

DRAFT

## 8 PARKING & TRANSPORTATION DEMAND MANAGEMENT





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### Role of Parking

The pivotal role of parking in all aspects of the life and economy of an urban district is often overlooked. Because provision of parking is very costly, the amount of parking required is often a key determinant of the quality and quantity of new development. The price and availability of parking influences how people choose to travel and whether they will travel to destinations within the district. The amount of space dedicated to parking is a determining factor in the form development takes and to the experience of a pedestrian within the district. Adopting a sensible and well-tailored approach to managing parking may be the single most important thing that HCDA can do to foster a pedestrian-friendly, transit-oriented Kaka`ako community. This section details specific steps that should be taken to manage parking in the KCDD.

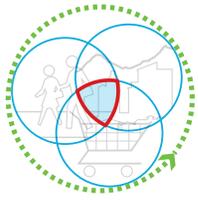
### Existing Regulations

#### *Off-Street Parking*

The Mauka and Makai Plans include parking standards for each land use type, including the quantity of off-street parking and loading spaces that must be provided. A summary of these minimum parking requirements is provided in Figure 8-1.

**Figure 8-1 Existing Off-Street Parking Regulations**

Land Use	Mauka	Makai
<b>Residential</b>		
Detached dwellings, live-work, and duplexes	2/unit + 1/ 1,000 sq ft of floor area over 2,500 sq ft	Not Applicable
Multi-family dwelling (<600 sq ft)	0.9/ unit	0.9/ unit
Multi-family (600-800 sq ft)	1.25/ unit	1.13/unit
Multi-family dwelling (>800 sq ft)	1.25/ unit	1.35/unit
Group homes, care, convalescent and nursing home	0.9/ 4 patient beds, dwelling units, or lodging units	0.9/ 4 patient beds, dwelling units, or lodging units
<b>Commercial</b>		
Commercial, clinics, administrative and all other uses	1/ 450 sq ft of floor area	1/ 400 sq ft of floor area
Restaurants and bars, and dance-nightclubs	0.9/ 300 sq ft of eating or drinking area + 0.9/ 25 sq ft of dance area + 1/ 450 sq ft of kitchen or accessory area	1/ 300 sq ft of eating or drinking area + 0.9/ 25 sq ft of dance area + 1/ 400 sq ft of kitchen or accessory area
Industrial, media production, printing and publishing and warehousing	One per nine hundred square feet of floor area	Not Applicable
<b>Education and Assembly</b>		
Group assembly/Auditorium	0.9 per three hundred square feet of assembly area or 0.9 per ten fixed seats, whichever is greater	0.9 per three hundred square feet



Land Use	Mauka	Makai
Religious facilities and theaters	0.9 / 5 fixed seats OR 50 sq ft of general assembly area (whichever is greater)	0.9 / 5 fixed seats OR 50 sq ft of general assembly area (whichever is greater)
Day-care facilities	0.9/ 10 enrolled capacity	1/ 10 enrolled capacity
Educational (elementary and intermediate level)	0.9/ 20 students of design capacity + 1 / 450 sq ft of office floor area	Not Applicable
Educational (high school, vocational, technical university, etc.)	0.9/ 10 students of design capacity + one per 450 sq ft of office floor area	1/ 10 students of design capacity + one per 400 sq ft of office floor area
Waterfront Industrial	Not Applicable	1/1,000 sq ft of floor are or 1/ 2 employees, whichever is greater.

Source: KCDD Mauka and Makai Area Plans

Minimum parking requirements like these have emerged as one of the biggest obstacles to many cities’ efforts to encourage new residential and commercial development in downtown areas, especially in cities like Honolulu where nearly all parking must be provided in multilevel above ground facilities. With the cost of providing multilevel parking spaces exceeding \$50,000 per space, it no longer makes sense to provide more parking than is needed, since the value put into unused parking could be used for a higher quality of development or for additional amenities. Furthermore, the availability of plentiful and unused parking will ultimately undermine efforts to create a walkable transit-oriented community. More specifically, minimum parking requirements have been shown to:

- Create an “oversupply” of parking in most communities in all but the highest periods of parking demand
- Devalue the true “costs” of parking to drivers, thereby creating an incentive to drive, which results in more local congestion and vehicle emissions
- Require tremendous amounts of land, thereby degrading the physical environment and impacting a community’s urban form, design, and aesthetics
- Limit the ability to do urban “infill” projects or adaptively reuse historic structures
- Make development projects more expensive and reduce overall profitability

It is very difficult to create a walkable, bikeable environment when more land is dedicated to parking than to buildings. The oversupply of parking resulting from minimum parking requirements can be particularly damaging to uses such as restaurants, which help create a sense of streetlife.

High levels of temporary residency and out-of-state ownership in Honolulu further exacerbate the disparity between supply required by minimum parking standards and actual levels of use at any given time. While KCDD developers report that the market for high-end condos demand some level of guaranteed parking sold with the unit, lower- to moderate-income units may not, particularly if other choices for mobility are available.

