City of Oakland & Metropolitan Transportation Commission

DOWNTOWN OAKLAND PARKING MANAGEMENT REPORT

FINAL

June 2016

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EXECUTIVE SUMMARY

The Downtown Oakland Parking Study set out to understand existing parking conditions in downtown, in order to recommend parking management and technology strategies. This report, the *Parking Management Report*, is the fourth and final deliverable of the study. It builds upon the research and analysis conducted in previous phases, and presents a cohesive slate of recommendations for managing parking in ways that achieve the City of Oakland's overarching goals for economic growth, environmental responsibility, and social equity.

These recommendations are designed to implement, throughout the Downtown study area, the *Parking Principles for Commercial Districts* which were unanimously adopted by the Oakland City Council on October 15, 2013.[1] In addition, the recommendations in this report (e.g., the recommended methodology for adjusting parking meter rates) are designed to be easily extended citywide, so that Oakland's adopted *Parking Principles* can be fully implemented. Those principles are set forth in the section below.

Oakland's Parking Principles for Commercial Districts

"RESOLVED, that the city shall adopt the following Parking Principles as official policy to guide actions dealing with parking in commercial districts citywide:

Parking is part of a multimodal approach to developing neighborhood transportation infrastructure.

- Users of commercial districts (shoppers, employees, visitors) have varied needs for access, via private auto, transit, bicycle and foot.
- Curbside parking must be balanced with multiple complementary and competing needs, including but not limited to delivery vehicles, taxis, car share vehicles, bus stops, bicycle parking and sidewalk widening.

Parking should be actively managed to maximize efficient use of a public resource.

- Parking should be treated as an asset that helps bolster the economic vitality of neighborhood commercial areas.
- Parking should be managed to achieve an approximate 85% maximum occupancy per block so that there will always be some parking available to shoppers and visitors.

[1] Brooke A. Levin, Interim Director, PWA. *Agenda Report re: Ordinance Supporting a Flexible Parking District Program*, August 23, 2013. https://oakland.legistar.com/View.ashx?M=F&ID=2638143&GUID=B82816CE-EF18-4D2D-87D4-6017CA050209.

- Parking should be priced to achieve usage goals ("market rate pricing"); market prices may vary by area; by time of day and may be adjusted occasionally to reflect current use.
- Pricing and policies should encourage use of off-street parking lots where they are available.

Parking should be easy for customers.

- Costs, rules and penalties should be easily comprehensible.
- Fees should be payable by a variety of fare media (prepaid cards, credit cards, cash and cell phones).
- If possible, and where appropriate, time limits should be avoided in favor of market pricing.
- The role of tickets should be minimized in generating parking revenue; it should be easier to pay parking fees, which may lower the incidence of tickets.

Parking policy and regulations should help the City meet other transportation, land use and environmental goals.

- Pricing policies should encourage a "park once" approach, to minimize driving from store-to-store within a commercial district and adding to congestion and air pollution.
- Whenever possible, a portion of parking revenue should be reinvested directly back to neighborhood commercial district improvements, potentially through a mechanism such as a parking benefit district."

Progress on Implementing Oakland's Parking Principles

The City has been moving steadily forward on implementing these principles. On July 31, 2014, the City completed the $5.8 million Smart Parking Meter Upgrade Conversion Project.[2] The project replaced all 3,800 remaining single-space, coin-only parking meters in commercial districts across Oakland with new "Smart Parking Meters". The new meters are solar-powered and wirelessly networked, have backlit displays to communicate parking prices and rules, and accept payment by credit cards, debit cards, coins and pay-by-phone. By providing better information and multiple payment options (including the option of extending time remotely by phone), the new meters have made it easier for customers to pay, and easier to avoid citations.

The new meters also set the stage for implementing performance-based parking pricing (i.e., varying parking prices to achieve an occupancy goal for each block) throughout the City. The meters wirelessly communicate, in real time, information about which meters have been paid, providing most of the information needed to easily (a) estimate hour-by-hour occupancy on each block and (b) adjust parking prices by block, day of week, and time of day to meet occupancy goals. Each meter's electronic display allows easy communication of the day's parking prices and rules for that block.

On August 18, 2014, the City implemented the Montclair Village Flexible Parking Pricing Pilot Project. The project varies parking prices on each block to achieve the City's goal of an approximate 85% maximum occupancy on each block. The project created the City's first parking benefit district: 50% of any net increase in parking revenues resulting from the flexible parking

[2] http://www2.oaklandnet.com/Parking/SmartMeters/index.htm

pricing will be reinvested into improving public infrastructure within the district. Overall, the project has been well-received, and the Montclair Village Association has expressed its support for the City's continuing efforts to implement "smart" parking and related strategies that build on the Montclair flexible parking pricing pilot program.

Key Findings from Peer Review, Existing Conditions Review & Public Outreach

The recommendations in this report also draw upon lessons learned from the many cities – including San Francisco, Berkeley, Glendale, Los Angeles, Redwood City, Seattle and Ventura – which have successfully implemented performance-based parking pricing. These cities found that adopting performance-based pricing improved parking availability; reduced unnecessary vehicle miles traveled and pollution due to vehicles circling in search of underpriced curb parking; and (particularly in those cities which returned a portion of meter revenue to the neighborhoods where the revenue was collected) has maintained majority support from local merchants and residents. This study's *Technical Memorandum #1 – Context Analysis* summarizes results achieved and lessons learned from several of these cities.

In addition to the principles listed above, the recommendations in this report are also based on a major data collection and public outreach effort. These efforts included a comprehensive parking inventory, occupancy counts of on-street and City-owned off-street parking, a survey of Disabled Person Parking Placard use at on-street meters, stakeholder focus group meetings, and merchant and shopper surveys. The results of that work are described in *Technical Memorandum #2 – Existing Conditions* and *Technical Memorandum #3 – Public Outreach Summary*.

These efforts uncovered numerous important findings. For example, respondents to the merchant and shopper surveys said that:[3]

- Shoppers use a variety of modes to visit downtown Oakland.
- Merchants acknowledge the multimodal nature of how customers and employees arrive to their place of business.
- Merchants are dissatisfied with parking, perceiving high prices, inconsistent enforcement, and overly restrictive time limits.

Nelson\Nygaard's mapping and analysis of the parking inventory and occupancy data yielded several key findings.[4] These include:

- **In total, more than 20,000 parking spaces exist in the study area.** This includes 6,330 on-street spaces, 4,036 City-owned off-street spaces, 1,633 off-street spaces owned by other public agencies, and more than 9,236 privately-owned off-street spaces.
- **When the City-owned downtown parking spaces are considered *as a whole*, a parking surplus exists.** Overall parking occupancy for both on- and off-street City-owned spaces reached 79% at the peak hour of demand during the parking survey (Thursday, 12 p.m. to 1 p.m.). At this hour, more than 2,000 parking spaces remained vacant in the City-owned supply.[5]

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[3] For more information on these findings, refer to *Technical Memorandum #3 – Public Outreach Summary*, November 2015.

[4] For more information on these findings, refer to *Technical Memorandum #2 – Existing Conditions,* January 2016.

[5] Parking occupancy data for non-City owned parking lots and garages was not available from the owners of these facilities. Due to both budget limitations and the difficulty of obtaining permission to conduct occupancy counts in private facilities, non-City-owned facilities were not included in the occupancy surveys.

- **Hot spots of high parking demand and localized parking shortages exist, while other lots and garages simultaneously remain underutilized.** In core business areas such as Chinatown and City Center, finding available curb parking spots can be difficult during much of the day, both on weekdays and Saturdays. The occupancy survey results appear to confirm the findings of previous studies such as the 2014 Lake Merritt Station Area Plan, which noted frequent curb parking problems in the core of Chinatown, including merchants using curbside parking spaces for storage throughout the day; illegal parking in loading zones and no parking zones; and double parking and street loading.
- **At peak hour on Thursday, three City lots and garages (Telegraph Plaza, the 18th Street Uptown Lot, and the Franklin Plaza Garage) are either nearly or entirely full (**Figure 0-1**).** In two other City facilities (the Dalziel Garage and the Clay Street Garage), while the "reserved" parking spaces may remain mostly vacant and the *total* parking occupancy remains below 85%, "regular" parking spaces are full at the peak hour, making these facilities effectively full for the average member of the public.
- **Parking occupancy on Saturday is far lower, with overall parking occupancy reaching just 49% at the busiest hour (12 p.m. to 1 p.m.).** At this time, more than 5,000 parking spaces remain vacant in the City-owned downtown parking supply, and all of the City's off-street lots and garages have substantial excess capacity.
- **Prices for City-owned parking spaces, both on-street and off-street, are significantly below market rate.** Hourly parking rates for City-owned spaces range from $0 to $4, while rates for nearby private garages generally range from $4 to $8 per hour. Monthly permit rates for City-owned garages are also significantly below market rate. These prices make City-owned spaces the "best deal in town" and result in overcrowding of the most popular City-owned lots, garages, and on-street spaces.
- **Disabled parking placard use at metered curb spaces is a significant issue.** Surveys of disabled placard use found that on numerous blocks in downtown Oakland, motorists using disabled placards to park for free occupy most of the metered curb parking spaces most of the time. On some blocks, vehicles with disabled placards occupy more than 80% of metered curb parking spaces at the peak hours of the day. Approximately 23% of vehicles with a disabled placard remained parked at a meter for seven or more hours.

Figure 0-1 On- and Off-Street Parking Supply and Restrictions, Downtown Oakland

Based on this data analysis and in light of the $1.3 million grant recently awarded to the City by the Metropolitan Transportation Commission to implement performance-based[6] parking pricing and accompanying transportation demand management measures (TDM) in the downtown area, this report focuses on specific approaches for implementing performance-based parking pricing, returning a portion of the revenue to the blocks where it was collected, reforming off-street parking requirements, and strategic management of parking demand.

Of course, parking prices are only one lever —albeit an important one— available to help the City achieve its policy goals. Many other techniques —reallocating types of parking spaces, removing time limits, improving enforcement, providing better wayfinding, and so on— can and should play strong supporting roles. These techniques have also been evaluated for their potential to (a) help alleviate localized parking shortages and make use of nearby surpluses, and (b) help Oakland achieve its broader economic, environmental, social equity, and quality of life goals.

Summary of Recommended Strategies

This study recommends a holistic parking management strategy which integrates all aspects of parking: pricing, regulations, enforcement, and policy for both on-and off-street facilities. This Parking Management Report's recommended strategies can be summarized as follows:

To improve management of on-street parking:

1. Adopt a clear methodology to guide decision-making on how to prioritize the use of scarce curb space. In general, the following uses should be given priority (in order from highest to lowest priority) :
    i. bicyclists, pedestrians, and transit;
    ii. active freight and passenger loading, including taxi stands;
    iii. places to linger, such as parklets and sidewalk dining;
    iv. short- and long-term parking.
2. Implement performance-based parking pricing with rates that vary by time of day, day of week and by block.
3. On each block, charge for parking whenever necessary – including evenings and weekends, if needed – to achieve an approximately 85% maximum occupancy per block.
4. Use prices rather than time limits to achieve curb parking availability.
5. Use the Sensor Independent Rate Adjustment (SIRA) methodology[7] developed for San Francisco's *SFpark* performance-based parking pricing to adjust meter rates, calibrating it for Oakland's commercial districts.
6. Establish one or more parking benefit districts for the commercial and residential areas of downtown, in order to provide an institutional structure for returning a portion of curb parking revenue to the blocks where it was collected to fund neighborhood improvements.

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[6] Performance-based parking pricing is also referred to as demand-based, dynamic, or variable-rate pricing. These terms are essentially interchangeable; for consistency, this report uses the term of "performance-based."

[7] San Francisco used multiple years of occupancy data from parking sensors (supplemented by manual counts for quality assurance) and revenue data from parking meters to develop a model to estimate parking occupancy using meter payment data. This is described in greater detail in Chapter 3 of this report.

7. Return 50% of any net increase in curb parking revenues to the parking benefit district where the revenue is collected, to fund improved public infrastructure and services.
8. Give existing merchant and neighborhood organizations, such as Business Improvement Districts, a significant advisory role in deciding how to spend their local parking benefit district's revenues.
9. Establish a committee, with significant representation from people with disabilities, charged with proposing reforms to (a) improve curb parking availability for people with disabilities, and (b) reduce Disabled Placard fraud and abuse.
10. Improve parking monitoring and enforcement with integrated "smart" meters, off-street Parking Access and Revenue Control Systems, and license plate recognition (LPR) systems.
11. Evaluate emerging parking occupancy sensor technologies (in-ground and/or on-meter) and consider deploying them if and when current reliability, accuracy and cost problems are overcome.
12. Improve parking signage.

To improve management of City-owned off-street parking:

1. Refrain from subsidizing automobile storage and use: require that City-owned lots and garages in downtown be operated as an *enterprise operation*.
2. Require that this Off-Street Parking Enterprise Operation support itself solely through lot and garage user fees, without additional support from other taxpayer dollars or curb parking revenues.
3. Plan and budget for the long-term financial sustainability of this Enterprise Operation, including setting parking rates which are sufficient to provide for long-term facility maintenance, renovation, reconstruction, staffing, and pension liabilities.
4. Implement performance-based parking pricing with rates that vary by time of day, and day of week.
5. Specifically, raise or lower both monthly and hourly rates at each lot and garage as necessary to (a) eliminate wait lists and "lot full" signs, and (b) raise all funds necessary to support the Off-Street Parking Enterprise Operation.
6. Extend or contract parking lot and garage hours of operation as necessary, with the goal of ensuring that public and/or private parking is readily available within a reasonable walk of all significant destinations.
7. Reassess the number and location of reserved off-street parking spaces to ensure they are well used.
8. Improve parking signage.
9. Develop a real-time parking wayfinding system.
10. Place a moratorium on construction of any City-owned new or replacement off-street parking, until the following have been completed: (a) the now-in-progress *Downtown Specific Plan*; (b) the establishment of maximum parking requirements; and (c) a "highest and best use" analysis of city-owned lots and garages.

To manage future growth in ways that minimize traffic congestion and pollution, while improving economic vitality and social equity:

1. Remove minimum parking requirements from the Zoning Code.
2. Establish maximum parking requirements in the Zoning Code.
3. Require new developments to: (a) unbundle the cost of parking from the cost of other goods and services; (b) offer car sharing agencies the right of first refusal for a limited number of parking spaces and require that those spaces be provided to the car sharing agencies free of charge; and (c) provide free transit passes to the project's residents and/or employees.

To improve transportation choices, while minimizing congestion and pollution:

1. Assess the most cost-effective mix of investments in pedestrian, bicycle, transit, ridesharing and parking infrastructure and services for meeting Oakland's economic, environmental and social equity goals.
2. Develop transportation demand management (TDM) programs with clear, quantifiable goals for reducing parking capital and operating costs, vehicle trips and pollution.
3. Plan, fund and staff TDM programs with the same clarity of purpose, level of expertise and seriousness normally accorded to a parking garage construction project.
4. Use a portion of parking revenues to fund TDM programs, focusing particularly on helping commuters leave their cars at home, in order to free up more space in City-owned garages for high-priority, high-revenue hourly customer parking.
5. Establish deep-discount group transit pass programs for both existing and future residents and employees.
6. Encourage and enforce compliance with California's parking cash-out law.
7. Establish a Transportation Management Association for downtown Oakland, to improve traveler information about, marketing of, and employer participation in programs and services regarding walking, bicycling, ridesharing and transit.

Fully implementing Oakland's Parking Principles and making cost-effective investments in improving transportation choices can help Oakland make real progress towards its economic, environmental, and social equity goals. Performance-based parking pricing has been shown to be one of the single most effective ways to improve parking availability for customers, reduce double parking and circling in search of underpriced curb parking, and thereby to reduce unnecessary frustration, vehicle miles traveled, wasted gasoline, and pollution. Better parking management – in particular, ending below-market rate parking pricing, and the judicious use of a portion of parking revenues to fund better transportation choices – can also significantly increase walking, bicycling and transit trips, which translates directly to reductions in vehicle use and the improved vitality and livability of commercial districts and adjacent neighborhoods.

Managing parking with social equity goals in mind can also reduce inequality. On average, low-income families own fewer cars and drive less than the average family. They rely more heavily on walking, bicycling, and transit. Wealthy families own more cars, drive more, and park more often. Parking management policies that remove public subsidies for automobile parking can therefore increase social equity. For example, removing minimum parking requirements increases housing

affordability. Similarly, using a share of curb parking revenues to fund free transit passes can help low income families, who often cannot afford an automobile, meet their daily needs.

Finally, but not least, effective parking management makes convenient parking readily available on every block, resulting in positive economic impacts for local businesses, as employees, residents, and visitors can all better utilize the parking supply to shop, dine, or relax.

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1 INTRODUCTION

PLANNING WITH CITY POLICY GOALS IN MIND

Parking planning efforts in the downtown Oakland area are built on the cornerstones of City policy goals: economic growth, environmental responsibility, and social equity. These goals are represented in the following plans, principles, and initiatives led by the City.

Parking Principles for Commercial Districts

On October 15, 2013, the Oakland City Council unanimously adopted, as official City policy, a set of goals and objectives entitled "Parking Principles for City of Oakland Commercial Districts." These goals and objectives provide the overarching policy framework within which the City manages parking.[8] Oakland's *Parking Principles* are set forth in the section below.

Oakland's Parking Principles for Commercial Districts

"RESOLVED, that the city shall adopt the following Parking Principles as official policy to guide action dealing with parking in commercial districts city-wide:

Parking is part of a multi-modal approach to developing neighborhood transportation infrastructure.

- Users of commercial districts (shoppers, employees, visitors) have varied needs for access, via private auto, transit, bicycle and foot.
- Curbside parking must be balanced with multiple complementary and competing needs, including but not limited to delivery vehicles, taxis, car share vehicles, bus stops, bicycle parking and sidewalk widening.

Parking should be actively managed to maximize efficient use of a public resource.

- Parking should be treated as an asset that helps bolster the economic vitality of neighborhood commercial areas.
- Parking should be managed to achieve an approximate 85% maximum occupancy per block so that there will always be some parking available to shoppers and visitors.
- Parking should be priced to achieve usage goals ("market pricing"); market prices may vary by area; by time of day and may be adjusted occasionally to reflect current use.

[8] Brooke A. Levin, Interim Director, PWA. *Agenda Report re: Ordinance Supporting a Flexible Parking District Program*, August 23, 2013. https://oakland.legistar.com/View.ashx?M=F&ID=2638143&GUID=B82816CE-EF18-4D2D-87D4-6017CA050209.

- Pricing and policies should encourage use of off-street parking lots where they are available.

Parking should be easy for customers.

- Costs, rules and penalties should be easily comprehensible.
- Fees should be payable by a variety of fare media (prepaid cards, credit cards, cash and cell phones).
- If possible, and where appropriate, time limits should be avoided in favor of market pricing.
- The role of tickets should be minimized in generating parking revenue; it should be easier to pay parking fees, which may lower the incidence of tickets.

Parking policy and regulations should help the City meet other transportation, land use and environmental goals.

- Pricing policies should encourage a "park once" approach, to minimize driving from store-to-store within a commercial district and adding to congestion and air pollution.
- Whenever possible, a portion of parking revenue should be reinvested directly back to neighborhood commercial district improvements, potentially through a mechanism such as a parking benefit district."

Energy and Climate Action Plan

The City of Oakland Energy and Climate Action Plan (ECAP) was developed as an environmental policy to address the issues of climate change and energy consumption. The document identifies and prioritizes actions the City can take to reduce energy consumption and greenhouse gas emissions across multiple sectors, including parking management. Among others, the ECAP identified the following three-year priority actions[9]:

- "TLU-28. Develop regulations that would permit parking requirements to be met through alternative approaches demonstrated to reduce parking demand and GHG emissions. [...]
- TLU-29: Conduct a citywide dynamic parking pricing study to develop a strategy for creating adjustable parking rates at City meters and garages that can: influence drivers to reduce vehicle trips; provide adequate parking supply; encourage economic development; and fund alternative transportation improvements. [...]
- TLU-54: Discontinue the practice of providing parking to City employees based in transit-served locations. [...]"

Other relevant action items include the following:

- "TLU-30: Impose parking maximums on new development and assist developers, lenders, property owners and tenants in preparing strategies to minimize parking demand and encourage shifts to transit and other transportation modes.
- TLU-31: Develop a strategy to facilitate unbundling of the costs of renting parking from renting building space, where appropriate, to more explicitly charge for parking.

[9] City of Oakland Energy and Climate Action Plan. December 4, 2012.

- TLU-32: Review the process of establishing residential permit parking and consider opportunities to expand this program in appropriate locations."

Downtown Oakland Specific Plan

Development of the Downtown Oakland Specific Plan began in September 2015 and will run through the end of the 2016, with the final plan adoption proposed for the end of 2017. The Plan's purpose is to guide future land use planning. The Specific Plan development process draws on significant community input and engagement.

The recommendations in this parking plan were developed in coordination with the creation of the Downtown Oakland Specific Plan, which has the following draft goals[10]:

- Restore practical, prosperous, equitable and delightful places in the heart of the City, for residents, businesses, employees, and visitors.
- Establish policy to implement the vision for the future of downtown Oakland, incorporating land use, transportation, economic development, open space, landscape design, historic preservation, cultural arts, and social equity.
- Coordinate with ongoing efforts at the City, including the Downtown Oakland Parking Study, to establish a cohesive vision for future development.

Department of Race and Equity

In June 2015, the Oakland City Council adopted an ordinance establishing the Department of Race and Equity, which will, among other tasks, "intentionally integrate on a citywide basis the principle of 'fair and just' in all that the city does in order to achieve equitable opportunities for all people and communities." The ordinance also states that this "fair and just" principle, that "the city serves all residents by promoting fairness and opportunity and eliminating inequities through actions to which equity and social justice foundational practices are applied" is a core element of the goals, objectives, and strategies of the City.[11]

Oakland Department of Transportation

In June 2015, the Oakland City Council approved funding to establish the Department of Transportation. To implement the Department, the City Administrator will reorganize existing staff and resources from several departments to create a new full-service, vertically integrated Department of Transportation. The Parking and Mobility Management group of the DOT will manage the city's off-street parking and curb space, including policy, parking infrastructure, meter management and enforcement to serve the public needs for private vehicles, transit, taxis, commercial loading, bicycle parking, parklets and other public benefits. The group is also intended to develop and administer programs and policies that improve and expand transportation choices, such as car sharing, bicycle sharing, and transit pass programs for residents and employees.

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[10] City of Oakland. *Priority Development Area Profile Draft Report*. Downtown Oakland Specific Plan: Existing Conditions. 2015.

[11] Oakland, California. Ordinance no. 13319 C.M.S. June 30, 2015. Amended July 21, 2015.

Oakland Demand-Responsive Parking and Mobility Management Initiative

In December 2015, the Metropolitan Planning Commission (MTC) awarded the City of Oakland a $1.3 million grant to strengthen the existing demand-responsive parking pricing pilot program in Montclair Village and expand the program to downtown Oakland, including Chinatown, Lake Merritt/Uptown, and Civic Center/Old Oakland. In addition to proposing specific steps to implement and evaluate performance-based parking pricing throughout downtown Oakland, the grant reaffirmed downtown Oakland's role as a designated Priority Development Area and the City's commitment to reducing greenhouse gas emissions and vehicle miles traveled through dynamic parking pricing and other transportation demand efforts. On January 5, 2016, the Oakland Council unanimously adopted a resolution accepting the grant funding, committing the City to provide matching funds of up to $437,000, and stating the Council's support for and assurance that the City will complete the project.[12] Many recommendations in this report mirror the actions that the City has committed to implement with this grant.

The findings from the Downtown Oakland Parking Study support many of the observations about parking policy delineated in the Metropolitan Transportation Commission's (MTC) recent Value Pricing Pilot Parking Regional Analysis. This report's recommendations address many of the key findings of the MTC report, including the following:

- There are localized shortages and nearby surpluses of parking, contributing to a growing perception of an inadequate parking supply.
- There is a lack of coordination of prices between on-street and off-street parking, and between publicly- and privately-owned parking, resulting in drivers circling for cheaper on-street parking and adding to congestion and greenhouse gas emissions.
- Minimum parking requirements in the zoning code are not properly aligned with population demand or City goals. "High parking requirements make housing less affordable," according the MTC report.[13]

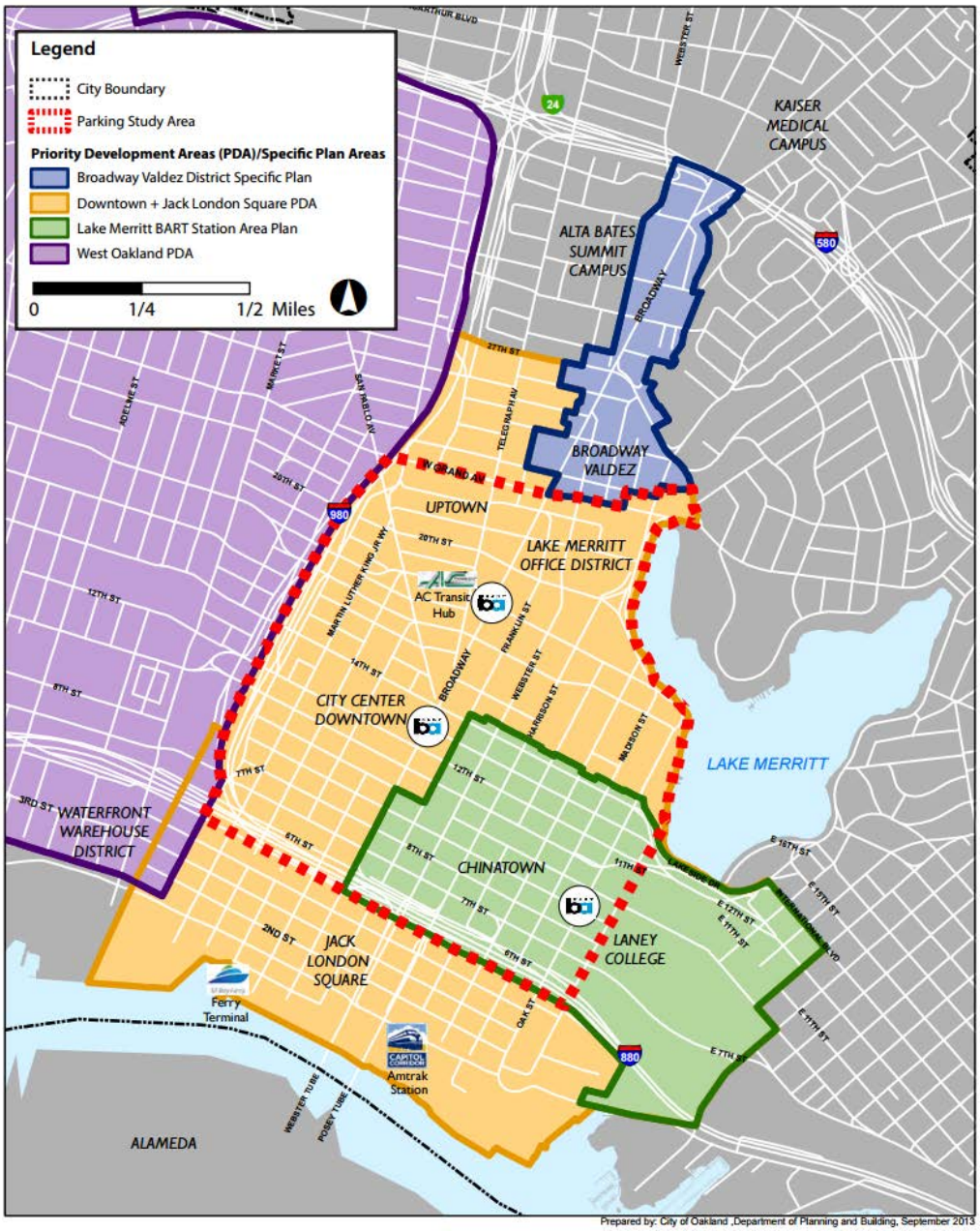
STUDY APPROACH

The Downtown Oakland Parking Study set out to understand existing parking conditions in downtown Oakland in order to make recommendations and update Oakland's parking technology and management strategies. This report, the *Parking Management Report*, is the fourth and final deliverable of the study. It builds upon the research and analysis conducted in previous phases, and presents a cohesive slate of recommendations for managing parking in ways that contribute to the City of Oakland's economic, environmental, and social goals and objectives.

[12] https://oakland.legistar.com/LegislationDetail.aspx?ID=2519261&GUID=5EC03E50-3385-4B2E-B0B2-E331AC51C821

[13] Metropolitan Transportation Commission. "VPP Parking Regional Analysis: Research, findings, and policy recommendations." September 2015. http://regionalparking.mtc.ca.gov/app/images/1.pdf

Figure 1-1 Study Area



The first deliverable, *Technical Memorandum #1 – Context Analysis*, reviewed and documented the City's parking policies; parking prices and regulations for City-owned parking facilities; significant conclusions from previous studies; and other background information communicated during interviews and correspondence with City staff. It also includes a peer review of five cities that have recently implemented performance-based parking, documenting their overall experience and lessons learned.

The second deliverable, *Technical Memorandum #2 – Existing Conditions*, contains a comprehensive assessment of downtown Oakland's parking supply and utilization. This latter task included assembling an inventory of on- and off-street parking facilities, including all privately-

owned facilities to which the project's surveyors were able to gain access. Hourly parking occupancy counts of all on-street spaces and all City-owned off-street parking facilities were conducted; in addition, a follow-up survey of Disabled Person Parking Placards and License Plates at on-street parking meters was conducted to assess utilization and length of stay.

