Alta Housing

Terra Bella TDM Plan

September 2022

NELSON
NYGAARD

Table of Contents

Figures and Tables

This TDM Plan is presented to satisfy the Residential TDM Standards, as outlined in Section 3.9.2. of the East Whisman Precise Plan (EWPP). Accordingly, it is organized as follows:

- **Project Background** – An overview of the project and its surrounding development and transportation context.
- **Proposed TDM Plan –** As proposed for the project, organized according to the requirements presented in the EWPP, as follows:
  - TMA Requirement – As a new residential development of at least 100 units, the property will comply with the requirement to establish and maintain membership with the Mountain View Transportation TMA.
  - Site Plan Requirements – Site Design TDM strategies, as required and as proposed for the development.
  - TDM Plan Operational Requirements – Operational TDM strategies, as required and as proposed for the development
  - Parking Rationale – Demonstration of how the TDM Plan will ensure that the parking provided at Terra Bella will be sufficient to meet all the parking needs of the development.
  - TDM Monitoring & Results – A statement on commitment to comply with all monitoring and results related requirements.

1 PROJECT BACKGROUND

Project Description

Terra Bella, an affordable housing development proposed by Alta Housing, will be in the City of Mountain View at 1020 Terra Bella Avenue -- south of US-101 and west of SR-85. The project will have 108 apartments, including a combination of 30% and 60% Area Median Income (AMI) units for persons with disabilities (I/DD), and Rapid Rehousing. To meet the City's Conditions of Approval, Alta Housing submits the following Draft Transportation Demand Management (TDM) Plan, detailing how the development will meet the City and Alta Housing's agreed-upon parking ratio.

Proximity to Transit Services

Valley Transportation Authority

Fixed-Route Service

Table 1 Bus route near Terra Bella

Bus Route	Description	Days of the Week	Span of Service	Frequency	Bus Stop Location
40	Foothill College - Mountain View Transit Center via North Bayshore	Mon-Sun	6:14 a.m. – 10:30 p.m.	30 mins (weekdays) ~50 minutes (weekends/holidays)	Shoreline Blvd. & Terra Bella Ave

Valley Transportation Authority (VTA) operates a fixed-route local bus service throughout the City of Mountain View. Terra Bella is 0.3 miles (5-minute walk) from VTA's Route 40 northbound and southbound bus stops. The route runs seven days a week at 30-minute frequencies on weekdays and 50-minute frequencies on weekends. The Mountain View Transit Center is a 15-minute bus ride, connecting riders to other local routes and regional transportation options, including Caltrain.[1] A single ride is $2.50.

Paratransit Service

VTA ACCESS paratransit service is available to eligible individuals with disabilities who cannot use conventional fixed-route and light-rail services due to physical, visual, or cognitive disabilities. Eligible riders can reserve trips up to three days in advance. One-way standard trips are $4.00, premium trips (outside the service area) are $16, and same-day trips are $16.[2]