### On-Street Parking

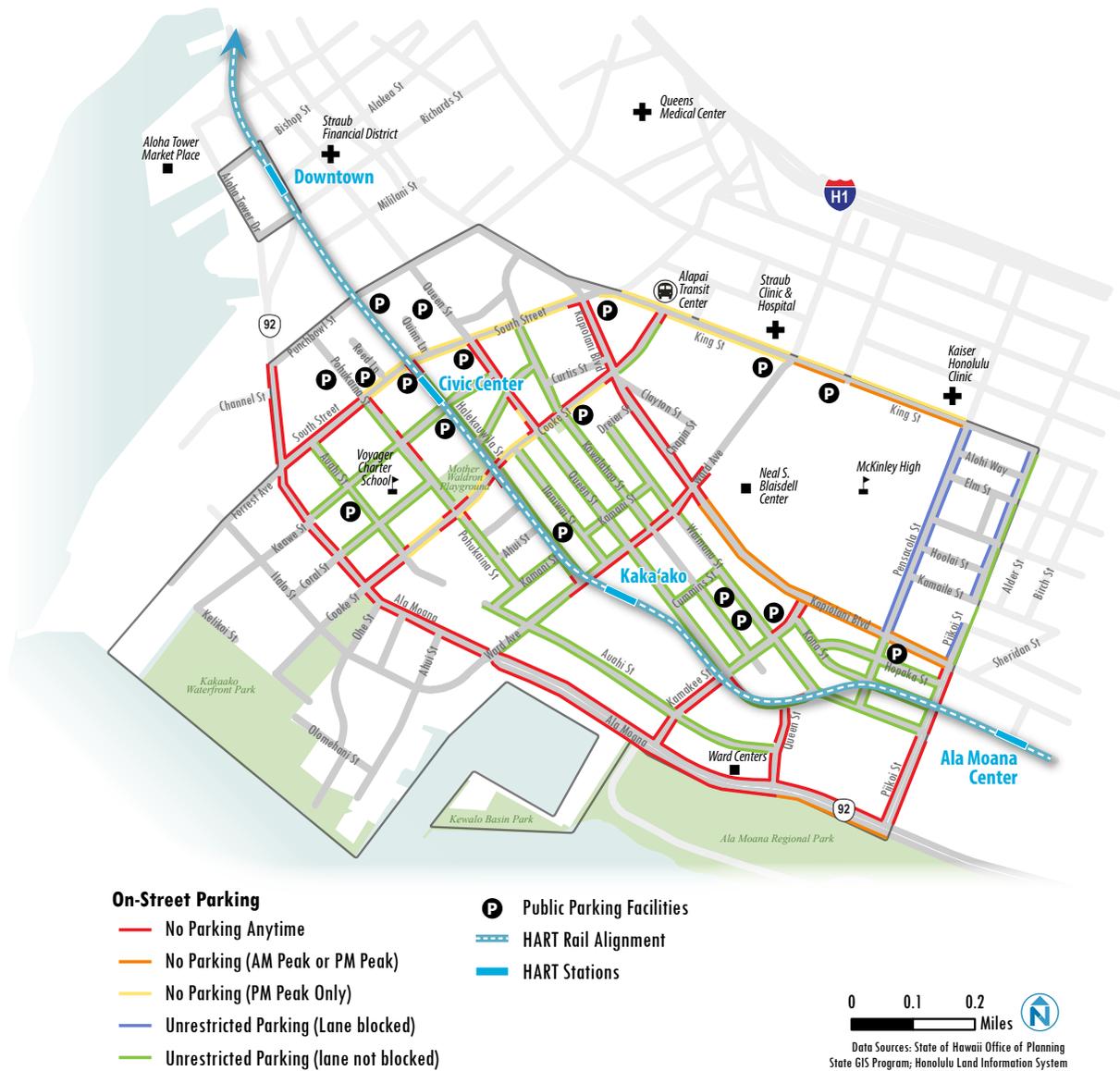
Figure 8-2 illustrates on-street parking in Kaka`ako. Curb parking is regulated as follows:

- On the major regional Boulevard, curb parking is not permitted at any time or at least not during peak travel hours.
- On portions of Cooke, South, and S. King Streets, Parking is not permitted during the PM peak period, while portions of Kapiolani and Ala Moana Boulevards restrict parking during both the AM and PM peak periods.

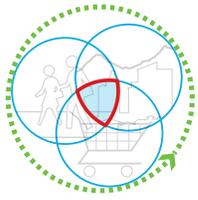
- On-street parking is free on many blocks in the district: relatively few streets east of Cooke have parking meters. To the west of Cooke, many streets are metered including Pohukaina, Halekiau, Auahi, Kawaiahao, Cooke, and Queen Streets in the Civic Center neighborhood. Other streets in that same district remain unmetered.
- Where curb parking is permitted, there is a mix of completely unrestricted parking, and parking with 1- or 2-hour time limits.

On weekdays, unrestricted parking typically fills to capacity with long-term parkers early in the day, while time-restricted parking goes largely unused.

**Figure 8-2 On-Street Parking Regulations**



Source: Kaka`ako Mauka Specific Plan SEIS



Given high levels of employment and relatively few retail or residential uses in Central Kaka`ako, street or alley parking that is not time-limited fills quickly in the morning, while time-limited on street parking remains highly underutilized through much of the day.

Poorly managed on-street parking can have other negative consequences for the transportation system and the quality of the public realm: When demand for curb parking exceeds supply, drivers end up circling the block searching for an available parking space. This behavior wastes time for drivers and generates unnecessary traffic and emissions: *some studies have shown that as much as 30% of traffic in the busiest downtown areas is the result of circling for parking.* Drivers searching for parking also tend to be more distracted and less attentive to the road, which can increase the collision risk for pedestrians, cyclists, and other drivers.

### A Market-Based Approach to Parking

Parking is not an end in itself, but rather a means to achieve and support broader community goals and priorities. Rather than focusing on providing an arbitrarily chosen quantity of parking, successful transit-oriented communities actively manage parking to ensure on-street or easily accessible public parking availability for visitors, while right-sizing supply for new development; and allowing the market to determine parking's appropriate price and its value relative to other potential uses for land. Eliminating arbitrary parking minimums does not eliminate new parking supply; rather it allows development to build the precise amount of parking they need to keep their development viable.

Key principles for this approach are as follows:

- **One size does not fit all.** Parking regulations and management strategies should be tailored to the district, and careful measurement of real-world parking supply and demand.
- **Ensure that some parking is always available.** Parking facilities should be managed to achieve 85-90% occupancy, which represents the optimal balance between ease of finding a space and the efficient use of parking resources. This is particularly important for the most visible spaces on the street, and close to garage entrances. If occupancy rises above 90%, it should increase in price, a reduced time limit, or another measure to increase availability. A well managed parking system will almost always have one parking space available on each block face, so that no one is forced to “circle” to find parking near their destination.
- **Share information about parking availability.** Economic success depends not just on the availability of parking, but on the public's perception of availability. Wayfinding should be used to ensure that drivers know where to look for available parking.



