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1. OVERVIEW

Parking and vehicle congestion are cited as primary concerns for the residents of Key West. Results from the Harris Poll indicate that a large majority of residents believe that traffic congestion is bad and getting worse¹. Sixty-eight percent of those surveyed by the City believe that implementing better traffic management programs is important or very important². These perceptions have been statistically verified by the Planning Department in the *Steady Increase of Traffic in Key West*, which shows a trend of traffic increasing 1.5% per year for the past 16 years³. Although 1.5% may seem insignificant, it becomes significant over time if the roadway capacity and parking spaces remain stable, as is the case in Key West. This increase means that there are more automobiles but not more space for them to drive along the roads or to park.

The purpose of this report is to explain in detail the current parking situation in Key West and propose solutions. This explanation describes the existing rules governing parking, identifies the different kinds of parking spaces, where they are located, and how many there are, and discusses the demands for parking. This paper concludes with an in-depth analysis of specific stresses on the parking supply and recommends policies and improvements that will help alleviate the stresses on the overall parking supply and for each user group.

2. PARKING RULES

The City has a myriad of parking regulations for public on-street parking, public parking lots, private parking lots, and private on-site parking. The Transportation, Public Works, Key West Bight, and Garrison Bight departments control public parking. Private parking requirements are enacted when a property is redeveloped, expanded, or the use becomes more intensive. Planning, Building, and Code Enforcement regulate private parking. The regulations are designed to serve the public parking needs while protecting the health, safety, welfare, and quality of life of the community.

Parking Meters

The City Manager has the right to establish metered parking on any public street⁴. Meters are enforced from 8 am until midnight, Monday through Saturday, and noon until midnight on Sunday, including holidays⁵. Smathers Beach meters are enforced from 9 am until 4 pm, Monday through Saturday, and noon until 4 pm on Sunday and holidays are free. The on-street metered parking costs \$1 per hour and there is no limit on how long a vehicle may be legally parked for 24 consecutive hours as long as the meter is paid.

Parking Meter Permits

The City Manager's office issues permits that allow qualified people to park at meters for free. Qualification is typically limited to people performing official work for the City and priority City officials. There are roughly 250 of these free permits⁶.

¹ Harris, Louis and Peter Harris Research Group. *Key West Survey on Tourism and the Community*. December 2004.

² *City of Key West Citizen Survey*. 2004. www.keywestcity.com

³ Key West Planning Department. *The Steady Increase of Traffic in Key West*. July 15, 2004.

⁴ *Code of Ordinances*. City of Key West. Volume I. Section 70-156.

⁵ www.keywestcity.com/depts/parking/parking.asp. Accessed July 16, 2005.

⁶ City Manager's Office statistics compiled on June 13, 2005.

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The City offers a parking meter permit that can be purchased by anyone for \$86/month (roughly \$3 per day). The permit allows the vehicle to park at any streetside parking meter without feeding the meter. These permits are primarily purchased by workers and business owners who have no on-street parking in the area. There are roughly 240 valid permits at any one time⁷.

In addition, residents of blocks that are lined with parking meters are eligible to buy a pass for \$85/year that allows them to park for free at the meters on their block⁸. Twelve of these permits have been issued this fiscal year.

A total of 252 meter permits have been purchased. Combining this number with the free parking permits results in approximately 500 vehicles allowed to park at meters for free or for a reduced price.

Residential Parking Program

Revisions are being considered for this program.

The Residential Parking Program was implemented to reserve on-street parking spaces for residents. Drivers that live outside the neighborhood were included in the program because it was believed that neighborhood residents would drive their cars to work in the morning and residents of New Town and Monroe County would use the spaces during the day. The resident would then come home from work and occupy a space that has been vacated by a resident of New Town or Monroe County whose shift just ended.

The program extends along most blocks in Old Town that have marked parking spaces and are not metered. Only a portion of the spaces in the program are striped for residential parking. The quantity and location of these spaces were determined through a survey sent out to residents asking if they used on-street parking. One space was allocated for each resident that used on-street parking. There are 89 blocks in the program and each block has between 2 and 25 marked residential parking spaces for a total of roughly 1,100 spaces. The spaces not marked as residential are available for free to anyone. For more information on the Residential Parking Program, see the *Residential Parking Study*⁹ and *Appendix*¹⁰ reports by the Planning Department.

Moped/Motorcycle Parking

There are no designated size requirements for motorcycle and moped parking and no requirements for their inclusion in any project. Motorcycles and mopeds have specially designated spaces across Old Town, typically spaces near intersections where smaller vehicles are preferred to preserve the lines of sight and leftover spaces too small to park an automobile. Most of these spaces are free of charge. The City is encouraging their use by not charging for parking these vehicles. There are no rules prohibiting mopeds and motorcycles from parking in full-size automobile spaces.

Bicycle Parking

Bicycles may be parked free of charge at designated spaces. The City requires bicycle parking spaces for certain land uses (see Figure 2). A bicycle space for a private development

⁷ Key West Parking Collections Department statistics compiled on June 13, 2005.

⁸ *Code of Ordinances*. City of Key West. Volume I. Section 70-216 through 70-219.

⁹ Key West Planning Department. *Residential Parking Study*. March 21, 2005.

¹⁰ Key West Planning Department. *Residential Parking Study Appendix*. March 21, 2005.

must be 2 ft. by 6 ft. (12 sq. ft.)¹¹. The Board of Adjustment may allow bicycle parking to be substituted for automobile parking¹².

Automobile Parking Space Sizes

A residential driveway counts as a parking space if it is at least 20 ft. long¹³. To increase safety and eliminate dangerous conflicts, projects requiring 3 or more parking spaces are prohibited from having driveways where vehicles back onto the public street and, therefore, must have parking lots¹⁴. Standards for spaces in parking lots vary depending on the configuration. Figure 1¹⁵ shows the parking stall width and the required driveways and aisles for each parking type. The typical parking lot has 90 degree parking and a 2-way driveway. Parking lots with 20 or more spaces may be comprised of up to 15% compact spaces which are a minimum of 7 ½ ft. wide by 15 ft. long¹⁶.

Figure 1. Parking Space Size Requirements for Different Configurations

	45 Degree	60 Degree	90 Degree	Parallel
Width of Stall (ft.)	9	9	9	9
Length of Stall (ft.)	18	18	18	23
Width of Aisle (ft.)	14	18	24	14
Width of 1-way Driveway (ft.)	14	14	24	14
Width of 2-way Driveway (ft.)	20	20	24	20

Parking Requirements

Parking requirements depend on the use of the property (e.g. commercial, residential) and the location (Old Town or New Town). The calculations for required parking are based on site attributes such as square feet or number of residential units. Figure 2¹⁷ shows some of the automobile and bicycle parking requirements. All developments must contain the total number of required parking spaces and properties are not allowed to share parking¹⁸. For instance, a movie theater where customers arrive in the evening is not allowed to share parking with an office where the workers are there during the day. Required parking cannot be used for purposes other than parking (such as storage)¹⁹.

