

PROJECT NO. 33-1727.00



## COMMUTER PARKING AND MAINTENANCE MANAGEMENT PROGRAM

### FINAL REPORT

SUNNYVALE, CA

Prepared for:  
CITY OF SUNNYVALE  
DEPARTMENT OF PUBLIC WORKS

OCTOBER 19, 2012



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## EXECUTIVE SUMMARY

The City of Sunnyvale ("City") engaged Walker Parking Consultants ("Walker") to prepare a Parking and Maintenance Management Program Study. The primary objective of this study is to provide the City with a program for financial sustainability of the available City-owned parking facilities<sup>1</sup> ("City-owned Facilities") that are located in the vicinity of the downtown Sunnyvale Caltrain Station ("the Station") and serve its passengers.

The Study Area consists of six parking facilities:

- 1) Caltrain Parking Facility, which includes a garage and adjacent surface lot (Caltrain-owned)
- 2) Mathilda Offramp Lot (City-owned)
- 3) West Hendy Avenue on-street spaces, south side of street, (City-owned)
- 4) South Mathilda Underpass Lot (City-owned)
- 5) Evelyn Avenue Lot (City-owned)
- 6) North Mathilda Underpass Lot (City-owned)

Other parking facilities in the Station area, both on- and off-street, in commercial and residential areas, were observed as part of the assessment of the overall demand for parking in the six facilities listed above.

## STUDY FINDINGS

The current policy of providing free parking in the City's commuter-serving parking facilities, located near Sunnyvale's Caltrain Station, has a number of negative effects:

- The estimated costs to maintain the parking spaces in the facilities studied are not tied to a specific revenue source that offsets the cost of providing these spaces. The City's general fund appears to be subsidizing the cost of parking for a relatively small number of commuters.
- Between 9:00 AM and 3:00 PM on a typical weekday no paid or free parking spaces were available south of the Station or along West Hendy Avenue to drivers who wished to park and board a train at the Station. The only options for passengers was to return within an unrealistically short period of time or park illegally by overstaying time limits in other downtown and neighborhood parking areas or park in spaces reserved for people with disabilities.
- There are an estimated 137 spaces available to the public north of the Station in the North Mathilda Underpass Lot on weekdays. However, this parking lot is inconvenient to reach by car, poorly signed, lacking lighting, and in need of signage to direct people to the facility and

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<sup>1</sup> We use the term parking "facility" to denote a location that facilitates parking because not all the facilities to which we refer are parking lots. Four of the five City facilities are lots, but the West Hendy Avenue "facility" represents the on-street parking located on the south side of that street between North Taaffe Street and Sunnyvale Avenue. The Caltrain parking facility contains both a parking structure and surface lot.



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subsequently to the Station once they park there. The existence and availability of these spaces appears to be unknown to most members of the public and represents an underutilized resource that may be convenient for captive users such as train commuters.

- A comprehensive analysis of parking enforcement was not undertaken as part of this study. It therefore cannot be concluded with certainty whether or not the current level of enforcement is sufficient to enforce the posted time restrictions that are and in effect for on- and off-street parking spaces in the Station area. City staff and Walker have heard from a few residents and business owners that in some instances commuters were parking in locations that are restricted for short-term parking only.

## RECOMMENDATIONS

In order to address the issues described above, we make the following recommendations within this report.

### PARKING ENFORCEMENT

- Enforce the time restrictions currently in effect along streets and in off-street parking areas in close proximity to Sunnyvale Station in order to ensure that commuters are not parking in these areas regularly;
- Consider the expansion of the Station Area Parking Permit Program if commuter parking spillover occurs on streets not currently in the program, and residents and property owners in these areas support inclusion in the program.
- Enforce the paid parking program as described in the report. Based on limited data and study, we believe that current enforcement staff may be able to enforce the existing parking regulations as well as the recommended paid parking program. To the extent that this is not the case, additional parking enforcement staff should be able to be cost-neutral if not revenue generating.

### PAID PARKING

- Implement a monthly paid parking permit program with an initial rate of \$32.00 per month. Purchasers of these permits would be allowed to park in each of the parking facilities under study including the south side of Hendy Avenue with the exception of the South Mathilda Underpass Lot. The South Mathilda Underpass Lot will be reserved and signed for daily parkers only.
- Reserve the South Mathilda Underpass Lot exclusively for daily parkers on weekdays and implement a fee of \$3.00 per day (24-hour period) for parking on weekdays in this facility.
- Allow for both daily and monthly parking in the North Mathilda Underpass Lot, with a daily parking fee of \$2.00 per day (24-hour period) once the recommended improvements have been made to upgrade the facility. Until that time, this facility should likely remain free.
- Consider a pilot program prior to the full implementation of the paid-parking recommendations. One possibility would be the implementation of daily paid parking in one of the City's commuter-serving lots (likely the South Mathilda Underpass Lot) to gauge acceptance of and demand for paid parking in these lots.



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- Consider not allowing holders of residential parking permits to park along the south side of Hendy Avenue during business hours on weekdays given the abundance of parking along other blocks in the neighborhood.
- Parking on weekends should, at this point in time, be kept free. The typical parking demand that we observed does not justify charging for parking on weekends. While not specifically quantified, anecdotally, we understand that parking demand on weekends during events in San Francisco likely would justify charging for parking.<sup>2</sup> However, we suggest that charging for parking on selected days only could create confusion and difficulty for the public.
- If paid parking is implemented, free parking should not be granted in parking spaces for people with disabilities. In our experience, providing free parking for people with disabled placards creates abuse and actually reduces accessibility for drivers with disabilities.
- Paid parking in the facilities under study will be effective only if the recommended enforcement measures are undertaken.

### *POLICIES, IMPROVEMENTS AND OTHER RECOMMENDATIONS*

It should be the City's policy that some parking spaces should always be available to serve the public; the least desirable situation is for a driver to have no option for parking at the Station. Based on this premise, we recommend the following:

- Link the paid parking program to improvements in the North Mathilda Underpass Lot and improved parking availability in all the parking facilities included in this study.
- Make the North Mathilda Underpass Lot more attractive to daily and monthly parkers by making improvements to the facility including:
  - Striping
  - Signage: Signage along southbound and northbound Mathilda Avenue should clearly indicate the existence of parking for Caltrain passengers in this location. Signage should also be provided in the Station area, particularly along Evelyn Avenue, directing drivers to available and lower cost parking in the North Mathilda Underpass Lot. Signage in the lot should also direct drivers to the Station on foot. A simple parking guidance system that demonstrates real-time parking availability in this parking lot would be highly desirable.
  - Lighting for convenience, perception and security purposes
  - Initial cleaning (and regular maintenance) of the facility
  - Possible security cameras
  - Pedestrian curb cut to the sidewalk along Angel Avenue
  - Curb cut or automobile access to/from Angel Avenue<sup>3</sup>
  - Construction of a pedestrian path along the Caltrain right-of-way from the North Mathilda Underpass Lot to the North Platform of the Caltrain Station.<sup>4</sup>
- Monitor parking occupancy rates in each of the facilities and on-street locations on a regular (monthly) basis. Given frequent enforcement, this should not be difficult.

<sup>2</sup> Daily passenger data for the Station, particularly for weekend days, would be helpful in this regard. The data was not available in time for inclusion in this study.

<sup>3</sup> This measure would require a Traffic Impact Analysis (TIA) to determine the impacts on traffic in the area.

<sup>4</sup> Provided that it is determined that this can be done safely for pedestrians.



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- Adjust parking rates and policies based on observed parking occupancy rates on a quarterly basis, keeping in mind the effects of seasonality on parking demand. While maintaining a system that is easy for the public to understand and reasonable for the City to administer, generally rates should be reduced in facilities that are underutilized while rates should be increased where facilities are regularly full or near full. We note that, to ensure that the system of paid parking in the City's other commuter-serving facilities, it is likely that some fee will need to be charged in the North Mathilda Underpass Lot even if the lot is not at full capacity on a regular basis.
- Consult with Caltrain to determine the extent to which bicycle parking facilities for the Station are oversubscribed.<sup>5</sup> To the extent that the demand for bicycle lockers at the Station exceeds supply, the City should consider setting up additional bicycle parking to increase access to the Station using non-driving modes.

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<sup>5</sup> This data was unavailable within the time constraints of this analysis.



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## PROJECT UNDERSTANDING

The City of Sunnyvale ("City") engaged Walker Parking Consultants ("Walker") to prepare a Parking and Maintenance Management Program Study. The primary objective of the study is to provide the City with a program for financial sustainability of the available City-owned parking facilities<sup>6</sup> ("City-owned Facilities") that are located in the vicinity of the downtown Sunnyvale Caltrain Station ("the Station") and serve its passengers.

The primary question that this study seeks to answer is, would the implementation of paid parking in the City-owned facilities contribute to the financial sustainability of City-owned parking facilities or would the costs of implementing and operating paid parking exceed the revenue that such a (paid parking) policy would generate?

The study also seeks to address additional important questions including:

- Are there parking management benefits that can be achieved through the implementation of paid parking in these facilities?
- Are there environmental benefits to be gained from the implementation of paid parking in these facilities, perhaps resulting from changes in driving habits or even less "cruising" in search of parking spaces as drivers arriving after 9:00 AM must drive around in search of available parking?

The City seeks to answer these questions through an analysis of inventory and occupancy surveys of the parking facilities under study as well as the Caltrain-owned parking facility ("Caltrain Facility") located in front of the Station. The City also requested an analysis of the cost and expenses associated with implementing paid parking as well as the City's current maintenance expenses for the City-owned Facilities. We note that the estimates and projections contained within this document are for "go/no-go" decision making purposes only and should not be used for financing.

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<sup>6</sup> We use the term parking "facility" to denote a location that facilitates parking because not all the facilities to which we refer are parking lots. Four of the five City facilities are lots, but the West Hendy Avenue "facility" represents the southern block face of that street between North Taaffe Street and Sunnyvale Avenue. The Caltrain parking facility contains both a parking structure and surface lot.



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## EXISTING CONDITIONS

### STUDY AREA INVENTORY

The Study Area consists of the six parking facilities (which include on-street parking along West Hendy Avenue). The parking inventory or number of spaces contained in each facility is shown in Table 1.

Table 1: Parking Inventory by Facility

| Facility Number | Name / Location  | Weekday Spaces for Commuters <sup>A</sup> |
|-----------------|--|---|
| 1               | Caltrain Facility (Garage and Adjacent Surface Lot) <sup>B</sup> | 427                                       |
| 2               | Mathilda Off Ramp Lot - City owned                               | 38  |
| 3               | West Hendy Avenue - South blockface <sup>C</sup>                 | 37  |
| 4               | South Mathilda Underpass Lot                                     | 30  |
| 5               | Evelyn Avenue Lot  | 39  |
| 6               | North Mathilda Underpass Lot <sup>D</sup>                        | 140                                       |
|                 | <i>Subtotal Non-City-owned spaces in study</i>                   | <i>427</i>                                |
|                 | <i>Subtotal City-owned spaces under study</i>                    | <i>284</i>                                |
|                 | Number of Spaces Studied   | 711                                       |

<sup>A</sup> These include spaces reserved for people with disabilities.

Walker counted 489 spaces but 62 spaces are signed as reserved for use by an adjacent

<sup>B</sup> office building.

These represent on-street parking spaces, assuming a reasonably efficient configuration

<sup>C</sup> given that the parking spaces are not striped.

