WAIKIKI PARKING METER STUDY AND PRICING PLAN

HONOLULU URBAN CORE PARKING MASTER PLAN

HONOLULU, HI

Prepared For:
THE CITY & COUNTY OF HONOLULU

JUNE 19, 2015

WALKER
PARKING CONSULTANTS

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EXECUTIVE SUMMARY

Walker Parking Consultants has been engaged by the City and County of Honolulu Department of Transportation Services (DTS) to study on-street parking in Waikiki and to prepare a parking meter study and pricing plan for the area. Waikiki currently has approximately 1,017± on-street parking spaces, the majority of which are located in mixed residential/hotel areas, are provided free of charge, and are fully occupied throughout the day and night.

Walker met with DTS staff in January 2015 to discuss the goals and challenges of the on-street parking study. On-street parking is typically the most desirable type of parking for most user groups, as it is generally closer to a user's destination, and requires less effort to park compared to driving through a large parking lot or into a multi-level parking structure. The lack of available on-street parking in Waikiki is a significant problem, as it causes users to hunt for parking spaces and travel around the circulation system (Waikiki's streets) multiple times in the hopes of finding convenient, and likely free, on-street parking instead of directly driving to a parking lot or structure.

Walker staff visited the Study Area, bound by Ala Wai Boulevard to the north and east, Kapahulu Avenue to the south, and Ala Moana Boulevard and Kalia Road to the west, in January 2015 to collect an inventory of existing on-street parking spaces and loading zones, and to collect parking occupancy counts and a license plate inventory (a measure of how long a car is parked in a given location). Based on our fieldwork and experience in Waikiki, the Study Area was split into three zones; the Resort Hotel Zone, the Commercial Zone and the Residential Zone.

The results of the parking occupancy counts showed that free on-street parking spaces, are virtually 100% full throughout the day, evening and night. Metered spaces in the Resort Hotel and Commercial Zones are approximately 85% full during the morning and early afternoon and completely full at night, while metered spaces in the Residential Zone are approximately 70% full during the morning and early afternoon and completely full at night, as hours of meter enforcement end at 6:00 PM. The results of the license plate inventory on Ala Wai Boulevard indicate that long term parkers are generally residents, and that a significant percentage of spaces do not turn over for multiple days at a time.

Walker staff also sampled parking occupancy at several off-street facilities in the Residential Zone in the evening and found parking utilization generally around 70-80% in the evening, indicating that there is off-street capacity available to satisfy on-street parking demand pushed off street by implementation of meters in currently free spaces.

In addition to the fieldwork and observations in Waikiki, Walker researched public parking rates in beach cities in the mainland U.S., off-street parking prices in Waikiki, off-street parking prices in Pacific Rim Cities, on-street parking prices in North American west coast cities, and loading zone policies in several mainland U.S. cities. In general, on-street parking in Waikiki is priced below that of beach cities in the U.S., well below off-street parking rates in Waikiki, and below the maximum hourly parking rates charged in North American west coast cities.

Additionally, Waikiki's parking strategy and meter technology is falling behind that of its peers, as several U.S. west coast cities such as Seattle, Los Angeles and San Francisco have been moving ahead with smart meter technology, demand-based pricing and hours of enforcement changes, and even real-time pricing strategies.

U.S. cities have also been moving towards more sophisticated loading zone policies, such as the installation of parking meters in loading zones which must be paid by commercial vehicles during loading zone hours, and can be used (for a fee) by general vehicles outside of loading zone hours. Additionally, several cities provide the option of purchasing a Commercial Vehicle Loading Zone permit; to park in a loading zone in these places; a commercial vehicle must pay the meter or have a valid permit. Currently, Waikiki has yellow curbs and signs posted in loading zones, however with little enforcement; these spaces are often treated as free parking by the general public and contractors.

We provide several recommendations at the end of this report. The recommendations provided are based on sound planning principles that benefit society as a whole. While all individuals will not support the recommended changes, we believe these recommendations, if implemented, support making Waikiki a better place to live, work and play while improving access and mobility. The societal benefits of implementing the recommendations contained herein exceed the benefits to individuals. Below is a brief synopsis of the recommendations, which are explained in more depth in the recommendations section of the report.

RECOMMENDATIONS

Recommendation 1: Utilize the existing Waikiki Business Improvement District (BID) or a new Waikiki Parking Management Authority (PMA) to accumulate and reinvest parking meter income into neighborhood improvements.

One of the arguments against paid on-street parking in general is that it is a money grab by a government used to plug holes in its general fund. One way to diffuse this potential criticism would be to utilize the existing BID or create a new PMA to accumulate parking meter income and reinvest it into neighborhood improvements within Waikiki.

Parking meter income could be reinvested into the following improvements that will improve the quality of the experience for visitors to Waikiki, keeping tax revenue strong, while also improving the quality of life for residents of Waikiki and employees working in Waikiki:

- Complete Streets improvements
- Pothole repairs
- Parking lot and street paving/repaving
- Improved landscaping and aesthetic improvements
- Wayfinding/signage
- Litter and graffiti removal
- Lighting, security and safety enhancements
- Bicycle facilities, routes and bike share programs
- Car share programs
- New off-street public parking spaces

Recommendation 2: Add a Waikiki residential parking "permit" program that offers discounts on parking meters but not free parking.

To partially alleviate the impact of the potential change to more on-street paid parking in the Residential Zone, the City and County of Honolulu could offer Waikiki residents preferential pricing at on-street parking meters in the Residential Zone by choosing to offer residents a discount on parking at Residential Zone parking meters. The discount could either be percentage based, for example, residents pay half of the posted rate, or it could be a flat rate such as resident pay $0.50 or $0.75 cents per hour.

Residents could register their license plates through either an on-line program or mail in application; alternatively DMV registration records could be used to pre-enroll vehicles registered at residential addresses in Waikiki, although there may be privacy concerns with such an option. Such parking permits should be administered and enforced using a license plate recognition system (LPR) and the aforementioned online (license plate) registration system. On-line applicants could be given a preferential rate over mail in applicants to encourage use of on-line registration and reduce City and County administrative costs.

We recommend that a paid parking system of the type envisioned in this report be enforced via mobile license plate recognition (LPR) with fully integrated pay-by-cell, permit and mobile LPR software systems.

Recommendation 3: Change the hours of parking meter enforcement in the Resort Hotel Zone, Commercial Zone and Residential Zone

Resort Hotel Zone: Change the hours of parking meter enforcement from 7:00 AM through 6:00 PM Monday-Saturday to 7:00 AM through 10:00 PM seven days a week.

Commercial Zone: Change the hours of parking meter enforcement from 7:00 AM through 6:00 PM Monday-Saturday to 7:00 AM through 10:00 PM seven days a week.

Residential Zone: Change the hours of parking meter enforcement from 7:00 AM through 6:00 PM Monday-Saturday to 10:00 AM through 10:00 PM seven days a week. Changing the hours of parking meter enforcement to start later in the morning at both the existing and potential future meters in the Residential Zone would provide residents who park on-street overnight with some relief since they would not necessarily have to wake up early to move their vehicle or pay a meter.

Recommendation 4: Extend or remove time limits on parking meters in the residential zone

Parking meters in the Residential Zone currently have a two-hour time limit. Time limits are meant to encourage turnover and accessibility, however they require additional enforcement to prevent meter-feeding and can lead to less than desirable behaviors such as a car being moved from one side of the street to another to avoid time limits. We feel that proper pricing, rather than arbitrary time limits, is a better way to increase turnover and improve the accessibility of spaces. It also improves customer choice, as a driver willing to pay short-term parking rates for a long time period can do so if the convenience of the space is worth it to

them. Therefore we recommend that in conjunction with meter rates designed to promote turnover and 85-90% average occupancies, that time limits in the Residential Zone be extended to up to eight hours or removed entirely.

Recommendation 5: Adjust parking meter rates in the Resort Hotel Zone, Commercial Zone and Residential Zone

Resort Hotel Zone: Once meters are installed that accept payment by credit cards, it is recommended that the hourly rate at all existing and proposed meters in the Resort Hotel Zone be set to at least $3.00 per hour.

Commercial Zone: Once parking meters are installed that accept payment by credit cards, it is recommended that the hourly rate at all existing and proposed meters in the Commercial Zone be set to at least $3.00 per hour, consistent with the findings and recommendations in the *Honolulu Urban Core Parking Master Plan Parking Rate Study (Walker Parking Consultants, February 2014)*. In recognition of the peak parking occupancies seen during the evening hours, we would encourage the City and County to also consider using some level of dynamic pricing, such as increasing the price at meters in the Commercial Zone from $3.00 per hour to $4.00 per hour after 5:00 PM.

Residential Zone: The existing hourly rate of $1.50 per hour in the Residential Zone appears to be appropriate at the existing meters based on the occupancy observed during the morning and early afternoon. However, if new paid on-street parking is implemented in the Residential Zone, there should be a test period aimed at finding the appropriate rate for various areas within the Residential Zone to allow the City and County to achieve the desired parking occupancy rates.

Recommendation 6: Review loading zones and consider implementing one or a combination of the following options:

- Convert loading zone spaces to paid parking with a high hourly rate to encourage efficient loading. Loading hours and days should be determined by the City and County only after collaboration with the applicable service providers and businesses and subject to roadway conditions.
- Implement paid parking with a high hourly rate in loading zone spaces to encourage efficient loading. Restrict use of paid parking spaces during posted loading zone hours to commercial vehicles only, enforced by towing. Allow use of spaces as general paid parking outside of loading hours.
- Implement paid parking at loading zones that is only active during non-loading hours (i.e. during posted loading hours, only vehicles with permits are allowed to park for loading activities).
- Implement a Commercial Vehicle Loading Zone (CLVZ) permit program wherein commercial vehicle operators could apply and pay for a permit to parking in loading zones for loading/unloading. Vehicles with a CVLZ permit would still be subject to loading zone time limits.

In general, based on research, large cities on the mainland U.S. often have either paid parking in loading zones, commercial vehicle loading permits or both.
The installation of general meters, loading zone meters and/or a CVLZ permit program would likely require modification to and expansion of section 15-22.2 of the Revised Ordinances of Honolulu (ROH).

Recommendation 7: Implement paid parking on all streets that currently have free on-street parking, including Ala Wai Boulevard, to the extent feasible.

The recommendation to implement paid on-street parking throughout Waikiki is due to the current lack of on-street parking availability and turnover, the desire to create available on-street parking and increase turnover, to provide more access, and to provide consistency throughout Waikiki. This recommendation applies primarily to the Residential Zone, and a small amount of free on-street parking in the Commercial Zone (three spaces on Lewers Street). There is no legal free on-street parking in the Resort Hotel Zone. Certain streets, such as Makee Road and Tusitala Street, with narrow or non-existent sidewalks may make implementation of paid parking impractical; however to the extent possible, paid parking should be implemented throughout Waikiki for consistency.

The current mixture of paid and unpaid on-street parking in the Residential Zone, which may have had an empirical reasoning behind it when the meters were first installed, appears arbitrary in today's Waikiki. Streets with similar cross sections and land uses (residential and hotel) differ in that some have paid on-street parking and some have free on-street parking. For example, Kalaimoku Street and Lewers Street between Kuhio Avenue and Ala Wai Boulevard are both metered, whereas parking on the two streets between them; Launiu Street and Kaiolu Street, is free. The presence of free on-street parking provides an incentive for drivers to circulate through Waikiki searching for free parking as opposed to parking in a paid off-street location. It incentivizes residents to park on the street even if they have off-street parking, if the location of the on-street parking is more convenient. It also incentivizes residents to opt out of paid monthly off-street parking in favor of hunting for free parking. Free on-street parking creates a system of "winners" defined by those users who find an open spot, and is a severe disincentive to parking space turnover, given the difficulty of finding a free parking space to begin with. As documented during the LPI study, vehicles park on Ala Wai Boulevard for days at a time without moving. Essentially a public asset is providing some users with free vehicle storage.

Walker identified 746 potential parking spaces in the Residential Zone and 3 potential parking spaces in the Commercial Zone where paid parking could be implemented.

Recommendation 8: Consider converting select two-way streets to one-way streets, and convert one side of the street to metered parking.

Lauula Street and Waikolu Way between Royal Hawaiian Avenue and Seaside Avenue are both currently two-way streets. These could both be converted to one-way traffic to form a couplet, similar to the way that Koa Street and Prince Edward Street function between Kaiulani Avenue and Liliuokalani Avenue. Waikolu Way likely has too narrow a cross section, and a

lack of sidewalks, making it a poor candidate for on-street parking, however as part of a one-way couplet, metered on-street parking could be provided on one side of Lauula Street.