¹¹ *Code of Ordinances*. City of Key West. Volume II. Section 108-643.
¹² *Code of Ordinances*. City of Key West. Volume II. Sections 108-574.
¹³ *Code of Ordinances*. City of Key West. Volume II. Section 108-578.
¹⁴ *Code of Ordinances*. City of Key West. Volume II. Section 108-648(b).
¹⁵ *Code of Ordinances*. City of Key West. Volume II. Sections 108-641.
¹⁶ *Code of Ordinances*. City of Key West. Volume II. Section 108-646.
¹⁷ *Code of Ordinances*. City of Key West. Volume II. Section 108-572.
¹⁸ *Code of Ordinances*. City of Key West. Volume II. Section 108-577.
¹⁹ *Code of Ordinances*. City of Key West. Volume II. Section 108-571.

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Figure 2. Sample Minimum Parking Requirements

Land Use	Automobile Spaces	Bicycle Spaces
Single-family	1 per unit	None
Multi-Family		
a. Within historic district	1 per unit	0.10 per unit
b. Outside historic district	2 per unit	0.10 per unit
Motels, hotels, and other lodging	1 per unit plus 1 for the manager	0.35 per unit plus 0.35 for the manager
Restaurants, bars, and lounges	1 per 45 sq. ft. of serving and consumption area	0.25 per 45 sq. ft. of serving and consumption area
Retail store	1 per 300 sq. ft. of gross floor area	0.25 per 300 sq. ft. of gross floor area

The parking regulations apply to all zoning districts except for those located within the historic commercial pedestrian-oriented area around Duval Street (see Figure 3)²⁰. The special rules for this area recognize that on-site parking standards are prohibitive for the properties to redevelop or change uses and the redeveloped properties would lose their special character. Parking requirements are only applied in the Duval corridor when new commercial space or new residential units are added.

Variations from the parking requirements must receive permission from the Board of Adjustment. Affordable housing has a special section where the Board of Adjustment may allow the substitution of bicycle parking for automobile parking²¹.

²⁰ *Code of Ordinances*. City of Key West. Volume II. Section 108-573.

Figure 3. Historic Commercial Pedestrian-Oriented Area.



Large Vehicles

Vehicles larger than personal automobiles, such as motor homes and boats, are strictly limited in where they may park. Code Sections 108-675 through 108-683 require that large vehicles be screened when parked at single-family residences and that specially designated areas be set aside for parking these vehicles on multifamily lots. Vehicles and trailers designed to be lived in that exceed 20 ft. in length and 7 ft. in width may not park on city streets²².

Parking Lots

The City of Key West owns and operates parking lots and garages with over 1,000 parking spaces. The operating responsibilities and revenues for parking lots are distributed across multiple departments, including Public Works, the Department of Transportation, Key West

²² *Code of Ordinances*. City of Key West. Volume I. Section 70-462.

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Bight, and Garrison Bight²³. Parking is usually managed to produce revenue for each department. There is no coordinated parking program that manages parking rates, occupancies, and the resulting congestion.

Enforcement

Figure 4 shows the parking-related citations for a 3-month period²⁴. 'Other' refers to categories with fewer than 50 citations, including handicap violations, parking on sidewalks, and blocking driveways. The table shows that 'Expired Meter' is most cited, followed by 'No Parking Zone'.

Figure 4. Parking Citations from December 1, 2004 through March 1, 2005

Citation Type	# of Citations	% of Total	Ticket Amount	Fine Amount
Expired Meter	8,097	60%	\$25.00	\$202,425
Fire Lane Violation	126	1%	\$175.00	\$22,050
No Parking Zone	3,154	23%	\$35.00	\$110,390
Other	1,070	8%	Varies	\$48,550
Oversized Vehicle	85	1%	\$75.00	\$6,375
Residential Parking Violation	1,061	8%	\$35.00	\$37,135
3-Month Total	13,593	100%	Varies	\$427,285

Historic Architecture Review Committee

The Historic Architecture Review Committee (HARC) has jurisdiction over the appearance of the historic district. To maintain the historic appearance of Key West, the bylaws of this committee discourage parking in front yards²⁵.

²³ Key West Planning Department. *Transportation Financing; The Effect of Multimodal Planning*. March 2, 2005.

²⁴ *Tickets by Violation Report*. City of Key West Police Department. Prepared March 7, 2005.

²⁵ *Historic Architecture Guidelines*. City of Key West. 2002.

3. PARKING SUPPLY

The parking supply for Key West is composed of private on-site parking, private parking lots, public on-street parking, and public parking lots. The parking spaces can be further classified as metered, residential, hourly, and unmarked (free). In addition, there are compact parking spaces, loading zones, scooter parking, motorcycle parking, and bicycle parking. This section uses available data to estimate the total number of parking spaces in Key West.

Public Parking Lots

The City of Key West owns and operates parking lots and garages with hundreds of parking spaces. Figure 5 lists the parking lots, the fund that receives the revenue, the number of spaces, and the monthly, daily, and hourly costs. The City operates over 1,100 parking spaces in lots, which are mapped in Figure 11. Although Garrison Bight has the highest number of parking spaces, the parking is primarily dedicated to users of the marina who require multiple spaces for the large vehicles and trailers.

Figure 5. City Parking Lot Sizes and Costs

Lot	Receiving Fund	# of Spaces	Monthly Cost	Daily Cost	Hourly Cost
Old Town Garage	Transit	300	\$75	\$10	\$1.50
Mallory Square	General	98	\$150	\$48	\$3.00
City Hall ^a	General	115	Unk.	Unk.	Unk.
Conch Harbor	Transit	35	--	\$16	\$1.00
Key West Bight	Key West Bight	119	--	\$13	\$2.00
Garrison Bight	Garrison Bight	477	--	\$6 ^b	--
		Total	1,144		

^a Post-construction

^b Fee only applies to trailers

Figure 6 ²⁶ calculates the revenue and occupancy per parking space in the primary parking lots. Occupancy rates are calculated by analyzing the total revenue because parking volumes are not available. The actual occupancy rates are slightly higher for Old Town Garage and Mallory Square due to the monthly passes. The table shows a weighted average revenue of \$3,123 per space and an occupancy of 24% per day. Mallory Square is the most utilized parking lot with an occupancy rate of 55%. Analyzing occupancy rates for an entire day is limited because the parking lots could experience a short peak where 100% of spaces are occupied. However, hourly vehicle counts are not readily available.

