

DATE: August 11, 2020
TO: Shaunn Mendrin
COMPANY: City of Sunnyvale Community Development Department
ADDRESS: 456 W. Olive Ave
CITY/STATE: Sunnyvale, CA
FROM: Chrissy Mancini Nichols, Shannon Edwin, Manuel Soto, Sue Thompson
PROJECT NAME: 100 Altair Parking Study
PROJECT NUMBER: 33-002075.05

The City of Sunnyvale enlisted Walker Consultants (“Walker”) to conduct a parking study for the proposed 100 Altair office development located at 100 Altair Way in Downtown Sunnyvale. The parking study took into account planned transportation demand management and operations strategies the developer will use to manage parking demand, parking garage design, as well as Walker’s expertise on parking planning and policy in Downtown Sunnyvale.

Overall Findings

- The proposed project plans to provide 158 spaces on-site in an underground garage with the additional capacity to park 147 vehicles via a valet operation, with a total parking capacity of 305 vehicles.
- To reduce parking demand and trip generation, the project applicant has developed a robust Transportation Demand Management (TDM) plan and anticipates achieving a 30% reduction in Single Occupancy Vehicle (SOV) trips upon opening (day one) and a full 40% reduction in SOV trips within the first six months.
- As a result, Walker evaluated parking needs based on a 30% reduction in projected parking demand as well as a 40% reduction in projected parking demand.
 - Based on a 30% drive ratio adjustment, a parking supply of 342 (307 employee spaces and 35 visitor spaces) is recommended. The 30% reduction is based on the categories that will be implemented on day one or that are inherent to the project: distance to transit, limited parking supply, and pedestrian enhancements. At a 30% reduction, the proposed project would have a parking deficit of 184 parking spaces.
 - Based on a 40% drive ratio adjustment for TDM, a total parking supply of 298 (263 employee spaces and 35 visitor spaces) is recommended. The additional 10% reduction is based on categories that will be ramped up and fully implemented within six months, such as TDM marketing, incentives, and ride match. At a 40% reduction, the proposed project would have a parking deficit of 140 parking spaces.
- The proposed project is located in Zone 4 of the City’s Parking Management Assessment District. Development on this property is required to pay \$21.88 per deficit parking space. Parking deficits may be calculated based on the results of the parking needs analysis presented in this report. Only physically marked parking stalls are counted toward the on-site parking supply; valet spaces are not included as part of the assessment calculation and are applied towards the project parking deficit.

- Walker reviewed the valet plan provided by Ace Parking and, based on our review and discussions with Ace, we have determined that the methods and information provided for the valet plan follow industry practices and agree that the valet plan presented should provide for adequate operations within the garage.
- Walker reviewed the parking garage ramp slope design and found the proposed 20% slope would likely have a Level of Service (LOS) rating of F and would require consideration from the City through the Special Development Permit process. The City of Sunnyvale's Parking Guidelines call for speed ramps to have a maximum of 12% slope.
 - The proposed project design plans show transition ramps at the top and bottom of the speed ramp with slopes of 10% and a length of 10 feet. The Sunnyvale Parking Guidelines call for transition ramps to have a minimum length of 10 to 12 feet at the top and bottom of speed ramps.
- The following recommendations are proposed:
 - With plans to provide 158 marked parking spaces on-site, and a projected demand of 342 spaces upon opening, the project would experience a 184-space deficit. If parking utilization reports show that after full implementation of the TDM program, reduction goals are reached and parking demand reduces to 298 spaces during the peak, the assessment should be recalculated to reflect the new deficit.
 - To accommodate additional parking demand, the proposed project may participate in the downtown employee parking program. It's estimated that 37± employee parkers may need to park off-site prior to full implementation of the TDM program.
 - Given that a significant amount of parking is supplied through a valet operation and full implementation of TDM amenities will not begin until month six, it is recommended that the property owner submit a parking utilization report to the City based on the following schedule:
 - Months 1 through 6 of opening before full implementation of the TDM program:
 - In conjunction with the TDM reporting, the property owner should provide a daily/weekly parking utilization report and participate in the employee parking program to park some employees in the adjacent public garage to accommodate the parking deficit for tenants and visitors.
 - Months 7 through 12 of opening:
 - Provide the parking utilization report on the last day of each month.
 - Year 2 of opening and forward:
 - Annually in January for the previous year in conjunction with the annual TDM survey and annual PMAD assessment.
 - The property manager not only hires a Transportation Demand Management (TDM) manager for the building, but also that this person implements a performance monitoring program for the TDM plan to oversee its development and progress.
 - Performance monitoring should be completed by conducting an annual commute survey for all tenants and employees. The survey should aim at assessing the mode share of all commute modes, including telework.

Project Description

The proposed project includes a seven-story, 141,333 square foot office building. Parking is planned to be provided on-site via an underground garage with a supply of 158 physical parking spaces as shown in Figure 1 on page 3.¹ To increase parking capacity, parking in the garage will use a valet operation. With the addition of valet, the proposed project anticipates the ability to park an additional 147 vehicles in the parking garage drive aisles. This would equate to a total parking capacity of 305 cars in the garage.

Figure 1: Proposed 100 Altair Way, Sunnyvale, CA



Source: 100 Altair Way Planning Application – Resubmittal #2, February 24, 2020

¹ All project based data provided by the Minkoff Group.