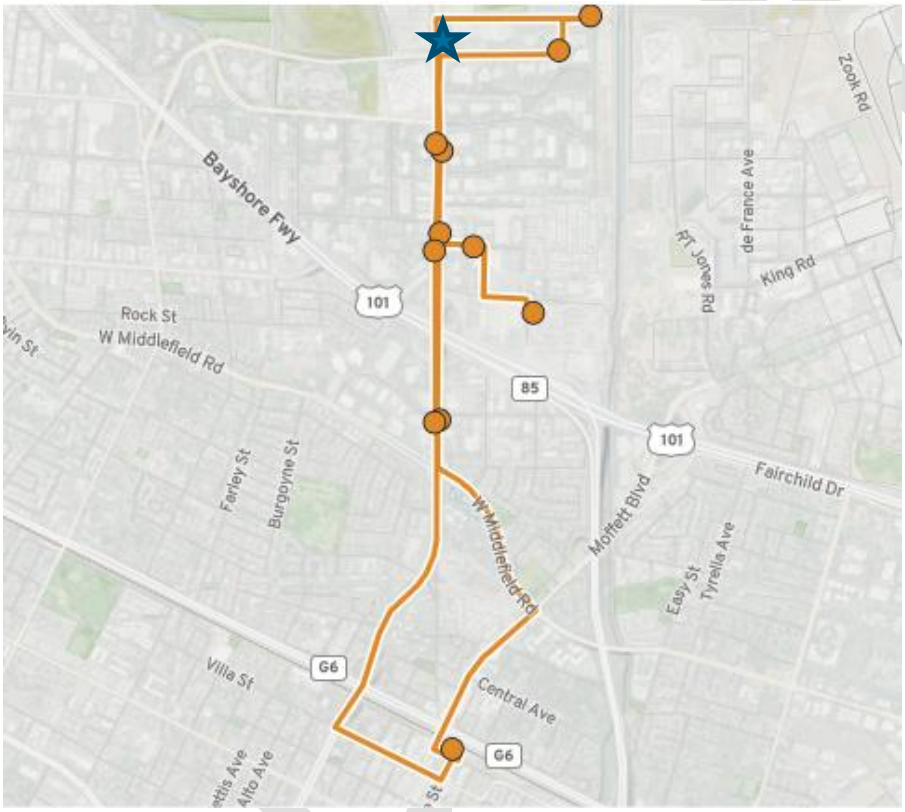
[1] Valley Transportation Authority (2022). *Foothill College – Mountain View Transit Center via North Bayshore.* Retrieved from https://www.vta.org/go/routes/40

[2] Valley Transportation Authority (2022). *VTA Access Paratransit.* Retrieved from https://www.vta.org/go/paratransit#accordion-fares

MVgo Shuttles

Mountain View's MVGo Shuttles are fare-free public service that provides a first and last-mile transit connections from the Mountain View Transit Center to various locations throughout the city. Terra Bella is on Route B which will provide future residents direct access to amenities along Shoreline Boulevard, looping through the transit center and traveling along Moffet Boulevard and W. Middlefield Road. The Shuttle is two blocks from the site and runs every 30-minutes between 6:30 a.m. and 10:30 a.m. and then in the afternoons, between 4:00 p.m. and 7:00 p.m. MVgo shuttle buses are wheelchair accessible and equipped with bike racks and real-time tracking equipment to provide riders with shuttle arrival predictions. [3]

Bus route near Terra Bella (Map)



Mountain View Community Shuttle

In addition to MVgo shuttles, the Mountain View Transportation Management Association (MTMA), in partnership with the City, runs the Mountain View Community Shuttle. The Community Shuttle fill gaps in mid-day and evening service. There are two routes -- the red route (clockwise) and grey route (counterclockwise) – which both run seven day a week. Weekday service is every 30-minutes

[3] MVGo Shuttles (2022). *Route B – Shoreline, La Avenida, Crittenden.* Retrieved from https://mvgo.org/routes/b/

between 7 a.m. and 7 p.m. and weekend service is every 60-minutes between 10 a.m. and 10 p.m.[4] Both routes are a 1-minute walk from the site at Middlefield Road and Shoreline Boulevard.

Proximity to Active Transportation Facilities

Bicycle Facilities

Terra Bella is within two blocks of a Class II bike lane along Shoreline Boulevard and is a 10-minute bike ride to the Stevens Creek Trail – a 20-mile Class I multi-use path that runs between Shoreline Park and Dale and Heatherstone.[5]

The City of Mountain View is planning Class IV protected bike lane improvements to the existing Class II bike lane on Shoreline Boulevard, between Middlefield Road and Terra Bella Avenue. A Class I multi-use path is also planned on Shoreline Boulevard, between Shorebird Way and Terra Bella Avenue.

As noted in the City of Mountain View's *Shoreline Boulevard Transportation Corridor Study* and prioritized in the *2015 Bicycle Transportation Plan Update,* the intersection of Shoreline Boulevard and Terra Bella Avenue will receive bicycle improvements, such as physical barriers to separate bicycles and vehicles, distinct high-visibility crosswalks, and pavement markings to clearly define the route.