Kealohilani Avenue is a narrow two-way street without parking between Kalakaua Avenue and Kuhio Avenue. Kealohilani Avenue could be converted to one-way traffic with metered on-street parking.

Recommendation 9: Consider converting select through traffic lanes to parking lanes and install meters.

Kaiulani Avenue between the Sheraton Waikiki Hotel and Kuhio Avenue has two lanes in the westbound direction, one of which requires that motorists must turn right into the Sheraton Waikiki Hotel. There is a bus dwelling zone immediately before the entrance to the Sheraton Waikiki Hotel which renders this extra traffic lane moot. This lane could be converted to a parking lane. Table 15 summarizes the number of potential new metered spaces that would be gained by implementing part or all of recommendations six, eight, and nine.

Walker has identified 18 potential parking spaces in the Residential Zone, 12 potential parking spaces in the Resort Hotel Zone and 205 potential parking spaces in the Commercial Zone that are currently marked as no parking zones or loading zones where paid parking and/or a CVLZ program could be established.

Recommendation 10: Bring enforcement responsibilities into the hands of the Department of Transportation Services, the Waikiki BID, or a newly created Waikiki PMA.

The State of Hawaii collects 100% of income associated with parking violation citations issued by the City and County. The genesis of this policy decision is rooted in the State's cost of adjudicating all cases involving parking violations. In other words, the State successfully made the case to the City and County that since it was paying court costs to adjudicate parking tickets, then it should receive the parking violation citations income.

One potential opportunity that could generate significant revenue for the State and/or the City and County is to evaluate and modify the existing parking violation citations program. It is possible that parking violation citation rates have not been increased in some time and it could be time to increase citation rates. Moreover, through improvements in revenue collection procedures and improvements in productivity, there may be upside potential. This upside could be significant. We suggest that putting the enforcement effort – and revenue from parking citations – into DTS or a Parking Management Authority (PMA) would improve parking conditions.

We recommend that the State be contacted to explore a potential revenue sharing agreement with regards to enforcement revenue generated by the Waikiki area. If an agreement can be reached, the enforcement revenue returning to DTS could be used to fund additional enforcement either by the DTS, by the Waikiki BID or a newly created Waikiki PMA, depending on how the revenue is dispersed.

In the final section of the report, an initial parking meter pricing plan is provided.

DEFINING THE PARKING PROBLEM

In discussions with City and County staff and employees and visitors to Waikiki, we have heard numerous complaints about parking in Waikiki. To ameliorate, if not solve the problem, we must first define the problem as specifically as possible and identify the solutions, best practices and resources that can be brought to bear for this purpose. At the same time, we must recognize that parking not only represents one component of the transportation system and method of accessing destinations in Waikiki, its management and use have far broader implications for the overall quality of life in the district. To properly address the parking issues effectively for all who live in or come to Waikiki, this broader context must be considered.

Based on our observations and experience, we suggest that the on-street parking problem in Waikiki should be defined as a lack of available and convenient on-street spaces for drivers. Based on our field data, for a significant amount of time each day, there are effectively no on-street parking spaces available for the public to park in Waikiki. The most convenient paid spaces are occupied nearly all the time and the few available on-street parking spaces are located in generally inconvenient locations, offering little access for short-term parkers to Waikiki's most popular destinations. Parking availability is effectively non-existent because it is either free of charge or priced below off-street parking options. On-street parking is limited in supply and overwhelmed by the thousands of potential users looking for somewhere to park.

While the lack of on-street and other public parking availability represents a key problem, we suggest a less obvious corollary, the underutilization of the (typically city-required) off-street spaces. Privately-owned, off-street parking in Waikiki represents hundreds of millions of dollars in infrastructure investment which, while the on-street parking supply has reached its capacity under current conditions and policies, is an asset that is partly going to waste.

While the number of on-street parking spaces could potentially, in some instances, be increased, we must recognize that ultimately the total number of on-street parking spaces that can be created in Waikiki, particularly in high demand locations, is finite. The limit to the number of on-street spaces makes maximizing their efficiency (making sure they serve as many people as possible, and making them more available) our goal.

However, as we outline in the report, the location of Waikiki's metered spaces, the unique mix of parking user groups (including residents, visitors, employees, and hotel guests), and the nature of the off-street parking supply, creates unique challenges and sometimes competing priorities, but also opportunities to ameliorate or solve the current parking problem.

THE ROLE OF ON-STREET PARKING SPACES IN THE WAIKIKI PARKING SYSTEM

The number of on-street parking spaces in Waikiki represents less than one percent of the total parking supply in Waikiki. The number of parking spaces currently metered represents a minority portion of the on-street spaces. Changes to the policies controlling these spaces therefore arguably represent an extremely small impact on parking in Waikiki. Yet despite their small number, these spaces play an oversized role in parking due to the following:

- On-street parking spaces are generally highly visible thereby representing the "face" of parking in Waikiki. They create drivers' first – and in some cases ongoing - impression of access to Waikiki. In contrast, most parking spaces in Waikiki require drivers to drive up or down a parking ramp, often several levels, to park all the while not knowing the precise location, condition, and in some cases (total) cost of (parking in) the space. Rarely do drivers know the exact location of the space they must park in beforehand.

- Many if not most of the thousands of parking spaces in Waikiki are reserved in some way only for drivers seeking to access a specific destination, and in some cases, drivers assigned to park in a particular location or even an individual parking stall or stalls. In contrast, on-street parking spaces, when available, are meant to accommodate any member of the driving public. This flexibility, and the ability to accommodate any number of parking users in Waikiki, is yet one more reason why the importance of the small number of on-street spaces is oversized and the demand for the on-street parking spaces is so high.

THE UNUSUAL NATURE OF ON-STREET PARKING SPACES IN WAIKIKI

A significant challenge in defining the parking problem and implementing a management strategy and policies for metered on-street parking spaces in Waikiki is that the role – and location – of the spaces is dramatically different than in other cities, or even in other parts of Honolulu.

The purpose of paid on-street parking spaces in a commercial district is typically to preserve the availability of convenient parking spaces, particularly for visitors. By encouraging drivers to park in these locations for a short time, and discouraging drivers from parking all day, paid spaces increase the number of vehicles and people that each space can accommodate, creating greater access to nearby destinations for visitors and customers. Analogous to a restaurant seeking to turn tables, paid *on-street* parking is meant to accommodate as many cars as possible throughout the day, using the most convenient spaces.

Paid parking is also meant to ensure the availability of approximately one to two parking spaces per block to ensure a choice for drivers who need to park in these locations. In this way, a paid parking policy is analogous to a small shop, always seeking to have some "inventory" of parking spaces on the shelf.

Because there is typically an inverse relationship between how long a parker stays at an individual destination and how far they should be expected to walk, paid parking is meant to encourage long-term parkers to park in more peripheral or less convenient locations. Except in the densest of urban areas, parking for residents is often one exception to the inverse time-spent-at-destination/distance-parked-from-destination. Parking for residents, and similarly for hotel (effectively short-term) residents is expected to be provided closer, rather than farther from where they reside. In the vast majority of cases in Waikiki, providing parking spaces for residents adjacent to their homes has been accomplished using parking structures located below residential buildings. However, we suggest that the relatively much lower price of on-street parking spaces incentivizes residents and hotel guests to park their cars in valuable on-street parking spaces. If not actively sought out, when an open on-street parking space is

available, drivers will quickly seize the opportunity, in some cases even if a parking space is available to them in another, albeit less convenient and/or more expensive location.

The challenge in implementing the above system properly in some instances is that, despite its effectiveness in maximizing the parking system's ability to accommodate people and improving, if not guaranteeing, their availability to find a parking space, many people do not like to pay for parking.

However, paid on-street parking spaces in Waikiki operate differently in nature than in the typical scenario outlined above for a number of reasons including the following:

- Metered parking spaces are located on side streets that are significantly, if not entirely, residential or hotel in nature. Waikiki's metered parking spaces are most often not on or even immediately adjacent to Waikiki's main commercial corridors.
- The majority of commercial activity in Waikiki takes place along two arterial streets, neither of which have on-street parking spaces. The identifiable parking spaces nearest to Waikiki's commercial activity are typically located in parking structures and a significant number of customers arriving at commercial and beach destinations either walk from elsewhere in the district or from parking spaces a considerable distance away.
- Two-hour time limits and the necessity of payment by coin encourage short-term usage at locations that have meters, yet the metered spaces, including those located in the off-street Kuhio-Kaiolu Municipal Parking Lot, are located some or a great distance from the primary commercial areas and beach destinations.

STUDY AREA

This study focuses on an area of Waikiki or "Study Area", bound by Ala Wai Boulevard to the north and east, Kapahulu Avenue to the south, and Ala Moana Boulevard and Kalia Road to the west.

Figure 1 shows the entire Study Area, which has been split into the following three zones for analysis purposes due to each zones' distinct character and primary function:

- Resort Hotel Zone – The Resort Hotel Zone is generally bound by Ala Moana Boulevard and Kalakaua Avenue to the east, and Waikiki Bay to the west. It does not include the Ala Wai Boat Harbor, which is operated by the State of Hawaii. This zone is comprised mainly of resort hotels and retail shopping. Due to the large resort properties, there is not a regular street grid in this area, and few streets have on-street parking.
- Commercial Zone – The Commercial Zone is bound by Kalakaua Avenue to the west, Kapahulu Avenue to the South and Kuhio Boulevard to the east. The Commercial Zone consists primarily of non-resort hotels, shopping and dining.
- Residential Zone – The Residential Zone is bound by Ala Wai Boulevard to the north and east, Kapahulu Avenue to the south, and Kuhio Boulevard and Ala Moana Boulevard to the west. The predominant land use in the Residential Zone is housing, in the form of

high and low-rise condominiums, apartment buildings, and single family homes. There are also non-resort hotels and some commercial activity in this zone.

Figure 1: Waikiki Study Area

Source Image: Google Earth Pro, 2015

DATA COLLECTION

INVENTORY

Walker staff collected an inventory of on-street parking spaces in the Waikiki Study Area in January, 2015. Table 1 summarizes the on-street parking inventory in Waikiki by zone. Appendix A contains a detailed inventory of on-street parking on a block-by-block basis.

Table 1: Waikiki On-Street Parking Inventory By Zone

Zone	Metered Spaces	Marked Stalls (No Meters)	Open Parking	Total
Resort Zone	19	0	0	19
Commercial Zone	47	0	14	61
Residential Zone	191	117	629	937
Total	257	117	643	1,017

Source: Walker Parking Consultants, 2015

As shown in Table 1, there are approximately 1,017± on-street parking spaces in the Waikiki Study Area. Approximately one-quarter of on-street spaces are metered and the majority of spaces are open parking (no stall markings or restrictions). The Residential Zone contains over 90% of the on-street parking spaces in the Study Area, with very little on-street parking available in both the Resort Hotel and Commercial Zones. In addition to the on-street parking documented in Table 1, there are also several loading zones in the Study Area, and one small area (ten spaces) of on-street permit-only parking managed by Diamond Parking on Lauula north of Lewers Street.

Figure 2 shows the general location of and quantity of on-street parking in the Study Area, as well as the general location of loading zones.

Figure 2: Waikiki On-Street Parking Inventory

Source Image: Google Earth Pro, Walker Parking Consultants 2015

OCCUPANCY

Walker collected weekday parking occupancy counts in a portion of the Study Area in February 2014 and in the remainder of the Study Area in January 2015. The results of the occupancy counts were consistent in showing very high levels of on-street parking utilization throughout the afternoon and evening.

Table 2 summarizes the on-street parking occupancy observed in the Waikiki Study Area between 9:00 AM and 10:00 PM on a weekday, with the last count beginning at 9:00 PM and ending at 10:00 PM.

The results of the occupancy counts were consistent in showing 97-100% utilization of unmetered parking stalls throughout the day and night. Utilization at metered spaces was

observed from the mid-70%s to mid-80%s throughout the morning and early afternoon, reaching 98-100% in the late afternoon and staying full throughout the evening.

