commuters about alternative transportation options and then inspiring and incentivizing them to use them is the objective of this program area. The Commute.org and my.Commute.org websites are the primary vehicles used to disseminate the information and promote/manage the incentives. This program area relies heavily on the use of advertising (online, video, and display), challenges, and prize-based campaigns to attract and retain the target audience.

Program Area 4: Working with public and private partners to collaboratively develop new resources and tools to expand transportation alternatives. This program area focuses on the work that Commute.org does with public and private partners to collaboratively develop new resources and tools to expand transportation alternatives. Efforts in this area include funding and resource development, development of community-based services and community facilitation of transportation alternatives.

Program Area 5: Strengthening the organizational capacity of the agency to achieve its goals. The final program area relates to strengthening the organizational capacity of Commute.org to achieve its goals and prioritizing its program efforts. This involves review of finance and budget, governance, administration and business practices, and communication to employers, riders and public and private partners.
Commute.org’s TDM programming in San Mateo County includes:

- **Guaranteed Ride Home (GRH).** Program is available to anyone who works or attends college in San Mateo County and is not covered by employers. When a commuter uses a qualifying alternative commute mode and experiences an emergency while at work or college, they can use any form of transportation to get home and be reimbursed up to $60 per trip up to 4 times a year.

- **STAR (Support, Track and Reward) Platform.** STAR is Commute.org’s web-based commuter management platform powered by RideAmigos. STAR programs include incentives, rewards, trip planning, app-based trip logging, and mode-specific challenges. The STAR platform also allows San Mateo County employers to operate employer-specific programs under the STAR platform umbrella. STAR currently has more than 16,000 active users.

- **Vanpool and Carpool Incentives and Ridematching.** A variety of incentives and rewards are available to new carpool and/or vanpool participants. Ridematching tools are also available via the STAR platform. Carpoolers can have their Scoop and Waze Carpool trips automatically recorded in the STAR platform to earn eligible rewards and incentives.

- **Try Transit Program.** Commuters who want to “try transit” can receive free tickets from transit agencies that serve San Mateo County, including Caltrain, SamTrans, and San Francisco Bay Ferry.

- **Annual Commuter Challenge.** Participants in the annual challenge log their non-SOV commute trips to become eligible for prizes. A total of 2,735 commuters participated in the 2019 challenge logging over 100,000 trips.

- **Bicycling Programs.** Commute.org is the coordinating agency for Bike to Work Day in San Mateo County. The agency also provides no-cost bicycle education and safety training courses at employer sites.

- **Shuttle Program.** Commute.org manages 20 shuttle routes in San Mateo County with annual ridership of 600,000 passengers. The public/private funding structure includes more than 60 private-sector partners (employers, property managers, developers). The Commute.org shuttle program includes real-time GPS tracking, GTFS data feeds, and text-based alerts.

**Final Note:** Commute.org provides TDM services across a large geographic footprint quite effectively. This model of providing TDM services provides tremendous value to its members and San Mateo County population. It currently serves only three of the cities participating in the Manzanita Talks, however, and doesn’t have the capacity to expand to all the participating cities. Furthermore, it is a public entity, and although it provides services to the private sector, it doesn’t include private sector members on its board.

The information above was provided by the commute.org website, Commute.org’s annual workplan, and several conversations with Executive Director, John Ford.
**Mountain View TMA (501c4)**

The Mountain View Transportation Management Association (MTMA) is a nonprofit organization comprised of Mountain View businesses and landowners. The MTMA was established in 2013 to reduce traffic in Mountain View for the benefit of the entire community and is a City-wide TMA. It is a membership organization governed by a Board of Directors and supported by a team of consulting staff charged with managing the organization, planning the services of the MTMA and operating the MVgo shuttle program. Contributions from its members primarily fund the services of the MTMA, though the organization does receive grant contributions from the Bay Area Air Quality Management District (BAAQMD) for partial funding of the MVgo shuttle program.

<table>
<thead>
<tr>
<th>MTMA Board Members</th>
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<tbody>
<tr>
<td>Samsung Research America</td>
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<tr>
<td>Google</td>
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<tr>
<td>Intuit</td>
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<td>LinkedIn</td>
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<td>Microsoft</td>
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<td>Rockwood Capital</td>
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The MTMA operates a successful last-mile shuttle service (MVGo) that operates during the commute period. MVGo has 3 primary routes: West Bayshore, East Bayshore and East Whisman. The latter has a different AM and PM route. The MVgo shuttle is a fare-free service open to the public. In June 2019, the routes had a combined monthly ridership of 9,128, or 456 daily riders. Real-time shuttle information for MVGo can be found on the MVgo website and is available on the RIDEMVGO App.

The MVGo shuttles routes connect Mountain View Transit Center with the three employment areas as depicted on the following map.
The Mountain View TMA also provides the following services:

- **Waze Carpool Partnership**: The MTMA partnered with Waze Carpool to kick-off a six-month pilot program, which offers commuters working in and commuting to Mountain View a discounted, flat rate of $2 per carpool ride, as well as an initial $20 credit for new app users. Carpool drivers can also earn up to $25 per trip. The pilot period ends in December 2019.

- **Mid-day Mobility Program**: The MTMA also recently extended the MVgo Mid-day Mobility Program through the end of the year. This program is a partnership with Lyft and Uber to provide a mid-day transportation solution for the Mountain View Community. The pilot program offers a $5 discount to riders on up to 10 shared trips that either begin or end in Mountain View. The purpose of the program is to provide transit commuters with a way to get around during the mid-day in an effort to incentivize commuters to try public transit.

The MTMA membership continues to grow as new development is approved in Mountain View. While it began serving commercial developments, it now serves a limited number of residential developments as well. The services of the MTMA will also expand as the organization implements new TDM strategies to support their members in achieving trip reduction goals.
Palo Alto TMA (501c3)

The Palo Alto TMA website states that “Palo Alto TMA reduces Single Occupancy Vehicle (SOV) trips, traffic congestion and demand for parking by delivering targeted transportation solutions to the Downtown area’s diverse range of employers, employees, visitors, and residents. The TMA also serves as a one-stop transportation information resource for the broader community; it provides a forum for community dialogue and is an active voice in local and regional transportation issues. While the primary focus of the TMA is the Downtown population whose travel choices have the highest impacts, its programs and services may extend beyond these constituents.”

The Palo Alto TMA was established in January 2016. It began operating as a Silicon Valley Community Foundation program until it received its independent 501c3 status in 2018. The Palo Alto TMA has received most of its funding to date from the City of Palo Alto, though it has also received grant and philanthropic funding. Certain members also pay membership fees.

It currently provides three programs:

- **Transit passes:** The Palo Alto TMA buys and manages monthly transit passes for more than 240 low-income commuters who work in Downtown Palo Alto. This program is being extended to California Avenue as well. Key figures from the Transit Pass program in 2018. To be eligible for the free transit pass employees must work in Downtown Palo Alto, earn less than 70K per year, currently drive-alone to work and commute to commuting by transit at least 3x per week. Over 240 employees from 66 business participated in the program in December 2018.

- **After-hours Lyft:** The TMA provides an after-hours Lyft subsidy for low-income commuters before 6 am and after 8 pm.

- **Scoop/Waze carpooling:** The PATMA provides downtown Palo Alto commuters with subsidized Scoop, and Waze Carpool rides without income restrictions.

The TMA also provides “high-touch” outreach, going door to door to 300 businesses in Downtown Palo Alto. The TMA report characterizes this as “retail TDM.” It is equity-focused, which is challenging to scale.
The PATMA is considering the following programs in 2019:

- Providing services to medium to large employers, potentially charging a fee for TDM services.
- Pursuing an e-bike loan program.
- Considering a “Bike Love” program which promotes healthy commuting for staff.
- Considering other pilot ideas such as van share and vanpool.
- Micro-transit service.
- E-scooter loan-to-own program.
- Leveraging programs and projects such as the Dumbarton Corridor Improvements, Palo Alto Transit Vision Plan Local Shuttle Enhancements, “zero-parking” programs.
- Increasing Accuracy of Downtown Survey.
- Increasing Revenue and Decreasing Costs.

The information above was collected from the PATMA website, PATMA annual report, City of Palo Alto staff report, and a conversation with the PATMA Executive Director.
Moffett Park Business Group (Sunnyvale) 501(c)(6)

The Moffett Park Business Group website states: “The Moffett Park Business Group (MPBG) is a membership-driven organization, committed to supporting the social, environmental, and economic health of our community through mutual cooperation and advocacy. We address common business concerns within the Moffett Park area, with a focus on development, sustainability, community engagement, and improved mobility.” While the MPBG is not a traditional TMA, the “improved mobility” commitment focuses on coordinating TDM related services to their members.

MPBG membership is voluntary, and is comprised of businesses in the area. Currently, the business members include:

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<tr>
<th>Moffett Park Business Members</th>
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<tr>
<td>Amazon</td>
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<tr>
<td>Baidu USA</td>
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<tr>
<td>City of Sunnyvale</td>
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<td>Detati</td>
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<tr>
<td>Google</td>
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<tr>
<td>Foothill College</td>
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<tr>
<td>Infineon</td>
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<tr>
<td>Jay Paul Company</td>
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<td>JSR Micro, Inc.</td>
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<tr>
<td>Juniper Networks</td>
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<tr>
<td>Lockheed Martin</td>
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<td>Microsoft</td>
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<td>NetApp</td>
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Moffett Park area commercial development, and the companies that operate within approved buildings, are subject to the City of Sunnyvale’s Moffett Park Specific Plan (adopted 2004). The Specific Plan has a number of TDM requirements, including the submittal of specific trip reduction programs, TDM plans, annual TDM audits, and the designation of a TDM coordinator. The Moffett Park Business Group is the TDM coordinator for many of its business members, as allowed under the Specific Plan that states:

“*The employer shall have the option to designate a TDM coordinator to administer the TDM program or participated in Transportation Management Association such as the Moffett Park Business and Transportation Management Association. The TDM coordinator shall manage all elements of the employer’s TDM program and serve as the principal contact between the employer and the City of Sunnyvale.*"
MPBG provides the following TDM services:

**Carpooling and Vanpooling:** The MPBG partners with Waze Carpool to provide an affordable option to commute to and from the Moffett Park. For $2 commuters can get a ride from anywhere in the Bay Area. The MPBG provides incentives to start vanpools for employees of member companies.

**Commute Resource Services:** The MPBG provides commute resource services for transportation coordinators of member companies. This includes sourcing and educating coordinators on different transportation options to get to and from Moffett Park area, as well as related programs and incentives. The MPBG also maintains a website that provides a list of those options, programs and incentives.

**Bicycle Programming:** The Moffett Park Business Groups assists their members with promoting bicycle commuter programs within their companies. In addition, the Business Group actively participates and promotes events like Bike to Work Day and commuter bike challenges.

**Advocate for Better Infrastructure:** The Moffett Park Business Group advocates for better transportation infrastructure on behalf of its members. For example, new bikes path to and through the Moffett Park area, or more frequent light rail service to service employees in the area.

**Annual Survey and Reporting:** As noted above, the Moffett Park Specific Plan contains a number of ongoing trip reduction and reporting requirements. In accordance with these requirements, the Moffett Park Business Group conducts an annual commuter survey for its members, and acts as the primary liaison to the City for reporting requirements.

**Shuttle Services:** Although the Moffett Park Business Group does not provide shuttle services, companies within the Moffett Park area provided first and last mile shuttles, as well as long-haul shuttles. These shuttles help companies meet the trip reduction requirements of the Moffett Park Specific Plan.
Stanford Research Park Transportation: SRPGO

The Stanford Research Park TMA, known as SRPGO, was established and began providing TDM services in 2015. The TMA offers transportation services to 140 companies and 29,000 commuters in Palo Alto. SRPGO is an “informal” TMA, in that they do not have bylaws, a board of directors, or membership fees. However, TMA members meet monthly to share information and learn about new programs and promotions. Stanford University provides a majority of the funding, while larger companies contribute to cover their share of various services.