Additional bike facility improvements include .66 miles of Class I trail/shared-use path improvements on Shoreline Boulevard, between Shorebird Way and Terra Bella Avenue.[6][7]

Pedestrian Access

Terra Bella will be built in an industrial area that is adjacent to familiar technology firms and campuses, including Google. The nearest walk to a grocery store and pharmacy is a 15-minute walk along Shoreline Boulevard, a four-lane corridor. While Shoreline Boulevard has sidewalks and pedestrian-scaled lighting, there is room for improvement. The Shoreline Bus Lane project includes plans to build protected intersections at Middlefield Road and Shoreline Boulevard and to add wider sidewalks between Plymouth Street and the Mountain View Transit Center.[8]

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[4]Mountain View Community Shuttle (2022). *Retrieved from* https://mvcommunityshuttle.com/

[5] City of Mountain View (2015) *Bicycle Transportation Plan Update.* Retrieved form https://www.mountainview.gov/civicax/filebank/blobdload.aspx?BlobID=18294

[6] City of Mountain View and Nelson\Nygaard (2014). *Shoreline Boulevard Corridor Study.* Retrieved from https://www.mountainview.gov/civicax/filebank/blobdload.aspx?BlobID=15441

[7] City of Mountain View (2015). *Bicycle Transportation Plan Update.* Retrieved from https://www.mountainview.gov/civicax/filebank/blobdload.aspx?BlobID=18294

[8] City of Mountain View (2022). *City Project Highlights.* Retrieved from https://www.mountainview.gov/depts/pw/projects/highlights.asp

Proximity to Daily Needs & Amenities

The Terra Bella site is within a four-minute bike ride, 10-minute transit trip, or a 10 to 15-minute walk to many basic goods, services, and amenities, most of which are located along Shoreline Boulevard. Nearby basic amenities include pharmacies, grocery stores, public vehicle charging stations, post-office, and banks.

The site also is located within a five-minute bike ride or 10 to 15-minute walk to various parks, trails, and recreation centers, including Stevens Creek Trail, Creekside Park, San Veron Park, Whisman Park, Crittenden sports fields, and the Whisman Sports Center. There are four schools near the site: Stevenson Elementary, Theuerkauf Elementary, and Crittenden Middle. There are a variety of entertainment options and venues near the site for residents to enjoy. These include, but are not limited to, the Shoreline Amphitheater, Shoreline Park, Stevens Creek Trail, Century Cinema 16, the Pear Theatre, and Theatre You.

2 PROPOSED TDM PLAN

TDM strategies work together to reduce single-occupancy vehicle (SOV) trips and parking demand by expanding mobility options to encourage residents and visitors to use of non-driving modes. This TDM Plan is presented to satisfy the Residential TDM Standards, as outlined in Section 3.9.2. of the East Whisman Precise Plan (EWPP). Accordingly, it is organized as follows:

- **TMA Requirement** – As a new residential development of at least 100 units, the property will comply with the requirement to establish and maintain membership with the Mountain View Transportation TMA.
- **Site Plan Requirements** – Site Design TDM strategies, as required and as proposed for the development.
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- **TDM Monitoring & Results** – A statement on commitment to comply with all monitoring and results related requirements.

Measures that are required for TDM Plan in the East Whisman Precise Plan are indicated via underlined text.

TMA Membership

As a new residential development of at least 100 units, Terra Bella will comply with the requirement to establish and maintain membership with the Mountain View TMA.

Site Plan Strategies

Designated Carshare Parking

Guided by the EWPP, Alta Housing will maintain two spaces, in a highly visible location accessible to both building users and the general public, to remain available to residents who participate in peer-to-peer car-sharing, as an incentive for participation, on a "right of first refusal" basis. At times when one or both spaces are not claimed by car-share participants, these spaces will be made available as general, resident parking spaces.

Bicycle Parking

Per the EWPP, Alta Housing will provide ample, convenient, and secure bicycle parking to support and increase bicycling for transportation. Per the city's parking standards[9], Alta Housing will allocate:

Table 2 Bicycle Parking Standards for Multifamily Housing (EWPP, pg. 90)

Land Use	Short-Term Parking	Long-Term Parking	Showers
Multi-Family Residential	1 per 10 units	1 per unit	None Required

Short-term bicycle parking is for guests and will include inverted-U bicycle racks in well-lit and highly accessible locations near building entrances. Long-term bicycle parking will be secure to protect against theft. Bicycle lockers, enclosed cages or other restricted interior areas are typical types of long-term bicycle parking.