Parking with no time limits is full in the early morning.  
Image from Nelson\Nygaard



Time-restricted parking, particularly supply further from the Downtown/Civic Center area, is underutilized.  
Image from Nelson\Nygaard

- **Share Parking.** Whenever possible, parking should be managed as a shared resource, rather than reserved for customers of a particular business. A city's parking supply is also a public good that needs to be actively managed so that it can meet parking demand during different seasons, different days of the week, or even at different times throughout the day.
- **Manage the entire parking supply as part of a coherent system.** To the extent possible, different types of parking—on- and off-street, public and private—should be managed according to the same set of principles. Pricing, time limits, and payment mechanisms should be standardized as far as possible.
- **Use parking as a tool to manage roadway congestion.** In dense urban districts, traffic congestion can become a serious problem. Cities can mitigate this problem by matching the total parking supply to the capacity of the roadway system.
- **Maximize the contributions of parking to good urban design.** With good design, parking facilities can contribute to, rather than detract from, the quality of the public realm.

## Parking Policies and Incentives

This section details a set of policies, rule changes, and implementation strategies designed to create a market-based approach to parking management in the Kaka`ako district. Implemented fully, they will remove unnecessary incentives for driving, reduce traffic congestion, and improve the sense of place in the district. The section that follows outlines a set of Transportation Demand Management (TDM) strategies that will reinforce the effectiveness of this approach to parking.

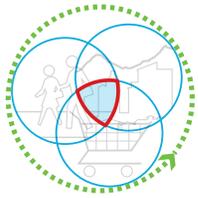
### Manage On-Street Parking

- The primary management goal for on-street parking supply in KCDD is to optimize access for businesses that rely on short-term visitors. This can be done by making it as easy as possible to find a parking space near where customers want to go. By setting specific availability targets and adjusting prices, demand can be effectively managed so that when a motorist chooses to park, they can do so without circling in search of a space, generating unnecessary traffic and emissions.
- In an emerging rail station area, on-street supply must be carefully managed to ensure that all-day or commuter park-and-ride uses are not allowed and that local parking needs are not overwhelmed by demand for access to the rail system.
- A set of strategies for management on-street parking is presented below.

#### Strategy PT1 Price on-street parking to ensure availability

One of the best ways to balance parking supply and demand is to treat parking like any other scarce commodity, and require motorists to directly pay for use of a space. By setting a price for parking, a city can establish the “market value” for each parking space and adjust those prices depending on the level of demand. Just as hotel room rates increase or decrease based on availability, demand-based pricing for parking seeks to increase prices when and where demand is highest and reduce prices when and where demand is low.

An ideal occupancy rate for on-street, curb spaces is approximately 85% at even the busiest hour, a rate which leaves about one out of every seven spaces available. These rates provide enough vacancies that visitors can easily find a spot near their destination when they first arrive. For a given block or off-street facility, the “right price” is the price that will achieve this goal. This means that pricing should not be uniform: the most desirable spaces need higher prices, while less convenient lots are cheap or may even be free. Prices could also vary by season, day of week, or time of day. Demand-based pricing can result in the following benefits:



- Consistent availability and ease in finding a parking space
- Longer time limits, thereby eliminating the need to move a vehicle to avoid time restrictions
- Convenient payment methods (credit cards, pay-by-phone) that eliminate the need to “plug the meter” and make it easier to avoid parking tickets
- Reduced search time for parking, resulting in less local congestion and vehicle emissions
- Reduced illegal parking and improved safety and street operations
- A more equitable and efficient way to account for the real costs to a city for providing parking

New advances in parking meter technology, such as wireless “smart” meters, make demand-based pricing a feasible option and can dramatically increase motorist convenience.

**Action PT1.1** Designate Zones and Monitor Parking Occupancies

HCDA will conduct an initial study of on-street parking supply, occupancy, and turnover. To aid in the understanding of these conditions, the district will be divided into functional parking zones as illustrated in Figure 8-3. Threshold parking occupancies should be established for each zone.

Once a baseline understanding of these conditions is established, HCDA will continue to monitor parking patterns on an ongoing basis, particularly as new development occurs and new residents and business move into the district. This information will be used to inform placement of parking meters, prices, and other regulations.

**Figure 8-3 Potential On-Street Marking Evaluation Districts**



**SOUTH LAKE UNION DEMAND BASED PRICING IN A TRANSITIONAL DISTRICT**

In 2005, Seattle’s South Lake Union District was dominated by light-industrial land uses. However, the District was on the verge of a major transformation. A single developer owned large areas of the district and had an aggressive master plan to transform South Lake Union into a dense, mixed-use urban neighborhood. At that time, parking demands in the district were very similar to Kaka`ako today. All non-regulated parking was full at 7 AM, used by local workers and those parking and walking to downtown. Time limited parking was highly underutilized. Nelson\Nygaard developed an on-street parking study that balanced current demand with the needs of a growing district.



Curb parking in Seattle’s South Lake Union District  
Image from Nelson\Nygaard

The plan recommended metering the entire district with no time restrictions on parking, except in areas where there were existing retail businesses. Prices were set based on demand, so all day worker parking was allowable and comparable to market rates in off street facilities. City staff was allowed to adjust prices quarterly to ensure 10-15% of parking was available at all times. Time restrictions have been added as the district redeveloped and ground floor retail uses were established. The flexibility of this approach has allowed the city to collect valuable parking revenue and manage parking incrementally as various areas of the district developed.

**Action PT1.2 Authorize Staff to Implement Parking Meters and Adjust Prices**

HCDA will work with the County and City of Honolulu to establish an ordinance that authorizes managing the on-street parking supply to ensure availability. The ordinance will:

- Specify a target on-street parking occupancy of 85% on each block face.
- Implement paid parking using parking meters or pay stations where necessary to achieve the target occupancy rates.
- Specify the frequency for adjusting price schedules. Based on data collected through ongoing monitoring, staff will adjust meter prices as needed to achieve the target occupancies.

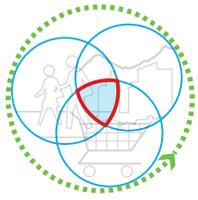
There are a variety of meter types and technologies, including single-space and multi-space models. At a minimum, the meters should incorporate credit card and pay-by-phone technology.