The graphic below shows the major Stanford Research Park companies:
The Stanford Research Park TMA provides the following services:

- **Last Miles Shuttles:** The Stanford Marguerite Shuttle lines are free and open to the public. Serving Stanford Research Park, the shuttles make frequent runs between the downtown Palo Alto Caltrain station and SRP during peak commute hours. A different shuttle line provides a connection to the Stanford Campus. Additionally, SRPGO manages the free public shuttles which meet trains at the California Avenue Caltrain station. Finally, a midday shuttle provides service to lunchtime destinations along California Avenue.

- **Long Distance Commuter Buses:** The TMA provides long-distance commuter buses to San Jose and San Francisco neighborhoods without reasonable public transportation. Stanford University and major Research Park companies fund these shuttles; however, they are open to all Research Park employees.

- **Bus Subsidy:** A large percentage of Stanford Research Park employees are eligible for a free or discounted VTA Smart Pass. Companies that do not participate in this Smart Pass program typically offer employees a direct transit subsidy.

- **Carpooling:** Beginning in April 2016, SRPGO has provided carpooling services via the Scoop. They currently have 8,000 registered participants and provide ongoing subsidies.

- **Vanpool:** There are currently 16 vanpools that travel to and from Stanford Research Park, and that number is growing. SRPGO subsidizes these vanpools, and charges participants a flat $100 monthly fare.

- **Guaranteed Ride Program:** Research Park employees are eligible for a free ride home in case of a personal emergency or other unexpected circumstance that disrupts their commute trip. Employees may choose taxi, Uber, or Lyft, and the TMA will reimburse the employee for the ride.

- **Trip Planning:** Research Park employees can plan transit trips at SRPGO.com, which utilizes the Ride Amigos platform. Employees can also utilize the City Motion Mobility App for "real time" transit information.

- **Zipcars:** Zipcars are available throughout Stanford Research Park. Stanford Research Park commuters receive a free Zipcar membership registration, a $25 use credit, and discounted hourly rates.

- **Commuter Points Rewards Program:** Employees who walk, bike, carpool, vanpool, or take transit to work are encouraged to log their trips at SRPGO.com to earn points. Employees may redeem points for gift cards and other commuter related benefits.

- **Education and Marketing:** To encourage the use of TDM services, the TMA distributes monthly newsletter targeted towards both employers and employees.

- **Additional Company Led Transportation Programs:** Many companies located within the Research Park also fund in-house transportation programs, including on-going transit subsidies and additional last-mile shuttle and long distance commuter buses.
Potential TMAs

**Peery Park (Sunnyvale):** As noted earlier in the report, the City of Sunnyvale adopted the Peery Park Specific Plan in 2017. This Specific Plan requires the establishment of a TMA and compels property owners (and tenants by extension) to join the TMA. The TMA is currently in the process of being established.

**Redwood City:** The City of Redwood City adopted a Citywide Transportation Plan in 2018, which states “implementation of the TDM Program may involve setting up one or more Transportation Management Associations (TMAs).” It further notes that “areas recommended to have Area TDM Plans are those that have high growth potential or within which sites have similar needs and would benefit from coordination.”

Areas that should be subject to TDM plans (which a TMA could coordinate) include Seaport, Redwood Shores, Downtown, El Camino Real Corridor, and Broadway/Veterans Boulevard Corridor. The Citywide Transportation Plan notes that a regional TMA could provide the TDM services for these areas.

**Menlo Park:** The City of Menlo Park is currently exploring options for a TMA within its borders. Facebook, the City’s largest employer, contributed 100K, and the City recently hired a transportation consultant to study the following options: Large Business TMA, Large and Small Business TMA, Citywide TMA, and an Alliance of Menlo Park TMA(s) with Mid-Peninsula TMAs. According to the City staff report, it is expected to take about 18 months to complete the exploratory study, after which the TMA formation could begin.

**East Palo Alto:** The City of Palo Alto does not currently have a TMA. However, the City recognizes that a TMA may be necessary to track and report out on future TDM requirements. A city staff report states there are regional TMA efforts that the City should track to potentially administer the TDM program. The report recommends that the City should “explore potential short-term arrangements to administer and manage the City’s TDM program until a long-term subregional TMA or other process is confirmed.”
While larger employers have historically provided transportation benefits to their employees, private sector transportation benefit programs have expanded significantly over the past decade. This is partially due to policy setting at the local and state level, but also a necessity for companies to recruit and retain employees.

As part of the Manzanita Talks, participating employers completing a survey detailing their transportation related activity programs. Here are the key takeaways from the survey as they relate to transportation programs and benefits provided by the private sector.
1. Five of eight participating companies are active in a Bay Area TMA. TMA activities include:
   - Last-leg shuttles from transit centers (Caltrain and VTA connections)
   - Service worker transit subsidies
   - Carpool subsidies (Scoop, Waze)
   - Commute.org shuttles

2. All eight companies provide pre-tax commuter benefits programs

3. Seven of the eight companies run shuttles for their employees. The survey results provided additional information about the shuttle programs:
   - Between the seven companies, there is a combined fleet of 1,600 shuttles
   - Shuttle programs include both long-haul and last-mile routes service Caltrain, Ace and Amtrak
   - Shuttles service all nine Bay Area counties
   - One company offers contractors access to long-haul buses for $3 per trip
   - Some companies also offer ferry services serving Berkeley, Richmond, Benicia, Tiburon
   - Shuttles are often shared, sometimes by more than five companies at a time
   - One company uses Tripshot as rider-facing app so that riders have real-time arrival/departure information
   - One company offers long-haul shuttle rides to the public for a free

4. Seven of eight companies offer a transit subsidy or reimburse for transit expenses for employees. Additional information was provided as follows:
   - One company provides a range of subsidy: $125 per month to $260 per month
   - One company reimburses 100 percent of all public transit expenses for full-time employees. About 2,300 employees are receiving reimbursement.
   - One company only offers a subsidy for certain offices

5. Five of eight companies offer Caltrain GoPasses to employees:
   - One company reimburses 100 percent of public transit expenses for full-time employees. 421 employees in that company used Caltrain in 2018
   - Of the six companies offering GoPasses or reimbursements for GoPasses, the aggregated total is 7,186 Caltrain riders (11 percent of Caltrain’s daily riders)

6. Six of the eight companies offer free or guaranteed rides home:
   - One company offers five rides per calendar year
   - One company is flexible with permissive expense policy on late-night commutes
   - One company has a public program made available in a city
   - Some companies are using Lyft, while others are working with Lyft to develop a program
7 Seven of eight companies subsidize vanpools:
   • Over 322 vans aggregated across all respondents
   • One company subsidizes $130
   • One company covers the entire cost including fuel and toll
   • One company requires riders to pay fuel, toll, wifi
   • In one company case, this is the only subsidy available to workers coming from outside the Bay Area

8 Five of the eight companies have carshare available to their employees during the workday for errands.

9 Four of the eight companies have a bike-lease program. Additional survey information is as follows:
   • Some companies provide bikes and e-bikes for commute purposes
   • Some companies provide bikes on their campus, rent e-bikes, and make bikes available for sale at cost
   • One company offers a free commuter bike lease to those committed to biking one day a week (either from home or first mile/last mile)
   • One company has a program launching: 10 bikes, 2 of which are e-bikes.
   • Employees can rent for one week at a time. The same company facilitates discount bike purchases

10 Five of the eight companies have corporate campus have a bike share program.
   • Aggregated, there are 2,955 bikes in use across five corporate campuses
   • One campus used to offer Lime bikes, but currently offers none

11 Six of eight companies offer one-on-one commute counseling. Other comments include:
   • One company said it is very challenging if the employee isn’t right on the transit line
   • One company said it is hard to scale
   • One company said it is generally handled over email
   • Typical length of a counseling session: 10 minutes (one company), 20 minutes (two companies), 1 hour (two companies)

12 Companies indicated the following programs are the most effective:
   • 6 companies indicated shuttles
   • One company: pre-tax transit subsidy, long-haul shuttles, and van pools
   • One company: Shuttles, commute counseling
   • One company: “It depends.”
   • One company: carpooling, shuttles
Chapter 5

Case Studies: TMAs From Other Regions
For over thirty years TMAs have operated within dense urban cores, suburban job centers, highway corridors, and residential neighborhoods to alleviate traffic congestion by providing transportation options to commuters, residents and employers. Typically developed as partnerships between the public and private sectors, these organizations solve shared transportation problems by pooling grant-based, employer member and increasingly, federal dollars to design and implement key programs and policies targeting commuters. TMA organizational structures vary, led in some cases by metropolitan planning organizations or local governments for residential and commercial audiences, and in others formed as coalitions comprised of multiple employers to provide specialized services for employees.

With over 100 TMAs across the country, these nonprofit organizations play an increasingly important role in reducing the number of vehicles using the transportation system during peak hours, improving livability, and helping state and regional governments achieve their sustainability goals. Despite their prevalence, questions remain related to the why and how of transportation management associations. The following four case studies – (1) Pennsylvania’s ‘Greater Valley Forge’ TMA, (2) Massachusetts’ “MassCommute” TMA, (3) Emeryville TMA and (4) Contra Costa Centre TMA to provide insight to these questions.
Case Study # 1: Greater Valley Forge TMA

**Location:** King of Prussia, Pennsylvania working across Montgomery and Chester (PA) counties, represent 39 municipalities.

**Year Formed:** 1990

**Daytime Population:** Over 1.3 million residents within Montgomery and Chester counties.

**Annual Operating Budget:** $1.2M
With major employers locating within the King of Prussia area in the late 1980s, the region experienced considerable growth and congestion. Heeding employee complaints related to construction delays and growing traffic, large employers, such as GlaxoSmithKline and local governments came together to form GVF. This not-for-profit organization was established to advance transportation infrastructure projects, advocate for regional funding, and manage relationships across the public and private sectors to provide key “gap” services. Since that time, GVF, who will celebrate its 30th anniversary in 2020, has grown to become the leading TDM expert throughout the Greater Philadelphia region and beyond. Recognized internationally as the “Most Outstanding TMA”, GVF focuses on advocacy, developing and maintaining strategic partnerships, as well as bringing innovative ideas and programing to their region. GVF has evolved over the last two decades to provide TDM services across the entire region. Services include, but are not limited to, creating TDM plans for large employers and specific employment centers, operating shuttle systems, providing TDM services, promoting transportation alternatives across the whole region, and advocating for transportation infrastructure projects and funding to enhance mobility.

Governance

- Six (6) Full Time Employees:
  - Executive Director, Deputy Executive Director, Director of TDM Planning, TDM Manager, TDM Coordinator and Office Manager
- GVF’s Board of Directors consists of high-level executives from Fortune 500 companies, engineering firms, developers, municipalities, as well as PennDOT Secretary of Transportation, PA state representatives, county government, MPO (DVRPC), Public Transit Agency (SEPTA)
  - Numerous public sector and private sector partner agencies
  - 4 officers, 10 board members, 10 ex-officio members

Funding

The annual operating budget is $1.2 million. All TMAs, in PA, receive the same base funding from PennDOT, which has remained flat since the 1990s. Therefore, it has been critical for GVF to diversify its funding in order to be successful over the last 30 years. GVF’s funding also comes from membership dues, numerous contract revenues from shuttle management, public outreach contractor on construction projects to various grant funding.
Programs & Key Outcomes

Summary of Services Provided:

- **Focus on Employment Centers:** GVF has created TDM plans and has provided TDM services to numerous employment centers across the 39 municipalities in Montgomery and Chester counties. For example, GVF created a TDM Plan for the Fort Washington Office Park in Upper Dublin Township in Montgomery County. The Fort Washington Office Park is a suburban 1950s office park in the Greater Philadelphia Region that includes 123 properties within 536 acres and has over 11,000 employees. Through its analysis, GVF identified that people were commuting from over 300 different zip codes and from five different states. GVF developed short, medium and long term TDM recommendations in the plan, such as infrastructure improvements (for example, locations of bike lanes) and TDM strategies employers can implement to help reduce congestion. GVF has created numerous TDM Plans for suburban office parks throughout the subregion.

