City of Livermore

DOWNTOWN PARKING MANAGEMENT STUDY

Final Report

November 2014

NELSON
NYGAARD

Table of Contents

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Table of Figures

Page

EXECUTIVE SUMMARY

OVERVIEW

Downtown Livermore is a regional destination, drawing visitors from Bay Area communities to the west and the Central Valley to the east.[1] Downtown's major attractions include restaurants, shopping, and entertainment venues such as three theaters—the Vine, Bankhead, and Livermore Cinemas and various bars. The vineyards of Livermore Valley are also a major nearby destination, and a variety of wine bars and tasting rooms in downtown Livermore cater to these visitors. A map of the full downtown area included in this study is shown in Figure ES-1. For the purpose of this study, downtown includes both the First Street area and the surrounding blocks, which often experience spillover in demand for parking from the center of downtown.

First Street is the heart of downtown Livermore. In recent year, it has grown as a destination, following streetscape improvements in 2006 that removed travel lanes, reduced speeding traffic, enhanced the pedestrian experience, and added angled on-street parking. Demand for parking in downtown has increased as a result of Livermore's success in attracting businesses and visitors, and parking occupancy rates in the highest-demand blocks of downtown reach 100% capacity during peak hours, especially during evening dining hours and on days when there are major events or shows at the Bankhead Theater.

Ensuring the continued vitality and livability of downtown Livermore will require effective management of the limited on-street parking supply and examining options for better managing off-street parking supply. Private off-street parking is also a key challenge. Private parking makes up a substantial portion of the overall parking supply, but it is not well utilized, even as public parking fills up both on-street and off-street. In addition to growth in the demand for parking, another challenge is posed by planned development of the two largest publicly available parking lots—the Livermore Village lot and the lot adjacent to the Bankhead Theater—which will impact existing off-street parking supply.

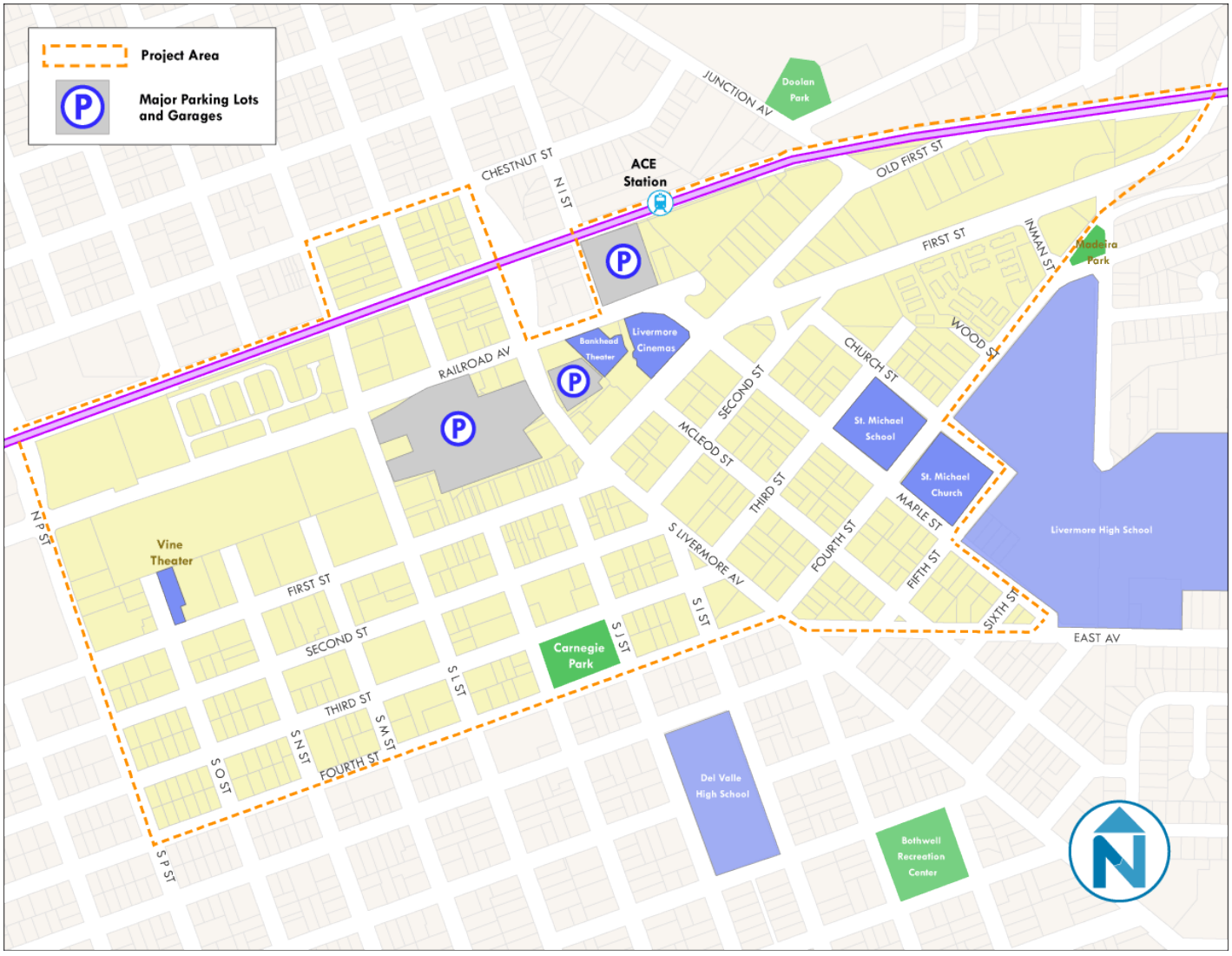
This Parking Management Study represents the City's efforts to address parking challenges in downtown that exist at present, and those challenges expected to emerge as further development occurs. The study documents the existing parking conditions in downtown Livermore, including an inventory of parking supply and demand through a parking occupancy and turnover study at on- and off-street parking facilities. The results of this parking utilization study provide data to inform analysis of actual parking patterns – as opposed to commonly accepted perceptions about parking – and to establish key parking trends occurring throughout downtown Livermore.

Based on key findings from the parking occupancy and turnover study, public outreach efforts, as well as a downtown parking survey completed by 935 residents, visitors, employees, and business owners (which was available both online at the project's website and in person), the plan proposes a set of recommendations designed to improve parking availability in downtown Livermore, and address future changes in parking supply and demand—including the planned redevelopment of the Livermore Village site. These recommendations were also developed based on input from City staff, Livermore Downtown Inc. (LDI), and members of the public who are residents, visitors,

[1] For the purposes of this report, Downtown is generally bounded by the railroad tracks to the north, Livermore High School to the East, Fourth Street and East Avenue to the south, and P Street to the west, with First Street as its focal point.

business owners, or employees in downtown. The recommendations from this plan seek to proactively address existing and future parking challenges in a way that supports the continued success of downtown Livermore as a destination and place to live.

Figure ES-1 Downtown Parking Management Plan Study Area



CHALLENGES ADDRESSED IN THE STUDY

Key Parking Challenges Facing Downtown

This report identifies the following key challenges for parking in downtown Livermore.

1. **Downtown Livermore has a parking problem today, as it is very difficult to find available parking on the street and in public lots in the highest-demand areas of downtown during peak hours.** On weekend evenings and during the weekday lunch period, parking is nearly full on-street near the highest-demand sections of First Street and in the public parking lots at Livermore Village and next to the Bankhead Theater. In an online and in-person downtown parking survey, the difficulty of finding on-street parking was the most commonly listed concern, and parking occupancy and turnover study data suggests First Street is at capacity between M and Maple streets during peak hours. Parking occupancies are very high on all of First Street in the heart of downtown, and the area immediately in front of the Vine Theater also has especially high occupancies throughout the day. Abundant parking is available a few blocks from the core, but many visitors to downtown are not aware of it, or prefer to park closer.
2. **Some employees are parking for long periods of time in high-demand spaces near businesses.** Based on the results of an online and in-person survey about parking in downtown that was administered to downtown residents, visitors, employees, and business owners, most employees (over 80% of employees who responded to the survey) appear to park within a block of their workplace, and generally stay for at least 4 hours, and often for longer than 8 hours. This reduces turnover in high-demand parking spaces and may contribute to the difficulty of finding a space for visitors, who nearly all parked for much shorter periods.
3. **The Livermore Village site will eventually be redeveloped, leading to the loss of over 500 parking spaces.** The Livermore Village site currently provides 360 official public parking spaces. In addition, the adjacent unpaved dirt lot (formerly the site of a Lucky Supermarket) provides approximately 200 spaces that are regularly used for overflow parking when the official lot is full. During peak hours, both lots fill to capacity. These sites are planned for redevelopment, which will necessitate replacement parking in the highest-demand area of downtown.

Causes of Parking Challenges in Downtown

Based on a review of occupancy and turnover data, as well as a downtown parking survey taken in 2014 of 935 residents, visitors, employees and business owners about parking in downtown Livermore (administered both online and in person), there are several potential causes for the parking challenges identified above.

1. **Private off-street lots in downtown are abundant but underutilized.** Private off-street parking, which is mostly reserved for customers and employees, is abundant in downtown Livermore, making up 32% of the total parking supply, but it generally has very low occupancy rates compared to public lots. Occupancy in private lots peaked at rates of only 47% on Thursday and 35% on Saturday. By contrast, occupancy was much higher in public off-street parking lots, which reached 100% capacity during the peak hours on Saturday.

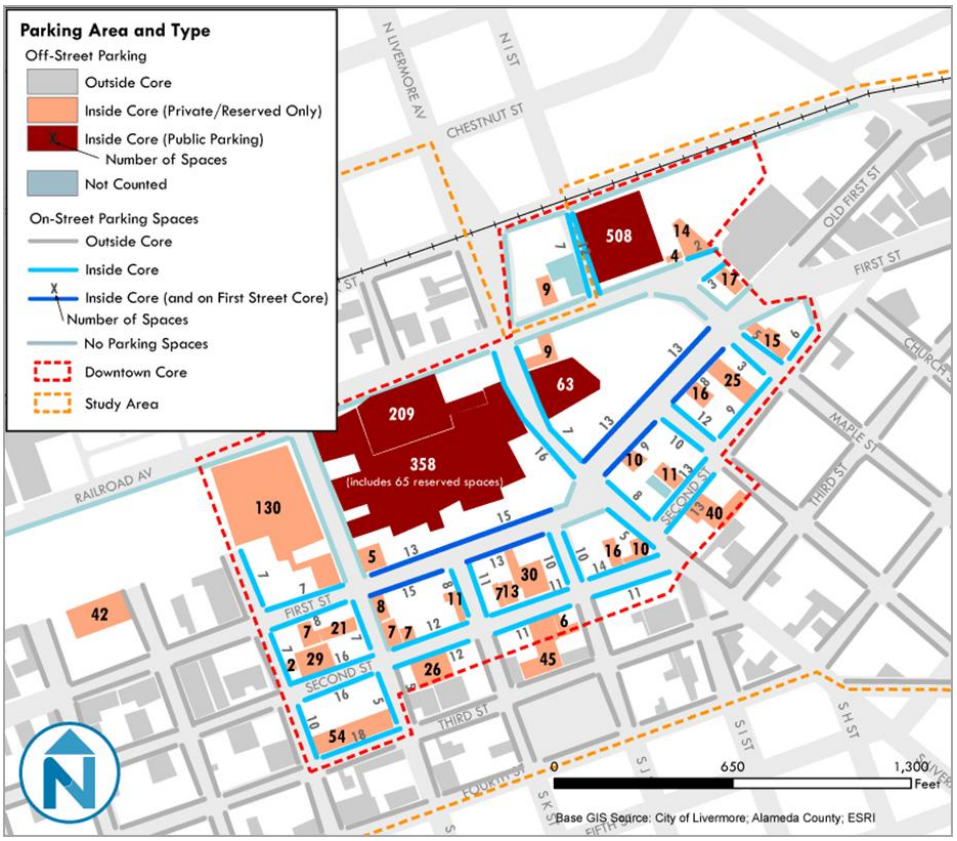
2. **The public parking garage is underutilized, especially on the top floor.** Even as public parking lots in the downtown core fill to capacity and experience illegal double-parking during the peak hour on Saturday, there is generally still capacity available on the top floor (roof) of the public parking garage. Currently, the public parking garage reaches peak occupancies of about 70%. In part, this is because the public parking garage is farther from the majority of dining venues than the Livermore Village lot, but it also reflects people's preference for parking on-street or in a nearby surface parking lot.
3. **Some visitors to downtown may not be aware of public parking available in nearby streets or off-street facilities.** The results of the parking occupancy and turnover study and the downtown parking survey indicate that many visitors experienced difficulty finding parking in the highest-demand blocks of downtown, near First Street. Within a 10-minute walk of the center of downtown (First Street and South Livermore Avenue), however, over a third of on-street parking spaces were available, even during peak hours. This suggests that people may not be aware that public parking is available just a few blocks away, or find it unappealing to walk a few blocks for a parking space, due to inconvenience when shopping, mobility challenges, or perceived safety issues.
4. **Lack of adequate enforcement of time limits.** Although most visitors comply with time limits, according to the parking occupancy and turnover study data and the downtown parking survey data (which asked people how long they parked for), it appears employees park for much longer, and some employees reported that they are aware that parking time limits are rarely enforced. The lack of enforcement of time limits in the downtown core may reduce the likelihood that employees will park farther from the highest-demand areas, making it more difficult for customers to find convenient short-term parking near their destinations.
5. **The availability of free parking and the limited number alternatives for reaching downtown Livermore without driving increase demand for parking.** Parking pricing can be used as to encourage use of less preferred parking spaces. Without this economic incentive, parking on-street or off-street near prime destinations, even during peak periods, motorists circulate on downtown streets in search of limited available parking. The volume of motorists competing for limited parking spaces is also increased by the limited availability of convenient non-auto alternatives for reaching downtown Livermore during peak periods – particularly on weekend evenings.
6. **Redevelopment of the Livermore Village site on the existing parking lot will remove surface parking.** The Livermore Village lot is currently the most popular off-street parking facility in downtown Livermore. Replacing this surface lot with structured parking will require a major capital investment, which will need to occur before the rest of the site is developed to ensure there is no disruption in the parking supply.

EXISTING CONDITIONS

Parking Supply

Nelson\Nygaard conducted a parking occupancy and turnover study in 2014.[2] The study area is generally within a half-mile walk of the intersection of First Street and South Livermore Avenue (see Figure ES-1). Figure ES-2 highlights the boundaries of and the inventory of on-street and off-street parking facilities in the downtown core area. The core is the highest-demand area of downtown and is about one-third the size of the entire study area.

Figure ES-2 Parking Facilities by Type in the Downtown Core[3]



Parking supply and regulations were determined by counting all publicly accessible facilities, both public and private. In total, the study identified 5,297 spaces, including 1,735 on-street spaces and 3,562 off-street spaces across the study area. The off-street supply is comprised of 2,422 spaces

[2] It is important to note that while the project schedule required data collection in January, the parking data was recalibrated to account for higher seasonal demand during the summer. All parking occupancy rates referred to in this report are adjusted to summer, the peak season, using local and national data to develop appropriate adjustment factors. The adjustment factors include downtown seasonal data points such as tax receipts, business sales volumes, and theater use, as well as data from the Institute of Transportation Engineers' Parking Generation, 4th Edition, and the Urban Land Institute's Shared Parking, Second Edition. Future demand projections are based on those adjusted numbers to better capture peak demand.

[3] Note: Some parking lots are partially publicly accessible and partially reserved (private), including several of the lots on the western edge of the Livermore Village site.

that are privately owned and reserved for specific users (e.g. customers or employees) and 1,140 publically owned spaces that may be used by any motorist, regardless of their destination. Residential parking was not included. All of the 1,140 *public* off-street parking spaces in downtown are located in the core area, which also has 441 on-street spaces and approximately 669 private off-street spaces.

Parking Occupancy and Turnover

Parking in the core of downtown Livermore can very difficult during peak periods. The study found that parking occupancy in the downtown core exceeds target occupancy rates of 85% for on-street parking (about one available space per block) and 90% for off-street parking for much of the day, even as parking occupancy rates in the rest of the downtown study area remained much lower. As shown in Figure ES-3, *total study area* occupancy (including the core and the periphery of downtown) on Thursday peaked from 12-1 p.m. at 55%. On Saturday, demand peaked at 59% from 7-8 p.m., reflecting the greater number of people visiting for dinner and shows at the Bankhead Theater. On both days, private parking was utilized at substantially lower levels than public parking.

During the peak hour in the *downtown core*, occupancy rates on-street reached 87% on Thursday and 90% on Saturday. During peak periods, public parking lots filled beyond 100% capacity, leading to double parking and circling for parking. However, the public parking garage did not exceed 70% capacity, even during peak periods, and could accommodate additional overflow from the public parking lots.

Figure ES-3 Existing Peak Hour Vehicle Demand and Occupancy Rates in the Study Area, June

	Thursday			Saturday		
Parking Type	**Inventory**	**Demand**	**Occupancy**	**Inventory**	**Demand**	**Occupancy**
On-Street	1,735	1,086	63%	1,735	1,117	64%
Off-Street (Public)	1,140	676	59%	1,140	1,140	100%[4]
Off-Street (Private)	2,422	1,131	47%	2,422	845	35%
Total	5,297	2,893	55%	5,297	3,102	59%

Note: Assumes a shift from off-street (public) to on-street of 40 vehicles on Saturday.

Average parking turnover rates are high at on-street spaces in the study area. Throughout the study area, most vehicles (75%) were parked at on-street spaces for less than two hours, but those short stays are offset by a number of vehicles parking for more than four hours at a time (according to the downtown parking survey, employees accounted for most of the longer-term parking that did occur downtown).

[4] This figure represents parking demand that exceeds capacity in the off-street lots, leading to double parking and other illegal parking, although there is still parking available in the public parking garage. The number of vehicles projected to be double parked in public off-street lots would be offset by the number of spaces still available in the parking garage, resulting in 100% utilization in total for all off-street public facilities.

FUTURE PARKING DEMAND

This report provides an analysis of projected future parking demand in the downtown Livermore study area based on collected occupancy data, modeled inputs, and anticipated land use changes provided by the City. Parking occupancy rates are projected for the study area under a baseline scenario, wherein no additional parking strategies are implemented, as well as a scenario wherein the parking supply expansion and management strategies described in Chapter 3 are implemented.

With the baseline scenario, demand for on-street public parking in the core and in public off-street lots is projected to continue to match or exceed capacity during peak periods, while vacancy rates remain high in private lots. The scenario with implementation of parking supply expansion and management strategies is also projected to result in high rates of utilization of the public parking supply, but more efficiently accommodates demand by shifting more vehicles to spaces that are currently part of the private supply (e.g. through shared parking agreements).

Evaluation of these two scenarios highlights two significant findings:

1. Given the number and location of vacant parking spaces observed in private lots, it is important to implement strategies that increase utilization of these spaces by making them publicly-accessible through shared parking agreements, revisions to downtown parking requirements, or other means.
2. Redevelopment of the Livermore Village site will significantly change parking resources. The timing of replacement parking (approximately 560 public parking spaces[5]) in a nearby location that is close to the heart of the downtown is crucial.

This demand analysis suggests that by taking proactive action immediately (described below under the "Immediate Action Strategies" heading) the City will be able to improve parking availability in the short-term, and delay future parking challenges while continuing to grow. Figure ES-4 shows the projected peak hour parking demand for weekdays and Saturday in each term.

Figure ES-4 Projected Peak Hour Vehicle Demand and Land Uses in the Study Area, Summer

	Peak Hour Demand (Vehicles)		Peak Hour (Time)		Projected Land Uses				
Term	Weekday	Saturday	Weekday	Saturday	Office/ Retail (SF)	Theater (seats)	Day Care (students)	K-12 School (students)	Hotel (units)
Existing	2,893	3,102	12–1 p.m.	7–8 p.m.	980,000	3,199	122	332	0
Short	2,988	3,369	12–1 p.m.	7–8 p.m.	983,000	3,199	122	332	110
Medium	2,990	3,504	12–1 p.m.	7–8 p.m.	975,000	3,199	122	332	110
Long	3,375	4,011	12–1 p.m.	8–9 p.m.	1,071,000	5,199	72	N/A	300

[5] Includes approximately 200 unmarked parking spaces in the unpaved dirt lot adjacent to the official public lot, formerly the site of a Lucky Supermarket. The unpaved dirt lot is not an official public lot, though it is accessible to the public, and is used for general parking when the adjacent Livermore Village lot reaches 100% capacity.

PARKING MANAGEMENT PLAN STRATEGIES

Included in the *Parking Management Study* are a diverse range of strategies to increase supply, better manage demand, adjust parking policies related to new development, and finance components of the implementation of the parking program. These strategies were discussed with members of the public at a workshop in downtown Livermore, as well as through in-person and online polls on the project website, ParkDTL.com. A more detailed description of each strategy is included in Chapter 3: Parking Management Plan.

Timeline and Cost-effectiveness of Strategies

The *immediate strategies* represent low-hanging fruit that could be easily implemented and address immediate parking challenges in very low-cost manner. The *short-term* strategies require some additional analysis and have moderate costs, and could be implemented within 1–2 years. The *medium-term* strategies include supply and financing strategies linked to the replacement of the public surface parking at the Livermore Village and hotel sites. Given the necessity of addressing the loss of parking when the current surface lot is removed, all strategies are assumed to occur before these sites are developed. Immediate steps should be taken to further plan for implementation of medium-term strategies, which require additional study, acquisition, design, and financing before they can be implemented. The first step in initiating this process is to develop an implementation plan, which will include a work program for each strategy, identification of a funding plan and a detailed implementation schedule.

Figure ES-6 provides a timeline for implementation of each strategy, and provides a high-level summary of the projected order-of-magnitude cost and impact of each strategy. As noted above, the immediate action strategies generally have lower costs (denoted by dollar signs, on a scale from $ to $$$$), as well as lower to moderate impacts (on a scale from low to high).

All of the strategies described below are recommended for implementation, except Strategy #14, which is only recommended for implementation if it receives stronger community support in the future as a means of managing parking demand. The City should focus its efforts most immediately on Strategies #2, 3, 5, 6, 7, 8, 10, 11, and 13, which offer the strongest combination of value and benefits, as detailed in Figure ES-5, and can be implemented relatively quickly (except Strategy #13). While Strategy #13 will not need to be operational until construction begins on the Livermore Village site, the City should proceed with furthering this strategy in greater detail immediately, to ensure it is ready for implementation when development occurs. Strategies #1, 4, 9, and 12 should also be pursued, but they generally will have less impact, and therefore are prioritized lower than the other strategies. Strategy #5 is projected to have a low impact on its own, but is a key complement to implementing Strategy #7, which will increase enforcement of parking regulation.

Figure ES-5 Timeline for Implementation and Projected Costs and Benefits of Parking Strategies

Cost symbols (one-time or 10-year annual cost): $—Less than $50,000 $$—$85,000-$400,000 $$$—$500,000-$2 million $$$$—Greater than $15 million

	Implementation Timeline				Costs and Benefits	
Strategy	**2014-15**	**2015-16**	**2016-17**	**Livermore Village Construction**	**Cost**	**Benefits**
Immediate Action Strategies						
1. Implement more passenger loading zones and enhance ADA access	Implement (signage)	Implement (CIP)			$	**Low** ▪ Improved access and convenience for the mobility impaired
2. Improve parking garage/lot design and safety	Implement	Implement			$$	**Low-Medium** ▪ Moderate improvement in distribution of parking demand ▪ Enhanced sense of safety and security and user experience
3. Update wayfinding and add real-time parking availability information for the public parking garage	Implement (static signage)	Implement (real-time signage)			$$	**Medium** ▪ Moderate improvement in distribution of parking demand ▪ Enhanced customer experience and convenience
4. Improve on- and off-street bicycle parking	Implement				$	**Low** ▪ On-street corrals replace one car parking space with 8 bike spaces ▪ Shifts 15–30 peak hour trips to biking at most (depending on how much parking is added and how well utilized it is)
5. Revise and simplify parking restrictions	Implement				$	**Low - Medium** ▪ Becomes more effective with increased enforcement (strategy #7) ▪ Modest improvement in turnover and parking availability during peak ▪ Discourages long-term parking in high-demand areas
6. Encourage a (privately-run) peak period valet service	Implement				$	**Medium** ▪ Better distribution of parking demand during peak periods
7. Increase enforcement of parking regulations	Implement (targeted enforcement)				$ (net cost)	**High** ▪ Significant increase in compliance with regulations, especially time limits ▪ Increased turnover of prime on-street spaces availability of parking ▪ Prevent long-term parkers from utilizing popular on-street spaces

	Implementation Timeline				Costs and Benefits	
Strategy	**2014-15**	**2015-16**	**2016-17**	**Livermore Village Construction**	**Cost**	**Benefits**
Short-Term Strategies						
8. Where feasible, increase public parking supply through shared parking agreements	Develop	Implement			$ - $$$ (dependent on agreements)	**High** ▪ Significantly increases the supply of convenient public parking (amount varies depending on number of lots—potentially 50-300 spaces) ▪ More efficient use of existing parking supply ▪ Shifts demand away from most popular on-street spaces
9. Provide additional surface parking adjacent to the public parking garage	Develop	Implement			$$	**Medium** ▪ Adds 90 additional public parking spaces at established parking garage
10. Reduce fee amount for voluntary parking in-lieu fees	Develop	Implement			$	**Medium** ▪ Moderate increase the provision of public parking
11. Maximize the amount of public on-site parking provided by new development	Develop	Implement			$	**Medium** ▪ Maximizes use of lots provided by private development, shifting some vehicles away from public parking
12. Implement an employee parking program	Develop	Implement			$	**Low-Medium** ▪ Becomes more effective with increased enforcement (strategy #7) ▪ Increases parking turnover and availability at prime locations
Medium-Term Strategies						
13. Build a public parking garage at the Livermore Village site	Develop Financing Strategy	Land Acq-uisition; Design Concept	Finalize Design and Bid	Implement	$$$$	**High** ▪ Replaces 500 parking spaces that will be lost during future development
14. Consider demand-based pricing of curb parking in high demand locations to maintain availability	Monitor	Develop	Develop	Implement only if all other strategies in this study are not effective	0-3 years: $$ > 3-years: Revenue positive	**High** ▪ Ensures availability will meet 85% target ▪ Incentivizes long-term parkers to park in off-street lots ▪ Reduces search time for parking

	Implementation Timeline				Costs and Benefits	
Strategy	2014-15	2015-16	2016-17	Livermore Village Construction	Cost	Benefits
						▪ Better distributes short-term parking demand

Each strategy is described below with greater detail on found in Chapter 3. Note that all cost projections are preliminary, order-of-magnitude estimates, and additional study is necessary to determine costs more precisely.

IMMEDIATE ACTION STRATEGIES

STRATEGY #1: IMPLEMENT MORE PASSENGER LOADING ZONES AND ENHANCE ADA ACCESS.

One of the consistent points of feedback from the community was that downtown Livermore does not have enough convenient and accessible passenger loading zones or disabled parking spaces. The lack of loading areas impacts the ability of mobility impaired people and drop-off patrons to access key destinations. This strategy proposes to increase loading zones and visibility of ADA spaces in targeted locations in downtown, including adding ADA signage.

There are existing disabled spaces located throughout downtown both on-street (generally at the corners of blocks) and in parking lots (see Figure 3-1). However, there are no ADA spaces on First Street, due to the street's two-step curb design and streetscape elements. As part of this strategy, the City should enhance existing signage of ADA parking, and provide a map of existing ADA spaces on the City's website.

In general, this strategy is likely to have a relatively small impact on parking demand, and will actually reduce the supply of parking for general use a small amount, but it also has very minimal costs, and thus is a cost-effective way to provide an improved parking experience for people needing to make passenger drop-offs.

STRATEGY #2: IMPROVE PARKING GARAGE/LOT DESIGN AND SAFETY.

Lighting and perceived personal safety of the customer experience affects the success of night-time use of parking resources in downtown Livermore, especially at parking garages and on walking routes between the most active destinations and parking areas.

At present, Livermore's public parking garage is not well utilized compared to on-street parking and public off-street parking lots in the downtown core. To increase its utilization, the existing public parking garage should be upgraded with basic low-cost improvements such as adding area identification markers and color coding for each level in the stairwells that make it easy to remember where vehicles are parked, as well as improving the internal pedestrian pathway from the front entryway of the garage. Similar treatments should be applied to any future garages that are constructed. Modifications to Railroad Avenue and improved pedestrians crossings to the garage are also recommended. Crosswalk improvements should be incorporated into the budget for the Annual Crosswalk Safety Improvements section of the Capital Improvement Program.

Improvements to lighting and other amenities that increase the feeling of safety and convenience are generally low-cost compared to adding new parking. It may encourage people to use parking facilities that are currently underutilized, reducing the concentration of demand in prime on-street spaces.

In total, these upgrades would cost approximately $200,000–$300,000 if they are all implemented, and would deliver a moderate return for the cost in terms of improved customer experience and shifting some vehicles away from the highest-demand areas.

STRATEGY #3: UPDATE WAYFINDING AND ADD REAL-TIME PARKING AVAILABILITY INFORMATION FOR THE PUBLIC PARKING GARAGE.

Many respondents to the downtown parking survey noted the difficulty of locating the main parking areas in downtown when first visiting the area. Providing signage to direct visitors to these locations will help to better distribute parking demand, reducing the concentration of demand in the core and increasing the utilization of the public parking garage.

One aspect of this strategy is to use automated counters to track the number of vehicles entering and exiting the existing public parking garage and provide information about real-time availability of parking spaces, helping to direct visitors to this garage. Another segment of this strategy is to add additional directional signage on the roadway system to direct visitors to the public parking, which may be placed just outside downtown to guide drivers as they approach downtown. Real-time availability signage is more costly to install than static wayfinding signage (about $75,000 to $150,000 to install real-time signs at five locations in downtown), though it may be more effective in encouraging drivers to use the public parking garage. Static wayfinding signage costs approximately $10,000 to purchase and install. The design of any signage that is installed should be in keeping with downtown's character.

These wayfinding improvements could be implemented in two phases, with "low-tech" improvements such as static wayfinding signage being implemented in the immediate term, and higher-tech real-time electronic signage introduced in the short-term (1–2 years).

Improving wayfinding and adding real-time information about parking availability will cost about $85,000 to $160,000 in total (including both real-time and static signage), and does not produce new parking supply, but is likely to shift motorists from higher-demand areas into underutilized facilities.

STRATEGY #4: IMPROVE ON- AND OFF-STREET BICYCLE PARKING.

Currently, there are a minimal number of bicycle parking facilities in downtown Livermore. What bicycle parking that does exist is often single “post-and-ring” racks in inconspicuous locations scattered throughout downtown. This strategy aims to provide existing bicycle riders with secure storage in downtown, create a more welcoming environment for potential bicycle riders, and encourage bicycle trips as an alternative to automobile trips.

Although this strategy will likely not result in a significant reduction of motor vehicle parking demand, it will contribute to the larger goal of improving access to downtown Livermore. Priority locations for bicycle parking are focused in the downtown core and major activity centers, particularly along First Street and at major destinations such as the Bankhead Theater, Vine Cinema, and Livermore Cinemas. Other potential locations to enhance bicycle parking include the public parking garage, public parking lots, ACE station, and key transit stops. In general, bicycle parking should be in prominent and highly visible areas.

In addition to the City providing bike parking at some key locations, the City should consider revising its zoning code to require new businesses to provide more employee and guest bike parking. The City should also encourage existing businesses to provide bike parking voluntarily, by sharing information with businesses on the benefits to bike parking versus the costs. For instance, while an on-street bike corral costs approximately $3,000-$4,000 per corral and removes an automobile parking space, it provides parking for up to 8 bicycles. Installing

additional bike parking in downtown Livermore would likely cost $5,000–$30,000, depending on the type and amount of parking added.

STRATEGY #5: REVISE AND SIMPLIFY PARKING RESTRICTIONS.

About one-third of downtown on-street spaces have time limits of one to three hours, and 6% are short-term (under 30 minutes), loading, or accessible parking. On-street spaces with time restrictions are concentrated in the downtown core, while blocks on the periphery of downtown generally allow parking for unlimited amounts of time. The specific duration of time limits varies greatly among on-street parking spaces. In fact, parking regulations can change from one block to the next and sometimes even within the same block.

These parking regulations have largely developed over time in response to new businesses, changes in land uses, and ad hoc requests from businesses. The result is a system that responds to individual business needs, but lacks coordination, which can negatively impact the motorist experience and user-friendliness of the parking system. This strategy seeks to create more consistency with the parking regulations to minimize motorist confusion and improve customer friendliness of the parking system. This strategy is likely to be most effective in conjunction with implementing more consistent enforcement of regulations (see strategy #7).

Current parking regulations also end at 5 p.m. or 6 p.m. depending on the specific area. However, given the dining and entertainment uses in the downtown, peak demand often occurs after 6 p.m. With time restrictions ending prior to peak demand, long-term parking in prime on-street spaces is encouraged, thereby reducing turnover and parking availability. This strategy proposes specific revisions to the parking regulations, including:

- Standardize on-street time limits in the downtown core and on First Street to 2 hours.
- Transition all “green-curb” short-term restrictions to a standard 15-minute restriction.
- Standardize enforcement hours: 9 a.m. to 8 p.m. (and to 6 p.m. in lower-use areas).
- Evaluate eliminating time restrictions outside the downtown core, except where directly adjacent to businesses.
- Implement a 4-hour time limit in the Livermore Village parking lot, with an exemption for permitted employees (see Strategy #12), and with accommodations for overnight parkers frequenting drinking establishments. The public parking garage would continue to retain its current limits.

Excluding costs of enforcement, costs associated with implementing this strategy are estimated at $10,000, primarily to replace signage.

STRATEGY #6: ENCOURAGE A PEAK PERIOD VALET SERVICE.

This strategy proposes that the City encourage downtown businesses to initiate a privately-operated valet parking program during peak periods of demand. The valet program should be designed to facilitate convenient drop-off and pick-up without impacting existing parking or traffic operations. By actively reaching out to private businesses to initiate the program, the City can ensure that the valet service will serve businesses that need it the most and are willing to fund it, without requiring a substantial subsidy from the City.

Valet parking provides an opportunity to shift demand to off-street lots and increase the ease of parking for visitors to high-demand areas in the downtown core. It can also increase the effective

parking supply through more efficient use of parking supply, as valet operators can "tandem" or "triple" park vehicles. Valet operators would be permitted to use designated off-street lots/garages or portions of publicly available off-street lots/garages. Parking in on-street spaces outside the downtown core that have lower occupancy rates during peak hours may also be permitted.

This strategy would be financed and operated privately to avoid creating an ongoing budgetary burden to the City, and therefore would have a minimal financial impact on the City. Some City staff time would be required to provide technical support to businesses to start the program, oversee operations, and ensure that program is operating successfully.

STRATEGY #7: INCREASE ENFORCEMENT OF PARKING REGULATIONS.

The City currently conducts limited parking enforcement in the downtown. Although there was limited public support for increased enforcement during the outreach process, many of the proposed parking management strategies rely on improved enforcement to be effective.

In the short-term timeframe, the City should pursue a more formalized part-time targeted parking enforcement approach, which can be partially financed through citation revenue. As additional recommended parking management strategies are implemented over the long-term timeframe, however, the City may consider ramping up its enforcement activities and/or explore the possibility of hiring a third-party contractor to oversee parking management operations. Alternatively, if the City continues to employ a part-time targeted enforcement approach in the long-term, parking pricing may eventually provide an additional revenue source for enforcement.

According to stated assumptions[6], annual labor costs for a part-time staff enforcement position are less expensive for contracted labor, at around $33,000 per year, compared to $38,700 for in-house enforcement (including supervision). The difference between public and private costs for full-time staff enforcement is smaller, ranging from approximately $50,000 for a contractor to about $53,100 for in-house enforcement (including supervision).

One-time capital costs for both part-time and full-time options include the purchase of handheld ticketing units which would be required for efficient citation issuance. Depending on any existing City devices and future needs, these units could range in price from $10,000 to $13,000 per unit (estimate includes associated software costs and staff training). Maintenance costs of these units are minimal, and they would result in decreased staff needs and increased revenues from tickets due to more efficient enforcement. For both public and private full-time enforcement, the City would also likely need to purchase a new enforcement vehicle at an assumed cost of approximately $27,000 for full-time enforcement activities[7]. Despite higher up-front costs, enforcement vehicles can decrease overall costs by increasing the area a parking enforcement

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[6] Estimated per the following assumptions: Part-time in-house staff would be provided by the Police Department in a newly created position (approximately $23/hour, 24 hours a week, all year, which amounts to approximately $28,700), plus oversight to be performed by an existing sworn police officer working overtime at a cost of $10,000 annually. Full-time in-house enforcement would be conducted by 2-3 part-time un-benefitted police cadets or parking enforcement technicians paid a similar rate at a total cost of approximately $43,100 annually, plus oversight to be performed by an existing sworn police officer working overtime at a cost of $10,000 annually. Private staff would be provided by a contractor at two-thirds the regular full-time salary ($50,000 full-time; $33,333 part-time). Private staff costs derived from a 2010 proposal by Duncan Solutions, Inc., rounded up to account for inflation. More research and outreach is needed to fully understand current private contracting costs, although contractors may be unwilling to share this information outside of a bid process to retain their proprietary information.

[7] Additional costs are assumed to include $1,000 for citation paper, $1,000 for envelopes, and $1,500 for postage.

technician can cover, thereby potentially reducing labor costs. However, there are also benefits to having enforcement officers walk their beat, such as the increased sense of a police presence in the community, and new purchases should be made taking this into consideration.

If the average citation rate were $50, which is the average rate the City charges for a parking violation[8], citation revenues would amount to approximately $86,112 per year. Under the targeted enforcement (part-time) scenarios, the City would expect to issue fewer citations (analysis assumes two-thirds of full enforcement scenario, plus an extra 25% assumed increase in citations due to targeting the most problematic times, or 7.7 citations per enforcement day), resulting in less revenue ($23,920).

All options would require operating subsidies during the first year of implementation, with full-time contracted option and full-time in-house option requiring less subsidy than the part-time options. The full-time, in-house option and full-time, contracted enforcement option would generate net revenues during their second year of operation.

It is recommended that, as a first step, the City conduct increased parking enforcement on a part-time basis as a short term "pilot" project to evaluate its effects. Targeted enforcement would cost less up-front to implement than a full-time strategy, while helping to increase compliance as motorists (especially employees who park regularly) recognize the possibility of receiving a citation for parking longer than the posted time limits. In time, the City could increase enforcement downtown to a full-time role, or hire a private contractor to fill this role.

SHORT-TERM STRATEGIES

The following strategies require some additional study compared to the immediate action strategies described above, but could still be implemented within 1–2 years. The City should begin the process of studying each strategy in more detail immediately so they will be ready for implementation in this time frame.

STRATEGY #8: WHERE FEASIBLE, INCREASE PUBLIC PARKING SUPPLY THROUGH SHARED PARKING AGREEMENTS.

Shared parking agreements are arrangements with private parking lot owners that provide for privately owned off-street parking to be available to the general public during specified periods of time, usually when the parking lot is in low demand for its associated tenants.

A typical example of shared parking is a land use that is used by customers during the day and then would become available to the general public during its non-business hours (evenings and/or weekends) or at other times when there is consistent availability of spaces.

In downtown, only 32% of the off-street parking supply is not restricted to a private business or designated specifically for customers, and on-street parking in total makes up about 33% of the parking supply in the study area. Shared parking agreements present an opportunity to increase the supply of unrestricted public off-street parking and for private parking lot owners to maximize the use and value of their parking lots.

[8] Parking citation rates range from $48 to $53 in Livermore, depending on the violation.

There are three potential types of agreements which the City could enter into: leasing private lots; private ownership of lots with public enforcement of regulations; and third-party management of the program.

In general, shared parking agreements are significantly more cost-effective than building a new parking space. A single parking space in a garage can cost more than $30,000 (or about $4,000 per year, including debt service), while existing spaces can often be leased and operated for less than $1,000 per year. The estimated costs for 125 leased spaces, for instance, would range from about $85,000 to $160,000 per year, compared to about $500,000 per year (about $4,000 per space, including debt service) if the spaces were included in a new public parking garage[9].

STRATEGY #9: PROVIDE ADDITIONAL SURFACE PARKING ADJACENT TO THE PUBLIC PARKING GARAGE.

The existing public parking garage on Railroad Avenue was designed to be expanded into the parcels to the west. In the interim, the existing unpaved lot next to the public parking garage could be restriped as additional surface parking. This would yield 90 stalls.

At present, the public parking garage is not fully utilized, even during peak hours. As a result, adding parking adjacent to the garage may be less effective than increasing supply closer to the center of the downtown core. Expansion should be triggered by occupancies in the public parking garage exceeding 90% during peak hours. Currently, occupancy reaches a peak of about 70%.

The project cost of developing this parking lot would be $400,000. This strategy would create approximately 90 new parking spaces at a cost of $400,000, or about $4,400 per space. This is significantly more cost-effective than a new garage, which costs about $30,000 per space.

STRATEGY #10: REDUCE FEE AMOUNT FOR VOLUNTARY PARKING IN-LIEU FEES.