Spaces in this lot are not striped. This number of spaces represents an estimated capacity

<sup>D</sup> once striped from Hendy Avenue between North Taaffe Street and North Sunnyvale Avenue.

Source: Walker Parking Consultants, 2012

This report only contains recommendations pertaining to Parking Facilities 2 through 6 and not Parking Facility 1, the Caltrain parking facility, which is not City-owned or operated. However Caltrain's policies with regard to paid parking directly impact parking behavior in the City's commuter-serving lots. For this reason, and because the Caltrain facility provides the best comparable for paid commuter parking in the area, parking inventory and occupancy patterns were observed in the Caltrain facility along with the City's lots. The location of each of the six facilities is shown in Figure 1 on the following page. The facility numbers correspond with those in Table 1.

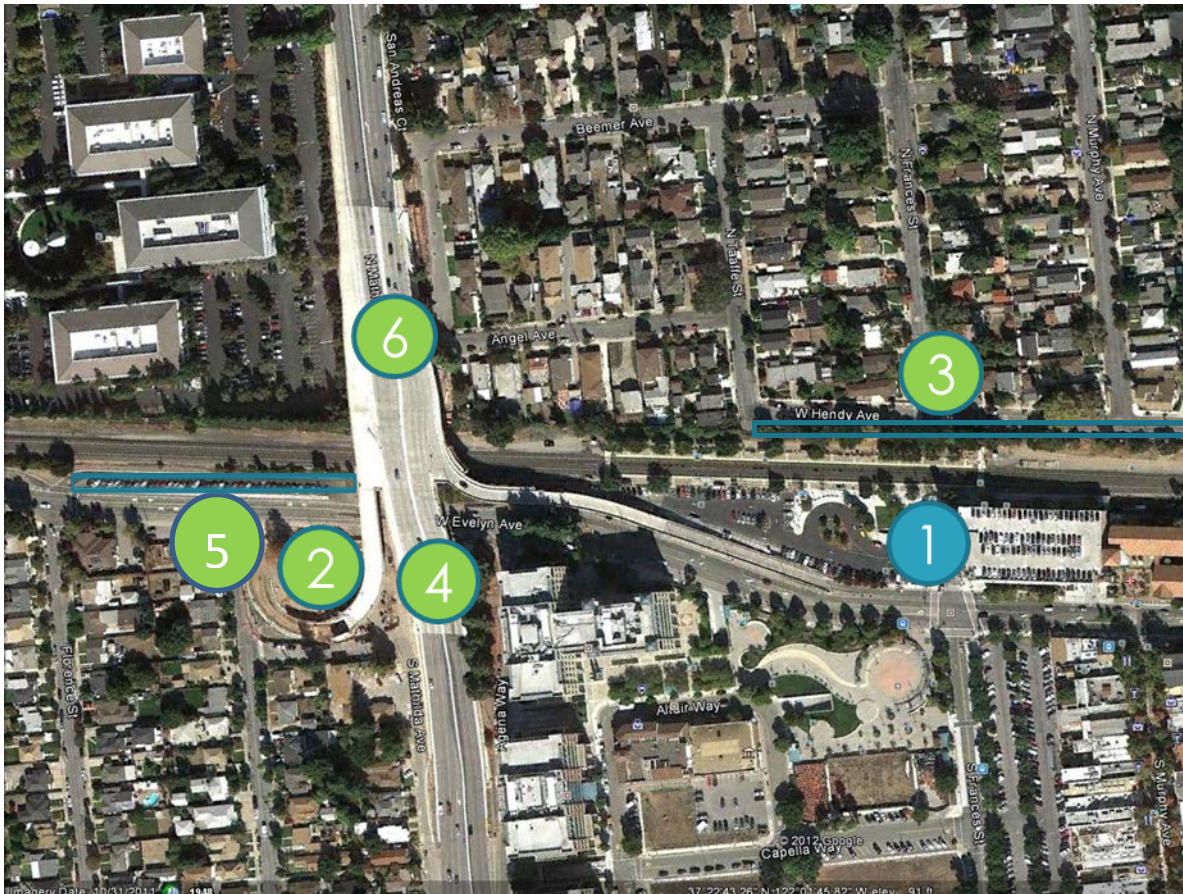


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### Figure 1: Parking Facilities Studied



- 1) Caltrain Parking Facility (Caltrain-owned)
- 2) Mathilda Offramp Lot (City-owned)
- 3) West Hendy Avenue on-street spaces, south side of street, (City-owned)
- 4) South Mathilda Underpass Lot (City-owned)
- 5) Evelyn Avenue Lot (City-owned)
- 6) North Mathilda Underpass Lot (City-owned)



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## STUDY AREA OCCUPANCY AND TURNOVER

Based on our experience with parking behavior at commuter rail stations, the requirements of the RFP and subsequent discussions with City staff, three parking occupancy counts were conducted on what were identified as a typical weekday and weekend for parking demand in the Study Area. However, additional occupancy counts were conducted to help support or confirm our initial findings.

We note that the results of the occupancy counts reflect demand for standard spaces and do not include spaces for people with disabled placards. In the City-owned parking facilities in particular, there was no demand observed for these spaces and they were generally found to be empty. However, we were concerned that including data that shows these spaces as available would misrepresent the level of parking availability for the general parking public in the three facilities that have spaces for people with the placards.

The following tables demonstrate the results of our weekday and weekend occupancy counts.

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Table 2: Weekday Base Occupancy Counts

| Facility Number | Name / Location  | Weekday Spaces for Commuters <sup>A</sup> | Weekday Occupancy 9:30 <sup>B</sup> | Weekday Availability 9:30 AM | Weekday Occupancy 2:00 PM <sup>C</sup> | Weekday Availability 2:30 PM | Weekday Occupancy 10:30 PM <sup>D</sup> | Weekday Availability 10:30 PM |
|-----------------|--|---|-------------------------------------|------------------------------|--|------------------------------|---|-------------------------------|
| 1               | Caltrain Facility (Garage and Adjacent Surface Lot) <sup>E</sup> | 415                                       | 413                                 | 2                            | 414                                    | 1                            | 15                                      | 400                           |
| 2               | Mathilda Off Ramp Lot - City owned                               | 36  | 36                                  | 0                            | 36                                     | 0                            | 3                                       | 33                            |
| 3               | West Hendy Avenue - South blockface <sup>F</sup>                 | 37  | 37                                  | 0                            | 34                                     | 3                            | 6                                       | 31                            |
| 4               | South Mathilda Underpass Lot                                     | 28  | 28                                  | 0                            | 28                                     | 0                            | 1                                       | 27                            |
| 5               | Evelyn Avenue Lot  | 37  | 37                                  | 0                            | 37                                     | 0                            | 3                                       | 34                            |
| 6               | North Mathilda Underpass Lot <sup>G</sup>                        | 140                                       | 4                                   | 136                          | 4                                      | 136                          | 0                                       | 140                           |
|                 | <i>Subtotal Non-City-owned spaces in study</i>                   | 415                                       | 413                                 | 2                            | 414                                    | 1                            | 15                                      | 400                           |
|                 | <i>Subtotal City-owned spaces under study</i>                    | 278                                       | 142                                 | 136                          | 139                                    | 139                          | 13                                      | 265                           |
|                 | Number of Standard Spaces Observed                               | 693                                       | 555                                 | 138                          | 553                                    | 140                          | 28                                      | 665                           |

<sup>A</sup> Spaces for people with disabled placards were removed from the analysis as, in many cases, they were unoccupied but not available to the general parking public. The actual number of these disabled-placard spaces should be confirmed in some facilities.

<sup>B</sup> Counts performed on Tuesday, September 25, 2012.

<sup>C</sup> Counts performed on Tuesday, September 25, 2012.

<sup>D</sup> Counts performed on Tuesday, October 9, 2012.

<sup>E</sup> Walker counted 489 spaces in total but 62 spaces are signed as reserved for use by an adjacent office building during weekday business hours.

<sup>F</sup> Hendy Avenue spaces are on-street parking spaces between North Taaffe Street and North Sunnyvale Avenue. The number of spaces shown assumes a reasonably efficient configuration given that the parking spaces are not striped.

<sup>G</sup> Spaces in this lot are not striped. This number of spaces represents an estimated capacity once striped.

Source: Walker Parking Consultants, 2012

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Table 3: Additional Weekday Occupancy Counts

| Facility Number | Name / Location  | Weekday Spaces for Commuters <sup>A</sup> | Weekday Occupancy 7:00 AM <sup>B</sup> | Weekday Availability 7:00 AM | Weekday Occupancy 11:00 AM <sup>B</sup> | Weekday Availability 11:00 AM |
|-----------------|--|---|--|------------------------------|---|-------------------------------|
| 1               | Caltrain Facility (Garage and Adjacent Surface Lot) <sup>D</sup> | 415                                       | 107                                    | 308                          | 415                                     | 0                             |
| 2               | Mathilda Off Ramp Lot - City owned                               | 36  | 32                                     | 4                            | 36                                      | 0                             |
| 3               | West Hendy Avenue - South blockface <sup>E</sup>                 | 37  | 37                                     | 0                            | 37                                      | 0                             |
| 4               | South Mathilda Underpass Lot                                     | 28  | 20                                     | 8                            | 28                                      | 0                             |
| 5               | Evelyn Avenue Lot  | 37  | 37                                     | 0                            | 37                                      | 0                             |
| 6               | North Mathilda Underpass Lot <sup>F</sup>                        | 140                                       | 0                                      | 140                          | 3                                       | 137                           |
|                 | <i>Subtotal Non-City-owned spaces in study</i>                   | 415                                       | 107                                    | 308                          | 415                                     | 0                             |
|                 | <i>Subtotal City-owned spaces under study</i>                    | 278                                       | 126                                    | 152                          | 141                                     | 137                           |
|                 | Number of Standard Spaces Observed                               | 693                                       | 233                                    | 460                          | 556                                     | 137                           |

<sup>A</sup> Spaces for people with disabled placards were removed from the analysis as, in many cases, they were unoccupied but not available to the general parking public. The actual number of these spaces needs to be confirmed in some facilities.

<sup>B</sup> Counts performed on Wednesday, October 10, 2012.

<sup>C</sup> Counts performed on Wednesday, October 10, 2012.

<sup>D</sup> Walker counted 489 spaces in total but 62 spaces are signed as reserved for use by an adjacent office building during weekday business hours.

<sup>E</sup> Hendy Avenue spaces are on-street parking spaces between North Taaffe Street and North Sunnyvale Avenue. The number of spaces shown assumes a reasonably efficient configuration given that the parking spaces are not striped.

<sup>F</sup> Spaces in this lot are not striped. This number of spaces represents an estimated capacity once striped.