Table 2: Waikiki Weekday Parking Occupancy and Utilization Rates

Zone	Inventory	Occupancy						
		9:00 AM	11:00 AM	1:00 PM	3:00 PM	5:00 PM	7:00 PM	9:00 PM
Resort Zone								
Metered Spaces	19	19	18	18	19	19	19	21
Commercial Zone								
Metered Spaces	47	43	44	41	47	47	46	47
Open Parking	14	14	14	14	14	14	14	14
Residential Zone								
Metered Spaces	191	144	156	147	152	187	192	191
Marked Stalls	117	117	117	117	114	117	117	117
Open Parking[1]	621	615	603	613	612	615	614	616
Total								
Metered Spaces	257	206	218	206	218	253	257	259
Marked Stalls	117	117	117	117	114	117	117	117
Open Parking[1]	635	629	617	627	626	629	628	630
Grand Total[1]	1,009	952	952	950	958	999	1,002	1,006

Zone	Inventory	Utilization						
		9:00 AM	11:00 AM	1:00 PM	3:00 PM	5:00 PM	7:00 PM	9:00 PM
Resort Zone								
Metered Spaces	19	100%	95%	95%	100%	100%	100%	111%
Commercial Zone								
Metered Spaces	47	91%	94%	87%	100%	100%	98%	100%
Open Parking	14	100%	100%	100%	100%	100%	100%	100%
Residential Zone								
Metered Spaces	191	75%	82%	77%	80%	98%	101%	100%
Marked Stalls	117	100%	100%	100%	97%	100%	100%	100%
Open Parking[1]	621	99%	97%	99%	99%	99%	99%	99%
Total								
Metered Spaces	257	80%	85%	80%	85%	98%	100%	101%
Marked Stalls	117	100%	100%	100%	97%	100%	100%	100%
Open Parking[1]	635	99%	97%	99%	99%	99%	99%	99%
Grand Total[1]	1,009	94%	94%	94%	95%	99%	99%	100%

1 = Eight parking spaces on Niu Street that are signed No Parking from 6:00 AM-6:00PM have been excluded from the inventory and occupancy counts in Table 2

Source: Walker Parking Consultants, 2014-2015

Tables 3, 4 and 5 show detailed weekday parking occupancy counts by zone, by street.

Table 3: Detailed Parking Occupancy – Residential Zone

Residential Zone	Inventory	Occupancy						
		9:00 AM	11:00 AM	1:00 PM	3:00 PM	5:00 PM	7:00 PM	9:00 PM
Pau between Kalakaua and Ala Wai	12	12	14	14	12	12	12	12
McCully between Kalakaua and Ala Wai	5	4	2	5	4	6	6	7
Kaioo	47	46	44	45	45	47	47	47
Hobron between Ala Moana and Lipeepee	24	24	24	24	23	24	24	24
Hobron between Lipeepee and Ena	35	33	31	31	33	36	36	36
Ala Wai between Ala Moana and Kalakaua	137	137	135	134	137	137	137	137
Ala Wai between McCully and Ainakea	210	205	201	204	201	205	204	205
Pualani between Paoakalani and Wai Nani	38	38	37	37	37	38	38	37
Ainakea between Pualani and Ala Wai	25	25	24	25	25	25	25	25
Tusitala between Kaiulani and Kapili	10	10	10	10	9	10	10	10
Kapili between Cleghorn and Tusitala	5	5	5	5	6	5	5	5
Kapuni between Kuhio and Cleghorn	6	6	6	8	8	6	6	8
Cleghorn between Kaiulani and Kapili	9	9	9	9	9	9	9	9
Aloha between Lewers and Seaside	19	8	14	8	13	18	19	19
Kaiolu between Kuhio and Ala Wai	31	31	31	32	31	31	31	31
Launiu between Kuhio and Ala Wai	27	27	27	27	28	27	27	27
Keoniana between Kuhio and Ala Wai	22	22	22	22	22	22	22	22
Kuamoo between Kuhio and Ala Wai	18	18	18	18	18	18	18	18
Namahana between Kuhio and Ala Wai	6	6	6	6	4	6	6	6
Olohana between Kuhio and Ala Wai	19	13	13	11	9	16	19	18
Kalaimoku between Kuhio and Ala Wai	21	9	10	12	11	21	20	20
Lewers between Kuhio and Ala Wai	8	7	7	8	7	8	8	8
Royal Hawaian between Kuhio and Ala Wai	7	5	7	7	6	7	7	7
Seaside between Kuhio and Ala Wai	14	11	14	13	14	14	14	14
Nohonani between Kuhio and Ala Wai	13	9	12	11	9	12	13	13
Nahua between Kuhio and Ala Wai	21	21	20	20	21	21	21	21
Walina between Kuhio and Ala Wai	16	12	13	12	13	16	16	15
Kanekapolei between Kuhio and Ala Wai	13	12	13	9	12	12	13	13
Liliuokalani between Kuhio and Ala Wai	17	17	17	17	17	17	17	17
Ohua between Kuhio and Ala Wai	30	30	30	30	30	30	30	30
Paoakalani between Kuhio and Ala Wai	39	39	36	38	39	38	39	39
Wai Nani between Kuhio and Ala Wai	25	25	24	25	25	25	24	24
Total	**929**	**876**	**876**	**877**	**878**	**919**	**923**	**924**

Source: Walker Parking Consultants, 2014-2015

Table 4: Detailed Weekday Parking Occupancy – Resort Hotel Zone

Resort Zone	Inventory	Occupancy						
		9:00 AM	11:00 AM	1:00 PM	3:00 PM	5:00 PM	7:00 PM	9:00 PM
Beach Walk between Kalakaua and Kalia	5	5	5	5	5	5	5	7
Saratoga between Kalakaua and Kalia	14	14	13	13	14	14	14	14
Total	**19**	**19**	**18**	**18**	**19**	**19**	**19**	**21**

Source: Walker Parking Consultants, 2014-2015

Table 5: Detailed Weekday Parking Occupancy – Commercial Zone

Commercial Zone	Inventory	Occupancy						
		9:00 AM	11:00 AM	1:00 PM	3:00 PM	5:00 PM	7:00 PM	9:00 PM
Uluniu between Kalakaua and Kuhio	4	4	4	4	4	4	3	4
Ohua between Kalakaua and Kuhio	25	22	25	21	25	25	25	25
Paoakalani between Kalakaua and Kuhio	18	17	15	16	18	18	18	18
Lewers between Kalakaua and Kuhio	3	3	3	3	3	3	3	3
Makee Road	11	11	11	11	11	11	11	11
Total	**61**	**57**	**58**	**55**	**61**	**61**	**60**	**61**

Source: Walker Parking Consultants, 2014-2015

Walker collected weekend occupancy counts in a portion of the Study Area in February 2014. The results of the occupancy counts were consistent in showing very high levels of on-street parking utilization throughout the afternoon and evening.

Table 6 summarizes the on-street weekend parking occupancy observed in the Waikiki Study Area between 9:00 AM and 9:00 PM on a Saturday, with the last count beginning at 9:00 PM and ending at 10:00 PM.

The results of the occupancy counts were consistent in showing 97-100% utilization of unmetered parking stalls throughout the day and night. Utilization at metered spaces was observed from the mid-70%s to mid-80%s throughout the morning and early afternoon, with one dip below 60% at 11:00 AM, reaching 98-100% in the late afternoon and staying full throughout the evening.

The results of the weekday occupancy counts compared to the partial Saturday occupancy counts indicate that the pattern of on-street parking demand in Waikiki is similar throughout the week, with no noticeable changes in behavior on weekends versus the weekdays. Free spaces are generally full throughout the day and evening, while metered spaces have availability in the morning, fill up throughout the afternoon, and remain full through the evening as meter enforcement hours end. This finding makes sense, as Waikiki is a tourist destination 7 days a week, 365 days a year.

Table 6: Waikiki Saturday Parking Occupancy and Utilization Rates

Zone	Inventory	Occupancy						
		9:00 AM	11:00 AM	1:00 PM	3:00 PM	5:00 PM	7:00 PM	9:00 PM
Commercial Zone								
Metered Spaces	47	37	30	44	46	47	46	47
Open Parking	14	14	14	14	14	14	14	14
Residential Zone								
Metered Spaces	132	97	76	103	129	131	132	128
Marked Stalls	93	93	93	92	93	93	93	93
Open Parking	274	268	261	262	268	272	270	270
Total								
Metered Spaces	179	134	106	147	175	178	178	175
Marked Stalls	93	93	93	92	93	93	93	93
Open Parking	288	282	275	276	282	286	284	284
Grand Total[1]	560	509	474	515	550	557	555	552

Zone	Inventory	Utilization						
		9:00 AM	11:00 AM	1:00 PM	3:00 PM	5:00 PM	7:00 PM	9:00 PM
Commercial Zone								
Metered Spaces	47	79%	64%	94%	98%	100%	98%	100%
Open Parking	14	100%	100%	100%	100%	100%	100%	100%
Residential Zone								
Metered Spaces	132	73%	58%	78%	98%	99%	100%	97%
Marked Stalls	93	100%	100%	99%	100%	100%	100%	100%
Open Parking[1]	274	98%	95%	96%	98%	99%	99%	99%
Total								
Metered Spaces	179	75%	59%	82%	98%	99%	99%	98%
Marked Stalls	93	100%	100%	99%	100%	100%	100%	100%
Open Parking[1]	288	98%	95%	96%	98%	99%	99%	99%
Grand Total[1]	560	91%	85%	92%	98%	99%	99%	99%

Source: Walker Parking Consultants, 2014-2015

ALA WAI BOULEVARD LICENSE PLATE INVENTORY

Walker staff conducted a license plate inventory (LPI), also known as a "length of stay" study over a 24-hour+ period on Ala Wai Boulevard. The LPI study area was broken up into two segments: 1) Between Ainakea Way and McCully Street and 2) Between Ala Moana Boulevard and Kalakaua Avenue.

Ala Wai Boulevard between Ainakea Way and McCully Street

On-street parking is permitted on the east side of Ala Wai Boulevard, adjacent to the Ala Wai Canal between Ainakea Way and McCully Street. There are approximately 210+ open

(unmetered and unstriped) parking spaces along this stretch of Ala Wai Boulevard. The last 4 digits of license plates of cars parked along this stretch of Ala Wai Boulevard were collected at 2:30 PM and 8:00 PM on Tuesday January 27th, 2015, at 6:00 AM and 2:00 PM on Wednesday January 28, 2015 and at 9:00 AM on January 29th, 2015. Key takeaways from the LPI study along this stretch are as follows:

- 482 distinct vehicles were observed over the course of the 42-hour LPI period.
- 27 vehicles, occupying 13% of the spaces on this segment of Ala Wai Boulevard did not move during the period of the LPI (approximately 44 hours and two nights).
- Approximately 39% of the vehicles observed Tuesday at 8:00 PM were still present on Wednesday at 6:00 AM.
- 47 vehicles (10% of the total number of observed distinct vehicles) were recorded parked in multiple spaces over the course of the LPI.

Based on field observations that occurred during and after LPI periods, parking along this segment of Ala Wai appears to be primarily residents and some hotel patrons overnight. During the day as residents go to work, these spaces are generally taken by workers in Waikiki.

Ala Wai Boulevard between Ala Moana Boulevard and Kalakaua Avenue

On-street parking is permitted on the both sides of Ala Wai Boulevard between its terminus in a cul-de-sac next to Ala Moana Boulevard and Kalakaua Avenue. There are approximately 137± open (unmetered and unstriped) parking spaces along this stretch of Ala Wai Boulevard, not including a small loading zone area on the south side of the street approaching Kalakaua Avenue. The last 4 digits of license plates of cars parked along this stretch of Ala Wai Boulevard were collected at 10:30 AM and 4:00 PM on Tuesday January 27th, 2015, and at 6:00 AM and 2:00 PM on Wednesday January 28, 2015. Key takeaways from the LPI study along this stretch are as follows:

- 229 distinct vehicles were observed over the course of the 28-hour LPI period.
- 65 vehicles, occupying 47% of the spaces on this segment of Ala Wai Boulevard did not move during the period of the LPI.
- Approximately 67% of the vehicles observed Tuesday at 4:00 PM were still present on Wednesday at 6:00 AM.
- 40 vehicles (17% of the total number of observed distinct vehicles) were recorded parked in multiple spaces over the course of the LPI.

Based on field observations that occurred during and after LPI periods, parking along this segment of Ala Wai appears to be primarily residents at all hours of the day, with some parking by workers at the nearby commercial buildings. During the 4:00 PM LPI on Tuesday, several workers were observed walking across Ala Wai, getting in to their cars, and leaving. These spaces were quickly retaken by residents.