A voluntary in-lieu parking fee program allows applicants for development projects or conversion of existing structures to new uses to pay a designated fee instead (or "in-lieu") of providing off-street parking spaces according to City code requirements. Fees collected in lieu of providing off-street parking are commonly dedicated to funding the provision of shared public parking, and/or related access and demand management improvements.

Livermore currently has a parking in-lieu fee option for development/changes of use within the downtown area for applicants with 10 or fewer parking spaces, although it has not been used extensively by developers. The fee is currently set at a per space cost equivalent to construction of a new space in a garage, excluding land cost. However, the fee should actually be lower than the full cost of replacing every space, to encourage more developers to exercise the in-lieu fee option and thereby to expand the supply of shared public off-street parking in downtown Livermore. In-lieu fees should be priced with the realization that multiple motorists park in a public space each day, whereas private spaces tend to be less well-utilized.

Therefore, this strategy calls for the City to substantially reduce the in-lieu fee rate and to expand options for payment of such fees. While the reduced fee would not be high enough to provide a

[9] Assumes a monthly lease cost of $50 to $100 per space. In general, spaces would only be leased for use during the highest-demand times for restaurant and entertainment uses, i.e. Thursday through Sunday.

public parking space to replace every private space that is not constructed, it reflects the fact that public parking tends to be better utilized.

STRATEGY #11: MAXIMIZE THE AMOUNT OF PUBLIC ON-SITE PARKING PROVIDED BY NEW DEVELOPMENT.

Different land uses have different periods of parking demand. For example, an office use adjacent to a restaurant can share a common parking facility. Shared parking leverages these different periods of demand and can help to maximize existing resources in a cost-effective manner. To facilitate shared parking in the downtown and encourage the provision of public supply as part of new development, the potential zoning policies are proposed:

1. The *Downtown Specific Plan* allows for a reduction in parking requirements for commercial, retail, and office uses from 3.3 spaces per 1,000 square feet to 2.5 spaces per 1,000 square feet "if all provided parking remains open for non-exclusive use by the general public at all times." To further encourage shared parking and creation of public supply, the City could allow for further parking reductions. The amount of the reduction would be developed during the implementation phase. While this reduces the amount of parking a development provides, public parking is much better utilized in the core of downtown Livermore than private parking reserved for specific users (the highest recorded occupancy at private lots in the core was about 44% lower than the highest recorded occupancy for public parking). This reduction should only apply to projects that would provide 10 or more public spaces.
2. Alternatively, the City could simply require as a condition of approval (at the City's discretion) that private parking in any new development or adaptive reuse projects be made available to the public, or among different uses within a single mixed-use building by right, at least during non-business hours.

In addition to reducing parking requirements for new developments, this strategy could apply to intensification of uses on an existing parcel. At the City's discretion, property owners who currently have a building on part of their property and a parking lot on the remainder, that meet or exceed the existing parking requirements, could be allowed to redevelop a portion of the parking lot to add a new building and use the reduced parking rates, if an adequate share of the remaining parking is made public.

This strategy would increase the public parking supply at very little cost to the City, and therefore is a very cost-effective way to create a moderate amount of new public parking.

STRATEGY #12: IMPLEMENT AN EMPLOYEE PARKING PROGRAM.

Parking for downtown Livermore employees is a critical issue given the number of workers present and the long hours their vehicles are parked in the area. Employees often park in prime spaces on-street, limiting parking for customers and visitors and increasing the number of vehicles circling for parking.

An employee parking permit (EPP) program operates by designating priority parking within a geographic area for employers or employees. Designated parking areas for employees can be located in off-street facilities, with permit holders eligible to park in those spaces during a specific time period exempt from posted regulations. It is important to note that this strategy will be

much more effective if time limits are enforced, providing employees with an incentive to seek out spaces that allow for longer term parking.

Based on the results of the downtown parking survey, which suggest that most employees park within 1–2 blocks of their workplace, a program that effectively encourages employees to park a few blocks farther away could free up dozens of prime spaces in the downtown core during peak periods.

Permit costs would remain affordable to encourage their use while covering the cost of administering the program—approximately $30–40 for an annual pass (or $.12–$.16 per work day[10]). The program could be administered by the City, LDI, or through contracting with a private company.

MEDIUM-TERM STRATEGIES (REPLACEMENT PARKING FOR LIVERMORE VILLAGE)

It is important to note as part of this discussion that the Livermore Village was purchased by the City in 2008 with a $10.1 million[11] for the purpose of housing and as such cannot solely remain parking. In addition, the site has been selected as a catalyst site for the downtown. The following strategies would be pursued in conjunction with the continued revitalization of properties at the Livermore Village site into a mixed-use area.

STRATEGY #13: BUILD A PUBLIC PARKING GARAGE AT THE LIVERMORE VILLAGE SITE.

The development of a 500-space public parking garage on the Livermore Village site would replace stalls lost to redevelopment of the site, and should be built concurrent with redevelopment.

It is important to note that there is currently no funding identified for building the garage, which is projected to cost $16 million, or $32,000 per space. If the garage is financed, it will cost over $2 million annually for debt service and maintenance. Although the new development may be able to support funding a portion of the garage, the majority of its use will be associated with existing businesses and therefore other contributions should be considered.

Taking into account annual debt service and operations costs for the garage, each space would cost over $4,000 per year until the debt service is retired in 25 years, versus about $1,000 per year to lease surface parking spaces. This is far less cost-effective than other strategies recommended here, but it provides a greater amount of public parking supply than any of the other strategies, and increases convenient parking supply in a high-demand location. Strategies for financing the garage are discussed below.

The public parking garage would be constructed at a capacity of at least 500 standard-size spaces, but the City may wish to consider converting the top floor to tandem, valet-parked spaces for employees or other long-term parkers at a later date if demand exceeds supply.

[10] Assumes 255 work days.

[11] Source: http://laserfiche.cityoflivermore.net/WebLink8/0/doc/150137/Page21.aspx

Potential Financing Strategies for a Public Garage and/or other Access and Parking Projects

The following strategies could be used to assist in financing the proposed 500-space garage and/or other access and parking projects. This discussion recommends further evaluation of several of the approaches outlined below that the City may opt to pursue (additional detailed discussion of each of these transportation finance strategies is provided in Chapter 3). Individually, none of the financing options would finance construction and operation of a new public parking garage to replace parking that will be removed when the Livermore Village and hotel site is redeveloped. A combination of these strategies, including developer contributions, could finance the building of the garage, ensuring that Downtown revitalization continues and the Livermore Village catalyst site is successful.

Strategies to Evaluate Further

The following strategies should be further evaluated before determining whether they are appropriate to implement.

Parking Assessment District

Under California law,[12] cities can initiate the creation of assessment districts that can finance infrastructure improvements, including developing parking facilities, from revenue generated by assessments on properties benefitting from such improvements. Other California cities, including Santa Monica and San Mateo, have used assessment districts to fund parking structures. Creation of a parking assessment district would require City Council approval; followed by vote of approval by a majority of affected property owners.

If set at an average annual rate of $0.40 per built square foot—comparable to rates in other California jurisdictions—an assessment district would generate approximately $390,000 per year for infrastructure. If entirely dedicated to a parking garage, this would cover approximately 20% of the annual debt service cost of $1.9 million (exclusive of garage operating costs, which would total an additional $181,000 annually) over 25 years.

This strategy is recommended for further study and potential implementation, although it is important to note it will not cover the full cost of the garage, and should be implemented in tandem with other strategies.

Livermore Village Developer Contribution[13]

Part of the cost of replacing public parking on the Livermore Village site could be borne by the developer of the site. Instead of requiring the developer to build the garage, an alternative approach is to require the developer to make a contribution to the City to help offset a portion of the cost of providing replacement parking.

The amount of this contribution would be negotiated with the developer as part of the development agreement, and will reflect market conditions at the time the development is approved. The contribution amount is likely to only pay for a portion of the garage, which has a

[12] Assessment districts are enabled by the California Streets and Highways Code, Division 10 and 12.

[13] The analysis is based on a similar evaluation Nelson\Nygaard conducted for the City of Sacramento when it updated the Sacramento Zoning Code, due to the market similarities between downtown Sacramento and downtown Livermore.

total cost of $16 million (if financed in a lump sum without a loan), and would therefore need to be combined with other financing strategies.

Livermore Village is currently projected to include 260 residential units. Covering the full cost of a 500-space garage up-front would require the developer to contribute approximately $61,500 per unit—more than is likely financially viable for any developer. A contribution of $5,000 to $10,000 per unit is more realistic, which would generate $1.3 million to $2.6 million, or about 3-6% of the total debt service for the garage ($1.9 million annually for 25 years, not including $181,000 in operating and maintenance costs).

The cost of this contribution could be partially offset through transferring the City-owned land at Livermore Village to the developer at a discounted price. The City originally purchased the land in 2008 for using affordable housing funds in the amount of $10.1 million[14], and property values in Livermore have increased by approximately 20% since that time, according to data from the real estate website Trulia. The City therefore holds approximately $12.1 million in land value, which could be partially provided to the developer to help make the project financially feasible given the cost of the garage.

Requiring a developer contribution to the garage is recommended for implementation, although the developer should not be required to pay the full cost of the garage, since the garage use will primarily support existing businesses and as a full contribution would render the Livermore Village project financially unfeasible.

Parking Revenues

This study does not recommend adding parking meters at this time, and they should be considered in the future only if all other strategies in this study are not effective in creating parking availability. Parking pricing is an important tool for managing parking demand and can also generate revenue to fund access and parking management programs in congested commercial areas. An analysis of the potential financial impact of parking pricing is included here for discussion purposes as one of several potential options for partial funding of a new off-street parking facility in downtown Livermore. It is important to note that community feedback has not been supportive of installing meters. Many people remain unfamiliar with demand-based pricing, or the use of "smart meters" that accept credit and debit card payments.

Although potential net operating profit of $61,000-79,300[15] (meter and citation revenue net of capital and operating costs) year would represent a revenue source to the City as a potential funding source for many valuable access improvements, it would provide a very limited contribution to the financing of a new off-street street parking garage, even if entirely dedicated to that purpose. Net revenues of $79,300 per year would cover about 4% of the estimated $1.9 million annual cost of debt service on construction of a new parking garage (exclusive of garage operating costs, which would total an additional $181,000 annually) over 25 years.

This strategy does not have community support for implementation in the short-term. Parking revenue could be used to assist in financing the operation of a garage if implemented in the

[14] Source: http://laserfiche.cityoflivermore.net/WebLink8/0/doc/150137/Page21.aspx

[15] Installing parking meters on-street at approximately 99 of the highest-demand spaces would generate approximately $112,600 in meter revenue (assuming an average meter rate of $0.50 per hour, with meters in operation six days a week, from 9:00 a.m. to 8:00 p.m., plus an additional $91,500 per year in citation revenue). Alternatively, a lower price of $0.25 per hour could be used for off-peak times (4 hours per day), yielding approximately $95,000 in meter revenue annually, a reduction of about $18,000.

future, but we recommend primarily evaluating parking pricing as a tool to manage parking demand and ensure availability.

Alternatively, increased enforcement of existing parking regulations (Strategy #7) could generate a source of revenue that could be used to fund a public parking garage, without parking meters. Full-time enforcement of existing regulations in downtown could generate up to $32,612 in net revenue annually, or about 1.7% of the estimated $1.9 million annual cost of debt service on construction of a new parking garage (exclusive of garage operating costs).

Enhanced Infrastructure Financing District

Under the Infrastructure Financing District Act of 1990 (Government Code §53395, et seq.), California cities can create Infrastructure Financing Districts (IFDs) to pay for regional scale public works projects, including parking facilities. IFDs can use Tax Increment Financing (TIF) to divert property tax increments to infrastructure projects that have community-wide benefits for a period of 30 years. Newly enacted Enhanced Infrastructure Financing District (EIFD) legislation will make this tool more useful to cities.

In the past, IFDs have been used infrequently, because they require a two-thirds (66.6%) vote of residents in a district to create the district, and an additional two-thirds vote to authorize bond issuance based on TIF revenue. Under SB 628, which was been approved by the state legislature and governor in September 2014, cities can create EIFDs without voter approval. Issuing bonds based on TIF revenue would still require approval of voters or property owners, but the threshold would be reduced from 66.6% to 55%. In addition to TIF, EIFDs can also use a variety of other funding sources to finance improvements, such as creating a Parking Assessment District, provided they have the required voters approval. Revenue may only be used for construction of facilities, and may not go towards maintenance and operations. EIFDs will not be able to divert property tax revenues from schools.

An important advantage of this financing tool is the ability to issue bonds for the full revenue amount up front. The City would need to determine whether the EIFD would only include the redevelopment site, or if it would also include surrounding properties that utilize the existing Livermore Village parking lot. Including existing properties would increase the amount of revenue generated, but would require the approval of far more people, and the City would need to demonstrate that these properties would benefit from the new garage.

Fiscal Strategies Not Recommended

Other strategies posed greater challenges to implementation and/or lacked a strong nexus between the revenue source and the parties that benefit from improved parking facilities downtown and would be an economic disincentive to development. As a result, they were not recommended for implementation or further study. These strategies include downtown or citywide impact fees to fund downtown parking, as well as tax increases. These strategies are not described here because they are not recommended for implementation or study. However, the strategies are described in further detail in Chapter 3: Parking Management Plan.

STRATEGY #14: CONSIDER DEMAND-BASED PRICING OF CURB PARKING IN HIGH DEMAND LOCATIONS TO MAINTAIN AVAILABILITY.

Curbside parking is regularly filled to capacity on First Street (between L and Maple) during peak periods on both weekdays and weekends, causing motorists to search and circle in a wider area

for available parking (peak hour parking occupancy in this area reached 100% capacity). Added parking enforcement should help to relieve this situation in the short-term. However, as downtown's revitalization continues, it may become necessary at some point in the future to further consider demand-based pricing. This decision would be tied to occupancy and availability goals.

This strategy would suggest re-consideration of demand-based pricing of parking in the downtown core, with a four-part strategy to ensure the maintenance of on-street parking availability as the City continues to grow and change if occupancy goals are exceeded:

1. Establish a parking availability goal of 1-2 spaces per block for on-street parking.
2. Implement parking fees and initiate variable, demand-based pricing for curbside parking
3. Monitor occupancy and adjust meter rates up or down to meet established targets
4. Dedicate net revenue (up to $79,300 per year) to access improvements and enforcement
5. As an option, parking pricing can include a validation system if desired by merchants
6. Consider t priced parking for events at parking garages and lots

Community opposition to parking pricing was the strongest of all the considered strategies. In evaluating these measures, the City should carefully weigh the potential benefits of parking pricing to the concerns and desires of the community. Demand-based parking pricing is a direct, efficient and cost-effective means of optimizing use of the existing parking supply; however, it should be implemented in a manner that is supported by the community.

Based on a very preliminary estimate of demand and comparison to other cities that have implemented meters – an analysis that would need to be further refined before implementing a meter program – annual net meter revenue is estimated to be approximately $79,300. This estimate is based on an assumption that prices would initially be established at a rate of $0.50 per hour, with meters in operation six days a week, from 9 a.m.– 8 p.m., with the 99 metered spaces in the downtown core averaging an occupancy rate of approximately 75% (these spaces currently average 80% occupancy on weekdays and 85% on Saturday). If meter rates were set at a lower rate ($0.25) during four off-peak hours per day, net revenue would be approximately $61,000 ($18,000 less than if no off-peak discount is offered).

1 EXISTING CONDITIONS

OVERVIEW OF STUDY AREA

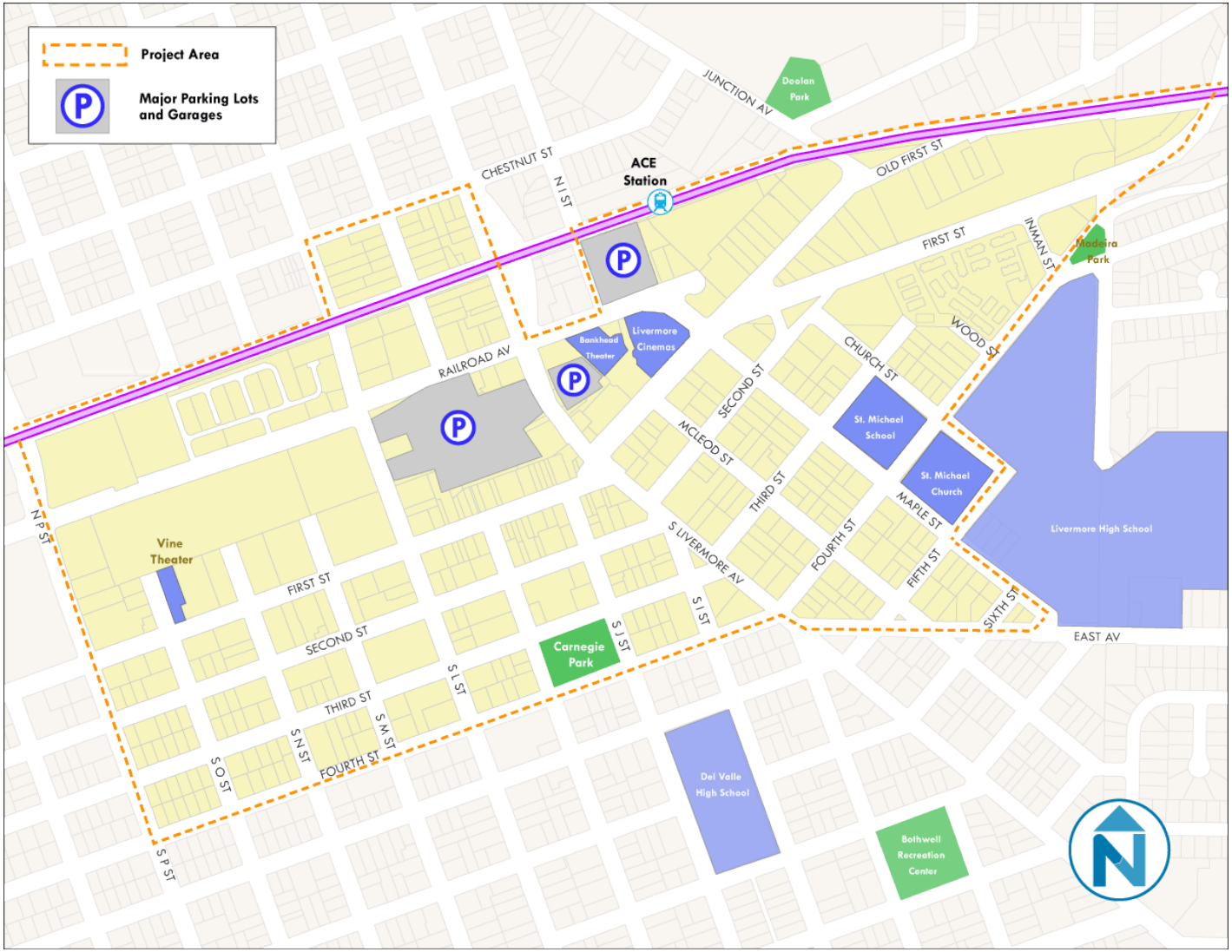
Downtown Livermore is located near the city's geographic center, in eastern Alameda County, 43 miles east of San Francisco. The downtown area is generally bounded by the railroad tracks to the north, Livermore High School to the East, Fourth Street and East Avenue to the south, and P Street to the west, with First Street as its focal point. Regional access to downtown Livermore is provided by I-580 and State Route 84, as well as by the Altamont Corridor Express (ACE) intercity rail station, which is situated on the north boundary of downtown and served by four roundtrip trains daily.

The downtown area was the site of the City's 1869 founding, and served as an early center of trade. Today, it is comprised of a mixture of land uses that includes small-scale retail and commercial, single-family homes, multi-family apartments and condos, and various cultural and entertainment destinations. First Street is the main commercial destination in downtown, and is a regional destination for visitors from other Bay Area communities to the west and from the Central Valley to the east. Downtown's major attractions include three theaters—the Vine, Bankhead, and Livermore Cinemas, as well as restaurants, bars, and shopping. The vineyards of Livermore Valley are also a major nearby destination, and numerous wine bars in downtown Livermore cater to these visitors.

First Street has grown as a destination in recent years, following the removal of the State Highway designation on First Street in 2002, and adoption of the *Downtown Specific Plan* in 2004, and streetscape improvements in 2006 that reconstructed First Street by removing travel lanes, provided pedestrian enhancements, and added angled on-street parking. Demand for parking in downtown has increased in recent years as a result, and parking occupancy rates in the downtown core reach high levels during peak hours, especially during evening dining hours and on days when there are popular shows at the Bankhead Theater.

Ensuring the continued vitality and livability of downtown Livermore will require effective management of the on-street parking supply and examining options for better managing off-street parking supply. Private off-street parking is also a key challenge. Private parking makes up a substantial portion of the overall parking supply, but it is not well utilized, even as public parking fills up both on-street and off-street. In addition to growth in the demand for parking, planned development and reuse of the two largest publicly available parking lots pose an additional challenge.

Figure 1-1 Study Area Boundary



Summary of Key Findings

This report has yielded various key findings related to parking supply, regulations, occupancy, and turnover in the study area. In the highest-demand areas of downtown, parking occupancy on-street and in the public lots is close to capacity during peak hours. For the study area *as a whole*, however, parking supply significantly exceeds demand, both on-street and off-street, though core downtown blocks exceed target occupancy rates for much of the day. The specific findings of the parking analysis are summarized below:

1. **Downtown Livermore has a parking problem today, as it is very difficult to find available parking on the street and in public lots in the highest-demand areas of downtown during peak hours.** On weekend evenings and during the weekday lunch hour, parking is nearly full on-street near the highest-demand sections of First Street and in the public parking lots at Livermore Village and next to the Bankhead Theater. In an online and in-person downtown parking survey, the difficulty of finding on-street parking was the most commonly listed concern. Parking occupancies are very high on all of First Street, but the area immediately in front of the Vine Theater also has especially high occupancies throughout the day.
2. **Private off-street lots in downtown are abundant but underutilized.** Private off-street parking (2,422 spaces), which is available to the public but mostly reserved for customers and employees, is abundant in downtown Livermore, but it generally has very low occupancy rates. Occupancy in private lots peaked at rates of 47% on Thursday and 35% on Saturday. By contrast, occupancy was much higher in publicly available off-street facilities (including lots and the public parking garage), with public lots reaching 100% capacity during the peak hours on Saturday.
3. **The public parking garage is underutilized, especially on the top floor.** Even as public parking lots in the downtown core fill to capacity and experience illegal double-parking during the peak hour on Saturday, there is generally still capacity available on the top floor (roof) of the public parking garage. Currently, the public parking garage reaches peak occupancies of about 70%. In part, this is because the public parking garage is farther from the center of downtown (about one-third of a mile from the intersection of First Street and South Livermore Avenue), but it also reflects people's preference for parking on-street or in a nearby surface parking lot.
4. **Peak demand patterns are different on Thursday and Saturday.** Total study area demand on Thursday peaked from 12–1 p.m. at 48%. On Saturday, demand peaked at 48% from 7–8 p.m., reflecting the greater number of people visiting for dinner and shows at the Bankhead Theater.
5. **Parking turnover rates are high at on-street spaces in the study area.** Throughout the study area, most vehicles (75%) were parked at on-street spaces for less than two hours. Parking durations in the downtown core were even shorter, while durations on the periphery of the study area were much longer, consistent with more residential and employee parking. However, a minority of people (about 25%) did park for longer periods in the core, reducing availability for visitors. The lack of regular parking enforcement and the 6 p.m. end time likely lead to the longer parking sessions among some people.
6. **Some people parked for longer than the posted time limits.** While most people parked for short periods of time, there were some blocks that were exceptions. The

average length of stay for people parking on-street exceeded the posted time limits on 11 block faces on Thursday and on 13 block faces on Saturday. Unlike the blocks in the downtown core, where turnover rates where high, most of the blocks where people parked for longer were located just beyond the downtown core. It is likely that residents and employees are parking for longer periods, and are not concerned about receiving parking citations. Of course, even on blocks that had higher turnover on average, some vehicles parked for longer, reducing parking availability.

7. **On-street parking and private off-street parking is relatively evenly distributed across the study area, but public off-street parking is more concentrated.** While private parking lots are spread out evenly across the study area, all publicly accessible off-street parking is located in the downtown core (within about a 7-minute walk from First and K streets at a standard walking pace, though longer for people with mobility impairments). Furthermore, the public parking garage is about one-third of a mile from First and K streets, which is less convenient for people.

Causes of Parking Challenges

There are several potential causes for the parking challenges in downtown Livermore.

1. **Lack of enforcement of time limits.** Although most visitors comply with time limits, according to the parking occupancy and turnover study data and the downtown parking survey data (which asked people how long they parked for), employees park for much longer than visitors do, and many employees reported that they are aware that parking time limits are rarely enforced. Based on the results of an online and in-person survey about parking in downtown that was administered to downtown residents, visitors, employees, and business owners, it is clear that most employees (over 80% of employees who responded to the survey) park within a block of their workplace, and generally stay for at least 4 hours, and often for longer than 8 hours. Parking sessions of more than 2 hours make up a minority of spaces in the core, but disproportionately contribute to the lack of parking availability. The lack of enforcement of time limits in the core may reduce the likelihood that employees will park farther from the highest-demand areas, making it more difficult for customers to find convenient short-term parking near their destinations.
2. **Some visitors to downtown may not be aware of parking available in nearby streets or off-street facilities.** The results of the parking occupancy and turnover study and the downtown parking survey indicate that many visitors experienced difficulty finding parking in the highest-demand blocks of downtown, near First Street. Within a 10-minute walk of the center of downtown (First Street and South Livermore Avenue) at a standard walking pace, however, over a third of parking spaces on-street were available, even during peak hours. This suggests that people may not be aware that public parking is available a few blocks away, or find it unappealing to walk a few blocks for a parking space, due to inconvenience, mobility challenges, or perceived safety issues.
3. **There is a large variety of time restrictions for the on-street spaces, which may be confusing to motorists.** On-street spaces within downtown are governed by at least six different time limits, including 15 minutes, 30 minutes, 1 hour, 90 minutes, 2 hours, and 3 hours. There is not a consistent approach to how time limits for each block are designated, which may make it more difficult for drivers to find a space that meets their needs.

4. **The availability of parking free of charge and limited alternatives for reaching downtown Livermore increase demand for parking**. With no charge for parking on-street or off-street near prime destinations, even during peak periods, motorists have an incentive to circulate on downtown streets in search of limited available parking immediately adjacent to prime destinations. The volume of motorists competing for limited parking spaces is also increased by the limited availability of convenient non-auto alternatives for reaching downtown Livermore during peak periods—particularly on weekend evenings (Many employees, customers and visitors come from neighborhoods and cities outside of downtown Livermore that do not have direct access to the area by transit).

PLANNING CONTEXT

Three major plans govern the existing approach to transportation and land use planning in downtown Livermore. These studies are described below.

- The 2009 *Downtown Livermore Parking Study* evaluated existing and projected demand for parking in downtown Livermore under various future development scenarios. The study concluded that future development would lead to a shortage of 431 parking spaces on Friday evening and 800 spaces on Saturday evenings throughout the downtown study area. If parking was not added, the study concluded, parking demand may spill over into surrounding residential neighborhoods, and some patrons may not visit downtown. These findings are consistent with the conclusions of the current report, as discussed in the Seasonal and Future Parking Demand chapter (Chapter 2).
- The 2004 *Downtown Specific Plan* (updated in 2009) set out to revitalize downtown Livermore and restore its role as the heart of the city's civic activity and community life. The plan detailed the land uses, infrastructure improvements, and design guidelines for downtown, with a focus on restoring the walkability of First Street, adding mixed-use retail and housing development, and addressing transportation challenges.

  Objectives for parking in the plan include ensuring that parking facilities are dispersed to provide drivers with options depending on their destinations; locating parking facilities on the periphery of downtown so pedestrian travel is prioritized in the core; and sizing parking garages to be about 500 spaces to minimize the number and size of the facility entry/exit points. To achieve these objectives, the plan proposes increasing the amount of parking constructed downtown (including constructing a 500-space garage on the Livermore Village site to replace parking lost through redevelopment of the existing lot), encouraging shared parking of private supply, promoting valet parking, considering time limits and paid parking for employees, and providing accessible on-street parking spaces.
- The Circulation Element of the Livermore *General Plan* (2003) identified the City's plan, in coordination with Caltrans, to reroute State Route 84 from First Street in downtown to the Isabel Avenue corridor, freeing up First Street to be redesigned as a traditional walking-oriented main street, which has since occurred.

PARKING POLICY REVIEW

Livermore's existing parking management policies are discussed in further detail below. This review includes enforcement practices, development standards, and other relevant tactics currently employed in the project area that would influence or be influenced by a new parking

management program. In particular, the review focuses on policies specific to the *Downtown Specific Plan*.

Parking Maintenance, Operation, and Enforcement Procedures

Parking facilities in downtown Livermore are operated and maintained by the City. The Police Department is responsible for enforcing parking regulations, but does not proactively enforce time limits or other parking regulations at this time.

Downtown Livermore streets are closed on occasion for special events. For instance, the annual Wine Country Festival, Rodeo parade, and holiday parade require the closure of several downtown streets. The City also regularly hosts a winter farmers' market in the parking lot at the southeast corner of North L Street and Railroad Avenue.

Supply and Demand Management Policies

The City does not charge for parking in any of its on-street or off-street facilities. Instead, demand for on-street parking is primarily managed through the use of time limits, which vary throughout downtown, and include 15 minutes, 30 minutes, 1 hour, 90 minutes, 2 hours, and 3 hours. Most time limits apply every day except Sunday and holidays, and generally extend from 9 a.m. to 6 p.m. or 8 a.m. to 4 p.m. Passenger and commercial loading zones are provided on some downtown blocks. There are also 12 ADA accessible parking spaces reserved for use by people with disabled parking placards in the downtown area, providing priority parking for individuals with disabilities. Examples of parking restriction signage are shown above. The placement and design of wayfinding signage is sporadic, and includes both internationally recognized and customized signage.

Downtown Parking Requirements

Development in downtown must meet the following parking requirements, as outlined in the *Downtown Specific Plan*.

Non-residential use parking requirements:

- Commercial, retail, and offices uses: 1 space per every 300 feet.
- Places of assembly with fixed seating (auditoriums, theaters, assembly halls, etc.): 1 space for every 4 fixed seats.
- For all uses above, parking provided on-site, via restricted access lots for private use only, may not exceed 5 spaces per every 1,000 square feet.
- Privately owned parking garages and surface parking lots may not front First Street or other downtown streets in general. Instead, they must be located at the rear or sides of buildings.

- The City code also allows for uses to be "grandfathered" in, where a new business can opt to not provide additional parking if the old use in question was of the same or less intensity.

Residential use parking requirements:

- Single-family residential uses: 1 space for one-bedroom homes; 2 spaces for homes with two or more bedrooms.
- Multi-family residential uses: 1 space for studios; 1.5 spaces for one-bedroom homes; 1.75 spaces for homes with two or more bedrooms.
- For multi-family apartments with 10 units or more, 1 guest parking space must be provided for every 10 units.

Parking Reductions for TDM Programs

Parking requirements may be reduced if the project implements programs that are proven to reduce parking demand. Projects with satisfactory transportation demand management (TDM) plans may receive up to a 10% reduction in parking requirements, at the discretion of the City's Zoning Administrator. Strategies that may qualify include: locating the project close to public transportation facilities, provision of free transit passes to all employees, operation of a carpool or bus program, or evidence that many of the project's residents, employees, or customers use a bicycle to access the site on a regular basis.

Shared and Off-site Parking

Non-Residential Uses

The *Downtown Specific Plan* calls for the City to pursue partnerships with businesses to facilitate shared parking arrangements, including allowing general parking use in private lots after daytime business hours. Commercial, retail, and office uses that keep parking open for non-exclusive use by the general public at all times may reduce the amount of parking they provide by one space for every 400 square feet. If an existing private lot is converted to a shared lot that is open to the public for non-exclusive use, spaces that exceed the required minimum may be leased to other establishments.

In the Downtown Core plan area, all new surface lots are required to remain open for non-exclusive use. Private surface parking lots are not allowed, though private structured lots are permitted. In general, parking for facilities in the Downtown Core area may be provided on-site; by payment of an in-lieu fee; off-site elsewhere in the Downtown Core; or through a combination of these approaches. Elsewhere in downtown, including the Downtown Boulevard and Transit Gateway Plan areas, required parking may be provided through similar approaches, though any off-site parking must be within one-fourth mile of the project site.

Commercial use projects may also receive a reduction in their parking requirements, at the discretion of the City Engineer (or the City Council/Planning Commission, if the project requires the approval of one of those bodies), if they demonstrate that the various uses within the project have periods of peak parking demand that do not coincide with one another.

Residential Uses

Per the *Downtown Specific Plan*, in the Downtown Core, residential units located above first-floor retail/commercial on First Street, and live/work spaces within the Downtown Core, may provide parking through payment of an in-lieu fee or construction of parking facilities off-site in the Downtown Core.

Accessible Parking

The *Downtown Specific Plan* calls for the City to continue to look for opportunities to provide additional accessible parking spaces in the downtown. There are no specific requirements for the amount of accessible on-street parking. As part of the First Street Streetscape project in 2004–2006, the City located accessible parking spaces on side streets and in off-street public lots due to safety risks associated with wheelchair access and the two-step curb and landscaping on First Street, which do not allow for direct curbside loading and unloading.

Lighting of Parking Facilities

Attractive, ornate lamps provide pedestrian-scale lighting in the core of downtown, including First Street between L and Maple streets, but many of the streets on the periphery of downtown are not as well lit and may discourage people from parking on these streets at night. Lighting and safety in parking lots was mentioned as a concern by many survey respondents. The City has improved lighting on some other downtown streets as well in the past two years, including installing white LED replacement luminaire heads along Second Street from J Street to L Street.

Parking Policies in the Climate Action Plan

The City of Livermore's 2012 *Climate Action Plan* is intended to reduce the amount of greenhouse gas generated in the city. It recommends a wide range of strategies for reducing emissions, including several related to parking management in the city. The strategies related to managing parking and reducing parking demand include the following:

- Support car sharing services, including some on-street car-share spaces.
- Over time, consider develop parking polices to help encourage alternatives to single-occupancy vehicle travel.
- Consider expanding the percentage of downtown parking spaces for ride-sharing vehicles, while reducing the available downtown parking spaces for private vehicles.
- Use parking pricing to discourage private vehicle use, especially at peak times.
- Create parking benefit districts, which invest meter revenues in pedestrian infrastructure and other public amenities. Parking districts should be encouraged throughout the City, but they should be concentrated in high traffic areas including downtown.
- Provide convenient pathways to parking for pedestrians; provide shade trees for parking.
- Encourage adequate parking and passenger loading and waiting areas to accommodate vans used for ride sharing.

PARKING FINANCES

In the most recent year for which data was available, operating and maintaining on-street and public off-street parking downtown cost the City roughly $115,000, including roughly $4,200 for contractor maintenance support and $10,000 for City staff maintenance time.

The City of Livermore's Police Department reported issuing 177 parking citations in downtown in 2013, and 158 citations in 2012, primarily for parking in "no parking" zones ($53 fine) and in "limited parking" zones, such as commercial loading zones ($55 fine).[16] This accounts for less than $10,000 in revenue. Issuance of parking citations is generally up to the discretion of police officers, and time limits have not been actively enforced in recent years, due to the fact that issuing violations for exceeding timed parking limits is labor intensive, and the Police Department has experienced reductions in staffing due to budgetary constraints.

The City has received approximately $74,000 in revenue from parking in-lieu fees since the creation of the program and has spent $18,500 of this revenue on parking improvements.

PARKING INVENTORY AND REGULATIONS

Nelson\Nygaard conducted an inventory of parking facilities in the study area in January 2014. The boundaries of this parking occupancy and turnover study are shown in Figure 1-1. This section provides a brief summary of the parking inventory (type and number of spaces) and parking regulations (time limits and pricing) for each on-street block and off-street facility recorded as part of this study.

Methodology

Parking inventory and regulations were determined through field observations, including counting all publicly accessible facilities, including on-street parking, public parking lots and garages, and parking lots that are privately owned but publicly accessible (i.e. not gated or closed for construction).

Findings

Parking Inventory and Regulations

Figure 1-2 provides a detailed breakdown of the type of parking in the study area, including both on- and off-street facilities. In total, the parking occupancy and turnover study identified 5,297 spaces, including 1,735 on-street spaces and 3,562 off-street spaces, of which 2,422 are private spaces restricted to specific users, such as employees or customers. One parking lot with 16 spaces that was counted on Thursday was inaccessible on Saturday. The parking lot for Livermore High School, located immediately adjacent to the study area, is also included in the count.[17]

[16] Citywide, Livermore has averaged parking citation revenue of about $120,000 from fiscal years 2008 through 2012.

[17] It is important to note that certain lots, such as the Livermore High School lot, are frequently closed to the general public and may only be utilized at certain times.

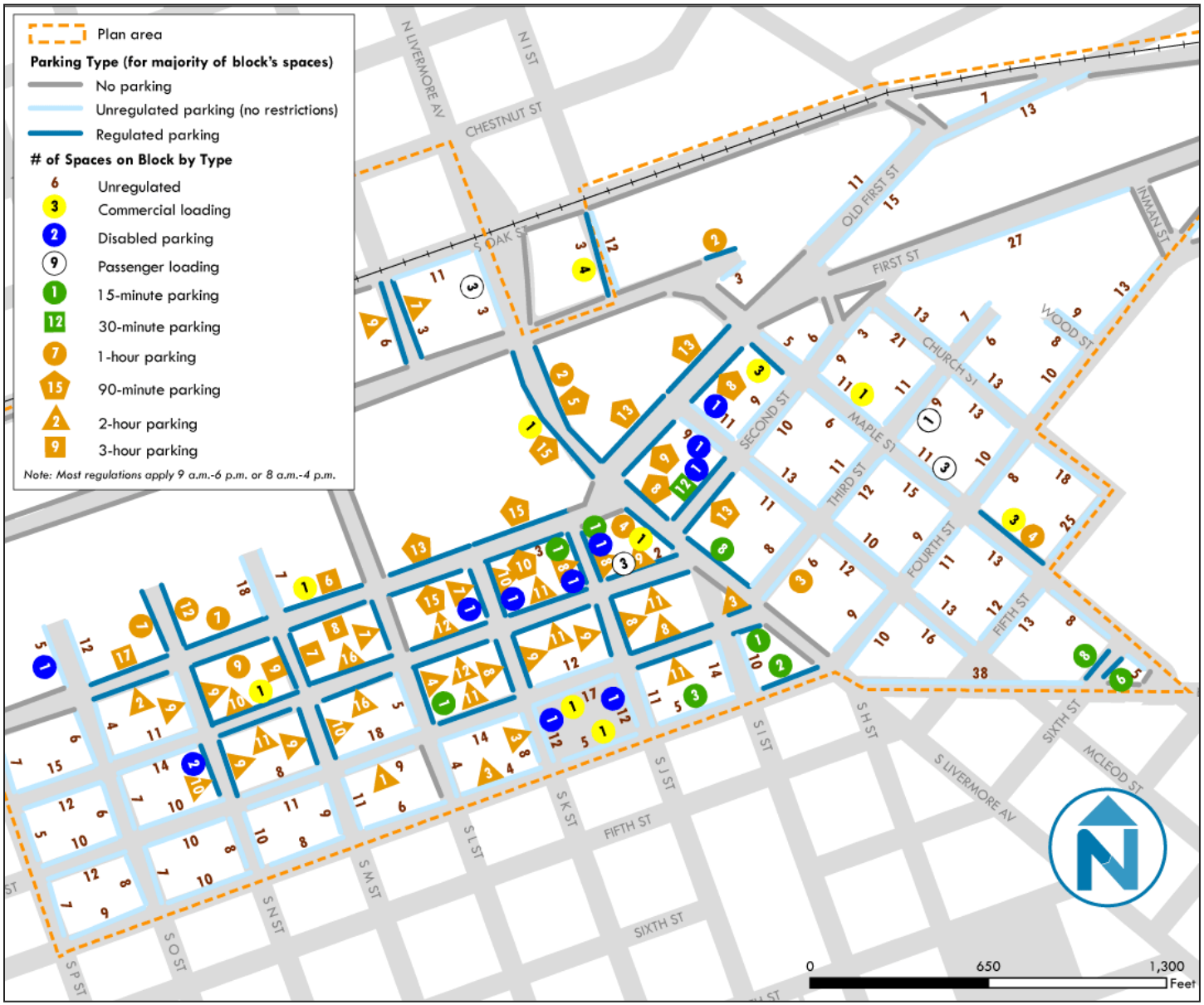
Figure 1-2 Study Area Parking Facilities by Type

Location	Private	Public					Total	% of parking
	Customer Only / Reserved	Unregulated or 4+ hour time limit	Short-term (15–30 mins)	Medium-term (1–3 hrs)	Disabled Parking	Loading		
On-Street	0	1,108	43	545	12	27	1,735	33%
	0%	64%	2%	31%	1%	2%	100%	
Off-Street	2,422	1,118	0	5	17	0	3,562	67%
	68%	31%	0%	0%	0%	0%	100%	
Total	**2,422**	**2,226**	**43**	**550**	**29**	**27**	**5,297**	**100%**
	46%	**42%**	**1%**	**10%**	**1%**	**1%**	**100%**	

Figure 1-3 shows the number of on-street spaces on each block in the study area and identifies the number of spaces with time and user restrictions. On-street parking is available on most streets in the study area, and comprises approximately one-third of all parking in the area. Of the 1,735 total on-street spaces in the study area, two-thirds do not have time limits or other restrictions (such as loading or accessible parking). About one-third of on-street spaces have time limits of one to three hours, and 6% are short-term (under 30 minutes), loading, or accessible parking. On-street spaces with time restrictions are concentrated in the downtown core, while blocks on the periphery of downtown generally allow parking for unlimited amounts of time.