Collaborative Workspace

A business services room can help encourage and facilitate working from home, which can have a direct impact on reducing trips to and from the site. Such an amenity is a typical part of large residential buildings, though the size and specific services included vary. The workspace is likely to include a rentable work room that can be reserved, video conferencing equipment, high-speed internet connections, basic office supplies, and printing, scanning, and faxing services. For residents interested in using this workspace long term, dedicated mailboxes for businesses could be set aside and located nearby.

Site Design/Pedestrian Oriented

The site will comply with the city's pedestrian-oriented design standards. Alta Housing will construct the site with 7' city standard concrete sidewalks, flower gardens and thematic plantings, gathering areas, bollard lights along the sidewalk, and accent pavers to delineate the location of the bike plaza. The site will be landscaped to improve traffic safety.

Secure Storage

Delivery Service Partnerships

The property manager will partner with online personal service providers (i.e., Instacart, Postmates, DoorDash, etc.) to facilitate efficient delivery, and space to hold deliveries, including a refrigerator for perishable deliveries. for residents to pick up. These partnerships reduce the need for a personal vehicle ownership and the frequency of one-stop trips.

[9] City of Mountain View (2022). *Parking and Loading.* Retrieved from https://library.municode.com/ca/mountain_view/codes/code_of_ordinances?nodeId=PTIITHCO_CH36ZO_ARTXPALO_DIV6BIPAST

Family TDM Amenities

Providing secure storage space for personal car seats, strollers, athletic or other extracurricular gear, and other large equipment can address challenges residents have while traveling. Moreover, Alta Housing will plan to locate the space near car share parking spaces to make it easier for families to travel without feeling a personal vehicle is necessary. If this measure is implemented without a dedicated employee, residents will be able to access the space with an access code or key card.

Operational TDM Strategies

Shared Bicycles and Resource Center

Loaner bicycles, helmets, and lights will be provided for resident use to facilitate non-driving access to neighborhood goods, services, and amenities. These bicycles will be provided as part of a bicycle resource center – dedicated space for residents to get information about bicycling and use shared tools for bicycle repairs and maintenance. A dedicated space contributes to social acceptance of bicycling and reduces maintenance costs, one key barrier associated with owning a bicycle.

Information Distribution

Marketing Materials, Promotional Events and Activities.

The TDM coordinator will oversee the active management of the TDM program through the distribution of marketing materials. Content will include a welcome packet detailing the TDM program, incentives, and upcoming events.

Mobility Concierge

The TDM coordinator will be a mobility concierge to residents and visitors. Beyond facilitating the abovementioned strategies, the TDM coordinator will share information about the nearest mobility services and liaise with residents to understand which strategies are the most effective and which strategies should be eliminated, revised, or added. The TDM coordinator will meet with residents at move-in to have one-on-conversations about the site's mobility services, provide information about tax benefits, and talk through nearby transit options.

Sustainable Travel Pledge

A sustainable travel pledge is a commitment to sustainable modes of transportation site wide. This can take many forms including residents' and employees' signing that underscores their individual and household commitment to reducing their impact on the environment. Pledges can be a part of the site's programming and an opportunity to bring people together around a common goal and initiative.

Safe Routes to School Promotion

As stated in the EWPP, the site needs to support Safe Routes to School programs (SR2S). At Terra Bella, the Transportation Coordinator/Property Manager will manage this requirement as part of their

role. The coordinator will promote SR2S by posting materials to analog and digital bulletin boards, notify families during move-in, coordinate a bicycle train and/or walking school bus for families with school aged children, and be available to coordinate with residents to facilitate events at Terra Bella and in the broader neighborhood.

Monetary Incentives

Pre-Tax Transportation Benefits

The federal tax code includes tax-free transportation fringe benefits. For 2022, the monthly subsidy limit is $280 per month for transit and parking. The Terra Bella residential coordinator will publish information about the tax benefit in the welcome packet and on the site's online web portal and further support residents through the process during one-on-one concierge services.