OFF-STREET PARKING OBSERVATIONS

While the main focus of this study is on-street parking, it important to understand the market for off-street parking spaces, as the closest alternatives for drivers when on-street parking spaces fill is nearby off-street parking facilities. The price to park in off-street spaces provide the most accurate comparison for on-street parking spaces, although these spaces are often considered inferior in desirability and worth less to drivers. Additionally, in Waikiki, a number of locations appear to set off-street parking rates with the seeming objective of limiting, though not prohibiting, access by the general public in order to protect the parking supply for a different user group. For example, Waikiki Beach Hotel Hyatt Place, located at the southwest corner of Paoakalani Avenue and Kuhio Avenue charges $9 for 30 minutes of parking and $18 thereafter, but no overnight parking. Signage states there is a $50 charge if the vehicle is left parked midnight. However for hotel guests at Waikiki Beach Hotel Hyatt Place self-parking is $25 per day and valet parking is $30 per day. Residential parking is often provided for 'free' to residents in condominium and apartment buildings, although anecdotally, Walker staff heard that some locations have unbundled the cost of parking from the cost of rent/purchase price.

Walker staff sampled parking rates and occupancy at a few commercial parking garages in the Residential Zone, and collected overnight parking occupancy information at several residential buildings to see whether or not off-street capacity is available in some form. The results of the observations are listed below.

- Overnight and monthly parking is available within several commercial garages.
  - The Eaton Square garage charges a maximum rate of $30.00 daily, and provides monthly parking for approximately $105 per month. Walker staff visited this garage late in the evening on a weeknight and noted over 100 unoccupied spaces, including almost the entire top level, indicating the facility has the capacity to absorb additional overnight parking demand.

- The Aston at Waikiki Banyan Hotel offers 24 hours of parking with in/out privileges to the general public for 15.00 per night or $80.00 per week. Walker staff did not obtain permission to access the facility; however staff at the entrance indicated that the garage generally had availability overnight.

- Walker staff sampled residential parking occupancy rates, counting the number of vehicles and comparing that number to the number of available parking spaces, in parking facilities belonging to small, medium, and large-sized residential developments in the Residential Zone late in the evening on Tuesday, January 27, 2015. An array of facilities was sampled, from developments on Hobron Lane to developments along and within one block of Ala Wai Boulevard between Ainakea Way and McCully Street. In general, the off-street parking spaces at these facilities were observed to be approximately 70-75% occupied between 10:00 PM and 11:00 PM in the evening when the observations occurred.

Table 7 summarizes the observed evening parking occupancy rate at the residential properties sampled. The table lists the general location of each sampled property.

Table 7: Sampled Residential Properties – Observed Evening Parking Occupancy

Residential Property Data Point	Evening Parking Occupancy Rate
Alawai 1	75%
Alawai 2	73%
Residential Zone Side Street 1	65%
Residential Zone Side Street 2	72%
Residential Zone Side Street 3	75%
Hobron Lane Area 1	74%
Hobron Lane Area 2	81%
Ala Moana Boulevard 1	58%
Sample Average	**72%**

Source: Walker Parking Consultants, 2015

Although the off-street parking occupancy data that was collected is representative of a sample, we believe that it is indicative of a widespread availability of off-street parking spaces. Therefore, if the City and County of Honolulu were to decide to increase usage restrictions and/or on-street parking rates with the consequence of sending some parking patrons in search of off-street options, there appear to be plenty of off-street parking options available.

OTHER OBSERVATIONS

During the collection of inventory, occupancy and LPI data, Walker staff made the following additional observations:

- Vehicles were observed using loading zones for general parking and dwelling there for long periods of time.
- There is a lack of on-street parking on commercial blocks.
- Opportunities exist for a more rigorous parking enforcement program that aligns with sound parking management principles.
- There are inconsistencies in terms of where meters are located and not located in the residential areas of Waikiki.
- On-street metered parking spaces have a two-hour time limit and are (signed to be) enforced between 7 AM to 6PM, Monday through Saturday. The rate is $1.50 per hour.
- Curb management is an issue in front of the Kobe Restaurant on Ala Moana Boulevard.

PARKING RATE COMPARISONS

In order to determine a parking pricing plan and parking rates for on-street parking in Waikiki, it is important to understand the role and context of on-street parking within the greater parking system and in the context of other parking rates such as other U.S. cities, other Pacific Rim cities, and other beach cities. The following subsections address these comparables.

BEACH PARKING RATES IN U.S. COASTAL CITIES

Parking in U.S. coastal beach cities is typically not provided for free. Although Hawaii, in general, is inclined to provide free parking next to its beaches, such practices lead to availability and congestion issues at popular sites. Walker staff researched public parking rates, for both on-street and off-street where available, at several coastal cities in the mainland United States. The result of this research is summarized in Table 8.

Table 8: Beach City Parking Rates

State	City	Rate Information
California	LA County Beach Lots	Winter: $3-$8; Summer $3-$12.50
California	Venice Beach Pier Lot	Winter: $4-$9; Summer $6-$17.50
California	Manhattan Beach	Pier lots, $1.50/hr; other lots $0.75/hr; on street $1.25/hr two hour limit, 8A -9P
California	Hermosa Beach	Pier Lots $1.25/hr, Meters $1.25/hour
California	Redondo Beach	Pier Lots $1.50-$2.00/hour. Meters $1.00/hour
California	Torrance	Winter $2.00 to $6.00; Summer $3.00 to $7.00
California	Santa Monica	Beach Parking $6-$15, Beach Meters $2.00/hour
California	Newport Beach	$1.00/hour off-season, $1.50/hour peak season
California	Corona Del Mar	$2.50-$4.00 per hour
California	Huntington Beach	Beach Lots $1/hour ($15 max), Meters1.50/hour 6AM-12A
Florida	Miami Beach	South Beach Meters $1.75/hour, north beach meters $1.00/hour
Florida	West Palm Beach	Meters $0.75-$1.25/hour
Florida	Dania Beach	Meters $1.75/hour
Florida	Miami	Meters $0.75-$1.50/hour
Florida	Ft. Lauderdale	Meters $0.50-$1.50/hour
Florida	Naples	$6.00 vehicle entry fee
Florida	Sanibel	Meters and Lots $3.00/hour
Florida	Daytona Beach	Meters $1.25/hour Lots $10
Florida	Clearwater Beach	Both meters and lots typically $1.25/hour
New Jersey	North Wildwood	Meters $1.50/hour beach season only
New Jersey	Wildwood	Meters $2.00/hour 8A-3PM beach season only
New York	Jones Beach	$8-10.00 vehicle entry fee
Maryland	Ocean City	Meters $1.50/hour off-peak. $2.50-$3.00/hour peak season
North Carolina	Wrightsville	$2.50 per hour, $15 max

Source: Walker Parking Consultants, 2015

Several of the cities in the list also offer discounted beach parking passes and/or resident parking passes for public parking lots and/or parking meters. As shown in the table, several cities charge higher hourly rates for public parking than Waikiki, while several charge similar or lower hourly rates. The cities in the table all provide free access to their shorelines and beaches, with no additional charge for beachgoers above and beyond the parking fees incurred by those arriving to the beach in a private automobile. However, with few exceptions, mainland U.S. beach cities do not have the same cachet or world-wide tourist draw as Waikiki Beach.

WAIKIKI OFF-STREET PARKING PRICES

In June 2013, Walker staff surveyed parking prices in Waikiki, where the majority of off-street parking spaces exist to serve hotel guests and visitors. Table 9 demonstrates our findings. Since paid on-street parking in Waikiki is currently limited to two hours, the table below has been designed to show the cost of off-street parking in Waikiki for the first two hours of a stay, as well as the daily maximum.

Table 9: Waikiki Parking Prices – Off-Street

Address	Name	Rates				
		0-30 mins	30-60 mins	1.0-1.5 hrs	1.5-2.0 hrs	Daily Max
1778 Ala Moana Boulevard	Discovery Bay	$2.00	$4.00	$6.00	$8.00	$35.00
2080 Kalakaua Avenue	King Kalakaua Plaza	$3.00	$3.00	$3.00	$3.00	$20.00
2155 Kalakaua Avenue	Bank of Hawaii Waikiki Center	$3.00	$6.00	$9.00	$12.00	$40.00
2222 Kalakaua Avenue	Waikiki Galleria Tower	$2.00	$4.00	$6.00	$8.00	$30.00
2552 Kalakaua Avenue	Waikiki Beach Marriot	$4.00	$8.00	$12.00	$16.00	$32.00
445 Seaside Avenue	Skyline Island Colony Hotel	$3.00	$6.00	$9.00	$12.00	$35.00
2250 Kalakaua Avenue	Waikiki Shopping Plaza	$2.50	$5.00	$7.50	$10.00	$40.00
2270 Kalakaua Avenue	Waikiki Business Plaza	$2.50	$5.00	$7.50	$10.00	$60.00
2005 Kalia Road	Hilton Hawaiian Village	$4.00	$8.00	$12.00	$16.00	$30.00
2058 Kuhio Avenue	Maile Sky Court	$3.00	$6.00	$9.00	$12.00	$30.00
1833 Kalakaua Avenue	Pacific Business News Building	$0.00	$2.50	$5.00	$7.50	$32.00
2255 Kuhio Avenue	Waikiki Trade Center	$4.00	$8.00	$12.00	$16.00	$45.00
1765 Ala Moana Boulevard	Marina Parking Garage	$4.00	$8.00	$12.00	$16.00	$35.00
2055 Kalia Road	Hale Koa Hotel	$4.00	$4.00	$5.50	$7.00	$36.00
2255 Kalakaua Avenue	Sheraton Waikiki Hotel	$6.50	$6.50	$11.00	$11.00	$40.00
2259 Kalakaua Avenue	Royal Hawaiian Shopping Center	$4.00	$6.00	$10.00	$12.00	$50.00
Kuhio Ave	Behind Joy Hotel	$12.00	$12.00	$12.00	$12.00	$25.00
Kuhio-Kaiolu Municipal Parking Lot[1]	Kuhio Avenue & Kaiolu Street (Public Lot)	$0.75	$1.50	$2.25	$3.00	
120 Kaiulani Avenue	Princess Kaiulani Moana Surfrider	$5.00	$5.00	$10.00	$10.00	$40.00
400 Hobron Lane	Eaton Square	$2.50	$5.00	$7.50	$10.00	$30.00
2463 Kuhio Avenue	Kuhio Village	$2.00	$4.00	$6.00	$8.00	$20.00
333 Seaside Avenue	Waikiki Parking Garage	$2.00	$4.00	$6.00	$8.00	$35.00
Average		**$3.51**	**$5.60**	**$8.30**	**$10.45**	**$35.25**
Median		**$3.00**	**$5.00**	**$9.00**	**$10.00**	**$35.00**

1 = Lot closed to public as of April 6, 2015; developer of the Ritz Carlton Hotel Development is renting the spaces for construction uses for two years, with an option to extend to four years.

Source: Walker Parking Consultants, 2015

Median off-street parking prices in Waikiki are roughly $5.00 for the first hour and $4.00 per hour thereafter. This is approximately three times the cost of metered on-street parking, which currently has the same price structure as the metered Kuhio-Kaiolu Municipal Parking Lot, as shown in the table. In a parking system, where on-street parking is typically the most convenient and desirable parking, ideally on-street parking rates would be higher than off-street parking rates due to its premium nature. Otherwise, as Waikiki is experiencing, on-street parking availability suffers, and patrons circle the area hoping to get lucky and find a premium on-street parking space that also costs less than a less desirable space in a structure.

ON-STREET PARKING PRICES IN REGIONAL WEST COAST CITIES

Within the past decade, two trends have led to the implementation of demand-based parking rates. First, studies have demonstrated the benefits of pricing on-street parking to address demand and better manage parking spaces. Second, parking meter technology that allows for credit card payment and provides payment and occupancy data has become commonplace in many cities. West coast cities, most notably Los Angeles and San Francisco, but also smaller cities such as Redwood City, CA, have led the way with demand-based parking pricing policies.

Table 10 below shows on-street parking rates in North American west coast cities. Waikiki's $1.50 hourly rate for on-street parking is lower than the maximum hourly rate in all six of the cities surveyed. The City of San Diego formerly had a lower maximum hourly rate than Honolulu, but recently increased the hourly rate at its most desirable locations on the waterfront and adjusted hours of enforcement in some areas to better align with demand. It is also noteworthy that in Los Angeles and San Francisco, while the maximum hourly on-street price is four times that of Honolulu's, the lowest hourly prices charged elsewhere in their commercial districts are a fraction of Honolulu's lowest hourly parking price.