The specific duration of time limits varies greatly among on-street parking spaces. At different locations throughout downtown, parking is subject to time restrictions of 15 minutes, 30 minutes, 1 hour, 90 minutes, 2 hours, and 3 hours.

Figure 1-3 On-Street Parking Supply and Restrictions (In Effect Monday through Saturday)



Off-street parking is provided in 103 off-street facilities in the study area, totaling 3,495 spaces. Of these spaces, 68% are located in facilities that are reserved for customers or employees, and 32% (about 1,080 spaces) are available to the public for general use. The largest off-street parking facilities available for public use are the Livermore Village site (approximately 500 public spaces, including 209 spaces in an unpaved dirt lot adjacent to the paved lot, formerly the site of a Lucky Supermarket, which is not an official parking area, but is used as general public parking in practice), the public parking garage (508 spaces), and the Bankhead Theater lot (63 spaces). These three facilities (shown in Figure 1-1) are closely clustered together in the northern-central portion of the study area. A small number of the spaces in the general public off-street facilities have time limits or restrictions of less than 4 hours, but 98% do not have any restrictions or allow for parking for at least 4 hours.

OCCUPANCY AND TURNOVER

This section provides an overview of the results from the parking occupancy and turnover study. It includes a summary of the count methodology, as well as the key findings.

Methodology

Occupancy and turnover counts of on- and off-street spaces in the study area were counted on the following days:

- Thursday, January 16, 2014
- Saturday, January 18, 2014
- Friday, May 2, 2014 (supplemental 7–9 p.m. count at public parking garage)

On each of these days, occupancy data was collected in hourly intervals from 9 a.m. up to 9 p.m. to observe parking behavior and demand throughout the day. Occupancy rates were collected for all on-street spaces in the study area and all publicly accessible off-street facilities, including those with reserved parking for customers and employees.

Turnover data for all on-street spaces in the study area was also collected. License plate numbers were collected every hour, tracking vehicle length of stay.

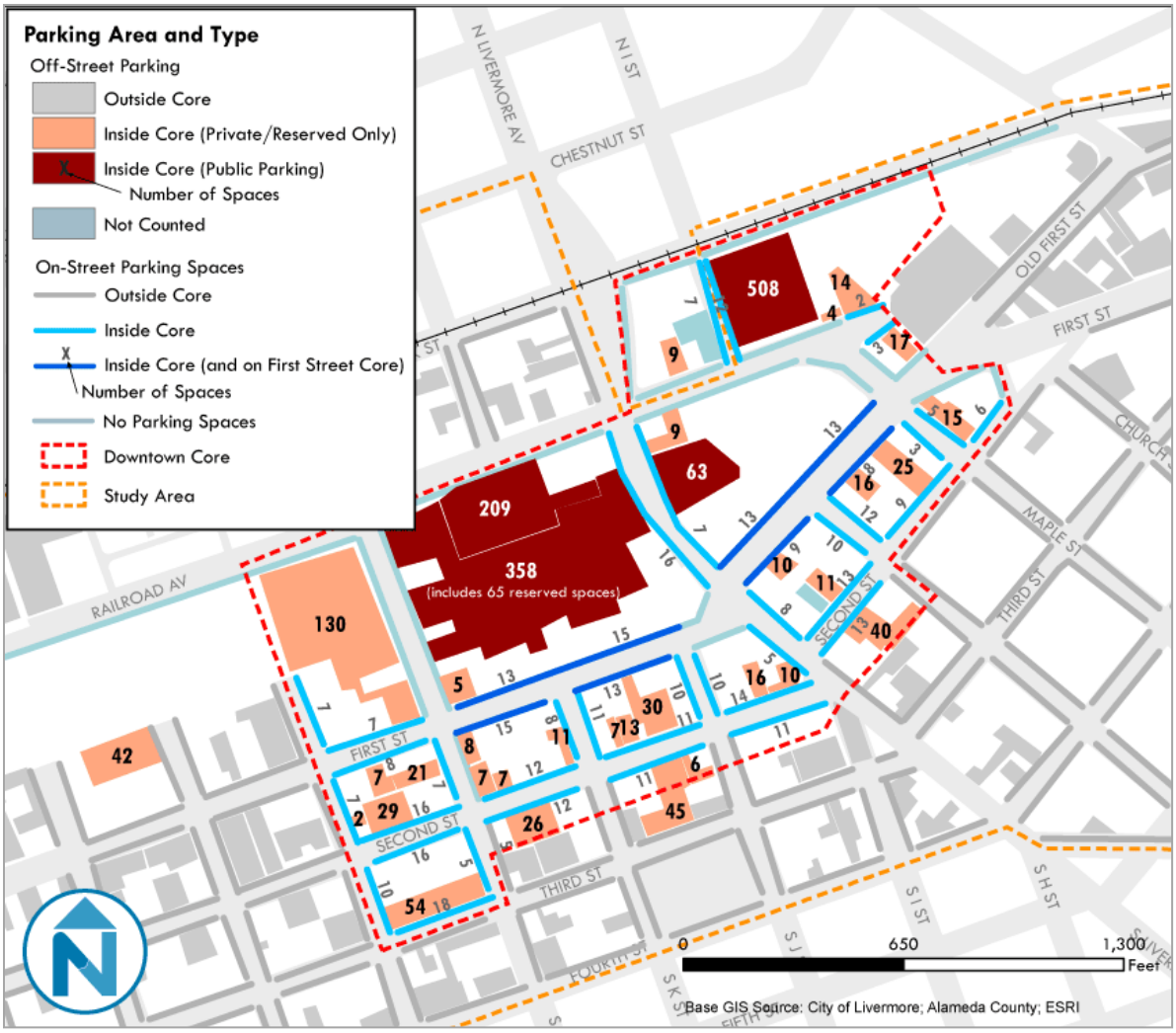
Parking occupancy rates in downtown Livermore are generally higher during the summer peak season than during January, when the parking occupancy and turnover study was conducted. In order to adjust for the higher demand in summer, this report adjusts the occupancy data from the January study to approximate summer demand, using a combination of local and national seasonal adjustment factors. The adjustment factors include downtown seasonal data points such as tax receipts, business sales volumes, and theater use, as well as data from the Institute of Transportation Engineers' *Parking Generation, 4th Edition*, and the Urban Land Institute's *Shared Parking, Second Edition*.

Occupancy

In the following sections, occupancy is analyzed in the downtown core area, in the overall study area, at on-street spaces in the highest-demand area of First Street (from M Street to Maple Street), and by off-street facility type (public or private). The downtown core boundaries used here were defined in the *Downtown Specific Plan*; everything in the core is within a 5-10 minute walk distance from all of downtown's major destinations at a standard walking pace (elderly or

mobility impaired individuals would have a more limited range of easily accessible parking facilities). Figure 1-4 shows the boundaries of the downtown core, identifies on-street parking that is within the First Street core (from M Street to Maple Street), and identifies public and private parking within the downtown core (all major public off-street facilities are located in the core).

Figure 1-4 Parking by Area and Type[18]



In order to measure occupancy, this report uses target rates of 85% and 90% as effective industry standards for on- and off-street spaces, respectively. In other words, maintaining 15% and 10% vacancy rates for corresponding on- and off-street stalls will help ensure an "effective parking supply." It is at these occupancy levels that roughly one space per block is available, making searching or "cruising" for parking unnecessary and allowing off-street lots to maintain adequate maneuverability. Occupancy rates below these targets indicate a diminished economic return on

[18] Note: Some parking lots are partially publicly accessible and partially reserved (private), including several of the lots on the western edge of the Livermore Village site.

investments in parking facilities—in other words, more parking is provided than is needed, which comes at a cost to the City and/or developers.

Downtown Core: All Parking

This section evaluates occupancy data for the downtown core area (shown in Figure 1-4), which was defined in the *Downtown Specific Plan* and generally includes the area within a five-minute walk of the center of downtown at a standard walking pace, including on-street parking, off-street public parking, and private reserved parking. The core includes 441 on-street spaces and 1,809 off-street spaces (of which 1,140 are publicly accessible).

In general, occupancy rates were much higher in the downtown core than in the study area as a whole. The Thursday peak in the downtown core occurred at the same time as the study area as a whole (12–1 p.m.), but the peak occupancy rate was higher in the core (63%) than the study area as a whole (55%). The non-core area of the study area reached an even lower peak occupancy rate of 48%.

On Saturday, peak hour (7–8 p.m.) occupancy at all parking, including private lots, reached 74% in the core, compared to 59% in the study area as a whole, and just 47% in the non-core area.

At on-street parking spaces in the downtown core area, the occupancy rate during the peak hour of Thursday (12–1 p.m.) was 87%, slightly above the target on-street occupancy rate of 85%. On Saturday, on-street occupancy in the core reached 90% during the peak hour (7–8 p.m.) Many blocks were 100% occupied during multiple periods on both days.

Downtown Core: On-Street and Public Off-Street Parking

Many of the off-street parking spaces in the downtown core are private and reserved for customers or employees only. Excluding the approximately 700 private spaces in the downtown core provides the most accurate picture of the actual amount of parking available to most people attempting to park in downtown.

During the peak hour on Thursday, excluding private lots, parking occupancy reaches a rate of 67% (compared to 63% when including private lots).

On Saturday during the peak hour, the occupancy rate in the core area increases to nearly 100% when excluding private lots, significantly higher than the occupancy rate when including private parking (74%).

First Street (M Street to Maple Street)

Demand greatly exceeds targets on the busiest portion of First Street—the six blocks from M Street to Maple Street (mapped in Figure 1-4), which is the highest-demand area of the downtown core. Parking occupancy during the peak hour reaches 100% capacity on both days. Although parking is available in sections of the study area, the high demand on First Street throughout the day helps to explain the perception that parking can be difficult to find in downtown Livermore.

Public Off-Street Parking Facilities

Nearly all major public off-street parking facilities in downtown Livermore are located within the core. At these facilities, parking demand never exceeds target capacity on Thursday (reaching a rate of 59% during the peak hour), but capacity at the public off-street lots is 100% full at the peak hour on Saturday. On both days, public off-street parking occupancy rates are much higher than

the private parking supply, which reaches occupancies of 47% during the peak hour on Thursday and 35% during the peak hour on Saturday. This partially reflects the wider distribution of private parking—only about 700 of the 2,400 private reserved parking spaces are located within the downtown core, where demand is the highest—as well as the lower rates of use of private parking, which has lower occupancy rates than public parking even in the downtown core.

Overall Study Area

Overall study area occupancy, including all private as a well as public parking in the broader downtown area (shown in Figure 2-1), did not exceed 60% during the peak hour on Thursday or Saturday. The peak hour overall occurred in the early afternoon on Thursday, peaking at 55% (12–1 p.m.), and during the evening on Saturday (7–8 p.m.), reaching an occupancy of 59%. Similarly, for the study area as a whole, on-street and off-street occupancy did not exceed target rates at any time during the peak hour on either Thursday or Saturday.

On Thursday, the on-street occupancy rate during the peak hour was 63%. Off-street occupancy on Thursday (including private, reserved lots) followed a similar pattern, peaking at 51% during the peak hour. On Saturday, the on-street parking occupancy rate reached 62% during the peak hour.

Overall, on both days, on-street parking demand is heavily concentrated on a few blocks near the center of downtown. Many of these blocks exceeded target occupancy levels throughout much of both days, while on-street spaces just a few blocks away generally remained well below target occupancy throughout the day. Similarly, most off-street demand is concentrated in the publicly accessible off-street parking lots closest to the center of downtown, while private lots on the periphery of downtown remain much less full.

On Thursday, the peak occupancy period occurred from 12–1 p.m. Even during the peak hour, the majority of blocks and parking lots remained well below the target occupancy rate, with demand concentrated primarily in the center of downtown along First Street, and in the publicly accessible parking lots open to general parking. The private lots with reserved parking scattered throughout downtown generally had much lower occupancies, as did on-street parking more than a few blocks from the downtown core on First Street.

The peak period on Saturday occurred from 7–8 p.m. On-street demand followed a similar pattern to Thursday, though more demand spilled west on First Street beyond the busiest portion of the street's commercial core. Off-street parking in the publicly accessible lots reached higher occupancies during the Saturday peak, with two of the largest publicly accessible lots exceeding target occupancies. Despite this, however, the public parking garage remained below 75% capacity during the peak period.[19]

Parking Turnover

In addition to parking occupancy data, parking turnover data was collected for all on-street block faces.[20] This data reveals the total number of people parking in a space over the course of a day,

[19] The seasonal adjustment to the off-street parking garage count for Saturday was confirmed by taking an additional count on Friday, May 2, 2014, which better approximates the peak season.

[20] Turnover is defined as the number of vehicles parked on a block-face divided by the inventory. In other words, the higher the turnover figure, the less time the average vehicle was parked on a block-face (i.e. the greater the amount of vehicular turnover).

and helps to identify areas where people are parking for shorter and longer periods of time. In some cases, areas with lower turnover rates may be more heavily used by employees and residents who park for the full day (or who move their vehicle periodically throughout the day to comply with limits), though it is not possible to determine this with certainty from the data collected because the surveyors did not record full license plate numbers.

As shown in Figure 1-5, three-quarters of on-street vehicles parked for fewer than 2 hours on both Thursday and Saturday. Another 13% parked for two to four hours on both days. Only 5% of vehicles parked for longer than six hours on Thursday, and 7% on Saturday. This suggests that most vehicles (75%) are parked for short shopping, dining, or other convenience trips, while a smaller number (25%) of vehicles were residents or employees parking in the same place all day. Overall, the average length of stay on Thursday was 106 minutes, compared to 109 minutes on Saturday, with about a quarter of vehicles parking for longer than two hours.

Figure 1-5 Length of Time Vehicles Parked, by Day in the Study Area

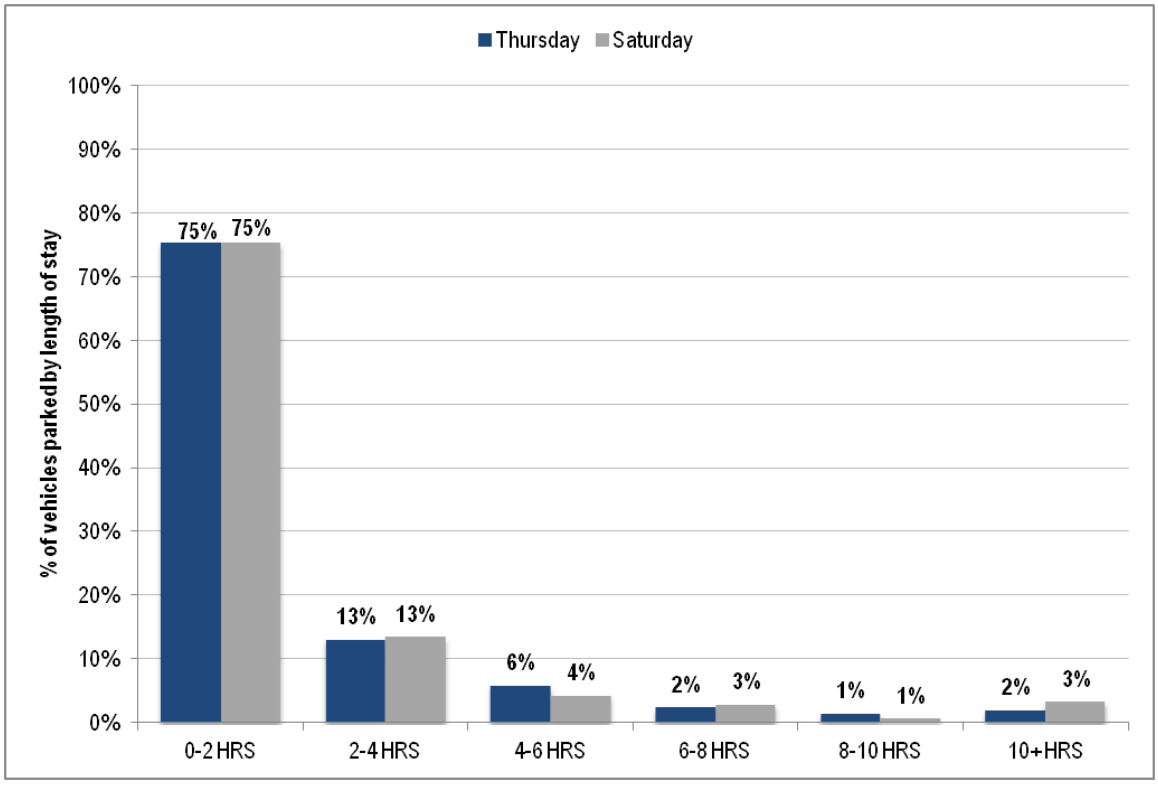


Figure 1-6 through Figure 1-9 map vehicle turnover and average length of stay by block-face for Thursday and Saturday. For the purposes of this map, turnover is defined as the number of vehicles parked on a block-face divided by the inventory. In other words, a higher number indicates that more vehicles were parked on the block during the day and that the average vehicle was parked for a shorter amount of time.

Turnover on both days was generally highest on the central downtown blocks, where occupancy was also highest, likely due to the number of shopping and dining destinations and the presence of time limits. High-turnover blocks were generally very similar on both days, with turnover somewhat higher on Thursday on the residential on the western half of the study area, and higher on Saturday on the eastern residential blocks near Livermore High School.

Figure 1-6 Parking Turnover (Number of Vehicles Parked in Space Per Day) by Block-Face, Thursday

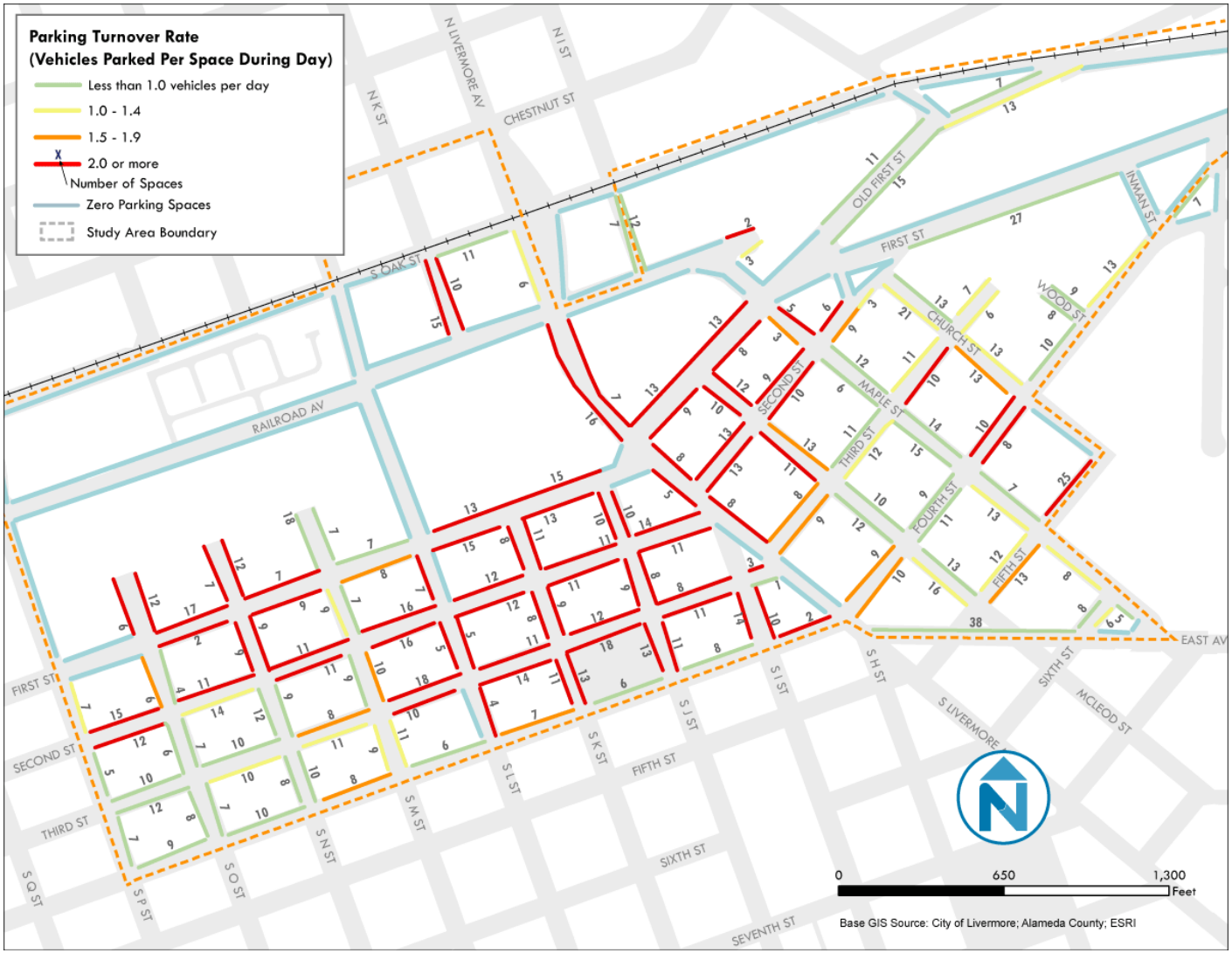
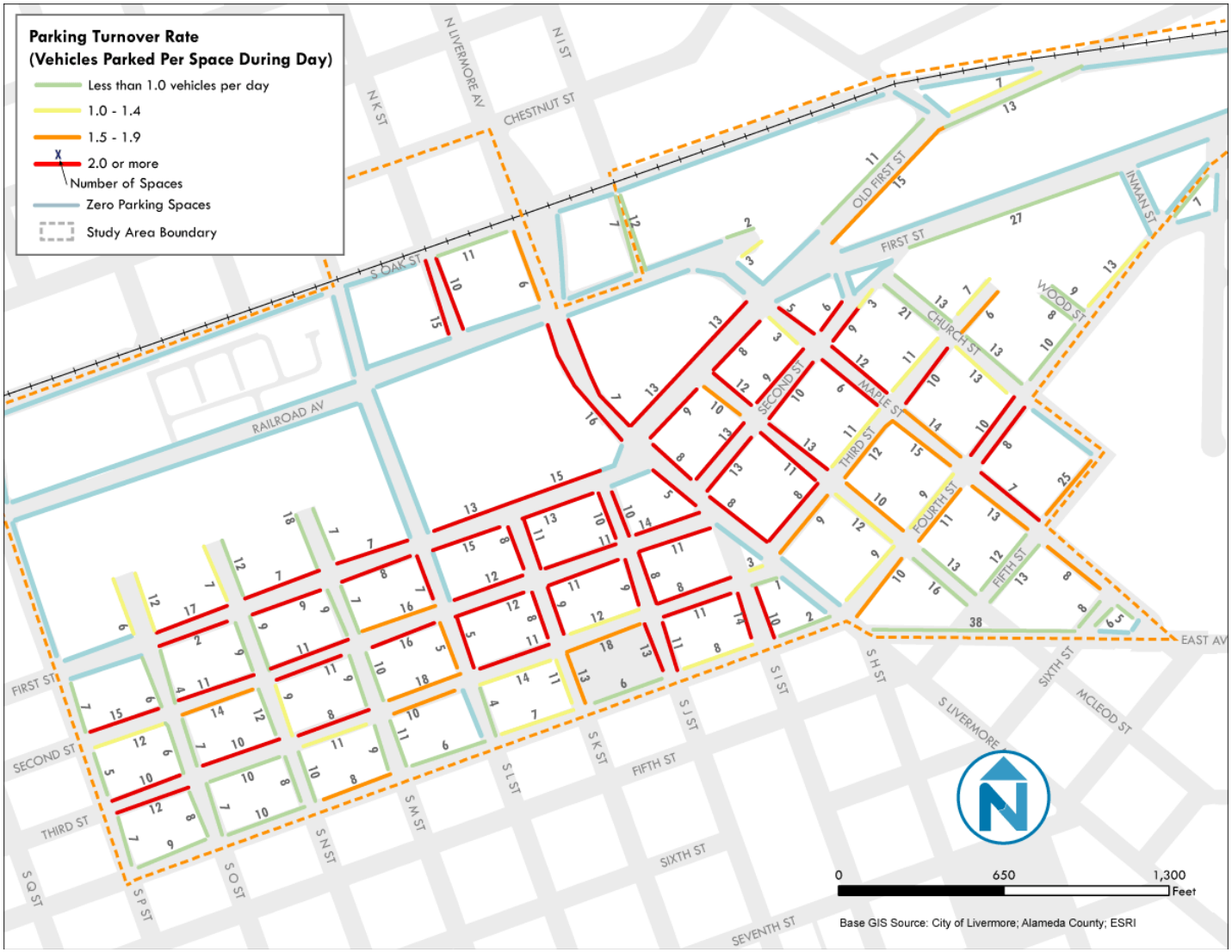


Figure 1-7 Parking Turnover (Number of Vehicles Parked in Space Per Day) by Block-Face, Saturday



The average-length-of-stay maps tell a similar story, while also showing blocks where the average duration exceeds the posted time limits (as discussed below, this may be legal in some cases, if people parked after time limit enforcement hours ended). On Thursday, average parking time across the study area exceeded the posted time limits on 11 block faces—a small percentage of the downtown as a whole, which has a total of 198 block faces, but enough to create a localized parking impact. On Saturday, the average parking time throughout the course of the day exceeded the posted limit on 13 block faces. Most of the blocks where average duration exceeded the posted time limit are located on the periphery of downtown, not in the core. This may be due to the natural turnover that occurs as people visit restaurants and shops in the heart of downtown for shorter periods of time, while blocks on the periphery of downtown attract more employees parking for the full day, residents storing their vehicles, and other types of parking that have a longer duration. This also suggests most people parking on the periphery of the downtown core do not expect time limits (where they exist) to be enforced. Of course, even on blocks where the average length of stay did not exceed the posted limit, some vehicles may still have parked for longer, reducing parking availability.

It is important to note that time limits are only in effect until 6 p.m. on most blocks (and 4 p.m. on a small number of blocks), so vehicles parked longer than the daytime time limit are not necessarily in violation if they arrived after the hours of enforcement. For instance, an employee parking their vehicle at 4:31 p.m. in a 90-minute zone that is enforced until 6 p.m. would be able to park for the rest of the night without moving their vehicle.

Figure 1-8 Average Length of Stay in the Study Area (Thursday)

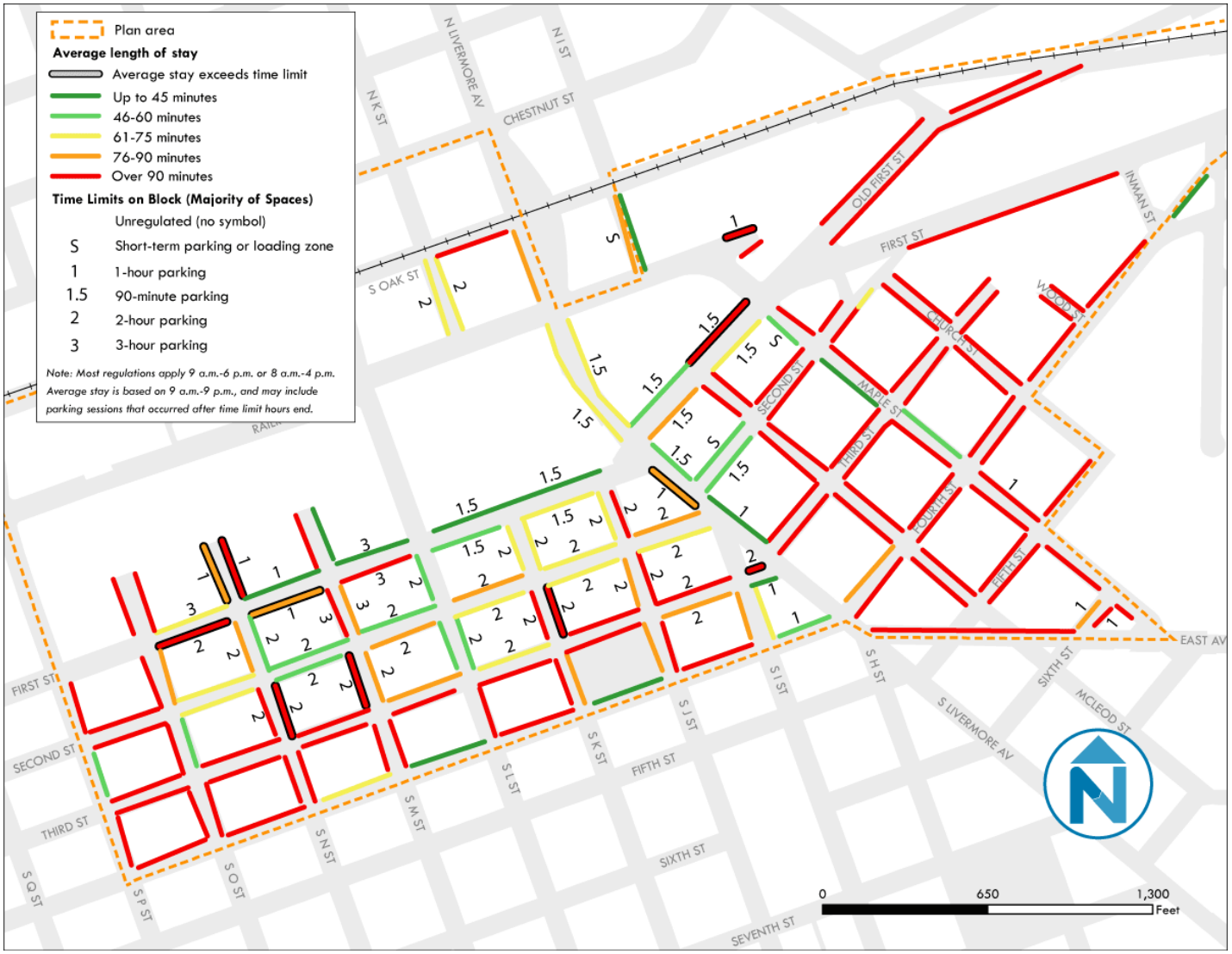
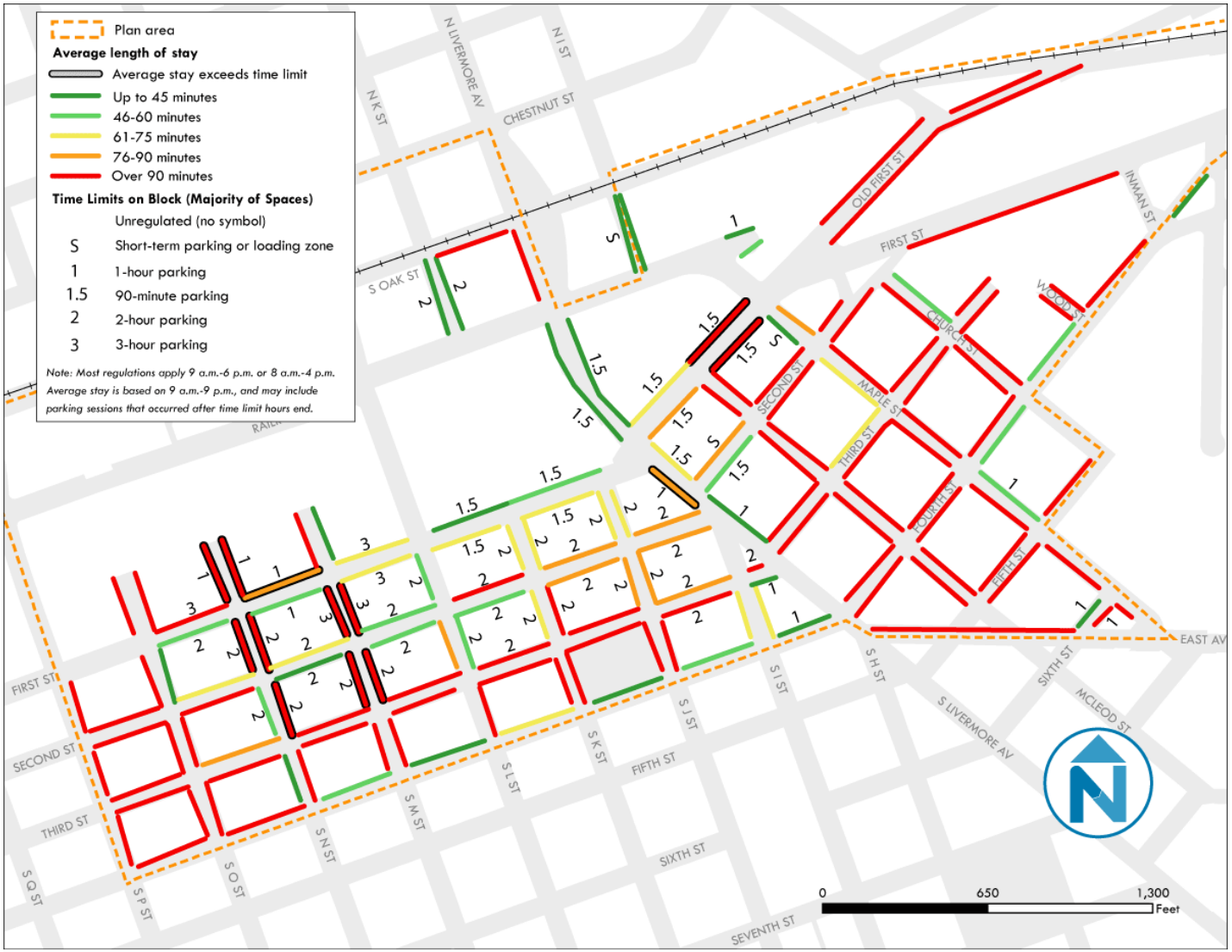


Figure 1-9 Average Length of Stay in the Study Area (Saturday)



DOWNTOWN PARKING SURVEY FINDINGS

In addition to studying parking occupancy and turnover in downtown Livermore, the project team conducted a survey of visitors, employees, residents, and business owners in downtown Livermore to gauge people's experience parking in downtown. Over 930 responses were filed to the downtown parking survey, which was available online at the project website (www.parkdtl.com), as well as in person at multiple events in downtown Livermore and a public workshop. The survey was completed by 51 business owners, 32 employees of Livermore (outside downtown), 66 downtown employees, 162 residents of downtown, 582 residents of Livermore (outside downtown), and 43 visitors to downtown who live and work elsewhere. Participants were surveyed on a range of questions relating to their parking behavior and experience parking in downtown.

Trip Purpose

Figure 1-10 shows the trip purpose for each response by category. For residents and visitors, eating and drinking is the most common trip type by a large margin, followed by movies or a show, while business owners and employees, unsurprisingly, primarily go downtown for work. Shopping, personal errands, and recreation were also important trip types for residents.

Figure 1-10 Trip Purpose for Current (or Most Recent) Trip to Downtown Livermore

Category	Go to work	Go home	Shop	Eat/ drink	Movie/ show	ACE	Work errand	Personal Errand	School	Recreation
Business owner	46	2	8	18	8	0	2	12	0	1
Employee (outside downtown)	2	2	10	25	8	0	2	3	0	4
Employee downtown	58	1	12	19	9	1	2	6	0	6
Resident (downtown/ adjacent)	1	21	62	125	55	4	3	27	6	23
Resident (non-downtown)	12	4	227	434	192	8	10	131	14	91
Visitor	2	0	13	26	9	0	2	4	0	6

Trip Frequency

Figure 1-11 shows the frequency of trips to downtown Livermore for each category. As the table indicates, business owners and downtown employees are most likely to visit five or more times per week, but many residents of downtown and the rest of Livermore also visit at least 2–4 times per week. Nearly all respondents visit at least once per week.

Figure 1-11 Frequency of Trips to Downtown Livermore

Frequency of visits	Business owner	Employee (outside downtown)	Employee downtown	Resident (downtown/ adjacent)	Resident (non-downtown)	Visitor
5+ times per week	29	3	27	28	59	0
2-4 times per week	2	3	5	26	103	2
At least once a week	0	6	2	14	92	5
At least once a month	0	0	0	3	11	5
Less than once a month	0	0	0	0	1	0
First time here	0	0	0	0	0	0

Length of Parking Session and Distance Walked

Figure 1-12 summarizes the length of time that respondents were parked during their most recent trip to downtown Livermore. Residents, visitors, and employees of Livermore outside of downtown generally parked for fewer than four hours, while employees of downtown and downtown business owners parked for longer. This reflects the importance of ensuring that longer term parkers, especially downtown employees and business owners, are encouraged to park farther from the downtown core's busiest areas, to keep all high-demand parking spaces available for visitors and short-term trips.

Figure 1-12 Length of Parking Session in Downtown Livermore (Most Recent Trip)

Length of time parked	Business owner	Employee (outside downtown)	Employee downtown	Resident (downtown/ adjacent)	Resident (non-downtown)	Visitor
Less than 1 hour	2	2	1	16	52	2
1–2 hours	3	5	4	25	106	1
2–4 hours	6	4	6	21	96	6
4–8 hours	9	1	14	1	9	2
8+ hours	10	0	9	2	3	1
Overnight or for multiple nights	0	0	0	0	0	0

Similarly, Figure 1-13 shows the distance walked from where respondents parked during their most recent trip to downtown Livermore to their destination. The majority of business owners and downtown employees parked right outside their place of business or within one block. Consequently, visitors and non-downtown residents had to walk farther, and most parked more than a block away, in part because about a quarter of prime spaces are occupied by downtown employees.

Figure 1-13 Distance Walked from Parking Space to Destination in Downtown (Most Recent Trip)

Distance walked	Business owner	Employee (outside downtown)	Employee downtown	Resident (downtown/ adjacent)	Resident (non-downtown)	Visitor
Parked right outside or adjacent	10	2	18	11	43	1
0–1 block	13	3	10	22	89	3
1–2 blocks	7	5	5	15	96	5
2+ blocks	0	2	1	19	38	3

Mode of Travel to Downtown

Downtown parking survey data indicated that a majority of people traveling downtown did so by car, with most driving alone. Among downtown residents, however, walking was more common than driving, and carpooling played an important role for all categories, making up about 29% of all trips, compared to driving alone, which comprised 61% of all trips. About 0.7% of people biked downtown.

Parking Location

Figure 1-14 summarizes parking location for respondents' most recent trip to downtown Livermore. Most respondents parked in on-street or in an off-street lot between First Street and Railroad Avenue (for most respondents, this is likely the Livermore Village lot or the lot adjacent to the Bankhead Theater). A substantial number of respondents also parked in the public garage (though at a lower rate than the public lots). The downtown parking survey underscores the popularity of publicly accessible parking, which is much more heavily utilized than private parking lots that are reserved for customers.

Figure 1-14 Parking Location in Downtown Livermore (Most Recent Trip)

Parking Location	Business owner	Employee (outside downtown)	Employee downtown	Resident (downtown/ adjacent)	Resident (non-downtown)	Visitor
On First Street (between L Street and Railroad Avenue/Maple Street)	2	1	0	20	51	5
On First Street (anywhere else along First Street)	5	2	3	18	55	5
On any street other than First Street	23	9	19	56	163	10
Public parking garage	4	5	7	16	93	6
Off-street lot/ garage (between First Street and Railroad Avenue)	6	14	28	36	172	13
Off-street lot/garage (any other lot or garage)	11	1	9	12	48	4

Parking Search Time

Figure 1-15 shows the amount of time that respondents spent searching for parking during their most recent visit to downtown Livermore. Downtown employees and business owners were most likely to spend less than a minute searching for parking, while residents of Livermore from outside downtown and visitors were more likely to spend 1–5 minutes, and a significant number spent more than five minutes searching for parking. This further reflects the importance of ensuring the prime spaces near businesses are not occupied by employees, so visitors do not have additional difficulty finding a parking space.