Unbundled Parking

Unbundled parking separates the cost of leasing a parking space from the cost of renting or purchasing a residential unit. Separating the cost of a parking space from the sale or lease of a housing unit saves money for households that do not wish to park a vehicle. This policy recognizes the cost of parking for residents and helps them determine if it is a worthwhile expense, as opposed to it being incorporated into the overall price of renting or buying a home regardless of whether the resident owns a vehicle.

Because the proposed development is Tax Credit funded, including the cost of the on-site parking, charging residents for the parking will be prohibited.

Free Loaner Bicycles

Loaner bicycles, helmets, and lights will be provided for resident use to facilitate non-driving access to neighborhood goods, services, and amenities. These bicycles will be provided as part of a bicycle resource center – dedicated space for residents to get information about bicycling and use shared tools for bicycle repairs and maintenance.

Free or Subsidized Public Bicycle and Scooter Share

When available in the City, the TDM coordinator will partner with public bicycle and scooter share providers to coordinate free or subsidized membership for all residents who use these services. Public bicycle and scooter share parking shall be conveniently located near building entrances. Free or subsidized membership will also be provided to all residents who meet the eligibility criteria (e.g., over 18 years). Loaner helmets will also be made available to all residents free of charge.

Additional Measures to Reduce Parking Needs

Peer to Peer Carshare

The TDM coordinator will facilitate the implementation of a peer-to-peer carshare program available to the residents of Terra Bella and neighboring sites, including Linda Vista. Residents will lead the program -- making decisions about whether carshare will be managed by resident liaisons or by a

third-party vendor, like Getaround or Turo. The peer-to-peer carshare strategy will take time to develop, but while there are gaps in the existing transit network, it will be a practical alternative transportation option.

Bike Trainings and Workshops

Organizing safety, repairs, maintenance, and other training sessions and workshops can increase bike ownership confidence and enthusiasm and generate a sense of connection within the biking community. The property owner/TDM coordinator will coordinate with a resident liaison team and local CBOs to set up bike training workshops throughout a given year.

CSA or Farmers' Market Partnership

Partnering with local community-supported agriculture (CSA) organizations has the potential to reduce greenhouse gas emission and vehicle-trips by providing residents convenient access to locally sourced food, reducing the number of trips and vehicle miles traveled by both vendors and consumers. This measure could also have marketing benefits and reinforce the site's overall message about sustainability. Program elements will include pickup and delivery accommodations, on-site markets, and discount and membership benefits. The TDM coordinator will seek to further coordinate with the city's Supplemental Nutrition Assistance Program (SNAP) to support residents and adjacent neighbors who need reliable access to affordable food source.

Note: This TDM plan is a living document that will be revised once the site is at full occupancy. Residents must have ownership of their mobility plan, working with the TDM coordinator to facilitate conversations regarding which TDM strategies will best improve mobility and access to essential services. Moreover, TDM strategies are subject to change based on market fluctuations. For example, new consumer facing commuter-related services (i.e., scooters, bike share, etc.) enter and exit the market with frequency. If strategies need to be swapped out, the TDM coordinator will work with residents and the broader Alta Housing team to identify replacements that to achieve an equivalent parking reduction. Furthermore, TDM items marked as "Required" will not be changed without written approval from the City of Mountainview Public Works Director or designee.

Parking Rationale

Parking Demand Analysis

Baseline Parking Demand Projection

The development is proposed as a residential-only property, to consist of a mix of the following housing-unit types:

- Independent, Developmentally Disabled
- Rapid Rehousing
- Affordable Housing

Parking demands for Rapid Housing and for independent, developmentally disabled units are based on comparable Alta Housing project. Parking demand for the remaining units was calculated using the parking analysis conducted by the City. These are outlined below, followed by the recommended parking supply.