Parking Management Assessment District

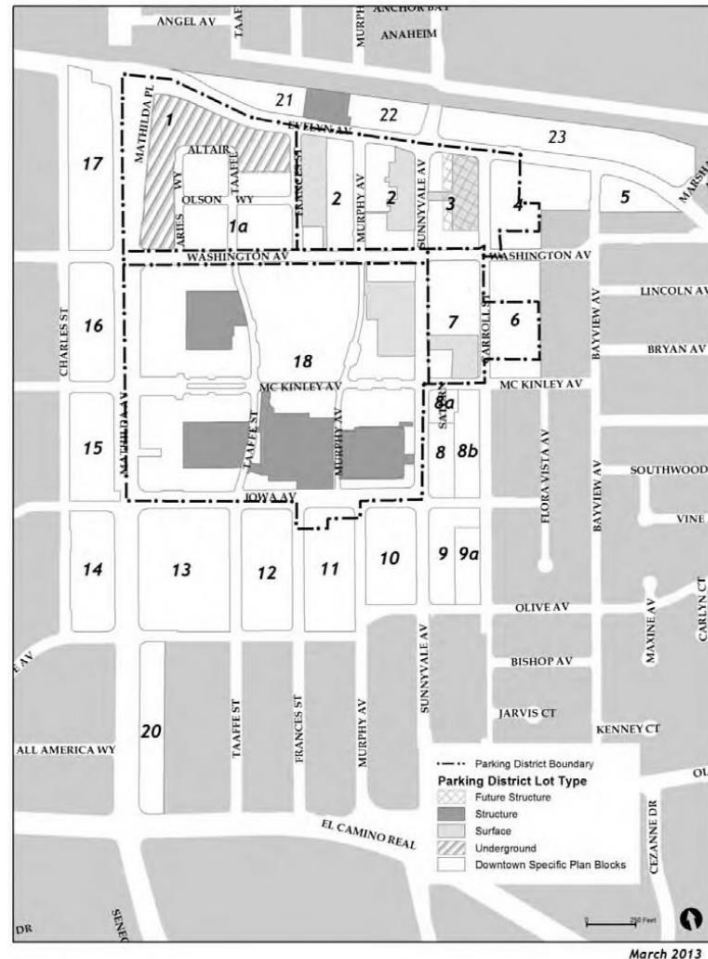
The proposed project is located within the City's Parking Management Assessment District (PMAD), which supplies, operates, and maintains shared public parking for downtown businesses that do not have sufficient on-site space to build parking. Instead of providing the entirety of their required parking, these owners pay an assessment based their parking deficit — the amount of parking they provide compared to the parking demand generated by their site. A parcel is considered to be at a deficit if it does not provide sufficient parking to meet the City's demand guidelines.² The annual assessment funds the operation and maintenance of existing public parking facilities and the debt service payments from the acquisition and construction of various public-parking facilities within the boundaries of the PMAD.³

The PMAD facilitates development in downtown and helps achieve goals to reduce space dedicated to parking by reducing the amount of parking spaces that would typically be required by current regulations. The PMAD allows property owners to maximize the value of their land, facilitates more dense development, and lowers development costs and rents. An oversupply of parking consumes valuable real estate, decreasing the amount of land dedicated to purposes that serve people. Further, building parking has been found to incentivize people to drive instead of riding transit, walking, and biking, which increases traffic congestion, greenhouse gas emissions, and minimizes investments in pedestrian centered infrastructure. A map of the PMAD is shown in Figure 2 on page 5.

² The methodology for calculating a property's parking demand, parking deficit, and assessment within the PMAD is provided in an annual report, titled, "Downtown Parking Maintenance District Preliminary Engineer's Report."

³ Each year in May all parcels within the boundaries of the Maintenance District are analyzed to determine their current use.

Figure 2: Downtown Specific Plan Blocks and Parking Management Assessment District Boundaries



Source: City of Sunnyvale Downtown Specific Plan, 2003 (Updated 2013).

The guidelines used to calculate parking demand for the purposes of determining the deficit parking for each property within the PMAD are different than the Zoning Code and DSP parking requirements. The assessment is based on PMAD parking demand guidelines. The PMAD was reauthorized on July 28, 2009 under City Council Resolution No. 398-09. The reauthorization stipulated a long-term assessment methodology that set a base rate for fiscal year 2009/10 to be adjusted annually based upon the previous year's change in the Consumer Price Index (All Urban Consumers, for the San Francisco-Oakland-San Jose area as determined by the U.S. Department of Labor). Table 1 on page 6 shows the PMAD Parking Demand Guidelines. For office uses, the guideline is one parking space per 250 square feet.