**Action PT1.3 Implement a pilot test of metered pricing**

Most of the district’s on-street parking is either unregulated and fully occupied throughout the day, or subject to time limits, and very lightly used. This pattern of use suggests that there is significant demand for longer-term parking. Conversion of some time-limited space to metered parking may help to serve this demand while raising revenue. HCDA, in conjunction with the City and County of Honolulu, will implement a pilot program, converting some time-limited on-street parking to metered parking without time limits. Low prices should be set initially to gauge the strength of demand. The test could begin by adding meters to all on-street parking that is not yet metered in the area west of Cooke Street (labeled as Area 1 in Figure 8-3). The rest of the district could be monitored and considered for future implementation. If the pilot program successfully attracts parkers and raises revenue without negative impacts, it should be widened to include other areas.

**Action PT1.4 Consider establishing Parking Benefit Districts (PBD)**

While effectively managed on-street parking improves retail sales and economic vitality of business districts, business owners are often initially concerned about the effect that priced parking will have



on their competitiveness with malls and other locations that offer free parking. One way for parking reforms to win the support of business owners is to establish “parking benefit districts,” a system that returns some or all parking meter proceeds to the immediate area in the form of improvements to the business district itself. Improvements may include street sweeping, pedestrian improvements, lighting, landscaping, or other improvements as selected by businesses located in the district. Besides establishing up-front buy in, Parking Benefit Districts give business owners a long-term stake in the success of parking management and reduce opposition to future price increases.

**RECOMMENDED RULE CHANGES FOR KAKA`AKO**

The following regulatory changes would govern regulation of on-street parking in the Mauka and Makai areas of Kaka`ako.

- **Regulation PT1.1:** Establish on-street parking occupancy target of 85% per block face.
- **Regulation PT1.2:** Implement parking meters where necessary to meet occupancy target (Specifies blocks where parking meters are permitted).
- **Regulation PT1.3:** Enable meters to adjust prices based on demand (Specifies maximum amount that prices can be moved within a specified time period).

### SMART METERS IN HONOLULU

In June 2012, the City and County of Honolulu started a pilot test of new smart parking meter technology. Designed to be convenient for motorists, the meters are solar powered, and allow payment by phone or credit card. The test also includes vehicle detection sensors, which will be used to collect information about parking occupancy. Phase 1 of the pilot test included Honolulu Civic Center Garage, S. King St. and Punchbowl St. near the state capitol building, and Honolulu Police Department. In phase 2, the test was expanded to Chinatown and the Financial Districts. This or similar meter technology could be deployed elsewhere in Kaka’ako.



Locations for Honolulu’s SmartMeter Pilot  
Image from City of Honolulu

Single space Smart Meters used in Honolulu’s pilot test  
Image from City of Honolulu

## Replace Off-Street Minimum Parking Requirements with a Market-Based Approach

Today, regulations specify the amount of dedicated off-street parking that must be provided by any land use in the Mauka or Makai districts. However, once on-street parking is effectively managed, off-street minimum parking requirements will no longer be needed to ensure availability. Instead, excessive off-street parking would only worsen traffic, and discourage developers, employers, residents and other property owners from implementing strategies that reduce traffic and parking demand. A new set of rules for off-street parking provision is presented below.

### Strategy PT2 Remove minimum parking requirements

Under this strategy, minimum parking requirements would be removed for all development within Kaka`ako. Off-street parking could still be built, but developers would determine the quantity of parking based on their own analysis of what is economically feasible for their project and what they believe the true parking demand is to make their project viable.

This change would create a “free market” for parking that is more realistically determined by actual parking demand, as opposed to arbitrary parking standards. It would reduce development costs and provide additional flexibility to developers, especially on smaller lots or with historic structures. It would also help to ensure that existing parking supply is efficiently utilized before additional parking supply is built. Numerous cities around the world, including many in North America have eliminated minimum parking requirements in major districts, including Seattle, San Francisco, Portland, OR, and Vancouver, BC.

The following requirements would still apply to all parking built in the district:

- Any parking built would still be subject to the parking design standards outlined in the Mauka Area Rules.
- As described above, any amount of parking supplied above the existing minimum parking requirements would be subject to shared parking. In other words, HCDA could retain the current minimum parking requirements (as per the Mauka Area Rules) as maximum level of parking which can be built as private, single-use parking. Any parking above that level would be required to be managed as shared supply.
- As described above, the cost of all parking would be “unbundled” (paid for separately) from the cost of housing or commercial leases.

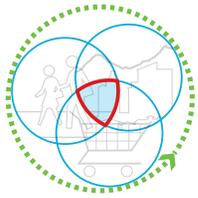
### RECOMMENDED RULE CHANGES FOR KAKA`AKO

The following regulatory changes would remove minimum parking requirements throughout the Mauka and Makai areas of Kaka`ako.

- **Regulation PT2.1:** Minimum parking requirements in the Mauka rules (Section §15-217-63 (e)) are repealed.
- **Regulation PT2.2:** Minimum parking requirements in the Makai rules (Section §15-23-68) are repealed.

### Strategy PT3 Include building area devoted to parking as part of the calculated Floor Area Ratio (FAR) for a proposed development project.

The land use guidelines outlined in Chapter 3 of this plan include permitted Floor Area Ratio for each development parcel. Space devoted to parking does not count toward the permitted FAR in the current Mauka/Makai rules. Under this strategy, parking would be counted towards FAR calculation. Developers would therefore have a choice between dedicating floor area to parking or to other active uses that enhance the development and generate revenue for the developer. Utilizing the market



based approach, a developer would be free to determine the most profitable use of the available space. More detail on this recommendation is provided in the Urban Design section of this plan.

### RECOMMENDED RULE CHANGES FOR KAKA`AKO

The following regulatory changes would remove minimum parking requirements throughout the Mauka and Makai areas of Kaka`ako.

- **Regulation PT3.1:** FAR allocations are inclusive of parking.

### Shared Use Parking Regulations

Because many different land uses (a bank and a bar or restaurant, for example) have different periods of parking demand, they can easily share a common parking facility, thereby limiting the total number of spaces required to serve the demand for parking at any one time. Shared parking policies do not treat the parking supply as individual units specific to particular businesses or uses, but rather emphasize the efficient use of the parking supply by including as many spaces as possible in a common pool of shared, publicly available spaces.