Factoring for Hexagon Traffic Analysis Report Findings

City of Mountain View staff have provided a copy of the Transportation Analysis report, completed for the City by Hexagon Transportation Consultants, Inc. in August 2022. This report includes a section on Parking Supply, in which projections of parking demand for the proposed development are presented, based on findings from parking occupancy counts, completed at "similar sites in the region". The report states that these findings suggest that "…affordable housing developments have an average parking demand of 1.36 spaces per unit…"(page 44). This, the report notes, suggests that **a supply of 147 spaces should be provided for the proposed housing units**.

The southbound left turn impact noted in the Hexagon report will be addressed through the trip-reduction effects of this proposed TDM plan. Since the property will be 100% residential in nature, and the TDM Plan is projected to reduce parking demand by 15%, this translates to 15% fewer vehicles making trips from the property to impact the intersection of concern here. This reduction in the number of resident vehicles making trips from the property will eliminate 2-3 vehicles from the left turn lane. Thereby, not causing the anticipated impact. Further, there are several strategies that incentive non-driving modes, further contributing to less vehicle trips.

Recommended Ratios

The ratios developed from comparable Alta Housing properties are recommended as the best fit option for the I/DD and Rapid Rehousing units. For the Affordable Units, the ratio developed based on the parking analysis in the Hexagon report – 1.36 spaces per unit – is recommended. This combination of ratios **results in a projected supply need of 123 spaces**.

Table 3 Recommended Baseline Parking Demand Ratios

Unit Type	Total Units	Demand-Generation Rate (Spaces/ Unit)	Total Demand (Spaces)
I/DD	10	0.85	9
Rapid Rehousing	27	0.6	17
Affordable Units	71	1.36	97
All Units	108	N/A	123

Factoring For TDM

As the term "baseline" suggests, however, these projections are estimates based on parking-demand ratios that do not assume any intentional efforts to reduce resident parking demand rates, through site planning and design or operational/programmatic TDM strategies. Therefore, to provide a more accurate projection of the parking needs for the proposed development, this section refines the above baseline projections, factoring for the strategies proposed in the TDM Plan outlined above.

The strategies listed in the TDM Program include several well-researched and documented measures that can be anticipated to reduce residential parking demand from the baseline estimate outlined in the able above. The fact that many of these strategies are required for residential developments in the EWPP underscores the demonstrated effectiveness in reducing residents' reliance on personal auto travel and ownership. The proposed TDM Plan includes measures beyond those required in the EWPP, to ensure meaningful reduction in on-site parking needs, and to that will improve residents' access to and from key destinations by non-driving modes. The supply reduction that this will allow will also significantly reduce the cost of the overall development, allowing Alta Housing to reduce the cost of the critically needed housing units it will provide.

The proposed TDM Plan would reduce peak parking demand by about 15% -- reducing the recommended minimum supply target to 105 spaces. The section below outlines our methodology for determining the 15% reduction in parking demand.

TDM Impact Analysis

Impact of Individual TDM Strategies

The most prominent and well-documented source for measuring the effectiveness of TDM strategies is a set of reports published by the California Air Pollution Control Officers Association (CAPCOA). Both its 2010 "Quantifying Greenhouse Gas Mitigation Measures" and 2021 "Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity" compile extensive research and findings from an expansive literature review. These reports summarize research-based findings on demand-reduction impacts from an extensive list of common TDM measures, and detail assumptions and limitations of each measure. While this measure can be a good proxy for reducing trips for office and commercial land uses, it is much less reliable in projecting potential reductions in residential parking demand.[10]

To address these limitations, Nelson\Nygaard Consulting Associates conducted its own research into available literature on documented TDM effectiveness in reducing resident parking demand (vehicle ownership rates). Published sources reviewed include San Francisco's 'SF Shift' TDM program and efforts led by regional planning agencies including the Valley Transportation Authority's VMT Calculator, and San Diego Association of Government's Mobility Management Toolkit. These new sources more accurately calculate demand reductions (in terms of parking supply) expected from common TDM measures, specific to residential developments.