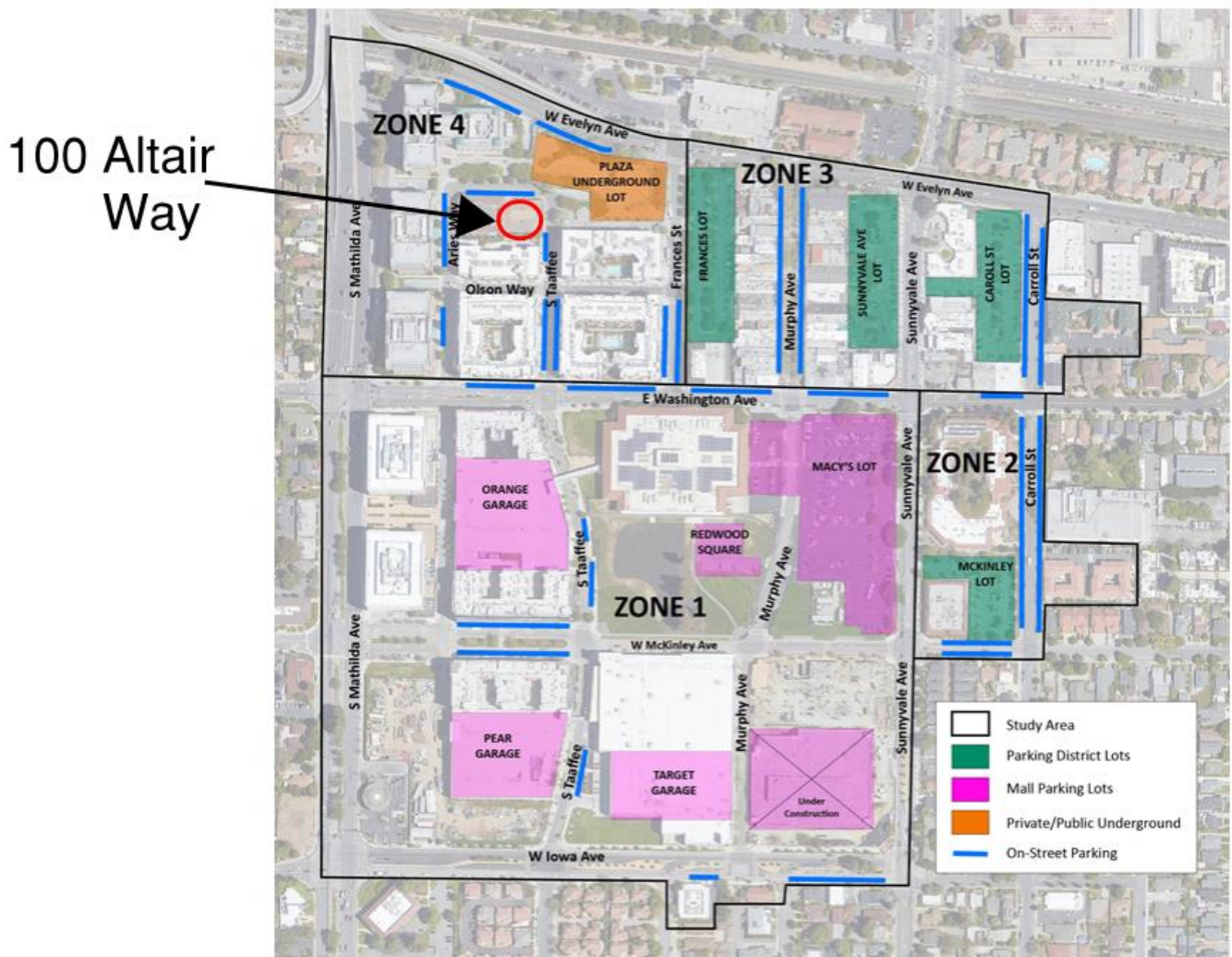
Table 1 Downtown PMAD Parking Demand Guidelines

Current Type of Use	One Parking Space Per
Apartments (1 bedroom)	0.66667 Units
Apartments (2-3 Bedrooms)	0.57143 Units
Churches	3 seats
Condos	0.50 Units
Financial Institutions	180 sq. ft.
General Offices (Free Standing)	250 sq. ft.
General Offices (In Center)	250 sq. ft.
Hotels	Rooms + Employees
Industrial Warehouses	2,500 sq. ft.
Medical/Dental	180 sq. ft.
Nightclubs and Bars	50 sq. ft.
Other Uses ¹	180 sq. ft.
Repair Garages	180 sq. ft.
Research & Development	500 sq. ft.
Rest Homes	2.25 Units
Restaurants w/ Bars	75 sq. ft.
Retail	250 sq. ft.
Senior Citizen Apartments	2.0 Units + Employees
Shopping Centers	225 sq. ft.

Source: City of Sunnyvale Downtown Parking Maintenance District FY 2017-18 Preliminary Engineer's Report, 2017

The assessment calculation also takes into account where the property is located within four PMAD Benefit Zones. Properties within their respective zones only pay for the operation and maintenance of the parking facilities within that benefit zone. The total maintenance and operation costs of parking within a zone are then distributed to each parcel within that benefit zone based on the proportionate number of deficit parking spaces. Figure 3 on page 7 shows the four Benefit Zones within the PMAD. The proposed project at 100 Altair Way is located in Zone 4.

Figure 3 Downtown PMAD Zones and Project Site



Source: City of Sunnyvale, Walker Consultants, 2020

The most recent Engineer's Report for Fiscal Year (FY) 2017-18 includes the assessment rate for each Benefit Zone based on the cost of operation and maintenance of the parking facilities. Property owners pay an annual assessment to the PMAD, ranging between \$21.88 and \$172.63 for each deficit parking space (owners in some blocks pay \$0). Table 2 on page 8 provides the assessment rate for each Benefit Zone in the PMAD. For example, since the subject site is located in Benefit Zone 4, the owner would pay an assessment of \$21.88 per deficit parking space.

Table 2: 2017-18 PMAD Assessment Rates per Benefit Zone

Benefit Zone	FY 2017-18 Assessment Rate per Deficit Parking Space
1	0.00
2	\$167.28
3	\$172.63
4	\$21.88

Source: City of Sunnyvale Downtown Parking Maintenance District FY 2017-18 Preliminary Engineer's Report, 2017

While property owners pay an annual assessment for deficit parking spaces, those deficit spaces are not owned or tied to the property. Public parking spaces in the PMAD are shared by all properties. Payment for deficit spaces is to account for a property's difference in the parking demand compared to the on-site supply and the right to access and use PMAD shared public parking to make up any shortfall. Property owners are paying for deficit spaces that are shared by all.