### Strategy PT4 Establish a “park once” district in Kaka`ako

The typical suburban pattern of isolated, single use buildings, each surrounded by parking lots, requires two vehicular movements and a parking space to be dedicated for each visit to a shop, office, or civic institution. By contrast, shared parking policies facilitate “park once” districts, in which motorists can park just once and complete multiple daily tasks on foot before returning to their vehicle. Overall, the benefits of fully implementing a “park once” strategy include:

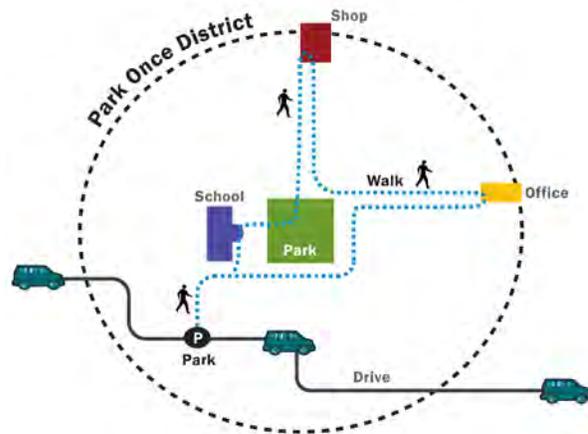


Image from Nelson\Nygaard  
Based on illustration by Walter Kulash

- Reduced vehicle trips and required parking spaces because spaces can be efficiently shared between uses with differing peak hours, peak days, and peak seasons of parking demand.
- More welcoming environment for customers and visitors because they do not have to worry about getting towed for parking at one business while visiting another
- Allows for fewer, but more strategically placed lots and structures, resulting in better urban design and greater redevelopment opportunities
- By transforming drivers into pedestrians, who walk instead of drive to different destinations, shared parking can immediately activate public life on the streets and generate additional patrons of street-friendly retail businesses.

Outlined below are specific policy recommendations designed to facilitate shared parking and the creation of a “park once” district in Kaka`ako.

**Action PT4.1** Work with property owners and businesses to ensure that existing private parking is made available to the public when not needed for its primary commercial use

There are a number of steps that HCDA can take in encouraging existing property owners to make their parking facilities available for public use during off hours. One of the primary obstacles to this practice for many property owners is concern about liability. To eliminate this concern, HCDA (or the City/County of Honolulu) can work with developers and land owners to eliminate liability for public use of private parking. The City of Sacramento has successfully adopted this practice. In some cases, the HCDA or the City may also wish to take over operating responsibility for privately owned parking during periods of public use.



Seattle's ePark system directs visitors to the most immediate parking and tells them how many stalls are available. Image from Nelson\Nygaard

**Action PT4.2** Maximize use of the existing parking supply by improving wayfinding and parking information

The HCDA should establish a wayfinding program specifically tailored to maximize utilization of the shared parking supply. Signs (including signs providing real time information, if necessary) can direct motorists to underutilized facilities, freeing up the most convenient “front-door” curbside spaces, and maximizing the efficiency of a parking system. Improved wayfinding in the form of new signs helps maximize the use of off-street parking facilities, representing another way to help eliminate traffic caused by cars circling for on-street parking. Wayfinding helps dispel perceived (but not actual) shortages in parking.

### RECOMMENDED RULE CHANGES FOR KAKA`AKO

The following Code adjustments are recommended to promote shared use parking.

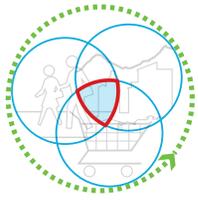
- **Regulation PT4.1:** Require that all newly constructed private parking provided in any Kaka`ako in commercial or residential developments in excess of *existing minimum parking requirements* be made available to the public.

*Discussion of regulation PT4.1: Under this regulation, developers would be permitted to build as much parking as the development requires. However, when parking is provided that exceeds the minimum requirements under today's regulations, the additional parking would have to be made available to the public. HCDA would work in partnership with developers to eliminate their liability for public parking on site. This arrangement would be particularly helpful, for example, in large residential developments with a significant number of non-resident owners. During periods of time when a small number of owners are on-site, the remaining number of parking spaces could be made publicly available. This reserve of parking could be used, for example, to provide park-and-ride access to the HART stations.*

- **Regulation PT4.2:** Allow parking to be shared among different uses within a single mixed-use building by right.

### Unbundled Parking

Parking costs are frequently subsumed into the sale or rental price of offices and housing. Although the cost of parking is often hidden in this way, parking is never free. Each space in a parking structure



can cost \$40,000 or substantially more. “Unbundling” these parking costs from the cost of other goods and services is a critical step for reducing parking demand and vehicle trips, because providing anything for free or at highly subsidized rate encourages use and means that more parking spaces have to be provided to achieve the same rate of availability. Further, by “daylighting” the cost of parking, new tenants may reconsider their need for multiple dedicated parking spaces.

### Strategy PT5 Unbundle parking costs from housing costs

For both rental and for-sale housing in multifamily buildings, the full cost of parking should be unbundled from the cost of the housing itself by creating a separate charge. (The exception to this policy should be any new residence with individual garages, such as townhouses, rather than common, shared parking areas). Regulations should require that when residential parking is unbundled, it should be leased, rather sold, to homebuyers. While some homebuyers would shy away from purchasing a unit without parking included because of the fear that it could not be easily resold, a residential building with an available supply of leasable parking spaces allows the homeowner to acquire or forgo parking as their needs change.

This policy provides a financial reward to households that decide to dispense with one or more of their cars, and helps attract that niche market of householders who wish to live in a transit-oriented neighborhood where it is possible to live well with just one car or without a car.

Unbundling parking costs also changes parking from a required purchase to an optional amenity, so that households no longer have to pay for parking spaces that they do not need or cannot afford. This strategy also has significant potential rewards for the district as a whole: with lower rates of auto ownership, many households will shift trips to other modes of transportation, reducing total vehicle trips and total emissions.