The third deliverable, *Technical Memorandum #3 – Public Outreach Summary*, documents information gathered through the study's stakeholder and community outreach efforts from the study's beginning through November 2015. Several approaches were used to gather input from and exchange ideas with both members of the public and City staff from many departments, including focus group and public meetings, a project website, and merchant and shopper surveys conducted both online and in-person.

2 REPORT FOUNDATIONS

The City of Oakland is the third largest city in the San Francisco Bay Area, and is one of the most ethnically diverse major cities in the country. Oakland is undeniably important to the economic well-being of the San Francisco Bay Area. Plan Bay Area forecasted that San Francisco, San Jose, and Oakland would account for the majority of housing and job growth in the Bay Area, and the effects of this growth can already be felt. Oakland has the second fastest rise in rents in the U.S., soaring by 12.1% in 2014. The downtown area has gained more than 8,000 new residents and dozens of new restaurants and bars in the last 15 years. A number of Bay Area companies have relocated to Oakland. Downtown Oakland is now the East Bay's biggest employment center with more than 17 million square feet of office space and nearly 84,000 jobs. Parking and mobility management are critical to guiding this growth.

In light of the pressing demands on this busy hub, this chapter highlights the key findings of a comprehensive assessment of downtown Oakland's parking supply and utilization. This assessment draws on several major data collection efforts, including the following:

- **A comprehensive inventory** of the study area's on-street and off-street public parking. This includes privately-owned, City-owned, and State, County, or other public agency-owned facilities.
- **Parking occupancy counts** of all on-street spaces and all City-owned off-street parking facilities in the study area, conducted hourly on a Thursday and a Saturday in March 2015 between 8 a.m. and 9 p.m.
- **A turn-over survey assessing the use of Disabled Person Parking Placards and License Plates** at on-street parking meters, conducted hourly on several weekdays in October 2015 between 8 a.m. and 6 p.m.

More than a dozen surveyors, driving video-equipped vehicles, were deployed in the field simultaneously during the parking occupancy counts, in order to complete hourly surveys of the more than 10,000 City-owned parking spaces.[14] For the follow-up Disabled Person Parking Placard and License Plate[15] surveys, which assessed both the share of on-street parking meters occupied by vehicles with disabled placards and their length of stay, surveyors collected data by

[14] Parking occupancy data for non-City owned parking lots and garages was not available from the owners of these facilities. Due to both budget limitations and the difficulty of obtaining permission to conduct occupancy counts in private facilities, non-City-owned facilities were not included in the occupancy surveys.

[15] For brevity's sake, Disabled Person Parking Placards and License Plates and Disabled Veterans License Plates are collectively referred to as "disabled parking placards" or "disabled placards" throughout the remainder of this report. "Parking spaces designated for disabled persons and disabled veterans" established pursuant to California Vehicle Code Section 22511 and/or California Building Standards Code (see Title 24, Part 2, Section 1129B) are referred to as "accessible parking spaces". This nomenclature (e.g., using the term "Disabled Person" parking placard, rather than the often preferred phrase is "person with a disability", and the term "accessible parking space" rather than "disabled parking space") was chosen to maintain consistency with the terminology currently used (a) by the California Department of Motor Vehicles, (b) in the California Vehicle Code and (c) in the California Building Standards Code.

hand, walking their routes hourly in order to identify vehicles displaying disabled placards and then record the last three digits of these vehicles' license plates.

PUBLIC OUTREACH RESULTS

In addition to the quantitative data collection efforts described above, substantial outreach was conducted to hear from the members of the public and City staff from various departments about parking issues and opportunities in downtown Oakland. These efforts included the following:

- **Focus group meetings** with City staff from multiple departments to help guide the project, share their local knowledge and unique understanding, and to act as a sounding board throughout the study.
- **Public meetings** to gather input from the entire community, including merchants, employees, shoppers, and residents.
- **A project website** to list upcoming project meetings and events, project documents, contact information for relevant City staff, and links to other relevant project materials.
- **Merchant and shopper surveys** in the form of both online surveys and in-person intercept surveys on the streets of downtown Oakland to understand perceptions of parking and transportation in the study area, including delivery patterns, customers' transportation options, employee transportation services, visitor travel mode, and shopper spending.

Technical Memorandum #3 – Public Outreach Summary documents the information gathered through the study's stakeholder and community outreach efforts from the study's beginning through November 2015. An overview of the results of the merchant and shopper surveys is presented in the following section.

Merchant & Shopper Survey Results

The merchant and shopper surveys provided valuable community input on parking and transportation in the area. 78 merchant surveys were completed, with 77 of the 78 surveys conducted in person. 417 shopper surveys were completed, 287 of which were conducted on the street, and 130 were completed online. Overall, merchants, shoppers, and other stakeholders expressed the following concerns:

Loading is a problem. Also reiterated by business owners in attendance at public meetings, more than two thirds (68%) of merchant respondents reported receiving deliveries by vehicles that double park or otherwise parked illegally (e.g., in red zones), while only 28% describe delivery vehicles serving their business as using designated loading zones. Five survey respondents expressed the desire for more loading zones, or some way to address the problems caused by frequent double parking in limited road space.

Merchants are dissatisfied with parking, perceiving high prices, inconsistent enforcement, and overly restrictive time limits. Nearly three-quarters (74%) of respondents believed parking conditions to be poor or fair for customers and for employees. In comments, at least ten respondents expressed frustration over inconsistent enforcement and citations. While a couple of individuals expressed frustration over parking meter fees, the majority of price complaints referred to inconsistent enforcement and parking citations. Both employees and customers who park at the curb have to remember to feed the meter every two hours; otherwise they are often fined. Enforcement is inconsistent, with some officers appearing

to be generous on some days (in refraining from issuing citations), and others not. Businesses whose owners and employees park at the curb often receive at least one parking citation per month.

A few merchants perceive that the difficulty of finding parking negatively affects their business; two respondents noted a loss of business due to customers looking for parking. One business in particular noted customers consistently calling about finding parking by their store.

There is a perception of widespread Disabled Person Parking Placard use and misuse. Merchants perceive that Disabled Person Parking Placards users occupy a large share of the on-street parking, frequently stay all day, and often appear to be used by people without significant disabilities. Without being prompted with a specific question about this topic, nearly ten respondents noted what they perceived as "rampant" and "illegal" use of placards. This perception was confirmed by public meeting participants, who noted their observations of widespread disabled placard use and abuse.

Opportunities to improve bicycle facilities, sidewalks, and street lighting exist. Nearly ten merchant respondents desired improved bicycle amenities and expressed concerns about safety. A quarter of respondents felt that street lighting is at a fair or poor level. Many respondents expressed concerns about the general safety, security, and cleanliness of the downtown area.

Overall, community members surveyed and/or participating in community meetings were open to the idea of parking strategies such as variable parking pricing programs and the reduction or removal of parking minimums in the City zoning code.

Travel Behavior of Survey Respondents

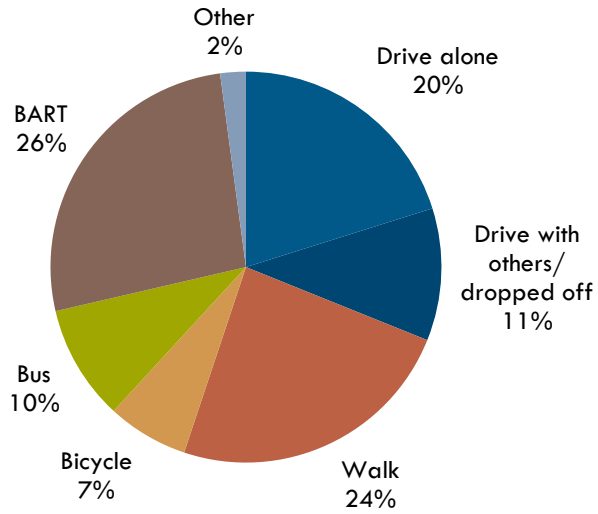
Shoppers use a variety of modes to visit downtown Oakland. Among the respondents to the on-street intercept surveys, approximately a third ride transit, a third walk or bicycle, and a third drive alone or with others when shopping in downtown Oakland (Figure 2-1). Among the respondents to the online surveys, the majority (66%) ride their bike when shopping downtown (Figure 2-2).

Shoppers in the study area are more likely to walk or bike than those farther away. Analyzing responses by zip code showed that only 6% of shoppers who live in the downtown study area drive to reach downtown shops, while that share increases to 10% for residents of zip codes that border the study area, and 24% for residents of all other zip codes.[16]

Most merchants acknowledge the multimodal nature of how customers and employees arrive to their place of business. Although nearly 40% of merchants interviewed believed that the majority of their customers (50% or more) arrived by driving, most merchants believed that the majority of their customers arrive by walking, public transit, or using a wide mix of travel modes, with no one mode of travel predominating. This is in line with how shoppers actually travel to downtown Oakland.

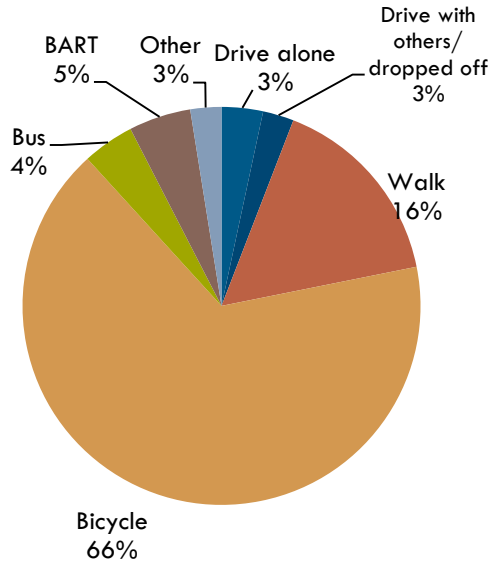
[16] Nelson\Nygaard Consulting Associates. *Technical Memorandum #3: Public Outreach Summary*. November 2015.

Figure 2-1 Typical Mode of Intercepted Shoppers in the Study Area



N = 283

Figure 2-2 Typical Mode of Shoppers Surveyed Online



N = 119

TRAVEL BEHAVIOR & HOUSEHOLD VEHICLE OWNERSHIP

Household Vehicle Ownership in Downtown Oakland

United States census data on vehicle ownership in downtown Oakland shows that approximately 25% of owner-occupied units and 57% of renter-occupied units do not own a motor vehicle.[17] This is far below the percentage of households without motor vehicles found at the national, state or even the overall city level (Figure 2-3). This information is particularly interesting in light of national data on the relationship between income and vehicle ownership.

Figure 2-3 Number of Vehicles per Household, 2009-2013

Number of vehicles per household	Study Area		City of Oakland		California		United States	
	Owner-occupied	Renter-occupied	Owner-occupied	Renter-occupied	Owner-occupied	Renter-occupied	Owner-occupied	Renter-occupied
None	25%	57%	4%	27%	3%	14%	3%	20%
One	56%	35%	32%	48%	23%	43%	27%	47%
Two	18%	7%	42%	20%	42%	31%	44%	26%
Three or more	1%	1%	21%	6%	32%	11%	26%	8%

American Community Survey, 2009-2013.

Income, Vehicle Ownership and Travel Behavior

Oakland-specific data on the relationships between household income, motor vehicle ownership and use, parking patterns, and other travel behavior was not readily available for this study.[18] However, national statistics on the relationships between household income, vehicle ownership, and transportation expenditures are available from the United States Bureau of Labor Statistics.

As shown in Figure 2-4, a larger percentage of households with higher incomes own or lease at least one vehicle. Similarly, a greater percentage of homeowners own or lease at least one vehicle than renters (Figure 2-5).[19] Lower income households also spend a greater share of their household income on transportation expenses (Figure 2-6).[20]

Understanding the relationships between income and vehicle ownership can be helpful for discerning the social equity impacts of specific policy proposals. For example, very low income households (which are least likely to own vehicles) may particularly benefit from policies which

[17] United States Census Bureau / American FactFinder. "B25044 : Tenure by Vehicles Available." 2009 – 2013 American Community Survey. U.S. Census Bureau's American Community Survey Office. <http://factfinder2.census.gov>.

[18] Many of these relationships could be determined by careful analysis of raw United States census data, but this level of effort was beyond the scope of this study. Other jurisdictions, such as Santa Clara County, have conducted such efforts and found them useful for analyzing social equity impacts of proposed policy reforms.

[19] U.S. Department of Labor, Bureau of Labor Statistics, Consumer Expenditure Survey, 2014.

[20] U.S. Department of Labor, Bureau of Labor Statistics, Consumer Expenditure Survey, 2014. The percentage of household income spent on transportation by those earning less than $5,000/year exceeds income because income calculations do not include savings or loans.

unbundle the cost of parking from the cost of other goods and services. Making parking an optional amenity, rather than a required purchase, may allow low income people who do not own a car to save money, since they will no longer be required to pay for parking spaces which they cannot use.

Figure 2-4 National Vehicle Ownership by Income Level (2014)

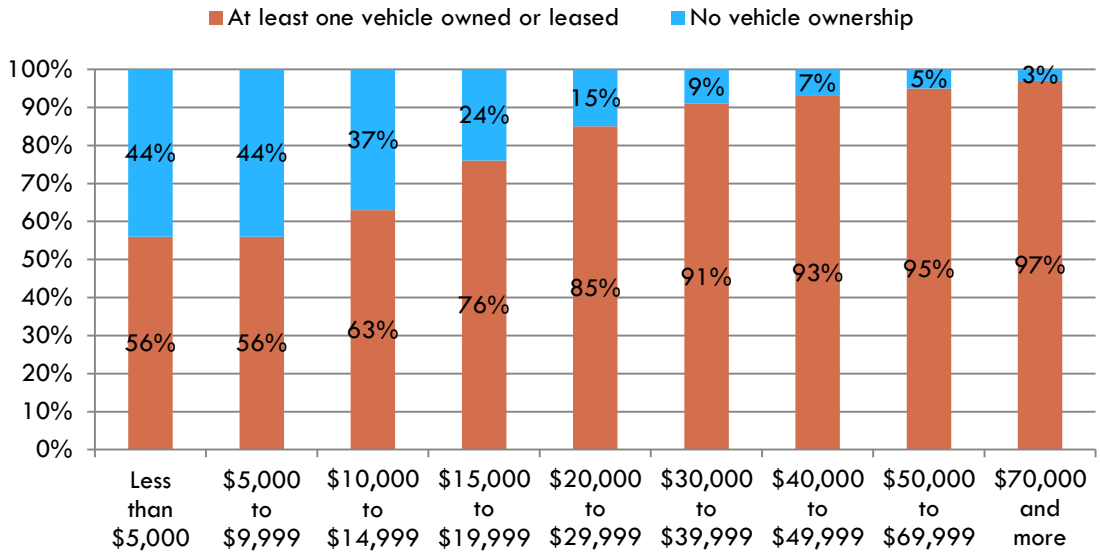


Figure 2-5 National Vehicle Ownership by Housing Tenure (2014)

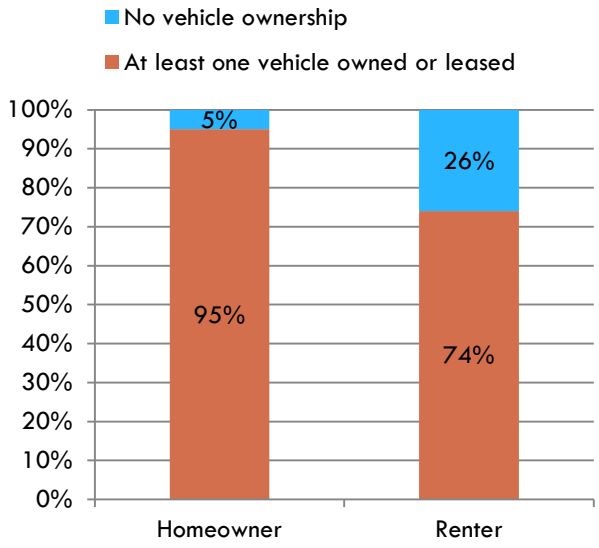
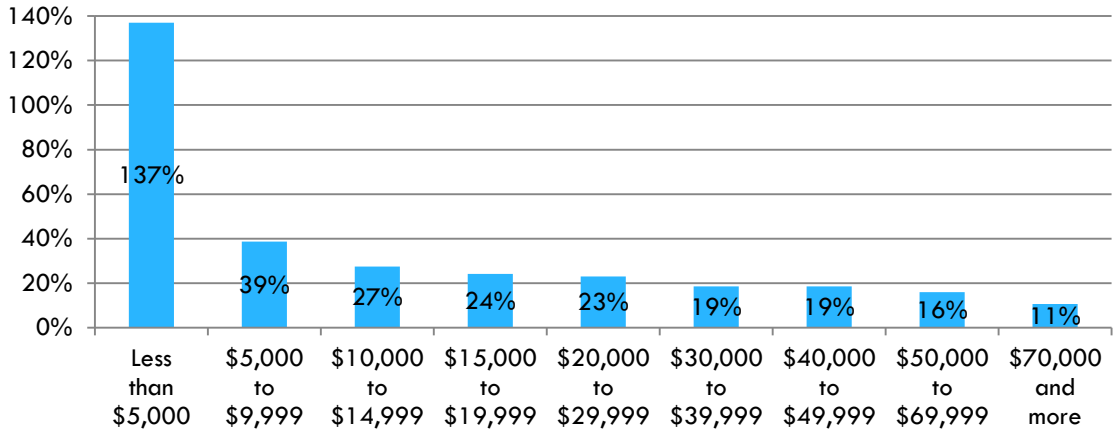


Figure 2-6 National Transportation Expenditures as a Percentage of Mean Income Before Taxes (2014)



PARKING INVENTORY

While community perception is important, it is also essential to examine the every-day, nuts-and-bolts aspects of the Downtown parking system. Every parking system has two key parts:

1. Quantity (i.e., the number of parking spaces)
2. Management (i.e., policies, regulations, prices)

The quantity and management of parking in downtown Oakland can be generally divided according to location (on-street versus off-street) and ownership (City-owned versus private entities or other public agencies). In total, the survey identified 21,235 spaces, including 6,330 on-street spaces, 4,036 City-owned off-street spaces, 1,633 off-street spaces owned by other public agencies (Alameda County, the State of California, or BART), and 9,236 privately-owned off-street spaces. Out of the privately-owned off-street spaces, approximately 6,521 are in structures and 2,715 are in surface lots.[21]

Figure 2-7 Downtown Parking Inventory, By Type of Space

	Number of Spaces	% of Total
On-Street	6,330	30%
Off-Street (City Owned)	4,036	19%
Off-Street (State, County, or BART Owned)	1,633	8%
Off-Street (Private)	9,236	43%
Total	21,235	100%

Figure 2-8 through Figure 2-11 show the downtown Oakland parking inventory in detail, indicating the curb parking regulations and their location, the location and capacity of major off-

[21] The inventory figure for off-street spaces includes all major parking facilities available for use by the general public. Private parking facilities (i.e., ones that are not available to the general public) for residential and commercial buildings are generally not included in this figure.

street parking facilities, as well as the two residential parking permit areas within the downtown area.

Figure 2-8 On- and Off-Street Parking Supply and Restrictions (Northwest Quadrant)

Figure 2-9 On- and Off-Street Parking Supply and Restrictions (Northeast Quadrant)

Figure 2-10 On- and Off-Street Parking Supply and Restrictions (Southwest Quadrant)

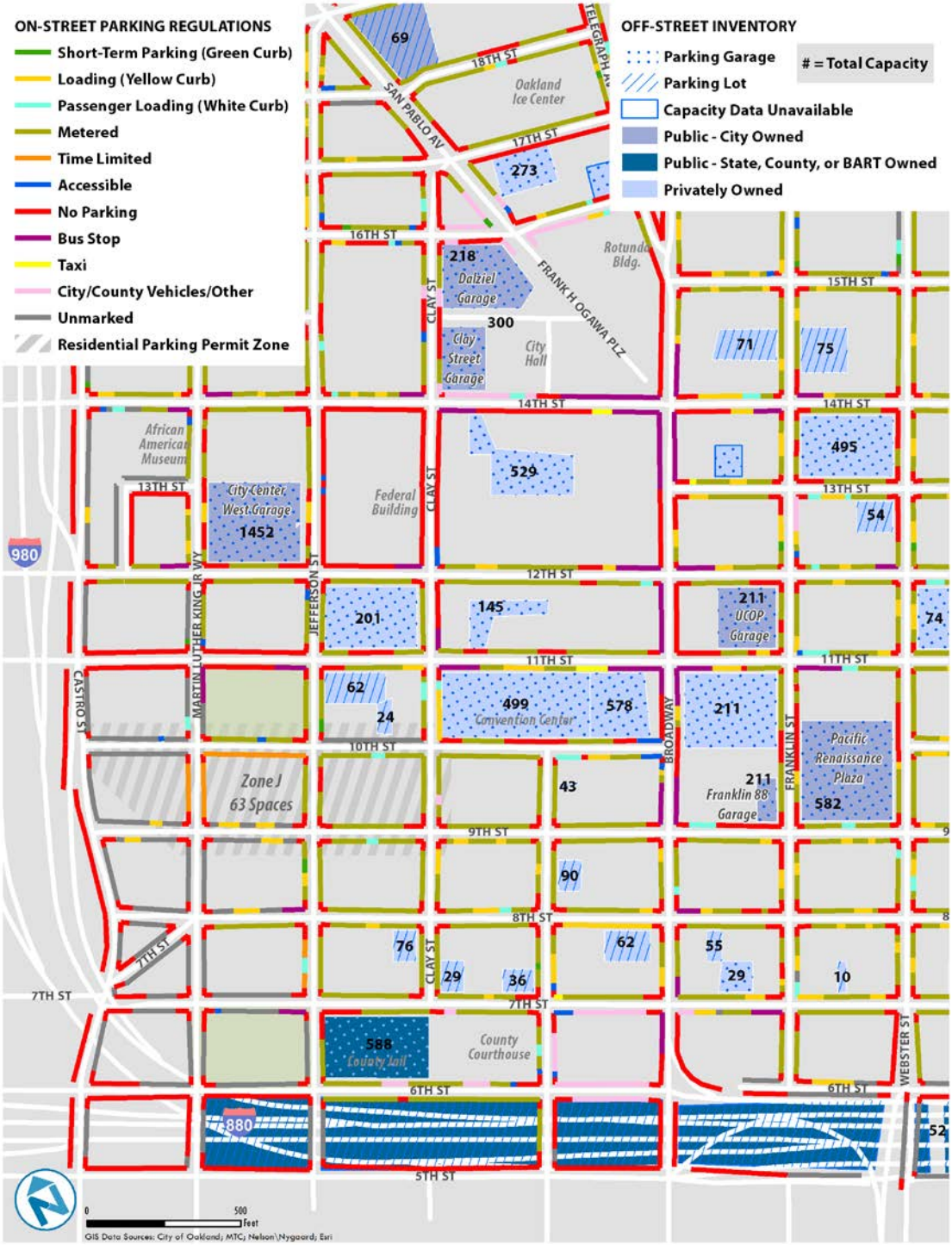
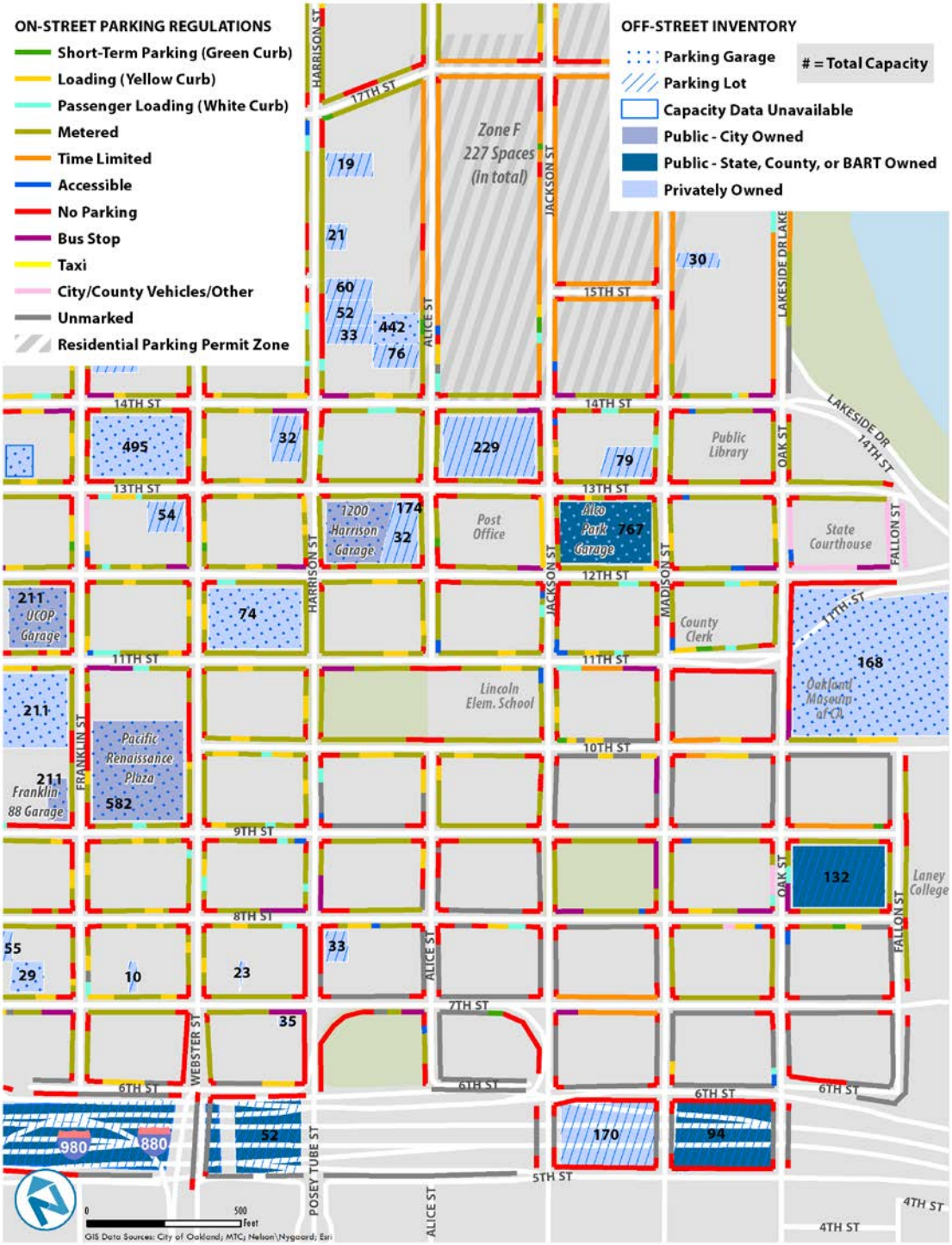


Figure 2-11 On- and Off-Street Parking Supply and Restrictions (Southeast Quadrant)



On-Street Parking Supply

Of the 6,330 total on-street spaces in the study area, the vast majority are regulated with either (a) time limits of up to two hours, or (b) both time limits and pricing, using meters that allow up to two hours of parking. Over half (56%) are metered. All curb parking meters in the study area charge a flat rate of $2.00 per hour and operate from 8 am to 6 pm, Monday through Saturday, with the exception of certain holidays. [22]

All of Oakland's parking meters are capable of accepting payment by either coin or credit card, with slightly more than half of spaces covered by multi-space "pay-and-display" payment kiosks and the other half equipped with "smart" single- or double-headed meters. Pay-by-phone technology provided by Parkmobile is also available at all metered spaces.

Time-limited, but not priced, parking is available on certain blocks, with most of these spaces subject to a time restriction of two hours. Loading zones account for less than 7% of on-street spaces. On-street spaces with meters and/or posted time limits are concentrated in the downtown core, while blocks on the periphery, particularly adjacent to I-980, I-880, and northwest of Uptown, are generally unmarked and therefore allow parking for up to 72 hours.

Figure 2-12 On-Street Parking Inventory, by Type of Regulation

Type	Number of Spaces	Percent
Metered	3,565	56.3%
Unmarked	1,327	21.0%
Time Limited, 30 minutes or longer	582	9.2%
Loading (Yellow Curb)*	426	6.7%
Passenger Loading (White Curb)	154	2.4%
City/County Vehicles/Other**	148	2.3%
Accessible	77	1.2%
12 minute Parking (Green Curb)	32	0.5%
Taxi	19	0.3%
Total	6,330	100%

* Includes four (4) signed Truck Loading spaces.

** Includes spaces signed and reserved for specialized uses, including: Alameda County Placards Only, BART Vehicle Only, City Car Share, City Council Staff, City Officials, City Vehicles Only, Fire Department Only, Fire Marshal Only, Mayor's Vehicle Only, OCIS Vehicles Only, Official Cars Only, Official Vehicles, Paratransit, Police, Press and City Vehicles Only, Transportation Vehicles Only.

Posted Time Limits

Time limits vary among on-street parking spaces, ranging from 3 minutes (passenger loading at white curbs) to 5 hours (a small number of metered parking spaces near Laney College), to 72 hours (all unmarked spaces). Most metered spaces (85%) are subject to a two-hour time limit.

[22] All curb parking meters in the City of Oakland, with the exception of those in the Montclair Village Flexible Parking Pricing Pilot Project area, have these same rates and hours of enforcement. Technical Memorandum #1, Context Analysis, provides more detail on these policies and on the Montclair Village Flexible Pricing Pilot Project.