Table 10: On-Street Hourly Parking Prices – North American West Coast Cities

City	Low	High	Note	General Hours of Operation
Vancouver	$1.00	$6.00		Daily 9am-10pm
Seattle	$1.00	$4.00		Mon-Sat 8am-6pm
Portland	$1.00	$1.60	$3.50 per hour beginning 90 minutes before games at Jeld-Wen Field	Mon-Fri 8am-6pm; Downtown: Mon-Sat 8am-7pm; Sun 1pm-7pm
San Francisco	$0.25	$6.00	$7.00 per hour near AT&T Park during events	Mon-Sat 9am-6pm; Sun 12pm-6pm
Los Angeles	$0.50	$6.00		Mon-Sat 8am-8pm; Sun 11am-8pm
San Diego	$0.25	$1.75		10am-8pm/8am-6pm
Average	**$0.67**	**$4.23**		
Honolulu (current)	$0.75	$1.50		Mon-Sat 7am-6pm

Source: Walker Parking Consultants, 2014

With the advent and refinement of smart parking meters that offer credit card acceptance, on-street parking rates are increasingly seen as something that can be adjusted based on demand either on a real-time basis or at scheduled intervals. The advent of smart parking meters has made it easier for cities to charge more and less for on-street parking based on observed parking demand, as there is no longer a need to carry rolls of quarters to pay

meters. Several west coast cities are exploring demand-based pricing with smart meters to increase and decrease parking rates. Both San Francisco and Los Angeles have implemented pilot programs of demand-based pricing based on sensor data from smart parking meters. In the case of San Francisco, the pilot program resulted in the average hourly price paid at parking meters decreasing by 4% and a 23% decrease in meter related citations.

The City of Seattle produces an annual report on on-street parking occupancy, which uses a manual count of on-street parking occupancy that occurs each year to adjust parking meter rates up or down and extend or reduce the hours of meter enforcement on a zone-by-zone basis, based on the City's on-street parking occupancy goals. Seattle is currently undergoing a two-year project to upgrade each of the City's 2,200+ parking meters with dynamic pricing technology.

OFF-STREET PARKING PRICES IN PACIFIC RIM CITIES

Table 11 shows off-street parking rates in Pacific Rim cities in Asia and Australia, which are then converted into average and median hourly parking rates of US$3.06 and US$2.24 respectively. Hourly rates (calculated based on daily rates and an eight-hour day) vary widely across Asian and Australian cities, ranging from less than $1.00 to more than $8.00 per hour.

Table 11: Off-Street Parking Rates - Asian and Australian Pacific Rim Cities

City	Daily Rate	Monthly Unreserved Rate
Jakarta	$0.92	$27.56
Manila	$2.31	$56.83
Beijing	$7.05	$154.70
Guangzhou	$11.14	$247.52
Shanghai	$12.38	$293.93
Taipei	$13.92	$313.20
Auckland	$17.89	$268.39
Singapore	$24.59	$225.04
Hong Kong	$28.25	$744.72
Seoul	$29.51	$187.34
Brisbane	$41.09	$568.89
Tokyo	$62.00	$744.00
Sydney	$67.42	$695.31
Average	**$24.50**	**$348.26**
Median	**$17.89**	**$268.39**
Honolulu	$38.00	$217.28
Assuming 8 hour length of stay		
Average	**$3.06**	
Median	**$2.24**	

Source: 2011 Colliers Global Parking Survey (rates in US Dollars)

RECOMMENDATIONS

The recommendations provided in this section are based on sound planning principles that benefit society as a whole. While all individuals will not support the recommended changes, we believe these recommendations, if implemented, support making Waikiki a better place to live, work and play while improving access and mobility. The societal benefits of implementing the recommendations contained herein exceed the benefits enjoyed by individuals.

CONSIDERATIONS FOR COMPREHENSIVELY MANAGING WAIKIKI'S PARKING SYSTEM

CONVERTING THE PROBLEM INTO AN OPPORTUNITY – AND IMPROVEMENTS

The significant demand for parking in Waikiki will result in drivers paying for parking in one way or another. In most instances to find parking, drivers will pay: A) monetarily; or B) in time and frustration - circling the area, waiting for spaces, walking significant distances to their destinations, or potentially suffering from occasional or frequent parking citations or even the towing of their vehicles.

However, while continuation of the current policies is an option, we suggest an additional, yet perhaps not apparent, disadvantage of continuing to manage parking through frustration is the lack of benefit. Time and frustration spent searching for parking cannot be used for investments and improvements to solve the parking problem or improve the Waikiki community. In fact, studies have shown, the frustration, inconvenience and resulting driving behavior that comes from underpriced parking can result in significant increases in traffic congestion, air pollution and greenhouse gas emissions. One promising, ongoing, development in Honolulu is that the City's Information technology department is partnering with others to develop apps which support parking information, locations and availability.

On the other hand, a paid parking solution generates revenue that can and should be invested in solutions to the parking problem, as well as general improvements in the area that partially benefit the residents and employees in the community. We suggest that it is reasonable to reinvest at least some parking revenue where it is generated, in part for the benefit of those who must deal, on a frequent basis, with the impacts of living and working in a popular destination where the infrastructure – including parking – is stretched to capacity by the large number of visitors who come to enjoy the amenities in Waikiki.

Improvements to Waikiki, funded by an incremental increase in public parking revenue, could include additional public parking, street repairs and improvements, bicycle parking and facilities, bike sharing and valet facilities, and improvements for pedestrians including enhanced lighting and security for improved public safety.

The benefits of a policy of using parking pricing to manage parking demand cannot be given appropriate consideration without taking into account the benefits that parking revenue, reinvested into the community where it is generated, can bring.

APPROACH TO COMPREHENSIVE MANAGEMENT OF THE WAIKIKI PARKING SYSTEM

The City, County and Waikiki neighborhood association should consider the role of streets in Waikiki. Is it to move cars and people through the area on their way to somewhere else or to provide people with access to destinations within Waikiki? Adding additional paid on-street parking spaces and turning over parking spaces increases access.

We calculate that the thousands of privately-owned parking spaces in Waikiki represent hundreds of millions of dollars in construction costs, not including the cost of land related to those structures that do not have buildings constructed above.

Managing and coordinating the allocation of privately-owned parking spaces would require a significant effort and commitment on the part of the City and County, one which we do not recommend at this time, due to the complexity and scale. It could also be accomplished by the Waikiki neighborhood association or business improvement district, potentially through a transportation management association (TMA) or parking benefit district-style entity. Recent technology offers the potential to facilitate the effort, including a website-based clearing house or marketplace for parking spaces.

Our recommendations are meant to encourage a more practical and streamlined alternative to a centrally-coordinated management of private parking. We seek to incentivize the owners of private parking to make it available to those who need it by pricing on-street parking at a rate that reflects both the demand and the price of off-street parking in the surrounding area, The revenue generated from such an effort is also meant to generate revenue to fund reasonable alternatives to driving to and within Waikiki, not only for the purpose of improving access and mobility within Waikiki, but also to meet the broader transportation and quality-of-life related goals set forth in Oahu 2035 which include the development, operation and maintenance of Oahu's transportation system in a manner that sustains environmental quality and in a manner that supports community-wide values related to health, safety and civil rights.

BENEFITS OF IMPROVED MANAGEMENT OF ON-STREET PARKING

The current system by which Department of Transportation Services (DTS) necessarily sets on-street parking management policies, the Honolulu Police Department effectively is in charge of executing those policies in the form of parking enforcement activities, and the State of Hawaii receives the revenue from the enforcement efforts, ties the hands of DTS in its efforts to effectively administer policies.

We suggest that improved public parking availability in general and the availability of on-street parking spaces in particular, could provide the added benefit of making Waikiki more accessible to residents or other parts of Oahu. Tourists are able to visit destinations in Waikiki by virtue of staying in hotels in or near the district, using tour company vehicles, or taxi and ride services such as Uber. Residents of Waikiki and other nearby neighborhoods in Honolulu have access to destinations by virtue of their proximity to and knowledge of the area, including parking. We suggest that the current public parking challenges may therefore impact the ability of residents of outlying areas, such as the residential communities to the west, north and east of the city of Honolulu, to access Waikiki. In our experience, planning parking for

destination districts, it is these visitors and patrons of businesses for whom parking challenges create the greatest problems. Solutions to these challenges create the opportunity of increased business, particularly during off peak/off season times from these residents.

GENERAL POLICY RECOMMENDATIONS

Based on our findings, we make the following general recommendations with regard to parking policy. In conjunction with adoption of some or all of the recommendations it is recommended that the City and County make best efforts to ensure that up to date technologies are in place and utilized during implementation such as pay-by-cell, parking apps and improved wayfinding and signage to assist visitors in finding parking in the Waikiki district.

RECOMMENDATION 1: UTILIZE THE EXISTING WAIKIKI BID OR A NEW WAIKIKI PMA TO ACCUMULATE AND REINVEST PARKING METER INCOME INTO NEIGHBORHOOD IMPROVEMENTS.

One of the arguments against paid on-street parking in general is that it is a money grab by a government used to plug holes in its general fund. One way to diffuse this potential criticism would be to utilize the existing BID or create a new PMA to accumulate parking meter income and reinvest it into neighborhood improvements within Waikiki.

One of the most successful examples of this approach is Old Pasadena in the City of Pasadena, CA. Parking meters were installed in Old Pasadena in 1993. Businesses, which were at first opposed to the idea, came onboard after the city promised to reinvest the net revenue from the parking meters directly into the community; on a street-by-street basis (only streets participating in the meter program were improved with revenue from the program). Over the next decade, Old Pasadena transformed from a rundown area to the top regional dining and retail destination.

While Old Pasadena is not an exact comparison to Waikiki, as the mix of land uses in Waikiki is different and includes much more residential, the basic ideas and benefits remain the same. Parking meter income could be reinvested into the following improvements that will improve the quality of the experience for visitors to Waikiki, keeping tax revenue strong, while also improving the quality of life for residents of Waikiki and employees working in Waikiki:

- Complete Streets improvements
- Pothole repairs
- Parking lot and street paving/repaving
- Improved landscaping and aesthetic improvements
- Wayfinding/signage
- Litter and graffiti removal
- Lighting, security and safety enhancements
- Bicycle facilities, routes and bike share programs
- Car share programs
- New off-street public parking spaces

RECOMMENDATION 2: ADD A WAIKIKI RESIDENTIAL PARKING "PERMIT" PROGRAM THAT OFFERS DISCOUNTS ON PARKING METERS BUT NOT FREE PARKING.

The potential removal of free on-street parking in Waikiki, which is currently concentrated in the Residential Zone, is likely to be a hot button issue and unpopular with the residents and employees that are, by and large, the beneficiaries of free on-street parking today.

To partially alleviate the impact of the switch to more on-street paid parking in the Residential Zone, the City and County of Honolulu could offer Waikiki residents preferential pricing at on-street parking meters in the Residential Zone by choosing to offer residents a discount on parking at Residential Zone parking meters. The discount could either be percentage based; for example, residents pay half of the posted rate, or it could be a flat rate such as residents pay $0.50 or $0.75 cents per hour.

Residents could register their license plates through either an on-line program or mail in application; alternatively DMV registration records could be used to pre-enroll vehicles registered at residential addresses in Waikiki, although there may be privacy concerns with such an option. Such parking permits should be administered and enforced using a license plate recognition system (LPR) and the aforementioned online (license plate) registration system. On-line applicants could be given a preferential rate over mail-in applicants to encourage use of on-line registration and reduce City and County administrative costs.

We note the use of residential parking permits at meters in a number of California cities. To implement this policy, City residents would register their license plates as special parking permits, entitling them to park in paid parking spaces for half the regular price if they utilize pay-by-cell. In other words, such a policy would likely fit with the parking enforcement regimen of pay-by-plate and pay-by-cell.

We recommend that a paid parking system of the type envisioned in this report be enforced via mobile license plate recognition (LPR) with fully integrated pay-by-cell, permit and mobile LPR software systems. In certain locations, such as along the Ala Wai Canal, the City and County of Honolulu may want to consider multi-space meter (pay-by-plate) technology in-lieu of single space parking meters. Walker typically recommends system capabilities and performance-based specifications, not system providers; however there are systems on the market that have these capabilities. Walker has not explored in detail the extent to which this system could be integrated, supported or authorized by the City's Motor Vehicle Registration department.