²⁶ Key West Budget Department statistics compiled June 16, 2005.

Figure 6. Revenue and Occupancy in Primary Parking Lots During Operating Hours- FY 2003-2004

Parking Lot	Lot Revenue	Actual	Potential	Uncaptured	Revenue	Hours	Daily
		Revenue per Space	Revenue per Space	Revenue per Space	per Day per Space	Occupied per Day	Occupancy Rate
		Lot Revenue / # of spaces	Hourly rate * 5840 hours per year	Potential Revenue - Actual Revenue	Actual Revenue / 365 days	Revenue per Day / Hourly rate	Hours Occupied / 24
Old Town Garage	\$446,711	\$1,489	\$8,760	\$7,271	\$4.08	3	13%
Mallory Square	\$704,311	\$7,187	\$17,520	\$10,333	\$19.69	13	54%
Key West Bight	\$463,732	\$3,897	\$11,680	\$7,783	\$10.68	7	29%
Weighted Average^c	\$499,458	\$3,123	\$11,093	\$7,969	\$8.56	6	24%

^c Multiplies values by the # of spaces in the lot and divides by the total # of spaces to account for parking lot sizes

Street Parking

Most public parking in Key West is marked and unmarked street parking. Unmarked parking spaces are difficult to count because the number of vehicles that can be parked is dependent on how close the vehicles are to each other and how large the vehicles are. Figures 7 and 8 show the difference in space requirements for small vehicles between marked and unmarked spaces. Because of the ambiguity, unmarked spaces were not counted. Almost all public parking in New Town is unmarked, except for the meters at Smathers Beach and the spaces at the airport, which are owned by Monroe County.

All on-street parking spaces in Old Town are mapped in Figure 9. The following table, Figure 10, lists all marked on-street public parking in Old Town, the cost, and the approximate number of spaces, and Figure 11 shows roads with parking meters and public parking lots in Old Town. The City also has a residential parking program, which is depicted in Figure 12. As this series of figures shows, almost all streets in Old Town have parking in the form of meters, residential spaces, and/or spaces available for everyone. There are roughly 3,000 marked on-street parking spaces, not including parking lots, and thousands of unmarked spaces. New Town, which is not shown, has thousands of parking spaces.

Metered on-street parking has an occupancy of 27%²⁷ during collection hours, which is slightly higher than the parking lot average reported in Figure 6. Meter occupancies are expected to be higher than lots because meters are cheaper than lots and frequently more convenient. Residential parking spaces are occupied 80% of the time, which also makes sense because the residential spaces are free. Few people will pay to park at a meter or a lot if free parking is available nearby.²⁸

Figure 7. Unmarked Parking is Flexible



Figure 8. Marked Parking is Rigid



²⁷ Key West Budget Department statistics compiled on June 16, 2005.

Figure 9. On-Street Parking in Old Town- 1,000's of Spaces

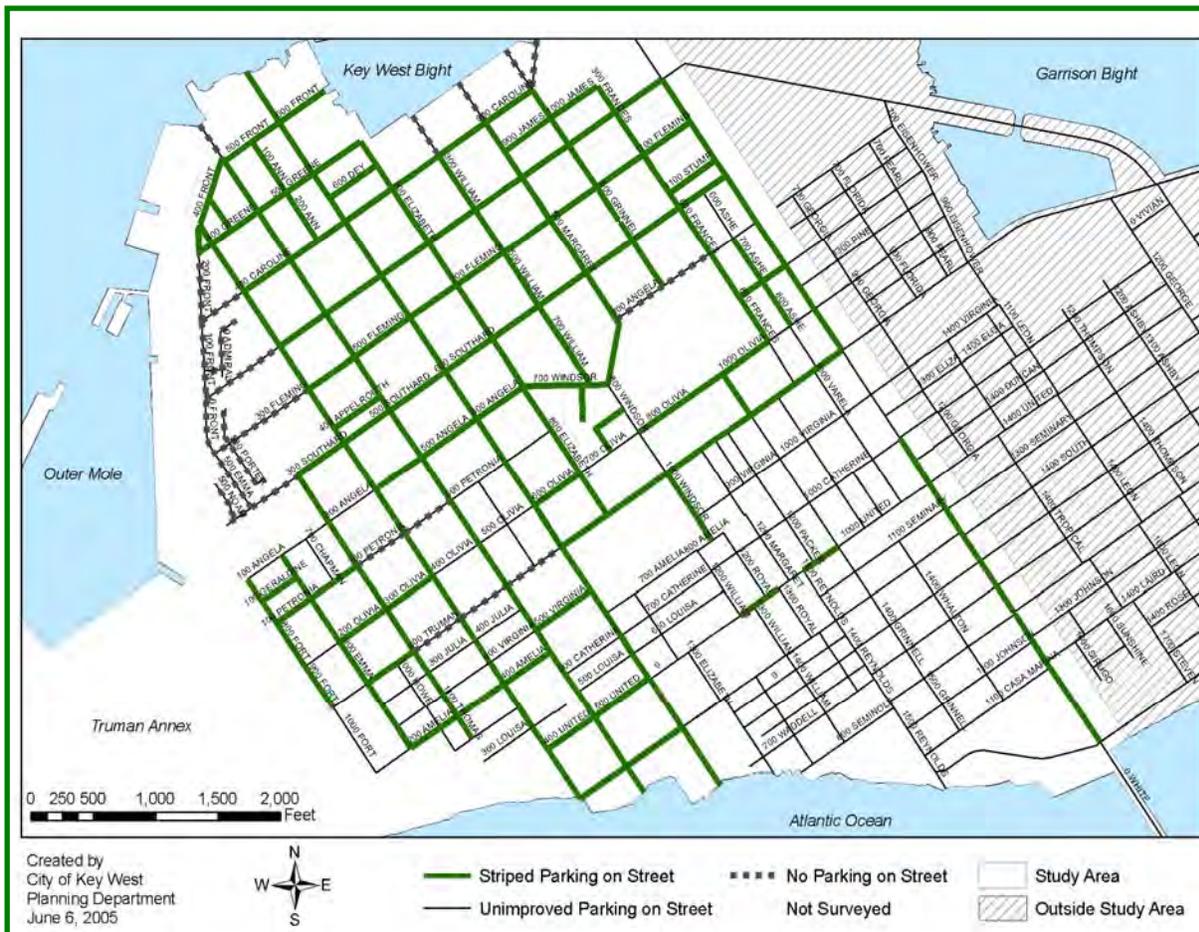


Figure 10. Marked Parking Spaces in Old Town

Type of Space	Cost	Approx. #
Residential only parking spaces	Free to County Residents	1,125
Open parking spaces	Free	900
Disabled	Free to Disabled	100
Other (15 min, 30 min., loading, church, etc.)	Free	100
Metered parking spaces	\$1.00 per hour	700
TOTAL		2,925

²⁸ Key West Planning Department. *Residential Parking Study Appendix*. March 21, 2005.