Figure 2-13 provides a breakdown of posted time limits for metered and time-limited but not metered curb parking spaces in downtown Oakland. Loading zones (yellow curbs and white curbs), Accessible and unmarked spaces are not included in this table.

Figure 2-13 On-Street Parking Posted Time Limits (Excluding Loading, Accessible & Unmarked Spaces)

Time Limit	Metered (Number of Spaces)	Percent of Metered Spaces	Posted Time Limit but Unmetered (Number of Spaces)	Percent of Spaces with Posted Time Limit but No Meter
12 minute	0	0.0%	32	5.2%
30 Minute	34	1.0%	0	0.0%
1 Hour	491	13.8%	7	1.1%
2 Hour	3,009	84.4%	575	93.6%
5 Hour	31	0.9%	0	0.0%
Total	3,565	100%	614	100%

In addition to these posted regulations, there are a number of special parking regulations for very specific uses, such as parking for City and County staff, taxis, and City Car Share vehicles. These specially regulated spaces comprise less than 3% of the total on-street parking supply.

The study area encompasses two Residential Parking Permit zones, Areas F and J, where residents can purchase permits that entitle a vehicle to be left parked at the curb for extended periods of time. The resident fee for an annual permit in these areas is $82 for a new permit, and $59 to renew an existing permit. A total of 290 on-street parking spaces are signed for Area J, and 227 are signed for Area F.

Off-Street Parking Supply

Off-street parking is provided in at least 96 off-street lots and garages in the study area. Of these, 83 facilities were readily accessible to the data collection team, totaling 14,905 spaces.[23] Thirteen off-street parking facilities were either closed for construction or otherwise unavailable to be counted at the time of the inventory. Although these 83 facilities are open to the public, not all of the spaces contained within them are available for public use; approximately 10% of the off-street parking spaces inventoried are reserved for a particular person or type of user.

Additionally, the study area contains numerous additional privately-owned parking lots and garages, such as gated residential parking garages and other lots used exclusively for private purposes, which were outside the scope of this study (and to which our surveyors generally would have been unable to gain access). These private parking facilities therefore went uncounted and are not included in this inventory.

[23] Additionally, a portion of the City Center Garage is open to residents only. Inventory data collectors were unable to gain access to this area to complete a count of the number of spaces in this section of the garage.

Figure 2-14 presents an overview of the types of parking regulations at off-street facilities in the study area that were accessible to the data collection team.[24] The definitions are as follows:

- **Regular**: Unmarked spaces (i.e., not designated for monthly parkers, residents only, or indicated with any other special markings or signage).
- **Accessible:** Parking spaces designated as reserved for disabled persons and disabled veterans pursuant to California Vehicle Code Section 22511 and/or the California Building Standards Code Title 24, Part 2, Section 1129B.
- **Reserved:** Any parking space that had a sign or plaque identifying it as reserved for a particular person or particular type of user. In other words, any space that was not open and available to the general public. This category includes several types of spaces not typically available for use by the general public, such as Security, Hertz Rent-a-Car, and reserved Accessible spaces.
- **Other:** Any other type of regulation governing publicly available parking. Types of parking covered by this designation include: 2-Minute Limit, 5-Minute Limit, and 30-Minute Limit.

Figure 2-14 Off-Street Parking Regulations by Owner Type

Totals by Type	Regular	Disabled	Reserved	Other	Total
City Owned	3,507	68	459	2	4,036
Other Public Agency (State, County, or BART)	1,556	31	9	37	1,633
Privately Owned	8,053	188	891	104	9,236
Grand Total	12,349	287	1,359	143	14,905

Off-Street Parking Requirements

Currently, there is no commercial parking required in downtown except for Residential Zones.[25]

Generally, one parking space is required per residential unit, which can be decreased to 0.5 parking spaces per unit with a conditional use permit.[26] The Lake Merritt Station Specific Plan Area requires 0.75 parking spaces per residential unit, which can be reduced through in-lieu fees. Required parking for senior housing can be reduced by 75% with a conditional use permit.

[24] As noted above, off-street parking facilities that are wholly private and not available to the public were not part of this study's scope and are therefore not included in the following data.

[25] City of Oakland Planning Code, 17.116.080.

[26] As specified in Oakland Planning Code 17.132.110, off-street parking requirements may also be waived or reduced by the Director of City Planning, if the waiver or reduction will "not substantially contribute to traffic congestion or impair the efficiency of on-street parking."

PARKING OCCUPANCY

On- and Off-Street Parking Occupancy

As shown in Figure 2-15, the peak hour of parking occupancy in the study area occurred on Thursday between noon and 1 PM, when overall parking occupancy reached 79%.[27] Generally, parking occupancy on Thursday followed a typical workday pattern, peaking at the noon hour and then gradually falling in the afternoon and early evening. On Saturday, overall parking occupancy peaked at 49% at noon.

Figure 2-15 Overall Parking Occupancy, Weekday versus Saturday

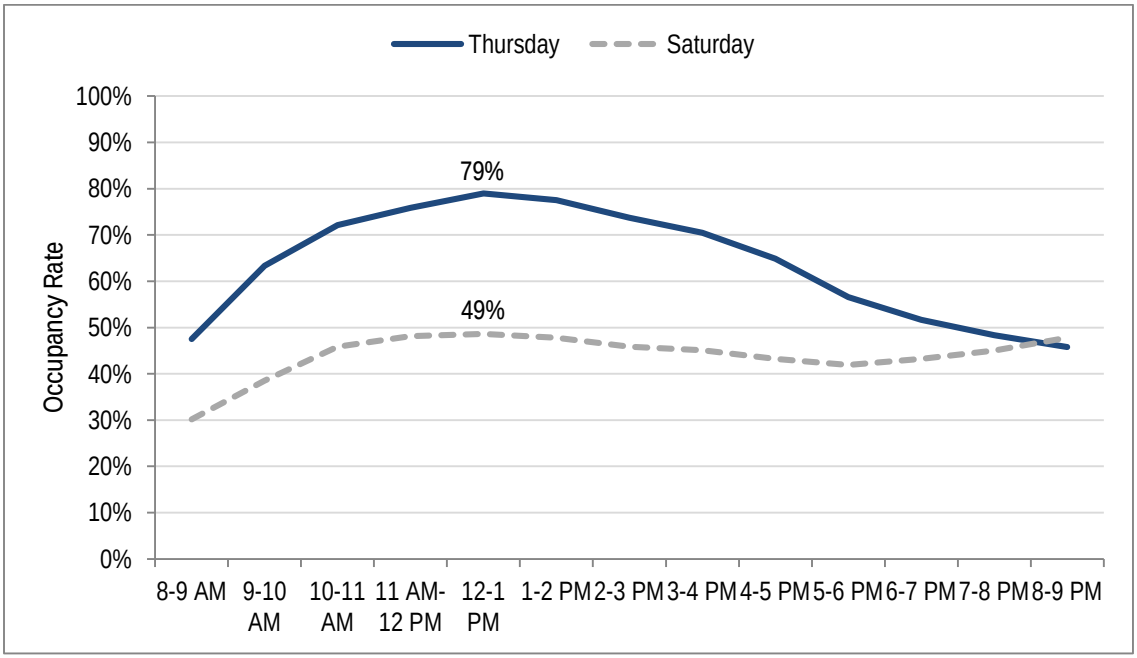


Figure 2-16 and Figure 2-17 compare on-street versus off-street parking occupancy for Thursday and Saturday, respectively.

On Thursday, on-street occupancy peaked at 84% (12-1 p.m.), and decreased gradually thereafter. Occupancy remained at about 70% during the dinner period and into the evening (5-9 p.m.). Off-street occupancy followed a much different pattern, peaking at 71% during the lunch hour (12-1 p.m.), and then steadily declining during the late afternoon and early evening to a low of just 11%.

On Saturday, on-street parking occupancy was more consistent throughout the day, increasing to 68% at noon, then falling slightly in the afternoon before rising to a peak of 70% from 8-9 p.m. Off-street occupancy was much lower. Parking occupancy at off-street facilities gradually increased to a peak of 22% from 3-4 p.m., falling again through the dinner period. Occupancy increased again during the 8-9 p.m. survey period.

[27] On Thursday, a few spaces (23 in total) were closed for construction. On Saturday, these spaces were available for parking. These spaces were counted as occupied on Thursday. These closed spaces have a nominal effect (boosting Thursday on-street occupancy by 0.3%), and therefore did not substantially affect the overall conclusions of this report.

Note that several major off-street garages are closed on Saturday—including the UCOP, 1200 Harrison, and City Center West garages —due to the low level of parking demand and the substantial cost of staffing them. Even with this temporary reduction of 1,837 off-street parking spaces, parking occupancy is still dramatically lower than on-street occupancy, with a peak of 41% from 3 -4 p.m. Regardless, all calculations of off-street parking include these facilities in the overall supply in order to consistently compare Thursday and Saturday parking utilization.

Figure 2-16 On-Street versus Off-Street Parking Occupancy, Thursday

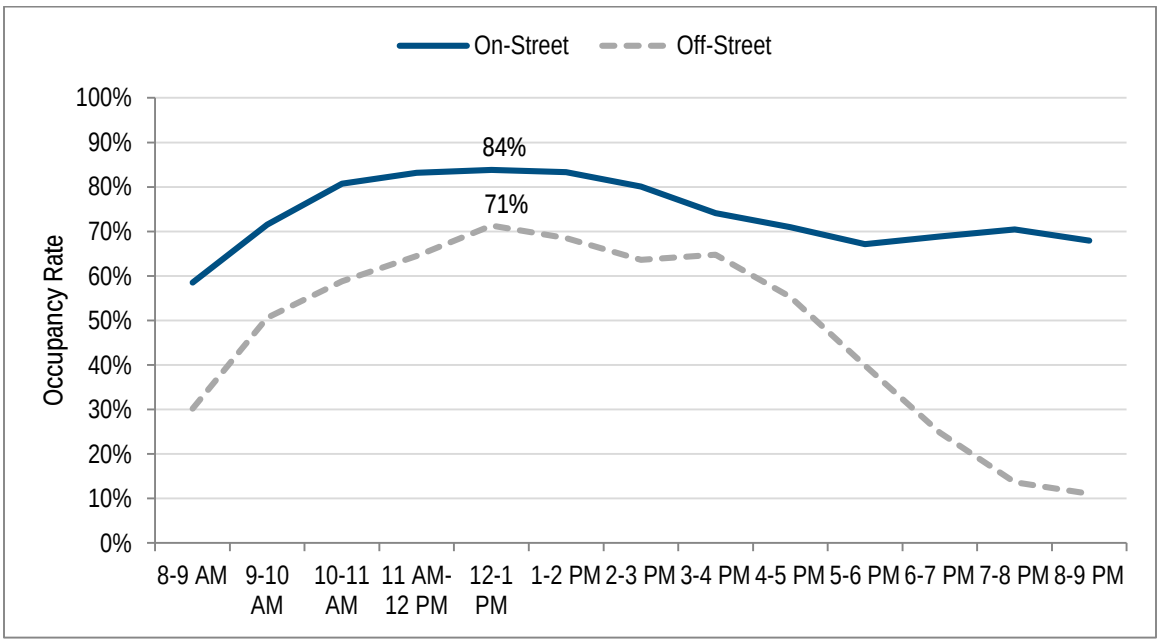


Figure 2-17 On-Street versus Off-Street Parking Occupancy, Saturday

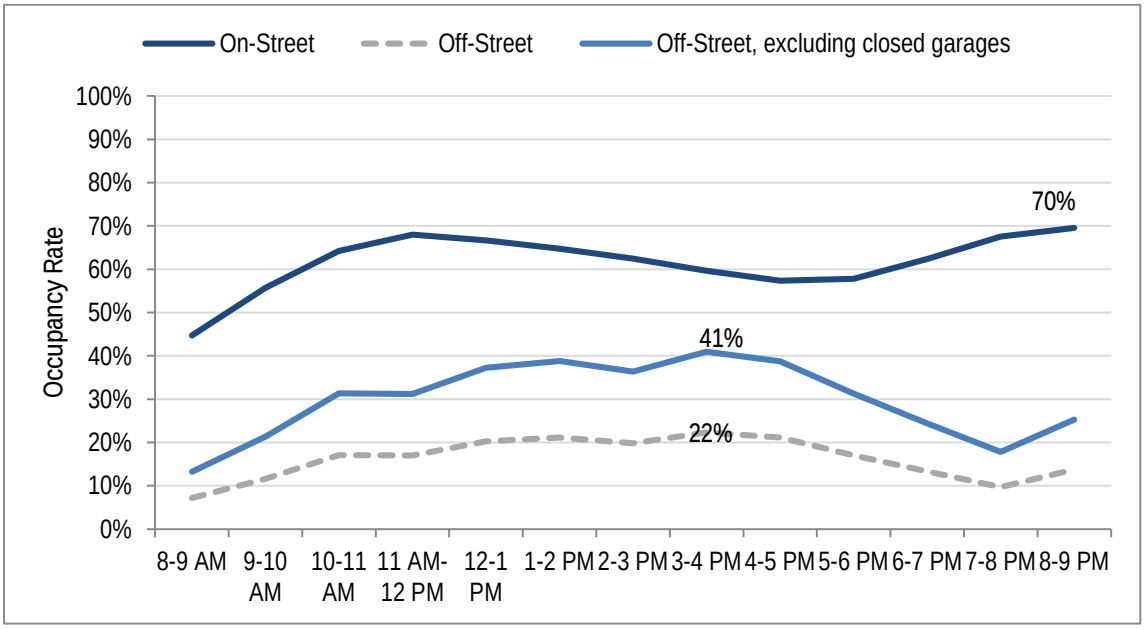


Figure 2-19 through Figure 2-22 map peak-hour occupancy in downtown Oakland. These maps show the occupancy level for each block face of curb parking and each off-street facility during the peak hours of parking demand.

To assist with the future implementation of performance-based parking pricing in the study area, the parking occupancy maps in this report are color-coded in a simple three-color format:

- Block faces of curb parking with an occupancy rate of 85% or greater are shown in red;
- Block faces of curb parking with an occupancy rate of 66-85% are shown in yellow;
- Block faces of curb parking with an occupancy rate of 65% or less are shown in green.

The occupancy maps for the City's off-street garages and lots are also color-coded in this manner. If the City chooses to implement performance-based parking prices (a.k.a. market rate prices) in the downtown parking study area, then:

- Block faces of curb parking shown in red (85%+ occupancy) are over the City's occupancy goal, and are therefore strong candidates for a price increase;
- Block faces of curb parking shown in yellow (66-85% occupancy) are well-used but still have parking readily available, and therefore are good candidates for leaving prices unchanged;
- Block faces of curb parking shown in green (occupancy rate of 65% or less) are underutilized, and are therefore good candidates for a price decrease.

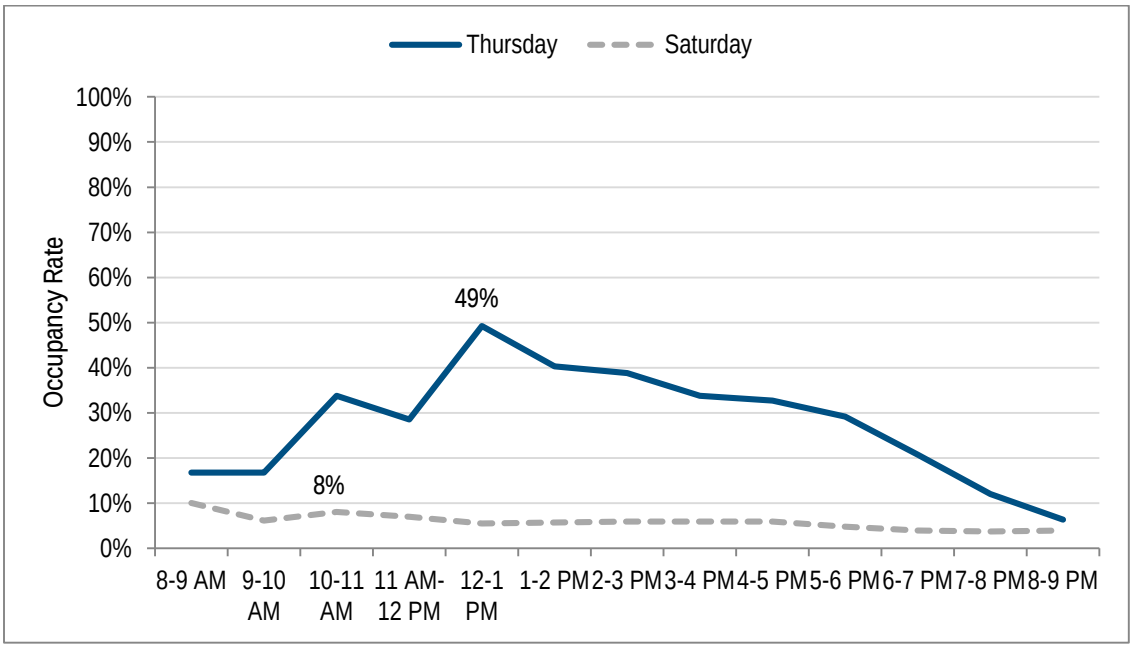
In *Technical Memorandum #2 – Existing Conditions*, separate maps are provided for each hourly parking survey period, to assist in analyzing parking demand patterns throughout the day. As might be expected, many blocks of curb parking which are full or nearly full at the peak hour are underutilized at other times. The hour-by-hour parking occupancy maps provided in that memorandum can be used to help determine how parking prices on individual blocks might be varied throughout the day. For example, the City may wish to implement three or four "time bands" (e.g., morning, lunchtime, afternoon and evening) for parking meter rates, with different parking rates for each of these time bands. This approach, used by San Francisco, helps set appropriate prices for blocks where parking demand varies substantially throughout the course of the day. In San Francisco, rates for the morning time band (when many shops and restaurants have not yet opened) are often low, while lunchtime rates are substantially higher. A similar approach can be used to help determine how to adjust parking prices (including monthly, daily and hourly rates) for the City's off-street lots and garages.

On Thursday, the overall parking supply reached peak occupancy during the 12-1 p.m. survey period. At this hour, overall parking occupancy reached 79%. Figure 2-19 depicts total parking occupancy during this peak hour. At this time, over half of on-street blockfaces exceeded 85% occupancy. Curb parking demand was spread throughout the study area, with on-street spaces in Chinatown and other business areas around City Hall and near Frank Ogawa Plaza consistently exceeding 85% occupancy. At just three of the City's off-street facilities (Telegraph Plaza, the 18th Street Uptown Lot, and the Franklin Plaza Garage), total parking occupancy exceeded 85%.

However, at some City garages, although *total* parking occupancy remained below 85%, the garages' regular spaces (i.e., spaces that are available to the general public, and not reserved for monthly parkers, residents, or other special users) were full or nearly full. Therefore, for the average member of the public, these garages were effectively full.

The reserved spaces in these same garages remained underutilized at the peak hour. As shown in Figure 2-18 Reserved parking space occupancy at all City-owned off-street facilities peaked at just under 50% on Thursday, with 233 reserved spaces unused at this time.

Figure 2-18 Off-Street Reserved Parking Occupancy Rates, Thursday and Saturday



To illustrate this situation in more detail, Figure 2-20 illustrates parking occupancy rates at the Thursday peak hour (12 p.m. to 1 p.m.) for regular parking spaces. At this hour, the parking occupancy rate for this regular spaces exceeded 85% at five parking facilities: Telegraph Plaza, the 18th Street Uptown Lot, the Franklin Plaza Garage, the Dalziel Garage, and the Clay Street Garage. Three parking facilities met the City's 65-85% target rate for regular parking spaces (the City Center West, Franklin 88, and 1200 Harrison Garages), and two facilities (the UCOP and Pacific Renaissance Plaza garages) had occupancy rates below 65%. The close proximity of the underutilized Pacific Renaissance Plaza garage to oversubscribed blockfaces in Chinatown is particularly striking.[28]

On Saturday, the overall parking supply also reached peak occupancy during the 12-1 p.m. survey period. At this hour, overall parking occupancy reached 49%. Figure 2-21 depicts total parking occupancy during this peak hour. At this time, 32% of all on-street blockfaces exceeded an 85% occupancy rate. On-street demand patterns were more easily discernible on Saturday than Thursday, with curb parking in residential areas near Lake Merritt and blocks throughout Chinatown consistently exceeding 85% occupancy.

At the peak hour on Saturday, occupancy rates for regular spaces at City-owned lots and garages (shown in Figure 2-22) exceeded the target occupancy rate at just two facilities: Clay Street, and

[28] The subsequent turn-over survey assessing the use of Disabled Person Parking Placards at on-street metered spaces indicated that during the peak hour from noon to 1 p.m., on the blockfaces immediately adjacent to the Pacific Renaissance Plaza garage, approximately 63% of the metered spaces were occupied by a vehicle displaying a disabled placard. Since drivers with disabled placards may park for free at metered curb parking spaces, but usually must pay to use off-street spaces, it is perhaps unsurprising to find many curb spaces occupied by vehicles with placards. More information on the Disabled Person Parking Placard survey is provided in the next section of this chapter.

the 18th Street Uptown Lot. Note that on Saturdays, four City garages are closed (due to Saturday's low levels of parking demand and the substantial costs of staffing garages) and the Clay Street Garage is free.

Figure 2-19 Overall Parking Occupancy at Peak Hour (Thursday 12 p.m. to 1 p.m.)

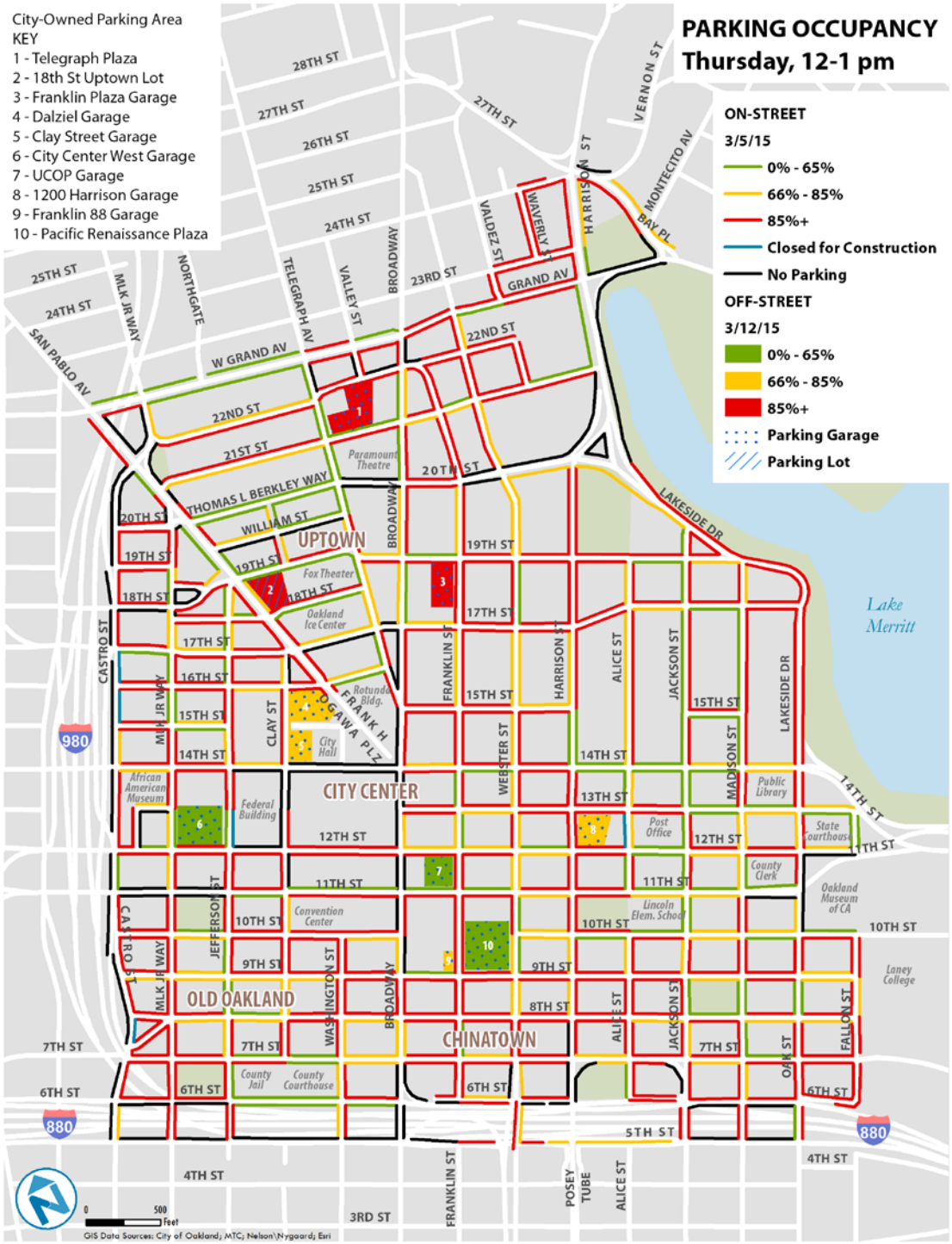


Figure 2-20 Parking Occupancy of Regular Spaces at Peak Hour (Thursday 12 p.m. to 1 p.m.)

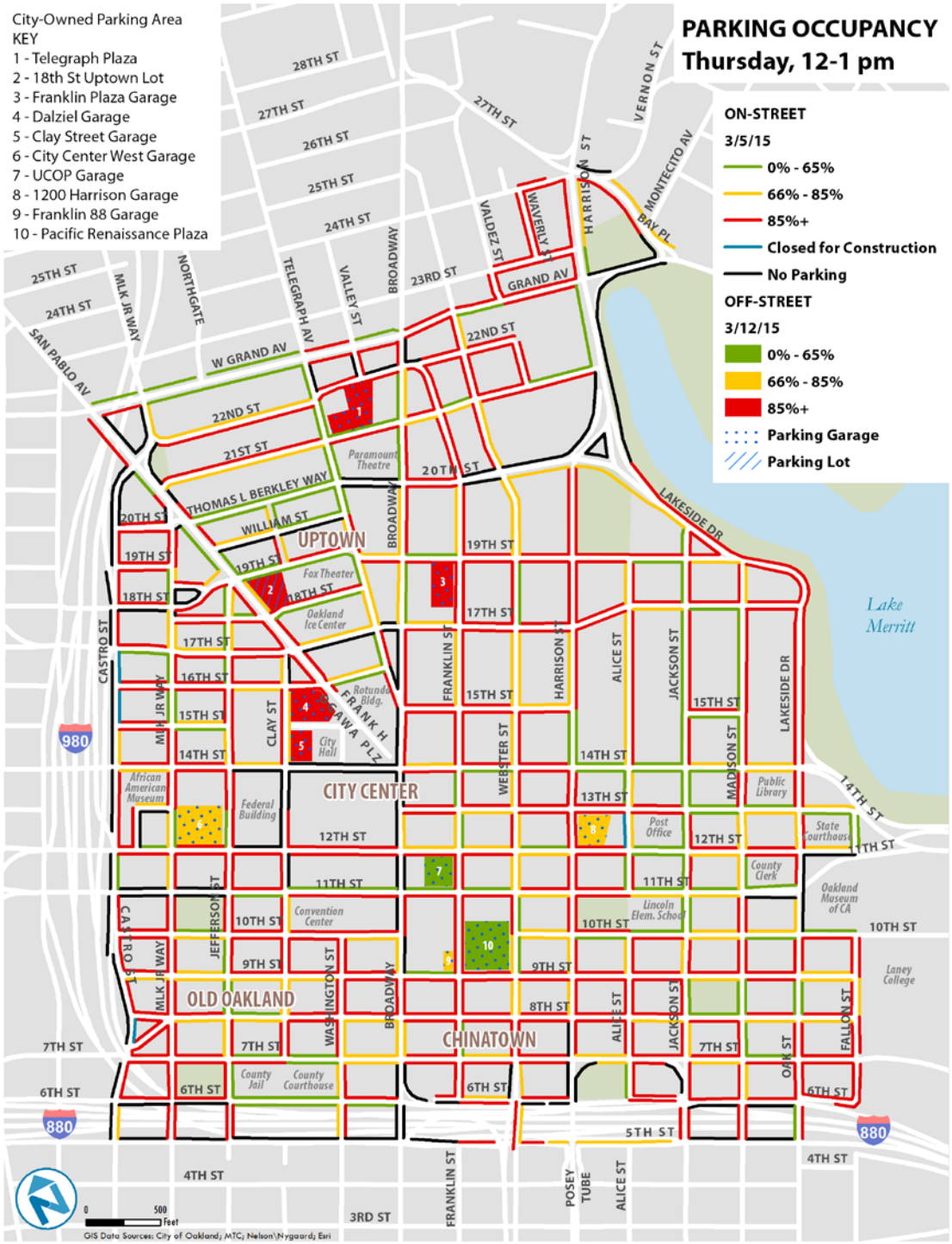


Figure 2-21 Overall Parking Occupancy at Peak Hour (Saturday 12 p.m. to 1 p.m.)