Source: Walker Parking Consultants, 2012

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Table 4: Weekend Occupancy Counts

| Facility Number | Name / Location  | Weekend Spaces for Commuters <sup>A</sup> | Weekend Occupancy 10:00 AM <sup>B</sup> | Weekend Availability 10:00 AM | Weekend Occupancy 2:00 PM <sup>C</sup> | Weekend Availability 2:00 PM | Weekend Occupancy 10:00 PM <sup>D</sup> | Weekend Availability 10:00 PM |
|-----------------|--|---|---|-------------------------------|--|------------------------------|---|-------------------------------|
| 1               | Caltrain Facility (Garage and Adjacent Surface Lot) <sup>E</sup> | 477                                       | 77                                      | 400                           | 82                                     | 395                          | 67                                      | 410                           |
| 2               | Mathilda Off Ramp Lot - City owned                               | 36  | 3                                       | 33                            | 3                                      | 33                           | 1                                       | 35                            |
| 3               | West Hendy Avenue - South blockface <sup>F</sup>                 | 37  | 9                                       | 28                            | 11                                     | 26                           | 6                                       | 31                            |
| 4               | South Mathilda Underpass Lot                                     | 28  | 4                                       | 24                            | 6                                      | 22                           | 4                                       | 24                            |
| 5               | Evelyn Avenue Lot  | 37  | 5                                       | 32                            | 6                                      | 31                           | 3                                       | 34                            |
| 6               | North Mathilda Underpass Lot <sup>G</sup>                        | 140                                       | 0                                       | 140                           | 0                                      | 140                          | 0                                       | 140                           |
|                 | <i>Subtotal Non-City-owned spaces in study</i>                   | <i>477</i>                                | <i>77</i>                               | <i>400</i>                    | <i>82</i>                              | <i>395</i>                   | <i>67</i>                               | <i>410</i>                    |
|                 | <i>Subtotal City-owned spaces under study</i>                    | <i>278</i>                                | <i>21</i>                               | <i>257</i>                    | <i>26</i>                              | <i>252</i>                   | <i>14</i>                               | <i>264</i>                    |
|                 | Number of Standard Spaces Observed                               | 755                                       | 98                                      | 657                           | 108                                    | 647                          | 81                                      | 674                           |

<sup>A</sup> Spaces for people with disabled placards were removed from the analysis as, in many cases, they were unoccupied but not available to the general parking public. The actual number of these spaces needs to be confirmed in some facilities.

<sup>B</sup> Counts performed on Saturday, September 29, 2012. A peak-demand event weekend day was deliberately avoided so as to gauge typical weekend parking demand to better project potential parking revenue.

<sup>C</sup> Counts performed on Saturday, September 29, 2012.

<sup>D</sup> Counts performed on Saturday, September 29, 2012.

<sup>E</sup> Walker counted 489 spaces in total but 62 spaces are signed as reserved for use by an adjacent office building during weekday business hours.

<sup>F</sup> Hendy Avenue spaces are on-street parking spaces between North Taaffe Street and North Sunnyvale Avenue. The number of spaces shown assumes a reasonably efficient configuration given that the parking spaces are not striped.

<sup>G</sup> Spaces in this lot are not striped. This number of spaces represents an estimated capacity once striped.

Source: Walker Parking Consultants, 2012



## LENGTH OF STAY OBSERVATIONS

Walker observed the length of stay in all six parking facilities. On weekdays no turnover was observed between the hours of 8:00 AM and 2:30 PM; all vehicles parked in facilities, which were 100% occupied, remained parked. Entering vehicles had no opportunity to park. For this reason our financial projections assume just one “turn” per space. In the evening we observed occupancy of just four percent overall and approximately half of these vehicles appeared to exit sometime later in the evening. Our hypothesis that a significant number of commuters were parking cars overnight and using them to travel from the Station to their jobs in the morning appeared incorrect. As a result we project no additional revenue from overnight parking.

During the weekend, in the Caltrain parking facility, more than half the vehicles “turned over” between morning and afternoon. However, in the City’s facilities all but one vehicle that was present in the morning was also present in the afternoon; not only was parking demand extremely low in the City’s facilities on the weekend, but there was no turnover. This observation is one more reason we believe that the demand for parking on weekends does not justify paid parking on weekends in the City’s parking facilities.





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**PUBLIC INPUT**

On October 10, 2012 the City held a meeting to gather input, comments, concerns, and suggestions from local residents and business owners regarding the possibility of charging for parking in City-owned commuter parking facilities near the Sunnyvale CalTrain station.

Attendees made the following statements and observations:

- Parking has been an ongoing problem for the past nine years with commuters;
- City parking lot next to one resident's building has a three-hour parking limit however commuters still park there because it is not heavily enforced;
- Streets immediately surrounding the CalTrain station (except for the south block face of Hendy) are signed for 3 or 7 hour limited parking;
- Residents on the streets immediately surrounding the CalTrain Station are required to purchase parking permits to park on these streets;
- Residents sometimes enforce on-street parking themselves through verbal communication with parkers because the City rarely does;
- Many commuters or even residents do not know that Lot 6 (the North Mathilda Underpass Lot) exists, which may be part of the reason that it gets so little use, others expressed concern that it appeared unsafe;
- Heavy pedestrian traffic is seen in order to gain access to CalTrain, not just access by car. Heavy pedestrian traffic from the lots south of the Station is seen as well;
- Some signs left over from the Mathilda overpass construction project, and likely intended for construction workers, may convey information that is unhelpful to commuter parkers;
- There were questions on the amount of parking rate fees that might be proposed for City lots and what parking equipment would be utilized to implement such a program;
- There was acceptance of the idea of implementing parking fees at the City's parking facilities provided that measures were taken to address commuter parking on residential streets;

**Recommendations from the Public**

- Update signage (particularly free parking); add more lighting near Lots;
- Promote/encourage commuters to utilize VTA, bicycling and walking;
- A park and ride program should be considered to ease the parking issues around the station;
- Implement a pilot plan for paid parking to see how proposed recommendations might work before a full program is implemented



## **PARKING PRICING METHODOLOGY**

### **GOALS OF THE PARKING RATE RECOMMENDATIONS**

The goals of our parking rate recommendations are to:

- Increase parking availability in the City-owned commuter parking lots, all but one of which currently show no parking availability after 7:30 AM on weekdays. We seek to increase parking availability not by building new spaces as this requires enormous expense and the use of scarce land. Instead our goal is to use existing resources more efficiently by redistributing a small portion of the concentrated demand for parking (where spaces are not available) to either:
  - underutilized locations (in this case the North Mathilda Underpass Lot) or
  - other modes of transportation such as bicycles, walking, transit or carpooling/drop offs for those commuters for whom such modes are viable options.
- Off-set the City's costs for providing and maintaining parking for commuters at the Sunnyvale Station, including the need to improve Parking Facility 6, the North Mathilda Underpass Lot;
- Encourage the use of non-driving modes of travel to the Station by commuters, including the use of bicycles, walking, transit and carpooling; and
- Ultimately increasing access to the Station and accommodating more passengers using the same amount of (parking) infrastructure.

We seek to achieve these goals by using pricing cues to provide parking availability to both those seeking convenient parking and are willing to pay for it or economical parking for those who are willing to park in a less convenient location. Currently these choices are largely unavailable; after approximately 8:30 AM on weekdays there is no available station parking south of the Station or along West Hendy Avenue.

### **COMPARABLES AND CONSIDERATIONS**

Our experience suggests that when drivers are required to pay for parking, behavior shifts will occur particularly when there are other options. When parking is provided for free, there is a tendency to maximize its use. However, when an individual must pay to park, he/she may think about the importance of that trip, whether to take it and if so, whether to use other modes or other parking locations. If the trip is necessary or desirable, it will still take place but the mode or, in the case of parking, the location may shift to a lower cost option. The availability of parking usually has a greater impact on drivers' decisions than does price, provided that the price is not exorbitant.

Sunnyvale is at the end of Zone 3 and each additional zone is an additional \$53.00 per month, based on a monthly pass purchase. For the majority of passengers, who commute northbound (to San Francisco), departing from Lawrence one station to the south would result in a \$53.00 increase in the monthly cost of commuting or a \$4.00 increase in the daily cost of commuting (a \$2.00 increase in each direction).





Table 5: Fare Pricing by Zone for Caltrain

| Ticket Type  | Purchase Method        | Travel Within |          |          |          |          |          |
|--------------|------------------------|---------------|----------|----------|----------|----------|----------|
|              |                        | 1 Zone        | 2 Zones  | 3 Zones  | 4 Zones  | 5 Zones  | 6 Zones  |
| One Way      | Ticket Vending Machine | \$3.00        | \$5.00   | \$7.00   | \$9.00   | \$11.00  | \$13.00  |
|              | Clipper Card           | \$2.75        | \$4.75   | \$6.75   | \$8.75   | \$10.75  | \$12.75  |
| Monthly Pass | Clipper Card           | \$73.00       | \$126.00 | \$179.00 | \$232.00 | \$285.00 | \$338.00 |

Source: Caltrain, 2012

Caltrain-owned parking at virtually all Caltrain stations is \$4.00 per day. Exceptions include parking at stations south of San Jose Diridon station and Belmont although Belmont's exemption is set to expire at the end of 2012. A northbound passenger on Caltrain may consider attempting to park for free on commercial streets near the Lawrence station, one station to the south, if their monthly parking outlay at Sunnyvale should increase by \$53.00. This is the amount of the increase in the price of a monthly pass for departing from stations in the next zone to the south. The difference across Zone 3 and 4 in a one-way ticket is \$2.00, or \$4.00 per round-trip.<sup>7</sup> Therefore for a northbound passenger who is not traveling under a monthly pass, an increase in parking of over \$4.00 may encourage them to depart from Lawrence or somewhere else in Zone 4.

In reality, the difference may be a little greater than \$53.00 and \$4.00 due to the uncertainty over obtaining a parking space on-street near the Lawrence station and potential additional inconvenience that may result from a longer walk between a passenger's car and the station platform. A southbound passenger on Caltrain currently parking and departing from the Sunnyvale Station for free may be inclined to depart from Lawrence if they no longer can park for free at Sunnyvale.

Any sort of price change for parking near the Sunnyvale Caltrain station could theoretically impact parking demand at other Caltrain stations. Caltrain's six zones are depicted in the following figure.

<sup>7</sup> We note that our recommended monthly permit and daily rates for parking are less than these amounts.



Figure 2: Caltrain Zone Map



Source: Caltrain 2012

### OTHER CONSIDERATIONS AND FACILITIES

In conversations with Caltrain staff, the particularly large number of passengers and demand for parking at the Sunnyvale Station was noted compared to other stations in the system. A significant increase in



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ridership was described over the past two years and demand for the commuter service was described as robust despite increases in ticket prices. While increased ticket prices could negatively impact the demand for paid parking in the City's commuter-serving parking spaces, increased Caltrain parking facility prices would likely increase the demand for parking in the City's lots. We specifically note that Caltrain staff stated that no increase in either ticket or parking prices was currently being planned.

The success of a paid parking program for the City's commuter-serving parking facilities analyzed for this study depends largely on the availability of parking in locations that are cheaper or more convenient than the City's facilities. For this reason we conducted a brief survey of parking in the following facilities:

- Caltrain's Sunnyvale Parking Facility: This facility filled to capacity during two days of weekday counts (both morning and afternoon) despite \$4.00 daily and \$40.00 monthly fees. We observed drivers entering the full facilities in search of parking spaces. This suggests to us that passengers are willing to pay for parking at the Station and that the demand for paid parking has not yet been met at current prices. The important question is how much demand is there for additional paid parking.
- On-street parking along residential and commercial streets located in close proximity to the Station have time restrictions ranging from one to seven hours that would result in typical all-day commuters receiving a parking citation. Assuming that these restrictions are enforced, these parking facilities are not reasonable options for commuter parkers.
- The Downtown Parking Maintenance District lots, including the underground Plaza del Sol Garage across the street from the Station, have time restrictions, typically three hours, which would result in commuters receiving a parking citation. Assuming that these restrictions are enforced, these parking facilities are not reasonable options for commuter parkers.
- Parking for the Jones Lang Lasalle – managed office building across the street from the Station and several of the City's parking lots is gated and available only to employees and visitors of that office complex.
- Parking in the Macy's parking lot two blocks south of the Station is signed "4-hour parking." Assuming that these restrictions are enforced, these parking facilities are not reasonable options for commuter parkers.
- Parking for the Lawrence Caltrain Station is located some distance to the east of the Sunnyvale Station. The parking lot was observed to have available spaces, but we note that the fee in Lawrence is the same as the fee in the Sunnyvale Station, \$4.00 daily and \$40.00 monthly. We therefore do not see this lot as competition for the City's commuter-serving lots. However, as noted above, Lawrence is also in another zone which, and for the majority of commuters who travel northbound, would result in a higher ticket price compared to a departure from Sunnyvale Station.