Figure 11. Parking Meters and Lots- Approximately 1,850 Spaces

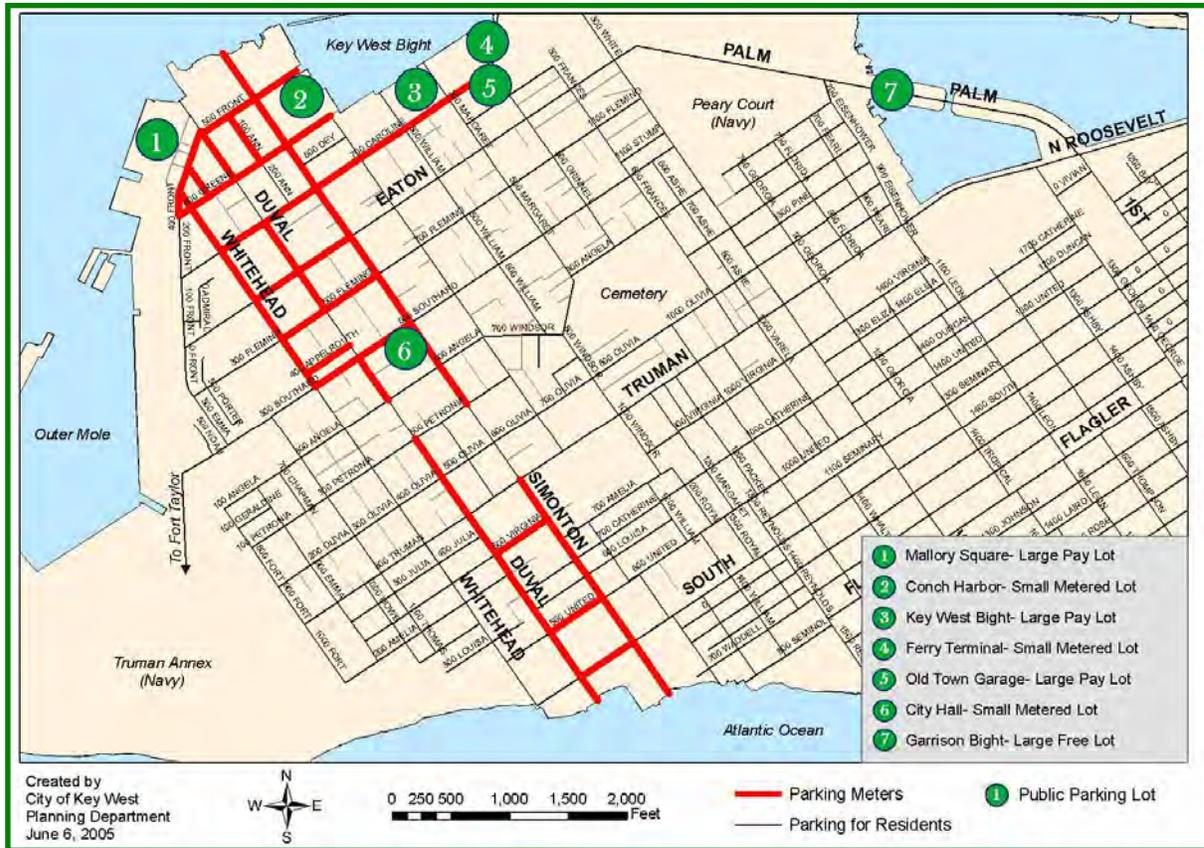
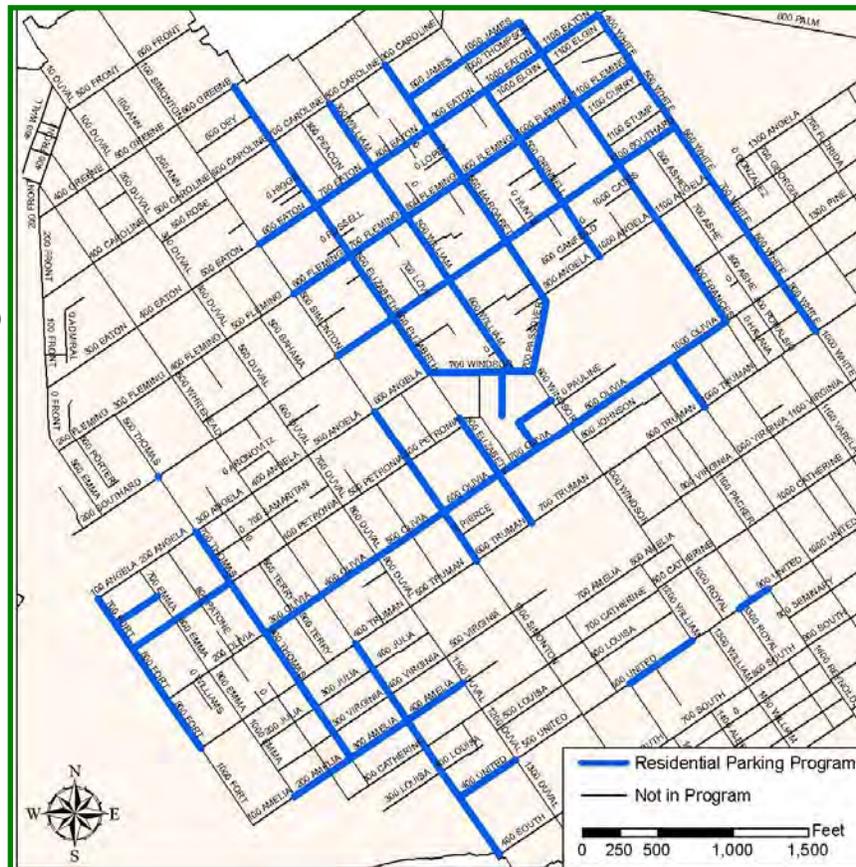


Figure 12. Residential Parking Program- Approximately 1,100 Spaces



Private Parking Lots

Dozens of private parking lots with capacity for hundreds of vehicles are located in the downtown commercial core, especially near Mallory Square. Figure 13 shows one of these parking lots. In many cases, private parking lots are a temporary money-earning use of the land until the owner decides to redevelop. One recent case, 531 Caroline Street, will replace 25,000 sq. ft. of parking with 5 single-family homes. When private parking lots are transformed into commercial or residential structures, it indicates that revenues from parking lots are lower than potential revenues for building rent. Thus, most parking lots are subsidizing the cost of parking because the owner is losing money by waiting to redevelop the lot into a more profitable use. If parking lots were profitable, the market would maintain enough parking spaces to meet the demand.