Figure 1-15 Time Spent Searching for Parking in Downtown (Most Recent Trip)

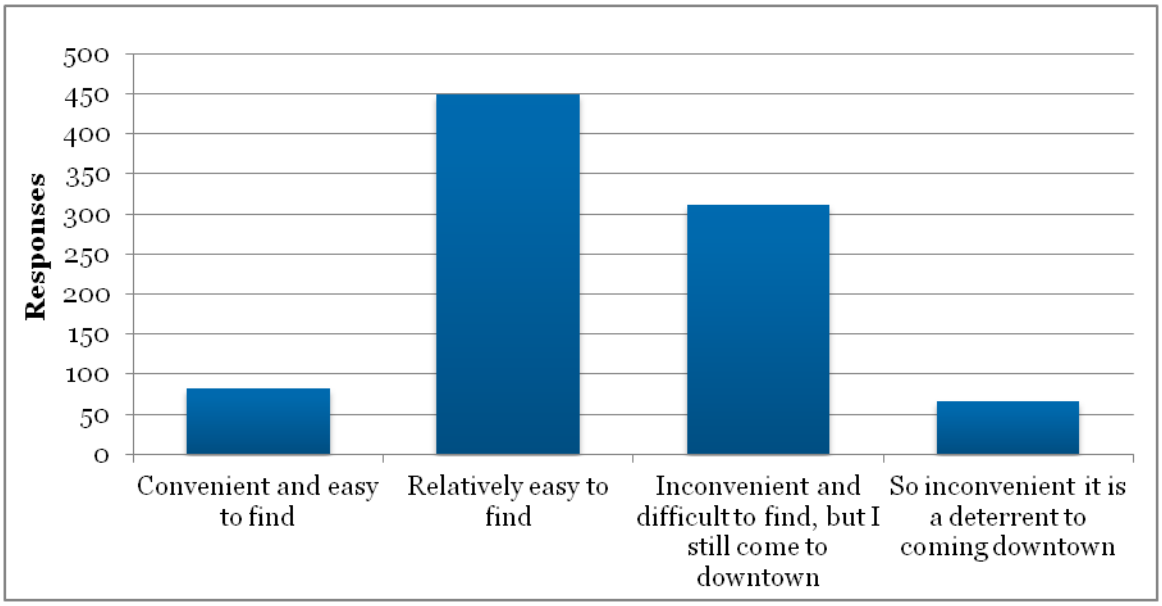
Amount of time spent searching	Business owner	Employee (outside downtown)	Employee downtown	Resident (downtown/ adjacent)	Resident (non-downtown)	Visitor
Less than a minute	15	3	20	26	82	3
1–5 minutes	11	7	7	24	114	5
5–10 minutes	4	0	4	15	53	3
10–15 minutes	0	2	2	2	16	0

More than 15 minutes	0	0	1	0	1	1

Convenience or Difficulty of Finding Parking

Figure 1-16 shows how respondents rated the convenience or difficulty of finding a parking space in downtown Livermore. The results suggest there are mixed perceptions about parking downtown. While about half of respondents rated parking as relatively easy, one-third of respondents indicated it is inconvenient and difficult but they still come downtown, and 7% of respondents said parking is currently a deterrent to coming downtown.

Figure 1-16 Convenience or Difficulty of Finding Parking in Downtown



Parking Location If On-Street Parking Is Not Available

Figure 1-17 summarizes respondents' parking location if on-street parking near their destination was not available. Overall, respondents were most likely to park in a nearby off-street lot or on-street space a few blocks away, and walk to their destination. Circling was relatively uncommon, and leaving downtown was also fairly uncommon.

Figure 1-17 Parking Location If On-Street Parking Is Not Available

Parking location	Responses
Circle the block until I find a space	7%
Park in an on-street space a few blocks away and walk to my destination	37%
Park in a nearby off-street lot and walk to my destination	53%
Leave downtown and go elsewhere	4%

Experience with Off-Street Parking Lots or Garages

Figure 1-18 shows downtown parking survey respondents' experience with off-street parking in downtown Livermore. Over half of all respondents indicated they only park in off-street locations as a last resort, while just over a third indicated off-street parking is their first choice. About one in nine indicated they would be more likely to park off street if they had more information about the location of these facilities, though visitors were somewhat more likely to say this.

Residents (downtown and non-downtown) and business owners were more likely to say off-street parking was a last resort than a first choice, while visitors and downtown employees were more likely to indicate off-street parking is a first choice than a last resort. This data points to the difficulty of encouraging people to use off-street parking, especially when on-street parking is free.

Figure 1-18 Experience With Off-Street Parking Lots or Garages

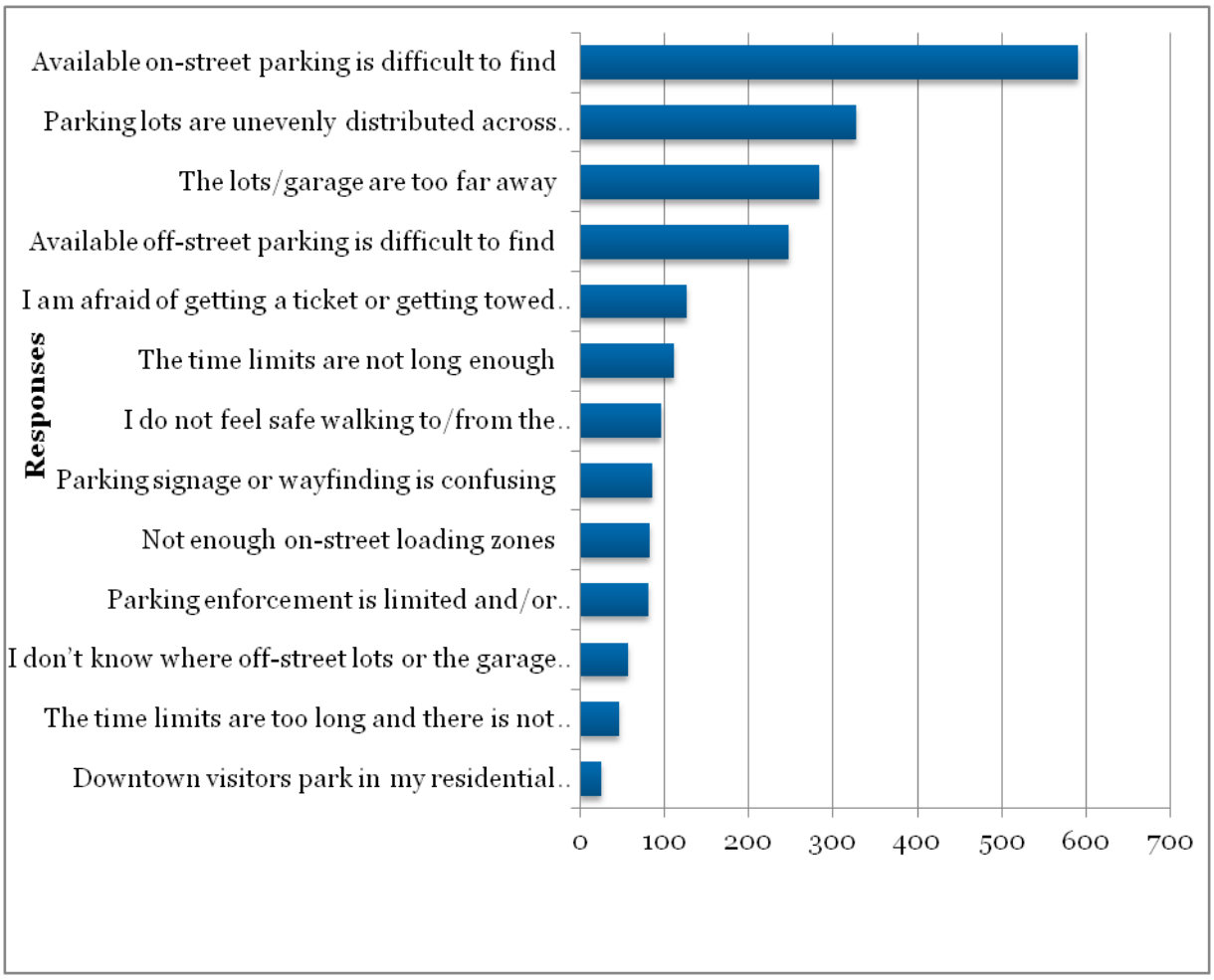
Response	Business owner	Employee (outside downtown)	Employee downtown	Resident (downtown/ adjacent)	Resident (non-downtown)	Visitor
Off-street parking is my first choice	13	8	29	57	201	20
Off-street parking is a last resort	27	22	23	81	296	13
I would park in an off-street lot, but I am not sure which lots are available for me	7	1	10	11	63	8
I would never park in an off-street lot or garage	2	0	2	6	8	1

Parking Challenges Downtown

Figure 1-19 summarizes the biggest challenges or concerns about parking in downtown Livermore that respondents indicated (each survey respondent could choose up to four answers). The availability of on-street parking was the top concern, accounting for over a quarter of all responses. The distribution of parking lots across downtown was the second most frequently cited

concern, followed by lots/garages being too far away, and available off-street parking being difficult to find. As the preceding chapter notes, private off-street parking lots are generally prevalent throughout the study area, but because they are restricted to customers, most visitors to downtown are unable to make use of them, contributing to the difficulty of finding parking.

Figure 1-19 Biggest Parking Challenges or Concerns in Downtown (Choose Four)



2 SEASONAL AND FUTURE PARKING DEMAND

This chapter provides an analysis of projected seasonal and future parking demand in the downtown Livermore study area based on collected occupancy data, modeled inputs, and anticipated land use changes provided by the City. Parking occupancy rates are projected for the study area under a baseline scenario, wherein no additional parking strategies are implemented, as well as a scenario where the demand and supply strategies described in the Parking Management Plan chapter are implemented.

OVERVIEW

In general, the baseline scenario reveals that the public parking supply becomes fully utilized while there continue to be high overall vacancy rates in private lots. The scenario with appropriate strategies experiences high rates of use in public spaces, but better accommodates demand by shifting more vehicles to the private supply. These two scenarios highlight two significant findings:

1. Given the number of vacant parking spaces in lots that are privately accessible, it is important to establish measures that make those lots better utilized by making them available to the public through shared parking agreements, revisions to downtown parking requirements, or other means.
2. The projected redevelopment of the Livermore Village parking site represents a significant change in parking resources and it will be important to replace its 569 public parking spaces in an approximate location that is close to the heart of the downtown[21].

This demand analysis suggests that, by taking proactive action immediately, the City will be able to improve parking availability in the short-term; however, future replacement parking for redevelopment will be crucial to further revitalization of the downtown.

PROJECTING PARKING DEMAND

Methodology

This section describes the methodology used to project future parking demand in the study area. Using land use projection data provided by the City, peak hour parking demand in June was projected for four different timeframes:

- Existing

[21] Includes approximately 209 unmarked parking spaces in the unpaved dirt lot adjacent to the official public lot.

- Short-term
- Medium-term
- Long-term

The land use data provided by the City is based on the *Downtown Specific Plan* (updated in 2009), as well as development projects currently in the planning phase. As a starting point for analysis, the initial parking demand ratios in the projection were based on the Institute of Transportation Engineers' *Parking Generation, 4th Edition*, as well as the Urban Land Institute's *Shared Parking, Second Edition*, which includes seasonally adjustment data and additional guidance on variance in parking demand by time-of-day for each land use. Sales tax data for downtown was reviewed as well to ensure that the seasonal adjustment factors from *Shared Parking* conform to local fluctuations in parking demand. The existing and projected future land use data for the study area is included in Figure 2-1, as well as the parking demand ratio for each land use referenced in *Parking Generation*. It is important to note that, although the following ratios were used as a starting point, the demand ratios included in this table were eventually adjusted to better fit local parking patterns.

Figure 2-1 Existing and Future Land Uses in the Study Area (Based on the *Downtown Specific Plan*)

Land Use	Existing	Short-term	Medium-Term	Long-Term	Units	Demand (Weekday / Saturday)[22] (ITE#)
Retail	592,000	584,000	566,000	561,000	square feet	2.55 / 2.87
Live Theater	500	500	500	2,500	seats	0.25 / 0.27*
Movie Theater with Matinee	500	500	500	500	seats	0.26 / 0.19
Multiplex Movie Theater	2,199	2,199	2,199	2,199	seats	0.15 / 0.2*
High Turnover Restaurant	170,000	187,000	197,000	160,000	square feet	13.3 / 16.3
Day Care	122	122	122	72	students	0.24 / 0.24*
Hotel	-	110	110	300	rooms	0.89 / 1.2
Office	163,000	157,000	157,000	325,000	square feet	2.84 / 0.28*
Government Office Building	50,000	50,000	50,000	20,000	square feet	4.15 / 0.42*
Residential (Visitor Parking)	569	759	1,235	2,226	units	0.15 / 0.15[23]
City Park	2	2	2	-	acres	2* / 2.3
Elementary School[24]	332	332	332	-	students	0.17 / 0*
Recreational Community Center	5,000	5,000	5,000	5,000	square feet	3.2 / 3.2*

*Indicates ratio is estimated because *Parking Generation* does not provide both weekday and Saturday parking demand data for this land use.
#Transportation Engineers (ITE), Parking Generation, 4th Edition

[22] Based on data from Institute of Transportation Engineers (ITE), *Parking Generation, 4th Edition* except where noted otherwise.

[23] Based on data from Urban Land Institute, *Shared Parking, Second Edition,* page 11.

[24] K-8 schools were classified as elementary schools for this analysis. ITE does not provide data for K-8 schools.

Note: Religious land uses were not included in this analysis, as most or all of the religious land uses in the study area are churches, which primarily generate parking demand on Sundays.

Parking demand ratios in *Parking Generation* are often higher than the actual ratios observed in communities similar to downtown Livermore, where it is more common for drivers to park once and visit several destinations on foot. To ensure the projections accurately reflect the study area's local context, the parking demand ratios for each land use were adjusted to more closely reflect the results of the parking occupancy and turnover study conducted in January 2014 (see the Existing Conditions memo for more detail on this study). Parking demand data by time of day is presented in Figure 2-2, including projected data based on the Institute of Transportation Engineers' *Parking Generation,* adjusted projections based on local parking generation ratios, and the actual January 2014 study data.

Figure 2-2 Existing Weekday Parking Demand in the Study Area (January Data Used for Model Calibration)

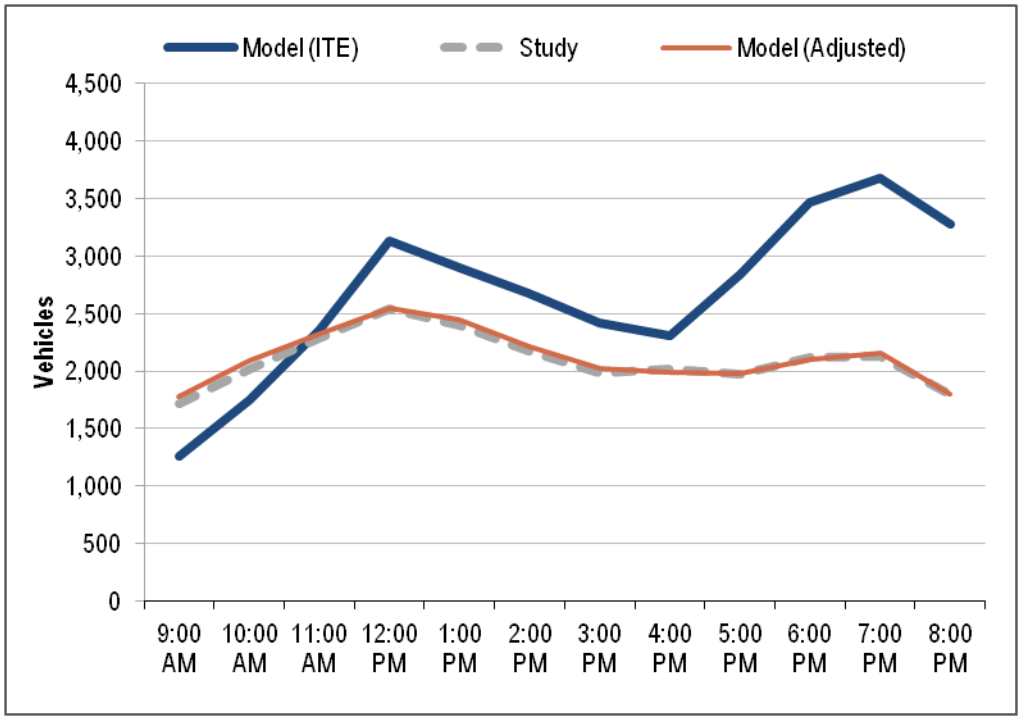
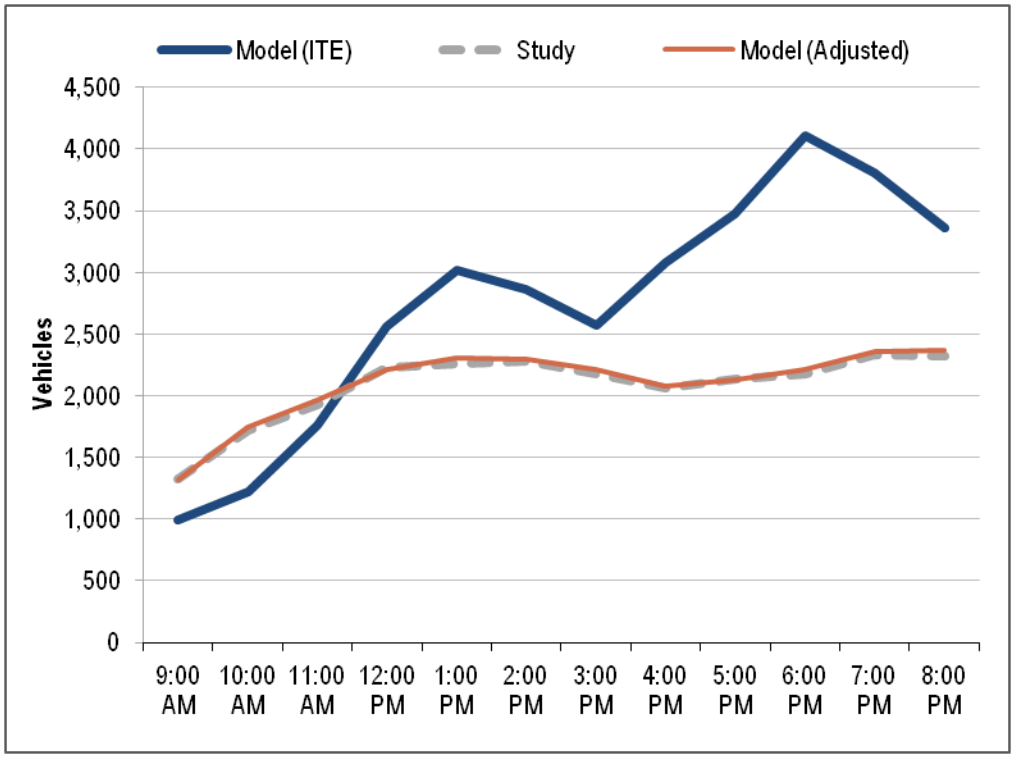


Figure 2-3 Existing Saturday Parking Demand in the Study Area (January Data Used for Model Calibration)



Seasonal Parking Demand Projections

After calibrating the model to the January 2014 parking occupancy and turnover study data, parking demand was projected for June, downtown Livermore's peak season. Figure 2-4 shows the projected peak hour parking demand in vehicles for weekdays and Saturday in each term (existing, short, medium, and long). These results are further discussed in the following sections, which evaluate the future parking supply as well, in order to project future occupancy rates.

Figure 2-4 Projected Peak Hour Vehicle Demand in the Study Area, June

	Peak Hour Demand (Vehicles)		Peak Hour (Time)	
Term	**Weekday**	**Saturday**	**Weekday**	**Saturday**
Existing	2,893	3,102	12–1 p.m.	7–8 p.m.
Short	2,988	3,369	12–1 p.m.	7–8 p.m.
Medium	2,990	3,504	12–1 p.m.	7–8 p.m.
Long	3,375	4,011	12–1 p.m.	8–9 p.m.

Changes in Parking Supply

The City anticipates that parking supply (inventory) will change in the future as a result of new development and the potential addition of some surface parking lots. Most significantly, the

Livermore Village parking lot is planned for development, which would trigger the replacement of over 500 public parking spaces (including approximately 209 parking spaces in the unpaved dirt area adjacent to the official lot, which is not an official public lot, but is used for general public parking in practice—formerly the site of a Lucky Supermarket). Other parking supply changes include the redevelopment of the 63-space parking lot next to the Bankhead Theater is developed as a hotel and the addition of eight spaces near the Livermore Village lot once the Depot building is relocated.

The private parking supply will increase as a result of parking requirements for development in new buildings. The addition of hotels in the short and long term will add private parking inventory, as will the projected increase in retail and restaurant uses in the long term. Changes to the amount of retail and restaurant uses in the near and medium term are projected to be very minor, and therefore it is assumed no parking will be added as a result of new retail/restaurant use in those terms.

The City is also considering adding spaces in an undeveloped lot adjacent to the existing public parking garage, and is considering building a new parking garage on part of the Livermore Village site. These potential additions to the parking supply are not included in the initial parking occupancy projections, and instead are included as options in the discussion below of potential parking strategies that could increase parking supply.

Existing Parking Demand by Facility Type

Figure 2-5 shows the distribution of parking demand across the different parking facility types in the study area. As noted in the table, on-street parking represents about 38% of total demand on Thursday and 35% on Saturday, but public and private off-street demand varies on the respective days, with public off-street parking representing 23% of parked vehicles on Thursday, and increasing to 38% on Saturday. It is important to note that while off-street parking supply exceeds demand by 181 spaces at present, demand at the Livermore Village lot exceeds capacity during peak hours on Saturday evenings, reaching an occupancy above 100%, while other public off-street parking lots and the public parking garage are below 100% capacity.

Figure 2-5 Share of Peak Hour Parking Demand By Parking Type in the Study Area

	Thursday	Saturday
Parking Type	Share of Demand	Share of Demand
On-Street	38%	35%
Off-Street (Public)	23%	38%
Off-Street (Private)	39%	27%

Projected Future Parking Conditions without Strategies

The data in Figure 2-5 was used to project the distribution of parking demand by facility type for the future terms (short, medium, and long). The total parking demand in the entire study area for each term from the adjusted model was multiplied by the share of vehicles observed parking in

each facility type, providing an estimate of the future distribution of parking by facility type.[25] Under the baseline scenario (without additional parking strategies), it is assumed that future development will provide the amount of parking required by the current City code, and all parking will be private (e.g. the future regional theater would provide its own private parking, as required).

The results of this analysis are presented for Thursday and Saturday in each term in Figure 2-6 through Figure 2-12. In cases where off-street public parking demand exceeded available supply, it was assumed that demand would "spill over" to on-street parking until it fills to capacity as well. Once both on-street and off-street public parking exceeded capacity, demand that exceeded the total public parking supply (on-street and off-street combined) was assigned evenly to the on-street and public off-street categories. With occupancy rates above 100%, vehicles will circle parking longer and/or double-park. (It is important to note that, in practice, excess parking demand in one area does not always efficiently distribute itself to lower-demand areas.)

As the following figures illustrate, parking supply across the study area is generally adequate to meet peak hour demand in the short term (for people who are able to walk 5-10 minutes), though demand for public off-street parking exceeds 100% capacity on Saturdays. In particular, demand greatly exceeds 100% capacity at the Livermore Village lot and adjacent unpaved dirt area (which is not an official public parking lot, but is used for general public parking in practice), while the public parking garage remains somewhat below capacity. In total, this leads to a net shortage of public off-street parking, even if all of the people circling for parking at the Livermore Village lot instead parked in the public parking garage. This pattern is likely to continue in the future, and parking demand in the Livermore Village area will likely be far more concentrated than public parking demand on the whole.

The critical change occurs in the medium term, when over 500 public off-street spaces are lost as a result of the redevelopment of the Livermore Village parking lot and the adjacent unpaved dirt lot. In the medium term, there is anticipated to be a “pent up” demand of 780 spaces for public off-street parking in the downtown core. However, all but 226 of those spaces could be absorbed into nearby existing public parking. This is not a recommended option, though, as the public parking would become heavily saturated through the study area. To retain a certain level of convenience, the City may wish to provide a garage larger than 226 spaces on the Livermore Village site to provide close access to shops and destinations on First Street.[26]

Total parking demand continues to grow in the long-term scenario, as more development occurs and the proposed 2,000-seat regional theater comes online, but much of this demand is absorbed by the dedicated private parking garage for the theater, and occupancy rates actually decrease overall. The overall occupancy ratio for the study area is projected to reach a maximum of 73%, well below the target occupancy rate for the study area as a whole, occurring on Saturdays in the medium term.

This underscores the importance of better utilizing the private supply, which is discussed in greater detail later in this memo. In all three terms (short, medium, and long), the private parking

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[25] Future parking demand from new hotels was assumed to all be private demand, as these facilities would provide dedicated parking in the baseline scenario (without applying the parking strategies). Demand from the 2,000-seat theater proposed for the long term was also assigned as private parking demand in the baseline scenario, except for any demand in excess of the required 500 parking spaces. In the parking strategies scenario, the theater's garage will be publicly accessible, and all parking demand from the new theater will be for public parking.

[26] See Figure 2-8 for parking shortage figures.

supply remains underutilized, reaching a peak occupancy of just 48%, occurring in the short and medium term on Thursday. Demand for public off-street parking can spill into residential streets, but it generally cannot spill into private lots that are reserved for specific users, such as customers, employees, and visitors.

It is important to note that parking occupancy rates may be much higher for on-street parking within the downtown core area (discussed in further detail in the Existing Conditions chapter), and thus even a small increase in overall occupancy across the study area may still result in central blocks reaching very high occupancy levels and experiencing double-parking.

Figure 2-6 Projected Existing Peak Hour Vehicle Demand and Occupancy Rates in the Study Area, June

	Thursday				Saturday			
Parking Type	**Inventory**	**Demand**	**Surplus (Shortage)**	**Occupancy**	**Inventory**	**Demand**	**Surplus (Shortage)**	**Occupancy**
On-Street	1,735	1,086	649	63%	1,735	1,117	618	64%
Off-Street (Public)	1,140	676	464	59%	1,140	1,140	0	100%[27]
Off-Street (Private)	2,422	1,131	1,291	47%	2,422	845	1,577	35%
Total	5,297	2,893	2,404	55%	5,297	3,102	2,195	59%

Note: Assumes a shift from off-street (public) to on-street of 40 vehicles on Saturday.

Figure 2-7 Projected Short-term Peak Hour Vehicle Demand and Occupancy Rates in the Study Area, June

	Thursday				Saturday			
Parking Type	**Inventory**	**Demand**	**Surplus (Shortage)**	**Occupancy**	**Inventory**	**Demand**	**Surplus (Shortage)**	**Occupancy**
On-Street	1,735	1,094	641	63%	1,735	1,303	432	75%
Off-Street (Public)	1,077	681	396	63%	1,077	1,077	0	100%
Off-Street (Private)	2,543	1,213	1,330	48%	2,543	989	1,554	39%
Total	*5,355*	*2,988*	*2,367*	*56%*	*5,355*	*3,369*	*1,986*	*63%*

Note: Assumes a shift from off-street (public) to on-street of 167 vehicles on Saturday.

[27] Note: This figure represents parking demand that exceeds capacity in the public off-street lots, leading to double parking and other illegal parking, although there is still parking available in the existing public parking garage. The number of vehicles projected to be double parked in public off-street lots is approximately equivalent to the number of spaces still available in the existing public parking garage, adding up to 100% capacity in total for all off-street public facilities.

Figure 2-8 Projected Medium-Term Peak Hour Vehicle Demand and Occupancy Rates in the Study Area, June

	Thursday				Saturday			
Parking Type	Inventory	Demand	Surplus (Shortage)	Occupancy	Inventory	Demand	Surplus (Shortage)	Occupancy
On-Street	1,735	1,260	475	73%	1,735	1,848	(113)	107%
Off-Street (Public)	516	516	0	100%	516	629	(113)	122%
Off-Street (Private)	2,543	1,214	1,329	48%	2,543	1,026	(1,517)	40%
Total	**4,794**	**2,990**	**1,804**	**62%**	**4,794**	**3,504**	**(1,290)**	**73%**

Note: Assumes a shift from off-street (public) to on-street of 165 vehicles on Thursday and 666 vehicles on Saturday.

Figure 2-9 Projected Long-Term Peak Hour Vehicle Demand and Occupancy Rates in the Study Area With Regional Theater, June

	Thursday				Saturday			
Parking Type	Inventory	Demand	Surplus (Shortage)	Occupancy	Inventory	Demand	Surplus (Shortage)	Occupancy
On-Street	1,735	1,396	339	80%	1,735	1,784	(49)	103%
Off-Street (Public)	516	516	0	100%	516	565	(49)	110%
Off-Street (Private)	3,572	1,463	2,109	41%	3,572	1,662	1,910	47%
Total	**5,823**	**3,375**	**2,448**	**58%**	**5,823**	**4,011**	**1,812**	**69%**

Note: Assumes a shift from off-street (public) to on-street of 217 vehicles on Thursday and 663 vehicles on Saturday.

Figure 2-10 Projected Long-Term Peak Hour Vehicle Demand and Occupancy Rates in the Study Area Without New Regional Theater, June

	Thursday				Saturday			
Parking Type	Inventory	Demand	Surplus (Shortage)	Occupancy	Inventory	Demand	Surplus (Shortage)	Occupancy
On-Street	1,735	1,396	339	80%	1,735	1,784	(49)	103%
Off-Street (Public)	516	516	0	100%	516	565	(49)	110%
Off-Street (Private)	3,072	1,430	1,642	47%	3,072	1,122	1,950	37%
Total	**5,323**	**3,342**	**1,981**	**63%**	**5,323**	**3,471**	**1,852**	**65%**

Note: Assumes a shift from off-street (public) to on-street of 217 vehicles on Thursday and 663 vehicles on Saturday.

Figure 2-11 Projected Peak Hour Parking Demand in Study Area By Facility Type in June (With Regional Theater & Without Strategies), Thursday

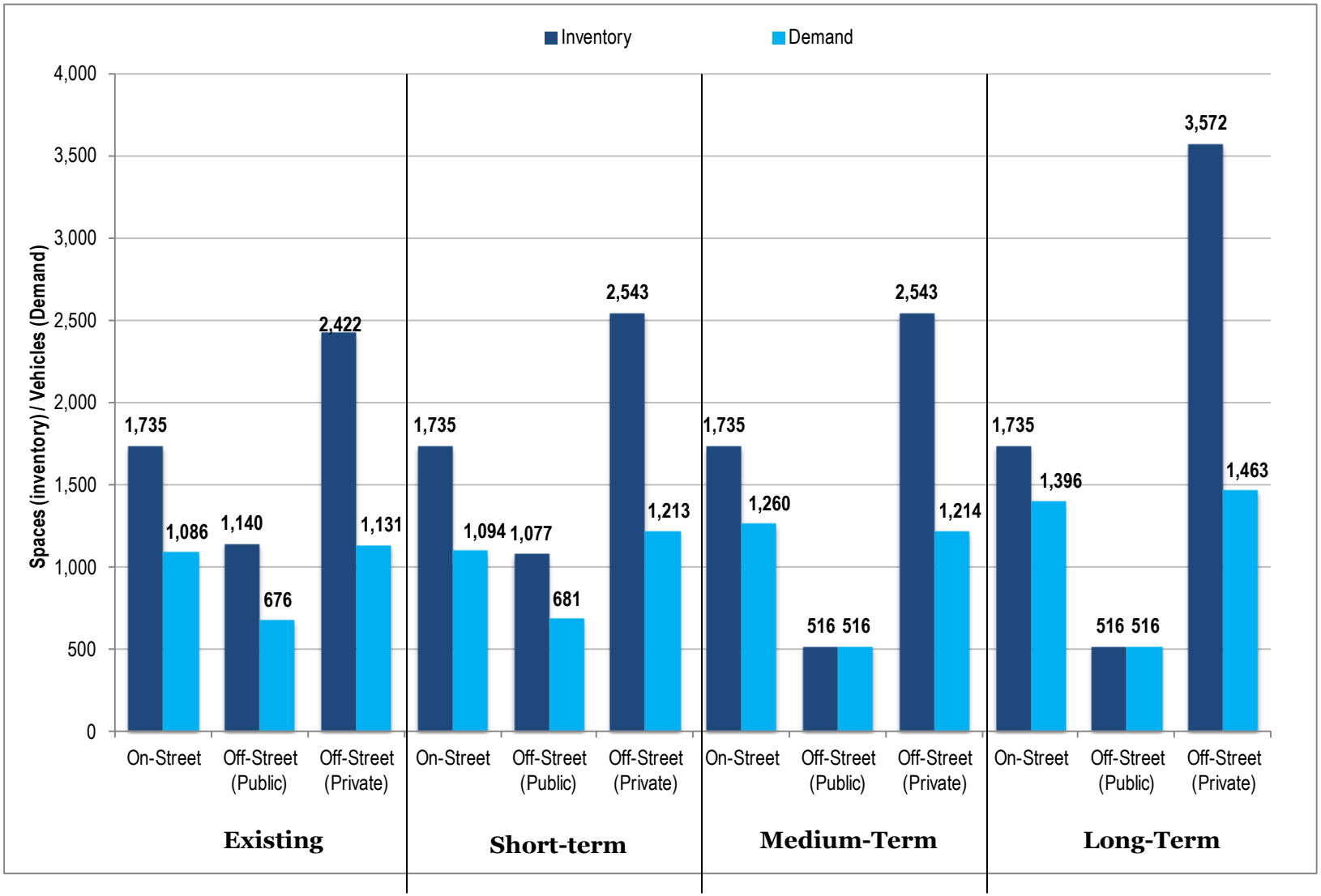
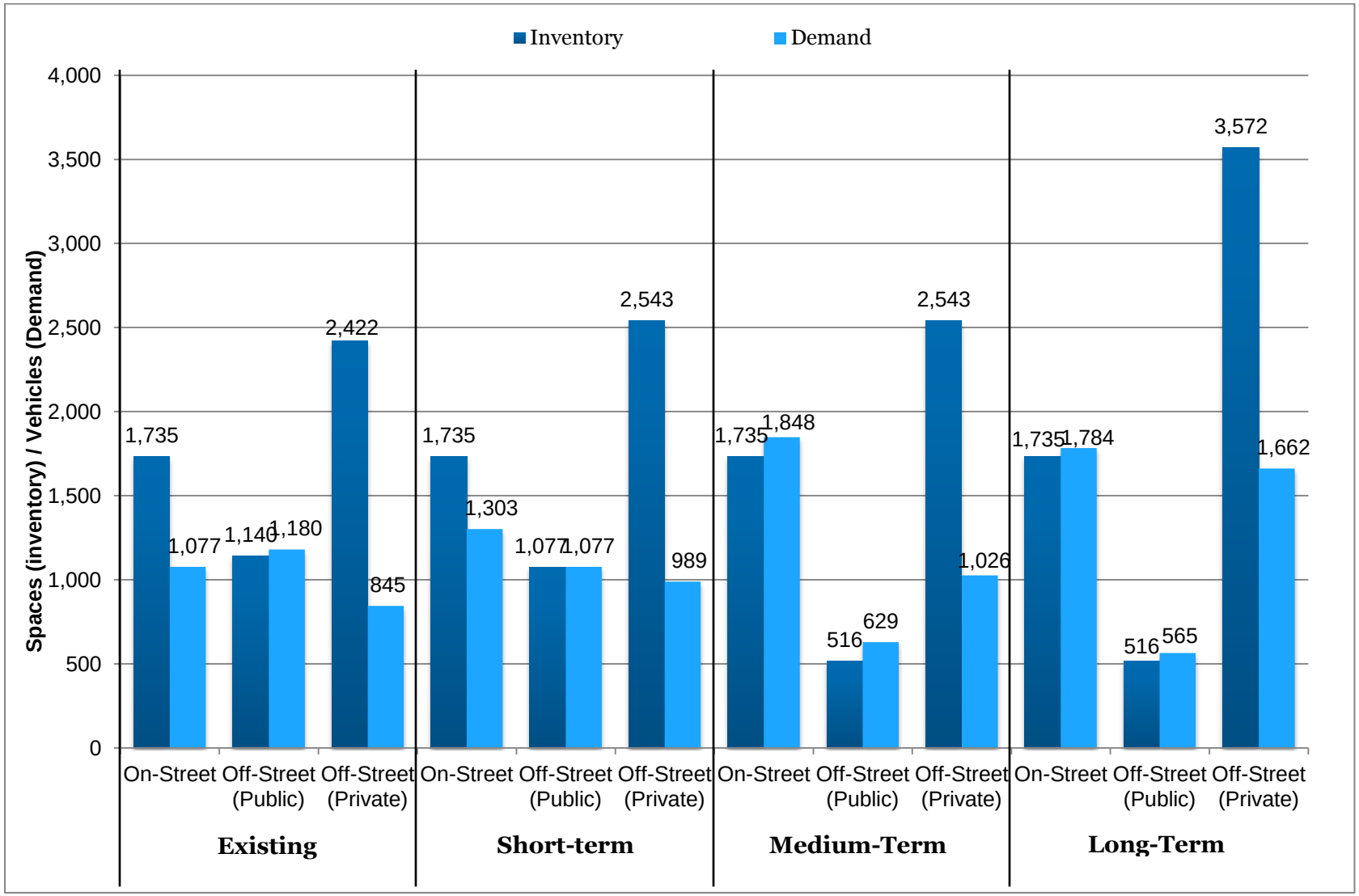


Figure 2-12 Projected Peak Hour Parking Demand in Study Area By Facility Type in June (With Regional Theater & Without Strategies), Saturday



IMPACTS OF PARKING STRATEGIES

The redevelopment of the Livermore Village parking lot, as well as increased parking demand as a result of future development, is projected to lead to public parking occupancy rates that will greatly exceed targets by the medium term. The strategies highlighted in this study provide options for increasing supply and better managing parking demand in the study area. These strategies could mitigate the projected shortages of public parking supply. The following section evaluates the likely impacts of selected strategies that impact the supply of publicly accessible off-street parking in the study area.

In general, the parking strategies evaluated below will not reduce parking demand overall, but are likely to enhance access to downtown by increasing the supply of shared public off-street parking, and to improve the efficiency of use of on-street and off-street parking facilities by shifting demand within the study area.

- Shared parking agreements will enable more efficient utilization of the existing pool of parking spaces in downtown Livermore by increasing the publicly-accessible supply.
- Maximizing the publicly accessible share of off-street parking provided by developers would accommodate some of the parkers who currently compete for limited on-street and public off-street parking. It is assumed in the following analysis that all future retail, restaurant, and theater uses will provide parking that is entirely publicly accessible (with allowance for developers of retail and residential uses to provide parking at a lower ratio).
- Providing additional surface public parking adjacent to the existing public parking garage on Railroad Avenue would increase the public parking supply.
- Building a parking garage at the Livermore Village site would replace the public parking supply in the medium to long-term.

Projected Parking Demand and Occupancy Rates with Strategies

Figure 2-13 through Figure 2-18 show the projected parking utilization patterns by facility type if each of the four strategies listed above are implemented. By shifting the demand for public parking to underutilized private lots, and adding public parking capacity, these strategies are projected to help reduce occupancy rates for public parking, and delay some of the acute parking challenges discussed earlier in this memo. Though slightly higher than the current rate, parking occupancy rates are projected to remain under targets of 85% for on-street parking and 90% for off-street parking in all terms. Some parking spillover is projected to occur from off-street public facilities to on-street parking in the short and medium terms.

The private parking supply will be better utilized than it would be in the absence of these strategies, but will still reach a peak occupancy level of only 52%, below the 90% target for off-street parking. If the City pursues shared parking agreements more aggressively than is assumed here, it may be possible to shift additional demand from public to private parking.

Figure 2-14 illustrates the need for replacement parking at the Livermore Village site. With the above strategies implemented, including construction of the 500-space replacement public parking garage, the public off-street parking inventory in the medium-term will be similar to its size today (in 2014). Demand for off-street public parking is also projected to be similar to the occupancies seen today, once these strategies are in place. Currently, parking demand exceeds supply at the Livermore Village lot and in the adjacent unpaved lot during peak hours, even as the

public parking garage is often underutilized. Given this, the loss of over 500 spaces at the Livermore Village site will create an acute parking shortage in that localized area, just as would occur today if the lot were closed immediately. The strategies are projected to improve public parking availability, but demand will remain heavily concentrated in the Livermore Village area near the center of downtown, and the parking deficit there would be greater than the deficit for off-street public parking across the downtown in the event the Livermore Village parking lot was not replaced with structured parking.

Figure 2-13 Short-term Peak Hour Vehicle Demand and Occupancy in the Study Area (Modeled) With Parking Strategies

	Thursday				Saturday			
Parking Type	Inventory	Demand	Surplus (Shortage)	Occupancy	Inventory	Demand	Surplus (Shortage)	Occupancy
On-Street	1,735	1,094	641	63%	1,735	1,203	532	69%
Off-Street (Public)	1,077	581	496	54%	1,077	1,077	0	100%
Off-Street (Private)	2,543	1,313	1,230	52%	2,543	1,089	1,454	43%
Total	**5,355**	**2,988**	**2,367**	**56%**	**5,355**	**3,369**	**1,986**	**63%**

Note: Assumes a shift from off-street (public) to on-street of 67 vehicles on Saturday.

Figure 2-14 Medium-Term Peak Hour Vehicle Demand and Occupancy in the Study Area (Modeled) With Parking Strategies

	Thursday				Saturday			
Parking Type	Inventory	Demand	Surplus (Shortage)	Occupancy	Inventory	Demand	Surplus (Shortage)	Occupancy
On-Street	1,735	1,095	640	63%	1,735	1,272	463	73%
Off-Street (Public)	1,106	581	525	53%	1,106	1,106	0	100%
Off-Street (Private)	2,543	1,314	1,229	52%	2,543	1,126	1,417	44%
Total	**5,384**	**2,990**	**2,394**	**56%**	**5,384**	**3,504**	**1,880**	**65%**

Note: Assumes a shift from off-street (public) to on-street of 90 vehicles on Saturday.