The existing building on the site is currently paying into the PMAD for a deficit of 57 parking spaces, based on the current land use. However, when this building is replaced with the planned 100 Altair development, the project's parking deficit and PMAD assessment would be recalculated based on the new project's square footage and use and the amount of parking built on the site.

Based on conversations with the City and technical expert who calculates the PMAD assessment for the Engineer's Report, when a parking study is completed for a proposed development or existing property, the parking deficit number used to calculate the PMAD assessment is based on the study recommendation, not the parking demand guidelines outlined on page 5 of this memo. This is because a study completed by a technical expert shows the true parking deficit of a project/site based on data and not an arbitrary number.

The proposed project would provide a total supply of 305 parking spaces including parking for 158 vehicles in marked stalls and parking for an additional 147 vehicles in garage drive aisles through a valet operation. Since the valet spaces would not be physically marked stalls, these spaces were not counted toward the project's parking supply for the purposes of the assessment calculation.

Therefore, the methodology for calculating the deficit assessment for the proposed project would be Walker's recommended supply of 342 parking spaces (see Parking Needs Analysis on page 11 of this analysis for recommended supply calculations) compared to the 158 parking spaces provided on site through marked stalls. Based on this calculation, the proposed project would have a parking deficit of 184 spaces at opening.

Transportation Demand Management Plan Review

To decrease parking demand and vehicle trips generated by the project, the project applicant plans to implement a Transportation Demand Management (TDM) program. Based on the combination of strategies outlined in this program, the plan estimates a 40% reduction in trip generation within six months of opening

Transportation Demand Management programs, or TDM, provide information and incentives that give people choices for how they want to get around and access their destinations. TDM programs promote alternatives to driving alone, such as transit and bike sharing, and reduce the demand for parking. These programs also influence how and when people travel, resulting in a more efficient transportation system. Effective TDM programs reduce congestion and improve mobility, quality of life, and air quality.

The TDM program that is proposed by the applicant is based on research and methodology from the “Quantifying Greenhouse Gas Mitigation Measures” report by the California Air Pollution Control Officers Association (CAPCOA).⁴ The program identifies 15 different measures that can be applied to the site and that will have an impact on changing commute-to-work travel behaviors. The 15 measures selected represent implementation of proven transportation demand management strategies such as:

- Commute trip reduction measures or transportation programs
- End of trip facilities or amenities within the building to facilitate arrival in alternative modes
- Marketing and information of commute options, benefits and incentives
- Enhancements to bicycle and pedestrian infrastructure and design of streets surrounding the site
- Site location and proximity to frequent transit services and other land use opportunities
- Provision of a limited parking supply in the building

Transportation Demand Management measures work in concert with each other to produce results. A balanced and calibrated TDM plan provides commuters with clear strategies, solutions, services, and support systems to incentivize, facilitate, change, reinforce, and maintain commute behaviors. Generally, commuters get on the car and drive to work almost by default, without considering their options. Historically, this has been facilitated by the provision of ample parking at their destination and very small out of pocket costs for driving.

The two most significant strategies that a project can pursue to change behaviors is to limit the provision of parking and to locate the project in close proximity of a frequent transit service station. These are two critical elements that will be provided by the 100 Altair development and that will facilitate implementation of a successful TDM program.

TDM strategies work to support provision of a reduced parking supply and increase the use of modes of transportation other than driving alone. The ultimate goal of TDM plans is to reduce vehicle trips, congestion, vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions. These are the objectives of California Environmental Quality Act (CEQA) and the implementation of California Senate Bill 375, Sustainable Communities

⁴ California Air Pollution Control Officers Association. *Quantifying Greenhouse Gas Mitigation Measures*, August, 2010. Available at: <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>

and Climate Protection Act of 2008. This also furthers the goals of California SB 743, which changed how the State measures transportation impacts from new development.

Prior to implementation of SB 743, transportation impacts were assessed in terms of Level of Service (LOS), which measures vehicle delay on the roadway and the impact to drivers. Measures to mitigate vehicle delay under LOS include widening lanes and adding turn lanes. SB743 shifts from this measurement from LOS and requires that transportation impacts of new development be measured by vehicle miles traveled (VMT) and the impact that the development will have on increasing or decreasing driving. Measures to mitigate VMT are similar to TDMs, such as increasing transit options, charging for parking, and incentivizing biking and walking.

The California Air Pollution Control Officers Association (CAPCOA) in its landmark report “Quantifying Greenhouse Gas Mitigation Measures” from August 2010, establishes that transportation demand measures stemming from Land Use/Location, Neighborhood/Site Enhancement, Parking Policy/Pricing, Transit System Improvements, and Commute Trip Reduction programs, can reduce VMT by as much as 75% at urban locations, such as downtown San Francisco, and as much as 40% at compact infill locations, such as downtown Sunnyvale.

As explained in the CAPCOA report, on page 58, “the interaction between the various TDM strategies is complex and sometimes counter-intuitive.” Combining measures can have a substantive impact on the reduction of vehicle trips and GHG impacts, however there are also diminishing returns of combining too many strategies. Vehicle trip reductions will not get to 100% but to a maximum level of reduction as justified by the available literature. The 40% maximum reduction that was established for the project site was based on this guidance.

However, TDM is an evolving field. Since 2010, there have been many changes in the transportation system, new mobility options have arisen such as Transportation Network Companies (TNCs such as Uber and Lyft), bike sharing, scooter sharing, e-bikes, and other personal mobility devices. At the same time, the real estate development industry has been consolidating existing downtown areas through infill, densification, and flexibility in parking regulations from local governments. Downtown Sunnyvale is a primary example of this development trend, as is locations such as South Lake Union in Seattle, the Pearl District in Portland, and many others in cities across the country.