- **Other TDM Related Consultant Services:** GVF provides TDM consultant services to private commercial districts and employers as noted above. The TDM plans are created using in-house mobility analysis utilizing customized commuter surveys, anonymized O & D/zip code data and GIS mapping. Through GVF’s close to 30 years of TDM expertise, it can offer these services to numerous partners and clients, which ultimately can create a more efficient system. Other consultant services include data analysis, commuter analysis, graphic design, video production, social media management, and website development and management.

- **Shuttle Program:** GVF manages corporate, university, government, and residential shuttles, and has done so for over two decades. The shuttle systems have resulted in providing over 1 million trips and diverting 600,000 vehicle miles in 2018 alone.

- **Relationship to Public Transportation Agencies and Elected Officials:** GVF advocates for additional funding for this region through working with elected officials, as well as transportation agencies. GVF has been successful in securing funding to help advance infrastructure projects, such as trail extensions and major construction projects. GVF was instrumental in helping to get ACT 89 passed, which was dedicated transportation funding for PA. Most recently, working with its public transit agency (SEPTA) and other private-public stakeholders, GVF has been an integral part in the advancement of a (5 mile) extension of a high-speed rail, which when complete, will provide passenger rail service to the largest commercial and employment center in the suburban Philadelphia Region, King of Prussia.
• **Regional Transportation Leadership:** GVF leads regional (and national) transportation efforts through private-public coalitions that focus on a specific topic or geographic region. For example, GVF created and currently leads the "US 422 Corridor Coalition". As stated on GVF’s website “The US 422 Corridor Coalition is a forum, that meets quarterly, in which the business community, municipal, county and state officials can cooperatively address and seek a resolution of traffic-related problems affecting the US Route 422 Corridor area”. Over 200,000 employees work along the 422 Corridor and this is projected to increase by 20% so it is critical to reduce congestion along this corridor. GVF has recently formed the 422 Transit Task Force, which will focus on looking at transit alternatives for the corridor, such as bus rapid transit (BRT). Additionally, GVF will be launching a public information campaign “422 My Way”, which is a mass marketing campaign focused on educating commuters on TDM alternatives, which has never been done in this region.

• **Sustainable Transportation Advocate:** GVF advocates for all modes of transportation, other than driving alone. GVF’s goal is to provide people with options and educate them on TDM alternatives so they can change their commuting behavior. An additional GVF goal is to make it easier for people to choose an alternative. Therefore, GVF educates local, state and federal partners and organizations on the innovative TDM programs and applications that are being implemented throughout the country and giving examples on how their region can implement it.

• **TDM Advocates Program:** One of the many events that GVF hosts is its TDM Advocates Breakfast. In addition to providing a relevant keynote speaker, GVF recognizes employers who are making investments into infrastructure and/or TDM programs that make it easier for their employees and residents to move throughout their community. Since its inception 10 years ago, GVF has given out over 250 recognitions,
• **Grant Allocation:** GVF works with local, state, and federal organizations to obtain grants for specific projects or programs to further enhance mobility. In 2018, GVF was awarded a Transportation Alternatives Set Aside Grant for “My School in Motion” program. This program focuses on biking and walking program in an area middle school curriculum. GVF’s website notes that “Tredyffrin/Easttown School District accepted the invitation to participate with GVF in creating and executing a program that will cover two academic years and provide a template that can be used in other interested school districts. The basics of pedestrian and bicycle traffic safety, civic involvement, and benefits of physical activity will be covered”. GVF was also successful in obtaining a Transportation and Community Development Initiative (TCDI) grant. This grant is working with one of GVF’s more progressive and largest municipal partners, Lower Merion Township. As Lower Merion Township continues to develop, how is TDM play a critical role. GVF has drafted a TDM ordinances to help with the Township’s growth and if approved, will be the first TDM ordinance for the region.

• **Communication/Outreach/Events:** GVF has been managing public information and outreach for its DOT for over two decades. GVF develops and maintain websites and social media accounts including phillytraffic.com, weareTDM.com, 422improvements.com, and US202.com. In 2018, through its press, email, social media and website campaigns GVF reached over 10,000,000 people. GVF also hosts quarterly signature events, as well as coalition meetings and TDM outreach events throughout each year with over 1,000- 2,300 executives and commuters attending annually.

• **Public Policy Council:** GVF created and manages the Public Policy Council, which has advocated for transportation improvements in the area for nearly three decades. The Public Policy Council includes large employers, educational institution, local government, engineering firms and transportation experts. “The Public Policy Council advocates for the improvement of local and regional transportation projects, infrastructure updates, and enhanced mobility. GVF has been advocating for a long-term transportation bill, permanent parity for commuter benefits and funding for local and regional projects.”

*Note: The information above was collected from GVF’s websites, Annual Reports, and communication with GVF Staff.*
Case Study # 2: MassCommute TMA

Location: Commonwealth of Massachusetts
Year Formed: 1996
Participating TMAs: 15
Stakeholders: 400 businesses, medical facilities and higher learning institutions, organizations representing more than 80,000 employees.
Type of Organization: 501(C)(4)
Impetus

Like many regions throughout the United States, the urban areas within the State of Massachusetts suffer from significant traffic congestion. In response to this congestion and the related local and State regulations, TMAs have formed in throughout Massachusetts. The State accounts for only 2% of the United States population but contains approximately 20% of the TMAs. The first TMA focused around critical corridors in the late 80s, and additional TMAs formed in the 1990s. MassCommute began as an informal coalition of Massachusetts Transportation Management Associations in 1995. Over time, and in response to regulation and employee demand, the coalition grew and became an official non-profit organization in 2005. MassCommute now has 15 member TMAs representing over 400 organizations and 80,000 employees.

Governance

- Executive Director
- MassCommute includes the following Massachusetts based TMAs: A Better City (ABC) TMA, Alewife TMA, Alston Brighton TMA, Charles River TMA, Commute-Works/MASCO, Crosstown Connect TMA, Junction TMO, Merrimack Valley TMA, MetroWest/495 TMA, Middlesex3 TMA, Neponset Valley TMA, North Shore TMA, Seaport TMA, TranSComm and Watertown TMA
- 4 person Executive Committee (comprised of TMA organizations)
- Bi-Monthly board meetings and technical subcommittee meetings
Programs & Key Outcomes

MassCommute Services:

- **TMA Formation Assistance**: MassCommute works with employment centers, businesses, institutions, and municipalities that are considering forming a TMA. Formation assistance includes helping potential TMAs thinking through the necessary steps. MassCommute also encourages potential TMAs to work with MassDOT, and MassRIDES to determine if other organizations would want to participate as a founding member. Finally, and perhaps most importantly, MassCommute will also help identify existing funding opportunities.

- **Facilitation of Regional TMA Discussions**: In general, the primary role of MassCommute is facilitating the regional TMA and TDM discussion. MassCommute expects that the Executive Directors (and staff) of each member TMA to attend and participate in bi-monthly board meetings, as well as technical subcommittee meetings. Through these meetings and the ongoing discussion, they look for partnership opportunities, funding opportunities, and other ways to collaborate.

- **Liaison to State Department of Transportation**: MassCommute and the MassDOT (State Department of Transportation) have a service coordination and funding agreement. For a TMA to have access to the funding and coordination benefits provided within this agreement, the TMA must be a MassCommute member.

- **Regional Advocacy**: On behalf of their member organizations, MassCommute advocates to State and Federal agencies for the development of policies that support TMAs, its members, and TDM measures in general.

- **Best Practices and Ongoing Education**: MassCommute provides support and training, networking, program sharing, and development for its TMA members. It also offer additional educational events and professional development roundtable discussions at their bi-monthly board meetings.

- **Promotional Events**: In addition to marketing done at the individual TMA level, MassCommute hosts or partners with other agencies to sponsor events such as the Massachusetts Eco-Awards (in partnership with MassRIDES and MassDOT). This event attracts over 150 attendees, including elected officials, and celebrates large employers and small businesses, who have shown a dedication to providing comprehensive transportation options. MassCommute’s signature event is the MassCommute Bicycle Challenge (MCBC). This event has been held for over 20 years, and is a “week-long, free and friendly competition among Massachusetts businesses, educational institutions, and municipalities.” In 2018, there were 88,794 total bicycle miles and 9,590 trips logged as a result of this challenge.
Member TMA Services:

- **TMA Services:** MassCommute doesn’t directly provide TDM and other TMA services. Those services are provided directly through their 15 TMA member organizations and include bike/walk promotions and incentives, emergency/guaranteed ride homes, vanpooling, carpooling, vanpooling, personal commute planning, and shuttle services. Additional details on several of these services are listed below.

- **Ride Matching:** MassCommute notes that many of its members TMAs utilize the same ride-matching service, NuRide. This program is a partnership with the Massachusetts Department of Transportation and MassRIDES, the State’s rideshare program. MassCommute’s website states, “TMAs help member employees register for the program and search for other participants who share commuting criteria. NuRide allows commuters to quickly and securely find travel companions based on proximity to origin and destination points, travel routes, similar working hours, and compatible ride-sharing preferences.”

- **Shuttle Services:** Some of the Member TMAs offer shuttle services to and from transit stations or park and ride locations. These shuttles connect inter-office locations as well. These shuttles are free to member employees and offered to the public for a fee.

- **Marketing:** Members TMAs market their services within their campuses, to promote and register employees for services such as carpooling and vanpooling.

Note: The information above was collected from MassCommute’s website, MassCommute’s Annual Reports, MassDOT, ACT conference presentation (2019) titled “TMA Expansion in Massachusetts: What’s behind the increase in popularity?” and related presentation notes provided by PATMA Executive Director (Rainey).
Case Study # 3: Emeryville TMA

**Location:** Throughout Emeryville with connections to MacArthur BART (in Oakland). Additional service in West Berkeley.

**Year Formed:** 1998

**Stakeholders:** Serves employees and residents. All shuttles are open to the general public.

**Type of Organization:** 501(C)(4)

**Partnerships:** Provides shuttle services to West Berkeley and Oakland.
Overview

The Emeryville Transportation Management Association operates the Emery Go-Round shuttle service. This last-mile shuttle service connects employees, residents, and visitors of Emeryville from the MacArthur BART Station in Oakland to various locations throughout the City. The service is primarily funded by the Emeryville Property Based Business Improvement District (PBID) and is open to the public. The service is also fare-free. The Emery-Go-Round began over 20 years ago as a way to connect various areas within the City of Emeryville to the MacArthur BART station. In addition to this original service, the ETMA now also provides two additional services, a Paratransit service and another “last mile” shuttle service to nearby areas of Berkeley. Further details about Emery Go-Round and these partnerships are detailed below.

Governance

• Executive Director, Veronica “Roni” Hattrup and Management Team (Gray-Bowen-Scott) (1.5 time position).

• The organization is governed by a Board of Directors, who also serve as the official representatives of property owners for the business improvement district.

• The Board of Directors is currently comprised of nine members representing both commercial and residential property owners within the City of Emeryville.

• The Board Meetings are scheduled for the third Thursday of each month and are held at the Bay Street conference room. Meetings are open to the public and agendas are posted online.

• The City of Emeryville designates a staff person to serve as a liaison to the TMA.
Programs & Key Outcomes

Emery-Go-Round Services:

- **Service Description:** The Emery Go-Round shuttle provides first and last-mile connection between the MacArthur BART Station (Oakland) and various locations throughout the City, including the Emeryville Amtrak Station. The Emery Go-Round serves a vital link to the community as it reduces vehicles trips throughout the City and subregion to allow for continued economic growth in Emeryville. The service is fare-free to riders with shuttle stops located within ¼ mile of nearly every Emeryville property. As noted below, the success of the service has led to additional partnerships and services.

- **Ridership:** The Emery Go-Round serves approximately 5,000 passengers every weekday and 3,000 passengers on the weekends. In 2018, the Emery Go-Round ridership was just under 1.4 million riders.

- **Service Frequency:** The shuttle runs seven days a week. On the weekdays, the shuttle runs between 5:30 am and 10:30 pm. The most frequent service occurs during the peak commute hours of 7 am, and 10 am and 3 pm to 7 pm. On the weekends, Emery Go-Round provides access to shopping and restaurants. The weekend shuttle runs on Saturdays between 8:20 am, and 10:30 pm, and on Sundays between 9 am and 7 pm.