**RECOMMENDED RULE CHANGES FOR KAKA`AKO**

The following Code adjustments are recommended to promote unbundled parking for housing.

- **Regulation PT5.1:** The cost of parking is required to be unbundled cost from the cost of rental housing.
- **Regulation PT5.2:** The cost of parking is required to be unbundled cost from the cost of ownership housing.

### Strategy PT6 Unbundle parking costs from commercial leases

New commercial developments should be required to unbundle parking costs by leasing parking spaces separately from the commercial space, and should be required to allow employers to lease as few parking spaces as they wish. This policy also makes it easy for employers to implement a parking “cash-out” program. In a parking cash-out program, employees who choose not to drive to work are given a cash reimbursement instead of receiving subsidized parking from their employer. Employers can save money by leasing fewer parking spaces when fewer employees drive. The policy also makes it easier to institute shared parking arrangements, because building owners can more easily lease surplus parking spaces to other users.

**RECOMMENDED RULE CHANGES FOR KAKA`AKO**

The following Code adjustments are recommended to promote unbundled parking for commercial leases.

- **Regulation PT 6.1:** In commercial leases, parking must be included as a separate line item, with the quantity of parking to be leased determined by the lessee.

### Tandem and Stacked Parking

Because of the difficulty of constructing underground parking in the district, a significant share of any parking constructed in Kaka`ako may be provided either as podiums at the base of buildings, or in surface lots, both of which can have significant negative impacts on the public realm. Tandem and stacked parking offer the opportunity to reduce these impacts by reducing the amount of surface area required to provide a given amount of parking. Given significant challenges to constructing underground parking in the KCDD, these spatial challenges associated with accommodating parking are particularly acute. High rise development will require up to five stories of parking to support development, if conventional parking design is used. Shrinking the footprint of parking using space-efficient parking strategies can conserve land for active public spaces and more productive land uses.

While the purpose of these strategies is similar, they are implemented differently:

- **Tandem parking.** Calls for an attendant to park two or more cars nose to tail, preventing all but the outermost car from leaving the parking facility independently; however, this allows more cars to fit into the lot by reducing the number of aisles required. In residential development, tandem parking is often unattended, with both parking stalls assigned to the same residence.
- **Stacked/robotic parking.** Stackers perform a similar function, but add vertical capacity; essentially, a hydraulic lifting apparatus raises the first car up, allowing a second car to be parked underneath. However the bottom car must be moved before the stacker can be lowered and the upper car released.

Generally applied in garages or parking lots, both techniques require an attendant to be on duty to move cars if a blocked-in car owner wishes to leave. These work well with valet systems and remote parking. It is important to recognize that these strategies do not reduce vehicle trips or traffic congestion because they do not reduce the total parking supply nor do they provide incentives to shift to other modes of transportation.

#### Strategy PT7 Tandem and stacked parking permitted by right

This strategy adjusts regulations in the Mauka and Makai Districts so that tandem and stacked parking are permitted by right. As discussed in Strategy PT3 and Regulation PT3.1, because space devoted to parking will be included as part of the permitted FAR for each development project, developers will have a strong incentive to minimize the amount of space dedicated to parking. Tandem and stacked parking offer a set of tools to help accomplish that objective.

Figure 8-4 Robotic vs. Conventional Parking Structures

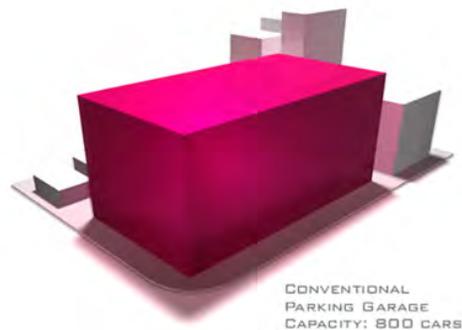
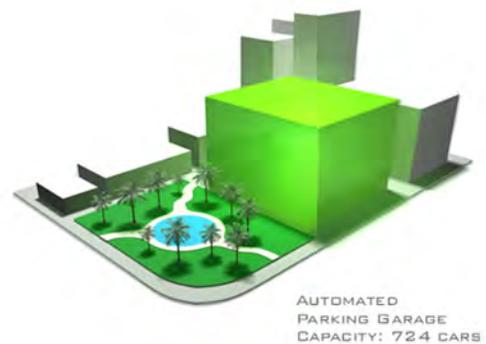
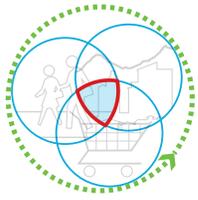


Image from Robotic Parking Systems

**RECOMMENDED RULE CHANGES FOR KAKA`AKO**

The following Code adjustments are recommended to promote tandem and stacked parking.

- **Regulation PT7.1:** Regulation permitting tandem and stacked parking by right.



## Transportation Demand Management Programs

Transportation Demand Management (TDM) refers to a collection of strategies to manage the demand for scarce parking and roadway capacity. They give people incentives to choose alternatives to driving alone by making those alternatives more attractive and convenient. TDM strategies are particularly appropriate for Kaka`ako because they are among the most cost-effective ways to accommodate higher density development without increasing traffic and parking demand. By investing in a strengthened package of parking and transportation demand management strategies, the HCDA can reduce growth in parking demand and decrease new vehicle trips associated with new development.

### District Transportation Demand Management (TDM) Requirements

As urban living is making a strong comeback around the U.S., cities are looking to reduce traffic demand and to make streets friendly, livelier, and more social. To do so, many cities require mandatory transportation demand management actions from developers, employers, condominium associations, apartment buildings, and institutions, planned and instituted at the time of development. The TDM strategy for Kaka`ako will include the creation of a Transportation Management Association to promote, implement, and monitor TDM efforts; required TDM plans from all new development; and supporting infrastructure and programmatic investments by HCDA.