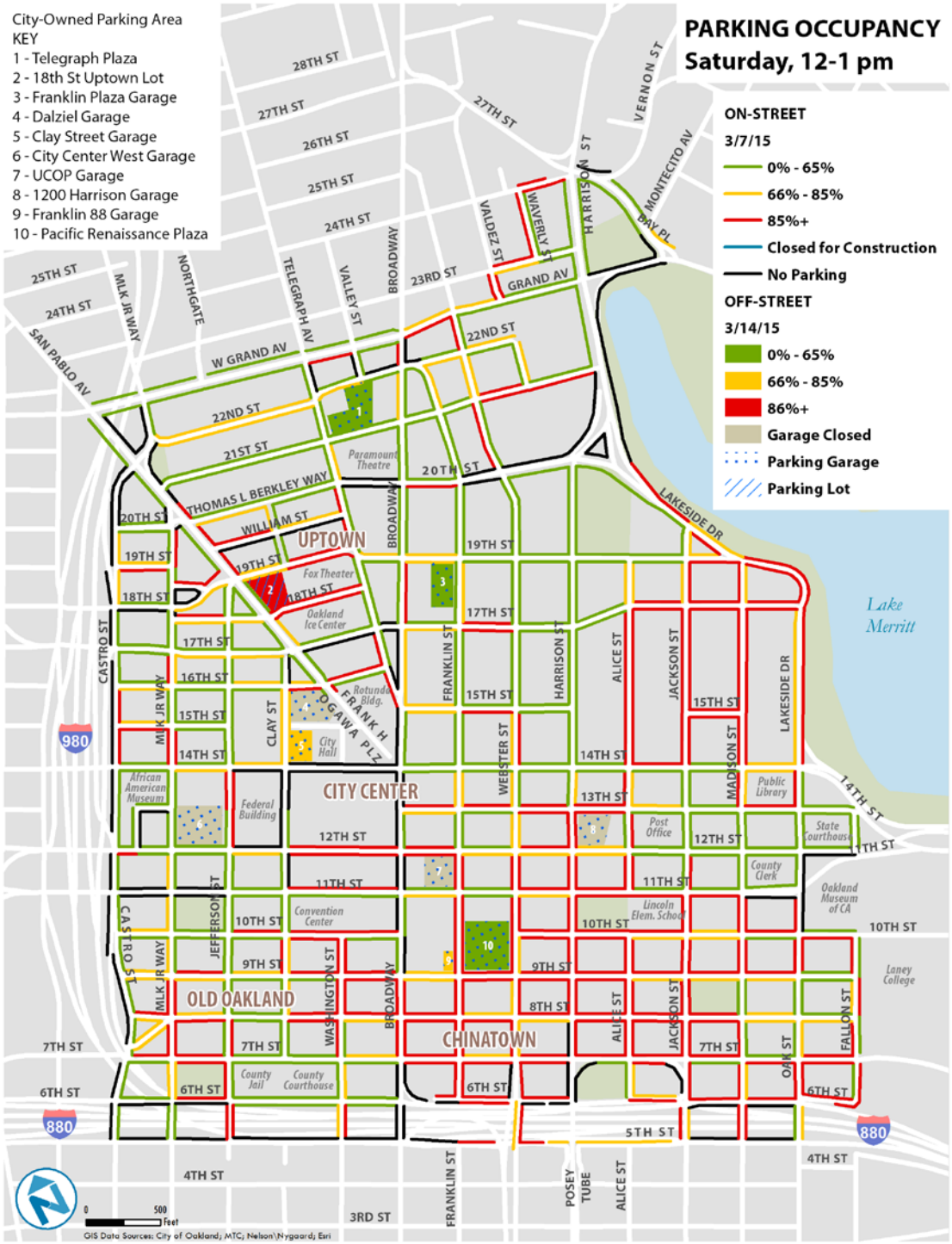
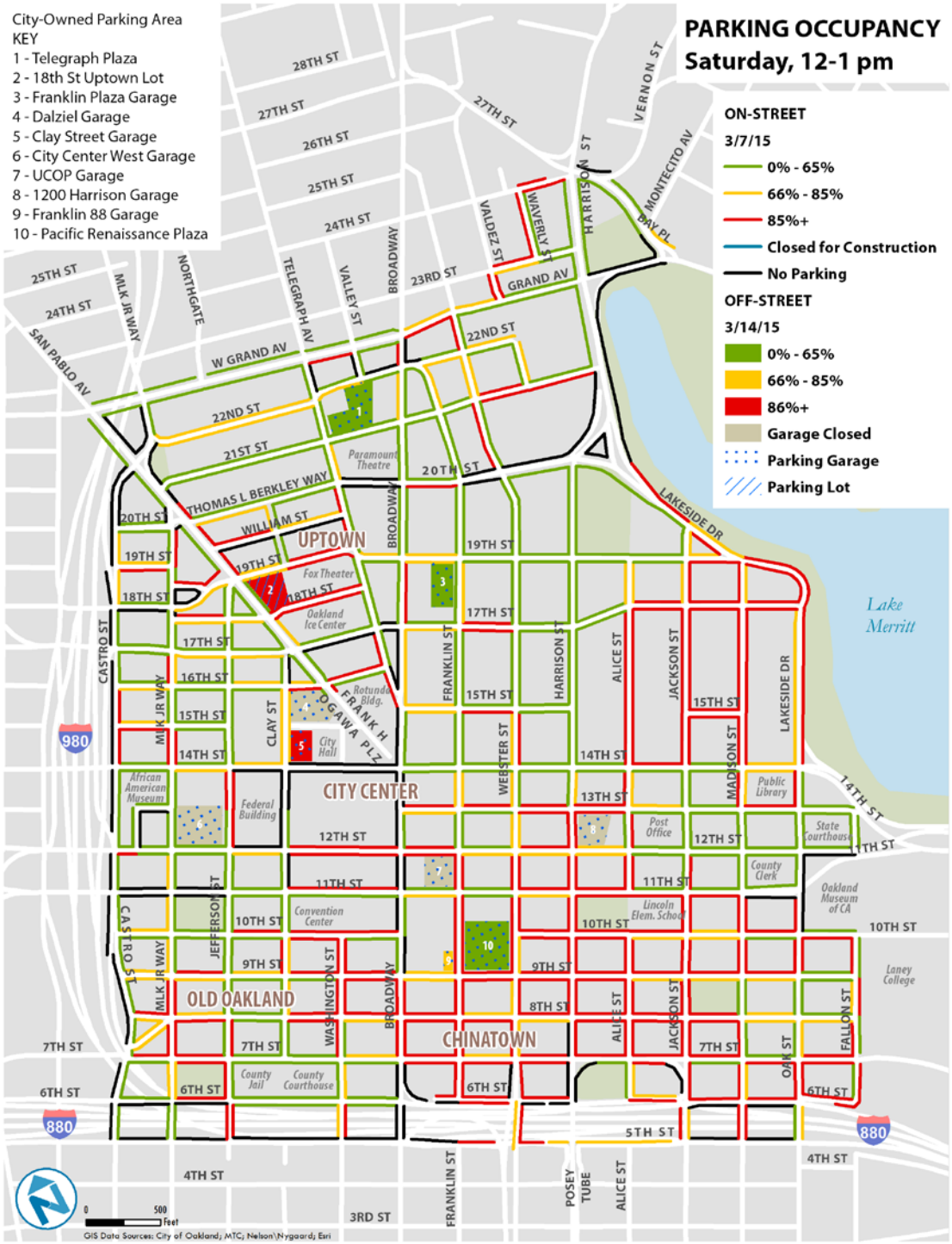


Figure 2-22 Parking Occupancy of Regular Spaces at Peak Hour (Saturday 12 p.m. to 1 p.m.)



Use of Disabled Person Parking Placards

As previously mentioned in this report, the City of Oakland's Parking Principles state that curb parking should be managed to achieve an approximate 85% maximum occupancy per block, to ensure that there will always be some available on-street parking for shoppers and visitors. For people with disabilities that make travel on foot for any significant distance slow, difficult, painful, or all of the above, it is particularly important to ensure that at least some curb parking spaces are available on each blockface, since curb parking spaces are frequently closest and most convenient to their destinations.

With this in mind, this study's data collection efforts included an investigation of the perception, voiced repeatedly during public meetings for both this study and previous downtown planning efforts, that (a) there is widespread use and abuse of disabled placards, with many drivers using them to park for free at metered curb parking spaces all day long, and (b) as a result, curb parking is frequently entirely full at peak hours, which discourages shoppers and hampers businesses.

Background

California Vehicle Code Section 22511.5 establishes that a "disabled person or disabled veteran displaying special license plates issued under Section 5007 or a distinguishing placard issued under Section 22511.55 or 22511.59 is allowed to park for unlimited periods" in any parking zone "that is restricted as to the length of time parking is permitted as indicated by a sign erected pursuant to a local ordinance." Disabled placard holders are also "allowed to park in any metered parking space without being required to pay parking meter fees".

However, this state law exempting disabled placard users from paying parking meter fees and allowing them to park for unlimited periods applies only to metered *curb* parking spaces, and not to *off-street* parking spaces.

In California, Disabled Person Parking Placards and License Plates are issued by the Department of Motor Vehicles, upon receiving a letter from any of a variety of healthcare practitioners declaring that the person applying for the placard or plate has a disability. Vehicle Code Section 22511.55 specifies that prior to issuing a disabled parking placard, "the department shall require the submission of a certificate" substantiating the disability and signed by a physician, surgeon, nurse practitioner, certified nurse midwife, or physician assistant, "unless the applicant's disability is readily observable and uncontested." The disability of a person "who has lost, or has lost use of, one or more lower extremities or one hand, for a disabled veteran, or both hands, for a disabled person, or who has significant limitation in the use of lower extremities" may also be certified by a licensed chiropractor. The blindness of an applicant shall be certified by "a licensed physician and surgeon who specializes in diseases of the eye or a licensed optometrist."

A review of peer cities facing similar parking management challenges concluded overall that fraudulent use of disabled parking placards is a frequent problem in their cities, and curbing disabled placard abuse has proven challenging. The cities also concluded that widespread use (and abuse) of disabled placards, particularly in their downtowns and highly populated blocks, often results in the metered curb parking spaces on numerous blocks filling up entirely. Surveys often found that placard holders parking for free are a significant contributor to this problem: in Seattle, surveys found that between 30% and 40% of the curb parking in popular districts was typically occupied by vehicles with disabled parking placards; in San Francisco, 45% of metered spaces in a downtown study area were occupied by vehicles with placards; and in downtown Los

Angeles, a survey found that cars with disabled placards occupied most of the curb spaces most of the time.[29]

The City of Oakland has previously examined the issue of disabled placard use in the downtown area. Limited parking surveys conducted in 2012 and 2013 in the western half of downtown Oakland found that approximately 60% of all the vehicles parked at the metered curb parking spaces surveyed displayed a disabled placard.[30]

Disabled Placard Survey Results

The survey work focused on determining both the share of metered curb parking spaces occupied by vehicles displaying disabled placards and on those vehicles' duration of stay. Over 25% of the curb parking meters in the study area were surveyed to observe disabled placard use, indicated in Figure 2-23.

As illustrated in Figure 2-24 (showing peak hour occupancy), the surveys of placard use found that on numerous blocks, vehicles with disabled placards occupied most of the metered curb parking spaces most of the time. Partially due to this high percentage of curb spaces occupied by vehicles with disabled placards, the overall parking occupancy surveys found that on many of the same blocks, curb parking was entirely full during peak hours.[31]

As shown in Figure 2-24, on some block faces, such as on Grand Avenue between Webster and Harrison, and on 21st and 22nd Streets between Webster and Valdez, vehicles with disabled placards occupy more than 80% of metered curb parking spaces at the peak hours of the day.

Figure 2-25 illustrates the duration of stay for vehicles displaying disabled placards at the metered spaces surveyed. The surveyors observed 1,339 unique vehicles displaying disabled placards at the metered curb parking spaces surveyed.[32] The average duration of stay for these vehicles with disabled placards was approximately three and a half hours, with a median stay of two hours.

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[29] Nelson\Nygaard Consulting Associates, *Downtown Oakland Parking Study Technical Memorandum #1: Context Analysis,* April 2015; *Downtown Oakland Parking Study Technical Memorandum #3: Public Outreach Summary,* November 2015.

[30] City Of Oakland DPW Memo on the impact of disabled placard parking policy on parking revenues and parking space availability in downtown Oakland, August 12, 2013.

[31] Nelson\Nygaard Consulting Associates, *Downtown Oakland Parking Study Technical Memorandum #2: Existing Conditions,* January 2016.

[32] By "unique vehicles", we mean vehicles with different license plate numbers.

Figure 2-23 Inventory of Metered Spaces Surveyed for Disabled Placard Use

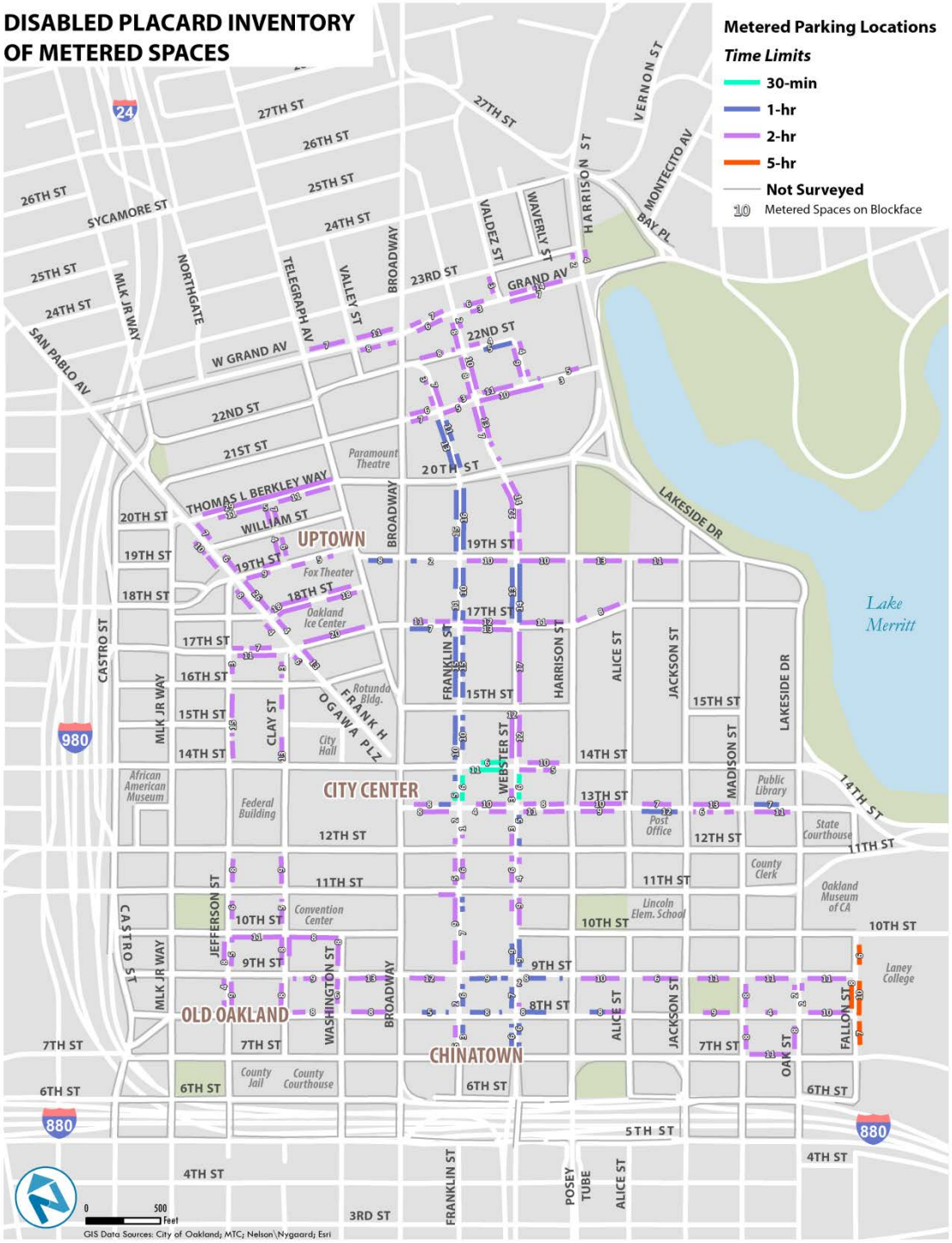
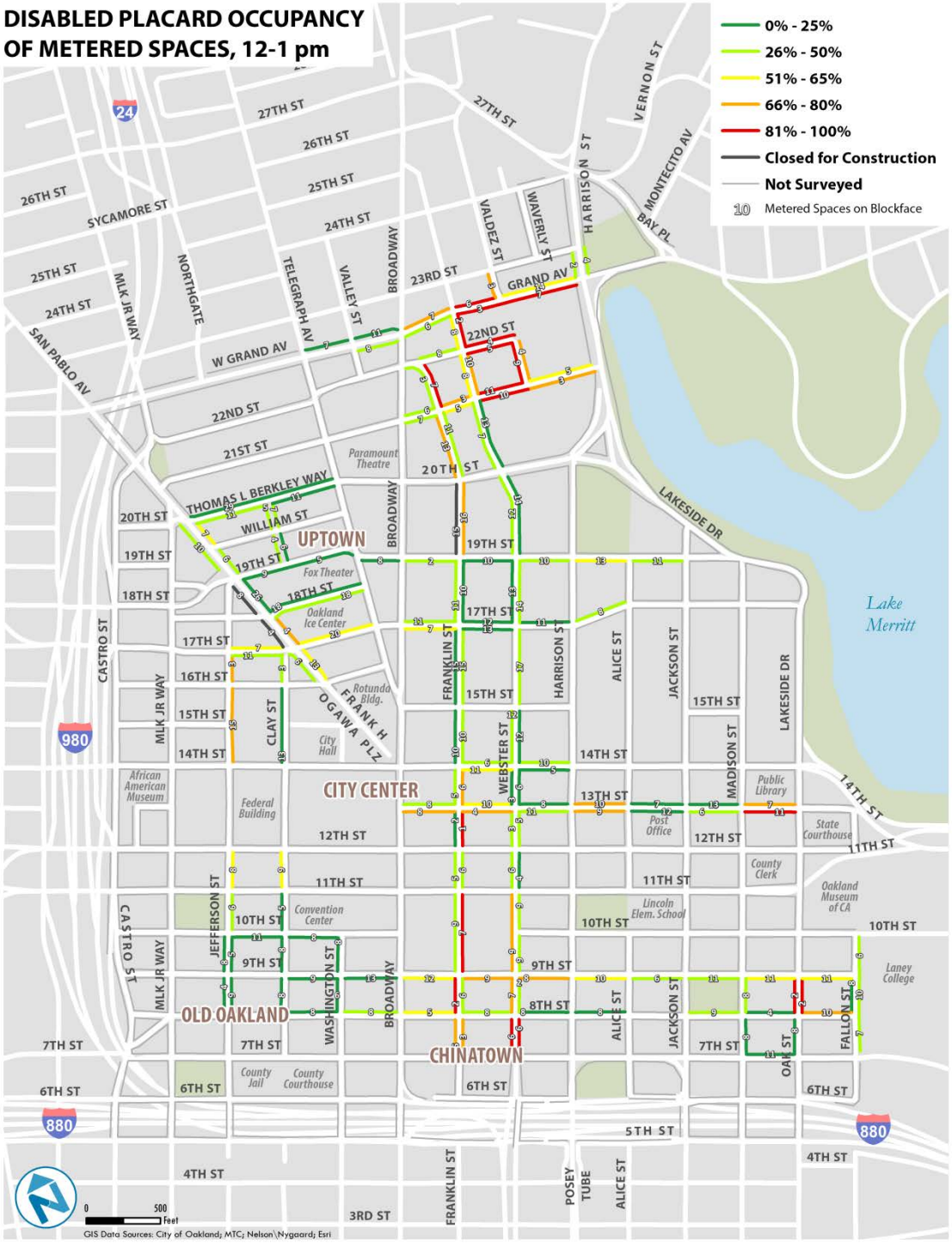
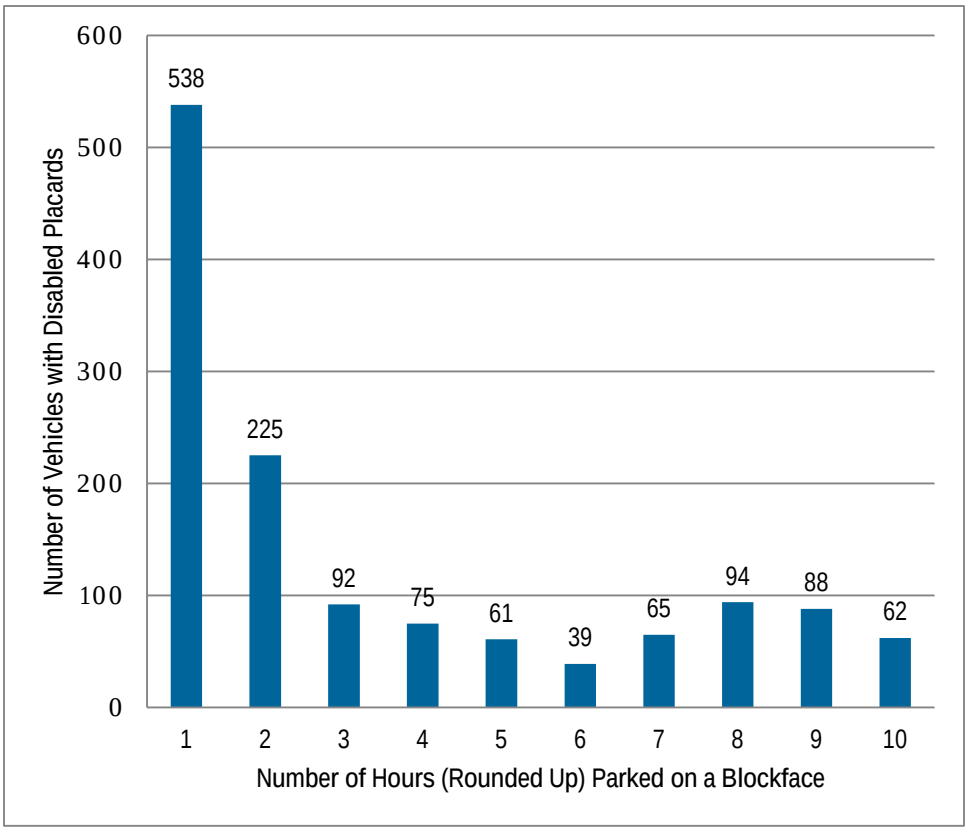


Figure 2-24 Metered Spaces Occupied by Vehicles with Disabled Placards at Peak Hour (12 p.m. to 1 p.m.)



Approximately 40% of these vehicles with disabled placards occupied a metered space for one hour or less, and 17% stayed for two hours or less. While these 763 vehicles (538 staying for one hour or less, 225 staying for two hours or less) accounted for the majority of the vehicles displaying disabled placards, they used a relatively small share of metered curb parking supply. Altogether, most of the spaces stayed for less than two hours each, and these drivers used less than 988 hours of metered curb parking time combined. By contrast, a relatively small number of drivers using disabled placards to park for free at metered curb parking left their vehicles parked at the curb for more than six hours.

Figure 2-25 Duration of Stay at Metered Curb Spaces by Vehicles with Disabled Placards



Overall, the data analysis revealed that most vehicles observed using disabled placards (57% of placard holders) to park for free at metered curb parking spaces stayed for just one or two hours, and together used up 988 hours of metered curb parking time. However, a small share (23% of placard holders) of vehicles were parked at metered curb parking spaces for more than six hours each, and these vehicles collectively used up more than 2,310 hours of metered curb parking time.

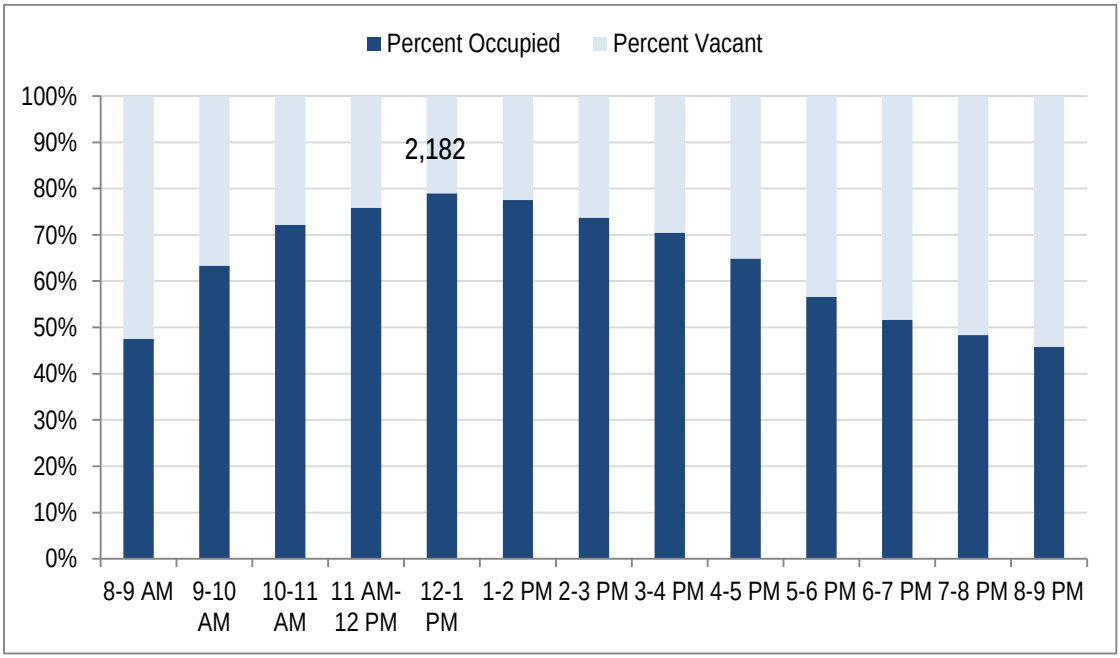
In summary, the surveys of disabled placard use found that on numerous blocks in downtown Oakland, vehicles with disabled placards occupy most of the metered curb parking spaces most of the time. On some blocks, vehicles with disabled placards occupy more than 80% of metered curb parking spaces at the peak hours of the day.

CONCLUSIONS REGARDING EXISTING CONDITIONS

As a rule of thumb, a parking system is considered to be effectively full when curb parking spaces (which are generally intended for short-term parking) reach an occupancy rate of 85%, and off-street parking lots and garages (generally intended for longer-term parking) reach an occupancy rate of 90%. An 85% occupancy rate for each block of curb parking typically leaves one or two spaces available on the block, meaning that parking is well-used but readily available. A slightly higher (90%) occupancy rate is generally considered acceptable for off-street parking, since many users (e.g., office workers parking for the day) are staying for longer periods. These occupancy rates leave a cushion of spaces available to accommodate incidents (such as spaces which are unavailable due to construction), and mean that a driver need not search every aisle in the parking system to find the last available space.

By these measures, when the City's downtown publicly available parking facilities are considered *as a whole*, a parking surplus exists. Figure 2-26 and Figure 2-27 compare the total inventory of City-owned parking with the total number of vehicles parked at these facilities at the peak hour. Overall parking occupancy for City-owned facilities reaches only 79% at the peak hour (Thursday, 12 p.m. to 1 p.m.) with more than 2,000 parking spaces remaining vacant, as shown in Figure 2-19.

Figure 2-26 Total Parking Occupancy, Thursday



Hot Spots: Localized Shortages and Nearby Surpluses

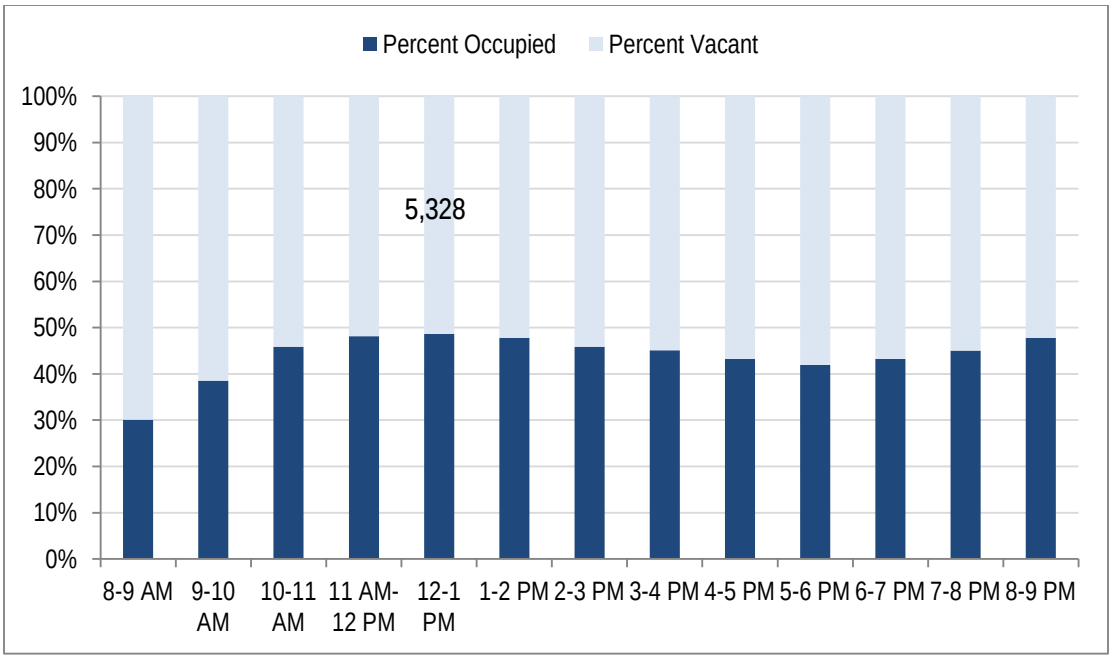
However, hot spots of high parking demand do exist. In core business areas such as Chinatown and City Center, finding available curb parking spots is difficult during much of the day, both on weekdays and Saturdays. The survey results appear to confirm the findings of previous studies such as the 2014 Lake Merritt Station Area Plan, which noted frequent curb parking problems in the core of Chinatown, including merchants using curbside parking spaces for storage throughout

the day; illegal parking in loading zones and no parking zones; and double parking and street loading.