- **Performance:** According to ETMA's annual report and the 2016 Statistical Summary of Bay Area Transit Operators, provided by the Metropolitan Transportation Commission, the Emery Go-Round is ranked among the top Bay Area, fixed-route transit providers. The Emery Go-Round’s service effectiveness, which is measured by the number of passengers per vehicle revenue hour, is in line with some large scale regional fixed-route transit systems. Another measurement of performance is cost-effectiveness, which is measured by the total cost per passenger. In 2018, the cost per passenger was $3, which ranks Emery Go-Round among the top 3 most cost-effective transit operators in the Bay Area.

- **Grant Funding:** In the spring of 2018, the ETMA was successful in obtaining a funding grant through the Bay Area Air Quality District’s Transportation Funding for Clean Air (TFCA) program. The ETMA partnered with the City of Emeryville to obtain the funding grant, which provided an additional $67,000 in revenue for the ETMA in 2018. The ETMA will continue to partner with the City to apply for future grant opportunities.
Partnerships (Close Collaborations):

- **Paratransit Services:** The ETMA has partnered with the City of Emeryville to operate a paratransit shuttle service. The 8-to-Go service provides low-cost door to door transportation within the Emeryville and North/West Oakland area for citizens age 60 years and older and/or people who are ADA qualified. In 2018, the City of Emeryville paid $92,278 to ETMA to provide the shuttle operator for this service.

- **West Berkeley Shuttle:** Beginning in 2011, the ETMA partnered with the neighboring Berkeley Gateway Transportation Management Association (BGTMA) to operate the West Berkeley Shuttle, which provides a free “last mile” connection from the Ashby BART station to the West Berkeley Area. Members of the BGTMA fund the shuttle operation. Bayer Corporation, whose campus is in West Berkeley, paid an additional $40,900 to the ETMA for additional mid-day service connection between their two campuses in Emeryville and Berkeley. In 2018, the BGTMA paid $340,000 to ETMA for the operation of the West Berkeley Shuttle, which included two branded vehicles, two shuttle operators and management oversight services. The partnership with the ETMA was advantageous for the BGMTA, as the ETMA already had an established contract with a shuttle operator and the service costs were lower as a result of the economies of scale pricing and shared overhead costs with the ETMA.

- **Potential West Oakland Service:** The Emeryville TMA has been in discussions with staff from the City of Oakland and property owners in the West Oakland neighborhood, regarding a new potential partnership to provide “last-mile” shuttle services to the West Oakland BART Station. While the concept has not advanced over the past year, the need for shuttle services will rise as redevelopment increases throughout the area. Partnering with the ETMA offer a simple plug and play approach and would benefit the West Oakland group by offering favorable pricing for shuttle operations, sharing in the cost of overhead resources and utilizing the ETMA’s management team to oversee the shuttle operations contractor.

Note: The information above was obtained via the ETMA annual reports, ETMA annual audit reports, ETMA website, the BGTMA website, City of Emeryville website and conversations with the ETMA Executive Director.
Case Study # 4: Contra Costa Centre TMA

**Location:** Waknut Creek, CA. Adjacent to the Pleasant Hill/Contra Costa Centre BART Station.

**Year Formed:** 1985

**Stakeholders:** Contra Costa Centre Property Owners, Business Owners, Employees and Residents.

**Partnerships:** John Muir Commute Solutions and Contra Costa County.

**Annual Operating Budget:** $300,000 (2018)

**Governance:** Not for profit mutual benefit corporation.
Overview

The Contra Costa Centre (CCC) Transit Village, is a 125-acre district surrounding the Pleasant Hill/Contra Costa Centre BART station. The Centre hosts 6,000 residents, 6,000 employees, and 6,500 BART customers a day. A Transportation Demand Management (TDM) program is a critical and mandatory part of CCC operation. This program is a result of conditions associated with the original development approval, an ongoing commitment from the property owners, and an extensive plan which has been put into effect by the CCC TMA team. In the 1980s, the original project owners contributed over $1.5 million exclusively for employee TDM programs. In 2002 the 14 project owners cast their votes approving a $200,000 annual tax assessment, with a yearly CPI increase, for transportation programs. The assessment, based on the square footage, is the foundation of the Contra Costa Centre Association’s ongoing commitment to minimize the use of single-occupancy vehicles at the Transit Village.

Governance

- Executive Director and TDM Program Manager (dedicated to TDM measures).
- Contra Costa Centre Association holds annual board meetings which are attended by the 14 property owner representatives.

Funding

As noted above, the TDM program was initially funded with a $1.5M from development impact fees (1985, .50 psf). In 2002 a Community Service Area (CSA) formed and annually assessed property owners $200,000 + CPI increase to sustain TDM program. In 2019, the assessment $300,000 annually. The Contra Costa Centre staff has also successfully obtained various state and local grants.
Programs & Key Outcomes

Summary of Services Provided:

• **Concierge Services:** A fundamental component of CCC’s successful TDM programming is the 1:1 commute counseling that the Contra Costa Centre Executive Director and Program Manager provide. These services include personalized commute planning, a commute hotline with same-day solutions, and the ability to load Clipper Card within their offices. In general, CCC staff is available anytime an employee needs commute advice or have hit a commute planning hurdle.

• **Mid-day Shuttle:** Many CCC based employees do not drive their own car to work, therefore CCC provides mid-day shuttles. The shuttles take CCC employees and residents to CrossRoads Shopping Center and Countrywood Shopping Center. The shuttle operates between the hours of 10:30am – 2 pm daily with 30-minute intervals.

• **Other Mid-Day Options:** In addition to the mid-day shuttles, CCC also offers employees other ways to get around during the day. This includes two Nissan Leafs, two Ford CMax Hybrids, eight standard bicycles and ten electric bicycles.

• **Bart and Bus Incentives:** CCC offers its members discounted BART rides via discounted fares on Clipper cards. CCC also partnered with MTC to become Clipper card vendor for onsite sales. Finally, CCC offers its members bus discounts, including an East Bay Value Pass, which equates to 50% savings.

• **Carpooling Incentives:** CCC provides a monthly gas card subsidy when two or more employees, carpool three times or more a week receive a monthly subsidy. In addition, CCC provides ride matching services to further facilitate ridesharing.

• **Bicycling and Walking Incentives:** Employees who bike or walk to work are also eligible for incentives.

• **Emergency Ride home:** CCC facilitates a “Guaranteed Ride Home” service. This service, which is provided by 511 Contra Costa, ensures that any commuter who needs to get home in case of emergency, unscheduled overtime or breakdown of commute vehicle will be guaranteed a ride home quickly.

• **Transportation Survey:** In order to provide the most effective TDM programming to its members, CCC staff conduct frequent transportation surveys to member employees and residents. In addition, CCC staff host events to increase survey response rates and raise awareness of TDM options.

• **TDM Results:** Contra Costa Centre TDM programs result in a 30% reduction in SOV. Non-SOV rates have been as high as 35% in recent years.
Expansion to John Muir Health Campus (Close Collaboration):

- **Expansion Overview:** In 2006, CCC partnered with "John Muir Health System, the Commute Solution", to provide TDM services to various John Muir Health Center locations. John Muir Health Center Commute Solutions services employees in the following locations:
  - Walnut Creek Medical Center
  - Concord Medical Center
  - Corporate Headquarters
  - Berkeley Outpatient Center
  - Walnut Creek Outpatient Center
  - Pleasanton Outpatient Center
  - Orinda Urgent Care, and
  - Concord Administration

- **Services Provided:** Since 2006, CCC and John Muir Health System, Commute Solutions, have partnered on the following TDM programs:
  - Created new Transportation Demand Management program
  - Created new Policy and Procedures
  - Created an employee commute hotline
  - Provided City and County required TDM reports
  - Coordinated surveys with employees, needs vs. wants
  - Educated employees regarding TDM program through a variety of activities and materials
  - Participated in ongoing hospital events
  - Designed and published weekly newsletter updates

- **Other TDM Services:** In addition to the TDM programs noted above, TDM services include carpool/vanpool subsidies, BART subsidies, bus and train subsidies and personal ride matching within hospital base. CCC also operates a free shuttle service to and from BART to the John Muir Walnut Creek/Concord medical centers. John Muir’s Walnut Creek medical center is about 2.5 away from the Pleasant Hill/Contra Costa Centre BART station.

*Note: The information above was collected from CCC’s websites, a CCC PowerPoint, and communication with CCC Staff.*
Chapter 6

Alternatives Analysis
As noted in this report, TDM service providers in the region, and throughout the United States, provide a wide variety of critical transportation-related services. These transportation services do not take the place of the public transportation pipelines (Caltrain, BART, VTA, Highways, etc.), but complement the established system by filling in service gaps. Although the specific services may vary depending on the commute shed and commuter needs, services generally fall into two buckets: actual transportation services, and administration support necessary to operate, educate and advocate for those services. Within the transportation services bucket, there are usually three distance categories: first and last leg, mid-range (5-10 miles) and long-haul transportation services. Transportation supportive services generally include organizational and program administration, commuter education and marketing and advocacy.

With the above services in mind, the following chapter will explore alternatives for working jointly on TDM services for commuters and residents in the subregion.
The analysis will look at the following four scenarios:

**Scenario 1, Status Quo:** Continue working on transportation initiatives within cities, existing TMAs/TMOs and companies, but do not formally expand collaborations at this time. It should be noted that this scenario would include communities adopting new TDM ordinances and potentially creating new TMAs. However, most of this would be done within jurisdictional boundaries.

**Scenario 2, Close Collaborations (Local Pairings):** Begin small. Cities and companies located within close geographical proximity can collaborate. An existing TMA/TMO or non-profit can facilitate these partnerships or new organization can be created. An example of this type of partnership can be found in the Emeryville TMA and Contra Costa Centre TMA case studies (Chapter 5).

**Scenario 3, Subregional Approach:** While not all Manzanita Talk participants (Redwood City through Sunnyvale) will formally join on Day 1, the participating cities and companies will work towards the goal of forming a Subregional TMA. A non-profit structure will need to be identified to facilitate this. Established TMAs and TMOs within the subregion could collaborate and share services with the Subregional TMA. The Subregional TMA could be organized as outlined in the GVF TMA or MassCommute TMAs as detailed in Chapter 5 case studies. Alternatively, it could be hybrid of these approaches.

**Scenario 4, Think Big (Super Region):** Work towards creating a Bay Area “Super Region TMA”, by combining multiple subregional efforts. The “Super Region” TMA is comprised of cities and companies located within all 9 Bay Area counties.

An important note and caveat to the scenarios above – Commute.org provides TDM services across large geographic footprint quite effectively. It is a model to explore further and provides tremendous value to its members and San Mateo County population. It currently only serves 3 of the cities participating in the Manzanita Talks, however, and doesn’t have the capacity to expand to all the participating cities. Furthermore, it is public entity, and although it provides services to the private sector, it doesn’t include private sector members on its board.
The analysis will evaluate each scenario using the following criteria:

1. **Expanding Services:** The vast majority of commuters (at all income levels) in the subregion do not work for large employers with formal commute programs or work within a TMA/TMO service area. In addition, residents who live in the subregion generally do not have access to TDM services. Does the scenario have the ability to provide TDM services to a larger population? This analysis focuses on the private sector companies and TMAs/TMOs who currently provide TDM services, as well as the public sector agencies responsible for creating, tracking and/or enforce TDM regulations.

2. **Economies of Scale:** Does the scenario provide proportionate cost saving by increasing the level and range of services offered? For example, can the scenario provide services that cannot be afforded on the individual level (shuttle connections, data, etc.) and can the scenario eliminate redundant services?

3. **Leveraging Funding:** Establishing, marketing and providing TDM services is expensive. Does the scenario allow for diverse and sustainable funding opportunities? Most importantly, can it leverage existing funding to gain access to larger sources of funding?

4. **Equity:** Lower-income workers often have no choice than to drive-alone in their vehicles. There are many reasons for this, including small business staff that cannot offer or are not required to provide TDM services, working off-peak hours, and residing in distant residential areas without access to transit. From a practical standpoint, decreasing the percentage of lower-income, SOV drivers can help improve traffic congestion in our area, while helping to improve lives. Therefore, the question is – does this scenario allow TDM services to reach a broader socioeconomic population viably?