The fact is that this project and its location may achieve more than 40% reduction in single-occupant vehicle trips. There are case studies that suggest this possibility within Silicon Valley. One example is Rubrik, Inc. located in the Palo Alto Research and Industrial Area, a suburban office park about one mile away from the California Avenue Caltrain Station. Rubrik implemented a robust and comprehensive TDM program in 2018 that includes first/last mile shuttle connections to train service, extensive support and facilities for bike commuters, and a robust ridesharing and telework program, among other features. Rubrik was able to increase the mode share of non-SOV commuters from 9% to 39% at the end of 2019, a full 30% reduction in SOV mode share.

It is important to note that Rubrik’s location is much more suburban than 100 Altair and much farther away from Caltrain service. In fact, 100 Altair is both within a five minute walk of the Sunnyvale Caltrain Station and close to the Mountain View stop, a station with higher frequency of service including express train (Baby Bullet) service to San Francisco and San Jose. Further, Caltrain’s electrification process will result in expanded service at the Sunnyvale Station and an express train (Baby Bullet). Further, electrification will allow more trains per hour to and from Sunnyvale and decrease travel times.

One of the key measures implemented by Rubrik was the hiring of a dedicated Employee Transportation Coordinator (ETC) to oversee implementation and coordination of the entire TDM plan. This is a critical measure, because TDM programs require continuous promotion, education, and engagement with users to be successful. The ETC acts as the owner and champion of the TDM Plan. It gives a face and recognition to the program. It is also the person that will track performance toward the plan goals and monitor the effectiveness of various measures, such as amount of transit pass subsidy, incentives for biking or carpooling to work, use of bike parking areas, etc.

The recommendation is that the property manager not only hires an ETC or TDM manager for the building, but also that this person implements a performance monitoring program for the TDM plan to oversee its development and progress toward a 40% SOV mode share reduction goal, and reporting to the City of Sunnyvale. Performance monitoring should be completed by conducting an annual commute survey for all tenants and employees. The survey should aim at assessing the mode share of all commute modes, including telework. Standard questions include:

- Days in the office and commute times, typical work schedule
- Commute miles
- Type of transportation used to commute to the office in the past week
- Number of times the employee drove alone and parked, and location of parking
- Number of days typically teleworking
- Reasons for commuting via driving alone or other modes

A complementary analysis to the commute survey is to provide a monthly report of parking utilization versus building occupation to track parking ratios throughout the year.

Parking Needs Analysis

To provide an understanding of how much parking would be needed to adequately accommodate the proposed project, a parking needs analysis was conducted.

Base Parking Ratios

The first step of the parking needs analysis is to start with the type and quantity of land use to be analyzed. Each land use has a specific metric considered by the parking industry to be a reliable measure of parking demand for that use. For office, that metric is square footage (gross leasable area or GLA). The parking demand is divided by the quantity for each metric to generate a base parking ratio for each land use based on that metric (i.e. for office the ratio is presented as “spaces per thousand square feet of gross leasable area”).

Simply put, the base parking demand ratios represent how many parking spaces should be supplied if the spaces are unshared, and the project is in a suburban context where the driving ratio, or the number of people driving to the site, is at or near 100 percent.

Table displays the base parking demand ratios used for this analysis. While the proposed project is a single land use that will not be sharing parking, the base ratios used for this study are the published rates in the Third Edition of *Shared Parking*, and Walker’s Shared Parking Model, both created in partnership with the Urban Land Institute

(ULI). Walker led a team of consultants in writing the updated Third Edition of *Shared Parking* and features the most up-to-date parking demand model. The model is designed to project the parking needs of various types of development from 6:00 a.m. to 12:00 midnight on a typical weekday and a weekend for every month of the year.

While *Shared Parking* methodology is typically used for multiple land uses sharing the same parking supply, the published base ratios were collected for standalone uses in suburban contexts. Therefore, Walker believes these base ratios are appropriate to use in evaluating the potential parking demand of the proposed project. Additionally, these rates are informed by thousands of field parking occupancy studies performed by parking and transportation professionals over decades. These ratios have been vetted by a team of consultants who specialize in parking demand analyses and who mutually agreed upon the use of these ratios prior to the publication of the Third Edition of *Shared Parking*.

Table 3: ULI Base Parking Ratios

Land Use	Base Ratio	
	Weekday	Weekend
Office		
Visitor	0.24	0.03
Employee	3.09	0.31

Source: Walker Consultants, 2020

Presence Factors

After the land use has been quantified and base parking ratios have been applied, adjustments are made to account for parking demand variability by hour of day and month of year. These time-based adjustments are referred to as a “presence” adjustment.

Presence is expressed as a percentage of the peak hour demand on a design day (a typical day) for both time of day and month of the year. The Third Edition of *Shared Parking* provides these presence factors for office land uses which was used for this analysis.

Drive Ratio Adjustment

A driving ratio adjustment is the percentage of patrons and employees that are projected to drive to the site in a personal vehicle expressed as a ratio. This excludes all non-driving modes of transportation including shuttle busses and other public transportation, taxi, ride-hailing (Lyft/Uber), walking, bicycling and carpooling passengers.

The proposed project is approximately 0.2 miles from the Sunnyvale CalTrain Station, an estimated four-minute walk. With close proximity to the station, it is anticipated that many employees would arrive to the location by the train.