The potential for commuter parking demand to compete with downtown parking demand exists in a number of cities served by Caltrain on the San Francisco Peninsula although generally not to the extent it does in Sunnyvale. If properly enforced, the time limits that are currently in place in downtown parking facilities and along downtown streets should sufficiently deter commuters from parking there. Indeed during our observations, we did not witness any clear examples of commuter parking in spaces within the



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Downtown Parking District. The following chart shows downtown parking prices for a number of Peninsula cities. It indicates what the public is accustomed to paying for parking in those cities.

**Table 6: Downtown Parking Rates in SF Peninsula Cities**

| City          | Area/Type   | Rates  |
|---------------|---|--|
| Burlingame    | Burlingame Avenue on-street (2-hour limit)<br>Other on-street and parking lot meters near Burlingame Avenue<br><br>10-hour lots | \$1.00 first hour, \$2.00 second hour<br><br>1-4 hours: \$1.00/hour<br>9-10 hours: \$0.30/hour<br>\$3.00 flat rate   |
| San Mateo     | Downtown garages<br><br>Downtown lots<br><br>Downtown on-street   | Underground, ground and second levels: \$0.50/hour (4-hour limit)<br>Upper levels: \$0.25/hour (10-hour limit)<br>Some garages have divided levels with 4 and 10 hour parking<br>Lots 10 and 11 free; lots 7 and 8 have 4-hour limit with 1st and 2nd hours: \$0.50/hour, 3rd and 4th hours: \$1.00/hour<br>1st and 2nd hours: \$0.50/hour, 3rd and 4th hours: \$1.00/hour |
| San Carlos    | Downtown  | Free with time limits<br>Employee permits are \$26 for six months  |
| Redwood City  | Downtown on-street<br>Downtown parking lots/garages   | \$0.25 or \$0.50/hour<br>First 1.5 hours free; \$0.25 or \$0.50/hour after; 4 hours free with validation; free after 6:00 pm<br>Employee permits are \$30 to \$60 per month depending on location and valid times  |
| Menlo Park    | Downtown on-street<br>Downtown lots   | Free with time limits<br>Free for up to 2 hours; \$1.00 for 3rd hour; \$1.50 for 4th hour; \$2.00 for each additional hour up until 9 hours<br>Employee permits are \$592/year, \$10 for full day, \$5 for half day  |
| Palo Alto     | California Avenue<br><br>Downtown   | Free with time limits of 2 or 3 hours<br>Daily pass \$6<br>2 hours free per color zone;<br>Daily pass \$15; permits are \$135/quarter or \$420/year  |
| Mountain View | Downtown on-street<br>Downtown garages/lots   | Free with time limits<br>Free with time limits<br>Employee permits are \$40/month or \$240/year  |
| Sunnyvale     | Downtown on-street<br>Downtown garages/lots   | Free with time limits<br>Free with time limits   |
| San Jose      | Diridon private lots<br>Diridon on-street meters  | Nearby lots charge \$3 and \$4/day<br>\$2.00 for up to 12 hours  |

### Caltrain Facilities System-wide Parking Policies

\$4 per day; \$40/month

Stations south of San Jose Diridon as well as Belmont offer free parking (free parking at Belmont through December 2012)

Free for disabled placard/license plates

San Antonio station has 5-hour parking limits across street

Lawrence station appears to have unrestricted street parking nearby (Sonoma Ct) but this has not been verified.

Source: Walker Parking Consultants, 2012



## **RECOMMENDED PARKING RATES AND REVENUE PROJECTIONS**

We break down the number of transit parkers into two categories:

1. Monthly/permit parkers pay a monthly fee and receive some type of credential to park in the parking facility indefinitely on a month-to-month basis.
2. Transient/daily parkers pay a daily fee each time they enter or exit the parking facility.

Based on our earlier discussion, methodology and goals we make the following rate structure recommendation for parking in the City's commuter-serving facilities on weekdays:

- Recommended monthly parking permit rate: \$32.00.

In general, only the City's on-street parking spaces along West Hendy Avenue (arguably) offer a more convenient parking location for commuters than the Sunnyvale Caltrain parking facility; all other City commuter-serving parking facilities require walking a longer distance from the facility to the Station platform. In the interest of consistency and simplicity we recommend charging one rate to all monthly parkers that represents a discount from the Caltrain monthly rate of \$40.00.

- Recommended daily parking rate: \$3.00 for daily parking on weekdays in Parking Facilities 2 through 5 but \$2.00 for daily parking in Parking Facility 6.

The fee for parking in Facility 6, the North Mathilda Underpass Lot, would be put in place only after proper lighting and striping have been implemented in that parking facility. Monthly parkers would be eligible to park in this facility although most likely would choose this generally less convenient location only when the other parking facilities had filled to capacity.

- Alternative daily parking rate: Free parking in Parking Facility 6 only; other facilities remain at \$3.00 per day.

Current occupancy rates in this facility justify free parking. However our concern is that free parking would "cannibalize" demand from other paid parking facilities and possibly reduce revenue to the point that the paid parking plan and infrastructure would no longer offset costs. On the other hand, even with free parking in Facility 6, total demand for commuter-serving parking could be such that A) a significant number of drivers would be willing to pay for the more convenient locations or B) Facility 6 would fill to the point that drivers arriving at the Station later would choose to park in the paid facilities (as occurs now in the parking dynamic between the paid Caltrain parking facility and the free City facilities). We note that, from the perspective of addressing the demand for commuter parking that may currently be met on the street, free parking in Facility 6 is more likely to achieve this goal.

- Weekend and evening parking: Given the typically low occupancy of the parking facilities in the evening and on weekends, we recommend that the City not charge for parking during these times.



## PRELIMINARY PARKING REVENUE PROJECTIONS BASED ON RECOMMENDED PARKING RATES

As described earlier in our discussion of occupancy rates in City-owned spaces, there are currently 147 vehicles parking in the City-owned facilities. While paid parking may dissuade some of these drivers from parking in these facilities, or encourage them to park in Facility 6 (particularly once it is improved), we project that the increased availability of parking is likely to attract additional parkers who currently are unable to find long-term, off-street spaces in which to park.<sup>8</sup>

According to staff at Caltrain/Samtrans with whom we spoke, “at least two-thirds of the parkers at Sunnyvale use monthly passes” with “the average number of monthly parking pass holders being 72%.” Based on our recommended discount rate for a monthly parking permit (\$32.00), on a daily basis a daily parker will generate significantly more revenue (\$3.00 or \$2.00) than a monthly parker (\$32.00/20 days = \$1.60 per day). In order to be conservative in our revenue projection purposes, we make a slightly more conservative assumption than the information provided to us by Caltrain/Samtrans:

- Approximately 80% of demand is generated by monthly/permit parkers
- Approximately 20% of demand is generated by daily parkers

Other assumptions contained in our preliminary revenue projections include:

- For revenue projection purposes, an approximately 85% - 90% occupancy rate in City Facilities 2 through 5; we project that two-thirds of this 15% reduction in cars parked in these facilities would move to Facility 6.<sup>9</sup>
- In addition to the demand for Facility 6 described above, we conservatively project that improvements to Facility 6 would generate a demand for an additional 15 parking spaces in that location, above the 10% of vehicles in other facilities that we expect would move to Facility 6.
- Paid parking in effect from 6:00 AM to 6:00 PM on weekdays only. Based on weekend parking occupancies, parking demand did not appear strong enough to generate revenue on typical weekend days; available parking spaces were plentiful in the Caltrain parking facility (unlike during the week) and commuters willing to pay for parking would likely park in that location first. We note that some revenue could be derived from days on which there are special events in San Francisco (most notably weekend Giants’ games) but that charging only on event days could be

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<sup>8</sup> We project an increase in the availability of parking spaces as a result of a push-and-pull effect: 1) a slight reduction in the current demand for parking in Facilities 2 through 5 resulting from the implementation of paid parking and 2) an increase in the demand for parking in Facility 6 as a result of improved parking conditions in that facility and better information for the public regarding the facility’s existence and location. Ultimately the result is an increase in the availability of parking spaces in Facilities in 2 through 5 and an increase in the total number of vehicles parked overall.

<sup>9</sup> We note that our revenue projections are based on an 80% average weekday daytime occupancy for daily parkers and an oversell rate for monthly permits of 105% in Parking Facilities 2 through 5. We believe that the actual oversell rate per occupied space for monthlies will be at least 115%. This number therefore translates into an occupancy rate for monthly spaces of just over 90%. Both occupancy rate numbers are significantly less than the current 100% occupancy rate which has been observed over the course of our fieldwork.





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confusing to the public. With regard to events Downtown, such as the Farmer's Market, it appears that the number of free parking options would, in nearly all cases, discourage the public from paying for parking.

The breakdown of 118 monthly and 30 daily vehicles among facilities 2 through 5 would allow for a clean separation of vehicles between monthly and daily parking facilities. While arguably less convenient for the public than facilities that would park both monthly and daily parkers, and requiring proper signage to accomplish, the segregation of parking user groups would allow for significant savings in equipment costs. Our two proposed scenarios are therefore as follows:

Alternative 1: Reserve the South Mathilda Underpass Lot for daily parking only and allow both daily and monthly parking in the North Mathilda Underpass Lot, which we project would require four multispace meters to implement and operate.

Alternative 2: Allow daily and monthly parking at each of the five facilities, 2 through 6, which we project would require eleven multispace meters to implement and operate.

We note that the *revenue* projections for our recommended rate structures below are the same regardless of how parkers are assigned in these four facilities; the two different alternatives outlined above reflect differences in expenses only.

#### **MULTISPACE METER LOCATIONS FOR ALTERNATIVE 1**

As discussed, Alternative 1 requires multispace meters in two parking facilities, rather than all six parking facilities under study. We recommend that two multispace meters each be located in both the 30-space South Mathilda Underpass Lot and 140-space North Mathilda Underpass Lot.

At least two pay stations are always recommended for purposes of redundancy (in case one machine stops working) and busy periods. Busy periods would be expected, particularly in the case of a commuter-serving facility before train departures. We note that the enhancement of the system using pay-by-cell capabilities can provide drivers with convenience in this regard.

We typically recommend pay stations be located at pedestrian access points located on the way to parkers' destination (in this case the Station). Ideally, each pay station in a facility should be visible from the other (as well as clearly marked) so that parkers can easily identify the second option in case one machine is being used or out of service.

In the case of the South Mathilda Underpass Lot, the facility is essentially made up of two separate, adjacent lots, each with its own points of entry and exit. To serve the northern lot, we recommend that one pay station be located as closely as possible to the pedestrian egress point near the southwest corner of South Mathilda Place and Evelyn Avenue, clearly marked, and on the sidewalk if necessary. We recommend that the second pay station be located to serve the southern lot of this facility, also on the sidewalk of South Mathilda Place, near the exit for pedestrians heading to the Station.