5. **Ability to Focus on Local Concerns:** Despite the regional nature of transportation issues, traffic congestion is a local issue that the public sector hears about often from residents. For example, local decision makers throughout the subregion often hear complaints about El Camino Real congestion within their cities. Private-sector employers must be responsive to the problems in their commercial areas as well. Does the scenario, therefore, have the ability to respond to residential quality of life and commercial area issues?
6. **Unified Voice and Policy Setting:** A unified voice on transportation issues will allow subregions to work with the major transportation providers (Caltrain, BART, SamTrans, VTA, etc.) more effectively. Identifying the most pressing issues is a key to supporting public transit ridership. Furthermore, while cities have similar policies and aim to reduce SOV, plans and requirements vary (required mode share percentages, for example). This variation can create a challenge as companies and TMAs attempt to work across jurisdictional lines or have campuses in multiple jurisdictions. Therefore, will the scenario allow the subregion to create unified goals (for example, 50% SOV) and come together with a unified voice when speaking to outside agencies? The Grand Boulevard Initiative is an example of an effort that allowed the subregion to unify its voice and create compatible land-use goals.

7. **Concierge Services:** A critical TDM service element is partnering with commuters by providing one-on-one commute advice. These services typically involve the TDM provider coaching a commuter on how to get from home to work and back without driving alone. The TDM counselor also provides information about programs and benefits that can make these trips viable and cost saving. It can be a very time-intensive task. Would the scenario allow for commuter concierge services?

8. **Improved Communication:** The private sector and the public sector do not consistently and effectively communicate with each other. The ineffective communication patterns are also true for city to city communication, and particularly so across county-lines. The scenario must therefore help improve communication and transparency across cities and sectors. Would the scenario improve communication between the private and public sector and between cities within the subregion?

9. **Stakeholder Identification:** For any coordinated transportation program to be successful, the people impacted by the proposed transportation programs need to be involved. Sustained community involvement cannot stop at the formation stage but must continue during operation. Does the scenario allow for stakeholders to be involved in the decision-making process?

10. **Political & Start-up Complexity:** It is never easy to start a new program. This difficulty is amplified when multiple public sector and private sector organizations are involved. We do not want to sacrifice the actual good for the hypothetical great. Therefore the exploration must gauge the political and start-up complexity of each scenario. In other words, is the scenario politically feasible?
The table has each scenario and criteria for evaluation. A scenario receives a checkmark if the criteria is a key positive quality of that scenario. Integrating harmonized TDM efforts across city and county lines, and integrating the public policy with private sector TDM service is key, yet it is critical that the larger size of the TDM service organization enhances, without eliminating qualities that smaller organizations provide.

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<th>Scenario</th>
<th>Status Quo</th>
<th>Close Collaborations</th>
<th>Subregional TMA</th>
<th>Super Region TMA</th>
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The table above reflects the evaluation criteria for each scenario, indicating whether each criterion is a key positive quality for that scenario, with the corresponding checkmarks for Status Quo, Close Collaborations, Subregional TMA, and Super Region TMA.
Status Quo Scenario

Key Qualities of Status Quo

• **Local Concerns:** The Status Quo scenario responds well to local concerns, particularly when looking at it from a short term "reactive response" standpoint. A local policy or program can be adjusted relatively quickly in response to a complaint, concern or new development proposal. For example, a City can work directly with a company if cut-through traffic occurs related to their campus. A local TMA can quickly change a shuttle route based on requests from its members.

• **Concierge Services:** When dealing with a smaller, focused population, concierge services are more easily provided. Local TDM service providers can partner with commuters and adjust services rapidly based on user input.

• **Identifying Stakeholders:** As is the case with responding to local concerns and providing concierge services, the same holds true for identifying stakeholders. Stakeholders are typically employees, companies, landlords in need of TDM services. However, stakeholders may also include nearby residents and public officials involved in TDM decision-making. When dealing with a focused population, it is far easier to identify the people and groups who will be directly impacted by a new program or policy. It is also easier to convene and communicate with this smaller group.

• **Political and Start-Up Complexity:** Our region is making good progress transportation initiatives, including TDM policy and implementation. It is much easier to keep doing what we are doing. There is momentum in this direction which could be lost in we move towards a different model.
Status Quo Challenges

- **Expanding Services:** While there are several TDM partnerships in existence or forming, TDM policy and programming is usually focused in specific geographic areas. However, the transportation system and traffic issues impacting these areas are much larger. The current system therefore will always have practical, financial and legal constraints. For example, if your TMA bylaws prohibit you from expanding services beyond certain borders, it makes it difficult to provide services to a larger population. In addition, communities generally control “one end” of the commute trip (home or work). Without a collaborative approach to address both ends of the trip there is a decreased effectiveness of TDM requirements.

- **Economies of Scale:** Given the limited geographic focus of the status quo, it is difficult to achieve any economies of scale in the provision of TDM services. There are administrative and other redundancies that most likely occur as well.

- **Funding:** While the status quo does allow for funding opportunities such as assessment districts, funding is generally limited at the local level. Local TDM programs must therefore primarily rely on member contributions, and in some cases, local government funding. Given these constraints, it is difficult to deliver on the equity issues which usually require additional funding, flexibility and a larger geographic footprint.

- **Equity:** As noted throughout the Manzanita Talks, there is a large population without access to TDM services. Funding and other restrictions associated with the status quo will continue to limit the subregion’s ability serve under-served populations.

- **Unified Voice:** The current TDM service structure does not give the subregion leverage when it comes to regional transportation issues. Furthermore, while TDM and related transportation policies have a consistent spirit from city to city, regulations and policies vary. Although cities should be able to continue to adopt policies that make sense within a City’s borders, policymaking coordination could make all policies more effective during the implementation stage.

- **Communication:** Although we generally communicate well within our own organizations (cities, companies and TMAs), we do not communicate as effectively across jurisdictional lines and sectors.

*Important caveat to the Status Quo scenario as noted above – Commute.org provides TDM services across large geographic footprint quite effectively. It is a model to explore further and provides tremendous value to its members and San Mateo County population. It currently only serves 3 of the cities participating in the Manzanita Talks, however, and doesn’t have the capacity to expand to all the participating cities. Furthermore, it is public entity, and although it provides services to the private sector, it doesn’t include private sector members on its board.*
Close Collaborations Scenario

Key Qualities of Close Collaboration

- **Expanding Services:** Services for the commute shed begin to get addressed. By working together on providing TDM services across jurisdictional boundaries, the number of people utilizing those services can increase and a multiplier effect takes shape as SOV trips are reduced city-by-city from origin to destination.

- **Economies of Scale:** As the TDM service provider grows, there are economies of scale that can be realized. For example, a shuttle service that serves one TMA area, can serve an adjacent area. The fixed costs such as the shuttle parking lot remain the same, but can now be shared by two employment centers.

- **Equity:** Lower-income workers, who historically haven’t had access to TDM services, can begin to have greater access. This is particularly true if there are areas where lower-income, service workers currently live, and commute to nearby employment areas served by a TMA.

- **Addressing Local Concerns:** At this level, there is still an ability to focus on local issues as well, as those issues usually impact neighboring cities at the same time, and neighboring cities share stretches of roads. Traffic impacts associated with employment campuses can also impact neighboring cities.

- **Concierge Services:** Given the relatively small size of these collaborations, concierge services can still be provided, though it becomes increasingly difficult as the footprint of these services expands the types of services increase.

- **Stakeholder Identification:** It will still be relatively easy to convene stakeholder groups under these scenarios. Though careful attention will need to be paid to make certain that both communities have equal ability to create, influence and track TDM services.

- **Communication:** Communication will also be increased between jurisdictions and private and public sector. For example, cities can private companies can begin to communicate regarding shared east-west arterials and how to approach traffic congestion.
Close Collaborations Challenges

- **Funding:** Given the relatively small footprint, this scenario could still struggle with funding. That said, it does present more funding opportunities than the status quo as there would be multiple jurisdictions involved and a greater number of people receiving services. The downside primarily lies in the fact that it begins to be more complicated to track funds between agencies to make sure everyone is getting their fair share of services.

- **Unified Voice:** While communication issues will certainly improve between nearby jurisdictions and companies within those cities, there may not be the critical mass needed to move the needle when speaking to other organizations (transit providers for example). These cities could begin to advocate for increase services along shared arterials and roadways that align where it makes sense. Moreover, companies that operate in these paired cities could align TDM programs where appropriate as well.

- **Political and Start-Up Complexity:** It is difficult to start any new program. It is even more difficult when a program extends beyond jurisdictional borders. The cities and companies will need to ensure that all are getting a proportional share of value based on contributed funds. The complexity will be less than the subregional or super region scenarios, as relationships with neighboring cities likely already exist.
Subregional Scenario

Key Qualities of a Subregional Approach

- **Expanding Services:** The primary quality of this scenario is the ability to start serving a larger population with TDM services. Connections to employment centers and neighborhoods that were not previously served may come into focus. Commute.org provides a good example of this type of scale, though it does not serve most of the subject subregion (Redwood City to Sunnyvale) nor is the private sector or other TMAs involved in Board level decisions.

- **Economies of Scale:** At this level, you would be able to start realizing the positive effects of purchasing power and reducing redundancies. For example, shuttle services could be spread out and shared with adjacent areas throughout the subregion. Carpooling services could be shared in a manner that streamlines platforms and matches more people. Data, surveys and measurements, which can be expensive for one agency to purchase, can be purchased by a number of agencies at a reduced proportional cost. Most importantly, you could look at TDM services from the “30,000 foot level”, and be able to identify partnership and shared service opportunities, as well as reduce administrative redundancies where appropriate. Shared long-haul shuttles might become affordable.

- **Funding:** The partnerships and footprint of a subregional approach to TDM services would allow for greater funding opportunities. In addition to local funding from cities and participating companies, the subregional TDM provider would also begin to be more competitive for regional, state and federal grants. For example, Commute.org receives funding from BAAQMD trip reduction program. At the same, there could be complications sharing funding across county lines, as this is not something that is typically done, and there could potentially be restrictions on county based funding programs (VTA, C/CAG, etc.).
• **Equity**: As the footprint of TDM services becomes larger, and funding opportunities become greater, the ability to provide services to lower-income populations becomes more likely. Furthermore, subregional TDM can actively identify population pockets that are currently underserved by transit agencies and other TDM service provider. Most importantly, our subregion can begin to include residents, small businesses and community leaders from those communities in the TDM decision making process.

• **Unified Voice**: The ability to convene and strategize collectively could allow our subregion to have more leverage as we identify problems and solutions together. For example, the subregion can communicate to our transit providers about what service makes the most sense given the TDM services being provided in our area. We can also align our TDM requirements across city lines, and learn from each other about programs that are working and programs that need to be changed.

• **Improved Communication**: Similar to the criteria above, by convening a subregional group that crosses jurisdictional boundaries and sectors, communication and transparency issues can improve. Cities could better understand private expansion plans, and the private sector could better understand policy initiatives that cities undertake. Moreover, including small businesses in the conversations, would allow larger businesses and cities to better understand transportation issues and address small business needs.
Subregional Scenario Challenges

- **Addressing Local Concerns**: As the footprint of TDM service widens, it could become challenging to focus on hyperlocal transportation issues. Businesses, employees and residents could also become disconnected from the decision-making process, if they believe they are not being served.

- **Providing Concierge Services**: Providing “one-on-one” commute counseling is challenging in any circumstance, but particularly challenging as the region becomes larger.

- **Stakeholder Identification**: Similar to addressing local concerns and providing concierge service, as the footprint of TDM services becomes greater, the ability to include all stakeholders in the decision-making processes becomes more difficult.

- **Political & Start-up Complexity**: Working together at a subregional level would be something new for our region. Pulling together the public sector organizations, private sector companies, commuters and residents from all 8 jurisdictions would be a very complex task. Commute.org provides a local example of how this can be accomplished, though the JPA structure limits private sector participation at the board and decision-making level.
Super Region Scenario

Key Qualities of a Super Region Approach

- **Expanding Services:** The Super Region Approach would coordinate TDM services across nine Bay Area counties, therefore it would have the widest impact of any of the scenarios if started and grown effectively. However, if not grown from the bottom up, these services could grow in an ineffective and inequitable manner.