Table 4 TDM Strategies in the Proposed Terra Bella TDM Plan

TDM Measures	Source of Reduction Impact Estimate	Projected Parking Supply Reduction Range

[10] *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* (2021). Retrieved from https://www.airquality.org/ClimateChange/Documents/Handbook%20Public%20Draft_2021-Aug.pdf

		Low	High
TMA Membership	North Bayshore TDM Guidelines: Trip Reduction Marketing (grouped, includes TMA, website with real-time transit info, TDM coordinator, sustainable incentives), 4%	**1%**	**4%**
On-Site Carshare	**Jain et al. (2021)** - One in three households reduced car ownership, and most reductions occurred in the year prior to joining car share. Fleet-based car share members reported a larger reduction in car ownership compared to peer-to-peer car share members. **Cervero (2007)** - 7 cars shed for every 100 carshare members; 24.2% reduced vehicle ownership by 1 or more; NET 3 cars are do owners + non owners; but reduction still useful for residential onsite **Klincevius (2014) -** 40 to 60% of households with membership are carless; increase of 20% of members who were carless after joining; 9-13 cars removed for every 1 shared car (those who removed a car or gave up a car)	**2%**	**16%**
Bicycle Parking	**CAPCOA:** SDT-7 Provide Bike Parking with Multi-Unit Residential Projects (grouped with LUT-9 Improve Design of Development, 3-21.3%) **SF Shift:** ACTIVE-2 Bike Parking, 1-4%	**1%**	**4%**
Collaborative Workspace	**CAPCOA**: TRT-6 Telecommuting and Alternative Work Schedules	**1%**	**2%**
Site Design/Pedestrian Oriented (Required)	CAPCOA: SDT-1 Provide Pedestrian Network Improvements, 0-2% and LUT-9, Improve Design of Development 3%-21.13%	**1%**	**5%**
Delivery-Supported Amenities	SF Shift: DELIVERY-1 Delivery Supportive Amenities, 1%	**1%**	**2%**
Family TDM Amenities	**SF Shift**: FAMILY-1 Family TDM Amenities, 1-2%	**1%**	**2%**
Shared Bicycles and Resource Center	**SF Shift**: Tailored Transportation Marketing	**1%**	**4%**
Bike Repair/Wash Stations	**SF Shift:** ACTIVE-5 Bike Repair Station/Maintenance Services, 1%	**1%**	**1%**

Bike Trainings & Workshops	**SF Shift:** Tailored Transportation Marketing, 1-4% **San Jose / SANDAG:** Community Based Travel Planning, 0-2%	**1%**	**4%**
TDM Coordinator/Mobility Concierge	**San Jose / SANDAG:** Community Based Travel Planning, 0-2%	**1%**	**2 %**
Informational/Promotional Materials	**CAPCOA:** TRT-7 CTR Marketing **SF Shift:** INFO-3 Tailored Transportation Marketing **San Jose / SANDAG:** Community Based Travel Planning	**1%**	**4%**
Pre-Tax Transportation Benefit		**1%**	**1%**

Collective Effect of TDM Plan

The effect of the above measures, implemented together in accordance with the proposed TDM Plan, cannot accurately be projected by simply adding the low-end or high-end effectiveness measure of each strategy. Strategies work together to complement and amplify their effectiveness. A set of complementary TDM measures will be more effective than the sum of its strategies' estimated effectiveness. However, many TDM measures can also compete with each other, producing a collective effect when implemented together than their individual effectiveness estimates would suggest.

The proprietary effectiveness calculator used to estimate the 15% reduction in parking demand, addresses these factors by organizing TDM measures into functional categories – see table below.

Table 5 TDM Functional Categories

Category	Description	Maximum Reduction Calculation for this Category
Parking Management Measures	These measures focus on pricing and other regulatory tools for incentivizing alternatives to personal vehicle parking.	20%
Program & Services	These measures include benefits and services that incentivize use of non-driving travel options.	25%
Physical Features	These measures reflect urban design strategies to incentivize non-driving modes, such as improvements to walking and cycling infrastructure, traffic calming measures, transit stop improvements,	10%

	delivery lockers, key land-use complements, and other similar on-site and contextual factors	
Promotions & Activities	These are measures that focus on increasing the awareness, appeal, and use of the TDM measures included in the other categories	5%

The calculator caps the projected effectiveness for each category of measures to ensure against overestimating the impact of measures that are more competitive than complementary. The calculator also factors for the inclusion of multiple complementary measures within a TDM Plan, by increasing the estimated impact of these measures – from the low end of the range, toward the high end of the range, depending on how many complementary measures are included.