At peak hour on Thursday, three City lots and garages (Telegraph Plaza, the 18th Street Uptown Lot, and the Franklin Plaza Garage) are also either nearly or entirely full. In two other City facilities (the Dalziel Garage and the Clay Street Garage), while the reserved parking spaces may remain mostly vacant, regular parking spaces are full at the peak hour, making these facilities effectively full for the average member of the public.

By contrast, parking occupancy on Saturday is far lower, with overall parking occupancy reaching just 49% at the busiest hour (12 p.m. to 1 p.m.). At this time, more than 5,000 parking spaces remain vacant in the City's downtown parking facilities, as shown in Figure 2-27, and all of the City-owned off-street lots and garages have substantial excess capacity.

Figure 2-27 Total Parking Occupancy, Saturday



Disabled Placard Parking Use and Abuse

Disabled placard use and abuse at on-street parking meters appears to be a significant issue. Surveys of disabled placard use found that on numerous blocks, vehicles with disabled placards occupy most of the metered curb parking spaces most of the time. Almost one in five (18.2%) vehicles displaying a disabled parking placard remained at a parking space for eight hours or longer. On some blocks, vehicles with disabled placards occupy more than 80% of metered curb parking spaces at the peak hours of the day. In part due to the high percentage of curb spaces on many blocks occupied by vehicles with disabled placards, curb parking on these same blocks is often entirely full during peak hours. This leaves no convenient curb parking available when many shoppers and visitors arrive – including those with disabilities.

3 MANAGING ON-STREET PARKING

The recommendations in this chapter are designed to further the implementation of the following City-adopted Parking Principles, which are particularly relevant to managing curb parking.

PARKING PRINCIPLES FOR MANAGING CURB SPACE

Parking is part of a multimodal approach to developing neighborhood transportation infrastructure.

- Curbside parking must be balanced with multiple complementary and competing needs, including but not limited to delivery vehicles, taxis, car share vehicles, bus stops, bicycle parking and sidewalk widening.

Parking should be actively managed to maximize efficient use of a public resource.

- Parking should be managed to achieve an approximate 85% maximum occupancy per block so that there will always be some parking available to shoppers and visitors.
- Parking should be priced to achieve usage goals ("market rate pricing"); market prices may vary by area; by time of day and may be adjusted occasionally to reflect current use.
- Pricing and policies should encourage use of off-street parking lots where they are available.

Parking should be easy for customers.

- Costs, rules and penalties should be easily comprehensible.
- Fees should be payable by a variety of fare media (prepaid cards, credit cards, cash and cell phones).
- If possible, and where appropriate, time limits should be avoided in favor of market pricing.
- The role of tickets should be minimized in generating parking revenue; it should be easier to pay parking fees, which may lower the incidence of tickets.

Parking policy and regulations should help the City meet other transportation, land use and environmental goals.

- Pricing policies should encourage a "park once" approach, to minimize driving from store-to-store within a commercial district and adding to congestion and air pollution.
- Whenever possible, a portion of parking revenue should be reinvested directly back to neighborhood commercial district improvements, potentially through a mechanism such as a parking benefit district."

SUMMARY OF RECOMMENDATIONS FOR MANAGING CURB PARKING

To improve management of on-street parking:

1. Adopt a clear methodology to guide decision-making on how to prioritize the use of scarce curb space. In general, the needs of the following uses should be addressed before examining long-term parking needs:
    i. Bicyclists, pedestrians, and transit;
    ii. active freight and passenger loading, including taxi stands;
    iii. places to linger, such as parklets and sidewalk dining;
    iv. short- and long-term parking.
2. Implement performance-based parking pricing with rates that vary by time of day, day of week and by block.
3. On each block, charge for parking whenever necessary – including evenings and weekends, if needed – to achieve an approximately 85% maximum occupancy per block.
4. Use prices rather than time limits to achieve curb parking availability.
5. Use the Sensor Independent Rate Adjustment (SIRA) methodology developed for San Francisco's *SFpark* performance-based parking pricing to adjust meter rates, calibrating it for Oakland's commercial districts.
6. Establish one or more parking benefit districts for the commercial and residential areas of downtown, in order to provide an institutional structure for returning a portion of curb parking revenue to the blocks where it was collected to fund neighborhood improvements.
7. Return 50% of any net increase in curb parking revenues to the parking benefit district where the revenue is collected, to fund improved public infrastructure and services.
8. Give existing merchant and neighborhood organizations, such as Business Improvement Districts, a significant advisory role in deciding how to spend their local parking benefit district's revenues.
9. Establish a committee, with significant representation from people with disabilities, charged with proposing reforms to (a) improve curb parking availability for people with disabilities, and (b) reduce Disabled Placard fraud and abuse.
10. Improve parking monitoring and enforcement with integrated "smart" meters, off-street Parking Access and Revenue Control Systems, and license plate recognition (LPR) systems.
11. Evaluate emerging parking occupancy sensor technologies (in-ground and/or on-meter) and consider deploying them if and when current reliability, accuracy and cost problems are overcome.
12. Improve parking signage.

DISCUSSION

Adopting a Clear Hierarchy for the Use of Scarce Curb Space

Curb space is a scarce and valuable public resource. Particularly in busy areas, space at the curb is desired, by many different parties, for a variety of public safety, access, movement, commerce, place making and vehicle storage needs. It is physically impossible for all of the desires of all parties to be met in this limited space. Therefore, clear priorities must be set.

The framework recommended above aims to prioritize the use of curb space in ways that match the City's overarching goals. The curb space needs for the most space-efficient and environmentally-friendly modes of transportation – bicycling, walking, and riding transit – should be given top priority. Active freight and passenger loading, which benefits greatly from proximity to destinations, and which requires relatively little space to accommodate many short-stay pickup and drop-offs events, is then accommodated. Pedestrian place-making functions (such as sidewalk dining, parklets, and similar spaces), which can add greatly to the charm and commercial vitality of a street, and which can provide for many people in a relatively small space, are given the next priority. Thereafter, short-term and long-term automobile storage space needs should be considered, with priority given to people with significant disabilities which make it difficult for them to walk for any distance.

This methodology implicitly recognizes that due to the substantial space needs of motor vehicles, the vast majority of downtown parking needs must be met in off-street parking lots and garages. In downtown, curb parking and loading spaces account for less than 30% of the total parking supply. Especially popular blocks with tall buildings, curb space can satisfy only a fraction of total parking demand. Therefore, most long-term vehicle storage needs must be met in off-street facilities, and parking prices should be set to encourage long-stay users to park off-street.

Progress on Implementing Oakland's Parking Principles

Implementing Smart Meters to Make Parking Easier

The City has been moving steadily forward on implementing the parking principles listed above. On July 31, 2014, the City completed the $5.8 million Smart Parking Meter Upgrade Conversion Project.[33] The project replaced all 3,800 remaining single-space, coin-only parking meters in commercial districts across Oakland with new "Smart Parking Meters". The new meters are solar-powered and wirelessly networked, have backlit displays to communicate parking prices and rules, and accept payment by credit cards, debit cards, coins and pay-by-phone. By providing better information and multiple payment options (including the option of extending time remotely by phone), the new meters have made it easier for customers to pay, and easier to avoid citations.

The new meters also set the stage for implementing performance-based parking pricing (i.e., varying parking prices to achieve an occupancy goal for each block) throughout the City. The meters wirelessly communicate, in real time, information about which meters been paid, providing most of the information needed to easily (a) estimate hour-by-hour occupancy on each block and (b) adjust parking prices by block, day of week, and time of day to meet occupancy

[33] http://www2.oaklandnet.com/Parking/SmartMeters/index.htm

goals. Each meter's electronic display allows easy communication of the day's parking prices and rules for that block.

Piloting Performance-Based Pricing and a Parking Benefit District

On August 18, 2014, the City implemented the Montclair Village Flexible Parking Pricing Pilot Project. The pilot project was developed with extensive help from the Montclair Village Business Improvement District. The project varies parking prices on each block to achieve the City's goal of an approximate 85% maximum occupancy on each block. The project effectively created the city's first parking benefit district: 50% of any net increase in parking revenues resulting from the flexible parking pricing will be reinvested into improving public infrastructure within the district. The Montclair Village Association (a Business Improvement District) plays an advisory role in helping determine how to spend any new revenues.

While other locations including Temescal and the Jack London District were studied in 2011 as possible locations for similar parking improvements, Montclair Village was ultimately chosen due to the presence of meter technology allowing neighborhood-wide flexible parking rates. In addition to determining curb parking rates through observed occupancy, the pilot project considers the Village's public garage as part of the whole public parking supply and prices it accordingly, with the aim of meeting the project's parking occupancy goals for the district.

Overall, the project has been well-received, and the Montclair Village Association has expressed its support for the City's continuing efforts to implement "smart" parking and related strategies that build on the Montclair flexible parking pricing pilot program. This existing pilot in Oakland is a strong example of how performance-based pricing can work together with a parking benefit district to benefit residents, visitors, and businesses alike.

The Case for Performance-based Parking Pricing

Currently, prime curb parking spaces in downtown are priced at $2 per hour (Monday through Saturday from 8 AM to 6 PM), and are free of charge at other hours. These prime curb parking spaces are often more visible, more convenient to destinations, and perceived as safer than nearby off-street garages. Yet, they are priced at just one half to one quarter the going rate ($4 to $8 per hour) charged at the competing nearby private lots and garages.

As demonstrated in Chapter 2, the result of this pricing structure is an imbalance between on- and off-street parking utilization, with frequent "hot spots" of on-street demand while there is a surfeit of off-street parking supply nearby. Similarly, there is a perception among merchants and shoppers in the downtown area that parking is difficult, double parking frequent, loading spaces adequate, and time limit regulations too limiting. Better pricing of scarce curb parking can help address these problems.

Available, convenient, on-street customer parking is important for ground-level retail to succeed. To create vacancies and ensure availability of the best, most convenient, front door parking spaces, it is crucial to have price incentives to persuade some drivers to park in the less convenient spaces (on upper garage floors or a block or two away). In other words, higher prices for the best spots and lower prices for the less convenient, currently underutilized spots.

Drivers can be thought of as falling into two primary categories: bargain hunters and convenience seekers. Convenience seekers are more willing to pay for an available front door spot. Many shoppers and diners are convenience seekers. They are typically less sensitive to parking charges

because they stay for relatively short periods of time, meaning that they will accumulate less of a fee than an employee or other all-day visitor. By contrast, many longer-stay parkers will find it worthwhile to walk a block to save on parking fees. With proper pricing, the bargain hunters will choose currently underutilized lots and more distant meters, leaving the prime spots free for those convenience seekers who are willing to spend more. For merchants, it is important to make prime spots available for these people: those who are willing to pay a fee to park are also those who are willing to spend money in stores and restaurants.

For some people, of course, the price of transportation is of primary importance. Lower-cost alternatives are available for those who are particularly sensitive to price, such as parking in off-street garages, and lower-cost modes such as transit, ridesharing and bicycling. Recommendations elsewhere in this report, such as the recommendation to provide all downtown workers and residents with free transit passes, are designed to ensure that one outcome of the report will be to improve equity for lower-income residents and workers.

The Case for Removing Time Limits

The primary alternative to performance-based pricing that cities can use to create vacancies in prime parking spaces is to set time limits, and give tickets to violators. The “time limits and tickets” approach, however, brings several disadvantages: enforcement of time limits is labor-intensive and difficult, and employees, who quickly become familiar with enforcement patterns, often become adept at the "two hour shuffle", moving their cars regularly or swapping spaces with a coworker several times during the workday. Even with strictly enforced time limits, if there is no price incentive to persuade employees to seek out less convenient, bargain-priced spots, employees will probably still park in prime spaces.

For customers, strict enforcement can bring “ticket anxiety", the fear of getting a ticket if one lingers a minute too long. As Dan Zack, the former Downtown Development Manager for Redwood City, CA, put it, “Even if a visitor is quick enough to avoid a ticket, they don't want to spend the evening watching the clock and moving their car around. If a customer is having a good time in a restaurant, and they are happy to pay the market price for their parking spot, do we want them to wrap up their evening early because their time limit wasn't long enough? Do we want them to skip dessert or that last cappuccino in order to avoid a ticket?"

A Redwood City staff report summarized the results found in downtown Burlingame, California:

> *In a recent "intercept" survey, shoppers in downtown Burlingame were asked which factor made their parking experience less pleasant recently... The number one response was "difficulty in finding a space" followed by "chance of getting a ticket." "Need to carry change" was third, and the factor that least concerned the respondents was "cost of parking." It is interesting to note that Burlingame has the most expensive on-street parking on the [San Francisco] Peninsula ($.75 per hour) and yet cost was the least troubling factor for most people.*

This is not an isolated result. Repeatedly, surveys of shoppers have shown that the *availability* of parking, rather than price, is of prime importance.

By using the right prices, with prices that vary by time of day and by location, and by carefully considering which locations can best accommodate this strategy, the City of Oakland can respond to changing demand patterns in a way that is more flexible and customer-oriented than setting time limits.

What is the right price for curb parking?

If prices are used to ensure availability of prime parking spots, then what is the right price? An ideal occupancy rate is approximately 85% at even the busiest hour, a rate which leaves about one out of every seven spaces available, or one to two empty spaces on each block face. For each block, the right price is the price that will achieve this goal.

Professor Emeritus Donald Shoup of UCLA describes this as setting prices for parking according to the "Goldilocks Principle":

> *The price is too high if many spaces are vacant, and too low if no spaces are vacant. Children learn that porridge shouldn't be too hot or too cold, and that beds shouldn't be too soft or too firm. Likewise, the price of curb parking shouldn't be too high or too low. When about 15 percent of curb spaces are vacant, the price is just right. What alternative price could be better?*

If this principle is followed, pricing parking should not drive customers away. After all, when the front-door parking spots at the curb are entirely full, underpricing parking cannot create more curb parking spaces for customers, because it cannot create more spaces. And, if the initial parking meter rate on a block is accidentally set too high, so that there are too many vacancies, then a policy goal of achieving an 80-85% occupancy rate will result in lowering the parking rate until the parking is once again well used.

How many vehicles need to go somewhere else to create a vacant space on every block?

To create one available parking space on every block face in downtown Oakland, approximately 787 vehicles would need to move from the curb into nearby garages (approximately 787 blockfaces in our study area) if all the curb parking were full. Fortunately, Downtown garages currently have far more than 787 vacant spaces, even at peak hour. Additionally, some drivers may respond by leaving their cars at home or in a park-and-ride lot.

No time limits needed

Once a policy of performance-based pricing is adopted, then time limits can actually be eliminated. With their elimination, much of the worry and "ticket anxiety" for customers disappears. In Redwood City, where this policy was adopted in 2006, Dan Zack describes the thinking behind the City's decision in this way:

> *Market-rate prices are the only known way to consistently create available parking spaces in popular areas. If we institute market-rate prices, and adequate spaces are made available, then what purpose do time limits serve? None, other than to inconvenience customers. If there is a space or two available on all blocks, then who cares how long each individual car is there? The reality is that it doesn't matter.*

While customers can stay as long as they like, Redwood City's performance-based pricing has succeeded nonetheless in ensuring vacancies, as employees and bargain hunters have moved to lower-price off-street parking nearby. Similarly, the cities of Ventura and Riverside, CA, have eliminated time limits for many downtown curb parking spaces, relying instead solely on prices to achieve their occupancy goals.

Focus on Ensuring Parking Availability, Not Turnover

The experience from cities that have adjusted parking rates with the aim of ensuring that parking is well-used, but still readily available, shows that to achieve this goal, it is better to use rates that vary by time of day, rather than what is known as "progressive pricing". Progressive pricing

charges drivers higher parking rates for longer stays (e.g., $1 for the first hour and $2 for the second hour) with the goal of increasing turnover at curb parking spaces. *Turnover*, however, is not the key metric that customers care about. Customers care about *availability*. Customers want to find a space available near their destination when they arrive. As long as a space is available, the customer doesn't care how long other people on the block may have parked.

To achieve the desired level of *availability*, particularly at busy hours such as lunchtime and dinnertime, rates that vary by time of day and by location have proven to be more effective than progressive prices. San Francisco's *SFpark* performance-based parking pricing program, for example, often sets higher midday (e.g., noon-3 p.m.) meter prices on blocks with popular lunch spots, with lower rates before noon and in late afternoon. This rate structure responds well to observed curb parking demand, helping ensure vacancies when the lunch crowd arrives. By contrast, progressive pricing—with a low rate for the first hour or two—does little to create vacancies during the lunch hour rush.

Time of day pricing is a superior approach for managing demand in downtown Oakland. As described in chapter 2, parking surveys show that during the week, curb parking occupancy rates are highest between 11 a.m. and 2 p.m., and that by early evening, curb demand levels off under 70% occupancy. With this overall pattern, progressive pricing would likely do a poor job of ensuring availability for the high number of lunchtime customers looking for parking for only an hour or two, and would overprice parking on many blocks in the evening. Instead, on many blocks, appropriate pricing is likely to be a higher rate during the midday period, with lower rates in the morning and evening.

Using *SFpark*'s Sensor Independent Rate Adjustment (SIRA) Methodology & *goBerkeley's* Monitoring & Enforcement Technologies

San Francisco and Berkeley's successful experiences with performance-based parking pricing demonstrate two different ways that the City can approach the task of adjusting curb parking rates and operations. In the following section, both San Francisco and Berkeley's approaches are described, to illustrate two viable alternatives.

This report's recommendations aim to draw from the best aspects of both Berkeley and San Francisco's programs. We recommend implementing time-of-day pricing and block-by-block pricing adjustments, as is done in San Francisco's SF*park* program. We also recommend using the Sensor Independent Rate Adjustment (SIRA) methodology, which was originally developed for the *SFpark* program, to adjust meter rates. This approach provides the advantage of being readily adaptable to a wide variety of districts throughout a large city like Oakland. The methodology for adjusting parking meter rates is also transparent, quantifiable, and data-driven. These characteristics may assist in creating confidence and trust that performance-based parking pricing will be aimed primarily at managing parking for availability, rather than maximizing revenue. A quantifiable, data-driven approach can also survive future staff turnover, and minimizes the need for judgment calls by individual City staff.

To monitor parking occupancy and improve enforcement, we recommend adopting the monitoring and enforcement technologies used by Berkeley's *goBerkeley* program. As described later in this section, and in the next section (on Payment, Monitoring and Enforcement Technologies), Berkeley monitors parking occupancy rates using a combination of data from their smart parking meters and data from the license plate recognition (LPR) systems mounted on City vehicles. Their software systems help City parking managers integrate the data, generate parking occupancy maps, and decide how to adjust parking meter rates.

San Francisco, CA – *SFpark* and the SIRA methodology

In San Francisco, the *SFpark* project established different rate periods for weekdays and weekends based on observed parking demand. Rates were then adjusted gradually and periodically based on demand, and rates changed no more often than once per month. Rates are set with the goal of maintaining no more than 80% occupancy on any single block.[34] For each block, prices can vary by weekday and weekend, and by time of day (divided into three to four "time bands" for simplicity; e.g., "9 a.m. to noon"). The example below shows all time bands and recent rates for the 100 block of Berry Street, where the meters operate from 9 AM to 10 PM. On this block, demand is highest on weekdays, somewhat lower on weekends, and substantially lower in the evening. Rates vary accordingly.

Table 3-1 Time of Day Parking Rates in San Francisco – An Example

Day Type	From Time	To Time	Current Rate
Weekday	9 AM	12 PM	$4.25
	12 PM	3 PM	$4.25
	3 PM	6 PM	$4.25
	6 PM	10 PM	$0.75
Weekend	9 AM	12 PM	$3.50
	12 PM	3 PM	$3.75
	3 PM	6 PM	$3.75
	6 PM	10 PM	$0.75

Occupancy rates *initially* were determined using data from wireless in-ground parking occupancy sensors and were calculated by dividing the total number of seconds the block was occupied by the sum of total occupied seconds and total seconds the block was vacant. Occupancy rates were only calculated on whole hour increments, so that the total number of occupied seconds was always divided by 3,600, the number of seconds in an hour. Following is a description of *SFpark*'s original approach to rate adjustments based on observed occupancy:

- When occupancy is 80-100%, the hourly rate is increased by $0.25
- When occupancy is 60-80%, the hourly rate is not changed.
- When occupancy is 30-60%, the hourly rate is lowered by $0.25.
- When occupancy is less than 30%, the hourly rate is lowered by $0.50.[35]

Between August 2011, when performance-based pricing went into effect, and the end of 2013, San Francisco implemented 13 rate adjustments using occupancy calculated from parking sensor data. At the end of 2013, the pilot project's federally-funded parking sensors reached the end of their

[34] San Francisco Municipal Transportation Agency, *SFpark: Putting Theory Into Practice* (San Francisco: SFMTA, August 2011), p. 25. Recently, the City found that after numerous rounds of performance-based price adjustments, rates very rarely needed to be lowered by $0.50, and for the sake of simplicity, eliminated this rate adjustment band.

[35] Ibid. p. 26.

useful lives and were deactivated and not replaced. *SFpark* staff decided not to purchase and operate new sensors due to a variety of problems they had experienced with this emerging technology, including problems with reliability, accuracy, cost, and replacing sensors removed without warning due to construction projects.

Instead, using the previous two and half years of occupancy data from the parking sensors (supplemented by manual counts for quality assurance) and revenue data from parking meters, San Francisco developed a model to estimate parking occupancy using meter payment data.[36] The goals of the Sensor Independent Rate Adjustment (SIRA) model were to support the existing on-street rate adjustment policy, address inherent uncertainty in using models to estimate outcomes, and provide for flexibility in expanding demand-responsive pricing citywide.

The SIRA model developed by the City was found to support these goals, and since June 2014, the City has used the model to continue making regular demand-responsive rate adjustments. The model allows the City to continue performance-based pricing, without needing sensors. Instead, meter revenue data, supplemented by manual and/or license plate recognition-based occupancy counts, can be used to verify that occupancy goals are still being met.

The model uses meter payment rates to estimate occupancy rates on each block. At any snapshot in time, the meter payment rate is the share of total spaces available that are also paid. The parking occupancy rate is the share of total spaces available that are also occupied. The occupancy rate is usually higher than the payment rate because not everyone who parks pays (sometimes because a driver is not required to pay, and sometimes because the motorist parked illegally). Using a statistical regression analysis model, San Francisco developed the following simple linear model equation:

$$Occupancy\ Rate = 29.283 + 0.808 * (Payment\ Rate)$$

As one example, using this model, a payment rate of 50% yields an occupancy rate of about 70%.

SFpark's Sensor Independent Rate Adjustments (SIRA) Methodology & Implementation Plan[37] provides extensive detail on the development of the model and important additional information on how to use it. The document also describes two slightly more accurate model equations, which customize the model for different San Francisco districts.

This report recommends adapting the SIRA model for use in Oakland. As a starting point, the simple linear model equation shown above can be used for initial parking price adjustments. To provide occupancy data, purchasing and using license plate recognition systems mounted on parking enforcement vehicles is recommended. (As described below, Berkeley has adopted the practice of using license plate recognition to collect occupancy data, with good results.)

Once Oakland has gathered a strong database of parking occupancy data for each block in the performance-based parking pricing areas, stretching over a year or more, the SIRA model equations can be calibrated for the specific conditions that exist in each of Oakland's commercial districts. This calibration step is recommended to improve the accuracy of the simple linear SIRA model equation shown above. This local calibration step is likely to result in a modest, but worthwhile, improvement in model accuracy.

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[36] San Francisco Municipal Transportation Agency. "Sensor Independent Rate Adjustments (SIRA) Methodology & Implementation Plan," May 14, 2014. http://sfpark.org/wp-content/uploads/2014/05/SIRA-methodology-and-implementation-plan_2014_05-14.pdf. Accessed February 28, 2016.

[37] Ibid.

As was done in San Francisco, for all of the areas with demand-based parking pricing, we recommend that pricing adjustments be made no more frequently than monthly.

Revenue Implications of Demand-Based Curb Parking Pricing

All of the cities that have implemented demand-based curb parking pricing have done so with the primary goals of increasing parking availability, reducing cruising for parking and ultimately reducing traffic congestion and greenhouse gas emissions; not with the intention of increasing parking-related revenue. However, many cities have found that their programs have either proved to be essentially revenue-neutral, or sometimes net positive. The cities that found their programs increased revenue generally either: (a) switched from using time limits with no parking pricing to pricing curb parking (e.g., Ventura, CA); or else (b) extended the hours of meter enforcement.

In many cases, upgrading meter payment technology to allow paying by credit card has a substantial impact on meter revenue. If this change is implemented at the same time as demand-based parking pricing, it can be difficult to know whether the change was due to allowing payment by credit card, or due to the demand-based pricing.

Like Oakland, Los Angeles upgraded its meter technology with credit-card accepting smart meters in advance of collecting the baseline data for the City's "Express Park" demand-based parking pricing. Meter revenue increased slightly overall due to the switch to the new credit-card accepting meters, which was offset by the increased cost in operating the new parking system. Los Angeles subsequently found that overall, the Express Park performance-based parking pricing program was essentially revenue neutral.[38]

San Francisco's SF*park* performance-based pricing program appears to have increased parking revenues, although not dramatically. The *SFpark* program appears to have increased net parking revenues by approximately $1.9 million per year. During the same period, annual citation

The goBerkeley approach to Performance-based Parking Pricing

In Berkeley, the *goBerkeley* project established different rates and regulations based on geography, with "value" spaces priced at $1.50 per hour with eight-hour time limits, while "premium" spaces were priced at $2.75 per hour and given two-hour time limits. Occupancy rates were determined using an integrated algorithm from smart meter data and license plate recognition (LPR) as part of police-managed enforcement. The software estimates parking occupancy rates on each block face based upon the number of transactions and amount of revenue collected at each parking meter on the block face. Based on observed occupancy, rate adjustments are based on the following:

- When occupancy is 85-100%, the hourly rate is increased to increase turnover and/or shift demand.
- When occupancy is 65-85%, the hourly rate and regulations are not changed.
- When occupancy is under 65%, the hourly rate is lowered and time limits extended to incentivize use of parking.

The rate changes differ depending on whether the block is in a "premium" or "value" zone. Moreover, depending on parking occupancy, blocks with consistently high occupancies may be categorized as "premium;" conversely, blocks that are consistently underutilized may be categorized as "value" and priced and regulated accordingly.

Although Berkeley has continued to use time limits and a zone-based approach to their performance-based parking pricing, this report does not recommend incorporating these aspects into downtown Oakland's parking management. Time limits are hard to enforce and can even prompt more circling as drivers move their cars to avoid a ticket.

As Chapter 2 demonstrated, the parking "hot spots" of on-street shortages and nearby availability are too fine-grained to be treated as a larger zone. As other cities, including San Francisco, have found, appropriate pricing on a block-by-block basis, with regular adjustments to reflect changing land uses (e.g., the opening of a popular new business), is the most flexible and most effective way to manage curb parking to ensure adequate availability.

[38] Peer Ghent, Los Angeles Department of Transportation. "Optimizing Performance Objectives for Congestion Pricing Parking Projects." TRB 15-1895. November 2014. http://docs.trb.org/prp/15-1895.pdf

revenues appeared to have decreased by approximately $0.5 million, and garage revenues grew at a slower pace.[39] However, since *SFpark* installed credit-card-accepting parking meters as part of this pilot program, the extent to which these changes were due to performance-based parking pricing (versus due to accepting credit cards) is unclear.

Additionally, it is important to note that in most of the eight *SFpark* pilot project areas, San Francisco only implemented performance-based parking pricing within the confines imposed by the City's previously existing hours of meter enforcement. Today, most San Francisco meters, including those in the pilot project areas, are still operated and enforced from only 9 a.m. to 6 p.m., Monday through Saturday.[40] There are limited exceptions to this general rule, such as implementing event pricing and evening metering on parking meters within walking distance of AT&T Park. Meters are also operated on Sundays in the Fisherman's Wharf area, on the Embarcadero, in five municipal off-street parking lots and in the Special Event Area around AT&T Park during special events. Generally, however, curb parking pricing has not been extended into evening hours or to Sundays in most of the pilot project areas, even if curb parking occupancy during those hours exceeds the City's goals. This has limited the potential for performance-based pricing to increase the City's parking revenues.

Using Curb Parking Revenues to Improve Social Equity

The City of Oakland has made a strong commitment to equity and affordability, as discussed in Chapter 1. Donald Shoup explains how curb parking pricing can be deployed in an equitable manner:

> *Free curb parking limits the revenue available to pay for public services, and poor people cannot replace public services with private purchases as easily as richer people can. The poorest cannot afford cars, but they do benefit from public services—such as public transport—that parking revenues can finance. Using curb parking revenue to pay for local public services is much fairer than keeping curb parking free, losing the revenue needed to pay for public services, creating chaotic parking problems on busy streets, and increasing traffic congestion caused by drivers who are searching for free parking.*[41]

The on-street parking pricing strategy in this report is paired with a recommendation for the establishment of new parking benefit districts, discussed in the following section.

Parking Benefit Districts for Commercial Districts

Parking benefits districts (PBDs) are defined geographic areas, typically in downtowns or along commercial corridors, in which revenue generated from on-street and/or off-street parking facilities within the district is returned to the district to finance neighborhood improvements.