- **Economies of Scale:** Given the size of the TDM services, this approach would allow for significant economies of scale. A super-region format could help eliminate local or subregional level redundancies. The super-region TDM service provider would need to be careful, however, to not become too large and bureaucratic, thereby losing some of the efficiencies. In other words, there could be a diminishing return on the effectiveness of services if the organization grows too large and too fast.

- **Funding:** Due to size, and number of participants, this format would likely have the most access to funding. This funding could come from participating cities, commuters, businesses and state and federal level funding. The distribution and tracking of funding would be difficult though, as cities and companies will want to make sure they receive proportionate services.

- **Equity:** This Super Region scenario has the greatest potential to reach populations that do not currently have access to TDM services. However, equity must be a foundational principle of the super region organization, rather than a “tack on” at the end.

- **Improved Communication:** This larger format would certainly improve communication channels between the private and public sector, and across jurisdictional and county boundaries. There would need to be attention paid to the relationship and communication issues within each subregion though, as developing these local relationships are critically important when tackling issues specific to each city and subregion.
Super Region Scenario Challenges

- **Addressing Local Concerns**: As the TDM service area grows to all 9 Bay Area counties, tailoring programs to cities, local employment areas would become more challenging. This would particularly true if local residents, decision makers and companies feel they are disconnected from the decision-making process or aren’t aware of available programs, or if the largest cities become the focus of attention.

- **Providing Concierge Services**: Similar to addressing local concerns, if the TDM organization becomes too large, or doesn’t grow with local agencies in mind, the “one-on-one” commute counseling services can be lost. One advantage of smaller TMA/TDM programs is that the TDM provider knows all the companies in an area, and gets to know the employees, and generally understands their concerns and commuting patterns. If a larger TDM organization was formed, it would need to slowly grow from the smaller format, rather than taking a top down approach.

- **Stakeholder Identification**: As noted earlier, when you are dealing with a smaller geographic area, it is relatively easy to identify and involve stakeholders. As the geographic area widens, and the number of people participating increases, it becomes much more difficult. Creating an involved stakeholder group at this level is just as important (if not more), however, it would be much more difficult to accomplish.

- **Political & Start-Up Complexity**: There are 101 cities and 9 counties within the Bay Area. There are also thousands of Bay Area companies that could take advantage of increased TDM services. Needless to stay, starting and successfully maintaining an organization of this size would be challenging and would take time and delay needed SOV reduction goals.

- **Unified Voice**: In terms of creating a unified for our subregion (Sunnyvale to Redwood City) a “Super-Region” TDM provider would present challenges. While representatives from our subregion may have a voice, it would be competing with larger cities, which have historically had a disproportionate influence of transportation and land-use decisions. Any super-region TDM organization would need to keep this in mind during formation and operation.
Chapter 7

Recommendations For Moving Forward
The Manzanita Talks were a first of its kind endeavor, bringing together public sector elected officials and private sector transportation experts to discuss subregional transportation and TDM issues. When talks started, there was a concern from local elected officials as to whether industry was trying to push through a pre-determined structure and program. This concern was understandable, as the public and private sector answer to related but different populations, and therefore approach problem-solving in different ways. Elected officials also correctly wanted city staff involved to rely on their expertise. Finally, the private sector wanted to avoid causing friction beyond their area of expertise.

Despite these hurdles, through the first four dialogues, participants did indeed find common ground in identifying problems that could be considered jointly. And, also recognized there more effective ways to establish discourse across sectors and jurisdictional boundaries.

One thing was certain - all participants were interested in improving the commuter and resident experience sooner rather than later. Public and private sectors participants shared views and concepts about how future collaboration might occur. The group also learned about collaboration models in other areas of the country. With these discussions in mind, the report provides recommendations for moving forward.

**Overall Recommendation:** Cities and companies that participated in the Manzanita Talks should continue the conversation around TDM services. If cities and employers need TDM services in the future, or if a new TDM organization is established, the recommendations below should be used and tailored to meet the needs of that specific situation.
Additional Recommendations:

• **Local Problem Focus**: Identifying which specific local problems and the approach to solving those problems is more important than the organizational structure itself. At the same time, the organization must understand the regional nature of the problem and commit to working within the local context where stakeholders know each other and are empowered to shape what works.

• **Equity**: The organization should define equity with specificity and how it will address equity as a foundational principle. For example, engaging commuters employed by businesses without TDM programs or incentives regardless of job class. The objective is to include SOV commuters when creating overall programming.

• **Resource Aware**: The proposal must consider the social equity concerns between cities that have different resources available.

• **Displacement**: Improving transit options for those displaced, connecting communities who have been cut off, and want to be able to access or move around their community, must be an integral part of the proposal.

• **Trip Sharing**: The organization should explain how it would approach trip sharing of shuttle buses in all directions.

• **Commute Planning**: Partner with commuters to provide personalized commute planning, including concierge services to find first- and last-leg options to public transit pipelines.

• **Active Transportation Safety**: The proposal should speak to safety including pedestrian, bicycle and scooter infrastructure.

• **Schools**: When public school is in session student populations complicate intercity traffic and congestion. Encouraging students to use public transportation is important. TDM solutions for schools could be considered in subsequent phases, and school stakeholders group should form to identify solutions to reduce car trips in partnership with local representation for school district leadership.

• **Resident Services**: The proposal should explain how residential populations could participate and be part of the solutions.
• **Community Outreach:** An initial and ongoing community outreach plan should be incorporated into the overall proposal. Specific community meeting tactics, such as charrettes, should be detailed with the goal of broad-based attendance and participation. In addition, civic community leaders should be invited and participate in the discussions.

• **Driving Culture:** The proposals should define short and long-term strategies that can be used to affect real behavior change when it comes to driving alone.

• **Collaboration:** Both public and private sector organizations must be able to participate and collaborate in the decision-making process. Furthermore, for public sector organizations that do not wish to join formally, the group should still be open to these organizations for informal, information sharing purposes. Existing TMAs and TMOs in the region should also be invited to participate in some manner, and potentially share services.

• **Local Transit Agencies:** The organization must be able to partner with local public transportation entities to understand and help strengthen its mission.

• **Funding:** The proposal should outline the approach to initial and ongoing funding.

• **Governance:** The organization’s governance structure should be explained, and then proposal should detail why it would be effective.

• **Other Criteria:** The proposal should thoughtfully address all the criteria outlined in the Report.
Appendix A

Detailed List of Symptoms & Issues Identified During Manzanita Talks (Table 2)
Relationship and Communication Issues

- **The Pace of Public Sector Decision Making Related to Transportation Policy:** The public sector must be deliberate and methodical in decision-making processes. Council members and staff answer to the entire population, not just those who may benefit from the adoption of an individual policy. Also, cities are considering dozens of policies at all times, with residents suggesting many more. Therefore, putting programs in place often takes time and involves much public input. Private sector companies are not used to this process and can be frustrated by the slow pace.

- **Private Sector Transparency:** For competitive business reasons, and intellectual property concerns in particular, private sector companies do not usually publicize growth plans. Nor do they publicly discuss the transportation programs that have been put into place to support that growth. This reluctance to share information has caused many members of the public to mistrust larger businesses. City Hall often hears from members of the public who do not trust larger businesses and express reluctance for the City to work with these companies.

- **Different Expertise, Vocabularies and Cultures:** The public sector and private sector have distinct cultures, use different vocabularies, and have different expertise. It is important to understand why each sector approaches challenges in certain ways in order to work together effectively.
Equity Issues

- **Transportation Equity**: Service workers often work for small and medium-size companies (restaurant, small businesses, etc.) and do not have access to transportation benefits. Service workers typically do not earn enough to afford housing in the Peninsula and travel great distances to work. In addition, there are employees who earn adequate salaries, but work for employers who do not provide TDM services.

- **Transportation Equity (Contract Workers)**: Although it is changing, many of the contract workers who work for the large tech firm have not historically received the same transportation benefits as regular workers. Given many of the contract workers earn less than regular employees, they drive farther to access affordable housing. Several employers have noted that tax laws create hurdles to providing transportation benefits to contract employees.

- **Transit Costs**: Transit can be expensive, particularly for low-income workers, who often can’t afford to purchase discounted monthly or even daily passes because of the cost.

- **Super Commuters**: Employees are living greater and greater distances from work. Lower-income employees typically travel the most extended distances. Commuting costs as a percentage of income, and time spent on the road away from their families, falls disproportionately on lower-income workers.
Local Quality of Life Problems

- **East-West Connections:** Along the Peninsula, we generally have an east-west arterial street network that connects the freeways and transit stops to our single-family neighborhoods, where most people live. These east-west connections also connect our freeways to the employment centers. East-West connections are more clogged than ever, leading to resident and commuter frustration.

- **Highway 101 Access:** Similar to East-West connections, accessing the 101 can be extremely difficult during peak periods. For example, the Woodside-101 interchange was constructed 70+ years ago and is not equipped to carry today’s traffic loads, creating daily traffic back-ups.

- **Commercial Parking Spillover into Residential Neighborhoods:** Office buildings, particularly those constructed decades ago in downtown areas, do not have onsite parking to accommodate their employees. Many employees choose to park for free in nearby residential areas, rather than pay for parking in downtown structures.

- **Neighborhood Cut Through Traffic:** Traffic congestion on the arterial streets has caused drivers to use streets that were designed to carry local traffic. Driving direction apps have further compounded this issue, as commuters and residents from adjacent neighborhoods cut through residential neighborhoods.

- **City Cut Through Traffic:** Some cities have estimated that about 30% of the traffic within their cities are people driving through their city, rather than to their city. Arterial corridors and local roads take on the increased traffic.

- **Operating and Maintaining Resident-Focused Local Shuttle Programs**
  - **Community Circulator Shuttle Services:** Resident focused shuttle programs are often requested. However, operating these shuttles can be very expensive on a per rider basis. Furthermore, despite the numerous requests, maintaining ridership on these shuttles can be difficult as well.

- **Aggregation of Demand:** Many companies are too small to have the demand for a shuttle or other transportation benefits. In order for a transportation program to be successful, it must aggregate demand by pooling employees and resources with nearby companies. While ridership increases when vanpoolers are subsidized, it wanes when subsidies are pulled, even despite the cost advantages for rideshares.
Transit Provider Limitations

- **Caltrain Capacity**: Caltrain Modernization will be complete in 2022 and will increase trains and seats. However, most trains are currently at capacity during peak commute times. Bike space and bike parking is also limited. In addition, Caltrain does not have a dedicated funding source, and therefore future program decisions can be difficult.

- **Caltrain Baby Bullet Stops**: The Caltrain Baby Bullet trains are popular and move people well through the Peninsula. However, they also attract commuters who would not otherwise park at the baby bullet stop locations. People have observed an increase in local and cut through traffic near these stations. Conversely, some cities, like Sunnyvale, do not have frequent baby bullet service, despite having a significant amount of jobs within walking distance of the train station.

- **“Peak-Focus” Transit Schedule**: Generally, local transit providers focus on providing peak trips. People who work early in the morning or later in the evening often do not have an option other than their cars. In addition, due to infrequent off-peak transit service, employees are often discouraged from taking transit to work, as they do not have a way to get home if their child is sick, an emergency occurs, or they have to work late.

- **Transit Agency Requirements**: Transit agencies sometimes appear to have unusual requirements due to grant funding or ties to other public transit providers. For example, an agency may add a new shuttle that has very little demand, while canceling service for a more popular shuttle.

- **Transit Agency Requests**: Given the number of cities (and three counties) that Caltrain and VTA serve, they hear many different opinions on transit service. There is not one “unified voice” coming from this stretch of the Peninsula, or the South or East Bays.
• **Bus Service:** For numerous reasons, some of which may be psychological, public bus service remains unpopular for a large segment of employees and residents. This is true for VTA and SamTrans.