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In the case of the North Mathilda Underpass Lot, the nature and location of final improvements would determine the precise location of multispace meters. Generally speaking we recommend that multispace meters be located at the access points along the common pedestrian route to the Station. This would likely entail multispace meters located at pedestrian access points to the sidewalk along Angel Avenue. If a pedestrian access point were created on the southern side of the Lot, leading to a proposed pedestrian walkway to the Station along the Caltrain right-of-way as has been proposed, one multispace meter should be located near this pedestrian point. In this scenario, and in keeping with the desire to have meters visible from one another, one meter would likely be located near the southeast corner of the lot with the other located at the entrance to the path to the Station. Again, the ultimate locations should be determined once improvements to this facility have been finalized. Given the size of this lot, signage throughout the lot directing parkers to the multispace meter locations is crucial for the convenience of parkers.

Another consideration we note in the placement of the multispace meter relates to compliance with the Americans with Disabilities Act (ADA). The manufacturer is responsible for the compliance of the machine (which should be verified by the City, particularly with regard to the height of the machine). The City is responsible for the ground (typically a concrete cover) around the machine and its accessibility to people with disabilities.



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Table 7: Weekday Projected Revenue<sup>10</sup>

|  | Ramp           |                 | West           | Hendy           | South Mathilda |                | North Evelyn   |                 | North Mathilda |                | TOTAL           |
|--|----------------|-----------------|----------------|-----------------|----------------|----------------|----------------|-----------------|----------------|----------------|-----------------|
|  | Daily          | Permit          | Daily          | Permit          | Daily          | Permit         | Daily          | Permit          | Daily          | Permit         |                 |
| <b>Revenue Generating Spaces</b>                   | 36             |                 | 37             |                 | 28             |                | 37             |                 | 135            |                | <b>273</b>      |
| <b>Breakdown of User Group</b>                     | 8              | 28              | 8              | 29              | 6              | 22             | 8              | 29              | 68             | 67             | 273             |
| <b>Daily or Monthly Parking Rate</b>               | \$3.00         | \$32.00         | \$3.00         | \$32.00         | \$3.00         | \$32.00        | \$3.00         | \$32.00         | \$2.00         | \$32.00        |                 |
| <b>Days/Year</b> (Mon-Fri minus 10 holidays = 250) | 250            |                 | 250            |                 | 250            |                | 250            |                 | 250            |                | 250             |
| <b>Daily Occupancy/Oversell</b>                    | 80%            | 105%            | 80%            | 105%            | 80%            | 105%           | 80%            | 105%            | 20%            | 20%            |                 |
|  |                |                 |                |                 |                |                |                |                 |                |                |                 |
| <b>Projected Daily or Monthly Revenue</b>          | \$19           | \$941           | \$19           | \$974           | \$14           | \$739          | \$19           | \$974           | \$27           | \$429          |                 |
|  |                |                 |                |                 |                |                |                |                 |                |                |                 |
| <b>Projected Annual Revenue</b>                    | <b>\$4,800</b> | <b>\$11,290</b> | <b>\$4,800</b> | <b>\$11,693</b> | <b>\$3,600</b> | <b>\$8,870</b> | <b>\$4,800</b> | <b>\$11,693</b> | <b>\$6,800</b> | <b>\$5,146</b> | <b>\$73,491</b> |

Source: Walker Parking Consultants, 2012

<sup>10</sup> The revenue projection is the same for both Alternatives 1 and 2. The breakdown between daily and permit parkers in the table reflects the allocation assumed in Alternative 2, in which both monthly and daily parkers have access to all parking facilities. Table 7 is shown for revenue calculation purposes only. In the case of Alternative 1, the South Mathilda Underpass facility would be reserved for daily parking and the North Mathilda Underpass Lot would allow for daily and monthly parking. The total number of daily and monthly parkers is projected to be the same in both alternatives.

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## EXPENSES

When parking is offered at no cost, the cost of providing the parking is often overlooked. However, even a surface parking lot requires maintenance and operations that results in expenses to the City. Based on the lots and plans under study in this report, the expenses associated with an ungated system of paid parking can be categorized as follows:

- Current maintenance expenses
- Cost to implement and recurring costs of paid parking
- Costs to enforce paid parking
- Costs to improve Parking Facility 6, the Mathilda Underpass lot

The equipment expense for ungated parking is significantly less than for gated parking; less equipment is needed to operate the system.

## CURRENT MAINTENANCE EXPENSES

The City provided Walker with annual, estimated maintenance expenses on a square foot basis as follows:

- |                                    |  |
|------------------------------------|--|
| • Pavement maintenance (\$/SF)     | \$0.27 <sup>11</sup>                                 |
| • Linear foot of striping/painting | \$0.60 (\$1.20 every other year)                     |
| • Sign maintenance                 | \$2.60   |
| • Parking lot light                | \$76.20 (\$1.20 per light plus \$75 for electricity) |

Because the square footage measurements of the parking facilities were not available, Walker projected expenses on a per-space and then per facility basis. We assume the cost of maintaining Lot 6 although many needed improvements to the facility have not yet been made. Our estimates of current maintenance expenses are shown in the following table. Our assumptions are highlighted in blue.

<sup>11</sup> According to the City, this includes sweeping, which is done on a bi-weekly basis; asphalt patching and crack seal, done on an as needed basis, with resurfacing approximately every ten years.

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Table 8: Estimated Current Maintenance Expenses - City-owned Commuter Parking Facilities

| Lot | Name                    | Spaces | Estimated SF/Space | Total SF | LF Striping/Painting per Space | Linear Feet | Signs/1,000 SF | Total Signs | Lights/1,000 SF | Total Lights |
|-----|-------------------------|--------|--------------------|----------|--------------------------------|-------------|----------------|-------------|-----------------|--------------|
| 2   | Mathilda Off Ramp       | 38     | 300                | 11,400   | 41                             | 1,558       | 2.0            | 23          | 1.25            | 14           |
| 3   | West Hendy <sup>A</sup> | N/A    | N/A                | N/A      | N/A                            | N/A         | N/A            | N/A         | N/A             | N/A          |
| 4   | S Mathilda Underpass    | 30     | 300                | 9,000    | 41                             | 1,230       | 2.0            | 18          | 1.25            | 11           |
| 5   | Evelyn North Side       | 39     | 280                | 10,920   | 41                             | 1,599       | 2.0            | 22          | 1.25            | 14           |
| 6   | N Mathilda Underpass    | 140    | 330                | 46,200   | 41                             | 5,740       | 2.0            | 92          | 1.25            | 58           |

| Lot  | Name                 | Pavement Maintenance | Striping/Painting | Sign Maintenance | Parking Lot Lighting | Total            |
|--|----------------------|----------------------|-------------------|------------------|----------------------|------------------|
| 2  | Mathilda Off Ramp    | \$ 3,078             | \$ 935            | \$ 59            | \$ 1,086             | \$ 5,158         |
| 3  | West Hendy           | N/A                  | N/A               | N/A              | N/A                  | N/A              |
| 4  | S Mathilda Underpass | \$ 2,430             | \$ 738            | \$ 47            | \$ 857               | \$ 4,072         |
| 5  | Evelyn North Side    | \$ 2,948             | \$ 959            | \$ 57            | \$ 1,040             | \$ 5,005         |
| 6  | N Mathilda Underpass | \$ 12,474            | \$ 3,444          | \$ 240           | \$ 4,401             | \$ 20,559        |
| <b>Total Projected Maintenance Expenses:</b> |                      | <b>\$ 20,930</b>     | <b>\$ 6,076</b>   | <b>\$ 403</b>    | <b>\$ 7,384</b>      | <b>\$ 34,793</b> |

<sup>A</sup>Because they are located along the street, for the maintenance cost analysis we do not include the spaces along West Hendy Avenue. It is nonetheless important to include West Hendy Avenue spaces in the paid parking plan as part of the City-owned parking facilities that, as a comprehensive on- and off-street parking system and not individual units, serve Caltrain commuters.

Source: City of Sunnyvale and Walker Parking Consultants, 2012



## LOT 6 (NORTH MATHILDA UNDERPASS LOT) PROJECTED COST OF IMPROVEMENTS

Many of the observations and recommendations in this report assume that parking utilization in Lot 6 can and should be increased in order to accommodate more parkers and potentially generate additional revenue. The following are order of magnitude cost projections for some of the improvements that may be necessary to improve the utilization of Lot 6.

The area of Lot 6 is estimated to be approximately 46,600 square feet within which we have projected 140 parking spaces could be provided (a ratio of approximately 330 feet per space).<sup>12</sup> We estimate that striping the lot would cost approximately \$15 per space or about \$2,000 in total. An additional \$1,000+ may be required for thoroughly cleaning the pavement before striping given its current condition. We estimate that lighting for the facility would cost approximately \$1.50 per square foot or \$70,000 in total. Signage within the lot would cost \$0.20 per square foot or about \$9,000 in total, but this does not include signage and wayfinding to direct drivers to the lot from Mathilda Avenue or the area around the Station south of the tracks. If the City were to determine that additional security, such as cameras, were necessary, the cost of different systems vary widely, but could start at \$25,000.

An approximate layout of spaces in the lot based on the assumptions above is shown in Figure 3 on the following page.

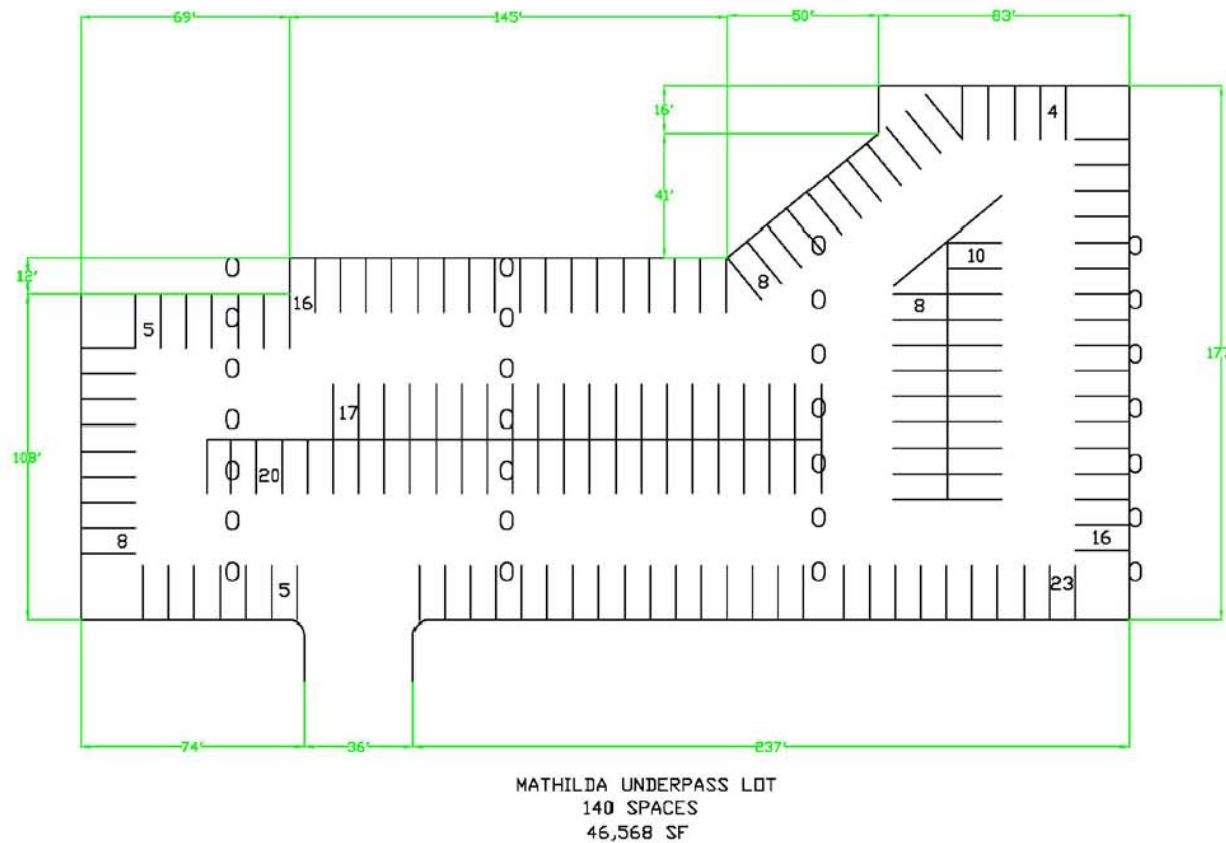
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<sup>12</sup> For revenue and expense projection purposes we round down to 46,200 sf and 140 spaces.