In our experience, mobile license plate recognition (LPR) systems cost approximately $50,000, with some price variation depending on the capabilities of the system, including software and hardware to equip one enforcement vehicle, including installation and training, but not including ongoing costs such as warranties, remote support and other optional items. Table 12 summarizes the typical costs associated with the implementation of Mobile LPR in one enforcement vehicle.

Table 12: Approximate Mobile License Plate Recognition System Costs

Cost For One LPR Unit		
LPR Hardware[1]	$	30,000 - 40,000
Laptop/Mounting	$	6,000
Software (Licenses/mapping)	$	2,500
Installation/Training	$	4,000
Total	**$**	**42,500 - 52,500**

Ongoing Costs		
Software Maintenance Agreement	$	400
Optional Hosted Server	$	3,600
Annual Support	$	1,500
1-Yr Extended Warranty	$	5,000

Note: 1 = Cost for LPR hardware varies based on capabilities of the unit
Source: Walker Parking Consultants, 2015

More research is needed to determine how a system such as this could be incorporated in the City's enforcement system. Appendix B contains a brief primer on mobile LPR systems.

Pay-by-cell (PbC) systems should be cost-neutral to the City and County, as the PbC vendors will implement and administer the system in exchange for charging user fees to the end users (typically $0.35 per transaction), which could be passed on to the parkers, included in the parking fees, or covered by the City and County. The City and County would be responsible for paying merchant credit card fees.

RECOMMENDATION 3: CHANGE THE HOURS OF PARKING METER ENFORCEMENT IN THE RESORT HOTEL ZONE, COMMERCIAL ZONE AND RESIDENTIAL ZONE

Resort Hotel Zone: Change the hours of parking meter enforcement from 7:00 AM through 6:00 PM Monday-Saturday to 7:00 AM through 10:00 PM, seven days a week. Since there is significant commercial activity (dining and entertainment) at night in Waikiki, with peak parking occupancy occurring in the evening, enforcing meters into the evening makes sense to promote turnover and space accessibility. Based on observed occupancy at the existing parking meters in the Resort Hotel Zone, parking meters are full throughout the morning, day and evening.

Commercial Zone: Change the hours of parking meter enforcement from 7:00 AM through 6:00 PM Monday-Saturday to 7:00 AM through 10:00 PM, seven days a week. Since there is significant commercial activity (dining and entertainment) at night in Waikiki, with peak parking occupancy occurring in the evening, enforcing meters into the evening makes sense to promote turnover and space accessibility. Based on observed occupancy at the existing parking meters in the Commercial Zone, parking meters are generally over 85% occupancy during the morning and afternoon and full in the evening.

Residential Zone: Change the hours of parking meter enforcement from 7:00 AM through 6:00 PM Monday-Saturday to 10:00 AM through 10:00 PM, seven days a week. Since there is significant commercial activity (dining and entertainment) at night in Waikiki, and competition for spots in the Residential Zone between residents, customers and employees, with peak parking occupancy occurring in the evening, enforcing meters into the evening makes sense to promote turnover and space accessibility. Based on observed occupancy at the existing parking meters in the Residential Zone, parking meters do not fill up until later in the day. Based on the LPI survey, there is significant overnight parking demand that is likely residents. Changing the hours of parking meter enforcement to start later in the morning at both the existing and potential future meters in the Residential Zone would provide residents who park on-street overnight with some relief since they would not necessarily have to wake up early to move their vehicle or pay a meter.

RECOMMENDATION 4: EXTEND OR REMOVE TIME LIMITS ON PARKING METERS IN THE RESIDENTIAL ZONE

Parking meters in the Residential Zone currently have a two-hour time limit. Time limits are meant to encourage turnover and accessibility, however they require additional enforcement to prevent meter-feeding and can lead to less than desirable behaviors such as a car being moved from one side of the street to another to avoid time limits. We feel that proper pricing, rather than arbitrary time limits, is a better way to increase turnover and improve the accessibility of spaces. It also improves customer choice, as a driver willing to pay short-term parking rates for a long time period can do so if the convenience of the space is worth it to them. Therefore we recommend that in conjunction with meter rates designed to promote turnover and 85-90% average occupancies, that time limits in the Residential Zone be extended to up to eight hours or removed entirely.

RECOMMENDATION 5: ADJUST PARKING METER RATES IN THE RESORT HOTEL ZONE, COMMERCIAL ZONE AND RESIDENTIAL ZONE

Resort Hotel Zone: The existing parking meters in the Resort Hotel Zone were observed to be full throughout the day and evening. There are currently 19 parking meters in the Resort Hotel Zone, 14 on Saratoga and 5 on Beach Walk that accept payment by coin only. These spaces are convenient to shopping destinations and are in high demand throughout the day and evening and should command a premium compared to other parking options in the vicinity. Once meters are installed that accept payment by credit cards, it is recommended that the hourly rate at all existing and proposed meters in the Resort Hotel Zone be set to at least $3.00 per hour.

Commercial Zone: The existing parking meters in the Commercial Zone were observed to be above 85% occupancy throughout the day and full in the evening. There are currently 47 parking meters in the Commercial Zone, concentrated mainly on Ohua Avenue and Paoakalani Avenue that accept payment by coin only. These spaces are convenient to shopping and restaurant destinations and are in high demand throughout the day and evening and should command a premium compared to other parking options in the vicinity. Once parking meters are installed that accept payment by credit cards, it is recommended that the hourly rate at all existing and proposed meters in the Commercial Zone be set to at

least $3.00 per hour, consistent with the findings and recommendations in the *Honolulu Urban Core Parking Master Plan Parking Rate Study (Walker Parking Consultants, February 2014)*. In recognition of the peak parking occupancies seen during the evening hours, we would encourage the City and County to also consider using some level of dynamic pricing, such as increasing the price at meters in the Commercial Zone from $3.00 per hour to $4.00 per hour after 5:00 PM.

Residential Zone: The existing parking meters in the Residential Zone were observed to be 75-85% full throughout the day and afternoon, reaching 100% occupancy in the late afternoon in anticipation of the end of meter enforcement at 6:00 PM and staying full throughout the evening and overnight when they function as free parking spaces. Demand for these spaces in not as high as in the other zones, as the Residential Zone is a little further away from the core activity centers of Waikiki. The existing hourly rate of $1.50 per hour in the Residential Zone appears to be appropriate at the existing meters based on the occupancy observed during the morning and early afternoon. However, with the potential to add over 700 new meters to the 191 existing meters in the Residential Zone, morning and early afternoon parking demand may or may not support the $1.50 an hour rate in all areas. We therefore recommend that if new paid on-street parking is implemented in the Residential Zone, there should be a test period aimed at finding the appropriate rate for various areas within the Residential Zone to allow the City and County to achieve the desired parking occupancy rates.

RECOMMENDATION 6: REVIEW LOADING ZONES AND CONSIDER IMPLEMENTING ONE OR A COMBINATION OF THE FOLLOWING OPTIONS:

> Recommendation 6a: Convert loading zone spaces to general parking meters with a high hourly rate to encourage efficient loading. Loading hours and days should be determined by the City and County only after collaboration with the applicable service provides and businesses and subject to roadway conditions.
> Recommendation 6b: Install parking meters with a high hourly rate in loading zone spaces to encourage efficient loading. Restrict use of meters during posted loading zone hours to commercial vehicles only, enforced by towing. Allow use of spaces as general parking meters outside of loading hours.
> Recommendation 6c: Install meters at loading zones that are only active during non-loading hours (i.e. loading during posted loading hours, only vehicles with permits are allowed to park for loading activities)).
> Recommendation 6d: Implement a Commercial Vehicle Loading Zone (CVLZ) permit program wherein commercial vehicle operators could apply and pay for a permit to parking in loading zones for loading/unloading. Vehicles with a CVLZ permit would still be subject to loading zone time limits.

Walker's review of existing conditions in the Study Area determined that there appears to be an excessive amount of curb space dedicated to loading zones on some streets. Additionally, vehicles were observed using loading zones for general parking and both vehicles involved with loading and vehicles not involved in loading were observed dwelling in loading zones for long periods of time. While examples of proper loading were observed, it appears that loading zones are often not serving their intended use. Contractors, in particular, seem to be abusing loading zone spaces.

Currently in Waikiki, loading zone hours are typically enforced 24-hours a day in the Commercial and Resort Hotel Zones and from 6:00 AM through 4:00 PM in the Residential Zone, and are reserved for the expeditious loading and unloading of freight. In no cases is the loading and unloading of freight in a loading zone to exceed 30-minutes per Section 15-5.1 of the Revised Ordinances of Hawaii (ROH). Per Section 15-5.5 of the ROH, vehicles classified as "Trucks" under Section 249-1 of the Hawaii Revised Statutes (HRS) can apply for a Freight Curb Loading Zone Permit with payment of a $25.00 fee.

Converting loading zone spaces to general parking meters, albeit with the highest hourly rate in the area, would promote turnover and provide the most utility and access as both vehicles involved with loading and the general public could utilize the spaces as long as they were willing to pay the parking meter fee. A drawback to this recommendation is that if enough general users were willing to pay the meter fee, a vehicle looking to do legitimate loading could find that there is no curbside availability. Additionally, essentially adding a parking fee to loading activities increases the cost of doing business.

Alternatively, meters could be installed in loading zones with a high hourly rate to encourage efficient loading with use of the meters restricted to commercial vehicles/loading activities during posted loading zone hours. During loading-only hours, enforcement would be needed of the loading zone meter time limits, as well as towing of general parkers from the loading area. Outside of loading hours, the meters would function as general parking meters.

A third option would be to install meters and stripe stalls at loading zones, but have the meters active only during non-loading hours while still preserving the loading area during the posted loading times for its intended purpose without charging loaders a fee. However, without more active enforcement, the current abuse of loading zones observed for existing conditions would likely continue in the future under this option. Loading zones are essentially free parking spaces in high demand areas before and after the posted loading hours. The installation of meters that would only be active before/after posted loading hours would promote turnover of these spaces in the evening, while also providing revenue to the City and County.

The City and County could also implement a Commercial Vehicle Loading Zone (CVLZ) permit program wherein commercial vehicle operators would need to apply and pay for loading zone permits to parking in loading zones for loading/unloading. These vehicles would still be subject to loading time limits. A CVLZ permit program could also be combined with meters at loading zones to give users the option of either purchasing a permit or paying by use at the meter. The CVLZ program is similar to the existing Freight Curb Loading Zone Permit that the City and County currently has in effect. However, the low fee and ambiguous definition of 'Trucks' in the HRS may be leading to some abuse of loading zones; for example the contractor vehicles seen parked in loading zones all day. The recommendation options above are intended to increase the cost of permits, provide a choice between getting a permit versus paying per use for, and make enforcement of the loading zones easier.

Walker conducted research into the loading zone policies of several large cities in the continental United States. Table 13 summarizes the findings of this research.

Table 13: Loading Zone Programs in Sampled U.S. Cities

City	Loading Zone Access Control Method
New York	Loading zone meters, in Manhattan for commercial vehicles only, 3 hours max
San Francisco	Loading zone meters. Commercial vehicles only during LZ hours (enforced by tow), after LZ hours open to general parking (meter must still be paid).
Chicago	30-minute time limit, no meters. Only commercial vehicles and non-commercial vehicles with a non-commercial loading zone permit ($250/calendar year) are allowed to park for loading.
Houston	CVLZ with meters. Operators can apply/pay for a permit (yearly) or pay meters ($5/hour) per use. Four types of permits available; yearly permits for 30-minute, 1-hour, or 2-hour loading privileges, and a short-term 21 day 30-minute LZ permit. Yearly permit cost ranges from $160.57 (30-minute permit) to $1,284.60 (2-hour permit).
Seattle	CVLZ with meters. Operators can apply/pay for a permit (yearly) or pay meters per use. Permit is $195/calendar year and gives 30-minute loading privileges.
District of Columbia	CVLZ with meters. Operators can apply/pay for a permit (yearly) or pay meters per use.

Source: Walker Parking Consultants, 2015

In general, the cities sampled, with the exception of Chicago, have either meters in loading zones, commercial vehicle loading permits or both. Chicago does not have meters in loading zones, and does not require commercial vehicles to have a permit to use loading zones. However, non-commercial vehicles can gain access to loading zones by purchasing an annual permit.