In downtown Oakland, one or more parking benefit districts should be established. Phase 1 of the Demand-Responsive Parking and Mobility Management Initiative funded by the $1.3 million MTC grant will deploy demand-responsive parking pricing paired with PBDs in Chinatown, Lake

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[39] San Francisco Municipal Transportation Agency, *SFpark Pilot Project Evaluation*. June 2014.

[40] San Francisco Municipal Transportation Agency. "Parking Meters: What You Need to Know about Parking Meters in San Francisco." Accessed May 25, 2016. https://www.sfmta.com/getting-around/parking/meters.

[41] Gregory Pierce & Donald Shoup (2013) Getting the Prices Right, Journal of the American Planning Association, 79:1, 78, DOI: 10.1080/01944363.2013.787307

Merritt/Uptown, and Civic Center/Uptown, as well as reinforce the existing demand-based pricing program and benefit district already established in Montclair Village.

In Oakland, Montclair Village is the first pilot of demand-based parking pricing and of establishing a PBD. Currently, the exact budgeting process for how net revenues resulting from this pilot effort will be allocated has yet to be determined. An important next step in implementing this report's PBD recommendations will be to develop clear protocols for allocating meter funds.

Two options for downtown Oakland can be considered. A first alternative would be to create a single PBD for the entire downtown. This offers ease of administration and easier aggregation of funds for a larger improvement project. A second alternative would be to create three downtown PBDs (Chinatown, Lake Merritt/Uptown, and Civic Center/Uptown). This alternative would help ensure geographic equity and reassure local merchants that their specific district would receive a share of any new revenues collected on their blocks.

The Case for Parking Benefit Districts

To make performance-based pricing popular and maintain enduring majority support, it is extremely helpful to return a significant share of any new curb parking revenue to fund public improvements in the blocks where the revenue is actually generated. If revenue from the district appears to be "disappearing" into the general fund, there will be little support for installing new parking meters or implementing pricing from local stakeholders.

To ensure the long-term success of a PBD, it is also critical that the city gauge the opinion of local residents and business owners to help determine how the revenues generated from the district should be spent. Potential expenditures that can be financed include a range of improvements:

- Purchase and installation costs of additional parking meters
- Additional parking enforcement
- Transit, pedestrian, and bicycle infrastructure and amenities
- Streetscape improvements, landscaping, and lighting
- Street cleaning, power-washing of sidewalks, and graffiti removal
- "Mobility Ambassadors" to provide visitor assistance and additional security
- Additional police patrols to provide additional security
- Leasing of private spaces for public use
- Marketing and promotion of the district and local businesses
- Implementation and administration of Transportation Demand Management programs to reduce commuter car use and parking demand (discussed in Chapter 6)
- Oversight and management of downtown infrastructure and amenities
- Additional programs and projects as recommended by local stakeholders and approved by City Council

By "net new revenues" we mean any new parking revenues from increases in fees less any increased parking costs, such as bond payments, operations and maintenance, enforcement, administration, and other costs required to establish and maintain the new parking system.

As prior efforts to change curb parking prices in Oakland have shown, engagement with local residents and business owners is key to communicating the benefits of implementation.

Implementing these parking recommendations can capitalize on the outreach done through this study and communication channels established as part of the Downtown Specific Plan process. During the Downtown Specific Plan's Parking Summit, for example, participants were strongly in favor of deploying more tools to manage demand for existing parking, including adjusting parking prices.[42]

Parking Benefit Districts for Residential Streets

In order to reduce spillover parking problems in residential neighborhoods, many cities, including Oakland, have implemented residential permit parking areas by issuing parking permits to residents. Cities may assess permit fees to cover costs associated with administering and enforcing the program. As discussed in Chapter 2, the City has two residential parking permit zones (Areas F and J) within the study area; the resident fee for an annual permit in these areas is $82 for a new permit, and $59 to renew an existing permit. These permits allow vehicles to park on the street for extended periods of time. One merchant permit per business license may be purchased in Area F.[43]

Conventional residential permit parking areas have several limitations. Most notably, cities often issue an unlimited number of permits to residents without regard to the actual number of curb parking spaces available in the area. In high parking-demand areas, this can lead to a situation in which on-street parking is seriously congested, and the permit functions solely as a "hunting license", simply giving residents the right to hunt for a parking space with no guarantee that they will actually find one. (An extreme example of this is Boston's Beacon Hill neighborhood, where the City's Department of Transportation has issued residents 3,933 permits for the 983 available curb spaces in Beacon Hill's residential parking permit district, a 4-to-1 ratio.)[44]

This report recommends working with residents to consider converting Areas F and J into Residential Parking Benefit Districts, and to also consider implementing them in other residential areas near downtown that experience spillover parking problems and/or curb parking shortages.

Residential Parking Benefit Districts are similar to conventional residential permit parking areas, but as recommended here, they differ in several significant ways. Residential Parking Benefit Districts are designed to:

- Manage curb parking to achieve an acceptable vacancy rate for that neighborhood (such as a goal of no more than an 80-85% occupancy rate on each block, even at the busiest hour on a typical day.)
- Allow a limited number of nonresidents to pay to use any surplus on-street parking spaces in these areas that may be available (e.g., during weekday working hours, when many residents may be away) and return the resulting revenues to the neighborhood to fund public improvements.

Paid parking with exemptions for residents has been implemented in various forms in the following jurisdictions:

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[42] Nelson\Nygaard Consulting Associates, *Downtown Oakland Parking Study Technical Memorandum #3: Public Outreach Summary,* November 2015.

[43] Nelson\Nygaard Consulting Associates, *Downtown Oakland Parking Study Technical Memorandum #1: Context Analysis,* April 2015.

[44] Shoup, Donald. The High Cost of Free Parking. APA Planners Press, 2005, p. 516. This phenomenon may or may not be occurring in Oakland since complete data on permits issued vs. spaces available was not readily available.

- San Clemente, California (regular parking fees $1.50 per hour, resident permits: $50 per year)
- Laguna Beach, California (regular parking fees $1.25 – $2.25 per hour, resident permits: $40 per year)
- Newport Beach, California
- Oceanside, California (regular parking fees: $1 per hour, resident permits: $100 per year)
- Aspen, Colorado (non-resident permits: $5 per day)
- Boulder, Colorado (resident permits $12 per year; non-resident permits $312 per year)
- Santa Cruz, California (resident permits $20 per year; non-resident permits $240 per year)
- Tucson, Arizona (resident permits $2.50 per year; non-resident permits $200 –$400 per year, declining with increased distance from University of Arizona campus)
- West Hollywood, California (resident permits $9 per year; non-resident permits $360per year)

To ensure that the Residential Parking Benefit Districts can charge performance-based parking fees which are high enough to achieve the occupancy goal for each block in the district, each parking benefit district should be established as a parking meter zone, as allowed under California Vehicle Code Section 22508. California case law authorizes local jurisdictions to charge fair market rates in parking meter zones "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." 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 not a tax for revenue purposes.

If established as parking meter zones under CVC Section 22508, existing residents in the zone may be issued annual permits (for free, or a nominal price, or higher if desired) to park at the meters, while all others are charged regular performance-based prices. The California examples listed above, as well as Oakland's own practice in some meter zones, offer precedents for this approach.

Residential Parking Benefit Districts should *not* be established as simple preferential parking permit zones, as California law for this type of zone may limit the fees that may be charged to an amount too low to achieve the City's goals.

This report recommends that as in Oakland's existing residential permit parking ordinance, Residential Parking Benefit Districts only be implemented if a majority of households in a proposed area supports formation of the District.[45] Residential Parking Benefit Districts can provide a mutually beneficial solution for both residents and non-residents. This approach can solve many of the problems experienced with conventional residential permit parking areas, where curb parking may be oversubscribed due to an unlimited number of permits being issued to residents without regard to the actual number of curb parking spaces available, or due to nonresidents gaining free parking by moving their cars frequently to evade time limits, or both.

[45] *Designation of a residential permit parking area*. City of Oakland Municipal Code, Section 10.44.050.

Access for Persons with Disabilities

As discussed in Chapter 2, drivers using disabled placards to park for free at the curb occupy a significant share of curb parking. Similarly, numerous merchants reported that they feel this extensive use of disabled placards indicates misuse and abuse. Although demand-based parking pricing has been shown to be effective at increasing parking availability, it is a less effective tool when drivers such as placard holders are unaffected by the price of parking. On many blocks, curb parking is entirely full at peak hours, meaning that many people with genuine disabilities that make walking difficult cannot find convenient parking near their destination. Therefore, complementary strategies may be desirable to address this issue.

In San Francisco, the Municipal Transportation Agency (SFMTA) and the Mayor's Office on Disability convened an Accessible Parking Policy Advisory Committee that brought together disability rights advocates and other stakeholders. The Committee worked together over six months to develop policy recommendations to increase access to street parking in addition to reducing disabled parking placard abuse. These recommendations included the following:

- Designate more accessible parking spaces (a.k.a. blue zones) at the curb
- Review the City's requirements for blue zone placement
- Improve enforcement of placard misuse by dedicating Parking Control Officers to enforcing placard use
- Direct a share of meter revenue to accessibility improvements

Cities such as San Francisco, Berkeley, and Los Angeles have formed a coalition to help lobby for changes at the state level, such as allowing qualified jurisdictions to require meter payment and four-hour time limits for disabled placard holders.

Given the level of disabled placard use observed in the downtown Oakland area, we recommend that the City of Oakland pursue a similar stakeholder engagement process with local disability rights advocates and community members with disabilities to develop specific policy recommendations that better meet the needs of people with disabilities.

This study's parking inventory indicated that accessible parking spaces make up approximately 1.2% of on-street parking in the study area. The City should consider reevaluating the quantity and location of existing blue zones to be more proactive about establishing on-street parking for people with disabilities on non-residential streets.

PAYMENT, MONITORING, AND ENFORCEMENT TECHNOLOGIES

A robust integrated payment, monitoring, and enforcement strategy is essential to the success of demand-based pricing, particularly as it requires regular adjustments and data collection so that the pricing rates and structure is effectively managing the parking system.

On-Street Parking Payment Technologies

As described earlier in this chapter, Oakland uses a mix of single-space and multi-space meters, equipped with a pay-by-phone option, to manage curb parking. These technologies are briefly reviewed below.

Single-space and Multi-space Parking Payment Options

Smart Meters

The $5.8 million Smart Parking Meter Upgrade Conversion Project[46] replaced all 3,800 remaining single-space, coin-only parking meters in commercial districts across Oakland with new IPS "Smart Parking Meters". This works out to a cost of approximately $1500 per meter upgraded. The new meters are solar-powered and wirelessly networked, have backlit displays to communicate parking prices and rules, and accept payment by credit cards, debit cards, coins and pay-by-phone. By providing better information and multiple payment options (including the option of extending time remotely by phone), the new meters have made it easier for customers to pay, and easier to avoid citations.

Pay-and-display

The rest of Oakland's metered spaces are governed by Cale multi-space "pay-and-display" parking payment kiosks. These meters also are wirelessly networked and accept payment via coin, credit card, debit card or phone. Pay-and-display meters serve roughly eight to 30 parking spaces each, depending on location and level of service desired. People must park, walk to the meter where they receive a receipt, and return to their vehicle to display the receipt on their dashboard. Pay-and-display meters cost approximately $10,000 to $12,000. These meters have clearly minimal maintenance costs; operating costs vary depending on the type of power system used. Pay-and-display meters can use solar power, keeping operational costs very low and requiring no utility work for installation (battery powered meters are also available). Enforcement costs are generally equivalent to those for single-space metering, as parking control officers must look at each vehicle to determine which cars are in violation.

Pay-by-space

Multi-space meters can also be configured as pay-by-space meters. This requires that on-street parking stalls be numbered. They can be more convenient for motorists because they do not need require drivers to get a ticket and return to their cars. Most models support pay-by-phone technology. Such meters can have lower enforcement costs, as enforcement staff do not have to inspect each vehicle's dashboard, and can instead review payment information from handheld devices or the central parking payment machine. Although such meters require each space to be numbered, this can be done in an inexpensive and inconspicuous manner, typically with stencils on the curb. Pay-and-display meters also cost approximately $10,000 to $12,000 per unit.

Pay-by-phone/Pay-by-plate

Pay-by-phone technology provided by Parkmobile is available at all metered spaces in Oakland, including both single and multi-space parking options. Pay-by-phone technology allows a driver to pay a parking fee via mobile phone or mobile phone application. Motorists can receive a reminder text when their time is almost up, and can add time without returning to their vehicle or parking meter. Receipts are available via email or text. Typically, these programs require pre-registration, as payment is linked to the license plate number of the parked vehicle. This parking payment method is usually available in addition to physical payment options, so that drivers without access to a mobile phone or smartphone can still pay for parking.

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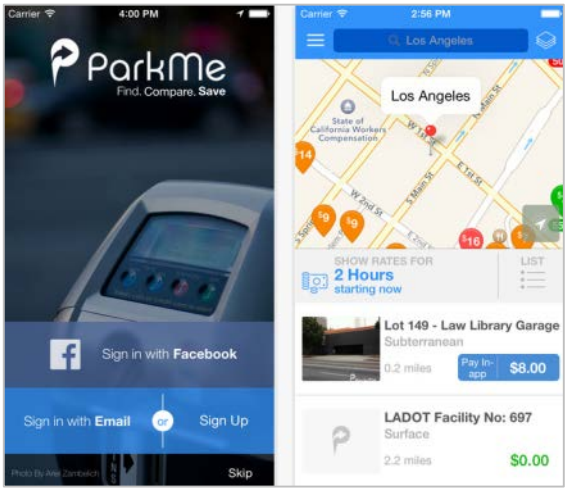
[46] http://www2.oaklandnet.com/Parking/SmartMeters/index.htm

Pay-by-phone technology can reduce maintenance and operational costs associated with meters, such as coin collection. Pay-by-phone systems can be implemented through smart meters with wireless communications or through simply affixing NFC (near field communication)-enabled decals to existing meters. NFC decals contain passive electronic chips that store information such as a parking space number that can be read wirelessly by any NFC-enabled mobile phone to complete payment transactions through a third-party vendor. In Oakland, Parkmobile provides the NFC decals, installation, and training for free in exchange for collection of a transaction fee. Drivers are charged a $0.35 fee per transaction. However, the minimal transaction fee provides value when compared to the hassle of returning to one's vehicle to feed the meter or risking the cost of a citation.

Enforcement costs may be reduced by this technology, as parking control officers can rely on handheld devices or license plate recognition (LPR) software to determine which vehicles are in violation.

Figure 3-1 Parking Meter and Payment Technology

Flickr user Jill Siegrist



Parking Enforcement & Monitoring Technologies

Currently, parking enforcement activities are under the purview of the Oakland Police Department. Duties include monitoring unlawful parking activities and citing vehicles that do not comply with posted or other regulations as outlined in the Oakland Municipal Code and the California Vehicle Code.

Handheld Ticketing Units

For several years, Oakland's parking enforcement officers have used computerized handheld ticketing units in issuing accurate and legible citations. The handheld units improve record keeping and reduce errors by allowing officers to take digital photos of vehicles parked in violation of the law, to accompany each citation; and by directly communicating with central records and printing digitized parking tickets. Typically, these units are also capable of automatically accounting for more complex regulatory structures, such as graduated fines issued at escalating rates for repeat offenders.

Parking Occupancy Sensors

Parking sensors are wireless, magnetometer-based devices which are typically embedded in the ground to detect when vehicles enter and exit a parking space. The sensors rely on electromagnetic field changes to detect the presence of a large metallic object such as a vehicle in the immediate vicinity. The sensors transmit data wirelessly to communicate when a vehicle enters or exits a space. This data is sent wirelessly via a network of pole-mounted repeaters and gateways to the sensor management system. Parking sensors are useful in gathering real-time data about parking occupancy, turnover/session counts, and length of stay.

The *SFpark* pilot program utilized this data collection system to varying levels of success, revealing a number of issues in the process which ultimately affected sensor accuracy. Problems encountered with this emerging technology included the following:

- High levels of electromagnetic interference from overhead power lines serving the City's electric trolley buses and other utility-related facilities reduced sensor accuracy
- Parking sensor batteries began to fail earlier than anticipated
- Lack of coordination with street construction efforts resulted in sensors occasionally being paved over or destroyed without notification
- Sensor data transmissions required additional independent monitoring and verification for quality control

The challenges associated with parking sensor operations and analysis should be taken into consideration when weighing the possibility of using parking sensors. This report recommends that the City evaluating emerging parking occupancy sensor technologies in a future pilot project, and consider more widely deploying them if and when current reliability, accuracy, and cost problems are overcome.

License Plate Recognition

License Plate Recognition (LPR) systems, or "digital chalk," allow a fast moving enforcement vehicle to scan the license plates of parked vehicles to conduct occupancy counts and perform a variety of enforcement functions, such as identifying vehicles reported stolen, vehicles with multiple outstanding citations, and/or enforcing time limits. Through a combination of license plate recognition, image capture, and GPS technology, the software records vehicle location,

time/date, and license plate number. When an enforcement officer returns to a specific block for a second time, the software scans plates again, notifying the officer when it detects a vehicle that has been parked longer than the posted time limits. The officer can then make a visual confirmation that the plate matches the pictures captured by the LPR system, and issue a citation.

The capital cost of a LPR system ranges from $50,000-$80,000 per unit, not including training and additional labor costs. The technology is more efficient than manual chalking of tires for enforcing time limits (two to four times faster). Ultimately, adoption of LPR for parking enforcement should provide positive fiscal impact to the City due to increased efficiency, reduced labor costs, and reduced costs associated with repetitive stress injuries sometimes suffered by enforcement officers who manually chalk tires.

Figure 3-2 Parking Enforcement Technology

LPR-procured data can be used to assess parking occupancy, turnover, and length of stay for vehicles. Although smart meter data can provide a baseline for this type of information, as described earlier, smart meter data does not reflect occupancy by non-paying vehicles, such as those displaying disabled-person placards. Furthermore, meter payment does not accurately reflect circumstances of overpayment of time, such as when a vehicle leaves a parking stall before the paid time period expires. LPR system can therefore serve dual purposes for enforcement as well as analysis.

The City of Oakland Police Department currently uses LPR as part of its regular law enforcement system, but not for parking enforcement. As discussed in the City of Oakland's MTC Climate Initiatives grant, procurement of an LPR system for parking enforcement will be highly beneficial to the implementation and management of a demand-based parking pricing system. The City of Berkeley's *goBerkeley* pilot project leveraged MTC and other federal funds to develop an automated parking data collection tool that integrates data collected from smart meters as well as LPR data. The software developed to integrate these two data streams is available for adoption for other cities, such as the City of Oakland. It is possible that additional software customization may be required to make it fully operational. The City of Oakland's existing parking services agreement with Xerox could potentially be augmented to have Xerox take on the role of integrating the smart parking meter data and the LPR data.

Additionally, parking staff should work closely with the police department and city attorneys to develop use regulations to ensure compliance with all applicable privacy laws[47] and clarify the purpose of this system (how the LPR units will be used and how the data will be shared) well before its implementation.

Signage and Wayfinding

Wayfinding signage helps orient visitors, shoppers, and residents alike, pointing them to area parking facilities, retail establishments, pedestrian and bicycle access routes, and other important destinations. Wayfinding strategies seek to efficiently coordinate movement within a neighborhood, pointing users of all modes of travel to the best access routes for their destination. It represents an important part of a comprehensive circulation and parking management strategy, improving the customer-friendliness of a neighborhood or district.

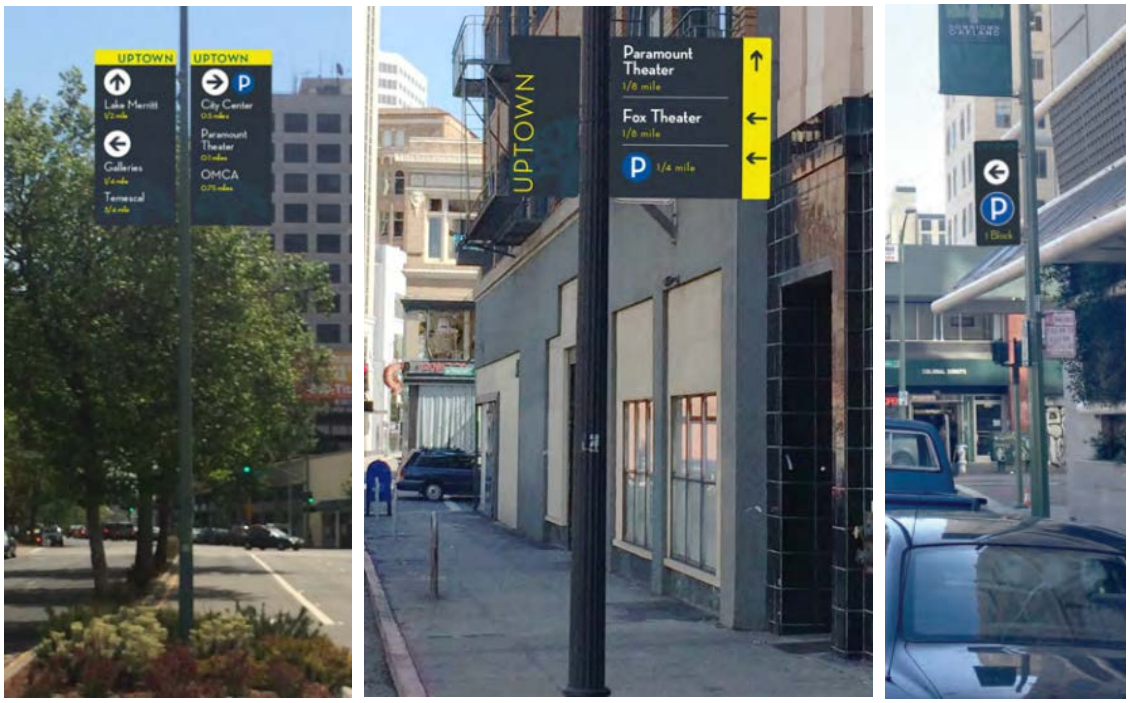
Parking signs can help direct motorists to underutilized off-street facilities, freeing up the most convenient "front-door" curbside spaces, and maximizing the efficiency of a parking system. Improved wayfinding in the form of new signs helps maximize the use of off-street parking facilities, representing another way to help eliminate traffic caused by cars "cruising" for on-street parking. Wayfinding can also help dispel perceived (but not actual) shortages in parking.

The City of Oakland initiated the Uptown Wayfinding Signage Pilot program in spring 2014. A joint effort of City staff and key stakeholders such as the Lake Merritt/Uptown, Downtown, and Jack London Business Improvement Districts (BIDs), this project's goal is to develop a consistent vehicular and pedestrian wayfinding system for destinations in the Uptown area. Project staff surveyed existing signage and researched best practices in other cities, ultimately developing a draft "signage family" of proposed designs to be shared with the Planning Commission's Design Subcommittee.[48] These new designs build on existing infrastructure, are scaled according to need, and can be easily adapted for directing drivers and other users to parking facilities and other transportation connections.

[47] California Senate Bill 34, Automated license plate recognition systems: use of data. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB34

[48] City of Oakland Uptown Wayfinding Signage Pilot Project. http://www2.oaklandnet.com/government/o/CityAdministration/d/NeighborhoodInvestment/s/Projects/UptownSignage/OAK050691

Figure 3-3 Draft Signage Family, Oakland Uptown Wayfinding Pilot Project



The City should also evaluate the implementation of real-time parking signage within new or proposed parking facilities. Real-time availability displays direct vehicles to those off-street lots with the most availability. Pricing information can also easily be displayed on parking wayfinding signage. The capital cost of real-time availability displays ranges from $25,000-$50,000 per unit. Annual operating and maintenance costs are typically $500 per unit.

Figure 3-4 Parking Wayfinding Signage

The City's data streams on parking inventory, locations, availability, and pricing should be mapped and made easily accessible through phone and web applications. This recommendation

follows from the City's existing Open Data Policy, adopted in October 2013, which declares that the City will make every reasonable effort to publish its data in machine-readable formats, in order to make it available to the greatest number of users and for the greatest number of applications.[49]

[49] City of Oakland Resolution No. 84659 C.M.S. October 2013.

4 MANAGING AND REGULATING OFF-STREET PARKING

The recommendations in this chapter are designed to further the implementation of the following City-adopted Parking Principles, which are particularly relevant to managing off-street parking.

PARKING PRINCIPLES FOR MANAGING OFF-STREET PARKING

Parking is part of a multimodal approach to developing neighborhood transportation infrastructure.

- Users of commercial districts (shoppers, employees, visitors) have varied needs for access, via private auto, transit, bicycle and foot.

Parking should be actively managed to maximize efficient use of a public resource.

- Parking should be priced to achieve usage goals ("market pricing"); market prices may vary by area; by time of day and may be adjusted occasionally to reflect current use.
- Pricing and policies should encourage use of off-street parking lots where they are available.

Parking policy and regulations should help the City meet other transportation, land use and environmental goals.

- Pricing policies should encourage a "park once" approach, to minimize driving from store-to-store within a commercial district and adding to congestion and air pollution.
- Whenever possible, a portion of parking revenue should be reinvested directly back to neighborhood commercial district improvements, potentially through a mechanism such as a parking benefit district.

SUMMARY OF RECOMMENDATIONS FOR MANAGING OFF-STREET PARKING

To improve management of City-owned off-street parking:

1. Refrain from subsidizing automobile storage and use: require that City-owned lots and garages in downtown be operated as an *enterprise operation*, which pays for itself through user fees.
2. Require that this Off-Street Parking Enterprise Operation support itself solely through lot and garage user fees, without additional support from other taxpayer dollars or curb parking revenues.

3. Plan and budget for the long-term financial sustainability of this Enterprise Operation, including setting parking rates which are sufficient to provide for long-term facility maintenance, renovation, reconstruction, staffing, and pension liabilities.
4. Implement performance-based parking pricing with rates that vary by time of day, and day of week.
5. Specifically, raise or lower both monthly and hourly rates at each lot and garage as necessary to (a) eliminate wait lists and "lot full" signs, and (b) raise all funds necessary to support the Off-Street Parking Enterprise Operation.
6. Extend or contract parking lot and garage hours of operation as necessary, with the goal of ensuring that public and/or private parking is readily available within a reasonable walk of all significant destinations.
7. Reassess the number and location of reserved off-street parking spaces to ensure they are well used.
8. Improve parking signage.
9. Develop a real-time parking wayfinding system.
10. Place a moratorium on construction of any City-owned new or replacement off-street parking, until the following have been completed: (a) the now-in-progress *Downtown Specific Plan*; (b) the establishment of maximum parking requirements; and (c) a "highest and best use" analysis of city-owned lots and garages.
11. Assess the highest and best use for City-owned lots and garages.

To manage future growth in ways that minimize traffic congestion and pollution, while improving economic vitality and social equity:

1. Remove minimum parking requirements from the Zoning Code.
2. Establish maximum parking requirements in the Zoning Code.
3. Require new developments to: (a) unbundle the cost of parking from the cost of other goods and services; (b) offer car sharing agencies the right of first refusal for a limited number of parking spaces and require that those spaces be provided to the car sharing agencies free of charge; and (c) provide free transit passes to the project's residents and/or employees.

DISCUSSION

As discussed in Chapter 3, an effective parking management system governs on- and off-street parking in tandem. Managing and regulating on-street parking is relatively straighforward, as it is all under the purview of the City of Oakland. Conversely, downtown Oakland's off-street parking supply is predominantly privately owned. 68% of off-street parking spaces surveyed in this report's inventory were privately owned and numerous additional private garages (primarily residential ones), which were outside the scope of this study, exist in downtown.[50] The City can

[50] Nelson\Nygaard Consulting Associates, *Downtown Oakland Parking Study Technical Memorandum #2: Existing Conditions,* January 2016. Approximately 3% of the off-street parking supply is owned by other public agencies, such as the state, the county, or BART. As these facilities constitute a fraction of the parking supply, this report does not contain any recommendations specific to dealing with these agencies.

make the necessary changes to the pricing and regulations of its own facilities. The primary mechanism for influencing private facilities is through the avenues of policy, incentives, and zoning. This chapter recommends several ways in which the City can manage and regulate the off-street parking supply in the downtown area in a way that complements the on-street parking management strategy and supports the City's long-term vision of economic growth, social equity, and environmental responsibility.

MANAGING CITY-OWNED LOTS & GARAGES

As Figure 4-1 and Figure 4-2 illustrate, City-owned off-street facilities are often priced lower overall than privately-owned off-street parking, implying that the City-owned prices are below market rate. Hourly rates for City garages range from $2 to $4 per hour, or one half the going rates ($4 to $8 per hour) at the competing nearby private lots and garages. Monthly parking rates at City-owned lots and garages are also frequently significantly lower than private garage rates.

Additionally, prime curb parking spaces in downtown are priced at $2 per hour (Monday through Saturday from 8 AM to 6 PM), and are free of charge at other hours. These curb parking spaces are often more visible, more convenient to destinations, and perceived as safer than nearby off-street garages. Yet, they are priced at just one half to one quarter the going rate for nearby private garages.

As demonstrated in Chapter 2 and reiterated in Chapter 3, the result of this pricing structure is an imbalance between on- and off-street parking utilization, with frequent "hot spots" of on-street demand while there is a surfeit of off-street parking supply nearby. Better pricing of scarce curb parking, as described in the Chapter 3, can help resolve the curb parking problems.