Figure 13. Private Parking Lot



Effect of Redevelopment

Properties in Key West are constantly being improved. Some improvements, such as those to the Santa Maria and Atlantic Shores hotels, involve tearing down the existing buildings and replacing them with new ones. When this happens, the new structures must be built in compliance with current City Codes, including parking. Many of the existing structures, especially in Old Town, do not have the required number of parking spaces. The Atlantic Shores project, if approved, will come into conformance with the City Code by increasing the number of parking spaces by 20, from 36 to 56- even as the number of transient units is decreased by 16 (from 71 to 55). Thus, every time a property with few parking spaces is redeveloped, the City gains parking spaces.

The parking requirement has another significant effect on redevelopment. Some intensely developed properties require a large amount of parking on relatively small sites, such as the Wyndham Reach. Parking requirements make redevelopment of these properties at the same intensity difficult in some cases and totally prohibitive in others.

Parking Supply Summary

The City owns and operates over 4,000 striped parking spaces and many more thousands of parking spaces that are unmarked. Private business and residences have thousands more private parking spaces, but funding was not available to survey these spaces.

4. PARKING DEMAND

The intent of this section is to estimate the current minimum demand for free, readily-available parking and to assess the effects of specific parking policies on demand. With the loss of City Hall Garage, and the pending development of the Truman Waterfront, it is imperative that the City estimates the citizens' desire for free parking and understands the sources of these demands before embarking on programs to satisfy it.

Population Density

Key West is densely populated with an average density of 5,000 people per square mile and over 10,000 people per square mile in portions of Old Town (see Figure 14²⁹). Many of the older buildings do not have on-site parking and sacrifices would have to be made in order to provide parking, including removing mature landscaping and demolishing parts of the buildings.

For comparison, Figure 15³⁰ shows the population density of Fort Lauderdale. Make note that the colors for the Fort Lauderdale and Key West maps do not correspond to the exact same densities.

Even though the numbers are not standardized, the maps show that Key West and Fort Lauderdale have comparable population densities. However, the two municipalities look and function quite differently. Key West has old structures built before land development codes required large amounts of on-site parking. By not having large amounts of on-site parking, the buildings in Key West have high densities but are only 2 or 3 stories tall. Fort Lauderdale has seen a recent growth spurt and many of its buildings are new and have ample on-site parking.

Figure 14. Key West Population Density

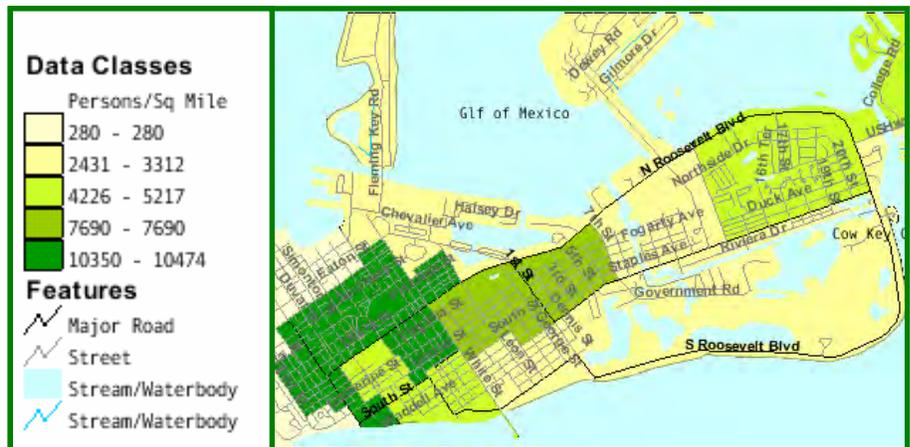
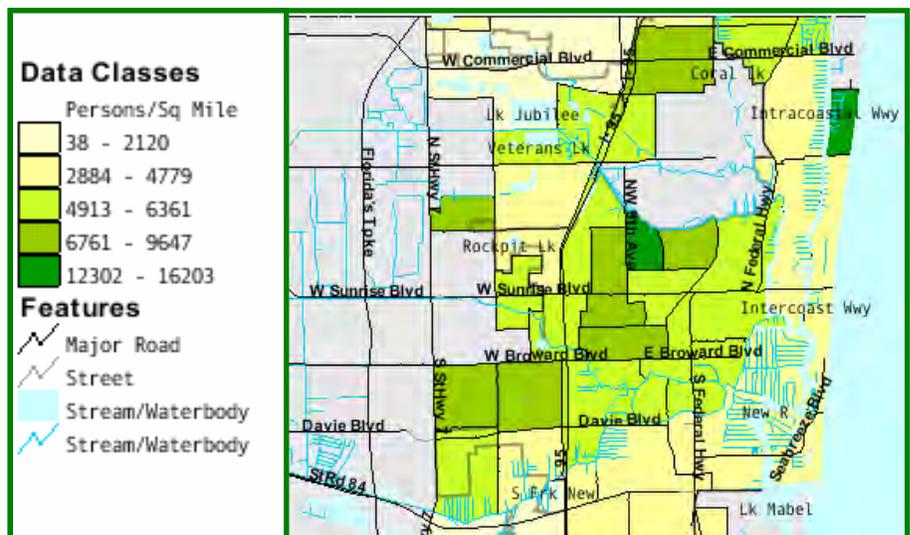


Figure 15. For Lauderdale Population Density



²⁹ Census 2000. www.census.gov. Accessed May 24, 2005.

³⁰ Census 2000. www.census.gov. Accessed June 1, 2005.

Figure 16. Fort Lauderdale



Figure 17. Key West

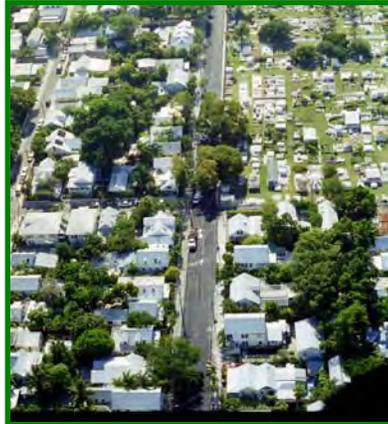


Figure 18. Ample Hotel Parking



Figures 16³¹ and 17, aerial photographs of Fort Lauderdale and Key West, show how the two cities achieve similar densities by using strikingly different approaches.

The easiest method to accommodate the on-site parking requirements and have high density is to build tall buildings and surround them with parking lots and garages. Providing ample on-site parking, as shown in Figure 18³², may have the unintended consequence of decreasing the quality of life and appeal of Key West. Parking scarcity may be one of the cornerstones that make Key West a desirable place to live and visit because it is quaint, compact, and bicycle and pedestrian friendly.