Calculated Reduction

As shown in the table below, the effectiveness calculator projects a reduction of 15.9% in parking demand, from the baseline estimate of 123 spaces, for a projected parking demand peak of 105 spaces.

Table 6 Total and By-Category Parking Reduction Estimates

Total Reduction	15.9%
Reduction from Parking Policy and Pricing	0.0%
Reduction from Programs and Services	2.7%
Reduction from Physical Features	8.8%
Reduction from Promotional Resources and Activities	4.4%

Comparing to Impacts on Trip Reduction

The analysis above is focused on TDM impacts on parking demand generated by the project. Because the nature of the proposed property is 100% residential, reducing parking demand is achieved solely through TDM strategies that can be lined to reduced resident vehicle ownership rates. As such, our TDM analysis relied on several sources documenting the reduction effectiveness of the selected TDM measures, with limited reliance on CAPCOA as a source (which focuses most consistently on VMT-reduction measures).

While our analysis is focused on projecting reductions to the project's parking demand, the fact that the calculated reduction of 15% equates to 15% fewer vehicles maintained on the property suggests that the TDM Plan should reduce trips and VMT by at least this much.

TDM Monitoring & Results

It is critical to establish a system to monitor the performance of TDM strategies. By observing how travel behavior changes over time, Alta Housing will have the tools to determine the proper time to implement TDM measures, gauge their effectiveness, and make updates accordingly. The property owner, or tenant, shall prepare an annual TDM report one-year following building Occupancy, and submit it to the City's TDM Coordinator as proven effectiveness of its TDM program. The City may assess the property owner a penalty for noncompliance with its TDM project conditions of approval.

The TDM report, prepared by an onsite TDM Coordinator, will include a survey of commute travel methods taken by all building occupants. Driveway traffic counts shall also be conducted during the peak periods by an independent, approved consultant and paid for by the property owner or tenant. The driveway counts and resulting data shall be included in the TDM report to determine compliance with trip reduction goals and provided to the City's TDM Coordinator.

The following metrics will be considered for the annual analysis:

- Residential mode split (all trips and all modes, including differentiating between driving along and carpool/rideshare)
- Parking utilization throughout the day
- Vehicle ownership at the residential development
- TDM program awareness
- Participation in individual TDM programs
- Cost-effectiveness of the TDM program
- Resident survey of travel behavior

If Terra Bella's parking is constrained and vehicle trips increase, Alta housing will submit a revised TDM Plan to the City that identifies new programs or strategies to meet requirements. Moreover, Alta Housing is prepared to pay a financial penalty for non-compliance.

3 APPENDIX: SUMMARY OF PARKING DATA FROM ALTA HOUSING SITES

The following properties were used as comparable housing developments, with their measures of parking demand, relative to the number of Rapid Rehousing units, used to inform the parking-demand ratio used for those units in the TDM Plan's parking analysis. All the units in both properties are Rapid Rehousing units, each with a population profile at both, in terms of developmental challenges, similar to that of the population who will occupy those units at Terra Bella.

Site 1: Eagle Park

This property consists of 67 units, including 62 studio apartments and five one-bedroom units.

Parking details:

- **Supply Ratio**: 0.4 spaces/ unit
  - The number of on-site parking spaces: 27 Spaces including 2 for disabled persons & 2 for electric vehicle charging.
- **Demand Ratio**: 0.4 spaces/ unit
  - Current Occupancy: 100%
  - Parking eligibility: Tenants are given one space per unit
  - The property sometimes maintains a waitlist for parking, depending on the needs of our current residents.

Site 2: Fair Oaks Commons

This property consists of 67 units, including 61 studio apartments and six one-bedroom units.

Parking details:

- **Supply Ratio**: 0.76 spaces/ unit
  - The number of on-site parking spaces: 51
- **Demand Ratio:** 0.5 spaces/unit
  - Current Occupancy: 69% (35 vehicles for 51 spaces)
  - Parking eligibility: Tenants are offered one space per unit