The drive ratio is also anticipated to be highly reliant upon implementation of the planned TDM strategies. Walker evaluated two scenarios in order to model the level of implementation and effect of TDM strategies. The project



applicant's TDM plan estimates a 40% reduction in vehicle trips with implementation of the plan (within six months of opening). Based on conversations with the project applicant discussing the strategies that will be implemented on day one of opening, a 30% reduction is likely to be achieved. As subsequent strategies are implemented over the following six months, the full 40% reduction should be reasonably achieved. Therefore, Walker analyzed both 30% and 40% reduction scenarios in driving adjustments. This translates into a 70% drive ratio with the 30% reduction for the first scenario and a 60% drive ration with the full 40% reduction under the second scenario.

Visitors to the office building are anticipated to arrive primarily by private vehicle, therefore, a drive ratio of 99% was used.

Parking Needs Analysis Results

The following provides the results of the parking needs analysis under two drive ratio scenarios:

- Scenario 1 – 30% reduction equating to a 70% drive ratio; assumes partial implementation of TDM plan on day one.
- Scenario 2 – 40% reduction equate to a 60% drive ration; assumes full implementation of TDM plan within six months of opening.

Scenario 1: 70% Drive Ratio

With a 70% drive ratio applied, peak parking demand is expected to occur in January, on a weekday, at 10:00 a.m. with a demand of 342 $\pm$ parking spaces. On weekends, peak parking demand is projected to occur at 11:00 a.m. with a demand of 36 $\pm$ spaces. With plans to accommodate 305 spaces on-site (158 marked spaces and 147 valet), the proposed project would experience a deficit of 37 $\pm$ spaces (the Recommendations section of this report provides recommended strategies to accommodate this parking deficit).

These results are summarized in Tables 4 and 5 on page 14.

Table 4: Weekday Peak Parking Needs Analysis Results – 70% Drive Ratio

Use	Quantity	Unit	Base Ratio	Driving Adj	Project Ratio	Unit	Peak Hr Adj 10AM	Peak Mo Adj January	Estimated Parking Demand
Office Visitors	141,333	sf	0.24	99%	0.24	ksf GFA	100%	100%	35
Office Employees			3.09	70%	2.17	ksf GFA	100%	100%	307
Total									342

Note: sf = square feet; ksf = 1,000 square feet; Adj = adjustment; Hr = hour; Mo = Month

Table 5: Weekend Peak Parking Needs Analysis Results – 70% Drive Ratio

Use	Quantity	Unit	Base Ratio	Driving Adj	Project Ratio	Unit	Peak Hr Adj 11AM	Peak Mo Adj January	Estimated Parking Demand
Office Visitors	141,333	sf	0.03	99%	0.03	ksf GFA	100%	100%	5
Office Employees			0.31	70%	0.22	ksf GFA	100%	100%	31
Total									36

Note: sf = square feet; ksf = 1,000 square feet; Adj = adjustment; Hr = hour; Mo = Month

Scenario 2: 60% Drive Ratio

With a 60% drive ratio applied, assuming full implementation of the TDM plan within six months of opening (as discussed with the project applicant), peak parking demand is expected to occur in January, on a weekday, at 10:00 a.m. with a demand of 298± parking spaces. On weekends, peak parking demand is projected to occur at 11:00 a.m. with a demand of 31± spaces. With plans to accommodate 305 vehicles on-site, (158 marked spaces and 147 valet), parking could be accommodated within the valet operation. These results are summarized in Tables 6 and 7 on page 15.

Table 6: Weekday Peak Parking Needs Analysis Results – 60% Drive Ratio

Use	Quantity	Unit	Base Ratio	Driving Adj	Project Ratio	Unit	Peak Hr Adj 10AM	Peak Mo Adj January	Estimated Parking Demand
Office Visitors	141,333	sf	0.24	99%	0.24	ksf GFA	100%	100%	35
Office Employees			3.09	60%	1.86	ksf GFA	100%	100%	263
Total									298

Note: sf = square feet; ksf = 1,000 square feet; Adj = adjustment; Hr = hour; Mo = Month

Source: Walker Consultants, 2020

Table 7: Weekend Peak Parking Needs Analysis Results – 60% Drive Ratio

Use	Quantity	Unit	Base Ratio	Driving Adj	Project Ratio	Unit	Peak Hr Adj 10AM	Peak Mo Adj January	Estimated Parking Demand
Office Visitors	141,333	sf	0.03	99%		ksf GFA	100%	100%	5
Office Employees			0.31	60%		ksf GFA	100%	100%	26
Total									31

Note: sf = square feet; ksf = 1,000 square feet; Adj = adjustment; Hr = hour; Mo = Month

Source: Walker Consultants, 2020

Valet Plan Analysis

The proposed project plans to manage and operate their parking through a valet program. The project applicant enlisted Ace Parking Management, Inc. ("Ace"), to develop a valet operations plan. As part of this parking study, Walker reviewed ACE's plan, dated March 9, 2020 and met with Ace on May 6, 2020, to review and discuss their plan.