Figure 2-15 Long-Term Peak Hour Vehicle Demand and Occupancy in the Study Area (Modeled) With Parking Strategies with regional theater

	Thursday				Saturday			
Parking Type	Inventory	Demand	Surplus (Shortage)	Occupancy	Inventory	Demand	Surplus (Shortage)	Occupancy
On-Street	1,735	1,179	556	68%	1,735	1,121	614	65%
Off-Street (Public)	1,846	1,133	713	61%	1,846	1,628	221	88%
Off-Street (Private)	2,752	1,063	1,689	39%	2,752	1,262	1,490	46%
Total	**6,333**	**3,375**	**2,958**	**53%**	**6,333**	**4,011**	**2,322**	**63%**

Figure 2-16 Long-Term Peak Hour Vehicle Demand and Occupancy in the Study Area (Modeled) With Parking Strategies, Without Regional Theater

	Thursday				Saturday			
Parking Type	**Inventory**	**Demand**	**Surplus (Shortage)**	**Occupancy**	**Inventory**	**Demand**	**Surplus (Shortage)**	**Occupancy**
On-Street	1,735	1,179	556	68%	1,735	1,107	628	64%
Off-Street (Public)	1,346	1,100	246	82%	1,346	1,113	233	83%
Off-Street (Private)	2,752	1,063	1,689	39%	2,752	1,251	1,501	45%
Total	**5,833**	**3,342**	**2,491**	**57%**	**5,833**	**3,471**	**2,362**	**60%**

Figure 2-17 Projected Peak Hour Parking Demand in the Study Area by Facility Type in June (With Regional Theater & Strategies), Thursday

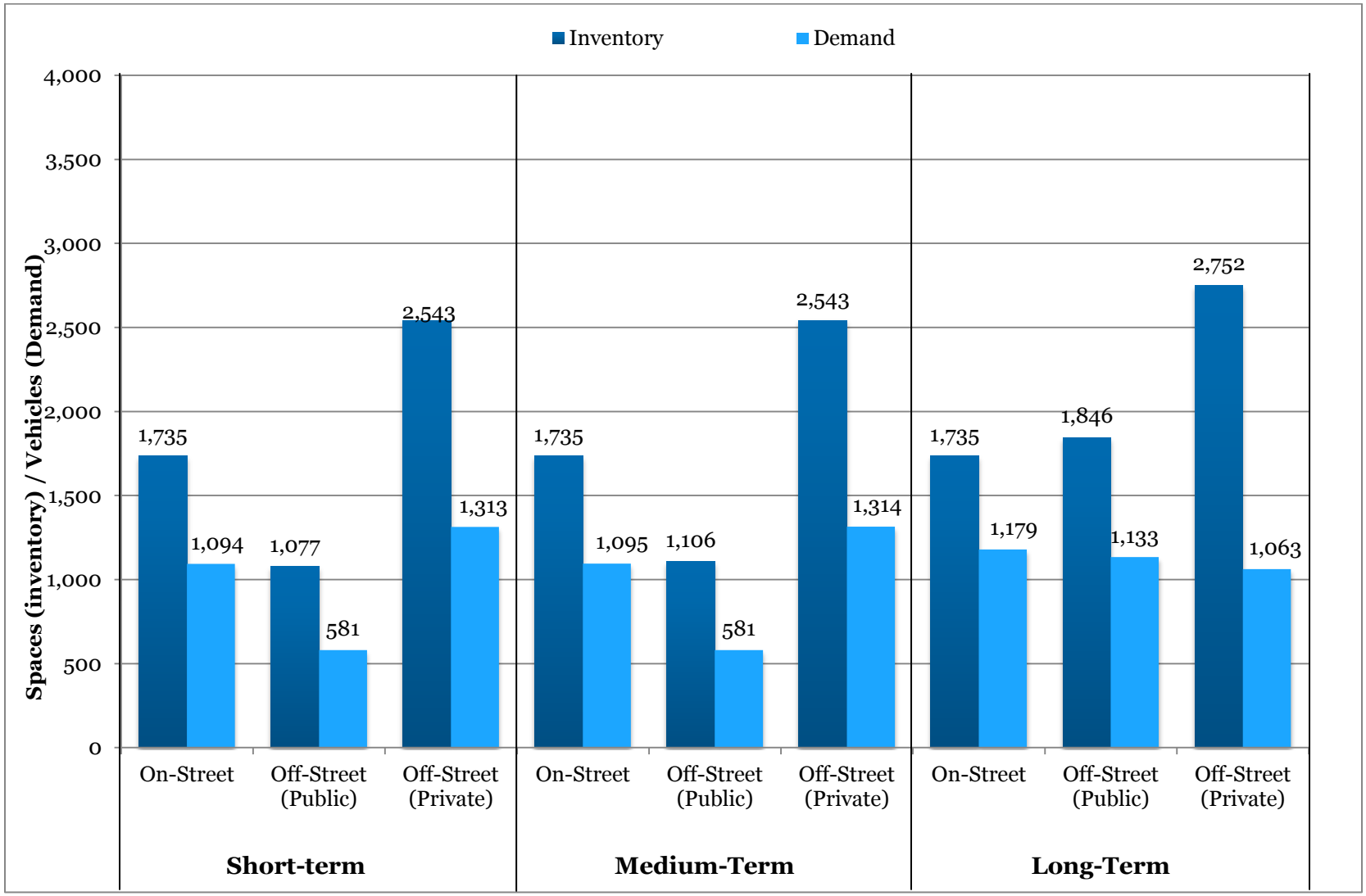
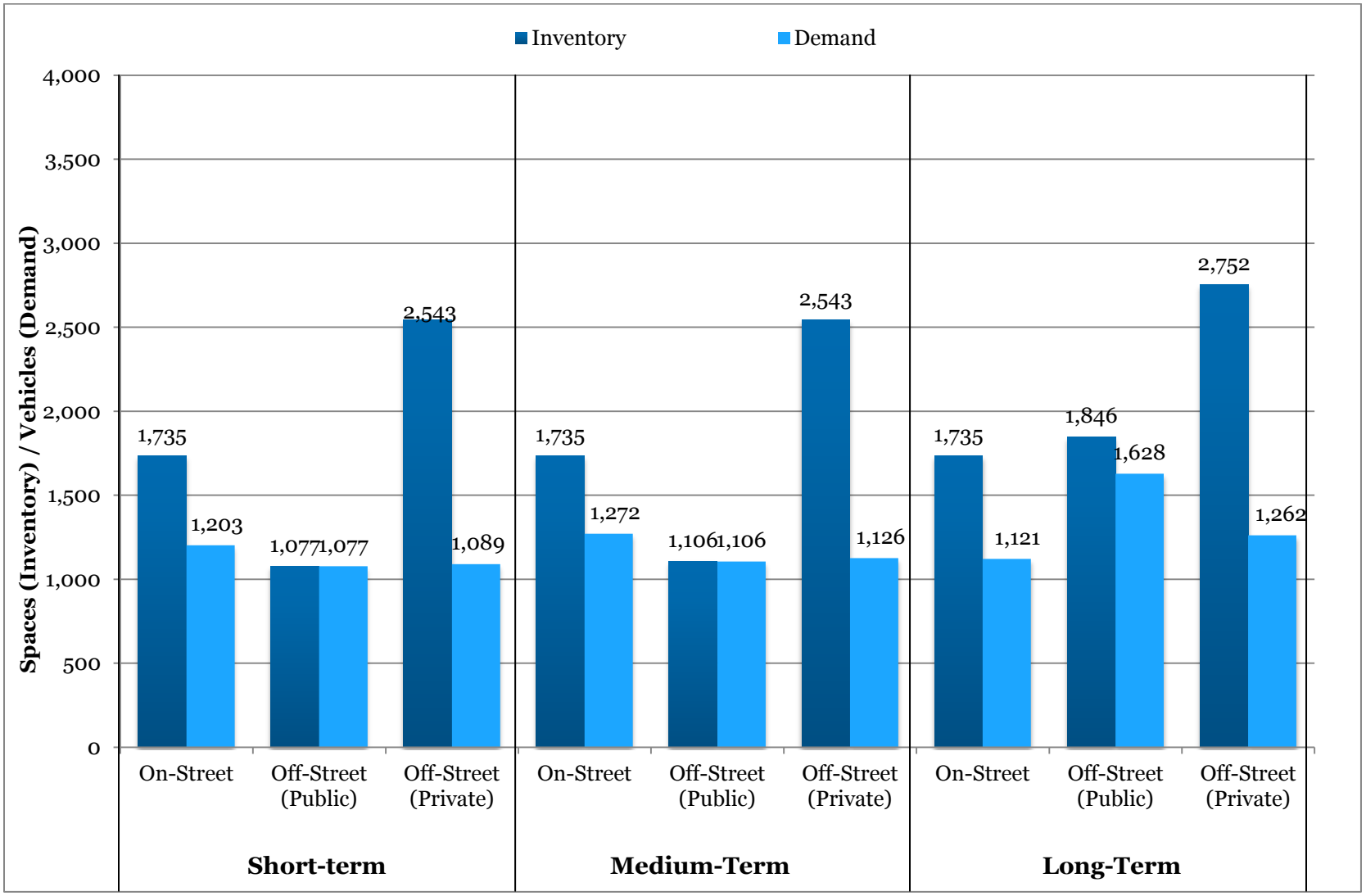


Figure 2-18 Projected Peak Hour Parking Demand in the Study Area by Facility Type in June (With Regional Theater & Strategies), Saturday



3 PARKING MANAGEMENT PLAN

This chapter provides a description of the proposed parking strategies for Downtown Livermore. The proposed strategies are designed to improve the availability and convenience of parking in downtown. The parking strategies were informed by observation of parking behavior, as well as with input from City staff, the residential and business community, property owners, and other local stakeholders.

Included in the Parking Management Plan are a diverse range of strategies to increase supply, better manage demand, adjust parking policies related to new development, and finance components of the implementation of the parking program. The strategies are generally organized according to implementation phase:

- **Immediate action strategies**: Includes strategies that represent the "low-hanging" solutions that could be more easily implemented and address immediate parking challenges in a cost-effective manner.
- **Short-term strategies:** Strategies that require some additional analysis and have moderate costs, but could still be fully implemented within 1–2 years.
- **Medium-term strategies (Livermore Village replacement parking):** The Livermore Village lot redevelopment strategies include supply, demand management, and financing strategies linked to the redevelopment of the surface parking at that location. Given the necessity of addressing the Livermore Village site surface parking, all strategies are assumed to occur before the Livermore Village site is developed. Immediate steps should be taken to further plan for implementation of medium-term strategies, to assure the replacement parking is operational prior to development occurring.

The phases should be viewed as general guidelines, as any given strategy could be implemented more quickly or slowly depending on its exact parameters. A description of the strategy is provided, along with an explanation of its potential benefits and tradeoffs. An assessment of the general financial impacts to the City is also documented. Finally, the chapter provides a brief description of strategies that were not pursued due to a lack of community support.

All strategies should be designated for further study immediately, though implementation may take longer for short- and medium-term strategies. Many of the medium-term strategies require taking immediate steps to ensure they are ready for implementation by the mid-term. The first step in initiating this process is to develop an implementation plan, which will include a funding plan, a detailed implementation schedule, and other specific steps for implementing medium-term strategies.

In addition to technical analysis and discussion with City staff, these strategies were discussed at a public workshop in downtown Livermore, which was attended by about 30 people. A description of the strategies was posted on the project website (ParkDTL.com) as well, with an accompanying

opinion poll about the strategies that was completed by 112 people. The feedback from this opinion poll was used to help evaluate each strategy's potential for implementation in Livermore.

Note that all cost projections are preliminary order-of-magnitude estimates. Additional study is necessary to determine costs more precisely.

PRINCIPLES FOR EFFECTIVE PARKING MANAGEMENT

Historically, a city wishing to "solve its parking problem" in a high-demand area has generally focused on increasing the supply of off-street parking. However, simply increasing supply does not fully address the core problem of concentrated demand, in which popular on-street spaces are consistently oversubscribed while nearby private off-street spaces remain underutilized. The goal of parking demand management is to manage demand for curb spaces to ensure availability, while also optimizing utilization of existing off-street supply to meet a variety of parking needs.

Effective parking management strategies can result in positive economic impacts for local businesses, as employees, residents, and visitors can all better utilize the parking supply to shop, dine, or recreate.

As downtown Livermore continues to grow and evolve its parking needs will change as well, especially once the existing surface lot is redeveloped as part of the Livermore Village project. This plan recommends techniques to both address current challenges and also allow the City to be nimble in reacting to future parking challenges. Above all else, this plan proposes a parking management approach that utilizes policies and programs that will enable more efficient utilization of existing supply, while alleviating parking congestion in certain areas.

In recognition of these considerations, the following goals and objectives informed the development of parking management recommendations for downtown Livermore:

- Establish a “park once” philosophy for downtown in which motorists can park and then access all destinations on foot
- Ensure that as much of the downtown parking supply as feasible is a publicly-available resource that is convenient and easily accessible for all user groups
- Manage the parking supply (public and private) as part of an integrated, downtown-wide system
- Make the most efficient use of all public and private parking spaces before increasing supply
- Ensure parking facilities adequately accommodate both existing and future demand
- Establish parking regulations that encourage motorists to stay and enjoy downtown
- Support the ability of local employees to find parking, but discourage them from parking in “prime” on-street spaces
- Ensure proper protection to help prevent “spillover” parking into adjacent residential neighborhoods
- Endorse parking management practices that support downtown economic development
- Provide strategies that recognize and properly incentivize the differing needs of long-term and short-term parkers
- Embrace new parking technologies where appropriate to maximize customer satisfaction, as well as foster enhanced parking data management and analysis

- Provide flexibility to decision makers and City staff to adapt to seasonal and long-term changes in parking demand
- Locate new parking in areas that minimize the safety and aesthetic impacts on downtown while ensuring convenience

IMMEDIATE ACTION STRATEGIES

STRATEGY #1: IMPLEMENT MORE PASSENGER LOADING ZONES AND ENHANCE ADA ACCESS.

Description

One of the consistent points of feedback from the community was that downtown Livermore does not have enough convenient and accessible passenger loading zones or disabled parking spaces. The lack of loading areas impacts that ability of mobility impaired people to access key destinations. For example, a typical comment in the downtown parking survey was that even if a motorist is willing to walk a bit farther to park their vehicle, they often have a passenger that cannot walk from the Livermore Village lot to destinations several blocks away, such as the Livermore Cinemas. This strategy proposes to increase loading zones and visibility of ADA spaces in targeted locations in downtown.

There are existing disabled spaces located throughout downtown both on-street (generally at the corners of blocks) and in parking lots. However, there are no ADA spaces on First Street, due to the street's two-step curb design and streetscape elements such as trellises, which do not leave space for ramps and loading areas. This likely amplifies the perception that there is a lack of disabled access.

Options for improved passenger loading and ADA access are discussed below. Figure 3-1 shows the location of existing ADA spaces and potential locations for new loading and disabled spaces.

- **Convert a limited number of existing angled on-street spaces to passenger loading zones (white curb).**[28]
  - Parallel white loading zones on the curb are the preferred layout for loading zones, as it facilitates easier loading to the curb. However, a reconfiguration to parallel parking would result in a net loss of "general" spaces.
  - Potential locations include:
    - McLeod Street, between First and Second Streets (in addition to existing spaces)
    - J Street, between First and Second Streets (in addition to existing spaces)
    - K Street, between First and Second Streets
    - S. Livermore Avenue, north of First Street

[28] Due to the amount of traffic on First Street, it is not advisable from a circulation standpoint to located angled passenger loading zones there.

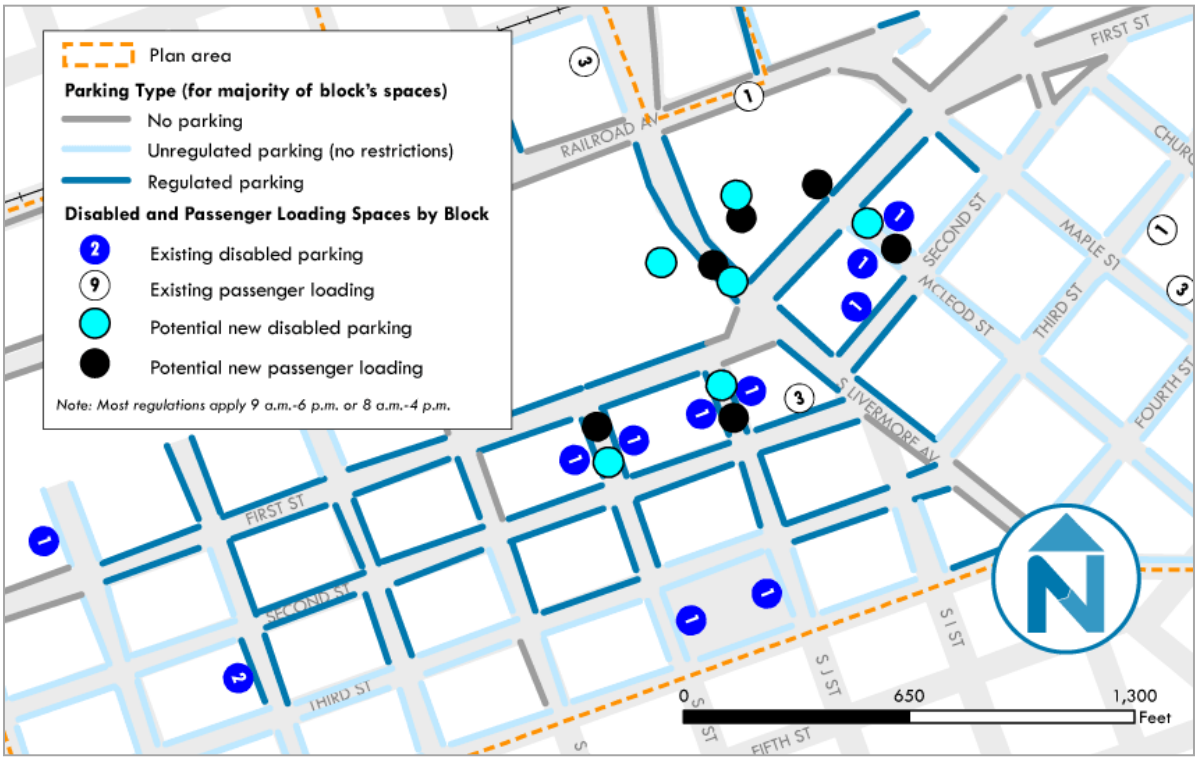
- **Convert a limited number of additional existing on- and off-street spaces to ADA parking spaces.**[29] Potential locations for additional ADA spaces include:
  - McLeod Street, between First and Second Streets
  - J Street, between First and Second Streets
  - K Street, between First and Second Streets
  - S. Livermore Avenue, north of First Street
  - Livermore Village parking lot, near S. Livermore Avenue mid-block crossing (could also be passenger loading spaces)
  - Public lot adjacent to Bankhead Theater (could also be passenger loading spaces)
- **Create a passenger loading zone (white curb) on the north side of First Street at McLeod Avenue**. A loading zone at this location could provide approximately two short-term loading spaces, but would likely require an expensive reconfiguration of the existing curb and landscaped streetscape. Potential impacts also include increased peak period congestion due to vehicle ingress/egress and negative impacts on the pedestrian environment and plaza aesthetics. Additional traffic analysis of this option would need to be performed prior to implementation.
- **Enhance wayfinding for passenger loading and ADA spaces.** As described in Strategy #3, improved wayfinding is a crucial strategy to ensuring that motorists can easily find available parking. Improved signage is particularly important for new passenger loading and disabled parking. Any wayfinding strategy should incorporate specific signage directing motorists to locations with designated loading and disabled parking.

This is a two-phased strategy that would begin in the immediate action phase, with white striping of parallel spaces and ADA accessible parking spaces in key areas. Potential locations for immediate action include S. Livermore Avenue north of First Street (passenger loading zone and/or accessible parking), the Livermore Village parking lot (accessible parking and passenger loading), and the public lot adjacent to the Bankhead Theater (accessible parking and passenger loading). As part of this phase of the strategy, the City should enhance existing signage of ADA parking, and provide a map of existing ADA spaces on the City's website.

In the short-term (1–2 years) and beyond, this strategy would involve more significant changes such as eliminating sidewalk space in certain areas to create passenger drop-off areas, and potentially converting some angled spaces to parallel passenger loading zone or accessible parking spaces on a limited basis.

[29] The conversion of angled spaces to ADA spaces on First Street was examined. While offering benefits to disabled motorists, it was determined to be too problematic. Such a conversion would require significant reconfiguration of spaces and the streetscape, including a ramp for the stepped curb, and likely result in a net loss of spaces in order to meet ADA space requirements. In addition, it would limit general parking availability in the commercial core. Additionally, existing ADA spaces on side streets are very close to First Street, and thus provide most of the benefit that spaces on First Street would provide.

Figure 3-1 Existing and Potential Loading and Disabled Spaces



Benefits

- Improved access and convenience for the mobility impaired
- Fosters a more welcoming visitor environment, especially at major destinations

Tradeoffs

- Increased capital costs, which can be substantial depending on degree of physical improvements
- Increased enforcement costs to monitor these spaces
- Likely net loss in spaces (approximately 5–10), especially to meet ADA space requirements[30]
- Further constrains limited parking supply in downtown core, especially with on-street ADA spaces, as disabled placard holders are not subject to time limit restrictions by California law[31]
- Depending on level of demand, loading zones may be overwhelmed during peak periods and exacerbate congestion and circulation challenges

[30] Design guidelines for ADA parking generally include: a location on the shortest accessible route of travel (an "accessible" route which never has curbs or stairs, must be 3 feet wide and have a slip resistant surface); slope not greater than 1: 12 in direction of travel; provision of a minimum number of van accessible spaces, which require a minimum 96-inch access aisle

[31] www.dmv.ca.gov/pubs/brochures/fast_facts/ffvr07.htm#

Financial Impact

- The costs for this strategy can vary substantially depending on the amount of new spaces. For example, converting existing parallel spaces to white loading spaces would cost very little. Reconfiguring diagonal parking would be more difficult and result in significant losses in parking. A reconfiguration of the area in front of the Bankhead plaza would be a significant capital cost.

Cost-effectiveness

In general, this strategy is likely to have a relatively small impact on parking demand, but also has very minimal costs. Therefore, it is a very cost-effective way to provide an improved parking experience for people needing to make passenger drop-offs.

STRATEGY #2: IMPROVE PARKING GARAGE/LOT DESIGN AND SAFETY.

Description

Lighting and perceived personal safety of the customer experience affects the success of night-time use of parking resources in downtown Livermore, especially on walking routes between the most popular destinations and parking lots, the public parking garage, and on-street parking outside the First Street core. This strategy seeks to prioritize short-term and low-cost improvements to improve safety and access to parking facilities to ensure their full use.

Existing Conditions

Street lighting in the downtown's core along First Street (from Maple to L Street) and along internal paths extending from the Bankhead Theater and Livermore Cinemas to the parking garage sets the present high standard in downtown for a well-lit, pedestrian-friendly and aesthetically pleasing night environment. That lighting strongly supports the active and popular evening dining and nightlife scene, walking, and curbside parking there. Similarly, the interior of the parking garage is brightly lit to modern standards. The greater downtown remains a work in progress, however, and the extent and quality of street and parking lot lighting beyond the First Street core is not always evenly matched to areas of heavier evening parking use.

In downtown, a major portion of existing streetlights are the shorter *post-top ("acorn")* type, which are generally better at directing light onto sidewalks with greater comfort, uniformity, and aesthetic appearance. However, they are only located in the First Street core, the "southern core" blocks (from south of First Street to Fourth Street, and from Livermore Avenue to L Street), the aforementioned Bankhead and Livermore Cinemas paths, at frontages of recent downtown infill housing developments, and at a handful of other limited locations. At other streets, the streetlights are the taller and more dispersed *roadway ("cobrahead")* type.

Several comments in the downtown parking survey cited poor and uneven lighting in the public Livermore Village paved parking lot, and absence of lighting in the unpaved dirt lot portion (which is not an official parking lot, but is used for general public parking in practice). While most downtown streets outside the First Street core are adequately lit for driving, most "cobrahead"-equipped streets do not light adjacent sidewalks, too-wide pole spacing, and mature tree canopies in between. Similarly, a number of pathways leading from First Street to back parking lots are poorly lit, with many located on private land and not directly within the City's control.

Figure 3-2 Existing Pedestrian and Lighting Conditions

Recent Improvements

Livermore has implemented significant citywide lighting improvements with conversions of older orange-colored *high-pressure sodium* (HPS) lamps and fixtures to more sustainable and higher quality white *light-emitting diode* (LED) fixtures. In 2012, most existing decorative HPS "post-top" street lights in downtown were upgraded from HPS to LED; a row of remaining HPS streetlights along L Street from Railroad Avenue to Fourth Street are now in the process of being converted.

The improvement of lighting is particularly noticeable in the uniformly brighter "southern core" blocks. However, other post-top lights along Railroad Avenue, along the First Street frontage of the PalaSage townhomes east of the core, and elsewhere have not yet been converted. In 2013, all *"cobrahead" (roadway height) type* street lights in Livermore were converted to LED, and a current project is installing LED cobrahead street lights on utility poles at corners and block faces centered at the McLeod and Second Street intersection.

Some poorly lit private parking lots and buildings have not been upgraded, however, which may continue to affect visitors' perceptions of nighttime personal safety walking to and from parked cars. To date, neither the paved or unpaved portions of the Livermore Village Parking lot have received LED upgrades, nor have any infill poles been added to dark or unpaved areas.

High Priority, Short-term Improvements

Install supplemental area lighting at Livermore Village and unpaved dirt lots.

As part of downtown revitalization strategies, these City-owned properties have long been planned for infill development. Though delayed by recession and state closure of Redevelopment Agencies, the recovering economy may enable the City to achieve infill in the short- to medium-term – perhaps as soon as 3-5 years. As a result, any improvements to the present parking lots would be temporary. Potential strategies to pave the dirt lot (the former site of a Lucky Supermarket, which is not an official parking lot, but is used for general public parking in practice) and/or upgrade the existing paved lot would include lighting improvements.

If infill paving or parking lot renovation is not pursued, a separate, stand-alone lighting improvement strategy could be implemented. Potential improvements include:

- Remove existing luminaire fixtures and mounting arms from the 12 existing parking lot poles and install replacement (and possibly additional) LED luminaires.
- Add supplemental luminaire heads aimed toward the unpaved dirt lot to the three existing short cobrahead streetlights along the Railroad Avenue frontage bordering the dirt lot.
- The provision of these replacement and supplementary LED luminaires at these approximately 15 existing poles would be a relatively low cost (probably less than $60,000 including design) and noticeably improve night time safety, security, and comfort while the parking lots continue to be used.
- Lights could be activated by motion sensors to reduce light pollution and save energy.

Figure 3-3 Existing Lighting Locations in Livermore Village Lot

Provide technical assistance and financial incentives to property owners to add building-mounted lighting.

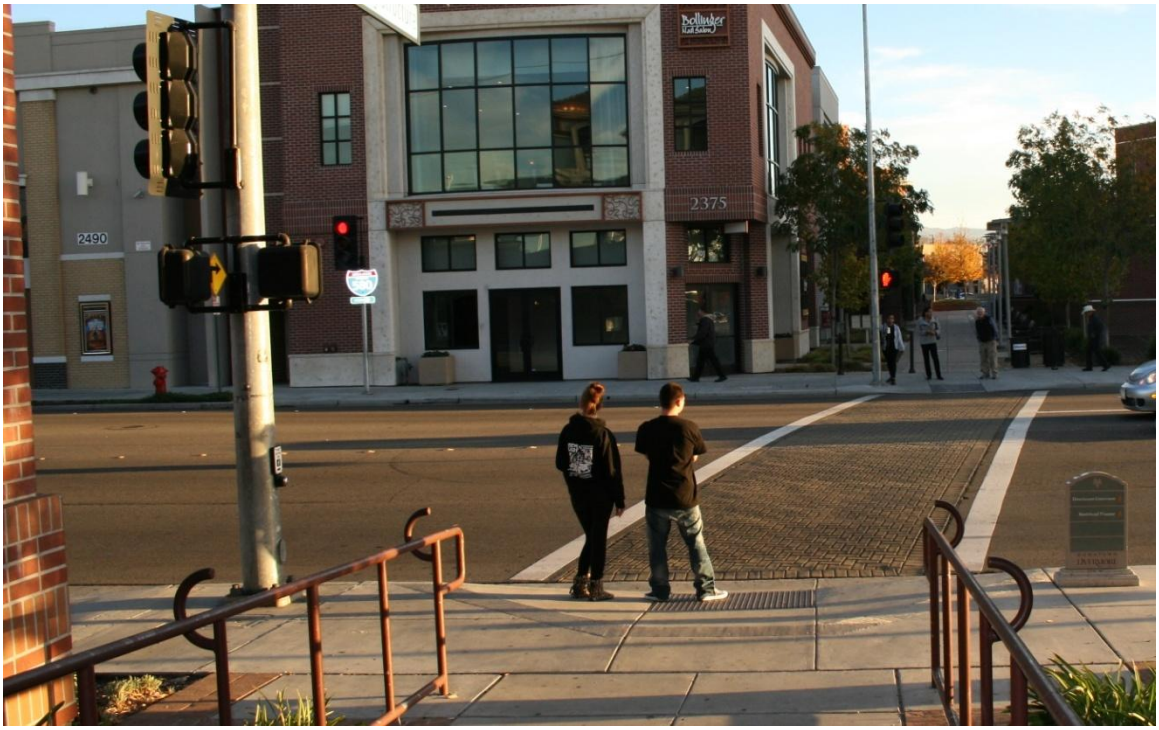
Between J and L Streets, there are at least six passages between buildings that pedestrians can use to walk between First Street and the Livermore Village parking lots to the north. While some of these passages have previously been improved and illuminated, others are poorly lit or unlit. The City could work with Downtown Livermore Inc. to partner with building owners to provide them wall-mounted luminaires and permit assistance for owners to mount light fixtures to their buildings.

Similarly, the City could work with building owners at Blacksmith Square and adjacent properties to provide wall-mounted fixtures to help illuminate currently dark parking areas, driveways, and walkways extending from other perimeter streets inward towards the parking lots. All fixtures should be glare-shielded to maintain the quality of downtown lighting quality, and color-matched for consistency (i.e. no HPS sources).

Install additional LED upgrades and/or supplemental lighting on Railroad Avenue between Livermore Avenue and the public parking garage. Upgrade pedestrian conditions at the Livermore/Railroad Avenue intersection.

At peak demand periods, the Livermore Village lots are full while parking is often underutilized in upper levels of the public parking garage. This is partially due to the poor pedestrian crossings on Railroad Avenue to the parking garage. The crosswalks constrict the flow of high pedestrian volumes at this location, lack visibility, and the remaining block of the Railroad Avenue connection to the public parking garage is minimally lit.

Figure 3-4 Existing Railroad Avenue Crossing



Potential crossing improvements include:

- High visibility (i.e. “ladder”) and/or raised crosswalk across Railroad Avenue and pedestrian crossing in front of garage entrance/exit
- Extend width of Railroad Avenue crosswalk
- Create a pedestrian refuge island in Railroad Avenue crosswalk (requires further study to ensure adequate street width is available)
- Add advance stop line for motorists
- Extended pedestrian signal phase
- Advanced signal warning (i.e. flashing lights) to north/west-bound motorists from Maple Street onto Railroad Avenue, prior to curve in road
- Consider relocating right-turn exit from the public parking garage to I Street to provide a safer pedestrian crossing at the pedestrian garage exit.
- Additional traffic enforcement

Figure 3-5 Example of Garage Wayfinding

Flickr User - AlmyogBenefits

The streetscape outside of the public parking garage is uninviting to pedestrians, and feels unsafe to some people walking at night due to the lack of pedestrian scale lighting. Improvement to pedestrian lighting along this partial block from the Livermore /Railroad Avenue intersection and the public parking garage should be a high short-term priority for lighting improvement, to reduce the barrier effect to better public parking garage use at night.

Crosswalk improvements should be incorporated into future budgets for the City's Capital Improvement Program, which includes Annual Crosswalk Safety Improvements.

Improvements to public parking garage and future parking garages.

At present, Livermore's public parking garage is not well utilized compared to on-street parking and public off-street parking lots in the downtown core. In part, lower utilization is due to common perceptions of garages as unsafe and unattractive. To increase its utilization, the existing public parking garage should be upgraded with basic low-cost improvements, including painting a portion of each level (such as the stairwell landing area) a different color to make it more attractive and easy to remember where vehicles are parked, as well as improving the internal pedestrian pathway from the front entryway of the garage. Similar treatments should be applied to any future garages that are constructed, ensuring they are attractive and offer a high-quality user experience.

- Provides enhanced sense of safety and security when walking between downtown destinations and parking facilities
- Improves distribution of parking demand, facilitating use of parking spaces beyond the First Street core and potentially more utilization of the public parking garage
- As well as improvement at targeted sites, the enhancements will benefit downtown, its perceived user-friendliness, and overall quality
- Incrementally improve the appeal and property values of adjacent private buildings whose users, customers, and residents benefit from the improved lighting
- Positive impression of City responsiveness if Livermore Village parking lighting is improved

Tradeoffs

- Capital costs of construction and minor obstructions from construction
- Additional staff resources
- May have limited impact, depending on extent of improvements
- Energy and operating costs where net-new lighting is added; stocking of new parts
- The temporary nature of lighting improvements to Livermore Village, if infill redevelopment happens quickly, and a potentially negative impression of "wasteful" expenditures
- Good-will expenditure in City negotiations with property owners, although this may strengthen relationships

Financial Impacts

- **Install supplemental area lighting at Livermore Village and unpaved dirt lots.** Up to $60,000 for design and construction for replacement luminaires and arms at 15 poles. Slight increase in electrical and maintenance costs.
- **Provide technical assistance and financial incentives to property owners to add building-mounted lighting.** Up to $15,000, but depending on quantity and extent of cooperative installations. Assumes that private owners will cover relatively low costs of maintaining fixtures and electricity.
- **Install additional LED upgrades and/or supplemental lighting on Railroad Avenue between Livermore Avenue and the public parking garage. Upgrade pedestrian conditions at the Livermore/Railroad Avenue intersection and in the pedestrian corridor across Shea Plaza.** $30,000–$45,000 for upgrades to existing luminaires and possible installation of two new supplementary streetlight poles; depending on selected intersection treatments, up to $150,000 for preparation and installation of intersection improvements at the Railroad Avenue/public parking garage intersection. Slight increase in electrical and maintenance costs.
- **Improvements to public parking garage and future parking garages.** $100,000 to paint each level of the public parking garage a different color.
- **Segregate vehicles turning right onto Livermore Avenue from the public parking garage.** Vehicles exiting the public parking garage currently pose a safety threat to pedestrians. By segregating right-turning vehicles in a separate traffic phase,

this conflict could be reduced. This would require prohibiting right turns on red, during the dedicated pedestrian crossing phase, but would cost very little to install if the current traffic signal can be maintained.

Cost-effectiveness

Improvements to lighting and other amenities that increase the feeling of safety and convenience are generally low-cost compared to adding new parking. While this does not add parking capacity, it is valued by the community. It also may encourage people to use parking facilities that are currently underutilized, reducing the concentration of demand in prime on-street spaces. In total, these upgrades would cost approximately $200,000–$300,000 if they are all implemented, and would deliver a relatively strong return for the cost in terms of improved customer experience and shifting some vehicles away from the highest-demand areas.

STRATEGY #3: UPDATE WAYFINDING AND ADD REAL-TIME PARKING AVAILABILITY INFORMATION FOR THE PUBLIC PARKING GARAGE.

Description

Many respondents to the downtown parking survey have noted the difficulty of finding the main parking areas in downtown when first visiting the area. Providing signage to direct visitors to these locations will help to better distribute parking demand, reducing the concentration of demand in the core and increasing the utilization of the public parking garage.

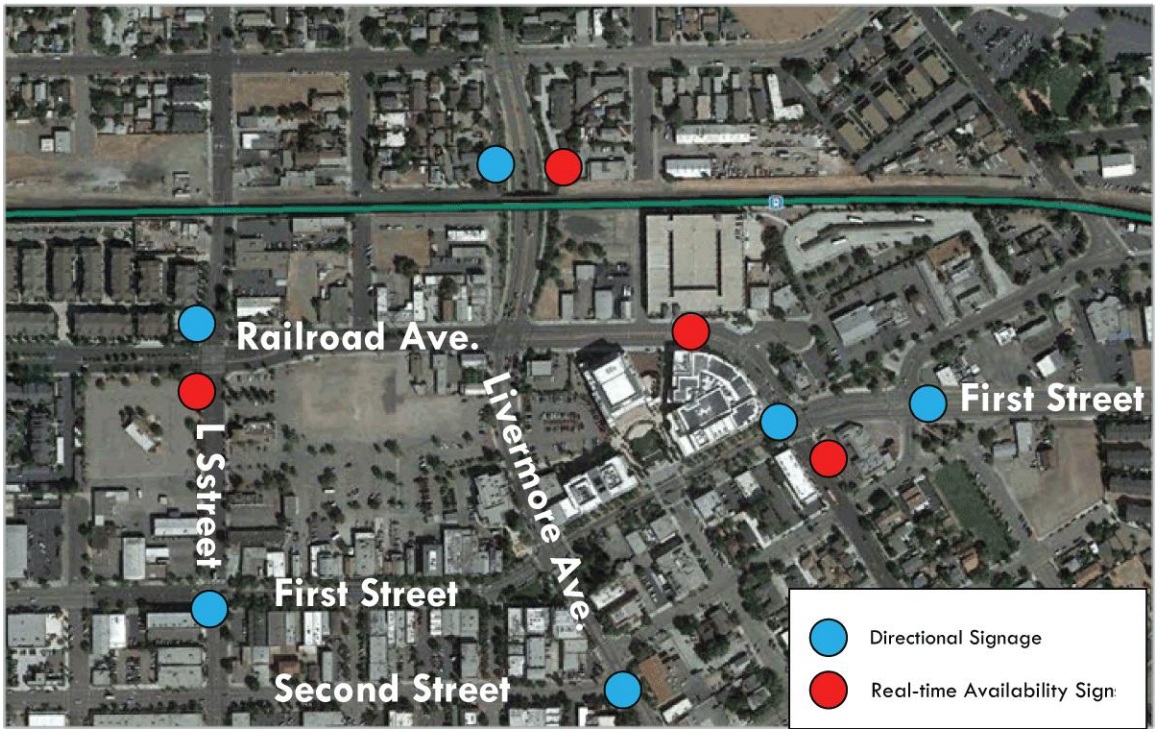
One component of this strategy is to use automated counters to track the number of vehicles entering and exiting the existing public parking garage and provide information about real-time availability of parking spaces, helping to direct visitors to this public parking garage. Another component of this strategy is to add additional directional signage on the roadway system to direct visitors to available public parking, which may be placed just outside downtown to guide drivers as they approach downtown. The design of any signage that is installed should be in keeping with downtown's character.

Real-time availability signage is more costly to install than static wayfinding signage, though it may be more effective in encouraging motorists to use the public parking garage.

These wayfinding improvements would be implemented in two phases, with "low-tech" improvements such as static wayfinding signage being implemented in the immediate term, and higher-tech real-time electronic signage (Figure 3-6) introduced in the short-term (1–2 years).

Figure 3-6 Examples of Real-time Parking Signage

Figure 3-7 Potential Locations for Wayfinding



Benefits

- Better distribution of parking demand
- Enhanced customer experience and convenience of visiting downtown

Tradeoffs

- Does not add parking capacity
- Additional capital and operating expenses

Financial Impacts

- Real-time availability signage: $75,000 to $150,000
- Additional static wayfinding signage: $10,000

Cost-effectiveness

Improving wayfinding and adding real-time information about parking availability will cost about $85,000 to $160,000 in total. This strategy does not produce new parking supply, but is likely to shift enough people from higher-demand areas into underutilized parking facilities, making this a very cost-effective strategy.

"We should install bike racks to not only promote a more environmentally friendly town, but also make it safer for us who do ride our bikes."

"Add more bike racks so casual visitors who are locals can avoid congesting parking spaces."

-Livermore Parking Survey respondents

STRATEGY #4: IMPROVE ON- AND OFF-STREET BICYCLE PARKING.

Description

Every bicycle trip begins and ends with bicycle parking. It is important to provide user-friendly, secure, and convenient bicycle parking that is highly visible and close to popular destinations. Currently, there are a limited number of bicycle parking facilities in downtown Livermore. The bicycle parking that does exist is often single "post-and-ring" racks in inconspicuous locations scattered throughout downtown.

This strategy aims to provide new and existing bicycle riders with secure storage in downtown, create a more welcoming environment for potential bicycle riders, and encourage bicycle trips as an alternative to automobile trips.

It is important to note that this strategy will likely not result in a significant reduction of parking demand. Although downtown Livermore offers flat terrain and relatively slow streets, the vast majority of trips to downtown will continue be by automobile for the foreseeable future, due to the land use characteristics of surrounding neighborhoods and limited number of bicycle lanes. However, it is important to ensure that there is convenient bicycle parking so bicycling is as attractive a mode of travel as possible. Some parking exists already in downtown, but bike parking should be available close to all major destinations downtown.

In addition to the City providing bike parking at some key locations, the City should consider revising its Code to require new businesses to provide more employee and guest bike parking. The Association of Pedestrian and Bicycle and Professionals *Bicycle Parking Guidelines, 2nd edition* provides recommendations for the amount of bike parking to be provided by land use, which should be referenced when establishing requirements in Downtown.