In New York City there are meters in commercial loading zones for the use of commercial vehicles only, with a three-hour maximum time limit. In San Francisco, loading zones are metered spaces, with commercial vehicles permitted during posted loading hour (with other vehicles subject to tow); after loading hours the meters function as a regular parking meter.

In Houston (CBD-only), Seattle and the District of Columbia, there are multi-space-meters in loading zones for those commercial vehicles desiring to pay by use, as well as Commercial Vehicle Loading Zone permits for those wishing to pay annually. Permits are typically either tied to the vehicle's license plate, or issued as a permanent decal that must be affixed to a designated place on the vehicle.

The City of Seattle actively monitors loading zone activity, and is currently in the middle of a commercial vehicle pricing pilot program which is looking at how technology and pricing strategies can make more efficient use of commercial vehicle loading zones. Seattle also monitors activity to determine where loading zones can be reduced in size or removed due to lack of use, as well as to determine where loading zones need to be lengthened due to high loading demand.

The District of Columbia's CVLZ program, which was approved in 2010, appears to be modeled after CVLZ programs in Houston in Seattle. It combines Houston's hierarchal permit types, offering three types of annual permits based on allowed length of stay as well as a day pass, with Seattle's active monitoring curbside management plan.

The installation of general meters, loading zone meters and/or a CVLZ permit program would likely require modification to and expansion of section 15-22.2 of the Revised Ordinances of Honolulu (ROH).

RECOMMENDATION 7: IMPLEMENT PAID PARKING ON ALL STREETS THAT CURRENTLY HAVE FREE ON-STREET PARKING, INCLUDING ALA WAI BOULEVARD, TO THE EXTENT FEASIBLE.

The recommendation to implement paid on-street parking throughout Waikiki is due to the current lack of on-street parking availability and turnover, the desire to create available on-street parking and increase turnover, to provide more access, and to provide consistency throughout Waikiki. This recommendation applies primarily to the Residential Zone, and a small amount of free on-street parking in the Commercial Zone (three spaces on Lewers Street). There is no legal free on-street parking in the Resort Hotel Zone. Certain streets, such as Makee Road and Tusitala Street, with narrow or non-existent sidewalks may make implementation of paid parking impractical; however to the extent possible, paid parking should be implemented throughout Waikiki for consistency.

The current mixture of paid and unpaid on-street parking in the Residential Zone, which may have had an empirical reasoning behind it when the meters were first installed, appears arbitrary in today's Waikiki. Streets with similar cross sections and land uses (residential and hotel) differ in that some have paid on-street parking and some have free on-street parking. For example, Kalaimoku Street and Lewers Street between Kuhio Avenue and Ala Wai Boulevard are both metered, whereas parking on the two streets between them; Launiu Street and Kaiolu Street, is free. The presence of free on-street parking provides an incentive for drivers to circulate through Waikiki searching for free parking as opposed to parking in a paid off-street location. It incentivizes residents to park on the street even if they have off-street parking, if the location of the on-street parking is more convenient. It also incentivizes residents to opt out of paid monthly off-street parking in favor of hunting for free parking. Free on-street parking creates a system of "winners" defined by those users who find an open spot, and is a severe disincentive to parking space turnover, given the difficulty of finding a free parking space to begin with. As documented during the LPI study, vehicles park on Ala Wai Boulevard for days at a time without moving. Essentially a public asset is providing some users with free vehicle storage.

Table 14 summarizes the number of potential new parking meters that could be installed at existing on-street parking spaces in the Residential Zone and the Commercial Zone.

Table 14: Potential New Meters at Existing Parking Spaces

Street Name	Side of Street	Cross Streets		Potential Meters Gained
Residential Zone				
Ala Wai	Both	Ala Moana	Kalakaua	137
Ala Wai	Northeast	Keonia	Kuamoo	8
Ala Wai	Northeast	Kuamoo	Namehana	8
Ala Wai	Northeast	Namehana	Olohana	9
Ala Wai	Northeast	Olohana	Kalaimoku	7
Ala Wai	Northeast	Kalaimoku	Launiu	6
Ala Wai	Northeast	Launiu	Kaiolu	8
Ala Wai	Northeast	Kaiolu	Lewers	12
Ala Wai	Northeast	Lewers	Seaside	26
Ala Wai	Northeast	Seaside	Nohonani	12
Ala Wai	Northeast	Nohonani	Nahua	11
Ala Wai	Northeast	Nahua	Walina	13
Ala Wai	Northeast	Walina	Kanekapolei	9
Ala Wai	Northeast	Kanekapolei	Kaiulani	8
Ala Wai	Northeast	Kaiulani	Liliuokalani	33
Ala Wai	Northeast	Liliuokalani	Ohua	9
Ala Wai	Northeast	Ohua	Paoakalani	10
Ala Wai	Northeast	Paoakalani	Wai Nani	10
Ala Wai	Northeast	Wai Nani	Ainakea	11
Niu	South	Kalakaua	Ala Wai	8
Pau	Both	Kalakaua	Ala Wai	12
Keoniana	Both	Kalakaua	Ala Wai	22
Kuamoo	Both	Kuhio	Ala Wai	18
Namahana	Both	Kuhio	Ala Wai	6
Launiu	Both	Kuhio	Ala Wai	27
Kaiolu	Both	Kuhio	Ala Wai	31
Liliuokalani	Both	Kuhio	Ala Wai	17
Ohua	Both	Kuhio	Ala Wai	30
Paoakalani	Both	Kuhio	Ala Wai	39
Wai Nani	Both	End	Ala Wai	25
Ainakea	Both	End	Ala Wai	25
Pualani	Both	Paoakalani	Ainakea	38
Tusitala	East	Kaiulani	Kapili	10
Kapili	South	Cleghorn	Tusitala	5
Kapuni	North	Kuhio	Cleghorn	6
Cleghorn	West	Kaiulani	Kapili	9
Hobron	Both	Ala Moana	Lipeepee	24
Kaioo	Both	Hobron	Hobron	47
			Subtotal Residential Zone	**746**
Commercial Zone				
Lewers	South	Kalakaua	Kuhio	3
			Grand Total	**749**

Source: Walker Parking Consultants, 2015

RECOMMENDATION 8: CONSIDER CONVERTING SELECT TWO-WAY STREETS TO ONE-WAY STREETS, AND CONVERT ONE SIDE OF THE STREET TO METERED PARKING.

Lauula Street and Waikolu Way between Royal Hawaiian Avenue and Seaside Avenue are both currently two-way streets. These could both be converted to one-way traffic to form a couplet, similar to the way that Koa Street and Prince Edward Street function between Kaiulani Avenue and Liliuokalani Avenue. Waikolu Way likely has too narrow a cross section, and a lack of sidewalks, making it a poor candidate for on-street parking, however as part of a one-way couplet, metered on-street parking could be provided on one side of Lauula Street.

Kealohilani Avenue is a narrow two-way street without parking between Kalakaua Avenue and Kuhio Avenue. Kealohilani Avenue could be converted to one-way traffic with metered on-street parking.

RECOMMENDATION 9: CONSIDER CONVERTING SELECT THROUGH TRAFFIC LANES TO PARKING LANES AND INSTALL METERS.

Kaiulani Avenue between the Sheraton Waikiki Hotel and Kuhio Avenue has two lanes in the westbound direction, one of which requires motorists to turn right into the Sheraton Waikiki Hotel. There is a bus dwelling zone immediately before the entrance to the Sheraton Waikiki Hotel which renders this extra traffic lane moot. This lane could be converted to a parking lane. Table 15 summarizes the number of potential new metered spaces that would be gained by implementing part or all of recommendations six, eight, and nine.

Table 15: Potential New Meters at Existing Loading Zone Spaces and No Parking Zones

Street Name	Side of Street	Cross Streets		Existing Use	Potential Meters Gained
Residential Zone					
Ala Wai	South	Ala Moana	Kalakaua	Loading Zone	3
Kuamoo	Northwest	Kuhio	Ala Wai	Loading Zone	4
Namahana	Northwest	Kuhio	Ala Wai	Loading Zone/Not Marked	7
Nohonani	Southeast	Kuhio	Ala Wai	Loading Zone	4
				Subtotal Residential Zone	**18**
Resort Zone					
BeachWalk	Both	Kalia	Kalakaua	Loading Zone/No Parking Zone	12
				Subtotal Resort Zone	**12**
Commercial Zone					
Lewers	Both	Kalakaua	Kuhio	Loading Zone/No Parking Zone	12
Royal Hawaiian	Southeast	Kalakaua	Kuhio	Loading Zone	22
Lauula	Northeast	Royal Hawaiian	Seaside	No Parking Zone	5
Seaside	Both	Kalakaua	Kuhio	Loading Zone/No Parking Zone	25
Kaiulani	Northwest	Kalakaua	Kuhio	Loading Zone/No Parking Zone	8
Koa	Both	Kaiulani	Uluniu	Loading Zone/No Parking Zone	18
Koa	Both	Uluniu	Lilluokalani	Loading Zone/No Parking Zone	14
Prince Edward	Both	Kaiulani	Uluniu	Loading Zone/No Parking Zone	14
Prince Edward	Both	Uluniu	Lilluokalani	Loading Zone/No Parking Zone	17
Liliuokalani	Northwest	Kalakaua	Kuhio	No Parking Zone	14
Uluniu	Both	Kalakaua	Kuhio	No Parking Zone	10
Kealohalani	South	Kalakaua	Kuhio	Traffic Lane	30
Ohua	Both	Kalakaua	Kuhio	Loading Zone/Not Marked	16
				Subtotal Commercial Zone	**205**
				Grand Total	**235**

Source: Walker Parking Consultants, 2015

RECOMMENDATION 10: BRING ENFORCEMENT RESPONSIBILITIES INTO THE HANDS OF THE DEPARTMENT OF TRANSPORTATION SERVICES, THE WAIKIKI BUSINESS IMPROVEMENT DISTRICT (BID), OR A NEWLY CREATED WAIKIKI PARKING MANAGEMENT AUTHORITY (PMA).

The State of Hawaii collects 100% of income associated with parking violation citations issued by the City and County. The genesis of this policy decision is rooted in the State's cost of adjudicating all cases involving parking violations. In other words, the State successfully made the case to the City and County that since it was paying court costs to adjudicate parking tickets, then it should receive the parking violation citations income.

One potential opportunity that could generate significant revenue for the State and/or the City and County is to evaluate and modify the existing parking violation citations program. It is possible that parking violation citation rates have not been increased in some time and it could be time to increase citation rates. Moreover, through improvements in revenue collection procedures and improvements in productivity, there may be upside potential. This upside could be significant. We suggest that putting the enforcement effort – and revenue from parking citations – into DTS or a Parking Management Authority (PMA) would improve parking conditions. Although it appears unlikely that the State would willingly forego this existing revenue source, we suggest that the State be contacted to inquire about the possibility of a jointly-sponsored State/City and County study. The purpose of such study is to explore the upside potential and a potential revenue-sharing agreement between the two parties. Although the State may be unwilling to forego any of its existing parking violation citations revenue stream, it may be willing to part with all or a portion of any incremental net operating income generated through changes to this program. A funding system could be set up through which the State and HPD could be guaranteed that the revenue from parking citations would be maintained at current levels.

One key argument for eliciting the State's support for a joint study is the fact that the City and County have reported that its HPD is not duly motivated to issue many parking tickets because it does not earn revenues (or offset expenses) from parking tickets. Combining this knowledge with the tendency of police officers to focus on more serious crimes other than parking violations, and it is highly probable that significant improvements and increased net incomes could be realized through some changes.

More parking citations can lead to more income, although compliance, more than revenue, should be the primary goal of parking enforcement. It is highly probable that an insufficient number of citations are being issued for at least two reasons; 1) the HPD prefers to focus on crimes more serious than parking and 2) the State collects all of the parking violation citations income.

Therefore, as mentioned above, we recommend that the State be contacted to explore a potential revenue-sharing agreement with regards to enforcement revenue generated by the Waikiki area. If an agreement can be reached, the enforcement revenue returning to DTS could be used to fund additional enforcement either by the DTS, by the Waikiki BID or a newly created Waikiki PMA, depending on how the revenue is dispersed.

ON-STREET PARKING PRICING PLAN

Several of the recommendations in the previous section provided advice and guidance on the price and enforcement of existing and proposed on-street parking meters. Table 16 summarizes the recommended initial pricing plan for on-street parking in Waikiki moving forward, based upon the recommendations in this report.