Overall, Walker determined that the proposed valet operations plan follows industry best practices and is a viable plan for increasing the parking capacity and managing the parking operation. The plan submitted by ACE provides

sufficient reasoning to show that operations of the valet should provide for adequate and efficient garage operations, if implemented as stated within the plan. The following are Walker's findings related to the adequacy of the plan:

- Walker supports utilizing a third-party valet operator, such as Ace, to plan and manage the valet. A qualified third-party valet parking operator has the industry experience and expertise to ensure that valet operations increase facility capacity and operate as effectively and efficiently as possible.
- Ace identified not only expected peak parking periods and vehicle volume at peaks, but also expected staffing needs and potential challenges of the valet operation and how those challenges would be addressed. Ace also supplied plans for a "worst-case" scenario of the need to move a self-parked vehicle surrounded by valet vehicles, showing that this challenge could be met and how it would be handled.
- The valet plan, as described, is in line with industry best practices for a valet operation with high peak traffic periods during ingress and egress times within a busy office environment type of parking facility:
 - Walker agrees with Ace's approach to park vehicles via a valet assist approach for ingress, i.e., tenant employees are directed to self-park in a space themselves upon arrival. With most tenant employees arriving within the same timeframe in office situations, this is considered to be the fastest and most efficient way to park incoming vehicles.
 - Walker also agrees with Ace's approach to keep all vehicle keys as they will be needed to rearrange cars and for retrieval later.
 - Walker agrees with Ace's plan to implement a full valet operation egress of vehicles, where tenants' employees will retrieve their vehicle at a valet stand on B-1. As the garage is expected to be highly occupied through the day, with vehicles stacked in the aisles, tenants or tenants' employees should not be allowed to drive through the garage. Therefore, ACE's approach for departing vehicles is appropriate.
- Walker supports Ace's plan to use electronic valet technology, including a text-based system for retrieval of vehicles. This text ahead feature is anticipated to help gain efficiencies and reduce wait times. Further, the anticipated reporting provided by the system should provide data that can be used to provide continued improvements to the overall operations.
- Based on the information provided with the valet plan, Walker anticipates the proposed valet staffing plan should be adequate for the proposed operations, but should be reviewed periodically over the first several months of operations for any necessary changes to staffing needs or efficiencies.

While Walker does believe the plan should be sufficient for the proposed valet operations, challenges that may arise were identified for consideration by both the project applicant and Ace, and include the following:

- The project applicant should be made aware that the parking system is being designed for a valet and will therefore always rely on a valet to operate. This means valet operating costs will always need to be considered and budgeted for as long as the parking demand requires more marked spaces than are being built.
- While Walker found plans to be sufficient, it is also recognized that in an office environment, daily ingress and egress may present challenges as employees arrive and leave for work generally around the same time.

- While the projected parking demand shows parking during the peak periods will require an extensive use of stacked valet parking, Ace's well thought out plan and industry expertise should allow for an effective valet operation that maximizes the space limitations within the garage.

Review of Parking Slope Design

Walker reviewed the proposed project design plans for ramp slopes in the parking garage. In our review, we determined the proposed speed ramp slope would require the City issue a variance approval. The review of the propose slope and transition in relation to the City's Parking Guideline ramps found:

- The proposed project design plans show vehicular speed ramps with slopes of 20 percent.
 - City of Sunnyvale Parking Design Guidelines call for speed ramps to have a maximum of 12% slope and the Zoning Code allows for alternatives through the Special Development Permit review.
- The proposed project design plans show transition ramps at the top and bottom of the speed ramp with slopes of 10% and a length of 10 feet.
 - The Sunnyvale Parking Guidelines call for transition ramps to have a minimum length of 10 to 12 feet at the top and bottom of speed ramps.

Typically, Walker does not recommend a speed ramp slope greater than 16 percent. Transition slopes are generally designed to be half the slope of the speed ramp. The proposed 20% speed ramp slope would require alternative consideration and approval from City of Sunnyvale. Should the City consider the proposed alternative slopes, some adjustments to the transition slopes need to be made.

Where there is a difference of 10% or more between two sections of floor slab, a transition slope is required to prevent vehicles from "bottoming out." This means the current design would need to provide additional transition ramps to ease the vehicle movement through the ramps. A minimum of 20 feet of ramp length (10 feet at the top and 10 feet at the bottom) would need to be added to include additional transition slopes. Another option would be to decrease the floor to floor height (if possible) in order to reduce the 20% speed ramp slope.

At the speed ramp from parking garage ground level to Level B1, there is an additional ramp at the bottom (after making a 90 degree turn) that has a slope of 10 percent. This additional ramp would require transition slopes at the top and bottom. The proposed 20% slope would likely have a Level of Service (LOS) rating of F. For reference:

Slope LOS:

- LOS D = 16% slope
- LOS C = 13.3% slope
- LOS B = 10.67% slope
- LOS A = 8.0% slope

Transition Slope Length:

- LOS D = 10 foot min. transition slope length
- LOS C = 11 foot min. transition slope length
- LOS B = 12 foot min. transition slope length
- LOS A = 13 foot min. transition slope length

Recommendations

1. Calculating the Assessment Paid to the Parking Management Assessment District

As explained on pages 4 through 8, the proposed project is located within the City's downtown Parking Management Assessment District (PMAD), which supplies, operates, and maintains shared public parking for downtown businesses that do not have sufficient on-site space to build parking. Property owners pay into the shared parking through an assessment based their parking deficit — the amount of parking they build and provide compared to the parking demand generated by their site. The annual assessment funds the operation and maintenance of existing public parking facilities and the debt service payments from the acquisition and construction of various public parking facilities within the boundaries of the PMAD.

The existing building on the site is currently paying into the PMAD for a deficit of 57 parking spaces based on the current land use. However, when this existing building is replaced with the planned 100 Altair development, the project's parking deficit and PMAD assessment would be recalculated based on the new project's square footage and use and the amount of parking built on the site.