Facility Induced Demand

The City Hall parking garage provided free parking for all employees. The convenient, guaranteed free parking is no longer available to employees now that the garage has been demolished. Instead, employees must search for parking in the neighborhoods, buy permits for parking at meters, take a shuttle from a park and ride facility, ride the bus, walk, bicycle, or be dropped off (by taxi or friend).

Figure 19 shows the results from a survey of city hall employees asking how they arrived when the garage was open and how they arrive now that it is closed³³. Closing the parking garage has resulted in 10 of the surveyed employees changing their behavior, a 20% decrease in automobile use, and an 83% increase in the use of alternative transportation. In addition, there are at least 20 fewer single-occupancy automobile trips to and from work and at least 10 fewer parking spaces required at the workplace.

³¹ <http://www.advancedroofing.com/projects/?id=50>. Accessed June 7, 2005.

³² www.padresouth.com/amenities.htm. Accessed June 1, 2005.

³³ Employee parking survey by the Key West Planning Department on June 13, 2005.

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Some employees indicated that they tried carpooling soon after the garage was closed, but began driving their own vehicles after they realized that parking was not scarce. No employees use transit for the entire commute to work.

Figure 19. Employee Behavior Changes Due to Demolition of City Hall Garage

Transportation Mode	With Convenient Free Parking		Without Convenient Free Parking		Net Change	
	#	%	#	%	#	%
Drive	49	80%	39	64%	(10)	(20%)
Alternative Mode	12	20%	22	36%	+ 10	+ 83%
Park and Ride	0	0%	2	3%	+ 2	--
Dropped Off	0	0%	3	5%	+ 3	--
Walk	5	8%	8	13%	+ 3	+ 63%
Bicycle	4	7%	6	10%	+ 2	+ 50%
Moped	3	5%	3	5%	0	0%
Total Surveyed	61	100%	61	100%		

Employees performed a cost-benefit analysis to determine how sensitive they are to the potential price of parking- including searching for a space, possibly paying for the space, and walking a few blocks. Free parking immediately adjacent to the destination when the garage was open made the price of driving close to zero. The benefits of parking near the door were substantially higher than zero, so they drove. Employees that lived close by and previously drove changed their behavior after the garage was demolished because the cost of searching for a space and walking is higher for them than the potential benefit of driving. These employees drove to the garage because parking was cheap and convenient, not because they lived on Little Torch Key and there were no other options. This is induced demand- demand created by the parking garage that is not present now that the garage has closed.

Policy Induced Demand

Two hundred and fifty permits for free parking at meters have been issued to qualified people. Free parking encourages people to drive more than expensive parking. A utilization study of these parking permits has not been undertaken, but one can assume that a person who parks free at a meter will use that meter more frequently than a person who pays.

Along similar lines, 240 meter permits are purchased each month for about \$3/day. Because the parking is pre-paid, it encourages people to drive instead of using other forms of transportation. If the user paid the full cost of parking each time he/she desired to come downtown, the price (\$16/day) may convince the person to use other transportation modes. Even if a person parks as frequently with or without a permit, the City makes \$13 more per day.

The parking permits discussed in this section total 490, which represents 70% of our total metered on-street parking supply. These permits may be greatly reducing the revenue from metered parking. In addition, these permits encourage the holders to drive more, increasing traffic congestion and decreasing the parking supply.

Non-Automobile Demand

Residents and visitors to Key West have adapted to the lack of cheap, convenient automobile parking by using other transportation modes that do not require large amounts of land. The City encourages moped, motorcycle, and bicycle use by providing free parking closer to the destination than automobile parking. The prevalence of mopeds, motorcycles, and bicycles indicates that the private market is responding to the lack of cheap, convenient automobile parking by switching to transportation modes that have cheap, convenient parking.

Minimum User-Group Demand

This section estimates the bare minimum of free automobile parking requested in Key West using current statistics of vehicle ownership and proven travel choice. The intent of this section is to begin the discussion of how many free, convenient parking spaces are being demanded by citizens and tourists and to illustrate that it may be impossible or at least very difficult to maintain the character of the community and the quality of life and simultaneously provide the amount of land and funding required to provide the parking.

Minimum Residential Demand- 61 Acres

Key West has an average vehicle ownership rate of 1.3 vehicles per household and 11,000 households. If it is conservatively assumed that 90% of these vehicles are automobiles³⁴, then Key West has 1.17 automobiles per household which requires 12,870 parking spaces for residents to park at their homes. Many residences in Old Town, especially in Bahama Village and near the Cemetery, do not have personal driveways. These homeowners rely on streetside parking.

Assuming that all driveways and on-street parking meet the required dimensions of a parallel parking space, then each parking space must be at least 23 feet long and 9 feet wide (207 sq. ft.)³⁵. No extra room is required for aisles and backing up space.³⁶ Because each 23 ft. by 9 ft. parking space requires 207 sq. ft. of land, the total amount of land required to park 12,870 automobiles near residences is 2,664,090 sq. ft. (61 acres)³⁷. This calculation does not account for the high demand for boat and trailer parking, which require larger spaces.

Minimum Shopping/Dining/Recreation Resident Parking Demand- 89 acres

This section calculates parking demand for residents of Key West only. Tourist requirements are calculated later. A conservative assumption for shopping, dining, and recreation parking demand by residents is that there should be at least 1 parking space per automobile in addition to the residential space. With this scenario, everyone drives their vehicles at the same time to watch a movie, eat dinner, shop at the store, or play basketball at the park and they all find 1 space to park in. As shown in the previous section, Key West has 12,870 automobiles. Shopping, dining, and recreation parking spaces are located in parking lots and therefore require roughly 300 sq. ft. per space for aisles and backing-up space. 12,870 automobiles times 300 sq. ft. results in 3,861,000 sq. ft. (89 acres) required for resident shopping, dining, and recreation.

³⁴ The other 10% would primarily be mopeds. This figure is conservative because only 4% of vehicles are mopeds, according to Census 2000.

³⁵ *Code of Ordinances*. City of Key West. Volume II. Section 108-641.

³⁶ *Code of Ordinances*. City of Key West. Volume II. Section 108-578.

³⁷ 1 acre = 43,560 square feet

Minimum Key West Resident Worker Parking Demand- 59 acres

Figure 20³⁸ shows the travel to work profile of Key West. The figure shows the City has 14,611 workers and that over 8,000 of them drive to work by themselves. Assuming that each carpool has an occupancy of 3 people, then there will be 500 automobiles that need to be parked in addition to the 8,000 single-occupancy automobile drivers. 8,500 parking spaces times 300 sq. ft. per parking lot space equals 2,550,000 sq. ft. (59 acres) of parking required for workers.