Table 16: Recommended Initial Parking Pricing Plan

Area	Recommended Hours of Meter Operation	Recommended Initial Cost for Parking Per Hour	Other
Resort Zone	7:00 A.M. to 10:00 P.M. 7 days a week	$3.00	Monitor occupany and adjust rates to achieve occupancy goals, consider demand-baed pricing or a tiered structure with rates higher after 3:00 PM
Commerial Zone	7:00 A.M. to 10:00 P.M. 7 days a week	$3.00	Monitor occupany and adjust rates to achieve occupancy goals, consider demand-baed pricing or a tiered structure with rates higher after 3:00 PM
Residential Zone	10:00 A.M. to 10:00 P.M. 7 days a week	$1.50 - General $0.75 - Residents	Residents park for half price Monitor occupany and adjust rates to achieve occupancy goals
Loading Zones	Consistent with the Zone they are located in (Resort, Commercial or Residential)	$6.00	Consider implementing loading zone meters in conjunction with a Commercial Vehicle Loading Zone permit program

Source: Walker Parking Consultants, 2015

Several of the recommendations in this report would have an impact on parking meter revenue in Waikiki. Table 17 summarizes the preliminary projected increase in revenue at existing meters assuming implementation of higher hourly rates in the Resort Hotel and Commercial Zones, and extended/changed hours of meter enforcement in all three zones (recommendations 3 and 5).

Table 17: Preliminary Revenue Projection Based on Recommended Changes at Existing Meters

Zone	Current Baseline Annual Revenue[A]	Number of Existing Meters	Recommended Hourly Meter Rate	Number of Meters to Implement Higher Rate	Projected Additional Annual Revenue from Increased Meter Rates[B]	Projected Additional Annual Revenue from Extended Hours of Enforcement	Projected Total Additional Revenue[C]
Resort	$ 53,200	19	$ 3.00	19	$ 71,000	$ 14,100	$ 85,100
Commercial	$ 112,800	47	$ 3.00	47	$ 152,000	$ 31,300	$ 183,300
Residential	$ 347,926	191	$ 1.50	0	$ -	$ 62,600	$ 62,600
Total[A]	$ 513,926	257			$ 223,000	$ 108,000	$ 331,000

[A] Waikiki baseline revenue based on meter revenue data 2013. Projected breakdown of total meter revenue into zones based on analysis of observed occupancy patterns

[B] Based on assumptions outlined in the report. Includes an estimated 15% assumed increase in revenue from the implementation of meters with credit card acceptance capabilities in Waikiki, and slightly decreased occupancies of approximately 10%. We strongly recommend that any meter charging more than $1.50 per hour be equipped to accept credit cards for payment.

[C] All financial projections are preliminary in nature and not to be used in financing documents

Source: Walker Parking Consultants, 2015

Table 18 summarizes the preliminary projected additional revenue at new meters assuming the installation of new meters in currently free spaces in the Commercial and Residential Zones and implementation of a discounted meter rate program for residents (recommendations 2 and 7).

Table 18: Preliminary Revenue Projection Based on Installation of New Meters

Zone	Number of New Meters	Recommended Hourly Meter Rate[A]	Projected Additional Annual Revenue from New Meters[B C]
Resort	0	$ 3.00	$ -
Commercial	3	$ 3.00	$ 17,010
Residential	746	$ 1.50	$ 1,082,306
		$ 0.75	
Total	749		$ 1,099,316

[A] Meter rate for residential zone proposed at $1.50 per hour with 50% discount ($0.75/hour) implemented for registered resident vehicles

[B] Assumes slightly decreased occupancies of approximately 10%. Assumes registered resident utilization of residential zone meters at 50% of total usage

[C] All financial projections are preliminary in nature and not to be used in financing documents

Source: Walker Parking Consultants, 2015

Table 19 summarizes the preliminary projected additional revenue at new meters assuming the installation of loading zone in existing loading areas throughout Waikiki (recommendation 9). The preliminary project shown in Table 19 assumes that all vehicles must pay at the loading zone meter for loading/unloading; however it is anticipated that a hybrid program of CVLZ

permits for heavy users of loading zones (with a higher fee than the current freight loading zone permit) in conjunction with loading zone meters for occasional users of loading zones would provide the most balance and access. If CVLZ permits are implemented in conjunction with loading zone meters, the amount of loading zone meter revenue realized will be lower than what is projected in Table 19 below.

Table 19: Preliminary Revenue Projection Based on Installation of Loading Zone Meters

Zone	Number of Loading Zone Meters [A]	Recommended Hourly Meter Rate	Projected Additional Annual Revenue from New Meters[B C]
Resort	6	$ 6.00	$ 56,160
Commercial	102	$ 6.00	$ 954,720
Residential	9	$ 6.00	$ 84,240
Total	117		$ 1,095,120

[A] Assumes half the amount of potential spaces identified in Table 15

[B] Assumes 10 hours of enforcement per day and 50% paid meter occupancy. Additional revenue could be gained if meters are available to general parking outside of designated loading zone hours

[C] All financial projections are preliminary in nature and not to be used in financing documents

Source: Walker Parking Consultants, 2015

Appendix A
Waikiki On-Street Parking Inventory – January 2015

Waikiki On-Street Parking Inventory - January 2015

Street Name	Metered Spaces	Striped Unmetered	Unstriped Unmetered	Total
Resort Zone				
Saratoga Road between Kalia and Kalakaua	14			14
BeachWalk between Kalia and Kalakaua	5			5
Subtotal Resort Zone	*19*	*0*	*0*	*19*
Commercial Zone				
Olohana between Kalakaua and Kuhio				0
Kalaimoku between Kalakaua and Kuhio				0
Lauula north of Lewers				0
Lewers between Kalakaua and Kuhio			3	3
Royal Hawaiian between Kalakaua and Kuhio				0
Seaside between Kalakaua and Kuhio				0
Dukes between Kalakaua and Kuhio	-	-	-	0
Waikolu Way between Royal Hawaiian and Seaside				0
Lauula between Royal Hawaiian and Seaside				0
Kaiulani between Kalakaua and Kuhio	-	-	-	0
Uluniu between Kalakaua and Kuhio	4			4
Koa Ave between Kanekapolei and Uluniu				0
Prince Edward between Kanekapolei and Uluniu				0
Koa Ave between Uluniu and Liluokalani				0
Prince Edward between Uluniu and Liluokalani				0
Liliuokalani between Kalakaua and Kuhio				0
Keolohilani between Kalakaua and Kuhio				0
Ohua between Kalakaua and Kuhio	25			25
Paoakalani between Kalakaua and Kuhio	18			18
Lemon between Liliuokalani and Kapahulu				0
Cartwright between Liliuokalani and Kapahulu				0
Makee east of Kuhio to end			11	11
Subtotal Commercial Zone	*47*	*0*	*14*	*61*

Waikiki On-Street Parking Inventory - January 2015

Street Name	Metered Spaces	Striped Unmetered	Unstriped Unmetered	Total
Residential Zone				
Ala Wai between end and Kalakaua			137	137
AlA Wai between Ainakea and McCully			210	210
McCully St between Ala Wai and Kalakaua	5			5
Niu between Ala Wai and Kalakaua			8	8
Pau St between Ala Wai and Kalakaua			12	12
Keoniana between Ala Wai and Kalakaua		22		22
Kuamoo between Kuhio and Alawai		18		18
Namahana between Kuhio and Alawai		6		6
Olohana between Kuhio and Alawai	19			19
Kalaimoku between Kuhio and Alawai	21			21
Launiu between Kuhio and Alawai			27	27
Kaiolu between Kuhio and Alawai			31	31
Lewers between Kuhio and Alawai	8			8
Royal Hawaiian between Kuhio and Aloha	7			7
Seaside between Kuhio and Alawai	14			14
Nohonani between Kuhio and Alawai	13			13
Nahua between Kuhio and Alawai	21			21
Walina between Kuhio and Alawai	16			16
Kanekapolei between Kuhio and Alawai	13			13
Kaiulani between Kuhio and Alawai	-	-	-	0
Liliuokalani between Kuhio and Alawai		17		17
Ohua between Kuhio and Alawai		30		30
Paoakalani between Kuhio and Alawai			39	39
Wai Nani between end and Ala Wai			25	25
Ainakea between end and Ala Wai			25	25
Pualani Way between Paoakalani and Ainakea			38	38
Tusitala St			10	10
Kapili St			5	5
Kapuni St			6	6
Cleghorn St			9	9
Aloha Drive	19			19
Manukai St	-	-	-	0
Hobron between Ala Moana and Lipeepee		24		24
Hobron between Lipeepee and Ena	35			35
Kaioo Drive			47	47
Ena between Ala Moana and Kalakaua	-	-	-	0
Subtotal Residential Zone	*191*	*117*	*629*	*937*
Grand Total	**257**	**117**	**643**	**1017**

Appendix B
Mobile License Plate Recognition

MOBILE LICENSE PLATE RECOGNITION

Mobile license plate recognition (LPR) technology has made the enforcement of pay-by-plate, pay-by-cell, and license plate permit parking remarkably efficient and cost effective.

Mobile LPR utilizes vehicle mounted cameras that read and record license plate numbers as an enforcement vehicle is driven through the downtown core, garages, lots, etc. The cameras are typically placed on the left and right side of the patrol vehicle and record the rear license plates of parked vehicles. The cameras use a series of algorithms to convert the photographic image of license plates into text data that can be compared with lists or databases of paid or permitted license plates, to determine if the vehicle has the right to park in that particular location at that particular time. A processor is installed in the vehicle's trunk or in the floor, and a laptop is installed on the dashboard, between the front seats.

The LPR software can integrate multi-space meter software, pay-by-cell software, permit software, and other databases such as law enforcement agencies to not only identify paid and unpaid parkers, but also stolen or otherwise significant license plates. If the LPR camera reads a plate that is not recorded as registered or paid, or has been otherwise identified as searchable, an audible alarm sounds to alert the driver, who can then take the appropriate action.

Mobile LPR can be used to enforce time restricted parking, as the software time-stamps every image. The software can be programmed to identify license plates that parked beyond the time limits of that particular zone.

Another benefit of LPR enforcement is the ability to use license plates as employee permits, as well as residential, business or monthly permits. This not only eliminates the need for paper, hang tag or decal permits, since the motorist already has the license plate; it also makes enforcement extremely efficient. Registration is typically done on-line, and can be done 24/7. Permit holders can enter their own data, saving office staff time. Furthermore, the license plate is a state regulated credential, providing a higher level of integrity and less opportunity for misuse or fraud.

License plate permitting significantly reduces the possibility of counterfeit permits or real permits being given, loaned or sold to unauthorized users. The permit software allows individuals to register more than one vehicle (for owners with multiple cars), while enforcement can restrict usage to one or more vehicle at a time. Permit parking can also be restricted to particular days, timeframes and even locations. The LPR system includes GPS monitoring to enable it to identify and segregate parking zones.

At a driving speed of just 15 MPH mobile LPR is five to seven times more efficient than foot-patrol, as the average foot patrol speed is two to three MPH. This means that one vehicle can cover the same territory as five to seven enforcement officers on foot-patrol.

Mobile LPR is not perfect. Accuracy varies greatly (from 70%-98%) due to a number of factors and variables. LPR cameras are similar to the human eye. If the license plate is not visible to the human eye, it is not visible to the camera. For example, the following scenarios can prevent the camera from capturing and/or identifying the license plate:

- Snow, sand, soot or dirt covering the plate.
- Trailer hitches, bicycle racks or bicycles covering the plate.

In these scenarios, manual intervention will be required, or the vehicle will not be properly enforced. In addition, the cameras may not be able to identify all of the characters in the following scenarios:

- Temporary cardboard plates.
- Plates with stacked characters.
- Out of state plates that use different styles, shapes or colors.

LPR software may not be able to capture a cardboard plate, as the character reflection is different than aluminum plates. LPR software may or may not be able to identify plates with stacked characters or plates from other states, as the software will be programmed for the types of license plates issued in the State (each state is different). The software will be calibrated by the manufacturer for the State's characteristics and will also learn from previous enforcement sessions to identify unusual characters and/or to correct or complete partial reads due to similar looking characters (such as the number and letter "o", a 5 and an s, etc.

The five to seven times efficiency in coverage makes up for a less than 100% accuracy rate, and enforcement staff always get to confirm the license plate on the in-vehicle monitor prior to issuing a citation. This prevents citations from being issued due to a camera error.