Prior to full implementation of the TDM program, based on Walker's analysis using the Walker/Urban Land Institute Shared Parking Model, the proposed project is projected to need 342 spaces to accommodate peak demand. The proposed project plans to provide 158 marked stalls on-site. Therefore, the parking deficit would equate to 184 spaces. With a current assessment rate for Zone 4 of \$21.88, the annual assessment fee would be \$4,025.92.

After six months of opening, the applicant should report to the City the TDM amenities it has implemented compared to the proposed TDM measures and strategies. From opening day through year 1, the applicant should perform parking utilization studies and conduct a TDM survey to determine if the TDM program is adequately reducing vehicle trips and parking demand.

Upon full implementation of the proposed TDM program and based on Walker's parking needs analysis, a recommended supply of 298 spaces would be needed to accommodate peak parking demand. This would equate to a deficit of 140 spaces. If the proposed project reaches these reduction goals, the annual assessment should be recalculated to reflect a 140-space deficit, equating to \$3,063.20.

It is recommended that the parking utilization reports submitted by the property owner to the City detail the following:

- Total parking inventory supplied (marked stalls and valet spaces)
- Daily number of spaces utilized per hour (marked stalls and valet spaces) between 7:00 a.m. and 7:00 p.m.
- Note any days where utilization reached 100 percent.
 - Note where vehicles were parked (if valet) or where drivers were instructed to park (if self-park)

The schedule for conducting the parking utilization report and submitting to the City:

- Months 1 through 6 of opening before full implementation of the TDM program:
 - In conjunction with the TDM reporting, the property owner shall provide a daily/weekly parking utilization report.
- Months 7 through 12 of opening:
 - Provide the parking utilization report on the last day of each month.
- Year 2 of opening and forward:
 - Annually in January in conjunction with the annual TDM survey and annual PMAD assessment.

2. Accommodate Parking in Adjacent Underutilized Public Parking Facilities

Based on parking demand projections and before full implementation of the TDM plan, the proposed project may experience a deficit of 37± parking spaces for the first six months of operations during the peak parking hour. The City should require daily or weekly parking utilization surveys for the first six months to determine the need to accommodate some parkers in the adjacent Plaza garage.

To accommodate additional parking demand, employees may participate in the downtown employee permit program, subject to limitations and consistency with the approved TDM plan.

3. Parking Management

In order to enhance the study and understanding of the valet, Walker recommends the following parking management additions:

- The plan should provide more clarity on how visitors, deliveries, and transient parking will be managed.
- The plan should consider only allowing tenants to park in the garage at a minimum over the first six months until the TDM plan is fully implemented. Greater efficiencies can be gained this way as tenants and valet staff become more familiar with each other – e.g. the valet staff learn employee schedules and anticipate parking ingress and egress needs, tenants learn the process to park and pick up vehicles increasing throughput of vehicles, etc. This would mean that visitor and transient parkers would be directed to use the Plaza garage.
- Provide clarity to the project applicant on wait times for tenants. Ace demonstrated that they have achieved low wait times (four to five minutes) in other locations and greater clarity on anticipated wait times for the 100 Altair project is recommended to be included.

4. Transportation Demand Management Monitoring and Enforcement

The 15 measures that are recommended for implementation in the TDM Plan are based on proven and effective experience, which has been summarized in the CAPCOA report “Quantifying Greenhouse Gas Mitigation Measures.”

It is anticipated that the TDM program may need to evolve over time as employees and visitors’ travel behavior adapt to post-COVID 19 conditions. Transit use may be depressed while telework and cycling may be exacerbated over the near-term. Recent discussions among TDM professionals indicate that the relative share of transportation modes among commuters will be in flux for the foreseeable future.

For this reason, it will be imperative to implement a performance monitoring program to track progress of the TDM Plan toward its goal of achieving 40% mode share of transportation modes other than Single Occupancy Vehicles (SOV). The property manager will be required to submit an annual monitoring report to the City of Sunnyvale summarizing the success of individual TDM measures and the TDM program as a whole.

The details of the reporting will be determined in collaboration with the City but could include metrics of success related to parking occupancy, drive-alone mode share, use of alternative modes and average travel distance for a typical day or week. Methods that can be used to evaluate the effectiveness of the TDM program and individual measures include:

- Provide a description of the TDM programs and services offered to employees on day one and at month six to confirm full implementation of the plan.
- Report the number of active users utilizing each program on a quarterly basis, as well as the cost of program operation and subsidies and incentives used, to assess program effectiveness and return on investment.
- Conduct an annual commute survey that captures data on how employees travel to and from the site and their attitudes toward alternative commute modes and satisfaction with available mobility options.
- Compile a report summarizing programs cost and utilization, and results of employee survey, and share with the City of Sunnyvale.

If the findings in the annual report show that a 40% reduction in single-occupant vehicle mode share has not been met over a period of three years, the property manager and tenants must work with City staff to identify additional TDM measures that could feasibly be implemented to further reduce trip generation from the project.

COVID-19 Considerations

This memorandum and analysis were conducted during the response and recovery of the COVID-19 pandemic. As a response to health directives resulting from the pandemic, more office workers are being instructed or voluntarily working from home. It is currently unknown to what degree office workers will continue to work from home upon recovery and reopening, however, it is anticipated that at least a portion of workers will continue to work from home for the foreseeable future. While Walker is closely monitoring predictions from experts, it is currently unclear how this may directly impact parking demand for office land uses. While the parking needs analysis anticipates a highly utilized garage based on current industry standards, these numbers may change depending on how work from home and commuter trends adapt prior to the availability of a vaccine and as working from home becomes a more viable option for office workers.