Six thousand people have chosen alternative means of arriving at work, ranging from carpooling to walking. Key West is a leader in the use of alternative transportation in small cities. Imagine the congestion and parking shortage if these 6,000 people decide to become single-occupancy automobile drivers. This would add 12,000 trips per day to our roads (round trip to work) and require 6,000 more parking spaces (1,800,000 sq. ft., 41 acres) at the workplace. In addition, every person that rides a bicycle or carools decreases congestion on the roads, making the journey faster for single-occupancy automobile drivers.

Figure 20. Travel to Work Profile

Mode	Number of Workers	Percent of Workers
Single-Occupancy Automobile	8,148	56%
Carpool	1,594	11%
Public Transit	175	1%
Motorcycle/Moped	575	4%
Bicycle	1,856	13%
Walked	1,166	8%
Other	258	2%
Worked at Home	839	6%
Total Workers	14,611	100%

Minimum Lower Keys Resident Worker Demand- 12 acres

The City experiences a net gain of over 2,000 vehicles during the morning rush hour³⁹. Assuming that 200 vehicles originate at Sunset Marina and the Key West Golf Course, the remaining 1,800 vehicles can be attributed to residents of Monroe County that work in Key West. Each of these 1,800 vehicles requires a 300 sq. ft. parking space, for a total of 540,000 sq. ft. (12 acres).

Minimum Tourist Vehicle Demand- 50 acres

During the peak tourist season (January through April), Key West experiences an influx of visitors and seasonal residents. Roughly 80% of the overnight tourist groups arrive in Key West via automobile⁴⁰. Key West has close to 4,500 legal hotel units which have occupancy rates near 100% in the peak season⁴¹. If one assumes that there are 4,500 groups of tourist (one for each hotel unit) and 80% of them arrive via automobile, then these tourists bring 3,600 automobiles into the City during peak season.

³⁸ 2000 Census of Population and Housing- Summary File 3. Florida State Data Center. Primary Profile.

³⁹ Key West Planning Department. *Statistical Abstract; Hourly Traffic Profile*. June 2005.

⁴⁰ Key West Planning Department. *Visitor Transportation Survey*. September 20, 2004.

⁴¹ Key West Planning Department. *Hotel Condominium Conversion- Draft*. June 1, 2005.

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Visitors do not have the demand for parking at work like residents, but they demand more parking at destinations since they are more mobile than residents. To maintain consistency in this report, we will assume that the visitors only require 1 extra parking space per vehicle for shopping, recreation, and dining. Thus, if the 3,600 cars parked at the hotels were all used at the same time to go out to dinner or watch the sunset at Mallory Square, we would need 3,600 additional parking spaces- 7,200 total. Each of the 7,200 parking spaces requires 300 sq. ft., for a total of 2,160,000 sq. ft. (50 acres). These numbers do not account for people who arrive via airplane, cruise ship, or boat and rent a vehicle and also do not account for day trip tourists from other Keys communities.

Minimum User Group Demand Summary- 270 acres

The totals revealed in this report show a very conservative estimate of the absolute minimum number of parking spaces demanded by different user groups. The estimated number is very conservative because the analysis only requires 1 parking space at home, 1 parking space at work for everyone who drives and 1 parking space for every vehicle at all other locations along with 1 space per hotel unit and 1 space elsewhere for tourists. This analysis does not include demand for parking rental vehicles, boats, large vehicles, or business vehicles, and the statistics do not include tourists who drive down for the day.

Even with this conservative estimate, the minimum number of parking spaces demanded by Key West residents and tourists is extremely high⁴², especially when the value of land is factored in. The total acreage of Key West divided by the total taxable land value results in land costs of roughly \$700,000/acre⁴³. The land value does not include structures. Figure 21 compiles the minimum parking demand for tourists and residents and the property value of the land required to satisfy the minimum demand. This figure shows that the minimum cost of providing parking in Key West, using a very conservative model, is \$189.2 million and \$4,400 per space. The price per space is diluted because homesteaded properties and properties that are not taxed (City and County) are undervalued. This price does not include the cost of constructing the parking space. Since our parking spaces have such a high cost attached to them, it is no wonder that some residents are removing their driveway in favor of swimming pools and electing to park for 'free' on the street. Figure 22 shows the 270 acres- the land required for 42,740 parking spaces. The minimum parking area demanded so that residents and tourists can have free, readily available parking takes up the entire area between the Southernmost Point, Whitehead Street, Southard Street, White Street, and South Street.

Figure 21. Minimum User Group Parking Requirement

User Group	Minimum # of Spaces	Sq. Ft. of Parking	Acres of Parking	Property Value (millions)
Residents	12,870	2,664,090	61	\$42.8
Shoppers	12,870	3,861,000	89	\$62.0
Key West Workers	8,000	2,550,000	59	\$41.0
County Workers	1,800	540,000	12	\$8.7
Tourists	7,200	2,160,000	50	\$34.7
Total	42,740	11,775,090	270	\$189.2

⁴² But lower than most of the country because people use alternative transportation.

⁴³ Monroe County Property Appraiser. 2005.

5. STRESSES ON THE PARKING SUPPLY

There are many stresses on the parking supply that limit parking availability. This section describes in detail conditions and factors that inhibit an efficient parking system in Key West. The following section uses this analysis to suggest policies and improvements that will help alleviate the pressure.

Vehicle Storage and Derelict Vehicles

Key West is unique in that it is not necessary for most people to use an automobile to travel to work, buy a gallon of milk, or go out to eat. As previously shown, 6,000 workers use alternative transportation modes to arrive at work, representing 43% of the workforce. Most of these people still own vehicles, but do not feel they must drive them. As a result, many vehicles parked throughout town are actually being stored in their parking space until the owner needs to make a weekly trip to the grocery store or a monthly trip up the Keys. Figure 23 shows vehicles being stored at Old Town Garage.

Figure 23. Vehicle Storage at Old Town Garage



Tourists also store their vehicles. A report by the Planning Department showed that the majority of tourists who arrive in Key West via personal or rented automobiles hardly ever drive these vehicles to reach destinations around town⁴⁴.

Figure 24. Derelict Vehicle



A large part of the parking supply in Key West is being used to store vehicles. A vehicle storage facility is not the same as a parking lot. Parking lots are designed for quick and easy access whereas storage lots are able to pack cars in more tightly and park more vehicles in the same amount of space.

Derelict vehicles that no longer operate are also stored in public parking spaces (see Figure 24). Eight percent of vehicles parked in residential-only spaces are believed to be derelict or abandoned, which amounts to 90 residential parking spaces⁴⁵. Unmarked spaces may have more derelict vehicles than the residential spaces.