### Strategy PT8 Establish a Transportation Management Association (TMA)

To encourage transportation Demand Management in Kaka`ako, HCDA should work to establish a Transportation Management Association (TMA). A TMA is a public/private partnership formed so that employers, developers, building owners, and government entities can work collectively to establish policies, programs, and services to address local transportation issues and foster economic development. TMAs are established within a limited geographic area to address the transportation management needs of their members. Their activities can be funded by member dues, transportation revenues from within the district (such as parking fees), or other sources. TMA's provide a variety of services that encourage more efficient use of transportation and parking resources. Such services can include:

- Access Management
- Advocacy
- Education and Outreach
- Flextime Support
- Guaranteed Ride Home Services
- Coordinated Incentive and Reward Programs
- Individualized Commute Trip Planning Services
- Marketing and Promotion
- Parking Management
- Pedestrian and Bicycle Planning
- Rideshare Matching and Vanpool Coordination
- Shared Parking Coordination
- Telework Support
- Transit Fare Products and/or incentives
- Transit Improvements
- Transportation Access Guides

In addition to developing and coordinating transportation management strategies, a TMA can bring a variety of stakeholders together to jointly address transportation challenges – and to give stakeholders a unified voice in advocating for enhanced transportation investments and coordination in their area.

#### Action PT8.1 Fund, market, and house a new TMA for the District

HCDA will provide initial start-up funding, marketing, and office space for a new TMA for the Kaka`ako district. As the TMA develops, ongoing funding may be obtained through membership dues, or rules could be established to fund the TMA through development fees and/or parking revenues. A

more detailed feasibility study and district outreach campaign would be needed to determine support and proper timing to develop and launch a TMA.

### Strategy PT9 Require TDM for new residential developments

HCDA will require that each new multifamily residential development in the district join the TMA and develop a TDM Plan. A TDM Plan is a written document that outlines strategies, targets, and evaluation measures that will be taken to reduce single-occupancy vehicle (SOV) travel to and from the site. The plan should be created during the development process prior to project approval, and any programmatic elements should be carried out by the property manager (for rental properties) or homeowner's association (for condominium properties). These groups could either implement the elements of the plan themselves, or cede implementation activities to TMA staff. Residential developments will have the option of contracting with the TMA to create the TDM plan. At a minimum, TDM Plans shall include the following:

- Project description; if this is provided in the land use application, the TDM Plan should reference the land use application
- The TDM strategies proposed for implementation (per Figure 8-5 below)
- Mode share performance targets
- A schedule for achieving mode share performance targets
- Copies of documentation to ensure deed notification of mandatory participation in the final TDM program to all subsequent purchasers and owners of the project.

TDM Plans shall identify strategies to achieve adopted mode split targets. The effectiveness of each TDM strategy varies based on land use, type of development (new or existing development), and geographic location. There is no single TDM measure that can effectively reduce a project's traffic impacts. As such, the HCDA can work with the applicant to develop a reasonable, relevant, and effective TDM Plan.

The TDM Program Strategies Menu in Figure 8-5 below provides a framework of options from which the TMA can help applicants identify appropriate actions to mitigate the traffic impacts of their project and sustain non-auto travel to the site for the lifetime of the building. TDM program strategies are organized by the type of program (i.e. incentive, programmatic, supportive facilities). In some circumstances, TDM strategies can be better implemented at the development phase (by a developer or property owner), while others will be implemented operationally for the lifetime of the project (by the property manager or homeowner's association). Depending on the type of project (location, new vs. existing construction, use), the TDM strategies selected will vary. This menu provides suggested strategies or guidance; it does not represent a comprehensive list of TDM strategies.

#### RECOMMENDED RULE CHANGES FOR KAKA`AKO

- **Regulation PT9.1:** New multifamily residential developments are required to create and implement a TDM plan that includes at least 5 elements from the checklist of TDM strategies, including at least one element from the 'Incentive' category.
- **Regulation PT9.2:** New multifamily residential developments are required to join the TMA.
- **Regulation PT 9.3:** Residential developments that are TMA members are required to monitor and report (every 5 years) on the status of any goals included in the TDM plan.

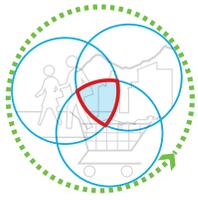


Figure 8-5 TDM Strategies Menu

	TDM Element	Program	Residential	Employer	Effectiveness	Strategy type
<b>Incentive</b>	Transit	Provide a subsidized or free transit pass	X	X	High	Operational
	Bike/pedestrian	Offer bicycle commuter benefit		X	Medium	Operational
	Carpool/vanpool	Provide vanpool/carpool subsidy		X	High	Operational
	Parking	Charge market price for parking		X	High	Operational
	Parking	Offer parking cash-out program		X	High	Operational
<b>Programmatic</b>	Transit	Sell transit passes on-site	X	X	Medium	Operational
	Carpool/vanpool/shuttle	Sponsor and community vanpool program through coordination, ridematching, and monetary sponsorship	X	X	Low-Medium	Operational
	Carpool/vanpool/shuttle	Provide shuttle service between site and HART station	X	X	Low-Medium	Operational
	Carpool/vanpool/shuttle	Provide carpool and vanpool matching services		X	Low-Medium	Operational
	Carpool/vanpool/shuttle	Offer a guaranteed ride home program		X	Medium	Operational
	Peak hour trip reduction	Support telework or flexible work schedules		X	Medium	Operational
	Information access	Establish an on-site information kiosk with routes, schedules, and fares	X	X	Medium	Operational
	General	Develop “new employee” commute packet on transportation options		X	Medium	Operational
	General	Provide bike/car-share vehicles for worker errands		X	Medium	Operational
<b>Supportive Facilities</b>	Parking	Provide priority parking for carpools or vanpools		X	Medium	Development/Operational
	Transit	Provide pedestrian-transit amenities such as shelters, sidewalks, footpaths, or signage on-site or close to the site	X	X	Medium	Development
	Parking	Limit on-site parking below existing minimum parking requirements	X	X	High	Development
	Bike/pedestrian	Provide on-site pedestrian circulation system connected to adjacent sidewalks or transit stops	X	X	Medium	Development
	Bike/pedestrian	Provide more bicycle parking than required in code	X	X	Medium	Development/Operational
	Bike/pedestrian	Install end of trip facilities (lockers, showers, covered bicycle parking)		X	Medium	Development/Operational
	General	Designate car-share spaces and bike share stations	X	X	Medium	Development/Operational

### Strategy PT10 Require TDM from large employers in new commercial development

HCDA should also require, as a condition of new development, that large employers (those with 50 or more employees) that are owners or tenants of new commercial developments in the district join the TMA and develop a TDM plan. Employers will have the option of contracting with the TMA to create the TDM plan. While commercial development will represent minority of new development permitted under the plan, these regulations can still have a significant effect, particularly on peak period vehicle traffic. Like residential TDM plans, the employer plans should include:

- Project description;
- The TDM strategies proposed for implementation (per Figure 8-5 above)
- Mode share performance targets
- A schedule for achieving mode share performance targets
- Copies of documentation to ensure deed notification of mandatory participation in the final TDM program to all subsequent purchasers and owners of the project.