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Figure 3: North Mathilda Underpass Parking Lot - Approximate Space Count and Layout based on Assumptions



## **PARKING MAINTENANCE AND MANAGEMENT PROGRAM**

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### **EXPENSES ASSOCIATED WITH PAID PARKING – UNGATED OPERATION (RECOMMENDED)**

As discussed, the projected breakdown of parking system users for the City's commuter parking facilities is 80% monthly parking permit holders and 20% daily parkers. However, implementing paid parking for daily parkers is more complex and costly than doing so for monthly permit holders.

Below we compare three alternatives, including an ungated system with limited (multispace) metered parking for daily parkers, an ungated system with (multispace) metered parking for daily parkers in all the facilities, and a gated but relatively costly system.

In addition to being more costly, the gated system requires that motorists stop at the entrance and exit gates to get or insert a ticket, which will cause back-ups when lots are busy.

The multispace metered pay-by-space system requires motorists to pre-pay. The gated system has the customer pay for parking prior to exiting. Motorists often prefer paying prior to exiting. They may be running late and won't want to miss their train in order to pay for parking; however a Pay-by-Cell option enables them to by-pass the meters and pay for parking while they wait for the train or even after they board the train.

Signage would be necessary for either scenario; instructing parkers to pay at the meters (or the pay-on-foot station), and advising of a fine if parked in violation of the meters. The fine needs to be severe enough to serve as a deterrent; or motorists will risk getting an occasional citation rather than purchasing a permit.

Pay-by-space requires that each space be numbered, which can be painted on the ground or posted on signs.

Multi-space meter vendors charge monthly management fees for hosting the Central Management System (CMS) and for cellular air time required for processing credit cards and for communicating transaction data and maintenance data from the meters to a password protected server.

As with permit parking, enforcement will be required at least once per day, ideally at different times each day but between the hours of 10:00 am and 2:00 pm. These parking areas are utilized by commuters, so the majority of the cars will be parked by 10:00 am and will be staying for a minimum of 4 hours. Walker recommends enforcing at different times each day so motorists cannot time their parking to avoid enforcement. This is quite common if enforcement is done on a regular schedule. Motorists will also notice if enforcement is not conducted every day. Fee compliance is commensurate with enforcement. If there is turnover in the parking areas a second round of enforcement should be conducted in the afternoon.

The alternatives are described in more detail below.

# PARKING MAINTENANCE AND MANAGEMENT PROGRAM

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## *ALTERNATIVE 1 (RECOMMENDED) – UNGATED, DAILY PARKING ALLOWED IN THE TWO MATHILDA UNDERPASS LOTS ONLY, SOUTH MATHILDA UNDERPASS LOT RESERVED FOR DAILY PARKERS*

Alternative 1 is the least expensive alternative to implement. It minimizes the City's investment in expensive hardware with only two multispace meters (MSMs) in each of the two Mathilda Underpass Lots. The remaining City facility spaces would be devoted to monthly (permit) parkers. The MSMs would allow for payment of daily parking and would also issue monthly permits for all the City-owned lots.

We recognize that proper signage would be necessary in the South Mathilda Lot to direct drivers to the North Mathilda Lot, in case the South Mathilda Lot fills to capacity. Daily parkers in particular may not be as familiar with the location of the North Mathilda Lot as they tend to be people who come to the station less frequently.<sup>13</sup>

## *ALTERNATIVE 2 – UNGATED DAILY AND MONTHLY PARKING ALLOWED IN ALL FACILITIES*

This alternative provides more flexibility and convenience to parkers; both daily and permit parkers can park wherever there is availability. In this scenario spaces are used more efficiently as well members of either user group can make use of an available space. However, the increased convenience to drivers comes at an increased cost to the City as more multispace meter units must be provided. We note that the net return over five years is significantly higher for Alternative 1 than Alternative 2 due to the smaller expenditure on equipment.

## STAFF TIME TO OPERATE THE PAID PARKING PROGRAM

City staff will need to devote time to overseeing the paid parking program. While this oversight is important, and necessary whether or not the parking operation is contracted out to a parking operations firm (as some cities do), based on our experience it should, on average, not require more than a fraction of the time of one full time employee. Our assumptions for the cost of operating the program are included in Table 9.

## ENFORCEMENT EXPENSES FOR UNGATED PAID PARKING ALTERNATIVES

The effectiveness of the proposed paid parking program depends on proper enforcement of both the methods of paid parking in the City's commuter lots and the short-term parking restrictions that are in place in the residential and commercial areas located within close proximity to the station. While we project that some additional time enforcing the new paid parking program would be necessary, we also suggest that additional enforcement should generate revenue above and beyond the cost of enforcement. Our assumptions regarding enforcement are shown in Table 9.

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<sup>13</sup> The challenge of directing drivers unfamiliar with the area to the North Mathilda Lot is one reason to price daily parking in the South Mathilda Lot to ensure that a few spaces will be available most if not all the time.

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City-wide the City issued 4,246 citations over the course of the past year. Assuming two PEOs, 26 hours each per week, and 49 weeks of enforcement per year, 4,246 citations translates into approximately 1.60 citations per hour.

We note that, according to City staff, there are currently two, part-time Parking Enforcement Officers (PEOs) who each work 24 to 28 hours per week. Police officers may also issue parking citations. The City issued 1,600 citations in the Downtown and Station areas and collected approximately \$96,000 in the last fiscal year. Approximately 1,400 of those citations were issued by the City's part time Parking Enforcement Officers.<sup>14</sup> "Chalking" is the primary method for identifying drivers who overstay time limits. To our knowledge, PEOs do not have the assistance of more technologically advanced equipment for determining violations or issuing citations.

As noted, only the ungated Alternatives 1 and 2 should require enforcement by PEOs. For our expense projections, we assume that this enforcement will require approximately six hours per week. Given that most parkers park multiple times per month, enforcement need not occur every single day provided that it occurs at different times of day or different days of the week so that habitual violators are likely to be cited. Two to three times a week is likely to be sufficient. If daily parkers were limited to one or two lots as was discussed in Alternative 1, the use of a pay-by-cell or multispace meters could facilitate the efficiency of enforcement further. The Pay-by-cell payment method will be discussed later in this section.

Because parking permit and time limit restrictions are already in place and should be enforced, it is possible that significant additional enforcement hours or personnel will not be necessary for this purpose. However, comments from a few residents and business owners suggest that the current rate of enforcement may be insufficient. We emphasize that we do not see the need for additional net outlays in this regard on the part of the City. We project that citation revenue would exceed the costs of issuing the additional citations. If performed appropriately, increased parking enforcement activity would be a net revenue generator for the City.

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<sup>14</sup> The amount of staff time devoted specifically to parking enforcement in the Downtown and Station areas was not available for this report.



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Table 9: Assumptions Regarding Paid Parking Enforcement and Operations Expenses<sup>15</sup>

| Parking Operations                  |                 | Assumptions   |
|-------------------------------------|-----------------|---|
| Additional FTE                      | 0.25            |   |
| Hours Per Week                      | 10.0            |   |
| Fully Loaded Hourly Rate            | \$80            | \$40/hr x 200%  |
| <b>Additional Annual Expense</b>    | <b>\$41,600</b> |   |
| <b>Enforcement</b>                  |                 |   |
| <u>Expenses</u>                     |                 |   |
| Additional FTE                      | 0.15            |   |
| Hours Per Week                      | 6.0             |   |
| Fully Loaded Hourly Rate            | \$60            | \$30/hr x 200%  |
| <b>Additional Annual Expense</b>    | <b>\$18,720</b> |   |
| <u>Revenues</u>                     |                 |   |
| FY 11-12 Citations                  | 4,246           |   |
| Approximate Enforcement FTE         | 1.25            |   |
| Annual Enforcement Hours            | 2,600           |   |
| Citations Per Enforcement Hour      | 1.6             | Assume same citation rate                                       |
| Additional Annual Citations         | 510             |   |
| Average Citation Value              | \$60            | Based on average of citation data in Station and Downtown areas |
| Additional Revenue Potential        | \$30,571        |   |
| Citation Collection Rate            | 80%             | Typical rate observed in cities nationwide                      |
| <b>Estimated Additional Revenue</b> | <b>\$24,457</b> |   |

Source: Walker Parking Consultants, 2012

<sup>15</sup> The time and cost of operations efforts such as the collection of money from multispace meter machines is assumed to be included in the time devoted to parking operations and enforcement. We note that the majority of transactions are assumed to be conducted by credit card.

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## REVENUE AND EXPENSE COMPARISON – UNGATED PARKING OPTION

In the following table we compare total revenues and expenses.

Table 10: Revenue and Expense Comparison - Ungated Parking

| Annual Revenues and Expenses - Alt 1<br>Four (4) Multispace Meters - Mathilda Underpass Lots Only              |                  | Five-Year Revenues and Expenses - Alt 1        |                   |
|--|------------------|--|-------------------|
| <b>Revenue</b>   |                  | <b>Revenue</b>                                 |                   |
| Transient  | \$24,800         | Transient                                      | \$124,000         |
| Monthly  | \$48,691         | Monthly  | \$243,456         |
| Additional Enforcement   | \$24,457         | Additional Enforcement                         | \$122,285         |
| <b>Total</b>   | <b>\$97,948</b>  | <b>Total</b>                                   | <b>\$489,741</b>  |
| <b>Expenses</b>  |                  | <b>Expenses</b>                                |                   |
| Meter Purchase Annualized <sup>1</sup>   | \$6,000          | Meter Purchase Annualized <sup>1</sup>         | \$30,000          |
| Meter Maintenance  | \$10,726         | Meter Maintenance <sup>2</sup>                 | \$48,828          |
| Lot Maintenance  | \$34,793         | Lot Maintenance                                | \$173,967         |
| Additional Operations  | \$41,600         | Additional Operations                          | \$208,000         |
| Additional Enforcement   | \$18,720         | Additional Enforcement                         | \$93,600          |
| <b>Total</b>   | <b>\$111,839</b> | <b>Total</b>                                   | <b>\$554,396</b>  |
| <b>Net Income (Loss)</b>   | <b>-\$13,891</b> | <b>Net Income (Loss)</b>                       | <b>-\$64,655</b>  |
| <b>Annual Revenues and Expenses - Alt 2<br/>Eleven (11) Multispace Meters - All Lots and West Hendy Avenue</b> |                  | <b>Five-Year Revenues and Expenses - Alt 2</b> |                   |
| <b>Revenue</b>   |                  | <b>Revenue</b>                                 |                   |
| Transient  | \$24,800         | Transient                                      | \$124,000         |
| Monthly  | \$48,691         | Monthly  | \$243,456         |
| Additional Enforcement   | \$24,457         | Additional Enforcement                         | \$122,285         |
| <b>Total</b>   | <b>\$97,948</b>  | <b>Total</b>                                   | <b>\$489,741</b>  |
| <b>Expenses</b>  |                  | <b>Expenses</b>                                |                   |
| Meter Purchase Annualized <sup>A</sup>   | \$16,500         | Meter Purchase Annualized <sup>B</sup>         | \$82,500          |
| Meter Maintenance  | \$24,866         | Meter Maintenance <sup>C</sup>                 | \$111,128         |
| Lot Maintenance  | \$34,793         | Lot Maintenance                                | \$173,967         |
| Additional Operations  | \$41,600         | Additional Operations                          | \$208,000         |
| Additional Enforcement   | \$18,720         | Additional Enforcement                         | \$93,600          |
| <b>Total</b>   | <b>\$136,479</b> | <b>Total</b>                                   | <b>\$669,196</b>  |
| <b>Net Income (Loss)</b>   | <b>-\$38,531</b> | <b>Net Income (Loss)</b>                       | <b>-\$179,455</b> |

<sup>A</sup> Assumes eight year useful life for four multispace meters.