This pricing structure can also lead to overcrowding of the best-placed City-owned lots and garages. Occupancy rates for City-owned lots and garages do indicate an *overall* surplus, with overall occupancy reaching 71% during peak hour on a weekday, and then steadily declining during the late afternoon and early evening to a low of just 11%. However, during peak hour on a Thursday, three City-owned off-street facilities were at or exceeded 85% occupancy. These facilities are likely overcrowded because the City's below-market rate pricing makes City facilities the "best deal in town". With this pricing, all else being equal, City facilities can be counted on to fill up first, before motorists turn to more expensive alternatives. (Of course, multiple factors influence market choices, but prices are a powerful influence on demand.)

City garage rates also appear to be substantially below the rates needed to cover the cost of building and operating a new (or replacement) parking garage. Figure 4-3 shows the estimated capital and operations costs for two recently proposed above-ground parking structure projects in downtown Berkeley. These estimates place the approximate cost of new or replacement above-ground parking structures in a similar East Bay context at a capital cost of approximately $40,000 per space. This leads to an estimated total cost of approximately $270-$280 per month per parking space, every year for the expected 35 year useful life of a parking structure. That is, to break even, a new or replacement garage must earn $270-$280 per month. Given monthly permit rates for most City garages that range from just $125-$200 per month, this is unlikely at current rates.

Figure 4-1 Select Rates at City-Owned Parking Facilities in Downtown[51]

Facility Name	Hourly Rate	Monthly Rate	Notes
Telegraph Plaza	$3	$125	$1/20 minutes; no reserved monthly parking
18th St Uptown Lot	$3	$125	a.k.a. "1800 San Pablo"
Franklin Plaza Garage	$3	$200	$1/20 minutes; reserved monthly parking price
Dalziel Garage	$4	$180	$1/15 minutes; reserved monthly parking price
Clay Street Garage	$4	$180	$1/15 minutes; reserved monthly parking price
City Center West Garage	$4	$250	$2/30 minutes; reserved monthly parking price
UCOP Garage	$3	$145	$1/20 minutes; no reserved monthly parking
1200 Harrison Garage	$3	$140	$1/20 minutes; reserved monthly parking price
Franklin 88 Garage	$3	$175	$1.50/30 minutes; no reserved parking
Pacific Renaissance Plaza	$2	$170	$1/30 minutes; reserved monthly parking price
Curb parking	*$0 to $2*	*NA*	*$2/hour if metered (8 AM-6 PM only, M-Sat only); no fee at some spots*
Range of Rates	$2 - $4	$125 - $250	

Figure 4-2 Select Rates at a Sample of Privately-Owned Parking Facilities in Downtown[52]

Facility Name	Hourly Rate	Monthly Rate	Notes
1111 Broadway	n/a	$255	reserved monthly parking price
Rotunda Garage (1630 San Pablo Ave)	$6	n/a	$3/30 minutes
Trans-Pacific Centre (1000 Broadway)	$4	$180	$1/15 minutes; tenant monthly parking price
17B Lot (17th St and Broadway)	$8	n/a	$4/30 minutes
555 12 St. Garage	$6	$210	$2/20 minutes; tenant monthly parking price
1427 Franklin St	n/a	$195	reserved monthly parking price
Range of Rates	$4 - $8	$180 - $255	Range observed at these select facilities only

[51] City of Oakland, Master Fee Schedule: Parking Management. Effective July 1, 2015.

[52] Data collected from Parkopedia, February 2016. http://en.parkopedia.com/parking/oakland/

Figure 4-3 Parking Garage Development Costs & Operating Expenses[53]

Assumptions		
Variables		Input value
Expected useful life of structure (years):		35
Interest rate on Revenue Bonds:		6%
Capital Costs		
	Center Street Replacement Garage	University Hall West Garage
Spaces Built	462	1071
Spaces Displaced	421	48
Net Spaces Gained (c=a-b)	41	1023
Total Capital Costs	$ 18,619,000	$ 38,945,398
Capital Cost per Space	$ 40,301	$ 38,070
Annual Debt Service		
Annual Debt Service	$ 1,284,224	$ 2,686,214
Annual Debt Service, per Space	$ 2,780	$ 2,626
Total Annual Costs Per Space		
Annual Debt Service, per Space	$ 2,780	$ 2,626
Annual Operations & Maintenance, per Space	615	615
Total Annual Cost per Space	$ 3,395	$ 3,241
Total Cost per Space per Month	$ 283	$ 270

Rider Levett Bucknall's *USA Report – Quarterly Construction Report, Fourth Quarter 2015* provides a second and more current estimate of parking construction costs. The report puts above-ground parking garage construction costs at $115 per square foot. Assuming a typical 330 ft.^{2} per parking space, this works out to $38,000 per space in capital costs. This figure is similar to that arrived at by the Berkeley parking structure cost estimates.

The Cost of Underground Parking

New or replacement public parking spaces can also be built underground. However, the high cost of underground parking frequently makes this option unattractive. A parking industry rule of thumb is that the capital cost of a parking space on the first level of an underground parking structure can be expected to be 50% higher than the cost for an above-ground structure (or approximately $60,000 per space in Downtown Oakland) due to the high cost of excavating and

[53] Sources: (1) International Parking Design, Inc., "Center Street Parking Structure Concept Level Construction Cost Estimate", memorandum dated July 7, 2009. (2) Walker Parking Consultants. *University Hall West Parking Garage Parking Study, June 2, 2009*, 30-31.

Note that for the Center Street Replacement Garage, we estimated an annual operations & maintenance cost of $615 per space, based upon the estimated operations & maintenance cost for the University Hall West Parking Garage. We used this estimate because a similar detailed estimate for the Center Street Replacement Garage was not available. Source: Walker Parking Consultants. University Hall West Parking Garage Parking Study, June 2, 2009, 30.

constructing underground facilities.[54] The cost of parking spaces on subsequent underground levels will be still higher, and can be expected to be approximately equal to the cost of the level above plus a constant equal to the difference between the cost of an above-ground structured space and the first-level of the underground facility (or approximately $20,000 per space).[55] Thus, a parking space on the second level of underground parking would cost about $80,000 and on the third level underground a parking space would cost $100,000. As these numbers show, while underground parking keeps land free for building projects, it requires a significant premium for each successive level below grade. Operating expenses are also frequently substantially higher, due to the expense of lighting and ventilating subterranean spaces, and the fact that many underground garages require constant dewatering.

The Case for Ending Below Market Rate Pricing of City Garages

This information about the current management of downtown Oakland's off-street parking and the growing financial costs of its construction, maintenance, and operation paints a dire picture of municipal management of off-street parking. However, the implementation of the recommendations listed at the beginning of this chapter, such as treating off-street parking as a utility, enabling users to face the true cost of these facilities, and assessing the highest-and-best use of these properties, the City can both alleviate the peak hour parking shortages being experienced at the most popular City lots and garages, and raise sufficient funding to provide for long-term facility maintenance, renovation, reconstruction, staffing, and pension liabilities.

Requiring that City-owned lots and garages in downtown be operated as an enterprise operation, which pays for itself solely through lot and garage user fees, can be expected to, over time, result in prices which are at or close to market rate. This will occur if the rates set truly provide for all long-term needs and liabilities of the enterprise operation, rather than "storing up trouble" by failing to set aside funds for long-term needs.

Within this framework, raising (or potentially even lowering some) monthly and hourly rates at each lot and garage as necessary to (a) meet occupancy goals, and (b) raise necessary funds necessary to support enterprise operation, can quickly eliminate wait lists and "lot full" signs.

This approach has many advantages beyond simply being a tried and tested approach to municipal parking finance. The advantages include:

1. Economic Efficiency: Paying for parking facilities using direct parking fees helps balance parking supply and demand. When the true cost of parking is made visible through direct fees, employers and residents are able to save on parking by using less of it. Employers, for example, can provide transportation demand management programs to help employees leave their cars at home, and reap the savings by leasing fewer employee parking spaces. Similarly, residents, as discussed later in this chapter, are able to save substantial amounts of money by owning fewer vehicles and leasing or purchasing fewer parking spaces. The result is that fewer parking spaces need to be built, and less motor vehicle traffic is generated in Downtown. As a result, parking construction costs are substantially lower than if parking is funded in indirect ways, such as through taxes and other fees on Downtown (or citywide) property owners, businesses and residents.

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[54] Walker Parking Consultants, "Solutions When More Parking is Needed", July 11, 2005.

[55] The Dimensions of Parking 5th Edition, Urban Land Institute, 2010.

2. Environmental Responsibility: Because paying for parking through direct user fees reduces both motor vehicle trips and parking construction, it substantially reduces air and water pollution and greenhouse gas emissions, compared to funding methods that hide the cost of parking in the cost of other goods and services. The principle is similar to the principle of charging for electricity through direct fees: when the cost is revealed, users have an incentive to conserve.
3. Social Equity: Paying for parking facilities using fees from those who park in the facilities follows a principle that is widely accepted as fair: that the beneficiaries of the project should pay for the project. Moreover, since higher income households, on average, own more vehicles, drive more often, and park more often, than households of lesser means, the "user pays" approach means that higher income households shoulder a greater share of the burden for parking facilities than if the cost of parking is hidden in the cost of other goods and services.

The City could also consider adopting "triple bottom line" accounting practices for the proposed Off-Street Parking Enterprise Operation, which would take into account not only the City's internal costs to build, maintain and operate the enterprise, but also the external environmental costs (the "environmental externalities", in economists' parlance), such as air pollution, water pollution and greenhouse gas emissions, generated by the garages and the motor vehicle trips attracted to the garages.

Reassessing the Number of Reserved Spaces

As shown in Chapter 2, at some popular City garages, although *total* parking occupancy remained below 85%, the garages' regular spaces (i.e., spaces that are available to the general public, and not reserved for monthly parkers, residents, or other special users) were full or nearly full. Therefore, for the average member of the public, these garages were effectively full. At the same time, these reserved spaces in these same garages remained underutilized at the peak hour; reserved occupancy at all City-owned off-street facilities peaked at just under 50% on Thursday, with 233 reserved spaces unused at this time.

This report therefore recommends that the City reexamine the number of reserved spaces, particularly in the Clay Street Garage, the Dalziel Garage, and City Center West Garage, to determine if they are still necessary for each particular subset of reserved space user. Each garage should be considered individually, as their reserved space needs and types differ, and parking demand may change as the on-street performance-based parking pricing takes effect. If the City can reduce the number of reserved off-street parking spaces, it effectively creates additional public parking without constructing a single space.

In order to more efficiently manage the parking reserved for City vehicles, the City should consider fleet management improvements. For instance, New York City transitioned its fleet management system to a software called FleetFocus, which aids citywide fleet staff and vehicle operators in managing the fleet efficiently. The system integrates with multiple agencies and citywide information systems. Implementing more dynamic fleet management software may reduce the need for additional vehicles by allowing for more efficient management of existing fleet. The City of Oakland should also consider partnering with a car share company to reduce the need for employees to bring their own vehicles for work-related travel.

Improving Signage and Other Wayfinding Strategies

As described in the previous chapter, good wayfinding strategies helps orient visitors, shoppers, and residents alike, pointing them to area parking facilities, retail establishments, pedestrian and bicycle access routes, and other important destinations. As described in that chapter, an integrated system of on-street and off-street signage can help direct motorists to underused off-street lots and garages. Once within the garage, good signage can direct motorists to available spots, and help them comprehend prices and regulations.

Improving wayfinding for Oakland's parking system should include improving both static signs and changeable electronic real-time availability signs, which can also be used to convey information about special events, street lot closures, and other information. As mentioned in Chapter 3, all of the information on parking pricing and locations should be mapped and made easily accessible through phone and web applications. When real-time parking availability data becomes available, these applications can be adapted to reflect off-street parking availability, and thus reduce the search time for parking by directing drivers to available parking spaces even before they have started their car. In line with the City's existing Open Data policy, the City should make any data tied to parking pricing, locations, inventory and availability free and available to the public to encourage the development of driver-facing applications.

The recommendations in this chapter are intended to work as an integrated package. Increasing rates for City-owned parking facilities to market rates can both raise the funds necessary to upgrade downtown's current wayfinding signs. Simultaneously, pricing City garages at market rates can help alleviate overcrowding in these same facilities, by redirecting some commuters and shoppers to private facilities nearby.

It's worth noting that while good wayfinding strategies can play a strong supporting role in alleviating overcrowding and helping motorists find what they're looking for, wayfinding signs work best if they are backed up by complementary parking pricing and regulation. In other words, good advertising works, but it works best if the product being advertised is a good deal.

For example, if City-owned off-street parking is priced at market rate and performance-based parking pricing is used to set curb parking prices, then prices and signage will be in good alignment. But if curb parking and City garages are underpriced, then real-time signs directing drivers to substantially more expensive private lots and garages will have limited impact. Better signage alone is unlikely to stop bargain hunters from circling in search of an underpriced spot.

Placing a Moratorium on Construction of City-Owned Parking

At present, the city is preparing a new vision for the future of downtown. The *Downtown Oakland Specific Plan*, now being prepared, will establish the specific policies, regulations and initiatives to give that vision clear shape and form. Downtown parking planning should support, rather than contradict, that effort. Additionally, numerous other recent city planning efforts have placed a new focus on pedestrian place making, environmental responsibility, and social equity, in addition to traditional economic development goals. The City's parking operations are also, as in many cities, facing a financially challenging future characterized by rising costs to replace or renovate aging facilities, meet pension obligations, and provide for rising staffing costs.

For all of these reasons, this report recommends placing a moratorium on construction of any City-owned new or replacement off-street parking, until the following have been completed:

- the *Downtown Specific Plan*;

- the establishment of maximum parking requirements for new private developments; and,
- a "highest and best use" analysis of City-owned lots and garages.

As described earlier in this chapter, new and replacement parking facilities are expensive. Each one is a multi-million-dollar investment. Before spending scarce city funds on any such investment, it would be wise to complete several tasks.

First, implementing the performance-based parking pricing, market-rate pricing, and other initiatives described elsewhere in this report is likely to reduce or entirely eliminate the current hot spots (i.e., localized parking shortages) on downtown streets and in a few popular garages. Implementing these improved management techniques, and then reviewing conditions to see if any new garages are still warranted, is likely to be cheaper, faster and more effective than attempting to solve the same shortages via the brute force approach of placing rebar and pouring concrete.

Second, waiting until the *Downtown Specific Plan*, including any new maximum parking requirements recommended by the plan, has been adopted, will ensure that any new or replacement City parking facilities that may eventually be needed are put in the right place, and fit with broader place making, land use and circulation plans.

Once these tasks are complete – i.e., once all the lower cost management improvements and transportation demand management strategies have been enacted, and once a clear plan for downtown is complete – new or replacement public parking facilities may be warranted. Until that time, this plan recommends conserving scarce public funds.

Assessing the Highest and Best Use of Off-Street Facilities

Given the new land use vision being crafted in the *Downtown Specific Plan*, the current below market rate pricing of some City-owned parking, the consistent underutilization of some off-street parking facilities, and the cost of maintaining and operating these aging facilities, we recommend that the City evaluate each City-owned lot and garage site from an economic and land use planning perspective. For some downtown lots and garages, this process is already underway or has been completed, but we recommend it be done on a systematic basis for all City-owned downtown parking.

In order to determine the maximum potential of these properties, the City should reconsider whether parking is the highest and best use for each site. Both the existing parking use and alternative land uses for each site should be evaluated, taking into account the following[56]:

- Is this land use desirable, given City goals?
- Is this land use physically possible?
- Is this land use financially feasible?
- Does this land use result in the highest value to the public possible?

These last two points are crucial to determining whether or not retaining these off-street parking facilities are in the best interest of the City. Many cities have revived their downtowns and help them prosper by replacing outmoded parking facilities with better land uses. Portland, Oregon's Pioneer Square is now the centerpiece, the living room, and the retail heart of its downtown.

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[56] Geltner D.M., Miller N.G., Clayton and J., Eichholtz P. (2007). Commercial Real Estate – Analysis & Investments. Thomson South Western.

Previously, the site was an aging parking garage. Similarly, Los Angeles recently tore down a badly cited garage and turned into a new downtown park. In San Francisco, several garages have either been converted into, or will be replaced with, new transit-oriented housing.

Parking is essential in the modern world, but it is possible to have too much of a good thing. A solid analysis of highest and best use for each City-owned site can help determine whether that has occurred in downtown.

Any financial feasibility analysis will also have to take into account the costs associated with demolishing the existing parking facility in order to prepare the site for any new use, be it a new property or leaving the site vacant for future development.

REGULATING PARKING IN PRIVATE DEVELOPMENTS

The City should take an active approach in establishing policies to regulate private developments, to ensure that new development supports City goals. This report recommends that those policies include removing minimum parking requirements, establishing maximum parking requirements, and requiring that new developments:

- unbundle the cost of parking from the cost of other goods and services;
- offer car sharing agencies the right of first refusal for a limited number of parking spaces and require that those spaces be provided to the car sharing agencies free of charge; and
- provide free transit passes to the project's residents and/or employees.

As referenced in Chapter 2, the Planning and Building Department is in the process of reevaluating off-street parking requirements in the Zoning Code. The recommendations in this chapter are intended to support and help inform that process, rather than compete with it.

The Case for Removing Minimum Parking Requirements

Minimum parking requirements work at cross purposes to virtually all of the City's other adopted goals. As UCLA professor Don Shoup describes it, "Parking requirements cause great harm: they subsidize cars, distort transportation choices, warp urban form, increase housing costs, burden low income households, debase urban design, damage the economy, and degrade the environment... [O]ff-street parking requirements also cost a lot of money, although this cost is hidden in higher prices for everything except parking itself." Removing minimum parking requirements will provide numerous rewards, supporting economic growth and a better quality of life in downtown, and helping meet the City's overall goals of environmental responsibility, social equity, and economic growth.

Removing minimum parking requirements will encourage the use of shared public parking infrastructure, rather than unshared private lots; can make the City more attractive to truly transit-oriented tenants with low parking demand rates; provide maximum flexibility for efficient sharing of parking; and create a healthy market for parking, where parking spaces are bought, sold, rented and leased like any normal commodity.

It is worth noting that removing downtown requirements is a relatively modest reform. Many places (see sidebar below) have removed minimum parking requirements, and some, such as Great Britain, have removed minimum parking requirements entirely throughout their cities, and now rely instead on active management of curb parking to prevent curb parking shortages, while using fees from drivers to finance the parking that those drivers use.

Minimum parking requirements, even relatively low ones, frequently deter investment and reinvestment in mature transit-oriented districts, particularly by developers who serve the niche markets of tenants (both residential and commercial) who rely heavily on transit, bicycling and walking, and have little or no need for on-site parking. In the long-term, therefore, as downtown develops, redevelops and intensifies in use, current code requirements are likely to work against the City's overall goals. By their very nature, minimum parking requirements are designed to ensure that districts have more parking than would exist if the matter was left up to the market, and over the long-term, they therefore distort transportation choices toward automobile travel, while increasing housing costs and the cost of other goods and services.

The one useful purpose that minimum parking requirements do serve is to prevent spillover parking issues – provided that they are strict enough, and provided that no fees are charged at off-street lots. (Note that if parking fees are charged at off-street parking lots and garages, then even if strict minimum parking requirements are in place and have resulted in an ample off-street parking supply, many drivers will still circle in search of free or underpriced curb parking, in order to save money.) However, if the other strategies suggested in this report are adopted, pricing of curb parking will ensure that ample vacancies exist on the street. Where good curb parking management has been implemented, minimum parking requirements become superfluous, and only their unfortunate side effects remain.

Finally, removing minimum parking requirements in a newly developing area is often a good way to demonstrate that neighborhoods can flourish, and maintain ample curb parking availability, without relying on these regulations. For example, San Francisco's Mission Bay Plan, a plan to redevelop the City's rail yards and surrounding areas as a transit-oriented district, removed all minimum parking requirements from the area in 1998, and its success has helped spur city leaders' decisions to remove minimum parking requirements from numerous other established San Francisco neighborhoods.

Communities that have eliminated parking requirements

Examples of communities that have partially (in particular neighborhoods and districts) or entirely eliminated minimum parking requirements include:

- Coral Gables, FL
- Eugene, OR
- Fort Myers, FL
- Fort Pierce, FL
- Great Britain (entire nation)
- Hayward, CA
- Los Angeles, CA
- Milwaukee, WI
- Nashville, TN
- Olympia, WA
- Portland, OR
- Sacramento, CA
- San Francisco, CA
- Santa Clarita, CA
- Stuart, FL
- Seattle, WA
- Spokane, WA

Establishing Maximum Parking Requirements

Maximum parking requirements set an upper limit on how much parking may be provided at any given building or site. Especially when implemented on a district-wide scale, parking maximums are a powerful tool for limiting the amount of motor vehicle traffic generated by new

development, and thereby limiting traffic congestion, pollution and greenhouse gas emissions. Maximum parking requirements can also result in better urban design, fewer surface parking lots, less impermeable surface, and therefore less storm water runoff and water pollution.

However, maximum parking requirements should be used with caution, and their levels set with care. If levels are set too tightly, building developers and employers may relocate some desired developments to areas that do allow more auto-oriented types of development. When set properly, minimum parking compartments are set at a level which requires building owners to charge for parking in order to balance supply and demand. When done well, the resulting parking prices are often high enough to cover all costs of building and operating parking (so automobile use is not subsidized), but not so high that all new investment in an area is deterred.

Establishing specific maximum parking requirements is beyond the scope of this report. To follow up on this report, maximum parking requirements should be set by a follow-up study. Ideally, individuals with both economic and transportation planning experience should take part. Fortunately, many thriving American cities – including Pasadena (CA), Portland (OR), and San Francisco – have acquired decades of experience in setting maximum parking requirements. Reviewing their experience and results achieved will be a useful step in setting requirements for Oakland.

Unbundling Parking Costs from the Cost of Other Goods and Services

Parking costs are generally subsumed into the sale or rental price of offices and housing for the sake of simplicity, and because that is the more traditional practice in real estate. Although the cost of parking is often hidden in this way, parking is never free. Each space in a parking structure can cost $25,000 or more, while in areas with high land values, surface spaces can be similarly costly, going as high as $60,000 or $70,000 a space.

Using parking as a tool to achieve revitalization goals requires some changes to status quo practices, since including parking spaces in office and residential space leases as a mandatory feature, rather than as an optional amenity, increases automobile use and means that more parking spaces have to be provided to achieve the same rate of availability.

Many residential and commercial leases in buildings that include off-street parking often assume that the lessee will want parking spaces, and will therefore include the cost of those spaces in the total cost of the lease. Unbundling this means the cost of the facility and parking are separate, allowing lessees to make an educated decision on how much parking is required. This report recommends that the City amend the zoning code to require that new residential and commercial developments with common parking areas “unbundle” the full cost of parking from the cost of the property itself, by creating a separate parking charge. This concept has already been implemented, in part, in the Lake Merritt Station Plan.

This strategy works best when nearby curb parking is actively managed to ensure residents and employees do not opt to utilize nearby on-street parking for long term storage of their vehicles.

Unbundling parking costs from commercial leases

If this strategy is adopted, new office developments should be required to unbundle parking costs by identifying parking costs as a separate line item in the lease, and should be required to allow employers to lease as few parking spaces as they wish.

An example of requiring the unbundling of parking costs in office leases

Bellevue, Washington: Bellevue requires downtown office buildings of more than 50,000 square feet to identify the cost of parking as a separate line item in all leases, with the minimum monthly rate per space not less than twice the price of a bus pass. For example, since the price of a monthly bus pass was $72 in 2003, the minimum price of a leased parking space was $144 a month. This requirement for "unbundling" parking costs does not increase the overall cost of occupying office space in a building because the payment for the office space itself declines as a result. In other words, unbundling separates the rent for offices and parking, but does not increase their sum. This innovative policy has several advantages. It makes it easy for employers to "cash-out" parking for employees (that is, to offer employees the value of their parking space as a cash subsidy if they do not drive to work), since employers can save money by leasing fewer spaces when fewer employees drive. It also makes it easier for shared parking arrangements to occur, since building owners can more easily lease surplus parking spaces to other users.

Unbundling parking costs from housing costs

If the strategy of unbundling is adopted, then for both rental and for-sale housing, the full cost of parking should be unbundled from the cost of the housing itself, by creating a separate parking charge. The exception to this policy should be residences with individual garages (such as detached single-family homes and townhouses) rather than common, shared parking areas. This approach provides a financial reward to households who decide to dispense with one of their cars, and helps attract that niche market of households who wish to live in a transit-oriented neighborhood where it is possible to live well with only one car, or even no car, per household. Unbundling parking costs changes parking from a required purchase to an optional amenity, so that households can freely choose how many spaces they wish to lease. Among households with below average vehicle ownership rates (e.g., low income people, singles and single parents, seniors on fixed incomes, and college students), allowing this choice can provide a substantial financial benefit. Unbundling parking costs means that these households no longer have to pay for parking spaces that they may not be able to use or afford.

It is important to note that construction costs and space needs required to meet parking regulations can substantially increase the cost of housing. For example, a study of Oakland's 1961 decision to require one parking space per apartment (where none had been required before) found that construction cost increased 18 percent per unit, units per acre decreased by 30 percent and land values fell 33 percent.[57]

Just as pricing curb parking is an effective lever to create availability, charging separately for parking is one of the most effective strategies for encouraging households to own fewer cars, and rely more on walking, cycling, car sharing and transit. According to one study, unbundling residential parking can significantly reduce household vehicle ownership and parking demand[58]. These effects are presented in Figure 4-4.

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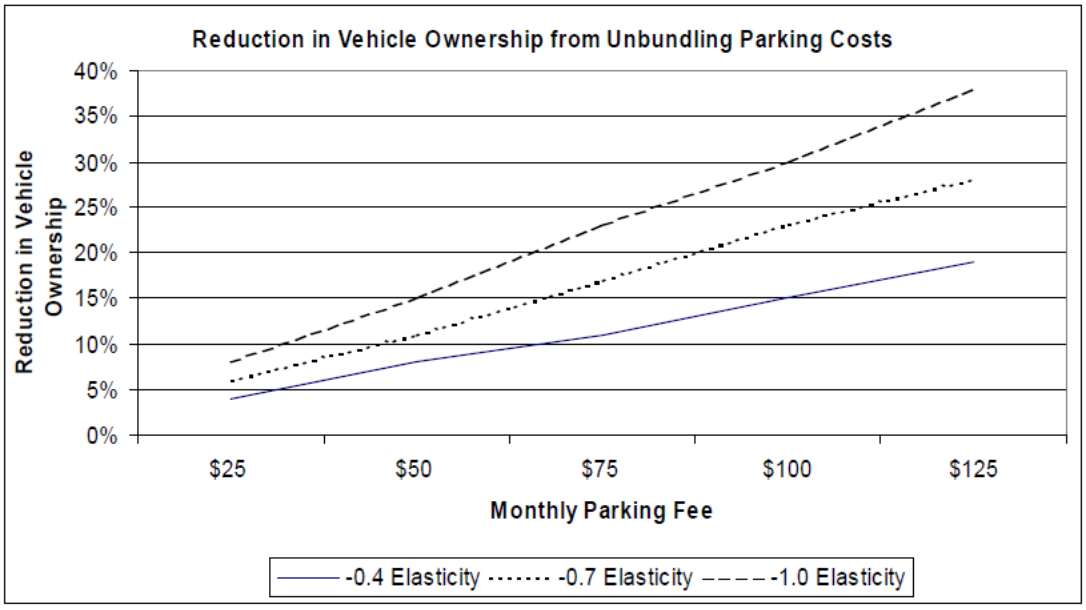
[57] Bertha, Brian. "Appendix A" in *The Low-Rise Speculative Apartment* by Wallace Smith, UC Berkeley Center for Real Estate and Urban Economics, Institute of Urban and Regional Development, 1964.

[58] Litman, Todd. "Parking Requirement Impacts on Housing Affordability." Victoria Transport Policy Institute, 2004.

Figure 4-4 Reduced Vehicle Ownership with Unbundled Residential Parking



Source: Litman, Todd. "Parking Requirement Impacts on Housing Affordability." Victoria Transport Policy Institute, 2004.

It is important to make residents and tenants aware that rents, sale prices, and lease fees are reduced because parking is charged for separately. Rather than paying "extra" for parking, the cost is simply separated out – allowing residents and businesses to choose how much they wish to purchase.

Example: San Francisco's ordinance requiring the unbundling of parking costs from housing costs

By ordinance, San Francisco requires new residential buildings (as well as conversions of non-residential buildings to residential use) containing 10 dwelling units or more to unbundle parking costs from housing costs. An exception to this requirement is granted for projects which include financing for affordable housing which requires that the cost for parking and housing be bundled together (a requirement which exists for some federal affordable housing tax credits).

Other destinations where parking costs can be unbundled

Requiring the unbundling of parking costs can also be implemented for cultural destinations and other land uses. Malibu's Getty Museum, for example, charges for parking in its garage, but offers free admission to the museum's art treasures, a policy that encourages enjoyment of the arts, while discouraging excess traffic and parking demand.

The Bay Area organization Transform has developed its GreenTRIP certification process, which recognizes new development projects that apply strategies to reduce traffic and greenhouse gas emissions. The process helps developers identify effective strategies, including "unbundling" the cost of parking from rent, to show how a project can reduce the amount of parking needed and pass on financial savings to residents.