The City should also encourage existing businesses to provide bike parking voluntarily, by sharing information with businesses on the benefits to bike parking versus the costs. For instance, while an on-street bike corral costs approximately $3,000-$4,000 per corral and removes an automobile parking space, it provides parking for up to 8 bicycles. Furthermore, research has shown that bicyclists often make more frequent trips to local businesses than drivers do, spending less per trip, but more total per month[32], making investments in attracting cyclists a smart business move.

Potential bicycle parking can include the following types of facilities:

- Inverted U-racks
- Post and Ring
- Undulating
- On-street "corrals"
- Lockers (longer-term parking)

Figure 3-8 Examples of Bicycle Parking Types

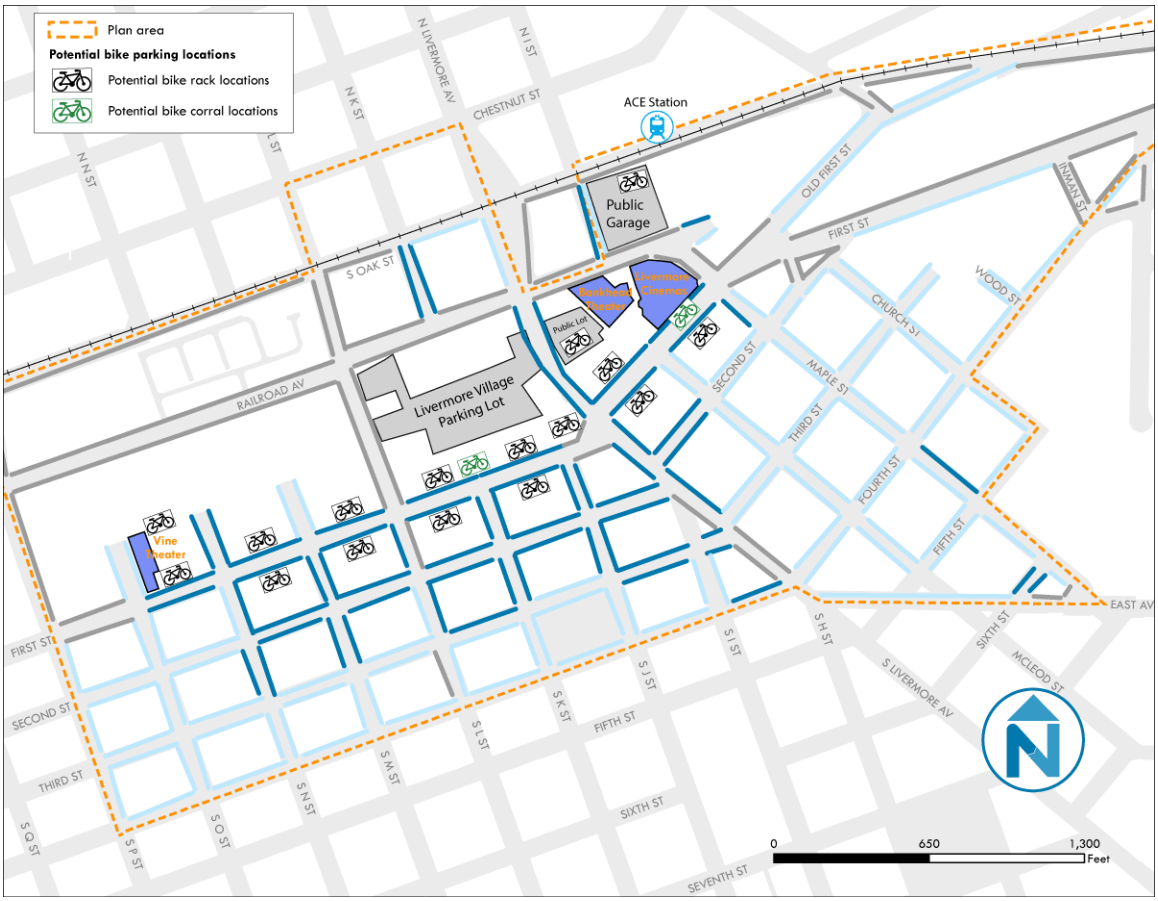
Bicycle Parking Locations

Figure 3-9 shows potential locations for new bicycle parking, including racks and on-street corrals (existing bicycle parking has not been inventoried for this report, and is not shown on the map).

[32] Source: http://trid.trb.org/view.aspx?id=882238

Priority locations are focused in the downtown core and major activity centers, particularly along First Street and at major destinations such as the Bankhead Theater, Vine Cinema, and Livermore Cinemas. Other potential locations to enhance bicycle parking include the public parking garage, ACE station, and key transit stops. In general, parking should be in prominent and highly visible areas. Where there is existing bike parking in downtown, the City should consider adding standard bike parking signage to guide bicyclists to the racks.

Figure 3-9 Potential Bicycle Parking Locations (Existing Bicycle Parking Not Shown)



Parking Guidelines

When installing bicycle parking, the following guidelines below should be used to ensure that facilities are accessible and can be properly utilized by bicyclists.

- Site Selection and Planning
  - Near high-demand locations, otherwise bicyclists may use trees or street furniture
  - Along existing/future bicycle routes and natural "desire" lines for bicyclists
  - High-traffic areas with strong visibility and "passive" surveillance
  - In off-street locations, place near entrances/exits and ensure that parking is well lit
- Racks
  - Locate rack to minimize obtrusions on sidewalk
  - Orient rack to ensure bicycles are parked parallel to the curb face and parked vehicles

  - Evaluate placement and footprint of parked bicycles based on parking dimension of 2' wide x 6' long
  - Ensure clearances from walls, trees, tree wells, news racks, doorway exits/entrances, and parked cars
- On-street corrals
  - Locate as close as possible to high-demand locations
  - Corner locations provide greater visibility and can be easier to navigate than mid-block locations
  - Space racks at 36 inches
  - Provide a minimum of 5-foot maneuvering zone
  - Provide physical protection such as a bollard or flexible stanchions
  - When implementing bicycle corrals, the City may wish to create a formal application process for businesses wishing to establish a corral in front of their business. Many cities[33] have used an application process as a way to ensure local business support for these type of facilities and ensure that the corral will be maintained as part of public/private partnership.

Benefits

- Increases visibility of bicycling as a mode and encourages bicycle travel
- Fosters an orderly streetscape and the preservation of the pedestrian right-of-way
- Business benefits including additional customer parking capacity, attraction of bicycle customers, and parking for employees
- On-street corrals offer approximately eight bicycle parking spaces for one parking space
- Relative costs are very low
- This strategy may be especially effective when implemented at special events, where car parking is limited

Tradeoffs

- Existing streetscape may be constrained in terms of physical space
- On-street corrals potentially reduce vehicle parking capacity
- Must compete for limited funding for capital and ongoing maintenance costs

Financial Impact

Outlined below are approximate costs for different types of bicycle parking facilities.

- Bike racks
  - Inverted U: $400 per rack (2 spaces)
  - Wave: $800 per rack (7 spaces)

[33] https://www.portlandoregon.gov/transportation/article/250076#FAQs

- Bike corrals: $3,000–$4,000 per corral (8 spaces), plus approximately $150 annual operating/maintenance costs
- Bike lockers
  - Keyed locker: $2,500 per locker (2 spaces), plus $25 annual operating/maintenance costs
  - E-locker: $10,500 per locker (4 spaces), plus $400 annual operating/maintenance costs

Cost-effectiveness

Installing additional bike parking in downtown Livermore would likely cost $5,000–$30,000, depending on the type and amount of parking added. This strategy is not likely to significantly reduce parking demand, as it would shift 15–30 peak hour trips to biking at most (depending on how much parking is added and how well utilized it is), and larger shifts are only likely to occur in conjunction with other significant improvements to bicycle infrastructure in Livermore. Nevertheless, the strategy would improve attractiveness for the segment of the population who does travel to Livermore by bicycle. Overall, this is a very low-cost investment compared to adding automobile parking, however, and a modest increase in bike parking would be a cost-effective investment.

STRATEGY #5: REVISE AND SIMPLIFY PARKING RESTRICTIONS.

Description

About one-third of downtown on-street spaces have time limits of one to three hours, and 6% are short-term (under 30 minutes), loading, or accessible parking. On-street spaces with time restrictions are concentrated in the downtown core, while blocks on the periphery of downtown generally allow parking for unlimited amounts of time. The specific duration of time limits varies greatly among on-street parking spaces. At different locations throughout downtown, parking is subject to time restrictions of 15 minutes, 30 minutes, 1 hour, 90 minutes, 2 hours, and 3 hours. In fact, parking regulations can change from one block to the next and sometimes even within the same block.

These parking regulations have largely developed over time in response to new businesses, changes in land uses, and ad hoc requests from businesses. The result is a system that responds to individual business needs, but lacks coordination, which can negatively impact the motorist experience and user-friendliness of the parking system. This strategy seeks to create more consistency with the parking regulations to minimize motorist confusion and improve customer friendliness of the parking system. This strategy is likely to be most effective in conjunction with implementing more consistent enforcement of regulations.

Current parking regulations also end at 5 p.m. or 6 p.m. depending on the specific area. However, given the dining and entertainment uses in the downtown, peak demand often occurs after 6 p.m. With time restrictions ending prior to peak demand, long-term parking in prime on-street spaces is encouraged, thereby reducing turnover and parking availability. This strategy proposes to extend time limits later in the evening in the downtown core.

Specific revisions to the parking regulations include:

- Transition all time restrictions in the downtown core and on First Street to a standard 2-hour restriction.
- Transition all "green-curb" restrictions to a standard 15-minute restriction.
- Standardize hours of enforcement from 9 a.m. to 6 p.m. (non-"core") and from 9 a.m. to 8 p.m. in the "core".
- In the long-term, evaluate eliminating all time restrictions outside of the downtown core, except where they immediately front businesses.
- Implement a 4-hour time limit in the Livermore Village parking lot, with an exemption for employees. The public parking garage would continue to have no time limits.

Benefits

- Additional flexibility for visitors and customers wishing to stay longer
- Improved turnover and parking availability during typical peak periods of demand – weekday and weekend evenings
- Discourages long-term parking in high-demand areas
- Simplified restrictions improve customer experience, enhance user-friendliness, and reduce motorist confusion

Tradeoffs

- Without adequate enforcement, time limits and restrictions have limited efficacy
- Business may object to specific changes on their block or in front of their business

Financial Impact

- Costs associated with this strategy are minimal and would largely be associated with staff time to implement changes. Capital costs to replace signage are minimal.

Cost-effectiveness

This strategy will not increase parking supply, but it offers a low-cost means to achieve modest increases in turnover and availability of parking.

STRATEGY #6: ENCOURAGE A PEAK PERIOD VALET SERVICE.

Description

This strategy proposes that the City encourage businesses to initiate a privately-operated valet parking program during peak periods of demand. By actively reaching out to private businesses to initiate the program and providing technical support for coordinating the effort, the City can ensure that the valet service will serve businesses that need it the most and are willing to fund it, without requiring a costly subsidy from the City. The valet program should be designed to facilitate convenient drop-off and pick-up without impacting existing parking or traffic operations.

Valet parking provides an opportunity to shift demand to off-street lots and increase the ease of parking for visitors to high-demand areas in the downtown core. It can also increase the effective

parking supply through more efficient use of parking supply, as valet operators can "tandem" or "triple" park vehicles. By increasing the supply of parking, a substantial number of additional vehicles could be accommodated in off-street lots during periods of high demand. Valet parking also offers a highly convenient parking option for those customers willing to pay for it. Businesses may also opt to subsidize valet parking, offering it to customers at no cost.

This strategy would seek to encourage businesses to a coordinated, "universal" valet service during the periods of highest parking demand, such as Thursday, Friday, and Saturday evenings, especially during special events or during performances at the Bankhead Theater.

Selection of valet parking drop-off locations would need to consider how the loss of parking spaces would impact parking behavior and whether drop-off and pick-up would negatively affect traffic flow and street operations, particularly on-street parking spaces. These locations could be coordinated with existing and proposed passenger loading zones to minimize parking loss.

Given the high demand for on-street parking spaces during peak periods, valet operators would be prohibited from parking vehicles in on-street spaces in high-demand areas downtown, and in the highest-demand public parking lots in the downtown core. Instead, valet operators would be permitted to lease designated off-street lots/garages or portions of publicly available off-street lots/garages. Parking in on-street spaces outside the high-demand areas downtown that have lower occupancy rates during peak hours may also be permitted. One possible location is the Livermore High School lot, which has 181 spaces.

Advances in technology have enabled valet parking drop-off, pick-up, and payment to be as seamless as possible. Numerous valet operators now employ technology (e.g. point-of-sale handheld computers, key "fobs," self-serve kiosks, mobile phone technology) that facilitates easy retrieval of vehicles and payment. For example, key "fobs," provided to a customer when dropping off their vehicle, can be activated 5–10 minutes before desired pickup so that a vehicle is returned by the time the customer is ready to leave. This technology can also enable more accurate collection of parking data and revenue.

Financial Impact

This strategy would be financed and operated privately to avoid creating a continuing budgetary burden to the City, and therefore have a minimal financial impact on the City. Some City staff time would be required to provide encouragement to businesses to start the program, oversee operations, and ensure that program is operating successfully.

Cost-effectiveness

Because this strategy would have minimal cost to the City, it would be a very cost-effective method of increasing the parking supply and reduce parking demand in the downtown core.

"Universal" Valet Parking Programs

Universal, district-wide valet services allow motorists to drop their vehicle off at any valet location, and pick their vehicle up at any other valet stand. Typically, these programs can be funded through downtown business associations or meter revenues. In general, cities or businesses enter into a contract with one or more valet operators to provide the service. In order to make valet services a single, seamless operation, consistent branding (signage and uniform) should be required and valet stands should be placed at designated locations.

Old Pasadena: The City of Pasadena offers district-wide valet service in the Old Pasadena district. The universal valet parking program allows customers to drop off their vehicles at any of the 11 valet stations within the district, and can arrange to have their vehicle waiting for them at any other valet stand. Various participating merchants allow validation that reduces the price of valet parking. The current cost is $10 without validation, and the City does not regulate the price of valet parking.

San Diego: The City of San Diego offers district-wide valet service in its Little Italy district. Motorists pay $7 to drop their vehicles at one of the three district wide valet stands. The services operate during peak periods only (Thursday–Saturday from 6–11 p.m.).

Redwood City: Initiated through a partnership of downtown businesses, the City of Redwood City offers valet services in downtown on Fridays and Saturdays from 6–11 p.m. Motorists drop off their vehicles at a specific location and their vehicle is parked in an underutilized off-street facility. The cost of the valet service is $10, or $5 with validation from a participating business.

STRATEGY #7: INCREASE ENFORCEMENT OF PARKING REGULATIONS.

Description

This strategy includes detailed information about the specific operations, financial implications, and efficacy of four types of parking enforcement operations, including:

Public (In-house)

- **Part-time targeted enforcement (Recommended in the short term)**
- Full-time enforcement (Recommended in the long term)

Private (Contracted)

- Part-time targeted enforcement
- Full-time enforcement

In the short-term timeframe, the City should pursue a more formalized part-time or targeted parking enforcement approach. As additional recommended parking management strategies are implemented over the long-term timeframe, however, the City may consider ramping up its enforcement activities and/or explore the possibility of contracting with a third-party contractor to oversee parking management operations.

Summary of the Problem

Currently, the City conducts very limited parking enforcement in the downtown, often only based on *ad hoc* requests. While the existing conditions analysis indicates that most motorists obey the posted regulations, it is also evident some motorists choose to park in high-demand areas (such as

First Street) for longer than the posted time limits. Specifically, some Downtown employees responded (via survey) that they park in prime on-street spaces, often in spite of posted time limits due to the common perception that time limits are rarely enforced. This practice can be particularly problematic in the evenings when demand is very high and there are no time limits in effect. At these times, the City currently has neither direct control (i.e., through time limits that encourage turnover) nor influence (i.e., through targeted enforcement that deters abuse) over parking behavior in the downtown area.

Although there was limited public support for increased enforcement during the outreach process, many of the proposed parking management strategies rely on improved enforcement to be effective. For example, while the individual actions of employees who park long-term in prime on-street spaces may appear to have minimal effects on their own, taken together they can exacerbate high demand situations, especially around popular restaurants at meal times. Implementing a multi-pronged strategy of employee parking permits, extending time limit applicability hours, and increasing enforcement would likely have an immediate effect on parking availability and turnover for customers and visitors. First, the employee parking permit strategy would encourage long-term parkers away from high-demand, on-street spaces. Second, ensuring that time limits are in place throughout high-demand time periods would help improve parking space availability during peak hours. Third, these first two strategies can only be successful if employees are aware that their actions are being policed through increased enforcement. Otherwise, employees may continue parking on-street and limiting on-street availability to visitors, even during evening peak hours.

As an associated benefit, enforcement can improve access for individuals with mobility impairments by ensuring that users of ADA spaces have a disabled placard and are not abusing its use. Finally, if the City at some point does choose to implement parking pricing, proper enforcement will be essential to spreading demand more evenly among downtown Livermore's on- and off-street parking facilities, and to collecting and ensuring a stable source of meter revenue.

Enforcement Alternatives

This section details four enforcement alternatives for consideration by the City. Overall, there are two categories of enforcement alternatives: public (in-house) and private (contracted). **Public** enforcement operations are conducted by in-house police or transportation department staff, while **private** operations are typically conducted by third-party companies that contract with the City to provide enforcement staff and management.

A more detailed discussion of the revenues and costs associated with these alternatives can be found in the "Financial Implications" section below.

Part-Time versus Full-Time Enforcement

In addition to deciding how enforcement staff may be sourced, the City should consider whether enforcement of time limits (and potentially priced parking, if warranted) is formally conducted on a **part-time** or **full-time** basis. Although there are pros and cons for each approach, it should be noted that any formal enforcement strategy employed by the City would have a positive effect on parking availability.

According to "Parking Made Easy," a guide to parking management released by the Oregon Transportation and Growth Management Program, "the level of parking enforcement is less

critical than the conducting of some form of parking compliance. Any amount of parking enforcement is better than none."[34] The guide also recommended that "to be most effective, enforcement hours should be randomized so as not to be predictable."

Moreover, most municipalities do a combination of targeted and full enforcement, with regular routes, periodic routes, and occasional responsive targeted enforcement. Approaches vary depending on each community's specific context and range of parking behavior. In San Mateo, for example, two full-time non-sworn parking enforcement officers work weekdays from 10 a.m. through 6 p.m. (the enforcement hours of meters downtown) in two zones. The City also employs one part-time parking enforcement officer who works Monday and Tuesday from 12:30 to 5 p.m., which are the busiest days of the week due to the local court's calendar and demand for jury parking.

Part-Time (Targeted) Enforcement

Part-time targeted enforcement would entail targeting enforcement during the times of highest demand (and therefore need). It is assumed that part-time enforcement would occur a total of four (4) times a week, with two (2) three-hour enforcement shifts occurring two (2) days a week. Potential enforcement shifts could be 11 a.m. to 2 p.m. (lunch) and 5 to 8 p.m. (dinner). The days of the week would vary per City direction, in order to ensure that no precise pattern could be determined to "game" the system over time.

Concept in Practice

In a study for the downtown Naperville, Illinois, Rich and Associates recommended that "due to the large number of restaurants and bars in the downtown, we recommend that the evening are selectively enforced and that selective enforcement occur one or two late afternoons and evenings every week. Like the daytime, these days should be rotated so that downtown employees do not know when the extra enforcement will be done."

The effectiveness of part-time enforcement again varies from community to community. As a general rule, however, more enforcement nets more revenue but at a declining rate. One value of part-time targeted enforcement for the City of Livermore at this time is that it can be used to test the effectiveness of enforcing time limits in a more formal fashion.

Pros:

- Less costly and more flexible than full-time approach

Cons:

- Less citation revenue (and/or meter revenue) collected than full-time enforcement[35]

Full-Time Enforcement

In time, the City may wish to increase its downtown parking enforcement presence to a full-time approach.

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[34] http://www.oregon.gov/LCD/TGM/docs/parkingprimerfinal71213.pdf

[35] Assumed to collect two-thirds the amount of revenue

Pros:

- Maximize curbing of abuse and revenue collection

Cons:

- More costly to implement

Public (In-House) Parking Enforcement Alternatives

In these alternatives, City staff would formally enforce time limits downtown on either a part-time or a full-time basis.

Pros:

- Staff more directly manageable (i.e., no "middle-man")
- Ability for Police Cadets (part time) or Officers (full time) to conduct other safety and oversight tasks in downtown area

Cons:

- More expensive than contracting with third party for full-time enforcement

Option 1A: Part-Time Public Enforcement

One part-time, non-benefited parking control officer would conduct targeted parking enforcement activities twice a week (on varying days based upon City discretion) during two three-hour timeframes. Under this option, it may be possible to utilize existing Police Department/City vehicles to conduct targeted enforcement, though new citation issuing equipment will be necessary to more efficiently conduct the increased enforcement activities.

Targeted enforcement would cost less to implement than a full-time strategy, while helping to increase compliance as motorists (especially employees who park regularly) recognize the possibility of receiving a citation for parking longer than the posted time limits.

Option 1B: Full-Time Public Enforcement

Option 1B assumes the use of two-to-three part-time non-benefitted police cadets to conduct enforcement Monday through Saturday over two three-hour enforcement shifts. Given the amount of time dedicated to parking enforcement, a new enforcement vehicle[36] would likely be required under this option.

Private (Contracted) Parking Enforcement Alternatives

In these alternatives, the City would contract with a third-party contractor to provide staff labor and management, with enforcement to be conducted on either a part-time or a full-time basis. For the purposes of this analysis, the yearly salary of full-time enforcement personnel is assumed to be $50,000, with part-time costs assumed to be two-thirds of this total ($33,333).

[36] Assumed to be a Go-4 Interceptor Vehicle (http://westwardindustries.com/vehicles/go-4/)

Concept in Practice

The City of Lawrence, Massachusetts contracts with the SP Plus Municipal Services division of Standard Parking Corporation to conduct a host of parking management services for the City, which includes labor for parking enforcement, meter collection, meter maintenance, citation processing, and delinquent citation collections. SP Plus also provided a project manager, a bookkeeper, and a customer service representative that handles citation payments at the City's administration building. SP Plus was also responsible for new meter installation at the outset of the contract period. Enforcement personnel hired by Standard Parking are not sworn police officers and have no arresting authority. Their duties include issuing citations, assisting maintenance staff, and providing in-person customer service, among other tasks.

Generally, it is not necessary to deputize contract workers in California, as many cities utilize staff (whether in-house or contracted) that are non-sworn. As such, they may issue citations but as in Lawrence simply have no arresting authority.

Pros:

- Lower cost for full-time enforcement
- Ability to establish minimum performance standards that can potentially lower municipal cost burden if not met
- Potential to take advantage of contractor's other services, such as meter revenue collection and processing, if applicable

Cons:

- Potential need to commit to minimum contract duration; potentially less flexible than in-house operations
- Lack of direct control over staff behavior and/or attitude
- Potential for public perception of "outsourcing" traditionally public jobs

Option 2A: Part-time Private Enforcement

In Option 2A, the City would opt to utilize a private contractor for enforcement activities for twice weekly targeted enforcement. Like Option 1A, it is assumed that the City will need to purchase new citation processing equipment for the increased enforcement strategy.

Option 2B: Full-time Private Enforcement

In this alternative (2B), the City could opt to utilize a private contractor for enforcement activities on a full-time basis. Depending on the contractor selected, the City might need to provide a new enforcement vehicle for full-time enforcement activities.

Financial Implications

Costs

The costs associated with increasing enforcement include yearly labor and capital costs, as well as one-time capital equipment costs. According to our assumptions[37], **annual labor costs** for a part-time staff enforcement position are somewhat less expensive for contracted labor, at around $33,000 per year, compared to $38,700 for in-house enforcement (including supervision). The difference between public and private costs for a full-time staff enforcement approach is smaller, ranging from approximately $50,000 for a contractor to about $53,000 for in-house enforcement (including supervision). Cost assumptions for each option are included in Figure 3-10.

Figure 3-10 Enforcement Option Costs

Enforcement Option	Assumptions	Annual Labor Costs	One-Time Capital Costs	Annual Capital Costs
Option 1A: In House Targeted Enforcement	One non-benefited part time Cadet or parking control officer at $23/hour Includes staff administration and supervising time ($10,000) Enforcement four times a week (varying days); 104 total enforcement days/year Two three-hour enforcement shifts Includes new handheld ticketing unit	$38,704	$10,000	$2,000
Option 1B: In House Enforcement (Full Time)	Two or three non-benefitted part-time Cadets or parking control officers at $23/hour Includes staff administration time ($10,000) Enforcement Monday through Saturday Two three-hour enforcement shifts Includes new Go-4 Interceptor Vehicle Includes new handheld ticketing unit	$53,056	$36,987	$3,500
Option 2A: Contracted Targeted Enforcement	Private Contractor Includes staff administration time ($4,000) Enforcement four times a week (varying days); 104 total enforcement days/year Two three-hour enforcement shifts	$33,000	$10,000	$2,000

[37] Estimated per the following assumptions: Part-time in-house staff would be provided by the Police Department in a newly created position ($23/hour, 24 hours a week, all year, which amounts to approximately $28,700), plus oversight to be performed by an existing sworn police officer working overtime at a cost of $10,000 annually. Full-time in-house enforcement would be conducted by 2-3 part-time police cadets or parking enforcement officers paid a similar rate at a total cost of approximately $43,100 annually, plus oversight to be performed by an existing sworn police officer working overtime at a cost of $10,000 annually. Livermore Police Department staff rates sourced from the City's most recent Memorandum of Understanding with the Livermore Police Officers Association. Private staff would be provided by a contractor at two-thirds the regular full-time salary ($50,000 full-time; $33,333 part-time). Private staff costs derived from a 2010 proposal by Duncan Solutions, Inc., rounded up to account for inflation. More research and outreach is needed to fully understand current private contracting costs, although contractors may be unwilling to share this information outside of a bid process to retain their proprietary information.

	Assumes labor costs to be 2/3 of Option 2A Includes new handheld ticketing unit			
Option 2B: Contracted Enforcement (Full Time)	Private Contractor Includes staff administration time ($4,000) Enforcement Monday through Saturday Two three-hour enforcement shifts Includes new Go-4 Interceptor Vehicle Includes new handheld ticketing unit	$50,000	$36,987	$3,500

One-time capital costs for both part-time and full-time options would include the purchase of handheld ticketing units (Figure 3-11), which would be required for efficient citation issuance. Depending on any existing City devices and future needs, these units could range in price from $10,000 to $13,000 per unit (estimate includes associated software costs, staff training, etc). Maintenance costs of these units are minimal, and they would result in decreased staff needs and increased revenues from tickets increase due to more efficient enforcement. Handheld ticketing devices are in widespread use in cities across the country, and are able to print parking citations on the spot, as well as take photographs of the parking offense in case the ticket is challenged. For instance, parking control officers in the City of San Francisco use handheld ticketing devices for all parking tickets, which has reduced the time spent writing tickets and improved accuracy.

For both public and private full-time enforcement, the City would also likely need to purchase a new enforcement vehicle (also shown in Figure 3-11) at an assumed cost of approximately $27,000 for full-time enforcement activities.

Figure 3-11 One-Time Capital Costs: Handheld Ticketing Device & Enforcement Vehicle

Source: Westward Industries (vehicle)

Finally, **annual capital expenses** would be required for supplies and materials (receipt paper, citation paper, citation envelopes, postage, etc.), which would likely not exceed $2,000 annually for part-time and $3,500 annually for full-time enforcement options (though continued use of the existing City of Livermore online ticket payment portal would help reduce these costs).[38] It should be noted that the City may need to review its online payment system practices to ensure the existing online payment system is compatible with new/increased enforcement practices. Finally, additional staff time may also be necessary to administer the program and supervise enforcement. All scenarios assume approximately $10,000 of yearly staff administration and enforcement time.

Revenues

With increased enforcement, additional citation revenue would be generated, which would offset a portion of additional enforcement labor costs. Based on comparable conditions in Mill Valley, California, (as a baseline) and adjusting for the number and types of spaces in downtown Livermore, the City could expect to issue approximately 9 citations per enforcement day under the full-time enforcement scenarios. If the average citation rate were $50, for instance, which is approximately the average rate the City charges for a parking violation[39], citation revenues would amount to approximately $86,112 per year, accounting for the likelihood that up to one-third of citations will not be paid (or will not be paid in full) [40], and the state and county are likely to collect at least 10% of citation revenue. Under the part-time targeted enforcement scenarios, the City would could expect to issue fewer citations (analysis assumes two-thirds of full enforcement scenario, plus an extra 25% assumed increase in citations due to targeting the most problematic times, or 7.7 per enforcement day), resulting in less revenue ($23,920), as shown in Figure 3-12.

Figure 3-12 Revenue Projections

Enforcement Option	Enforcement Days Per Year	Citations Per Enforcement Day	Yearly Revenue
Option 1A: In House Targeted Enforcement	104	7.7	$23,920
Option 1B: In House Enforcement (Full Time)	312	9.2	$86,112
Option 2A: Contracted Targeted Enforcement	104	7.7	$23,920
Option 2B: Contracted Enforcement (Full Time)	312	9.2	$86,112

Summary

Figure 3-13 presents a summary of annual revenues and costs associated with each enforcement option during the first two years of implementation. Please note that this is not a budget; it is an

[38] Assumes $1,000 for citation paper, $1,000 for envelopes, and $1,500 for postage

[39] Parking citation rates range from $48 to $53 in Livermore, depending on the violation.

[40] Analysis assumes two thirds of tickets are paid in full.

estimate of costs and revenues to provide the City an overview of order-of-magnitude financial implications of each alternative. Under the time limit enforcement scenario, all options would require operating subsidies during the first year of implementation, with full-time contracted option 2B and full-time in-house option 1B requiring less subsidy than the part-time options. Enforcement option 1B (full-time, in-house) and enforcement option 2B (full-time, contracted enforcement) would generate net revenues during their second year of operation.

Figure 3-13 Annual Costs and Revenues

	Option 1A: Public Part-Time		Option 1B: Public Full-Time		Option 2A: Private Part-Time		Option 2B: Private Full-Time	
	Year 1	Year 2	Year 1	Year 2	Year 1	Year 2	Year 1	Year 2
Annual Revenues								
Time Limit Citations	$23,920	$23,920	$86,112	$86,112	$23,920	$23,920	$86,112	$86,112
Annual Costs								
Time Limit Enforcement Staff Costs	($38,704)	($38,704)	($53,056)	($53,056)	($33,333)	($33,333)	($50,000)	($50,000)
Time Limit Enforcement Materials	($2,000)	($2,000)	($3,500)	($3,500)	($2,000)	($2,000)	($3,500)	($3,500)
Capital Costs (One Time)								
Time Limit Enforcement Equipment	**($10,000)**	**-**	**($36,987)**	**-**	**($10,000)**	**-**	($36,987)	-
Balance	**($26,784)**	**($16,784)**	**($7,431)**	**$29,556**	**($21,413)**	**($11,413)**	**($4,375)**	**$32,612**

Recommended Approach

It is recommended that, as first step, the City conduct increased parking enforcement on a part-time basis as a short term "pilot" project to evaluate its effects. To do this most effectively, the City should designate at least one part-time officer or Cadet to conduct occasional targeted parking enforcement in downtown, particularly on the blocks with the highest occupancy during peak times. Targeted enforcement would cost less up-front to implement than a full-time strategy, while helping to increase compliance as motorists (especially employees who park regularly) recognize the possibility of receiving a citation for parking longer than the posted time limits. Keeping the role in-house would allow the City maximum flexibility in administering the pilot program. In time, the City could increase enforcement downtown to a full-time role. At that time, the City could also consider whether an outside contractor would be more appropriate for its parking management operations.

In order to show results, the pilot project would need to be in effect for a minimum of six months. The City should also conduct surveys (potentially at the pilot project's midpoint and after six months) of parking availability and average length of stay to understand the effects of the pilot and to help guide any changes to the approach.

Next Steps

- Determine a schedule for the pilot project and finalize the evaluation strategy.
- Create a job description for the part-time parking enforcement position, clearly delineating its duties and responsibilities. If applicable, the City could work with the Police Department to fold these responsibilities into an existing Police Cadet position.
- Prior to the beginning of the pilot, conduct extensive outreach detailing the benefits of the program. It will be important to communicate that the increased enforcement is intended to increase parking availability for all users downtown and is not simply a punitive device or a means to generate revenue for the City.
- Finally, it is recommended that the City issue "warning" notices in lieu of actual citations for the first one or two months of increased enforcement. Doing so would help educate motorists about the new program.

SHORT-TERM STRATEGIES

STRATEGY #8: WHERE FEASIBLE, INCREASE PUBLIC PARKING SUPPLY THROUGH SHARED PARKING AGREEMENTS.

Description

Shared parking agreements are arrangements with private parking lot owners that provide for privately owned off-street parking to be available to the general public during specified periods of time, usually when the parking lot is in low demand for its associated tenants. Compensation for use of private lots may be made in the form of lease agreements that also outline specific provisions related to maintenance, operations, security, and liability.

A typical example of shared parking is a land use that is used by customers during the day and then would become available to the general public during its non-business hours (evenings and/or weekends) or at other times when there is an overabundance of available parking. The agreement with the parking lot owner would stipulate the times during which public users may park in the lot and terms for compensation and operation.

In downtown, only 32% of the off-street parking supply is currently available to the general public, and on-street parking in total makes up about 33% of the parking supply in the study area. Shared parking agreements present an opportunity to increase the supply of publicly available off-street parking and for private parking lot owners to maximize the use and value of their parking lots.

Type of Public/Private Agreement

There are three potential types of agreements which the City could enter into with a willing private property owner. These are:

1. **Leasing of a private lot:** Under this arrangement parking spaces would essentially be "rented" from the property owner and the City would be entitled to establish regulations during "shared" use hours. Upgrades (lighting, striping, signage, etc.) could be made and the City would enforce compliance with regulations.
2. **Private ownership, public enforcement:** Under this arrangement the private property owner would open their lot to the public and establish regulations (including any pricing). The owner could choose to charge for parking, depending on parking demand. The City would enforce compliance with regulations and collect citation revenue.
3. **Third-party management:** It may be simpler and more cost-effective for the City to contract with a private company with experience facilitating shared parking arrangements instead of crafting and managing its own agreements. This company would also establish regulations (including any pricing).

For any agreement, the City or other appropriate organization would work with the property owner and/or tenants to address the issues that typically arise from such agreements, including:

- **Financial compensation:** Some property owners may want to be compensated for use of their property. In such cases, spaces would need to be leased, as described above. While not inexpensive, the costs of such agreements would be far less than building an equivalent number of new spaces.
- **Liability:** Liability issues often emerge as a potential concern, yet these issues are typically covered in standard liability coverage in any land use policy to cover public passage. In addition, liability can be more comprehensively addressed through well-written lease agreements that include provisions about requiring the lessor to maintain a good state of repair, ADA access, etc. and the lessee to provide adequate and appropriate signage for patrons and take actions to avoid overcrowding or other hazardous situations.
- **Operation and Maintenance:** Ongoing costs associated with operation and maintenance is also a common concern. These issues should be addressed as part of the shared parking agreement, and would depend on the degree of shared parking between private and public users.
- **Displacement of tenants:** Displacement of current tenants' customers is often a key concern—"If this lot is open to the public, where will my customers park?" To address this

issue, it is recommended that agreements are only pursued with land uses whose peak parking demand does not occur during the evening or on weekends, which is typically the busiest time in downtown. For example, the City could pursue agreements for the parking lots at the banks and the Post Office, all uses which are closed by 5 p.m. or 6 p.m. during the weekday evening, and even earlier on weekends.

Potential Lots

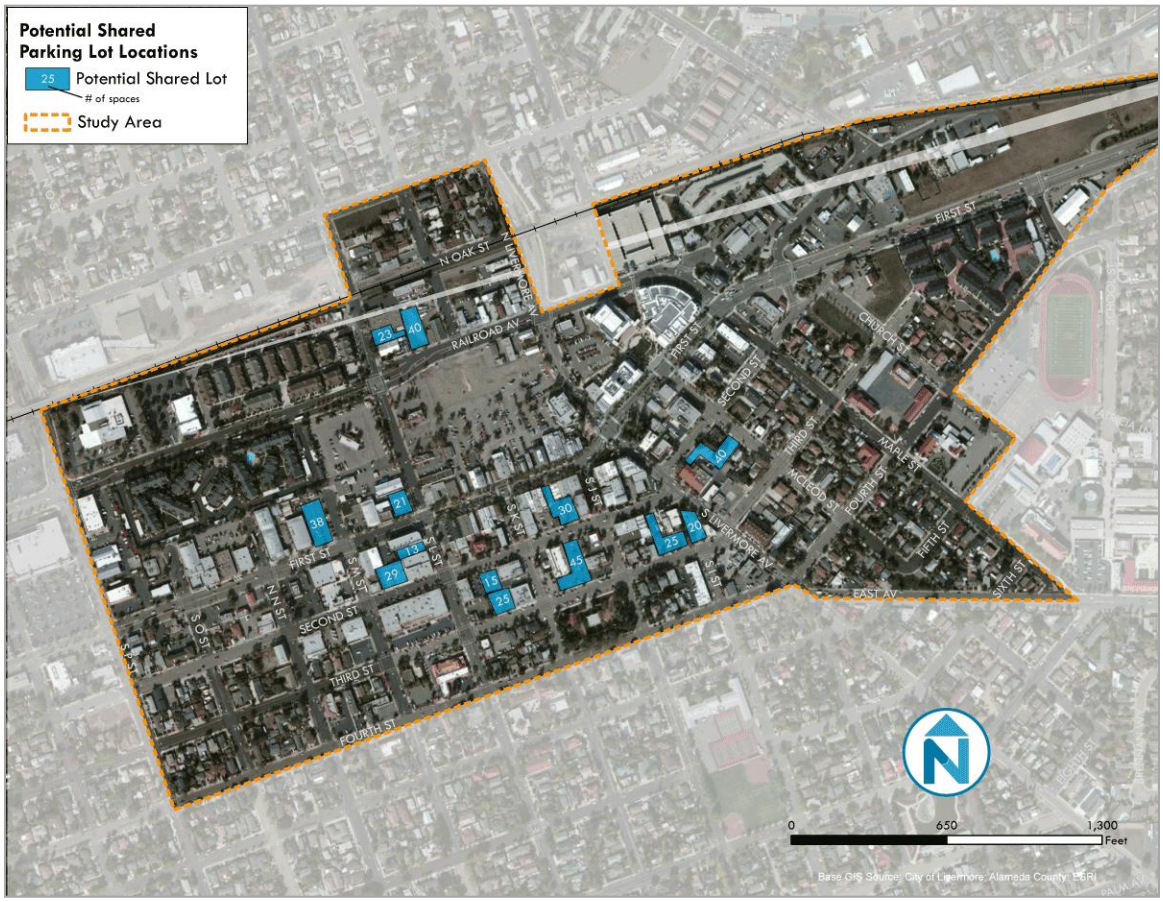
Figure 3-14 shows some potential lots that that could be pursued for shared parking. In short, shared agreements would not need to be secured for all of these lots. If even 50-100 spaces in the downtown core could be made public, parking challenges in the peak period could be alleviated.

In general, these lots were identified based on the existing land use, the size of the parking lot, and its proximity to the core. Some lots are more geographically desirable, but may be more difficult to open to the public depending on ownership and land use. Some of these lots may be designated for future redevelopment, yet shared parking agreements may be pursued to address peak parking challenges in the short-term. [41]

- Wells Fargo Bank lot on Second Street between L and K Streets (15 spaces)
- First Republic and Union Bank lot on Second Street between K and J Streets (45 spaces)
- Tri Valley Bank lot at First and L Streets (21 spaces)
- Chase Bank lot at Third and K Streets (25 spaces)
- Bank of West lot between Second and Third Streets (25 spaces)
- Surface lot on Second Street (north side) between M and L Streets (29 spaces)
- Surface lot bounded by First, Second, J, and K Streets (30 spaces)
- Dom's Outdoor Outfitters lot on First and M Streets (38 spaces)
- US Post Office lot on Second Street between Livermore Avenue and McLeod Street (40 spaces)
- Existing unpaved dirt lot at Railroad Avenue and K Street (~40 spaces)
- Surface lot on L Street north of Railroad Avenue (23 spaces)
- Livermore High School lot, with valet service to downtown (181 spaces)

[41] It is important to note that lots slated for redevelopment may not be suitable sites given the timeline for construction. For instance, the site of the former Groth Brothers Chevrolet dealership has been excluded from this list due to planned future development.

Figure 3-14 Potential Lots for Shared Parking



Benefits

- Increases the supply of public parking that is easily accessible, especially in the downtown core during peak periods of demand
- Creates a more welcoming environment for customers and visitors because they do not have to worry about getting towed for parking at one business while visiting another
- More efficient use of existing parking supply and ability to manage this supply as a cohesive unit
- Implementation timeframe is very fast
- Better distribution of parking demand away from most popular on-street spaces
- Long-term costs are less than construction of new supply
- New and/or maximized revenue source for private property owners
- Enforcement policies supported by the City's regulatory authority and reduced enforcement burden for private property owners

Tradeoffs

- Private property owners may not be willing to enter into any such agreements, especially non-local property owners

- Negotiation processes may be lengthy or complicated and could vary depending on the property owner
- Upfront costs to purchase/lease and upgrade parking facilities may be high
- Some lots may be designated for future redevelopment, which would impact the long-term availability of those spaces
- Lots will require enforcement by the City to ensure compliance with any posted regulations.