Employers may select from the employer-specific TDM strategies listed in Figure 8-5 above. The TMA can help applicants identify appropriate actions to mitigate the traffic impacts of businesses and sustain non-auto travel for the lifetime of the building. TDM program strategies are organized by the type of program (i.e. incentive, programmatic, supportive facilities). In some circumstances, TDM strategies can be better implemented at the development phase (by a developer or property owner), while others will be implemented operationally for the lifetime of the project (by the property manager or homeowner's association).

#### RECOMMENDED RULE CHANGES FOR KAKA`AKO

- **Regulation PT10.1:** Large employers (50+ employees) are required to create, update (every 5 years) and implement a TDM plan.
- **Regulation PT10.2:** Large employers (50+ employees) who are tenants of new commercial developments required to join a TMA that would implement its TDM plan.
- **Regulation PT 10.3:** Employers that are TMA members are required to monitor and report (every 5 years) on the status of any goals included in the TDM plan

### TDM Infrastructure and Public Investments

In addition to establishing the TMA and requiring TDM measures from new development, HCDA will pursue operational and infrastructure investments in TDM. These include measures to promote car-sharing and bike sharing, and establishing a multimodal wayfinding program. Bike share and multimodal wayfinding strategies and actions are described in greater detail in Chapter 5 and 6.

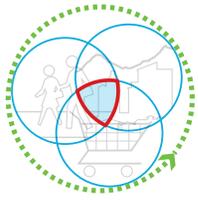
### Strategy PT11 Promote car-sharing in Kaka`ako

Car-sharing is a “hassle-free” way to rent cars by the hour. Rather than being concentrated at a central location like a rental car company, car-sharing cars are dispersed throughout an urban area at convenient centralized locations, such as residential or commercial developments, civic buildings, or central parking facilities. Car-share operators use telephone and Internet-based reservation systems that are totally self-service. Members are charged hourly and sometimes mileage-based fees for their use and receive a single bill at the end of the month for all their usage.



In 2012, the University of Hawai`i at Manoa started a small car-share operation on campus. Here a car-share vehicle receives a traditional blessing on opening day.

Image from University of Hawai`i at Manoa



Special membership plans for businesses and organizations enable easy access for all employees, which can augment or replace fleet cars or use of personal vehicles for work trips. Car-sharing operators generally have a diverse fleet so that members have access to anything from a compact sedan to a pick-up truck. Car-sharing companies operate throughout the United States and around the world. Currently, two car-sharing companies operate in Hawai`i, each in a small number of select locations: WeCar (a subsidiary of Enterprise), and Greencar (an independent car-sharing company specializing in low-emissions vehicles). Neither company currently operates in Kaka`ako.

Car-sharing can have environmental, economic, and social benefits for both the individual user and for the transportation system and community as a whole. For individuals it can provide cost savings, greater mobility, and convenience. For the community, car-sharing can reduce car ownership and vehicle travel, thereby reducing parking demand, supporting more compact development, and reducing emissions. Car-sharing fleets also tend to be low-emission and fuel-efficient which augments the environmental benefits of reduced driving. Car-sharing offers particular promise for the tourism sector: for visitors who arrive on the island without their own vehicle, car-sharing offers the visitor the opportunity to have access to a car when needed without having to rent one for their entire stay. A hotel or resort could conceivably reduce its guest parking needs substantially by providing moderate size fleet of shared cars. Similarly, government entities could reduce their auto fleet and create a broader public benefit by transitioning some or all of their fleet to a publicly available car-share service.

In order to help establish a car-sharing service in Kaka`ako, HCDA will pursue the following actions:

**Action PT11.1** Recruit and provide incentives for car-sharing companies to operate in the district

Recruit an existing car-sharing service provider to expand into the Kaka`ako market. HCDA may consider partially or fully subsidize operation costs for a specified term to help these services begin operating. In the past, localities have encouraged car-sharing by providing minimum revenue guarantees for operators. This provides certainty for the operator, and costs the locality little or nothing if a market develops. HCDA may also wish to consider direct subsidies from sources such as revenues from parking fees or public facilities dedication fees.

**Action PT11.2** Reserve some on-street parking spaces for car-sharing vehicles

HCDA will collaborate with the City to reserve a number of on-street parking spaces in strategic locations for car-sharing vehicles.



Car2Go's fleet is comprised exclusively of branded Mercedes Smart cars, making them easy to identify. San Diego is the first U.S. city to launch an all electric Car2Go fleet.

Image from Car2Go

**POINT-TO-POINT CAR-SHARING**

Car2Go is one of the fastest growing car-share companies in the United States. Opening in several new major cities each year, the services unique one-way rental feature is proving very popular. Unlike services where a car is checked out and returned to the same location, Car2Go vehicles can be checked out using a magnetic access card, driven anywhere in the service area, and left in any publicly available on-street parking stall. Customers are charged only for the time in use, making short trips very affordable.

**RECOMMENDED RULE CHANGES FOR KAKA`AKO**

- **Regulation PT11.1:** Require that new residential developments with parking provide spaces for car-sharing vehicles.
- **Regulation PT11.2:** Require that visitor accommodations such as hotels and resorts provide developments with parking provide spaces for car-sharing vehicles [the ratio should be higher than for ordinary residential].
- **Regulation PT11.3:** Require that new commercial developments meeting certain requirements provide parking spaces for car-sharing vehicles.