<sup>B</sup> Assumes eight year useful life for eleven multispace meters.

<sup>C</sup> First year warranty coverage is included free of charge.

Source: Walker Parking Consultants, 2012

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We note that both alternatives show a net loss, but the loss includes the approximately \$35,000 in maintenance expenses that the City is already paying annually for the lots. Taking this into consideration, Alternative 1 results in a net gain in revenue of approximately \$21,000 in year 1 and over \$100,000 over the next five years. In addition, as noted earlier, the paid parking program should result in increases in parking availability and accommodate more vehicles than is occurring currently.

Capital improvements to the North Mathilda Underpass Lot are not included in this analysis although we suggest that they should be undertaken regardless of whether or not paid parking is implemented. The lot will experience greater utilization if demand-based pricing is implemented.

## Pay-by-cell phone parking

In addition to daily and monthly parking paid for using the MSMs as noted above, the system can be enhanced with a Pay-by-Cell system. Pay-by-Cell (PbC) phone parking is just what it says it is. Motorists pay for their parking via their cell phone. It can be used as a convenient enhancement to multispace meter parking for daily parkers. Commuters rushing to a train appreciate it because they can pay after boarding from their cell phone provided that they know to remember their parking space number. A pay-by-cell system is even possible, and inexpensive, to provide paid daily parking using only a Pay-by-Cell system.<sup>16</sup> No equipment needs to be installed, but motorists must have a cell phone:

1. The pay-by-cell vendor sets up an account with the City, identifying all parking spaces and/or zones.
2. Motorists register their cellphones and provide credit card payment information for the pay-by-cell vendor online or via their cell phone.<sup>17</sup>
3. Upon parking, the motorist calls the pay-by-cell vendor's automated payment line.
4. The motorist enters the appropriate location codes for the City, zone, meter number, space number, etc., or enters their license plate. The motorist enters the desired parking time.
5. The Pay-by-Cell vendor charges a convenience fee, typically \$0.35 per transaction.
6. Enforcement is done by viewing a web-based report of paid transactions provided by the Pay-by-Cell vendor. Most Pay-by-Cell and Pay-by-Space vendors can integrate their reports so enforcement only needs to view one report.
7. The Pay-by-Cell vendor deposits the parking fees into the City's established bank account, keeping the convenience fees.

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<sup>16</sup> Only signage is required and the expensive multispace meter equipment is eliminated.

<sup>17</sup> While the process is relatively fast, it is admittedly an investment in time for those who will only use the system once. The process of using Pay-by-Cell is a more visual one for smart phone users but standard cell phones can also use the service by calling a 1-800 number and using an interactive voice response system (IVR).

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A “stand-alone” Pay-by-Cell would be the least expensive solution as there is no equipment required; just signage. However, it is somewhat restrictive if used as a ‘stand-alone’ solution. Motorists need to have a cell phone, they need to pay by credit card and they need to pay a convenience fee. Most cities offer Pay-by-Cell in conjunction with another payment option such as (an MSM) pay-by-space although one could argue that in current times most if not all people who drive and pay for parking have cell phones, particularly in Silicon Valley.

## **ALTERNATIVE 3 – GATED PARKING, TRANSIENT AND MONTHLY PARKING – HIGHEST COST**

As the name implies, traditional gated parking access and revenue control systems rely on gates to provide physical barriers to the entrance and exits of a parking facility. The gate is controlled via a credential that identifies the parker as one of two types of users: transient or monthly. Transient parkers pull a ticket from a ticket dispenser (aka ticket spitter) in order to access the garage and then process the ticket to exit. Monthly (aka Permit) parkers enter and exit the garage via a pass card or transponder.

The advantage of a gated system of parking access over an ungated system is that parking enforcement is unnecessary. Unauthorized parkers will not have access to the parking facility; little if any parking enforcement is necessary. However there are two distinct disadvantages to gated parking:

1. Cost. The equipment necessary for gated parking is significant as shown in Table .
2. Staffing. Despite little to no need for enforcement or a cashiered gate, staff must be readily available for instances when parkers have issues with paying or exiting.

We note that a gated system does create the potential for queuing issues upon entrance or exit from the parking facility, particularly when traffic volume is high such as shortly before or shortly after a train arrives or departs.

We also note that monthly parking permits and/or multispace parking meters would still be necessary on West Hendy Avenue in this scenario. That additional cost has not been factored into this scenario.

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Table 11: Projected Costs to Implement Gated Parking (Transient Parking Limited to 2 Facilities)

| MONTHLY   |           |          |           |  |
|---|-----------|----------|-----------|--|
| Mathilda Off Ramp, North Evelyn, North Mathilda Bridge - 1 IN/1 OUT |           |          |           |  |
| Gated Permit System   | Unit Cost | Quantity | Total     |  |
| Barrier Gate  | \$4,000   | 2        | \$8,000   |  |
| Loops/Loop Detectors  | \$1,000   | 4        | \$4,000   |  |
| Card Reader w/Intercom  | \$3,500   | 2        | \$7,000   |  |
| System Software   | \$30,000  | 1        | \$30,000  |  |
| Passcards   | \$4       | 200      | \$800     |  |
| Total   |           |          | \$49,800  |  |
| Installation/Contingencies  |           |          | \$9,960   |  |
|   |           |          | \$59,760  |  |
| TRANSIENT   |           |          |           |  |
| SOUTH MATHILDA - 2 IN/2 OUT   |           |          |           |  |
| Gated POF System  | Unit Cost | Quantity | Total     |  |
| Barrier Gate  | \$3,000   | 4        | \$12,000  |  |
| Loops/Loop Detectors  | \$1,000   | 8        | \$8,000   |  |
| Ticket Spitter w/Intercom   | \$16,000  | 2        | \$32,000  |  |
| System Software   | \$20,000  | 1        | \$20,000  |  |
| POF Station w/Intercom  | \$38,000  | 2        | \$76,000  |  |
| Exit Verifier   | \$15,000  | 2        | \$30,000  |  |
| Total   |           |          | \$178,000 |  |
| Installation/Contingencies  |           |          | \$35,600  |  |
|   |           |          | \$213,600 |  |
| TRANSIENT   |           |          |           |  |
| NORTH MATHILDA - 1 IN/1 OUT   |           |          |           |  |
| Gated POF System  | Unit Cost | Quantity | Total     |  |
| Barrier Gate  | \$3,000   | 2        | \$6,000   |  |
| Loops/Loop Detectors  | \$1,000   | 4        | \$4,000   |  |
| Ticket Spitter w/Intercom   | \$16,000  | 1        | \$16,000  |  |
| System Software   | \$20,000  | 1        | \$20,000  |  |
| POF Station w/Intercom  | \$38,000  | 2        | \$76,000  |  |
| Exit Verifier   | \$15,000  | 1        | \$15,000  |  |
| Total   |           |          | \$137,000 |  |
| Installation/Contingencies  |           |          | \$27,400  |  |
|   |           |          | \$164,400 |  |

Service agreements and extended warranties: \$10K - \$20K per year

The operation of gated parking is described below.

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## ***GATED PARKING (CONTINUED) - MONTHLY PARKERS***

Monthly parkers are authorized to access to the parking facility without needing to process a ticket. They will be issued a credential that will be used for repeated access and egress, as this is faster, easier and more efficient than having them utilize the ticket dispenser and validation system. The term 'monthly' comes from the method of assessing parking fees. Rather than charging tenants and employees the posted hourly parking fees, a monthly fee is established and paid on a monthly basis. If desired, system software can create invoices for billing purposes and also track payments.

The monthly parker receives a credential such as a pass card or transponder that is used to enter and exit the parking facility. They can be programmed for unlimited access or time-restricted access such as weekdays or weekends only, or during particular time periods such as days or nights.

The credential can also be programmed to protect the City from misuse by insisting on an "in-out-in-out" pattern of use. The theory is that if a pattern of "in-in" or "out-out" was allowed, the user could be allowing other cars to enter or exit the facility. This programming feature is referred to as "anti-passback" and can be set as "hard" (the pass will not work if the pattern is broken) or "soft" (the card will work but an exception is noted in the software system).

Other features include combining a number of pass cards into one group and limiting the number of cars that are allowed to be in the facility at any given time. This feature allows for compromises such as a lease restriction of ten parking spaces for a tenant with twenty part-time employees who work various shifts. Each employee can be issued a pass card with the understanding that only ten of them will be allowed to be in the garage at any given time. Once ten cards are in "in" status, the system will not allow another card to access the entry gate until one of the ten cars exits the garage.

Proximity cards are the most common type of monthly credential for gated lots. The motorist drives to the gate, rolls down the car window and waives the proximity ("prox") card within a few inches of a proximity reader. The reader confirms the validity of the card and if valid, sends a signal to open the gate.

An Automatic Vehicle Identification (AVI) system may be used in place of a proximity card system. AVI tags or license plate transponders are issued in place of proximity cards. This allows monthlies to enter and exit without needing to wave a pass card or even roll down their window. This system is more expensive than a proximity card system, and the AVI tags and transponders are twice as expensive as proximity cards. In addition, motorists who use multiple vehicles, such as a spouse's vehicle, may require multiple tags or transponders to be issued.

Neither proximity cards nor AVI would be necessary for an ungated system.

## ***GATED PARKING FOR DAILY/TRANSIENT PARKERS***

Transient parkers access the parking lot by pulling a ticket from the ticket dispenser (aka spitter), which then sends a signal to raise the gate. Underground sensors detect the presence of a car, and after it drives through the gate it sends a signal to close the gate.

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In order to exit, the motorist needs to process the ticket and pay the appropriate parking fees. This can be done at the exit with a human cashier, which has been the most common gated system for the past fifty years, or it can be done 'cashier-less, with an automated payment system (APS).

Cashier-less systems have become increasingly popular in the past ten years as the technology has become extremely reliable and eliminates or reduces the costs associated with a cashied system.

Large multi-lane facilities often automate all lanes except one in an effort to reduce payroll yet still allow customers to interact with a cashier for exception transactions and customer assistance. A cashier-less system will still require human intervention from time to time due to exception tickets (i.e.: lost or damaged tickets, machine or human error, etc.).