Requiring Parking for Car Sharing Vehicles

National and Bay Area car sharing operators such as City CarShare and ZipCar, using telephone and Internet-based reservation systems, allow their members an easy way to rent cars by the hour, with members receiving a single bill at the end of the month for all their usage. The shared cars are located at convenient neighborhood pods. Academic research demonstrates that car sharing has proven successful in reducing both household vehicle ownership and the percentage of employees who drive alone because of the need to have a car for errands during the workday. As a result, car sharing can be an important tool to reduce parking demand. Recent surveys have shown that more than half of car share users have sold at least one vehicle since joining the program in the San Francisco Bay Area.[59] Figure 4-5 shows that the average member drove 47% less after joining City CarShare. In contrast, the average member of a control group of non-members drove 73% more.[60]

San Francisco's Citywide Car Sharing Ordinance

San Francisco's citywide car sharing ordinance provides a model for Oakland. As with San Francisco's ordinance requiring the unbundling of parking costs, this language has the advantage of having been reviewed by the City Attorney of a major California jurisdiction, and tested by numerous development projects. The ordinance has been in effect citywide since 2006, and has generally worked well to help car sharing services overcome one of the barriers (finding parking) most frequently cited as a significant obstacle by car sharing organizations.

The Rincon Hill plan adopted in 2005 was the first San Francisco neighborhood plan to require the provision of car sharing spaces. In 2006, the City and County of San Francisco refined the language of the requirements for car sharing spaces at residential buildings and extended those requirements citywide.[61] San Francisco's ordinance requires that newly constructed buildings containing residential uses and existing buildings being converted to residential units provide spaces for car sharing vehicles at no cost to the car share organization. The ordinance applies only to buildings which include parking spaces. No car sharing spaces are required for buildings with fewer than 50 units, one space is required for buildings with 50 to 200 units, and buildings with 201 or more units are required to provide one space, plus one for every 200 dwelling units over 200. In 2010, San Francisco enacted similar car share requirements which apply to all new nonresidential buildings and stand-alone parking facilities.[62]

The City of Oakland passed its Car Sharing Policy in February 2015 in recognition of car sharing as a viable alternative to personal automobile ownership and a strategy to reduce greenhouse gas emissions and encourage use of other modes of transportation. Although this policy establishes City policy for including car sharing spaces in on-street parking and City-owned parking facilities, it is silent on the inclusion of car sharing spaces in private developments. The City should consider incorporating a provision similar to San Francisco's into its Car Sharing Policy that

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[59] April 2002 survey by Nelson\Nygaard Consulting Associates for City CarShare.

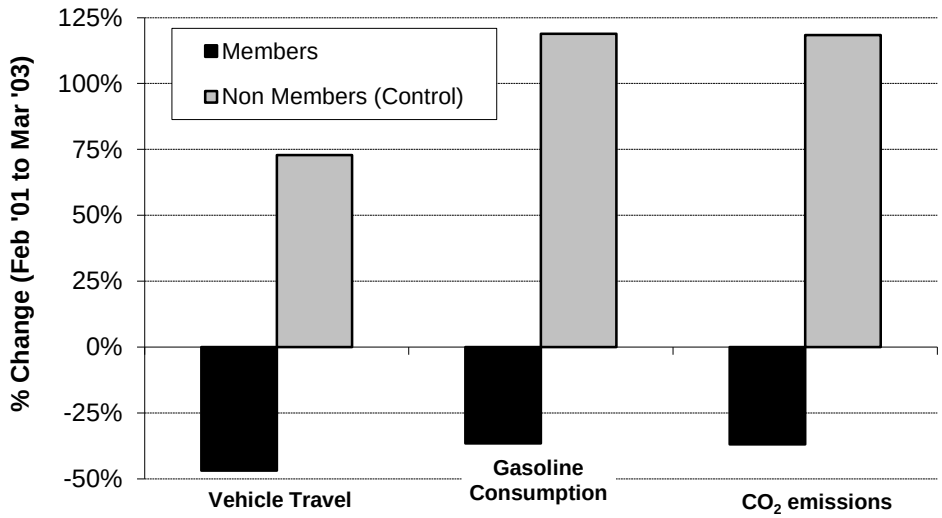
[60] The control group allows changes in vehicle travel due to other factors, such as weather, to be controlled for.

[61] Ordinance 129-06, adopted June 23, 2006. http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances06/o0129-06.pdf (accessed October 31, 2010). See also: http://www.livablecity.org/campaigns/c3.html (accessed October 31, 2010).

[62] Ordinance 286-10, adopted November 9, 2010. http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances10/o0286-10.pdf (accessed April 18, 2011).

requires private development of a certain size to provide spaces for car sharing vehicles at no cost to the car share organization.

Figure 4-5 Effects of Car sharing Membership on Vehicle Travel



Source: April 2002 survey by Nelson\Nygaard Consulting Associates for City CarShare.

Requiring the Provision of Free Transit Passes

Several Bay Area cities have helped meet their economic, environmental, social equity and congestion relief goals by requiring new developments to subsidize transit passes for employees and residents of new projects. Downtown Berkeley, for example, requires new downtown developments to provide transit subsidies to building employees and residents.

As described in more detail in the next chapter, enrolling the entire population of a new development in a deep-discount group transit pass program, such as AC Transit's EasyPass program, can be a cost-effective way for new building owners to provide tenants with an attractive amenity, reduce their project's parking demand and costs, and do their fair share to limit motor vehicle traffic and pollution.

This report recommends that Oakland enact a requirement similar to downtown Berkeley's policy, which has proven to be a workable and reasonably low-cost regulation, and provides substantial environmental and social equity benefits.

5 TRANSPORTATION DEMAND MANAGEMENT

The recommendations in this chapter are designed to further the implementation of the following City-adopted Parking Principles, which are particularly relevant to managing curb parking, as well as City goals set forth in other documents, such as the Energy and Climate Action Plan, and the MTC-funded Demand-Responsive Parking and Mobility Management Initiative.

PARKING PRINCIPLES

Parking is part of a multimodal approach to developing neighborhood transportation infrastructure.

- Users of commercial districts (shoppers, employees, visitors) have varied needs for access, via private auto, transit, bicycle and foot.
- Curbside parking must be balanced with multiple complementary and competing needs, including but not limited to delivery vehicles, taxis, car share vehicles, bus stops, bicycle parking and sidewalk widening.

Parking policy and regulations should help the City meet other transportation, land use and environmental goals.

- Whenever possible, a portion of parking revenue should be reinvested directly back to neighborhood commercial district improvements, potentially through a mechanism such as a parking benefit district."

SUMMARY OF TDM RECOMMENDATIONS

To improve transportation choices, while minimizing congestion and pollution:

1. Assess the most cost-effective mix of investments in pedestrian, bicycle, transit, ridesharing and parking infrastructure and services for meeting Oakland's economic, environmental and social equity goals.
2. Develop transportation demand management (TDM) programs with clear, quantifiable goals for reducing parking capital and operating costs, vehicle trips and pollution.
3. Plan, fund and staff TDM programs with the same clarity of purpose, level of expertise and seriousness normally accorded to a parking garage construction project.
4. Use a portion of parking revenues to fund TDM programs, focusing particularly on helping commuters leave their cars at home, in order to free up more space in City-owned garages for high-priority, high-revenue hourly customer parking.

5. Establish a Transportation Management Association for downtown Oakland, to improve traveler information about, marketing of, and employer participation in programs and services regarding walking, bicycling, ridesharing and transit.
6. Establish deep-discount group transit pass programs for both existing and future residents and employees.
7. Encourage and enforce compliance with California's parking cash-out law.

DISCUSSION

Why invest in transportation demand management?

As discussed in previous chapters, the costs, financial and otherwise, of constructing, maintaining, and operating parking can be remarkably high. The cost to construct new parking garages in Downtown can be expected to be in the range of $40,000 per space. This equates to a total cost to build, operate and maintain new spaces of approximately $280 per month per space, every month for the expected 35-year lifetime of the typical garage. These economics for parking garages lead to a simple principle: it can often be cheaper to reduce parking demand than to construct new parking. Any transportation demand management program that reduces parking demand at a net cost of less than $280 per month per space is a better deal than investing in new capacity.[63]

Regarding TDM's effects on City parking finances, commuters and downtown residents who purchase monthly permits for City garages tend to be high cost, low revenue customers. Funding transportation demand management programs aimed at commuters can be a cost-effective way of reducing the number of these monthly permit holders in the parking system, which can free up space in garages for high-revenue hourly customers and reduce the need for costly new capacity.

The active promotion of and incentives for walking, cycling, ridesharing and transit also reduces vehicle trips, alleviating parking demand and enhancing overall quality of life. Therefore, as an overall principle, the City of Oakland should invest in the most cost-effective mix of transportation modes for access to the downtown area, including both parking and transportation demand management strategies.

Numerous cities and major employers can serve as excellent precedents for accomplishing this. Downtowns like Portland (which placed a cap on its downtown parking supply in the 1970s) and San Francisco (which has instituted strict maximum parking requirements in downtown) have many lessons to offer. Additionally, major Bay Area employers with strong records of reducing parking demand and car trips, such as Genentech in South San Francisco, LinkedIn in Sunnyvale, and Stanford University in Palo Alto, demonstrate that cost-effectively reducing parking demand is feasible.

One important lesson from these programs is that TDM programs need expert staff, proper funding, and clear, quantifiable goals. Consider the approach that municipalities take when designing, funding, building and operating a new parking garage. To finance and build, say, a $20

[63] Perhaps counter-intuitively, investing in cost-effective TDM programs is a good deal for drivers as well as those who use alternative transportation, *even if these programs are paid for by parking fees*. For those who still need to drive and park downtown, a parking space freed up by helping someone else leave their car at home is just as good as a parking space gained by new construction. If TDM programs free up spaces for less than the cost of building new ones, it translates into lower parking fees needed to make the system work.

million, 500 space garage, a smart city will employ skilled engineers and architects to design and value engineer the project; hire people with economic training to project costs and revenues; and then hire an experienced parking manager and staff to keep it running. Similarly, a TDM plan aimed at helping 500 commuters leave their cars at home, to free up garage space downtown, needs funding and expertise. TDM programs should therefore be planned, funded and staffed with the same clarity of purpose, level of expertise and seriousness normally accorded to a parking garage construction project.

Using a portion of parking revenues to fund TDM programs, focusing particularly on reducing commuter parking demand, can help make this happen. Portland's Lloyd District, for example, uses a share of curb parking meters to pay for its deep discount group transit pass program, which provides free transit to every one of the district's employees, who belong to many different companies within the district. As a result of this and other programs managed by the Lloyd District Transportation Management Association, the drive-alone rate among all Lloyd District employees declined by 30% between 1997 and 2008.

Oakland's Recent Commitments to TDM

As part of the MTC Climate Initiatives grant, the City of Oakland committed to supporting the implementation and evaluation of TDM programs among City of Oakland departments and employees, laying the groundwork for other employers and residents to do the same. The TDM programs mentioned in the grant included providing a package of commute options and incentives to targeted employees within downtown Oakland, including travel coaching, supplying subsidized AC Transit passes, and education about bikeshare and car share options in Oakland.

Establishing a Transportation Management Association for Downtown

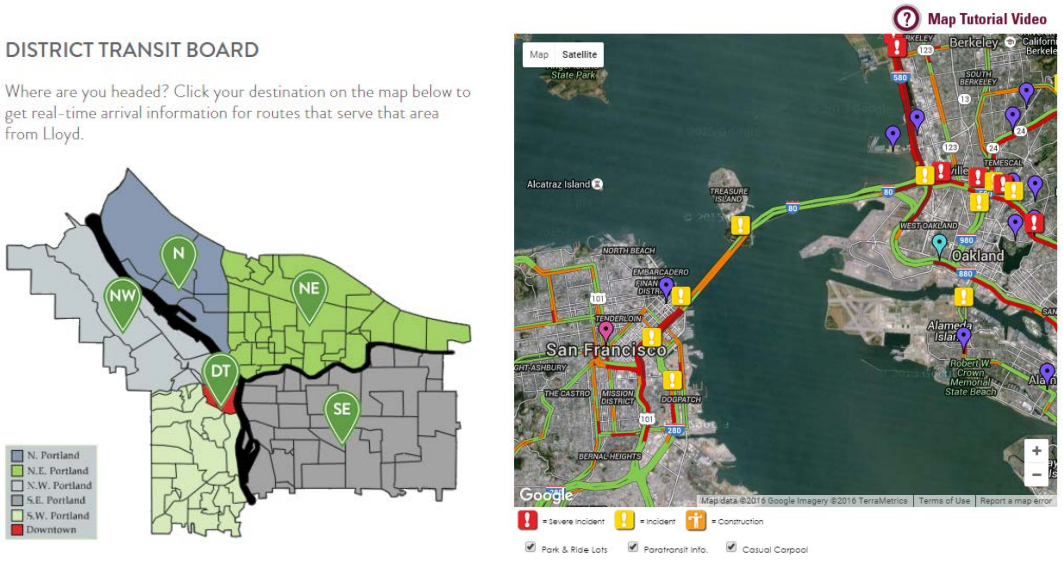
A transportation management association (TMA) is typically a nonprofit, member-based organization that provides transportation services in a particular area, formed to address the transportation needs and challenges of a particular destination with a distinct geographic boundary, such as a central business district. TMAs address parking and circulation through employee commute programs, trip planning, information about various travel options, and other tools. A TMA for downtown Oakland would be an efficient mechanism to deliver the various TDM measures that the City and other community organizations may provide. The TMA would also function as a point of coordination for employers and organizations that deploy their own transportation demand management programs, and also provide information to residents and visitors looking to learn more about their transportation options.

Successful TMAs include the Transportation Management Association of San Francisco (TMASF Connects); the Lloyd District TMA in Portland, OR; and the Emeryville TMA, which provides the Emery-Go-Round transit service in the East Bay. For example, TMASF Connects focuses on providing information on options to driving alone and other commute assistance services. The drive-alone rate among commuters of the TMASF Connects' members has steadily declined to below 10%.[64] The Lloyd District TMA, called Go Lloyd, provides a wealth of information on transportation options, including ridesharing, carpooling, transit options, and bicycling. Go Lloyd provides free custom-designed commute plans for employees working or residing in the Lloyd

[64] TMASF Connect website. http://www.tmasfconnects.org/

District, and also produces a Transportation Coordinators handbook to assist employers managing their own transportation demand.[65]

Figure 5-1 TMA Trip Planning Resources



Source: Go Lloyd website (left), TMASF Connects website (right)

A downtown Oakland TMA could capitalize on local organizations and businesses that already have a strong interest in the well-being of the downtown area. Organizations such as the Jack London Improvement District and the Downtown Oakland Association came together to provide the Broadway Shuttle, or B-Bus, transit service between downtown Oakland and other key destinations. This shuttle has already proven so popular that service hours have been expanded, and additional routes are being considered. Other potential partners for a downtown Oakland TMA include the Lake Merritt Uptown District Association, the Oakland Chinatown Chamber of Commerce, the Koreatown/Northgate Community Benefit District, and the Downtown Oakland Community Benefit District. All of these organizations stand to benefit from the parking and transportation recommendations enumerated in this report, particularly through potential revenue from parking benefit districts and the increase in economic growth due to a more vibrant and welcoming downtown. Requiring active participation or contribution to a downtown Oakland TMA could be considered a requirement for receiving any revenues stemming from parking pricing and regulation changes.

Potential responsibilities for a downtown Oakland TMA could include but not be limited to:

- Assisting employers in providing transit passes to a targeted groups of employees to increase the convenience of use and lower the price of transit;
- Promoting transportation via bicycling, walking, and carpooling/vanpooling;
- Assisting with the marketing/incentivizing bikeshare and car share program; and
- Providing information to employers regarding the California state law-mandated Parking Cash-Out programs for employees.

[65] Go Lloyd website. http://www.golloyd.org/

Establishing Deep Discount Group Transit Pass Programs

This report recommends using a portion of parking revenues to fund transportation demand management programs. Using such revenues to fund deep-discount group transit pass programs is one promising opportunity for meeting the downtown economic, equity and environmental goals. For example, enrolling all downtown employees and residents in AC Transit's deep-discount group transit pass program, known as the "EasyPass" program, could make a significant difference reducing downtown parking demand and vehicle trips. The City should also consider pursuing multi-operator passes or multiple passes for all of different transit operators that provide transit service in Oakland, including BART.

In recent years, growing numbers of transit agencies have teamed with universities, employers or residential neighborhoods to provide deep discount group transit passes. These passes typically provide unlimited rides on local or regional transit providers for low monthly fees, often absorbed entirely by the employer, school, or developers.

An example: Downtown Boulder, Colorado

One example of a multi-employer deep-discount group pass program funded by parking meter revenues is the Eco Pass program in downtown Boulder, which provides free transit on Denver's Regional Transportation District light rail and buses to more than 8,300 employees employed by 1,200 different businesses in downtown Boulder. To fund this program, Boulder's downtown established a Parking Benefit District, which pays a flat fee for each employee enrolled in the program, regardless of whether the employee actually rides transit. Because every full-time employee in the downtown is enrolled in the program, the Regional Transportation District provides the transit passes at a deep bulk discount.

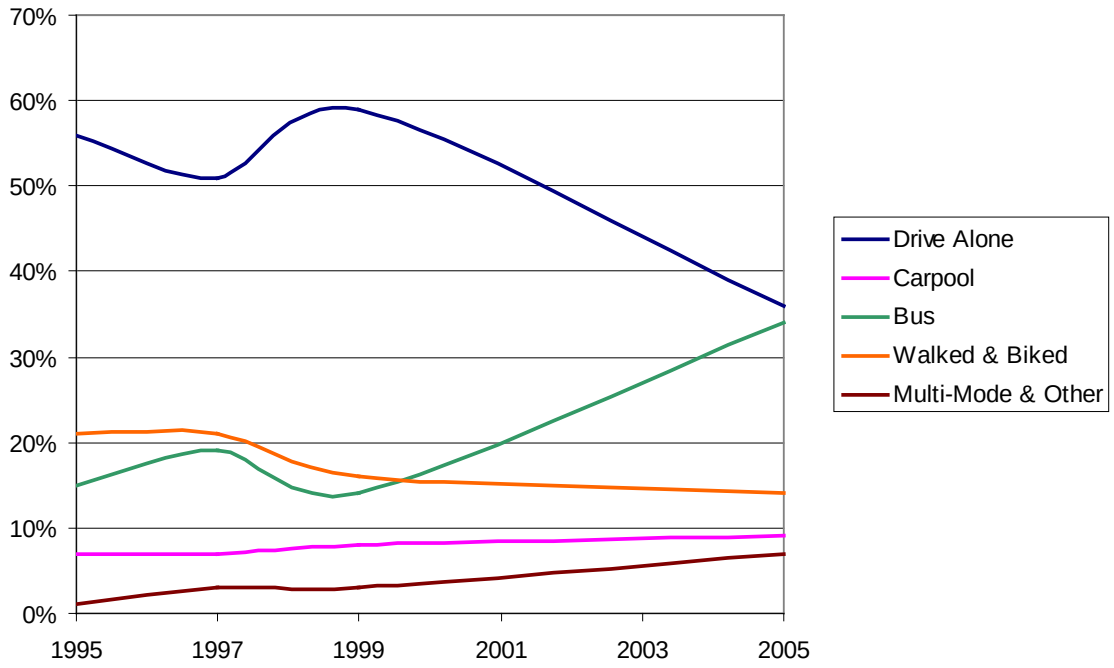
This program is an important model for downtown Oakland because it is a *multi-employer program*: it groups together hundreds of small (and a few large) employers in a way that allows them to benefit their employees, while reducing their downtown's demand for costly employee parking. The same principle is useful for downtown Oakland. On their own, many – perhaps most – downtown employers are too small to qualify for AC Transit's deep-discount pass program. The same holds true for many downtown residential buildings.

Since the baseline figures for downtown Boulder's program were established, the drive-alone rate has fallen 20 percentage points, from 56% in 1995 to 36% in 2005, while the transit rate has more than doubled from 15% to 34% (see Figure 5-2). The resulting ridership is estimated at a parking equivalent of 4,390 spaces. Overall, Boulder has found that it has been cheaper to provide free transit and strong ridesharing programs to all employees than to construct additional parking for them.

Results from other Deep-Discount Group Pass Programs

A review of existing deep discount group transit pass programs found that the annual per employee fees are between 1% and 17% of the retail price for an equivalent annual transit pass. The principle of group employee and residential transit passes is similar to that of group insurance plans – transit agencies can offer deep bulk discounts when selling passes to a large group, with universal enrollment, on the basis that not all those offered the pass will actually use them regularly.

Figure 5-2 Downtown Boulder Mode Split



A cost-effective transportation investment

Many cities and institutions have found that trying to provide additional parking spaces costs much more than reducing parking demand by simply providing everyone with a free transit pass. For example, a study of UCLA's deep discount group transit pass program found building that new parking cost more than three times as much per space as reducing parking demand by providing transit passes ($223/month versus $71/month).[66]

As the figure below illustrates, free transit passes are usually an extremely effective means to reduce the number of car trips in an area; reductions in car mode share of 4% to 22% have been documented, with an average reduction of 11%. By removing any cost barrier to using transit, people become much more likely to take transit to work or for non-work trips.

[66] Jeffrey Brown, et. al. "Fare-Free Public Transit at Universities: An Evaluation." Journal of Planning and Education Research, 2003: Vol 28, No. 1, pp 69-82.

Figure 5-3 Mode shifts achieved with free transit passes

Location	Drive to work		Transit to work	
	Before	After	Before	After
Santa Clara (VTA) [67]	76%	60%	11%	27%
Bellevue, Washington[68]	81%	57%	13%	18%
Ann Arbor, Michigan[69]	N/A	(4%)	20%	25%
UCLA[70] (faculty and staff)	46%	42%	8%	13%
Univ. of Washington, Seattle[71]	33%	24%	21%	36%
Univ. of British Colombia[72]	68%	57%	26%	38%
Univ. of Wisconsin, Milwaukee[73]	54%	41%	12%	26%
Colorado Univ. Boulder (students)[74]	43%	33%	4%	7%

Encouraging Compliance with Parking Cash out Laws

One other noteworthy transportation demand management measure that this report recommends implementing is developing, funding and staffing a pilot program specifically aimed at encouraging and enforcing compliance with California's parking cash-out law. California's parking cash-out law requires many employers which (a) offer subsidized parking to employees and (b) lease parking as a separate expense to offer the cash value of the subsidized parking space to any employee who does not drive to work. Several local jurisdictions have developed mechanisms to help enforce this cash-out law. For example, Santa Monica requires proof of compliance with the State's parking cash-out law before issuing occupancy permits for new commercial development.

Another potential avenue for encouraging voluntary parking cash-out, and/or enforcing compliance with parking cash-out, would be to work with any employers who currently pay for

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[67] Santa Clara Valley Transportation Authority, 1997.

[68] 1990 to 2000; http://www.commuterchallenge.org/cc/newsmar01_flexpass.html.

[69] White et. al. "Impacts of an Employer-Based Transit Pass Program: The Go Pass in Ann Arbor, Michigan."

[70] Jeffrey Brown, et. al. "Fare-Free Public Transit at Universities." *Journal of Planning Education and Research* 23: 69-82, 2003.

[71] 1989 to 2002, weighted average of students, faculty, and staff; From Will Toor, et. al. *Transportation and Sustainable Campus Communities*, 2004.

[72] 2002 to 2003, the effect one year after U-Pass implementation; From Wu et. al, "Transportation Demand Management: UBC's U-P ass – a Case Study", April 2004.

[73] Mode shift one year after implementation in 1994; Jpmes Meyer et. al., "An Analysis of the Usage, Impacts and Benefits of an Innovative Transit Pass Program", January 14, 1998.

[74] Six years after program implementation; Francois Poinsatte et. al. "Finding a New Way: Campus Transportation for the 21st Century", April, 1999.

their employees' monthly parking permits for City garages. Since these employers are already renting parking separately, and engaging with the City to do so, this provides an opportunity to engage with these employers. For example, employers paying for monthly permits in City garages could be required to certify that they are complying with cash-out law.

Currently, City employees receive discounted parking permits for City garages as part of an employee settlement. The City should consider gradually converting this employee parking discount into an overall transportation discount program, or a parking cash-out program. The City should also investigate the possibility of employing a transportation management platform such as Luum, which integrates with human resources and payroll systems to facilitate any financial benefits for employees who choose more environmentally responsible forms of transportation.

An example of parking cash-out benefits: Genentech, South San Francisco

Genentech, a major biotechnology employer in South San Francisco, California, offers a $4 per day cash payment to any employee who does not drive to work. This parking cash-out program is part of an ambitious and comprehensive transportation demand management program. The cash payments for not driving to work and other Genentech programs supporting transportation alternatives have had a measurable impact on Genentech's contribution to global climate change. In just one year, from 2006 to 2007, commute-related CO2 emissions per employee declined by 8.6%[75].

Factors of success in Genentech's innovative transportation demand management programs include:

The City: Trip reduction requirements imposed by the City of South San Francisco are specific and targeted, but provide ample flexibility for meeting goals.

Cost savings: Genentech was seeking to expand, so stood to realize cost savings ($100 million by their count) by reducing drive-alone commuting enough to avoid constructing additional parking. They realized it was cheaper to pay their employees not to drive than to build more parking.

Corporate culture: The TDM/Parking reform strategy was uniquely attractive to Genentech because it fits (a) the needs of their employees, many of whom are young, socially-minded professionals, who value commute alternatives, and (b) the corporate social responsibility strategy. Genentech wishes to be known as a good corporate citizen, doing its part for the environment by reducing drive-alone commuting.

[75] Genentech 2007 Corporate Sustainability Report, p. 13.

6 IMPLEMENTATION PLAN

This report has enumerated a wide variety of parking and transportation management strategies for the City of Oakland to deploy in their downtown area and actively support the City's goals of economic vitality, environmental responsibility, and social equity. Figure 6-1 provides a summary of all proposed parking and TDM strategies.

Figure 6-1 Summary of Recommendations

Category	Area of Deployment	Strategy	Goal
Parking Management	On-Street Parking Pricing and Regulations	Price Public On-Street Parking	▪ Price parking according to demand to ensure availability
		Extend Meter Hours of Operation	▪ Reduce congestion and circling in evening hours
		Eliminate On-Street Parking Time Limits	▪ Reduce congestion and circling
		Establish Parking Benefit Districts for Commercial and Residential Areas	▪ Use parking revenue for improvements that benefit everyone
		Examine Parking Allocation for Persons with Disabilities	▪ Ensure persons with disabilities have adequate parking facilities
		Improve Parking Monitoring and Enforcement	▪ Provide essential data collection for parking pricing
	Communications and Wayfinding	Develop Real-Time Parking Wayfinding Program	▪ Direct drivers to available parking easily and quickly
		Improve Parking Signage	▪ Direct drivers to available parking easily and quickly
	Off-Street Parking Pricing and Regulations	Moratorium on New Off-Street City-Owned Parking	▪ Evaluate financial feasibility of parking facility operations and maintenance
		Assess Highest and Best Use of City-Owned Lots and Garages	▪ Evaluate financial feasibility of parking facility operations and maintenance
		Assess Quantity of "Reserved" Off-Street Parking	▪ Maximize utility of existing off-street parking facilities
Zoning and Policy Administration	Regulating Parking in Private Developments	Eliminate Parking Minimums and Establish Parking Maximums	▪ Discourage construction of potentially unnecessary off-street parking

Category	Area of Deployment	Strategy	Goal
		Require Unbundling of Parking Costs	▪ Financially reward households who choose not to have a vehicle
Transportation Demand Management	Encouraging Use of Non-Auto Modes	Establish Transportation Management Association	▪ Provide centralized source of information about non-auto transportation alternatives
		Establish Deep-Discount Transit Pass Programs	▪ Financially incentivize transit use instead of driving

Figure 6-2 provides a high-level implementation framework for parking reform in downtown Oakland. Three timeframes are included and recommendations are organized according to priority of implementation. First and foremost, the City should evaluate the recommendations developed as part of this study, identify key priorities, and determine where additional study is needed. The immediate strategies, as shown below, could include implementing demand-based parking pricing at least in the areas funded by the MTC Climate Initiatives grant. In the short-term, the City would move forward on the other parking management and zoning code revisions. Over a longer period, the City should explore the feasibility of real-time parking wayfinding and identify other funding mechanisms for parking management and development.

Figure 6-2 Implementation Timeframe for Recommendations

Category	Strategy	Implementer(s)	Timeframe		
			Immediate	Short	Long
Parking Management	Price Public On-Street Parking	DPW	X		
	Extend Meter Hours of Operation	DPW		X	
	Eliminate On-Street Parking Time Limits	DPW	X		
	Establish Parking Benefit Districts for Commercial and Residential Areas	DPW and Planning		X	
	Examine Parking Allocation for Persons with Disabilities	DPW		X	
	Improve Parking Monitoring and Enforcement	DPW and Police	X		
	Develop Real-Time Parking Wayfinding Program	DPW and Planning			X
	Improve Parking Signage	DPW and Planning			X
	Moratorium on New Off-Street City-Owned Parking	DPW and Planning Dept.		X	
	Assess Highest and Best Use of City-Owned Lots and Garages	DPW and Planning			X

Category	Strategy	Implementer(s)	Timeframe		
			Immediate	Short	Long
	Reassess Number of "Reserved" Off-Street Parking	DPW		X	
Zoning and Policy Administration	Eliminate Parking Minimums and Establish Parking Maximums	Planning		X	
	Require Unbundling of Parking Costs	Planning		X	
Transportation Demand Management	Establish Transportation Management Association	DPW and Planning	X		
	Establish Deep-Discount Transit Pass Programs	DPW and Planning	X		

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Appendix A Technical Memoranda #1, #2, and #3

Attached are copies of prior deliverables.