• **Commuter Shuttle Services:** Last-mile shuttles operated by Caltrain, Commute.org, and private companies struggle to provide the frequent connections that commuters demand, largely because of the high costs of operating service and maintaining shuttles and buses.

• **Ferry and Hovercraft Service:** Managing and providing connections to private ferry service is difficult and expensive. Furthermore, and perhaps more importantly, there is currently no public ferry service to Mid-Peninsula or South Bay, though it is under consideration in Redwood City. However, the coastal ecosystem is fragile and precludes additional expansion in much of the bay.

• **HOV Lane Capacity and Use:** Though Caltrans is not a “transit” provider, the highways do provide the infrastructure for non-SOV use via the High Occupancy Vehicle Lanes (carpool lanes). Unfortunately, these lanes have become increasingly crowded. This is partially due to the single-occupancy electric vehicles being allowed to use these lanes. While there are certainly upsides to promoting the use of electric vehicles, there is now less incentive for people to carpool or take high capacity vehicles like buses and shuttles.
Starting, Expanding and Aggregation Challenges

- **Carpool and Vanpool Matching:** Within smaller and mid-size companies, or even larger companies, it is difficult to match people for carpools or vanpools. The current tax structure also precludes carpool subsidies from pre-tax transportation fringe benefits.

- **Human Resource Department Limitations:** Human Resource Departments often do not have the resources necessary to advertise and explain transportation benefits, such as pre-tax transit benefits or guaranteed ride home programs. Providing one-on-one commute counseling is difficult without having dedicated staff. Furthermore, constant communication with employees about commute programs is complicated, with limited staffing.

- **Long-Haul Shuttle Program Management:** Shuttles can be very effective for long haul commutes. However, shuttles are expensive and difficult to manage. It is even more challenging to manage when employers expand their shuttle programs to include other nearby companies. Given how expensive shuttle programs are, it is difficult for smaller companies to afford (but employees see them everywhere).

- **Empty Spots in Shuttle:** Given the difficulties matching shuttle routes within individual organizations, and the spread-out nature of our region, there are sometimes empty shuttles seats. Though it’s unrealistic and undesirable to have completely full shuttles, too many empty seats add to the transportation cost per employee.

- **TMA Funding:** TMAs can struggle for funding. For example, the Palo Alto TMA has relied on funding from the City since its inception. Without diverse funding sources, sustaining TMA operations is difficult. Operating TMAs (and providing TDM services) through different economic cycles will be challenging as companies and cities cut costs.

- **Establishing or Modifying a TMA:** Due to recent changes in tax law, the IRS process for establishing a non-profit takes longer than it used to. It’s also challenging to change the bylaws of a TMA under certain scenarios while retaining a nonprofit status.

- **Shuttle Drivers and Bus Mechanics:** Ironically, the housing and transportation issues a region is facing has made recruiting and retaining shuttle drivers and bus mechanics difficult. Private contractors that often provide shuttle drivers for public and private services typically pay shuttle drivers the least, driving the most seasoned drivers to work for full-size bus providers.
Bicycle, Scooter and Pedestrian (Active Commuter) Challenges

- **Bike Paths:** There is generally a lack of bike paths throughout the Peninsula. Given cities only control spending within City limits, developing safe bike paths that cross jurisdictional boundaries is challenging.

- **Bike Share:** It can be expensive to manage bike programs. Many companies have been hesitant to invest in bike share programs in the suburbs due to actual or perceived lack of demand.

- **Scooter Share:** Scooter share programs have many of the same issues as bike share, plus they are newer and have greater liability and safety concerns.

- **Right-of-Way Management:** Managing the numerous requests for the use of the right-of-way is difficult for cities. Shuttle stops, bike share programs, Uber/Lyft pick-ups, and drop-offs are all right-of-way uses that were not there a decade ago.

Municipality Specific Issues

- **Creating, Scaling, and Tracking TDM Requirements:** Cities commonly place TDM requirements on new developments. Existing staff must track and report on all of these developments. Generally, cities cannot increase the number of staff members due to financial constraints. However, the number of developments that need to be tracked increases every year.

- **Trip Caps:** Several cities have placed trip caps on development or are contemplating trip restrictions on future developments. Frequently monitoring trip cap requirements is time-consuming, and costly to both the public and private sector. Implementing escalating TDM measures when a development exceeds trip caps is also challenging. Like parking requirements, trip caps are often based on the Institute of Transportation Engineers (ITE) studies. Most of these studies were conducted in the 1970’s; before Transportation Network Companies existed; before Electric Vehicles were pervasive.

- **Older Developments:** A majority of commercial buildings and the roads accessing them, within our region, were developed between the 1950s-1980s. Cities did not typically place TDM requirements on these older developments, and it is legally difficult to place TDM conditions on existing buildings retroactively.

- **Intuitional Knowledge:** There is a high amount of public sector employee turnover. As staff leaves, institutional knowledge is lost, and tracking of development conditions becomes even more difficult.

- **Access to Data:** Most cities and many companies do not have access to current origin/destination data that they need to make transportation-related spending decisions.
Appendix B

C/CAG TDM Guidelines
C/CAG TDM Guidelines for Implementing the Land Use Component of the Congestion Management Program

All land use changes or new developments that require a negative declaration or an Environmental Impact Report (EIR) and that are projected to generate a net (subtracting existing uses that are currently active) 100 or more trips per hour at any time during the a.m. or p.m. peak hour period, must be reported to C/CAG within ten days of completion of the initial study prepared under the California Environmental Quality Act (CEQA). Peak period includes 6:00 a.m. to 10:00 a.m. and 3:00 p.m. to 7:00 p.m. **Peak hour is defined as the hour when heaviest daily traffic volume occurs and generally occurs during morning and afternoon commute times.** Traffic counts are obtained during AM and PM peak periods and the volume from the heaviest hour of AM or PM traffic is used to define peak hour for those time periods. The highest number of net trips resulting from AM or PM peak hour will be used. Net trips are calculated by subtracting trips for existing uses from those generated by the new project. Although projects that generate less than 100 peak hour trips are not subject to these guidelines, local jurisdictions are strongly encouraged to apply them to all projects, particularly where the jurisdiction has determined that the impacts of the project will have an adverse effect on traffic in that jurisdiction.

These guidelines are not intended to establish a Countywide threshold of significance of 100 peak hour trips for CEQA purposes. The determination of what level of traffic results in a significant impact is left in the first instance to the local jurisdiction. These guidelines do contemplate, however, that all trips resulting from projects that are reviewed by C/CAG and fall under these guidelines will be mitigated, whether or not it rises to a level of significance under CEQA.
Local jurisdictions must ensure that the developer and/or tenants will reduce the demand for all new peak hour trips (including the first 100 trips) projected to be generated by the development. The local jurisdiction can select one or more of the options that follow or may propose other methods for mitigating the trips. It is up to the local jurisdiction working together with the project sponsor to choose the method(s) that will be compatible with the intended purpose of the project and the community that it will serve. The options identified in these guidelines are not intended to limit choices. Local jurisdictions are encouraged to be creative in developing options that meet local needs while accomplishing the goal of mitigating new peak hour trips. The additional measures that are not specifically included in these guidelines should be offered for review by C/CAG staff in advance of approving the project. Appeals to the decisions by C/CAG staff will be taken to the full C/CAG Board for consideration.

The Congestion Management Program roadway network includes all state highways and selected principal arterials. When considering land use projects, local jurisdictions may either require that mitigation for impacts to the Congestion Management Program roadway network be finally determined and imposed as a condition of approval of the project, or may conditionally approve such project, conditioned on compliance with the requirements to mitigate the impacts to the Congestion Management Program roadway network. In those instances where conditional approval is given, a building permit may not be issued for the project until the required mitigation is determined and subsequently imposed on the project.
Some of the choices for local jurisdictions include:

1. Reduce the scope of the project so that it will generate less than 100 net peak hour trips.

2. Build adequate roadway and/or transit improvements so that the added peak hour trips will have no measurable impact on the Congestion Management Program roadway network.

3. If a local jurisdiction currently collects traffic mitigation fees, any portion of the fees that are used to mitigate the impacts of the project’s traffic on the Congestion Management Program roadway network will count as a credit toward the reduction in the demand for trips required under the Congestion Management Program. The developer may also contribute a one-time only payment of $20,000 per peak hour trip (including the first 100 trips) to a special fund for the implementation of appropriate transportation demand management system measures at that development. These funds will be used to implement transportation demand management programs that serve the development making the contribution.

4. Require the developer and all subsequent tenants to implement Transportation Demand Management programs that have the capacity to fully reduce the demand for new peak hour trips. The developer/tenants will not be held responsible for the extent to which these programs are actually used. The developer shall pay for a monitoring program for the first three years of the development. The purpose of the monitoring program is to assess the compliance of the project with the final TDM plan. The following is a list of acceptable programs and the equivalent number of trips that will be credited as reduced. Programs can be mixed and matched so long as the total mitigated trips is equal to or greater than the new peak hour trips generated by the project. These programs, once implemented, must be on going for the occupied life of the development. Programs may be substituted with prior approval of C/CAG, so long as the number of mitigated trips is not reduced. Additional measures may be proposed to C/CAG for consideration. Also there may be special circumstances that warrant a different amount of credit for certain measures. For example, a developer may elect to contract with the Alliance or another provider of TDM services to meet this requirement. These situations can also be submitted to C/CAG in advance for consideration. It is up to each local jurisdiction to use its best judgment to determine the extent to which certain measures are “reasonable and effective.” For example, there will be a point where additional showers will not result in more people riding bicycles or walking to work.
5. Adopt Congestion Management Program guidelines for projects within its jurisdiction and submit those guidelines for approval by C/CAG. The local jurisdiction would then apply these guidelines to the appropriate level of project and provide an annual report describing affected projects and guidelines applied. C/CAG would review the jurisdiction’s efforts on an annual basis and could require amendments to the jurisdiction’s guidelines if the jurisdiction’s guidelines were not meeting Congestion Management Program goals.

6. Adopt the C/CAG guidelines for application to the appropriate level of project in the jurisdiction, and submit an annual report describing affected projects and guidelines applied. C/CAG would review the jurisdiction’s efforts on an annual basis and could require amendments to the jurisdiction’s guidelines if the jurisdiction’s guidelines were not meeting Congestion Management Program goals.

7. Negotiate with C/CAG staff for other acceptable ways to mitigate the trips for specific developments on a case-by-case basis.