## **GATED FACILITIES AND AUTOMATED PAYMENT SYSTEMS**

There are two common types of automated payment systems: Pay-on-foot and pay-in-lane. Both of these systems eliminate the cashier, reducing payroll costs while allowing for 24/7/365 day coverage. There will still be the need for human intervention when a motorist loses or damages their ticket, is unable or unwilling to pay the required fee, or if the system malfunctions. An intercom system allows motorists to communicate with staff remotely. Ideally staff will be close enough to respond in person, but it's also possible to raise the gate remotely if staff is unable to respond in person. Please note that raising the gate remotely without visually observing the exit lane could result in someone or something being struck by the gate.

Pay-on-Foot (POF): As the name suggests, the motorist walks up to the POF station prior to returning to their car. The POF station is strategically located so that motorists will be walking past it on their way back to their car. The motorist inserts the ticket they received (upon entering the facility) into the designated ticket inlet. The ticket is read by a fee computer and the fee is calculated. The POF uses visible and audible messaging to advise the motorist of the parking fee.

- If paying by cash, the motorist inserts bills and or coins into the designated inlet. The POF is capable of calculating and returning change.
- If paying by credit card, the motorist inserts their credit card into the designated inlet and the POF processes the credit card.

The ticket is validated as paid, and returned to the motorist. A receipt is provided "upon request". The POF uses visible and audible messaging to advise the motorist to insert the validated ticket at the exit verifier at the exit of the garage. An intercom button is available in the event the motorist needs assistance.

The motorist returns to their car, drives to the exit, and inserts the validated ticket into the exit verifier. Upon reading the validated ticket the ticket reader sends a signal to automatically raise the exit gate.

The POF system allows for a predetermined grace period (i.e.: twenty minutes) to allow the motorist enough time to return to their car and drive to the exit. If the time expires the motorist will be required to

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pay additional parking fees. This insures that motorists pay the appropriate fees (they can't intentionally pay for parking a few hours before leaving in an effort to pay a lower fee).

Authorized parkers may misjudge the time, lose their ticket or forget to pay at the POF. The exit verifier can be equipped to accept credit card payments, and will prompt them to do so. If they wanted to pay with cash they would need to park their car and return to the POF, but there may be cars behind them. An intercom button will be available at the exit in the event the motorist needs assistance.

If a transaction cannot be reconciled through assistance via the intercom, staff should be deployed to the appropriate exit lane. There are hardware and software options that enable staff to process cash tickets at the exit ("Roving Cashier" feature). In the event that staff is not readily available to address the un-reconciled transaction, the gate may be raised remotely.

Pay-in-Lane (PIL): The PIL works the same way as the POF, but it is located in the exit lane at the exit of the garage. The motorist drives to the exit as they would when paying a cashier, but the cashier has been replaced by the POF. The motorist goes through the same payment procedure as described above. Once the motorist has paid the appropriate fee the PIL sends a signal to automatically raise the exit gate. An intercom button is available in the event the motorist needs assistance.

Parking operations that install POF systems experience less exit lane congestion than cashiering or PIL operations. This is due to the processing rate of a POF parker being approximately four times faster than that of cashiered or PIL cash transactions. This benefit is most relative to cashiered operations, so customers may not perceive it as such, since the entrance and exit driveways are currently un-gated; however in the cashiered or PIL scenario, there would clearly be a difference.

## **SYSTEM MANAGEMENT**

While POF operations require less staffing than exit cashiering, they still require staff to maintain the equipment, manage the revenues, oversee the validation and monthly programs, respond to customer service and tenant issues, and general inquiries and requests for assistance.

It is important to realize that without a human element present there is potential for vandalism – most commonly damage to the gates to allow for egress, particularly if a motorist has been frustrated by not being able to exit the garage and there is no response from the intercom system.

## **SIGNAGE AND GRAPHICS**

The key to successful POF deployment is to have a well-formulated system design and an implementation strategy that includes customer education and customer service, operational procedures, adequate staffing, and support from the PARCS vendor and installer. In addition, perhaps the most important element in the design of POF operations is an effective signage package, tailored to complement the layouts of the garages.



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A cashiered operation is straightforward in that customers take a ticket upon entry and proceed to the cashier upon exit with no intermediate action required. Since POF operations are not as common, it is important that customers be clearly advised upon entry that POF operations have been employed. In addition, customers must also be provided with specific instructions and reminders at various points in the parking operation regarding the process for handling their tickets.

Signage will be required to inform customers of the need to keep their parking tickets with them after they park their cars. At the entrances, signage such as “Take Your Ticket with You / Do Not Leave Ticket in Car” and “This Is an Automated Pay-on-Foot Garage. Please Pay before Exiting” are common and can be reinforced with audio messages at the ticket dispensers.

Signage with similar messages should be placed throughout the lots and at the pedestrian portals, such as “Do You Have Your Parking Ticket?” Since POFs will not be provided at every pedestrian access point, a comprehensive signage package must take all pedestrian portals into consideration, addressing each one individually and providing directions to the POF location.

Signs should also be placed at the POF locations informing customers to “Pay for Parking Here before Returning to Your Car”.

Signage also needs to advise parkers about the validation program. It is important to advise visitors and customers that their parking will be free or validated – this should appear in a large font so visitors and customers do not assume that the gates mean they will need to pay for their parking. Likewise, commuters and other unauthorized parkers need to be advised that they should not be parking in the garages. The rate structure, validation program, as well as the instructions and restrictions need to be posted.

Tenants also need to post signage advising that they validate parking, but also need to post the restrictions and they need to train their staff accordingly.

## **CONCLUSION AND RECOMMENDATIONS**

Revenue generated from paid parking can help offset the costs of maintaining parking spaces for commuters. The City should also explore using additional revenue to make Lot 6 (the North Mathilda Underpass Lot) more available to commuters; the lot represents a tremendous opportunity to increase access to the Station. However, the high occupancy rates in the parking facilities adjacent to and south of the Station represent an obstacle to Station access as well. The idea that paid parking, rather than free parking, can increase access to a destination is often counterintuitive. However, we suggest that paid parking along with improvements to Lot 6 can increase access to the Station. Ending the subsidy for parking and using additional revenue to encourage the use of alternative modes of transportation is an added benefit.

Below we restate the recommendations contained in this report:

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## **PARKING ENFORCEMENT**

- Enforce the time restrictions currently in effect along streets and in off-street parking areas in close proximity to Sunnyvale Station in order to ensure that commuters are not parking in these areas regularly;
- Consider the expansion of the Station Area Parking Permit Program if commuter parking spillover occurs on streets not currently in the program, and residents and property owners in these areas support inclusion in the program.
- Enforce the paid parking program as described in the report. Based on limited data and study, we believe that current enforcement staff may be able to enforce the existing parking regulations as well as the recommended paid parking program. To the extent that this is not the case, additional parking enforcement staff should be able to be cost-neutral if not revenue generating.

## **PAID PARKING**

- Implement a monthly paid parking permit program with an initial rate of \$32.00 per month. Purchasers of these permits would be allowed to park in each of the parking facilities under study including the south side of Hendy Avenue with the exception of the South Mathilda Underpass Lot. The South Mathilda Underpass Lot will be reserved and signed for daily parkers only.
- Reserve the South Mathilda Underpass Lot exclusively for daily parkers on weekdays and implement a fee of \$3.00 per day (24-hour period) for parking on weekdays in this facility.
- Allow for both daily and monthly parking in the North Mathilda Underpass Lot, with a daily parking fee of \$2.00 per day (24-hour period) once the recommended improvements have been made to upgrade the facility. Until that time, this facility should likely remain free.
- Consider a pilot program prior to the full implementation of the paid-parking recommendations. One possibility would be the implementation of daily paid parking in one of the City's commuter-serving lots (likely the South Mathilda Underpass Lot) to gauge acceptance of and demand for paid parking in these lots.
- Consider not allowing holders of residential parking permits to park along the south side of Hendy Avenue during business hours on weekdays given the abundance of parking along other blocks in the neighborhood.
- Parking on weekends should, at this point in time, be kept free. The typical parking demand that we observed does not justify charging for parking on weekends. While not specifically quantified, anecdotally, we understand that parking demand on weekends during events in San Francisco likely would justify charging for parking.<sup>18</sup> However, we suggest that charging for parking on selected days only could create confusion and difficulty for the public.
- If paid parking is implemented, free parking should not be granted in parking spaces for people with disabilities. In our experience, providing free parking for people with disabled placards creates abuse and actually reduces accessibility for drivers with disabilities.
- Paid parking in the facilities under study will be effective only if the recommended enforcement measures are undertaken.

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<sup>18</sup> Daily passenger data for the Station, particularly for weekend days, would be helpful in this regard. The data was not available in time for inclusion in this study.

# PARKING MAINTENANCE AND MANAGEMENT PROGRAM

CITY OF SUNNYVALE – COMMUTER SERVING LOTS - FINAL REPORT

OCTOBER 19, 2012

## *POLICIES, IMPROVEMENTS AND OTHER RECOMMENDATIONS*

It should be the City's policy that some parking spaces should always be available to serve the public; the least desirable situation is for a driver to have no option for parking at the Station. Based on this premise, we recommend the following:

- Link the paid parking program to improvements in the North Mathilda Underpass Lot and improved parking availability in all the parking facilities included in this study.
- Make the North Mathilda Underpass Lot more attractive to daily and monthly parkers by making improvements to the facility including:
  - Striping
  - Signage: Signage along southbound and northbound Mathilda Avenue should clearly indicate the existence of parking for Caltrain passengers in this location. Signage should also be provided in the Station area, particularly along Evelyn Avenue, directing drivers to available and lower cost parking in the North Mathilda Underpass Lot. Signage in the lot should also direct drivers to the Station on foot. A simple parking guidance system that demonstrates real-time parking availability in this parking lot would be highly desirable.
  - Lighting for convenience, perception and security purposes
  - Initial cleaning (and regular maintenance) of the facility
  - Possible security cameras
  - Pedestrian curb cut to the sidewalk along Angel Avenue
  - Curb cut or automobile access to/from Angel Avenue<sup>19</sup>
  - Construction of a convenient and safe pedestrian path along the Caltrain right-of-way connecting the North Mathilda Lot to the North Platform of the Caltrain Station.
- Monitor parking occupancy rates in each of the facilities and on-street locations on a regular (monthly) basis. Given frequent enforcement, this should not be difficult.
- Adjust parking rates and policies based on observed parking occupancy rates on a quarterly basis, keeping in mind the effects of seasonality on parking demand. While maintaining a system that is easy for the public to understand and reasonable for the City to administer, generally rates should be reduced in facilities that are underutilized while rates should be increased where facilities are regularly full or near full. We note that, to ensure that the system of paid parking in the City's other commuter-serving facilities, it is likely that some fee will need to be charged in the North Mathilda Underpass Lot even if the lot is not at full capacity on a regular basis.
- Consult with Caltrain to determine the extent to which bicycle parking facilities for the Station are oversubscribed.<sup>20</sup> To the extent that the demand for bicycle lockers at the Station exceeds supply, the City should consider setting up additional bicycle parking to increase access to the Station using non-driving modes.

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<sup>19</sup> This measure would require a Traffic Impact Analysis (TIA) to determine the impacts on traffic in the area.

<sup>20</sup> This data was unavailable within the time constraints of this analysis.



Preferential Parking Zones