Financial Impact

Figure 3-15 provides some example costs for leasing spaces at two different cost scenarios. The estimated costs for 125 leased spaces would range from about $85,000 to $160,000 per year.

Figure 3-15 Example Costs for Leasing

Example Scenario	# of spaces	Annual Costs				Total Annual Cost / Space		Total Annual Cost / Trip[42]	
		Lease per space	O&M per space	Total per space	Sum Total	Per Month	Per Day[43]	Per Month	Per Day
Lease spaces at $50 per space per month	125	$600	$75	$675	**$84,375**	$56.25	$3.52	$15.63	$0.98
Lease spaces at $100 per space per month	125	$1,200	$75	$1,275	**$159,375**	$106.25	$6.64	$29.51	$1.84

Cost-effectiveness

In general, shared parking agreements are significantly more cost-effective than building a new parking space. A single parking space in a garage can cost more than $30,000 (or about $4,000 per year, including debt service), while existing spaces can often be leased and operated for less than $1,000 per year. To properly enforce the lot, some additional staff time would be necessary as well (either a police officer, cadet, or contractor from a private firm), though enforcement costs could be reduced through using occasional targeted enforcement.

STRATEGY #9: PROVIDE ADDITIONAL SURFACE PARKING ADJACENT TO THE PUBLIC PARKING GARAGE.

Description

The existing public parking garage on Railroad Avenue was designed to be expanded into the parcels to the west. In the interim, the existing dirt lot next to the public parking garage could be restriped as additional surface parking. The public parking garage was designed with break-out panels for the expansion so the circulation for this lot could be provided through the public

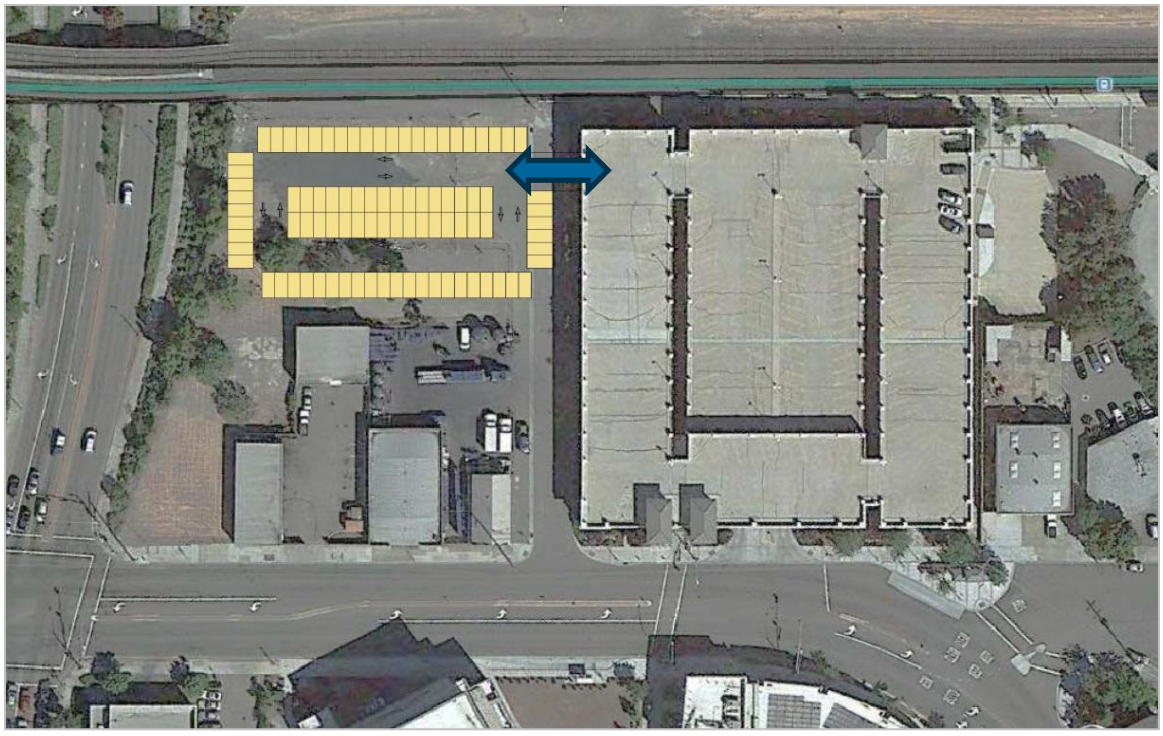
[42] Assumes a 90% occupancy rate and a conservative turnover factor of two vehicles per space per day.

[43] Assumes 16 "use days" per month (i.e. Thursday – Sunday).

parking garage to minimize additional conflict points at Railroad Avenue. The restriping of this area would yield 90 stalls.

At present, the public parking garage is not fully utilized, even during peak hours. As a result, adding parking adjacent to the garage may be less effective than increasing supply closer to the center of the downtown core. While the City should further study this option immediately, construction of this expansion should be triggered by occupancies in the public parking garage regularly exceeding 90% during peak hours. Currently, the public parking garage reaches peak occupancies of about 70%.

Figure 3-16 Conceptual Layout of Railroad Avenue Lot



Benefits

- Adds additional public parking at a relatively low cost to a facility the public is already familiar with
- Vehicle circulation and access control can be combined with the existing public parking garage

Tradeoffs

- These spaces are farther from First Street, where demand for parking is concentrated
- The garage is already utilized below capacity, even during peak hours, indicating additional capacity may be underutilized
- If the parcel is eventually developed into structured parking, the paved lot would have to be torn out

Financial Impacts

- The projected cost of developing this parking lot would be $400,000

Cost-effectiveness

This strategy would create approximately 90 new parking spaces at a capital cost of $400,000, or about $4,400 per space (not including annual operations). This is significantly more cost-effective than adding capacity in a new garage, which can cost about $30,000 per space.

STRATEGY #10: REDUCE FEE AMOUNT FOR VOLUNTARY PARKING IN-LIEU FEES.

Description

A voluntary in-lieu parking fee program allows applicants for development projects or conversion of existing structures to new uses to pay a designated fee instead (or "in-lieu") of providing off-street parking spaces according to City code requirements. Fees collected in lieu of providing off-street parking are commonly dedicated to funding the provision of shared public parking, or related access and demand management improvements. By providing the added flexibility of allowing developers to pay an in-lieu fee, cities can promote economic development that wouldn't be viable with parking provided on-site at the required rate, while providing a benefit to the City in the form of increased revenue for public parking spaces, which are generally much more well-utilized than private spaces.

Livermore currently has a parking in-lieu fee option for development/changes of use within the downtown area for applicants with 10 or fewer parking spaces. The in-lieu fee option has not been exercised extensively by developers, as the City has only collected approximately $74,000 in revenue since the creation of the program ($18,500 in fee revenue has been spent on parking improvements).

The fee is currently set at the cost of providing an amount of replacement spaces in a public parking structure equivalent to the number of private spaces that would not be constructed on site. However, the fee should actually be lower than full cost of replacing every space, to encourage more developers to exercise the in-lieu fee option and thereby to expand the supply of shared public off-street parking in downtown Livermore. In-lieu fees should be priced with the realization that multiple users park in a public space each day, whereas private spaces tend to be less well-utilized. Therefore this strategy calls for the City to substantially reduce the in-lieu fee rate (recognizing the greater capacity to accommodate parking demand in a shared public parking environment) and to expand options for payment of such fees (the in-lieu fee would continue to only apply to projects that required 10 or fewer parking spaces). While the reduced fee would not be high enough to provide a public parking space to replace every private space that is not constructed, it reflects the fact that public parking tends to be better utilized, and therefore a smaller number of public spaces may provide the same value as a greater number of private spaces would have. This includes defining an option for payment in annual installments over a 10-year period, as an alternative to lump-sum payment at issuance of the first building permit (current practice). Once revised, the in-lieu fee rates should be reevaluated periodically.

Existing Program

In general, applicants for new development projects, or changes of use can satisfy municipal parking requirements in the core area of Downtown Livermore by (1) providing off-street parking spaces on-site, (2) payment of a fee in-lieu of all or a share of the code required parking (funding the construction of shared public parking elsewhere in downtown), (3) provision or contracted use of off-street parking elsewhere in the downtown core (off-site), or through a combination of these approaches. Elsewhere in downtown (outside of the core area), including the Downtown Boulevard and Transit Gateway Plan areas, required parking may be provided through similar approaches, though any off-site parking must be located within 1/4 mile of the project site.

The purpose of the City's in-lieu parking fee program is not to impose an additional cost on development, but to provide an alternative for project applicants to contribute to shared public parking in cases where they have difficulty meeting on-site parking requirements. Fee revenues are dedicated to the construction of new shared public parking facilities.

According to the Livermore Municipal Code (Chapter 3-20-080 (C) – In Lieu Fee), project applicants may proceed with the in-lieu fee option if the proposal to do so is approved by City staff, as part of the site review plan, or by City Council (Where applicants seek to satisfy requirements for provision of more than 15 parking spaces by fee payment), with the conditions that:

1. There is available or planned public parking capacity to offset this demand; and
2. The public parking will be made available within a reasonable time period of approval of this project.

For the Downtown Specific Plan District, the specific amount of the in-lieu fee is established by City Council resolution. A separate fund has been established for the collection of in-lieu fees to be used "only to provide new or improved parking spaces in the downtown specific plan district."

In-lieu fees may not be used for redevelopment of existing uses.

In-lieu fees in other California Cities

One of the few cities in which the voluntary in-lieu parking fee program is well-used, the City of Davis, has amended their program multiple times since the 1970s in order to better encourage re-investment in the downtown. In 1998, the City created a fee reduction program that allowed waivers or reductions in the fee based on meeting specific policy objectives. While better used, the fee reduction structure was found to be cumbersome and uneven in application and in 2004 the City adjusted the fee to "be set at a rate that does not recover the full cost for structured parking downtown but requires a 'fair share' contribution to the development of such parking facilities." The fair share contribution was determined to be $4,000 per space for uses in the Central Commercial and Mixed Use Zoning Districts.[44]

Other cities have based their fees on the cost of building public parking, with results ranging from $8,000 to $67,100, depending on when those fees were proposed, how they are updated and the cost of public construction in different locations. These programs have generally not succeeded, in part because they ignore that parking also creates value, either in the form of a significant bundled amenity for other uses, or in direct revenue derived from parking fees.

[44] Staff Report to City Council, City of Davis, January 28, 2004.

Fee Rate

To determine the appropriate in-lieu parking fee rate for the City of Livermore it will be important to consider the type and cost of parking facilities likely be funded by fee revenue (be it in surface lots or in a multi-level structure), the greater capacity of individual public parking spaces to accommodate demand in a shared, mixed-use environment, and the value that accessory parking adds to a development project.

An appropriate formula for a parking in-lieu fee includes the costs of developing an on-site space discounted by the value of future revenue that space would have contributed to the project. The resultant fee should be equivalent to the value of that on-site parking from a development perspective and should be palatable to developers looking for alternatives to meeting all parking requirements on site. It should also of course, provide revenue to fund provision of a sufficient number of shared public parking spaces and/or other multimodal access projects and programs to accommodate projected demand for access to the new development.

Additional study and completion of a pro-forma cost analysis (with parking and development costs data from the local real estate market) are necessary to determine the exact fee rate that is consistent with these criteria and appropriate for the City of Livermore. However, the City can look to other communities that have employed this method to establish fee rates that provide flexibility to developers while meeting public goals for maintenance and enhancement of multimodal access including parking.

Based on a comprehensive economic analysis of the cost of various types of parking and the value of on-site parking for various types of development in different neighborhoods, the City of Sacramento recently conducted a study that concluded a blended in-lieu fee rate of $4,000 per parking space not provided on-site would be appropriate. This amount was determined to be just high enough to cover the average cost of building enough shared parking and other access improvements to accommodate demand for access not satisfied by on-site parking, while at the same time low enough (close enough to the added real-estate value of building on-site parking).

In light of the fact that Davis, California also determined that a $4,000 in-lieu fee also represents a “fair share” contribution to construction of shared public parking facilities, that amount is a reasonable starting place for determination of an appropriate in-lieu parking fee rate for the City of Livermore.

Broad Use of Fee Revenue

As noted, few cities have successfully constructed much public shared parking using in-lieu fee revenue, in part because fee revenue from development is unpredictable and difficult to use as a revenue source for bond financing. It is recommended that staff consider allowing fee revenues to be used for local transit or right-of-way improvements that result in greater potential for use of alternative transportation modes, such as walking, biking, light rail and bus, reducing the need for parking in the same area in which the project was built. Decisions regarding the use of fee revenues for either type of improvement should be related to assessment of current parking utilization patterns in the area, as well as broader transportation demand management goals.

Fee Payment Options

Although the City's current in-lieu program requires fee payment prior to issuance of initial permits, this strategy calls for providing project applicants with two-distinct options for free payment.

Lump-Sum Fee Payment

This option is a continuation of current policy, however to make the in-lieu fee more appealing to developers, the existing fee rate would be reduced. A one-time voluntary in-lieu parking fee can be set at a rate that will fund construction of a substantially smaller number of shared public parking spaces than the number of private off-street parking spaces required, while still accommodating the same level of parking demand in a mixed-use environment. This provides new development projects, or uses, with a reasonable alternative to on-site requirements, while recognizing that shared public parking spaces are generally better utilized, and can therefore accommodate more daily parking demand than private off-street parking spaces.

For instance, if a development is required to provide 3.3 spaces per 1,000 square feet of private parking, the in-lieu fee could be set at a rate that would finance the construction of 1.75 public parking spaces for each 1,000 square feet in the private development. This would be similar to the parking requirement reduction for on-site public parking discussed in Strategy #11.

Annualized Payment (10 Years)

As an alternative to lump sum fee payment, the City may consider offering project applicants the option to pay the in-lieu parking fee in installments over a ten-year period.

As noted earlier, few cities have succeeded in building parking using in-lieu fees, in part because fee revenue from development is unpredictable and thus difficult to use as a consistent revenue source for bond financing. Garnering commitments from private property owners to make annual payments over 10-year or longer period, would provide the City with a predictable stream of revenue and thereby enable appropriate, fiscally constrained planning and financing for construction of shared public parking or investment in other access and parking management programs.

Decisions regarding the use of fee revenues for should be based on assessment of current parking utilization rates and the projected needs for multimodal access to new and existing development in the area, as well as the City's broader transportation demand management goals.

Benefits

- By lowering the existing fee, more developers are likely to take part in the program, increasing the amount of revenue available for the City to build and maintain public parking and potentially to invest in non-auto access options.
- If payment of an in-lieu fee is made more affordable than building on-site parking, it may reduce total project development costs, and encourage desired development in downtown,
- Greater use of the in-lieu fee option can increase the provision of public parking, which is generally much more efficiently utilized than private parking. This makes for a more

accessible and vibrant downtown, with fewer vacant off-street parking spaces interrupting the urban fabric of the downtown core area.

- Fee reduction would not require a major legislative change and is likely to have the support of developers, and property owners because it is voluntary.
- Adding an annualized (over 10 or more years) fee payment option can encourage development by reducing project financing costs and provides a more predictable stream of revenue that the City can use to finance construction of shared public parking, or fund ongoing parking and transportation programs and services.

Tradeoffs

- Because it is voluntary, developers may continue to opt out of the program if they find it unnecessary for their site.
- In-lieu fees may still not provide enough revenue to construct a significant amount of parking in the short- or medium-term, if the volume of new development is limited.
- The fee proposed fee does not apply to existing developments, most of which have a large amount of underutilized private parking supply (although the City may choose to explore options for bringing some private parking into the shared public supply, through lease agreements funded by in-lieu fee revenues).

Financial Impact

- An updated in-lieu fee would have minimal costs to implement, as it simply requires an amendment to the existing fees for the downtown core and greater downtown area. If new fee payment options prove to be more popular with developers, the City would see an increase in the amount of money available to finance the construction and maintenance of public parking. It is important to note that this strategy is designed to promote economic development and increase the amount of public parking; it is not a strategy to fully finance the public parking garage needed in Livermore Village.

Cost-effectiveness

A restructured in-lieu fee would cost the City very little to implement, and could provide new funding sources to build public parking (which is better utilized than private, reserved parking in most cases) and implement other access and parking management strategies. From the City's perspective, this strategy would therefore be a highly cost-effective means of encouraging desired new development, while maintaining access to the core area of downtown.

STRATEGY #11: MAXIMIZE THE AMOUNT OF PUBLIC ON-SITE PARKING PROVIDED BY NEW DEVELOPMENT.

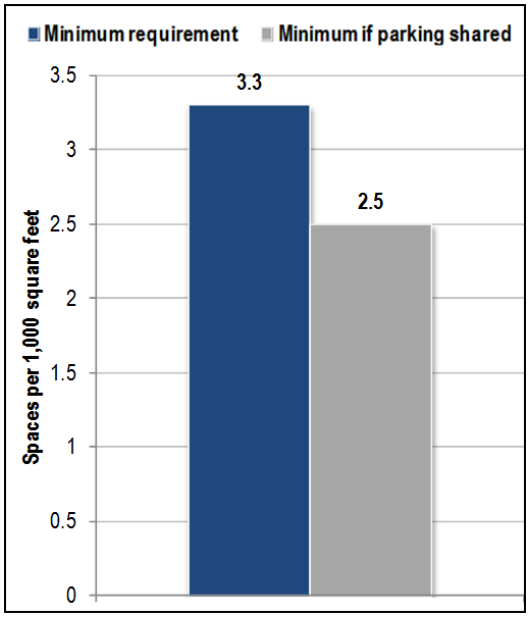
Description

Different land uses have different periods of parking demand. For example, an office use adjacent to a restaurant can share a common parking facility. Shared parking leverages these different periods of demand and can help to maximize existing resources in a cost-effective manner. To facilitate shared parking in the downtown and encourage the provision of public supply as part of new development, the potential zoning policies are proposed:

1. The Downtown Specific Plan allows for a reduction in parking requirements for commercial, retail, and office uses from 3.3 spaces per 1,000 square feet to 2.5 spaces per 1,000 square feet "if all provided parking remains open for non-exclusive use by the general public at all times." To further encourage shared parking and creation of public supply, the City could allow for further parking. The amount of the reduction would be developed during the implementation phase. While fewer spaces are provided than would otherwise required, the spaces would be public, and are likely to be better utilized than private reserved parking (the highest recorded occupancy at private lots in the core was about 44% lower than the highest recorded occupancy for public parking). This reduction should only apply to projects that would provide 10 or more public spaces.
2. Alternatively, the City could simply require as a condition of approval that private parking in any new development or adaptive reuse projects be made available to the public or be shared among different uses within a single mixed-use building by right.

In addition to reducing parking requirements for new developments, this strategy could apply to intensification of use on an existing parcel. For instance, at the City's discretion, property owners who currently have a building on part of their property and a parking lot on the remainder could be allowed to redevelop a portion of the parking lot to add a new building, if an adequate share of the remaining parking is made public.

Figure 3-17 Existing Parking Requirements in DSP—Commercial, Retail, and Office



Benefits

- Maximizes use of often under-utilized private lots
- Facilitates creation of a shared pool of publicly available parking supply
- Provides flexibility to developers and encourages new development

Tradeoffs

- Would not address short-term parking challenges

- Property owners may be hesitant to give up "exclusive" parking rights

Financial Impact

- Implementation of this strategy would simply involve staff costs associated with making the revisions to the zoning code and/or Downtown Specific Plan.

Cost-effectiveness

This strategy would increase the public parking supply at very little cost to the City, and therefore is a very cost-effective way to create a moderate amount of shared public parking.

STRATEGY #12: IMPLEMENT AN EMPLOYEE PARKING PROGRAM.

Description

Parking for downtown Livermore employees is a critical issue given the number of workers present and the long hours their vehicles are parked in the area. Employees often park in prime spaces on-street, limiting parking for customers and visitors and increasing the number of vehicles circling for parking.

An employee parking permit (EPP) program operates by designating priority parking within a geographic area for employers or employees. Designated parking areas for employees can be located in off-street facilities, with permit holders eligible to park in those spaces during a specific time period exempt from posted regulations. Ownership of a permit, however, does not guarantee the availability of a parking space. For this reason it is important not to sell permits far in excess of parking supply.

Many conventional EPP programs do not prohibit non-employee parking, but allow the general public to park within the area, subject to posted parking restrictions. Figure 3-18 provides an example of parking permit signs.

Figure 3-18 Permit Parking Signs in Culver City (left) and Washington, D.C. (right)

Source: Culver City, culvercity.org (left) and Ramon Estrada, http://ramonestradaanc2b09.blogspot.com, (right)

The ultimate intent of the program is to make parking more convenient and accessible for all users—residents, visitors, and commuters—by providing a designated and concentrated parking area for employees. EPP programs offer a convenient parking option, thereby reducing the need for an employee to "hunt" for a parking space, move their vehicle to avoid parking restrictions, or occupy "prime" on-street spaces intended for customers. A consistent parking option for employees also makes it easier for employers to attract and retain employees. By managing employee parking, EPP programs can ensure that high demand parking areas are not overwhelmed by employees.

Strong employer support is a crucial component to any successful EPP program. Employers are needed to inform their employees about the program, facilitate participation, and ensure that the program guidelines are adhered to. Employers must also work with City staff to provide feedback and modify the program as needed. It is also important to note that this strategy will be much more effective if enforcement of time limits is enhanced, providing employees with more of an incentive to seek out spaces that allow for longer term parking.

Potential Program Guidelines

All employees and employers in downtown Livermore would be eligible for one EPP per employee. As is done in other jurisdictions, it is recommended that employers apply for permits on behalf of their employees. As part of the application, employers would supply proof of employment, along with a copy of photo identification and vehicle registration information for each employee (information employers may already collect). Permit costs would remain affordable to encourage their use—approximately $30–40 for an annual pass (or $.12–$.16 per work day[45]).

[45] Assumes 255 work days.

The City could then designate specific off-street lots or garages for employee parking only and sell permits that would allow employees only during specific hours. Potential locations include a portion of the Livermore Village lot farthest from First Street, a portion of the public parking garage (top floor) or a portion of a new public shared lot. Enhanced safety and access improvements should be prioritized for these locations to ensure that employees feel comfortable using these facilities. Spaces should be prioritized for employee use by signing them for "employee use only" during certain hours when employees typically arrive at work.

Employees would have the option of using the permit system as a quick and convenient way of finding a space, rather than potentially wasting time circling for parking. Employees should not be required to make use of the spaces, yet if designed well, the program should incentivize its use.

Benefits

- Permits provide a consistent parking option for employees, reducing the need for an employee to "hunt" for a parking space or move their vehicle to avoid parking restrictions.
- Experience with other cities has shown that most employees will choose to pay for a permit that offers a reliable parking option over searching for free on-street parking and having to move their vehicle throughout the day.
- A convenient parking option makes it easier for employers to attract and retain employees.
- When employees park in popular on- or off-street spaces those spaces are no longer available for customers and visitors. Employee permits encourage participants to park in select areas while enhancing customer parking turnover at prime locations.

Tradeoffs

- Additional administrative costs to City
- Additional cost to employers and/or employees
- Potential resistance to use of more remote off-street lots due to safety or security concerns

Financial Impact

- Implementation of a new employee permit program would involve additional costs to the City to administer the program, including enforcement. Permit costs would generally be set at a rate to offset those administrative costs, but the City should ensure that permit rates are low enough to encourage their use. In addition to administering the program, enforcement costs should be taken into consideration when setting the permit price.

Cost-effectiveness

The cost of this program would be low to moderate compared to the other strategies, depending on the price the City sets for permits. The strategy does not increase parking supply, but would likely free up prime parking spaces that are currently being used by downtown employees parking for long periods of time. This is likely to be a very cost-effective strategy, as it could improve the availability of on-street parking spaces in the downtown core at a relatively low cost to the City.

MEDIUM-TERM (REPLACEMENT PARKING FOR LIVERMORE VILLAGE)

The following strategies would be pursued in conjunction with the redevelopment of the Livermore Village parking lot into a mixed-use area. Strategy #13 outlines the plan to build a 500-space garage on the Livermore Village site concurrent with redevelopment of the lot, and discusses the costs and potential funding sources for this project. Strategy #14 outlines the benefits and impacts of implementing demand-based pricing of curbside parking parts of the core area, with the goal of maintaining the availability of on-street parking as the Livermore Village site is developed and parking demand increases.

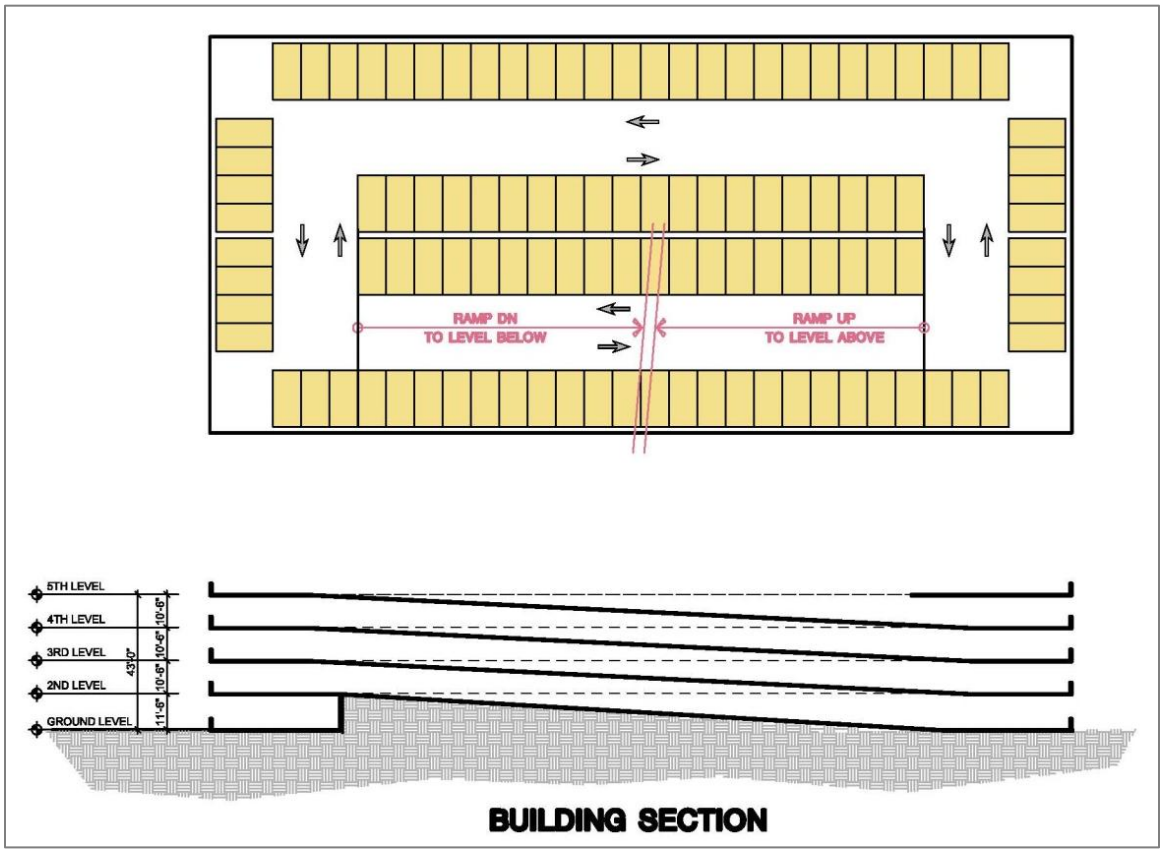
Because these strategies are tied to the redevelopment of the Livermore Village lot, there is no set time frame, except that they are proposed for implementation concurrently with the development, so as to ensure that the loss of parking in the surface lot does not affect the access to destinations in downtown Livermore over an extended period of time.

STRATEGY #13: BUILD A PUBLIC PARKING GARAGE AT THE LIVERMORE VILLAGE SITE.

The development of a 500-space public parking garage on the Livermore Village lot has been identified in the *Downtown Specific Plan* as a key strategy for increasing parking supply. This garage would replace stalls lost to redevelopment of the site, and would be built concurrent with redevelopment. The final location of the parking garage within the Livermore Village lot has yet to be determined. However, the basic footprint of a parking garage with 500 stalls would have five levels of parking (approximately 47 feet tall) and dimensions of 126 feet by 175 feet, leaving most of the existing site free for development. The public parking garage would be constructed at a capacity of 500 standard-size spaces, but the City may wish to consider converting the top floor to tandem, valet-parked spaces for employees or other long-term parkers at a later date if demand exceeds supply.

As discussed in Chapter 3, the garage should be operational before or at the same time that the rest of the existing parking lot is redeveloped, to avoid parking shortages in the downtown core. It is important to note, however, that there is currently no funding identified for building the garage, which is projected to cost $16 million, or $32,000 per space (Figure 3-20). If the garage is financed, it will cost over $2 million annually to service the debt on the garage and maintain it. Strategies #13 and #14 discuss potential funding sources. Although a developer contribution should be a part of the solution, because the new garage would primarily serve existing businesses other financing mechanisms should also be included in the overall financing plan.

Figure 3-19 Potential Layout of Parking Garage at Livermore Village Site



Benefits

- Replaces parking supply in the downtown core that will be lost during future development

Tradeoffs

- Potential underutilization of garage as people seek "front door" on-street parking or adjacent surface lots
- Limited City funding available, and requiring the developer to pay for the garage could make development prohibitively expensive
- Requires some property acquisition
- Minimum implementation period of two-years

Financial Impacts

- The project cost of developing this parking garage would be approximately $16 million, not including financing costs
- The required annual debt service would be approximately $1.9 million per year (see Figure 3-20)
- The annual operations and maintenance costs are approximately $181,000

Figure 3-20 Bond Financing Cost for 500-space Parking Garage

Item	Amount
Parking Garage Cost	$16,000,000
Semi-annual Required Revenue	$941,407
Annual Required Revenue	$1,882,815
CFD Terms	
Rate	8%
Term	25 years
Reserve and Costs	20%
Coverage	110%

Source: Willdan Financial Services, 2014

Figure 3-21 Operating Expenses for 500-space Parking Garage

Item	Per Month	Annual
Utilities		
Electricity (assumes LED)	$6,250	$75,000
Water/Sewer	$250	$3,000
Maintenance		
General	$583	$7,000
Labor	$0	$10,000
Electrical/Lighting (assumes LED)	$417	$5,000
Sweeping	$400	$5,000
Power Scrubbing	$417	$5,000
Deck Drainage	$83	$1,000
Landscaping	$333	$4,000
Plumbing	N/A	N/A
Elevator	$1,000	$12,000
Waste Removal	$167	$2,000
Pest Control	$167	$2,000
Long-term Maintenance (savings for repairs)	$4,167	$50,000
Insurance (included in City self-insurance policy)	N/A	N/A
Security/Enforcement (Livermore PD)	N/A	N/A
Management	N/A	N/A
Total	**$14,234**	**$181,000**

Source: Willdan Financial Services, 2014

Cost-effectiveness

This strategy would provide approximately 500 spaces at a cost of $16 million, or $32,000 per space. Taking into account annual debt service and operations costs for the garage, each space would cost over $4,000 per year until the debt service is retired in 25 years, versus about $1,000 per year to lease surface parking spaces. This is far less cost-effective than other strategies recommended here, such as leasing private parking spaces, but it provides a greater amount of public parking supply than any of the other strategies. Strategies for financing the garage are discussed below.

Potential Financing Strategies for Garage

The following strategies could be used to assist in financing the proposed 500-space garage. This discussion does not include a recommendation for any specific approach, but outlines several potential options, which the City may decide to pursue.

Strategies to Evaluate Further

The following strategies should be further evaluating before determining whether they are appropriate to implement.

Parking Assessment District

Under California law[46], cities can initiate the creation of assessment districts that can finance infrastructure improvements, including developing parking facilities, from revenue generated by assessments on property that benefit from the improvements. Creation of a parking assessment district would require a vote of the City council; a majority of affected property owners then must vote to support creation of the district.

Many other cities in California have parking assessment districts, typically targeted on the construction of one or more parking garages in downtown. For instance, the City of Santa Monica created the Mall Assessment District in 1986 to pay for improvements to the Third Street Promenade, including additional parking, and upgrades to the local streetscape, signage, and circulation. For the Property Tax Year (2010/2011), the assessment amounts ranged from $0.1908 per building square foot to $0.7171 per building square foot, depending on the zone. Together with a parking developer fee for buildings added after 1986 that do not provide parking, the total revenue to the city is approximately $1 million annually.

Downtown Livermore currently has approximately 982,000 square feet of building space. If the assessment amount was set at an average of $0.40 per build square foot annually, an amount that is similar to what other jurisdictions in California have charged, this would generate approximately $392,800 in annual revenue. Assuming annual debt service on the garage of $1.9 million per year, this would leave approximately $1.5 million annually for 25 years to be financed by the developer, the City, or some other source (this does not include annual operating costs).

This strategy is recommended for further study and potential implementation, although it is important to note it will not cover the full cost of the garage, and should be implemented in tandem with other strategies.

[46] Assessment districts are enabled by the California Streets and Highways Code, Division 10 and 12.

Benefits

- Can serve as revenue and security for a bond issue to construct improvements
- Helps pay for construction and maintenance of parking facilities
- Includes existing properties, which create parking demand but are exempt from an in-lieu fee or development impact fee
- Ensures support from property owners, who would have to vote to create the assessment district (if it is passed by Council)
- Supported by plurality of respondents to parking strategy opinion poll (an online poll on the project website)

Tradeoffs

- Additional administrative management costs for the City
- Additional tax burden on assessed parcels
- Requires support from a majority of property owners in the proposed district, which may be difficult to obtain

Livermore Village Developer Contribution[47]

Part of the cost of replacing public parking on the Livermore Village site could be borne by the developer of the site. The developer could make a contribution to the City to help offset a portion of the cost of providing replacement parking.

The amount of this contribution would be negotiated with the developer as part of the development agreement, and will reflect market conditions at the time the development is approved. The contribution amount is likely to only pay for a portion of the garage, which has a total cost of $16 million. If the City initially finances the new garage through a loan, the replacement parking could be constructed before the rest of development on the site begins, and the developer contribution would arrive later, helping the City to pay for the loan costs.

Livermore Village is currently projected to include 260 residential units. Covering the full cost of a 500-space garage up-front would require the developer to contribute approximately $61,500 per unit—more than is likely financially viable for any developer. A contribution of $5,000 to $10,000 per unit is more realistic, which would generate $1.3 million to $2.6 million, or about 3-6% of the total debt service for the garage.

Livermore Village is currently projected to include 260 residential units. Covering the full cost of a 500-space garage up-front would require the developer to contribute approximately $61,500 per unit—more than is likely financially viable for any developer. A contribution of $5,000 to $10,000 per unit is more realistic, which would generate $1.3 million to $2.6 million, or about 3-6% of the total debt service for the garage ($1.9 million annually for 25 years, not including $181,000 in operating and maintenance costs).

The cost of this contribution could be partially offset through transferring the City-owned land at Livermore Village to the developer at a discounted price. The City originally purchased the land

[47] The analysis below is based on a similar evaluation Nelson\Nygaard conducted for the City of Sacramento when it updated the Sacramento Zoning Code, due to the market similarities between downtown Sacramento and downtown Livermore.

using affordable housing funds in 2008 for $10,100,000[48], and property values in Livermore have increased by approximately 20% since that time, according to data from the real estate website Trulia. The City therefore holds approximately $12.1 million in land value, which could be partially or fully donated to the developer to help make the project financially feasible given the cost of the garage.

This strategy is strongly recommended for implementation, although the developer should not be required to pay the full cost of the garage, as this may render the Livermore Village project financially unfeasible.

Parking Revenues

This study does not recommend adding parking meters at this time, and they should be considered in the future only if all other strategies in this study are not effective in creating parking availability. Parking pricing is an important tool for managing parking demand and can also generate revenue to fund access and parking management programs in congested commercial areas. An analysis of the potential financial impact of parking pricing is included here for discussion purposes as one of several potential options for partial funding of a new off-street parking facility in downtown Livermore. It is important to note that community feedback has generally not been supportive of installing meters, although many people remain unfamiliar with demand-based pricing, or the use of "smart meters" that accept credit and debit card payments, which are recommended in this plan for consideration in the medium-term time frame.

Installing parking meters on-street at approximately 99 of the highest-demand spaces would generate approximately $72,800 in meter revenue (assuming a meter rate of $0.50 per hour, with meters in operation six days a week, from 9:00 a.m. to 8:00 p.m., including citation revenue). In the first year of operation, total costs (including one-time start-up costs) would exceed revenue by approximately $63,300. In subsequent years, however, annual revenue would exceed annual costs by approximately $72,800, generating a net profit for the program by the third year (i.e., offsetting original start-up costs), and continuing to be profitable into the future. Alternatively, a lower price of $0.25 per hour could be used for off-peak times (4 hours per day), yielding approximately $55,000 in net revenue annually, a reduction of about $18,000.

Although operating profit of $72,800 per year would represent a significant benefit to the City, as a potential funding source for many valuable access enhancements and parking management programs, it would provide a very limited contribution to the financing of a new off-street street parking garage, even if entirely dedicated to that purpose. Annual meter revenues of approximately $72,800 would cover less than 4% of the estimated $1.9 million annual cost of debt service (over 25-years) on the capital cost of constructing a new parking garage, leaving approximately $1.825 million per year to be financed from other sources (Note that these estimates of the debt service costs of a new parking garage do not include annual operating costs).

This strategy does not have community support for implementation in the short-term. Parking revenue could be used to assist in financing the operation of a garage if implemented in the future, but we recommend primarily evaluating parking pricing as a tool to manage parking demand and ensure availability.

Alternatively, increased enforcement of existing parking regulations (Strategy #7) could generate a source of revenue that could be used to fund a public parking garage, without parking meters.

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[48] Source: http://laserfiche.cityoflivermore.net/WebLink8/0/doc/150137/Page21.aspx

Full-time enforcement of existing regulations in downtown could generate up to $32,612 in net revenue annually, or about 1.7% of the estimated $1.9 million annual cost of debt service on construction of a new parking garage (exclusive of garage operating costs).

Enhanced Infrastructure Financing District

Under the Infrastructure Financing District Act of 1990 (Government Code §53395, et seq.), California cities can create Infrastructure Financing Districts (IFDs) to pay for regional scale public works projects, including parking facilities. IFDs can use Tax Increment Financing (TIF) to divert property tax increments to infrastructure projects that have community-wide benefits for a period of 30 years. Newly enacted Enhanced Infrastructure Financing District (EIFD) legislation will make this tool more useful to cities.

In the past, IFDs have been used infrequently, because they require a two-thirds (66.6%) vote of residents in a district to create the district, and an additional two-thirds vote to authorize bond issuance based on TIF revenue. Under SB 628, which was been approved by the state legislature and governor in September 2014, cities can create EIFDs without voter approval. Issuing bonds based on TIF revenue would still require approval of voters or property owners, but the threshold would be reduced from 66.6% to 55%. In addition to TIF, EIFDs can also use a variety of other funding sources to finance improvements, such as creating a Parking Assessment District, provided they have the required voters approval. Revenue may only be used for construction of facilities, and may not go towards maintenance and operations. EIFDs will not be able to divert property tax revenues from schools.

An important advantage of this financing tool is the ability to issue bonds for the full revenue amount up front. The City would need to determine whether the EIFD would only include the redevelopment site, or if it would also include surrounding properties that utilize the existing Livermore Village parking lot. Including existing properties would increase the amount of revenue generated, but would require the approval of far more people, and the City would need to demonstrate that these properties would benefit from the new garage.

Strategies Not Recommended

The following strategies pose greater challenges to implementation and/or lack a strong nexus between the revenue source and the parties that benefit from improved parking facilities downtown. As a result, they are not recommended for implementation or further study.

General Downtown Impact Fee

A general downtown impact fee would function similar to a citywide transportation impact fee, as described above, but would only apply to new development in downtown. Most of the same benefits and trade-offs apply, but the fee would be paid entirely by new development in downtown; in return, parking requirements would be lessened, similar to an in-lieu fee. This creates a closer nexus with the transportation demand created by new development in downtown, but also creates a greater financial burden on specific property owners, and would generate less revenue. Impact fees may also discourage downtown development if the fee rate is set too high.

In light of anticipated development of new restaurant and hotel uses in downtown Livermore, a fee of $8.80 per square foot for commercial development[49] and approximately $3,000 per new residential unit[50] would be expected to generate approximately $2.9 million over the next 10 years[51], which would cover approximately 15% of the annual debt-service costs of constructing a new public parking garage ($1.9 million over 25 years, not including $181,000 annually in operating and maintenance costs), if entirely dedicated to that purpose. Alternatively, the fee could be revised to cover only a portion of the minimum parking requirement to allow for uses that are not within close walking distance of the Livermore Village site to provide their own parking. As with other taxes and fees, there would be significant additional cost associated with building community support for a ballot measure to implement this fee.

This strategy did not receive strong support in the online opinion poll conducted for this project and significant outreach and education would be required to garner community understanding of and support for the concept if the City does move forward with implementation. In addition, the reduction or elimination of the minimum parking requirement associated with this impact fee would undermine other strategies.

Citywide Impact Fee

Local governments have been collecting impact fees for decades, with the power to exact impact fees arising from the city's police power to protect public health, safety, and welfare. Fees fund a variety of public facilities and services, including parks, schools, public art, and libraries.