8. C/CAG recognizes that for retail or special uses appropriate TDM measures may be difficult to implement. Please contact C/CAG to develop appropriate measures for these types of projects.
<table>
<thead>
<tr>
<th>Transportation Demand Management Measure</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Secure Bicycle Storage.</td>
<td>One peak hour trip will be credited for every 3 new bike lockers/racks installed and maintained. Lockers/racks must be installed within 100 feet of the building.</td>
<td>Experience has shown that bicycle commuters will average using this mode one-third of the time, especially during warmer summer months.</td>
</tr>
<tr>
<td>Showers and Changing Rooms.</td>
<td><strong>Ten</strong> peak hour trips will be credited for each new combination shower and changing room installed. An additional 5 peak hour trips will be credited when installed in combination with at least 5 bike lockers.</td>
<td>10 to 1 ratio based on cost to build and the likelihood that bicycle utilization will increase.</td>
</tr>
<tr>
<td>Operation of a dedicated shuttle service during the peak period to a rail station or an urban residential area. Alternatively the development could buy into a shuttle consortium.</td>
<td>One peak hour trip will be credited for each peak-hour round trip seat on the shuttle. Increases to two trips if a Guaranteed Ride Home Program is also in place. Five additional trips will be credited if the shuttle stops at a child-care facility enroute to/from the worksite.</td>
<td>Yields a one-to-one ratio (one seat in a shuttle equals one auto trip reduced); utilization increases when a guaranteed ride home program is also made available.</td>
</tr>
<tr>
<td>Charging Employees for Parking.</td>
<td><strong>Two</strong> peak hour trips will be credited for each parking spot charged out at $20 per month for one year. Money shall be used for TDM measures such as shuttles or subsidized transit tickets.</td>
<td>Yields a two-to-one ratio.</td>
</tr>
<tr>
<td>Subsidizing Transit Tickets for Employees.</td>
<td>One peak hour trip will be credited for each transit pass that is subsidized at least $20 per month for one year. One additional trip will be credited if the subsidy is increased to $75 for parents using transit to take a child to childcare enroute to work.</td>
<td>Yields a one-to-one ratio (one transit pass equals one auto trip reduced).</td>
</tr>
<tr>
<td>Subsidizing Pedestrians/ Bicyclists Who Commute to Work.</td>
<td>One peak hour trip will be credited for each employee that is subsidized at least $20 per month for one year.</td>
<td>Yields a one-to-one ratio (One pedestrian/bicyclist equals one auto trip reduced).</td>
</tr>
<tr>
<td>Creation of Preferential Parking for Carpoolers.</td>
<td>Two peak hour trips will be credited for each parking spot reserved.</td>
<td>Yields a two-to-one ratio (one reserved parking spot equals a minimum of two auto trips reduced).</td>
</tr>
<tr>
<td>Creation of Preferential Parking for Vanpoolers.</td>
<td>Seven peak hour trips will be credited for each parking spot reserved.</td>
<td>Yields a seven-to-one ratio (one reserved parking spot equals a minimum of seven auto trips reduced).</td>
</tr>
<tr>
<td>Implementation of a Vanpool Program.</td>
<td>Seven peak hour trips will be credited for each vanpool arranged by a specific program operated at the site of the development. Increases to ten trips if a Guaranteed Ride Home Program is also in place.</td>
<td>The average van capacity is seven.</td>
</tr>
</tbody>
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*Note: The numbers provided are based on estimated impacts and may vary depending on specific site conditions.*
<table>
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<tr>
<td>Operation of a commute assistance center, offering on site, one stop shopping for transit and commute alternatives information, preferably staffed with a live person to assist building tenants with trip planning.</td>
<td>One peak hour trip will be credited for each feature added to the information center; and an additional one peak hour trip will be credited for each hour the center is staffed with a live person; up to 20 trips per each 200 tenants. Possible features may include: - Transit information brochure rack - Computer kiosk connected to Internet - Telephone (with commute and transit information numbers) - Desk and chairs (for personalized trip planning) - On-site transit ticket sales - Implementation of flexible work hour schedules that allow transit riders to be 15-30 minutes late or early (due to problems with transit or vanpool) - Quarterly educational programs to support commute alternatives</td>
<td>This is based on staff’s best estimate. Short of there being major disincentives to driving, having an on site TDM program offering commute assistance is fundamental to an effective TDM program.</td>
</tr>
<tr>
<td>Survey Employees to Examine Use and Best Practices.</td>
<td>Three peak hour trips will be credited for a survey developed to be administered twice yearly.</td>
<td>This is based on staff’s best estimate with the goal of finding best practices to achieve the mode shift goal.</td>
</tr>
<tr>
<td>Implementation of a Parking Cash Out Program.</td>
<td>One peak hour trip will be credited for each parking spot where the employee is offered a cash payment in return for not using parking at the employment site.</td>
<td>Yields a one-to-one ratio (one cashed out parking spot equals one auto trip reduced.</td>
</tr>
<tr>
<td>Implementation of Ramp Metering.</td>
<td>Three hundred peak hour trips will be credited if the local jurisdiction in cooperation with CalTrans, installs and turns on ramp metering lights during the peak hours at the highway entrance ramp closest to the development.</td>
<td>This is a very difficult and costly measure to implement and the reward must be significant.</td>
</tr>
<tr>
<td>Installation of high bandwidth connections in employees’ homes to the Internet to facilitate home telecommuting.</td>
<td>One peak hour trip will be credited for every three connections installed. This measure is not available as credit for a residential development.</td>
<td>Yields a one-to-three ratio.</td>
</tr>
<tr>
<td>Installation of video conferencing centers that are available for use by the tenants of the facility.</td>
<td>Five peak hour trips will be credited for a center installed at the facility.</td>
<td>This is based on the staff’s best estimate.</td>
</tr>
<tr>
<td>Implementation of a compressed workweek program.</td>
<td>One peak hour trip will be credited for every 5 employees that are offered the opportunity to work four compressed days per week.</td>
<td>The workweek will be compressed into 4 days; therefore the individual will not be commuting on the 5th day.</td>
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<tr>
<td>Flextime: Implementation of an alternate hours workweek program.</td>
<td>One peak hour trip will be credited for each employee that is offered the opportunity to work staggered work hours. Those hours can be a set shift set by the employer or can be individually determined by the employee.</td>
<td>This is based on staff’s best estimate.</td>
</tr>
<tr>
<td>Provision of assistance to employees so they can live close to work.</td>
<td>If an employer develops and offers a program to help employees find acceptable residences within five miles of the employment site, a credit of one trip will be given for each slot in the program.</td>
<td>This assumes that a five-mile trip will generally not involve travel on the freeways.</td>
</tr>
<tr>
<td>Implementation of a program that gives preference to hiring local residents at the new development site.</td>
<td>One peak hour trip will be credited for each employment opportunity reserved for employees recruited and hired from within five miles of the employment site.</td>
<td>This assumes that a five-mile trip will generally not involve travel on the freeways.</td>
</tr>
</tbody>
</table>
| Provision of on-site amenities/accommodations that encourage people to stay on site during the workday, making it easier for workers to leave their automobiles at home. | Five peak hour trips will be credited for each feature added to the job site. Possible features may include:  
- Banking  
- Grocery shopping  
- Clothes cleaning  
- Exercise facilities  
- Child care center | This is based on staff’s best estimate. |
<p>| Provide use of motor vehicles to employees who use alternate commute methods so they can have access to vehicles during breaks for personal use. | Five peak hour trips will be credited for each vehicle provided. | This is based on staff’s best estimate. |
| Provide use of bicycles to employees who use alternate commute methods so they can have access to bicycles during breaks for personal use. | One peak hour trip will be credited for every four bicycles provided. | This is based on staff’s best estimate. |
| Provision of child care services as a part of the development. | One trip will be credited for every two child care slots at the job site. This amount increases to one trip for each slot if the child care service accepts multiple age groups (infants = 0-2yrs, preschool = 3&amp;4 yrs, school-age = 5 to 13 yrs). | This is based on staff’s best estimate. |
| Developer/property owner may join an employer group to expand available child care within 5 miles of the job site or may provide this service independently. | One trip will be credited for each new child care center slot created either directly by an employer group, by the developer/property owner, or by an outside provider if an agreement has been developed with the developer/property owner that makes the child care accessible to the workers at the development. | This is based on staff’s best estimate. |</p>
<table>
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<tr>
<td>Join the Alliance’s Guaranteed Ride Home Program.</td>
<td>Two peak hour trips will be credited for every 2 slots purchased in the program.</td>
<td>Experience shows that when a Guaranteed Ride Home Program is added to a TDM program, average ridership increases by about 50%.</td>
</tr>
<tr>
<td>Combine any ten of these elements and receive an additional credit for five peak hour trips.</td>
<td>Five peak hour trips will be credited.</td>
<td>Experience has shown that offering multiple and complementary TDM components can magnify the impact of the overall program.</td>
</tr>
<tr>
<td>Work with the Alliance to develop/implement a Transportation Action Plan.</td>
<td>Ten peak hour trips will be credited.</td>
<td>This is based on staff’s best estimate.</td>
</tr>
<tr>
<td>The developer can provide a cash legacy after the development is complete and designate an entity to</td>
<td>Peak hour trip reduction credits will accrue as if the developer was directly</td>
<td>Credits accrue depending on what the funds are used for.</td>
</tr>
<tr>
<td>implement any (or more than one) of the previous measures before day one of occupancy.</td>
<td>implementing the items.</td>
<td></td>
</tr>
<tr>
<td>Encourage Infill Development.</td>
<td>Two percent of all peak hour trips will be credited for each infill development.</td>
<td>Generally acceptable TDM practices (based on research of TDM practices around the nation and reported on the Internet).</td>
</tr>
<tr>
<td>Encourage Shared Parking.</td>
<td>Five peak hour trips will be credited for an agreement with an existing development to</td>
<td>Generally acceptable TDM practices (based on research of TDM practices around the nation and reported on the Internet).</td>
</tr>
<tr>
<td></td>
<td>share existing parking.</td>
<td></td>
</tr>
<tr>
<td>Participate in/create/sponsor a Transportation Management Association.</td>
<td>Five peak hour trips will be credited.</td>
<td>Generally acceptable TDM practices (based on research of TDM practices around the nation and reported on the Internet).</td>
</tr>
<tr>
<td>Coordinate Transportation Demand Management programs with existing developments/employers.</td>
<td>Five peak hour trips will be credited.</td>
<td>This is based on staff’s best estimate.</td>
</tr>
<tr>
<td>For employers with multiple job sites, institute a proximate commuting program that allows employees</td>
<td>One peak hour trip will be credited for each opportunity created.</td>
<td>Yields a one-to-one ratio.</td>
</tr>
<tr>
<td>Pay for parking at park and ride lots or transit stations.</td>
<td>One peak hour trip will be credited for each spot purchased.</td>
<td>Yields a one-to-one ratio.</td>
</tr>
</tbody>
</table>
## Additional Measures for Residential Developments

<table>
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<tr>
<td>Develop schools, convenience shopping, recreation facilities, and child care centers in new subdivisions.</td>
<td>Five peak hour trips will be credited for each facility included.</td>
<td>This is based on staff’s best estimate.</td>
</tr>
<tr>
<td>Provision of child care services at the residential development and/or at a nearby transit center.</td>
<td>One trip will be credited for every two child care slots at the development/transit center. This amount increases to one trip for each slot if the child care service accepts multiple age groups (infants, preschool, school-age).</td>
<td>This is based on staff’s best estimate.</td>
</tr>
<tr>
<td>Make roads and streets more pedestrian and bicycle friendly.</td>
<td>Five peak hour trips will be credited for each facility included.</td>
<td>This is based on staff’s best estimate.</td>
</tr>
<tr>
<td>Revise zoning to limit undesirable impacts (noise, smells, and traffic) instead of limiting broad categories of activities.</td>
<td>Five peak hour trips will be credited.</td>
<td>This is based on staff’s best estimate.</td>
</tr>
<tr>
<td>Create connections for non-motorized travel, such as trails that link dead-end streets.</td>
<td>Five peak hour trips will be credited for each connection make.</td>
<td>This is based on staff’s best estimate.</td>
</tr>
<tr>
<td>Create alternative transportation modes for travel within the development and to downtown areas - bicycles, scooters, electric carts, wagons, shuttles, etc.</td>
<td>One peak hour trip will be credited for each on-going opportunity created (i.e. five bicycles/scooters/wagons = five trips, two seat carts = two trips, seven passenger shuttle = seven trips).</td>
<td>This is based on staff’s best estimate.</td>
</tr>
<tr>
<td>Transportation Demand Management Measure</td>
<td>Number of Trips Credited</td>
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</tr>
<tr>
<td>Design streets/roads that encourage pedestrian and bicycle access and discourage automobile access.</td>
<td>Five trips will be credited for each design element.</td>
<td>This is based on staff’s best estimate.</td>
</tr>
<tr>
<td>Install and maintain alternative transportation kiosks.</td>
<td>Five trips will be credited for each kiosk.</td>
<td>This is based on staff’s best estimate.</td>
</tr>
<tr>
<td>Install/maintain safety and security systems for pedestrians and bicyclists.</td>
<td>Five trips will be credited for each measure implemented.</td>
<td>This is based on staff’s best estimate.</td>
</tr>
<tr>
<td>Implement jitneys/vanpools from residential areas to downtowns and transit centers.</td>
<td>One trip will be credited for each seat created.</td>
<td>Yields a one-to-one ratio.</td>
</tr>
<tr>
<td>Locate residential development within one-third mile of a fixed rail passenger station.</td>
<td>All trips from a residential development within one-third mile of a fixed rail passenger station will be considered credited due to the location of the development</td>
<td>This is based on staff’s best estimate.</td>
</tr>
</tbody>
</table>

The local jurisdiction must also agree to maintain data available for monitoring by C/CAG, that supports the on-going compliance with the agreed to trip reduction measures.
Acknowledgments

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