In recent years, many communities throughout California are increasingly relying on transportation-specific impact fees to ensure that the costs of transportation infrastructure and services necessary to support new development are not borne disproportionately by existing residents, businesses, and/or property-owners.

Impact fees directly related to transportation are typically calculated on the projected number of p.m. peak-hour vehicle trips that a new development would generate and implemented as a dollar amount per square foot (non-residential) or per dwelling unit (residential).

Development impact fees are a widely used, well-accepted practice in California. They offer an efficient way to pay for new infrastructure, can help sustain job growth in local economies, and contribute to economic prosperity. Above all, impact fees are one of the most efficient and effective ways to create a link between new development and the impacts it will have on the community.

Furthermore, transportation impact fees offer cities a revenue stream that can be used to fund a variety of transportation improvements which can help to mitigate or "offset" transportation impacts. By law, these fees cannot simply go to a city's general fund, but must be specifically

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[49] This is based on the median development impact fee amount charged for retail developments by a selection of California cities. See the 2009 National Impact Fee study done by Duncan Associates, www.impactfees.com/publications%20pdf/2009_survey.pdf

[50] This is also based on the median impact fee charged in the study mentioned in the prior footnote.

[51] The City anticipates approximately 27,000 square feet of new restaurant use and a new 110-room hotel will be built in downtown within the next 10 years. Assuming the hotel is approximately 850,000 square feet, and that all developments pay $8.80 per square foot, this would generate approximately $985,000 in impact fees. Additionally, City staff projects approximately 665 residential units will be added downtown within 10 years. At a rate of approximately $3,000 per new unit, this would generate $1.95 million. In total, these fees would generate approximately $2.9 million in the next 10 years.

allocated to transportation projects. Fees typically range from $4 to $11 per square foot on average for non-housing land uses, and from about $2,000 to $20,000 per housing unit. California cities have used revenue from impact fees to finance:

- Additional parking or parking management programs
- Roadway and intersection improvements
- New or enhanced transit services
- New bicycle and pedestrian infrastructure
- Transportation demand management (TDM) programs

Figure 3-22 provides a summary of impact fee amounts charged in a range of California cities.

Figure 3-22 Summary of New Development Impact Fees, Selected CA Cities[52]

Land Use	Average	Median	Min	Max
Retail (per sq. ft.)	$10.35	$8.80	$0.39	$46.68
Office (per sq. ft.)	$6.48	$4.54	$0.15	$22.19
Industrial (per sq. ft.)	$3.59	$2.76	$0.10	$12.61
Single-family (per unit)	$6,197	$4,612	$105	$26,014
Multi-family (per unit)	$4,059	$2,934	$63	$16,934

The City of Livermore already charges a traffic impact fee to fund citywide transportation projects, so any impact fee dedicated to a downtown parking garage would be additional. There is also a Tri-Valley Transportation Development Fee that applies to new development. As a result, there may be limited capacity to increase the existing transportation impact fees to fund parking projects. If applied to new development citywide, an increase in the City's traffic impact fee to pay for downtown parking of about 25% may generate $5-10 million in revenue over 10 years[53], covering about 30–50% of the $1.9 million annual debt service costs (exclusive of operating costs) associated with constructing a new public parking garage. To increase the fee, the City would need to demonstrate a nexus between growth in other areas of Livermore and increased demand for parking downtown. Results of the downtown parking survey administered for this plan indicate that about 61% of visitors to downtown Livermore are residents of the City who live outside downtown. By setting the fee at a level that reflects the relatively high parking usage by residents from non-downtown areas of Livermore, a citywide impact fee would have some nexus with the source of parking demand in downtown.

We do not recommend pursuing this strategy for financing a public parking garage, however, due to the disproportionate burden it would put on new projects built in other areas of the city, which account for only a small portion of the demand generated at the garage compared to demand from residents of existing housing units.

[52] The primary source of this information is the 2009 National Impact Fee study done by Duncan Associates, www.impactfees.com/publications%20pdf/2009_survey.pdf

[53] The Livermore Fiscal Year 2014-15 Financial Plan projects average Traffic Impact Fees of 3.32 million in FY 14 through FY 16. If increased by 25%, the fee would therefore generate approximately an additional $830,000 per year, or $8.3 million over 10 years, to be used for financing the public parking garage. However, given the unpredictable nature of development, the revenue has been presented as a range of $5-10 million over 10 years.

Benefits

- Provides a valuable revenue source to mitigate potential transportation impacts in downtown Livermore by financing parking programs.
- Impact fees can finance the construction of public parking, which is generally more flexible and better utilized than reserved private parking lots.

Tradeoffs

- This fee would fall under the purview of the California Mitigation Fee Act and would require an additional nexus study, which can be time and resource intensive.
- The City of Livermore already charges a traffic impact fee. The development community will likely resist an additional impact fee, as it would increase development costs. Fees are often passed on to future tenants
- Does not apply to demand from existing development.
- A citywide fee places a burden on development that does not actually generate significant transportation demand in downtown, and thus may not be as fair or as well received as a downtown fee. As a result, gaining sufficient support for a citywide fee may be a considerable obstacle.
- Implementation of a development impact fee would involve staff costs and likely consultant fees associated with conducting a nexus study. Once implemented, however, it would increase the amount of revenue available for parking management.
- As with other taxes and fees, there would be significant additional cost associated with building community support for a ballot measure to implement this fee.

Increased Business License Renewal Tax

Businesses in California are required to pay an annual license renewal fee based on a percentage of their gross receipts. Adjusting these rates for all businesses, or solely for businesses in downtown, could provide an additional source of income to finance a public parking garage. If applied citywide, the increased business license renewal tax could generate more revenue than an increase that only applies to downtown, but a citywide increase has a weaker nexus to the benefits it provides than a downtown-only increase would have.

The exact amount of revenue generated by an increased business license renewal tax would depend on the scale of the increase, and on whether it applies to all businesses, or only those within downtown. In addition, this strategy should not be implemented until the City enforces its license tax on all eligible vendors (e.g. street salespersons). As with other taxes and fees, there would be significant additional cost associated with building community support for a ballot measure to implement this tax increase.

Citywide Sales Tax Increase

Alameda County currently has a 9% sales tax, which generated approximately $700,000 in revenue from downtown businesses in 2013. The majority of this sales tax goes to the State, but any increases the City approves may be kept by the City for its own use.[54] By increasing the sales tax citywide by 0.25% (2.5 cents for every dollar spent at businesses), the City could generate

[54] For example, the City of Albany has a sales tax of 9.5%

substantial additional funds. However, state law prohibits a sales tax to only be applied to a particular district and must be instead levied on the entire city.[55] As such, funds from this increase would need to improve parking and mobility across Livermore, with a portion of the funds being spent downtown. This would require two-thirds majority support of the city's voters. As with other taxes and fees, there would be significant additional cost associated with building community support for a ballot measure to implement this tax increase.

Citywide Parcel Tax

Similarly to the citywide sales tax increase, a citywide parcel tax can be levied to improve mobility and parking across the city. A parcel tax is a form of property tax assessed on each parcel of real estate, based on characteristics of the property, instead of the assessed value. For instance, the tax can be set by the single-family home, by acre, or by square foot of developed space. Approval of a parcel tax requires two-thirds voter approval. Parcel tax revenues can be used for any type of spending, including constructing public projects such as a public parking garage.

Livermore currently has a parcel tax of $138 per parcel, with exemptions for citizens aged over 65, to support schools (27,785 parcels are included in the tax). This tax was expected to generate $3.8 million in revenue in fiscal year 2013-14.

The exact form of a citywide parcel tax could vary considerably, but a flat parcel tax of $35 per property, excluding people over the age of 65, could generate close to $1 million annually (accounting for a gradual growth in the number of parcels), or about 53% of the total debt service for the garage ($1.9 million annually for 25 years, not including $181,000 in operating and maintenance costs). This represents a significant contribution towards the cost of building a garage. As with other taxes and fees, though, there would be significant additional cost associated with building community support for a ballot measure to implement this tax.

STRATEGY #14: CONSIDER DEMAND-BASED PRICING OF CURB PARKING IN HIGH DEMAND LOCATIONS TO MAINTAIN AVAILABILITY.

Description

The rate of utilization of on-street parking spaces in prime locations at any given time depends on *demand* for access to the area by motor vehicle, the *supply* of parking spaces available, any *restrictions* on the use of spaces (i.e. regulations, such as time limits and load zone restrictions), and no less importantly the *price* charged.

This recommendation proposes initiating a program of demand-based pricing of parking in the downtown core, with a four-part strategy to ensure the maintenance of on-street parking availability as the City continues to grow and change: (1) establish a policy goal, or target for the availability (or occupancy) of on-street parking on blocks throughout downtown Livermore, (2) install smart parking meters and initiate variable, demand-based pricing for curbside parking in high demand areas, (3) commit to monitor occupancy and adjust meter rates and regulations to meet established targets, and (4) dedicate meter revenues to a Downtown Access Fund.

[55] http://www.boe.ca.gov/sutax/newloctax.htm

Existing Conditions

Like many Bay Area communities, Livermore permits use of prime curbside parking spaces free of charge, instead using time limits as a primary means of managing public on-street parking. As a result, curbside parking is regularly filled to capacity on First Street during peak periods on both weekdays and weekends, causing motorists to search and circle in a wider area for available parking. With no charge for parking, demand exceeds the supply of curbside parking spaces on the busiest portion of First Street—the six blocks from M Street to Maple Street – which is the highest-demand area of the downtown core. Parking occupancy in this area during the peak hour reached 100% capacity on both days observed.

This congestion of on-street parking in prime locations is perceived to be a major issue from the perspective of motorists/downtown visitors. In both the online and in-person downtown parking surveys conducted for this study, the difficulty of finding on-street parking was the most commonly listed concern.

However, it is important to note that community opposition to parking pricing was also the strongest of all the considered strategies. In evaluating these measures, it is strongly recommended that the City carefully weigh the potential benefits of parking pricing to the concerns and desires of the community. Demand-based parking pricing is a direct, efficient and cost-effective means of addressing concerns in finding on-street parking, but should ideally be implemented if the community endorses the measure.

Detailed Description

In the medium-term, as the Livermore Village Garage and adjacent public parking lot are displaced, on-street parking availability may be impacted throughout downtown and the duration of peak periods—those times when little to no on-street parking spaces are available—may be extended. As competition for limited curbside parking increases over time, the can City deploy smart parking meters with demand-based pricing to maintain the availability of curbside parking in high demand areas.

This recommendation proposes initiating a program of demand-based parking pricing in the downtown core, with a four-part strategy to ensure the maintenance of on-street parking availability as the City continues to grow and change:

1. **Establish targets:** In the short-term, the City should establish a policy goal, or target for the availability (or, conversely for the occupancy) of on-street parking on blocks throughout downtown Livermore. Achieving a commonly used occupancy target of 85%, would mean that—on average—one or two curbside parking spaces on each block-face in the area would remain open and available for use by incoming vehicles, even during periods of peak demand.
2. **Install meters with demand-based rates:** In the medium-term, on all block-faces for which comprehensive on-street parking utilization surveys indicate that parking occupancy consistently exceeds target rates, the City can install smart parking meters and initiate variable, demand-based charging for the use of curbside parking. At the outset, under current conditions, the only areas appropriate for meter-based pricing would be First Street, between M and Maple. However, by the medium-term, when this recommendation would take effect, the area with utilization in excess of target rates and thus appropriate for pricing, may have expanded.

a. **Meters:** As this is a medium-term strategy, the City will need to evaluate technology and vendor options for the installation and operation of meters closer to the date of implementation. In doing so, the City should consider a few criteria focused on convenience for the motorist in the selection of meters/vendors (there are many vendors who currently offer products meeting these criteria:

   i. User-friendly smart meters should accept payment by credit or debit card (in addition to cash or coins).

   ii. The City may work with meter vendors, or separately to accept payment by smart/mobile phone.

   iii. To reduce cost and maximize the capacity of on-street parking, the City should consider installing a limited number of multi-space meters (one or two on each block face), with a "pay and display" or "pay by space" model, as opposed to the conventional deployment of one parking meter for each and every parking space.

b. **Hours and Rates:** One of the best ways to balance parking supply and demand and generate turnover is with pricing structures that take into account *actual demand* for a parking space. Instituting demand-based pricing for parking means charging a higher rate per hour, when and where demand is highest with lower rates in locations and at times when parking demand is lowest.

   For each block face, the right price would be the price that will result in target occupancy rates (typically 85% for on-street spaces). This means that pricing need not be uniform: the most desirable spaces may need higher prices, while less convenient lots are less expensive.

   In practice, this would mean establishing a two or three-tiered rate structure, with the highest rate (perhaps $1.50 per hour) charged for parking during the peak period (including weekend evenings) on block-faces with the highest utilization (e.g. First Street between L and Maple), and lower rates of $0.50–$1.00 per hour on less congested block-faces on surrounding streets and/or during off-peak periods. To encourage turnover pricing can also vary based on vehicle duration of stay with a higher rate per hour charged the longer one stays.

   Specific hours and pricing would need to be determined at a future date based on relevant parking occupancy data. However, initial on-street rates would be low (with a rate of $.50 per hour) and then adjusted based on how parking patterns change over time if needed.

3. **Monitor and adjust:** Under the recommended approach, the City would commit to monitor the utilization of parking spaces within the Downtown core area on an annual basis and adjust meter rates and regulations, as necessary to meet the established availability targets. This means, for example that on block faces where observed peak period occupancy drops significantly below the target rate (for example, down to 50–60% of spaces full, where the City's adopted target is 80–90%), the City would reduce rates by $0.25 to $0.50 per hour. Conversely, where observed peak period occupancy continues to exceed City targets, even six months after meter installation, the City would increase the hourly rate by a similar amount.
4. **Dedicate meter revenue to local access:** The primary goal of a smart parking pricing program is to enhance the ease and convenience of access to downtown; not to maximize revenue. To ensure merchant and public support for parking pricing, any

meter and/or fine revenue collected in excess of program costs should be dedicated to a Downtown Access Fund, rather than going to the City's General Fund. Such a fund could be used to finance projects and programs that expand the public parking supply, finance the meters themselves (e.g., through revenue bonds or a "build-operate-transfer" financing agreement with a vendors), and enhance multimodal access to downtown through pedestrian and bicycle infrastructure and amenities, sidewalk and streetscape improvements, transportation demand management programs, wayfinding and signage, additional parking enforcement, valet parking services during peak periods, outreach related to parking reforms, the Employee Parking Program, and/or minor contribution to the financing of a new off-street parking facility (see Strategy #13, Livermore Village Garage).

5. **Business validation:** As an option, parking pricing can include a validation system if desired by merchants and the community in which businesses cover the cost of patrons' parking costs. This may be effective in incentivizing shoppers to frequent businesses, but may undermine the ability of parking pricing to create sufficient on-street availability.

By treating parking like any other scarce commodity, and requiring motorists to directly pay for use of a space, a jurisdiction can establish the "market value" for each parking space and adjust those prices depending on the level of demand. Just as hotel room rates increase or decrease based on availability, demand-based pricing for parking seeks to increase prices when and where demand is highest and reduce prices when and where demand is lowest. New advances in parking meter technology, such as wireless "smart" meters, make demand-based pricing a feasible option and can dramatically increase motorist convenience through new payment technologies.

Benefits

In summary, the primary goal of demand-based pricing is to make it as easy and convenient as possible to find and pay for a parking space. By setting specific availability targets and adjusting pricing, demand can be effectively managed so that when a motorist chooses to park, they can do so without circling the block or searching aimlessly. Demand-based pricing can result in the following benefits:

- Consistent availability and ease in finding a parking space, especially near local businesses and ground floor retail uses
- Flexible time limits, thereby eliminating the need to move a vehicle to avoid time restrictions
- Convenient payment methods that eliminate the need to "plug the meter" and make it easier to pay for parking and avoid parking tickets (see sidebar on meters)
- Incentivizes long-term parkers and daily commuters to park in off-street lots
- Reduces search time for parking, resulting in less local congestion and vehicle emissions
- Reduces illegal parking and improves safety and street operations
- Distributes short-term parking demand throughout the downtown area, taking advantage of on-street parking capacity on side-streets and areas surrounding the downtown core and reducing some demand for public expenditure on additional off-street parking facilities.
- Provides a more equitable and efficient way to account for the real costs to a city for providing parking
- Offers a potential revenue stream for the City that should be reinvested in local transportation and mobility improvements

Potential Tradeoffs

While demand-based pricing and the removal of time limits have proven effective, there are some potential tradeoffs that the City may wish to consider when evaluating this recommendation. These include:

- **Community Opposition:** Demand-based pricing would represent a significant change in the City's approach to parking management and, as noted above, was a highly unpopular strategy according to feedback received in the public surveys. The City should carefully consider the community's response to parking pricing against the potential benefits it brings when determining if implementation is feasible.
- **Implementation and management costs:** The City would have to make an investment to implement and manage a demand-based pricing program. In addition to the capital infrastructure required, the City will likely need to dedicate staff resources to program management, at least in the initial stages of implementation. While these costs are real, other jurisdictions have shown that such financial outlays are well worth the investment, resulting in dramatic improvements to the areas in which they have been applied. Furthermore, revenue generated from a demand-based pricing program can potentially be used to finance start-up capital and operating costs.
- **Success can take time:** Demand-based pricing may take time to fully realize its positive effects, as it is unlikely that the initial meter rates will be the exact prices need to meet the target occupancy rates. It may take a few additional price adjustments (based on additional occupancy analyses) to find the right prices for the different levels of demand throughout the year. The City should be prepared for ongoing monitoring and adjustments, and establish specific processes by which those adjustments are made to ensure consistency and transparency.

Legal Basis for Setting Meter Rates

The California Vehicle Code (CVC Sec. 200258) allows local jurisdictions to set parking meter prices at fair market rates necessary to achieve 85% occupancy. California case law authorizes local jurisdictions to enact parking meter ordinances with fair market rates that "may…justify a fee system intended and calculated to hasten the departure of parked vehicles in congested areas, as well as to defray the cost of installation and supervision."[56] California case law has also recognized that parking meter fees are for the purpose of regulating and mitigating traffic and parking congestion in public streets, *and are not a tax for revenue purposes.*[57]

Financial Impacts

Parking pricing is an important tool for managing parking demand and can also generate revenue to fund access and parking management programs in congested commercial areas. Installing parking meters would require a subsidy in the first year of operation, but would generate modest net revenues in subsequent years, which could be used for downtown improvements.

[56] DeAryan v. City of San Diego, 75 CA2d pp 292, 296, 1946.

[57] Ibid.

Parking meters would be most effective if installed at 99 of the highest-demand spaces along First Street from L to Maple Streets. Initially, the lowest average hourly rate that would achieve increased parking availability would be set at $0.50 per hour, and parking meters would be in operation six days a week, from 9 a.m. through 8 p.m. Initial average parking occupancy is assumed to be 75% (currently, downtown core spaces average 80% occupancy on weekdays and 85% on Saturdays). Parking meter citations are also assumed to be an initial rate of $53. Based on a very preliminary estimate of demand and comparison to other cities that have implemented meters – an analysis that would need to be further refined before implementing a meter program – annual meter revenue is estimated to be approximately $113,000. With full-time enforcement conducted at the rate assumed for enforcement of time limits alone, citations would generate approximately $91,000 in gross annual revenue (an increase of about $5,000 over the revenue from time limit enforcement alone); part-time enforcement would generate about $25,500 annually (an increase of about $1,500 over the revenue from time limit enforcement alone).

As an example, if the City chooses a full-time in-house enforcement approach to accompany meter installation, ongoing annual operations and maintenance costs, including City staff and enforcement costs, are projected to cost approximately $124,700 annually. One-time start-up costs, including the cost of the meter units themselves as well as marketing and training, and enforcement equipment, are anticipated to be approximately $136,100.

In the first year of operation, total costs (including one-time start-up costs) would exceed revenue by approximately $56,700. In subsequent years, annual revenue would exceed annual cost at a rate of $79,300 per year. Over a 10-year period, meters could generate net revenue of approximately $906,500. See Figure 3-23. Alternatively, a lower price of $0.25 per hour could be used for off-peak times (4 hours per day), yielding approximately $61,000 in net revenue annually, a reduction of about $18,000.

Figure 3-23 Meter Costs & Revenues (Assumes Full-Time, In-House Enforcement)

Line Item	Year 1	Year 2	Year 3	Year 4	Year 5
Meter + Citation Revenue	$204,094	$204,094	$204,094	$204,094	$204,094
Costs	$260,834	$124,749	$124,749	$124,749	$124,749
Annual Net Revenue (Cost)	($56,740)	$79,345	$79,345	$79,345	$79,345

Note: Assumes meter enforcement replaces time limit enforcement. Assumes $10,000 annually in police department staff overtime to administer the meter program, in addition to the $10,000 in police overtime assumed for supervision of enforcement.

Were meters and their associated enforcement revenues and costs to be introduced simultaneously with increased time limit enforcement, all options would require operating subsidies during the first year of operation. Assuming that the meter rate ($0.50), supply of meters (99), and citation fees ($53 for meter citations) remained constant, all options would generate net revenues in the second year, and in subsequent years.

Although potential net profit of $79,300 per year (after the first year) would represent a significant benefit to the City and a potential funding source for many valuable access enhancements and parking management programs, it would provide a very limited contribution to the financing of a new off-street street parking garage, even if entirely dedicated to that purpose.

Cost-effectiveness

The potential demand management effect of initiating demand-based pricing for on-street parking in the core area of downtown Livermore and associated benefits (including most importantly improved access to the area by motor vehicle), along with its potential to generate funding for other access programs, make this recommendation highly cost-effective. Nevertheless, additional planning and outreach are necessary to build awareness of the potential impacts of this strategy and to develop an appropriate program design and approach for implementation downtown Livermore.

PARKING STRATEGIES NOT PURSUED

Several strategies considered during the development of this report were not pursued further due to the lack of support from the community at workshops, in the downtown parking surveys, and in a separate online opinion poll that asked respondents to evaluate potential strategies (which was available on the project website).

- **Pave current dirt lot (former Lucky Supermarket site).** This strategy would have entailed paving the existing unpaved dirt lot (formerly the site of a Lucky Supermarket) adjacent to the existing Livermore Village parking lot. This lot is not an official public parking area, but in practice it is already used as an overflow parking area during peak periods, and paving the lot and adding lighting would improve the experience of using the lot. However, because this lot is scheduled for redevelopment within the next 3–5 years, it would not be cost-effective to pave it in the interim. Although some community members expressed support for paving the lot, there was not strong support overall.
- **Fee on new businesses that occupy existing buildings.** This strategy would entail charging a fee for new businesses that open in existing buildings in downtown Livermore. Similar to a parking impact fee on new development, this fee would be used to offset the new transportation demand created by new uses. However, there was not support in the community for this measure.
- **License Plate Recognition Parking Enforcement.** License plate recognition (LPR) enforcement is an increasingly prevalent enforcement practice because it offers the potential to reducing staff and labor costs, resulting in long-term savings. Public feedback on LPR in regards to paid parking was not supportive, however, due to concerns about privacy.

APPENDIX

Appendix A: Summary of Results of Downtown Parking Survey

Appendix B: Summary of Results of Parking Strategy Opinion Poll

APPENDIX A — SUMMARY OF RESULTS OF DOWNTOWN PARKING SURVEY

A downtown parking survey was conducted in person during public outreach and online via the project website, ParkDTL.com. Survey responses were received from December 2013 to April 2014. A shorter version of the survey received 510 responses, and a longer version of the survey received 426 responses. Most of the results of the survey (combining the short and long version) are included in Chapter 1: Existing Conditions of the Downtown Parking Management Study. The results of several additional questions, which were not included in the main report, are included below. A copy of the survey (both short and long versions) is also included.

Figure 1 **What time did you arrive in Downtown Livermore today (or most recent trip)?**

Arrival time	Business owner	Employee (outside downtown)	Employee downtown	Resident (downtown/ adjacent)	Resident (non-downtown)	Visitor
Before 8 a.m.	6		3	1	5	
8 a.m. – 10 a.m.	11		13	1	13	
10 a.m. – 12 p.m.	8	3	10	12	48	2
12 p.m. – 2 p.m.	3	3	1	14	46	5
2 p.m. – 4 p.m.	1	1	2	4	38	3
4 p.m. – 6 p.m.	2	4	5	22	69	
6 p.m. – 8 p.m.				12	42	2
After 8 p.m.				1	5	

Figure 2 **What day of the week was it today (or most recent trip) when you parked in Downtown Livermore?**

Day	Business owner	Employee (outside downtown)	Employee downtown	Resident (downtown/ adjacent)	Resident (non-downtown)	Visitor
Monday	3		7	15	32	1
Tuesday	4	7	8	13	70	4
Wednesday	4	8	6	22	86	2
Thursday	24	4	27	44	130	7
Friday	10	3	12	15	69	7
Saturday	4	8	5	36	153	16
Sunday	2	2	1	13	42	6

Figure 3 **Were you attending a special event in Downtown Livermore today (or most recent trip)?**

Response	Business owner	Employee (outside downtown)	Employee downtown	Resident (downtown/ adjacent)	Resident (non-downtown)	Visitor
Yes		1		7	28	3
No	31	11	34	60	238	9

Figure 4 **I would describe enforcement of on-street parking regulations as:**

Response	Business owner	Employee (outside downtown)	Employee downtown	Resident (downtown /adjacent)	Resident (non-downtown)	Visitor
Fair and consistent	2	1	3	18	45	1
Inconsistent	12	1	9	7	27	1
Non-existent	10	2	8	6	34	4
No opinion	5	8	14	36	158	5

Figure 5 **At any point during your time in Downtown Livermore today (or most recent trip) did you relocate your vehicle because of the posted parking time limits?**

Response	Business owner	Employee (outside downtown)	Employee downtown	Resident (downtown/ adjacent)	Resident (non-downtown)	Visitor
Yes	5		2	3	6	
No	24	12	32	64	258	11

Figure 6 **How many times did you move your vehicle to avoid the posted parking time limits?**

Times Moved	Business owner	Employee (outside downtown)	Employee downtown	Resident (downtown/ adjacent)	Resident (non-downtown)	Visitor
Once	4		1	3	5	
Twice					1	
Three times	1					
Four or more times			1			

Figure 7 What is your age group?

Age	Business owner	Employee (outside downtown)	Employee downtown	Resident (downtown/ adjacent)	Resident (non-downtown)	Visitor
Under 18		1	1			
18-24			5	4	8	
25-34	3	5	18	32	72	6
35-44	11	5	9	36	87	8
45-54	13	13	14	35	160	12
55-64	16	6	10	30	137	11
65-74	5		6	12	80	3
75+			1	3	13	

Figure 8 What is your gender?

Gender	Business owner	Employee (outside downtown)	Employee downtown	Resident (downtown/ adjacent)	Resident (non-downtown)	Visitor
Male	19	9	20	44	171	6
Female	30	21	43	107	384	33

Figure 9 What is your ZIP code?

Zip Code	Responses
94550	539
94551	238
All others	65

Figure 10 Travel mode to downtown Livermore

Travel mode	Business owner	Employee (outside downtown)	Employee downtown	Resident (downtown/ adjacent)	Resident (non-downtown)	Visitor
Drove alone	25	8	31	26	156	10
Carpooled	5	3	1	15	94	2
Walked	1	1		28	7	
Biked			1	1	1	
Took a bus/shuttle					1	
All others						

Figure 11 Short Version of Downtown Parking Survey

PARK DOWNTOWN LIVERMORE

PARKING SURVEY

Help the City of Livermore improve parking conditions in downtown! **All information will be completely confidential and for internal purposes only.**

Please return this survey to Livermore Downtown Inc. at 22 S. L Street or Livermore City Hall. Or, take the survey online at **www.parkdtl.com**. For more information, please contact:
Cheri Sheets, City of Livermore
(925) 960-4000

1. Select the category that best describes you. I am a…
   - ☐ a. Business owner in downtown
   - ☐ b. Employee working in downtown
   - ☐ c. Resident of Livermore (downtown or adjacent neighborhood)
   - ☐ d. Resident of Livermore (non-downtown)
   - ☐ e. Visitor to Livermore
2. What was the purpose of your trip to Downtown Livermore today (or most recent trip)? (Select all that apply)
   - ☐ a. Go to work (if you work in downtown)
   - ☐ b. Go home (if you live in downtown)
   - ☐ c. Make a delivery (work delivery)
   - ☐ d. Personal errand (office visit, medical appt., etc.)
   - ☐ e. Shopping
   - ☐ f. Eat/drink
   - ☐ g. Go to movie/theater
   - ☐ h. Commute via the ACE train
   - ☐ i. Go to school/school pick-up
   - ☐ j. Recreation/tourism/special event
   - ☐ k. Other: _____
3. Where did you park in downtown today (or most recent trip)?
   - ☐ a. On First Street (between L Street and Railroad Avenue/Maple Street)
   - ☐ b. On First Street (anywhere else along First Street)
   - ☐ c. On-street (any street other than First Street)
   - ☐ d. Railroad Avenue parking structure
   - ☐ e. Off-street (any other lot or garage)
4. What day of the week was it when you parked in Downtown Livermore on your most recent trip?
   - ☐ a. Monday
   - ☐ b. Tuesday
   - ☐ c. Wednesday
   - ☐ d. Thursday
   - ☐ e. Friday
   - ☐ f. Saturday
   - ☐ g. Sunday
5. I find parking in Downtown Livermore to be:
   - ☐ a. Convenient and easy to find
   - ☐ b. Relatively easy to find
   - ☐ c. Inconvenient and difficult to find, but I still come to downtown
   - ☐ d. A deterrent to coming downtown
6. If <u>on-street</u> parking is not available in front of my destination, I will:
   - ☐ a. Circle the block until I find a space
   - ☐ b. Park in an on-street space a few blocks away and walk to my destination
   - ☐ c. Park in a nearby off-street lot and walk to my destination
   - ☐ d. Leave downtown and go elsewhere

OVER ▶

7. Please indicate your experience with off-street parking (lots or garage).
   - ☐ a. Off-street parking is my first choice because it is easy to find and conveniently located throughout downtown
   - ☐ b. I only park in off-street locations as a last resort when all on-street parking is full
   - ☐ c. I would park in an off-street lot, but I am not sure which lots are available for me and I am afraid of getting a ticket
   - ☐ d. I would never park in an off-street lot or garage

8. What are the biggest parking challenges in Downtown Livermore? Please select your top FOUR.
   - ☐ a. Available on-street parking is difficult to find
   - ☐ b. Available off-street parking is difficult to find
   - ☐ c. Parking signage or wayfinding is confusing
   - ☐ d. I don't know where off-street lots or the garage are located
   - ☐ e. The time limits are not long enough
   - ☐ f. The time limits are too long
   - ☐ g. The lots/garage are too far away
   - ☐ h. I do not feel safe walking to/from the lots/garage
   - ☐ i. I cannot park in a lot because I am afraid I will get a ticket or my vehicle will get towed
   - ☐ j. Non-resident vehicles parking in my neighborhood
   - ☐ k. Not enough on-street loading zones
   - ☐ l. Parking lots are unevenly distributed across downtown
   - ☐ m. Other: _____

PARK DOWNTOWN LIVERMORE

9. Where do you live?
   - ☐ a. I live on (e.g. First St.):_____
   - ☐ b. My closest cross street is (e.g. Second Ave.): _____
   - ☐ c. Zip Code: _____

10. What is your age group?
    - ☐ a. Less than 18
    - ☐ b. 18-24
    - ☐ c. 25-34
    - ☐ d. 35-44
    - ☐ e. 45-54
    - ☐ f. 55-64
    - ☐ g. 65-74
    - ☐ h. 75+

11. What is your gender?
    - ☐ a. Male ☐ b. Female

12. If you would like to be entered in a drawing for a downtown gift basket ($500 value), please provide an email address (OPTIONAL):

_____

Thanks for your feedback!

LEARN MORE ON OUR NEW WEBSITE

Scan the QR code or visit our website http://parkDTL.com

Figure 12 Long Version of Downtown Parking Survey

Park Downtown Livermore - Parking Survey

Help the City of Livermore improve parking conditions and address current and future needs in downtown! The survey will take 5-7 minutes to complete.

All information will be completely confidential and for internal purposes only.

If you would like to be entered in a drawing for a gift basket from downtown merchants ($500 value), please enter your email address at the end of the survey (optional).

For more information, please contact:
Cheri Sheets, City of Livermore
925-960-4000

***1. Select the category that best describes you. I am a...**

- ◯ Business owner in downtown
- ◯ Employee working in downtown
- ◯ Employee working in Livermore (outside of downtown)
- ◯ Resident of Livermore (downtown or adjacent neighborhood)
- ◯ Resident of Livermore (non-downtown)
- ◯ Visitor to Livermore

Page 1

Park Downtown Livermore - Parking Survey

***2. What was the purpose of your trip to Downtown Livermore today (or most recent trip)? (Select all that apply)**

- [ ] Go to work (if you work in Downtown)
- [ ] Go home (if you live in Downtown)
- [ ] Shopping
- [ ] Eat/drink
- [ ] Go to movie/theater
- [ ] Commute via the ACE train
- [ ] Make a delivery (work delivery)
- [ ] Personal errand (office visit, medical appt., etc.)
- [ ] Go to school/school pick-up
- [ ] Recreation/tourism/special event
- [ ] Other (please specify)

***3. What was your primary mode of travel to Downtown Livermore today (or most recent trip)?**

- ◯ Drove alone
- ◯ Carpooled
- ◯ Walked
- ◯ Biked
- ◯ Took a bus/shuttle
- ◯ Took the ACE train
- ◯ Motorcycle/scooter
- ◯ Dropped off
- ◯ Other (please specify)

Page 2

Park Downtown Livermore - Parking Survey

***4. How often do you visit Downtown Livermore?**

- ◯ 5+ times per week
- ◯ 2-4 times per week
- ◯ At least once a week
- ◯ At least once a month
- ◯ Less than once a month
- ◯ This is my first time here

***5. Where did you park in downtown today (or most recent trip)?**

- ◯ On First Street (between L Street and Railroad Avenue/Maple Street)
- ◯ On First Street (anywhere else along First Street)
- ◯ On any street other than First Street
- ◯ Railroad Avenue parking garage
- ◯ Off-street lot/garage (between First Street and Railroad Avenue)
- ◯ Off-street lot/garage (any other lot or garage)

***6. What time did you arrive in Downtown Livermore today (or most recent trip)?**

- ◯ Before 8 a.m.
- ◯ 8 a.m. – 10 a.m.
- ◯ 10 a.m. – 12 p.m.
- ◯ 12 p.m. – 2 p.m.
- ◯ 2 p.m. – 4 p.m.
- ◯ 4 p.m. – 6 p.m.
- ◯ 6 p.m. – 8 p.m.
- ◯ After 8 p.m.

Page 3

Park Downtown Livermore - Parking Survey

***7. What day of the week was it today (or most recent trip) when you parked in Downtown Livermore?**

- ◯ Monday
- ◯ Tuesday
- ◯ Wednesday
- ◯ Thursday
- ◯ Friday
- ◯ Saturday
- ◯ Sunday

***8. Were you attending a special event in Downtown Livermore today (or most recent trip)?**

- ◯ Yes
- ◯ No

***9. How long were you parked today (or most recent trip)?**

- ◯ Less than 1 hour
- ◯ 1-2 hours
- ◯ 2-4 hours
- ◯ 4-8 hours
- ◯ 8+ hours
- ◯ Overnight or for multiple nights

***10. How far did you walk from your parking space to your primary destination today (or most recent trip)?**

- ◯ Parked right outside or adjacent
- ◯ 0-1 block
- ◯ 1-2 blocks
- ◯ 2+ blocks

Page 4

Park Downtown Livermore – Parking Survey

***11. How long did you spend searching for parking in Downtown Livermore today (or most recent trip)?**

- ◯ Less than a minute
- ◯ 1-5 minutes
- ◯ 5-10 minutes
- ◯ 10-15 minutes
- ◯ More than 15 minutes

***12. I find parking in Downtown Livermore to be:**

- ◯ Convenient and easy to find
- ◯ Relatively easy to find
- ◯ Inconvenient and difficult to find, but I still come to downtown
- ◯ So inconvenient it is a deterrent to coming downtown

***13. If ON-STREET parking is not available in front of my destination, I will:**

- ◯ Circle the block until I find a space
- ◯ Park in an on-street space a few blocks away and walk to my destination
- ◯ Park in a nearby off-street lot and walk to my destination
- ◯ Leave downtown and go elsewhere

***14. Please indicate your experience with OFF-STREET parking (lots or garage).**

- ◯ Off-street parking is my first choice because it is easy to find and conveniently located throughout downtown
- ◯ I only park in off-street locations as a last resort when all on-street parking is full
- ◯ I would park in an off-street lot, but I am not sure which lots are available for me and I am afraid of getting a ticket
- ◯ I would never park in an off-street lot or garage

***15. I would describe enforcement of on-street parking regulations as:**

- ◯ Fair and consistent
- ◯ Inconsistent
- ◯ Non-existent
- ◯ No opinion

Page 5

Park Downtown Livermore – Parking Survey

***16. At any point during your time in Downtown Livermore today (or most recent trip) did you relocate your vehicle because of the posted parking time limits?**

- ◯ Yes
- ◯ No

***17. How many times did you move your vehicle to avoid the posted parking time limits?**

- ◯ Once
- ◯ Twice
- ◯ Three times
- ◯ Four or more times

18. What are your biggest parking challenges or concerns in Downtown Livermore? Please select your top FOUR.

- ☐ Parking enforcement is limited and/or inconsistent
- ☐ I do not feel safe walking to/from the lots/garage
- ☐ Available off-street parking is difficult to find
- ☐ The lots/garage are too far away
- ☐ I am afraid of getting a ticket or getting towed when parking in an off-street lot
- ☐ The time limits are too long and there is not enough turnover of parked vehicles
- ☐ Parking signage or wayfinding is confusing
- ☐ Parking lots are unevenly distributed across downtown
- ☐ Not enough on-street loading zones
- ☐ The time limits are not long enough
- ☐ Available on-street parking is difficult to find
- ☐ Downtown visitors park in my residential neighborhood
- ☐ I don't know where off-street lots or the garage are located
- ☐ Other (please specify)

Page 6

Park Downtown Livermore - Parking Survey

19. Where do you live?

I live on (e.g. First Street):

My closest cross street is (e.g. Second Avenue):

Zip Code:

20. What is your age group?

- ◯ Under 18
- ◯ 18-24
- ◯ 25-34
- ◯ 35-44
- ◯ 45-54
- ◯ 55-64
- ◯ 65-74
- ◯ 75+

21. What is your gender?

- ◯ Male
- ◯ Female

22. Please provide any additional comments about parking in Downtown Livermore.

23. If you would like to be entered in a drawing for a gift basket from downtown merchants ($500 value), please provide your email address (OPTIONAL).

Page 7

APPENDIX B — SUMMARY OF RESULTS OF PARKING STRATEGY OPINION POLL

A parking strategy opinion poll was conducted online via the project website, ParkDTL.com. The poll included a summary of each proposed strategy, including potential benefits and trade-offs. Survey responses were received from March 2014 to June 2014. The poll received 117 responses. The results of the poll are included on the following page. Several strategies included in the poll were not recommended for implementation, and therefore have not been included in the report.

Figure 13 Summary of Parking Strategy Opinion Poll (114 Responses)

Strategy #	Description of strategy	Strongly agree	Somewhat agree	Neutral	Somewhat disagree	Strongly disagree
1	Provide more passenger loading zones	26%	24%	21%	16%	13%
2	Improve lighting, design, and safety in parking lots	49%	19%	22%	9%	2%
3	Improve parking wayfinding signage	35%	35%	11%	12%	7%
4	Add more bicycle parking	27%	27%	28%	8%	10%
5	Simplify parking restrictions and extend time limits to 8 p.m.	21%	36%	18%	9%	16%
6	Encourage peak-period valet service	7%	14%	18%	27%	34%
7	Increase enforcement of parking regulations	18%	25%	19%	16%	22%
8	Encourage businesses to share parking in existing lots	35%	35%	14%	9%	7%
8	Buy/lease parking lots from businesses for public parking	20%	31%	20%	17%	12%
9	Pave 76 additional spaces adjacent to public parking garage	30%	36%	17%	12%	4%
10	Lower the optional in-lieu fee	7%	14%	58%	9%	13%
11	Encourage new buildings to provide on-site public parking	37%	36%	17%	5%	6%
12	Implement employee parking program	38%	30%	18%	4%	11%
13	Construct a parking structure on the Livermore Village site	24%	17%	20%	20%	20%
13 (potential funding)	Institute a mandatory impact fee for transportation improvements	8%	18%	35%	20%	20%
13 (potential funding)	Require new uses in buildings to provide parking or fund transportation	16%	25%	24%	20%	15%
13 (potential funding)	Property owners should vote on creation of parking assessment district	15%	27%	26%	16%	16%
14	Parking user fees (as a contingency strategy)	10%	12%	11%	15%	51%
Not recommended	Pave the dirt lot near Livermore Village	26%	23%	17%	11%	24%
Not recommended	Pave the dirt lot and combine with existing lot at Livermore Village	24%	23%	20%	11%	22%
Not recommended	Use License Plate Recognition technology for meter enforcement	6%	20%	22%	15%	37%