⁴⁴ Key West Planning Department. *Visitor Transportation Survey*. September 20, 2004.

⁴⁵ Key West Planning Department. *Residential Parking Study*. March 21, 2005.

Illegal Parking

Illegal parking is a problem across the city. Issues include vehicles parked too close to corners, parking on sidewalks, blocking bus stops, or obstructing the travel lanes (see Figures 25, 26, and 27). All of these violations threaten the safety of bicyclists, pedestrians, and other drivers by limiting sight distances, narrowing travel lanes, and causing drivers to slalom between obstacles. On a recent visual survey of the parking situation, legal parking spaces were frequently found within 1 block of the illegally parked vehicles. The driver chose to park illegally and thereby endanger others instead of walking a short distance.

Figure 25. Car Partially Blocking Travel Lane



Figure 26. Bus Stops in Street Due to Illegally Parked Motorcycles



Figure 27. Parking on Corner



Businesses Claiming Parking

There are numerous instances of private businesses claiming public parking spaces for storing equipment and for advertising (see Figures 28 and 29). These businesses have overtaken a public commodity for private profit and have denied the public use of land that it owns and maintains.

Figure 28. Private Storage on Right-of-Way



Figure 29. Advertising on Right-of-Way



Boats, Trailers, and Large Vehicles

Another pressure on the parking supply is the high boat ownership rate in Key West. In New Town, boats are usually parked in the driveway and cars are parked along the streets. In Old Town, however, driveways either do not exist or are not large enough for the boat, so the boat is parked on the public right-of-way. Boats are used much less than automobiles—they may stay in the same parking place for a month before being used for a few hours. The infrequent movement of a boat effectively removes the parking space from the market (see Figure 30).

There has also been a movement in the United States toward buying larger vehicles. The H2 Hummer, for example, is 17 ft. long and 8 ¼ ft. wide (with mirrors)⁴⁶. A Honda Accord sedan is 15 ¾ ft. long and 6 ft. wide with mirrors⁴⁷. The metered parking spaces outside the Planning Department office are only 6 ½ ft. wide. Many of the parking spaces in Key West are 6 ½ ft. wide or narrower. Thus, a Hummer will obstruct 1 ¾ feet of the travel lane if perfectly parked (see Figure 31). Most likely, the driver will compensate for the width of the vehicle by parking on part of the sidewalk and obstructing pedestrian traffic, or, in the case of Figure 33, obstructing the bicycle lane. Key West streets are narrow and cannot be widened to accommodate these extra-large vehicles.

Figure 30. Boat Parked on Right-of-Way



Figure 31. Vehicle Obstructing Travel Lane



Figure 33. Vehicle Obstructing Bicycle Lane



Figure 32. Parked Electric Car, for Comparison



⁴⁶ <http://www.hummer.com/>. Accessed June 7, 2005.

⁴⁷ http://automobiles.honda.com/models/specifications_full_specs.asp?ModelName=Accord+Sedan&Category=2. Accessed June 7, 2005.

Reserved Spaces

Residents without sufficient on-site parking have been using innovative techniques to reserve the residential spaces in front of their houses. These techniques include placing garbage cans or cones in the parking space and posting ‘No Parking’, ‘Handicap Only’, or any other sign that will discourage others from using the space (see Figure 34). Some citizens complain of mopeds being placed in the middle of a parking space to reserve it until the automobile returns.

The parking program, as it is currently written, allows all residents of Monroe County to park in residential spaces. When spaces are reserved, others feel uncomfortable using them and this places an even greater strain on the parking supply because spaces remain empty. The current residential parking program is guaranteed to fail if people continue to reserve parking.

Figure 34. Signs Claiming Residential Spaces



Edges Between Free and Pay Parking

The residential parking spaces with the highest demand are those adjacent to pay parking, such as near Key West Bight on James Street⁴⁸. This neighborhood has free residential parking spaces beside a 300-space parking garage that charges \$1.50/hour and the ferry terminal metered parking is 1 block away. Figure 35 shows the typical occupancy for the ferry terminal meters. No resident of Monroe County will park in the frequently under-utilized garage if free parking is available nearby. The free parking increases the demand for driving, which stresses the parking supply near residences, culminating in attempts by the residents to reserve the spaces.

Figure 35. Underused Pay Parking at Ferry Terminal



The photos in Figures 36 were taken within minutes of each other on Virginia Street. The unmarked spaces, which are free, are 100% occupied while the metered spaces are mostly empty.

Figure 36. Occupied Free Parking and Empty Pay Parking on Virginia Street



⁴⁸ Key West Planning Department. *Residential Parking Study*. March 21, 2005.

Stripes, Signs, and Other Information

One of the suggestions included in the *Residential Parking Study* is to repaint the residential spaces to make it easier for tourists to understand where not to park⁴⁹. The same suggestion applies to all parking spaces in Key West. A tour of the island discovered curbs painted yellow (a symbol for no-parking) that had meters or striped parking spaces. As shown in Figure 37, the yellow paint sends a mixed-signal to drivers and makes it difficult to know where parking is allowed.

As tourists drive on to Key West, signs help them navigate toward parking areas. However, some of these signs are obsolete and some are obscured by vegetation. The Mallory Square parking sign in Figure 38 directs Simonton Street Beach visitors to drive through the Pier House. The obscured sign next to it is located near Old Town Garage on Grinnell Street.

Finally, parking information has not been readily available in the past. Recently, the Planning Department has created a map showing all public parking lots and meters in Old Town and the Department of Transportation is working on a parking brochure. Parking information is critical to providing an efficient transportation system, especially with thousands of tourists who are unfamiliar with City.

Figure 37. Yellow Lines at Meter



Figure 38. Parking Signs



Driveways

Driveways for private vehicles remove on-street parking for the public. Single-family homes on narrow lots with individual driveways can effectively eliminate all parking along the street because safe lines-of-sight must be maintained by not allowing vehicles to park close to intersections and driveways. The Land Development Regulations require on-site parking, which typically results in the loss of at least 1 public parking space per new private driveway. The Planning Department and neighborhood residents helped preserve 9 public parking spaces at a project on Eisenhower Drive by convincing the applicant to build a central driveway system instead of 7 individual driveways.

Figure 39. Curbcut for Unused Driveway



Because property is very expensive and lots are small in Key West, some property owners build the required on-site parking and then use the driveway as a patio or build a pool and park their vehicles on the free street parking. Figure 39 shows an example of a driveway curbcut prohibiting parking but the driveway does not appear to be in use. When this happens, the City effectively loses 2 parking spaces- 1 space is lost when the curbcut prohibits parking and 1 space is lost when the owner of the driveway parks his/her vehicle on the street instead of using the driveway.

⁴⁹ Key West Planning Department. *Residential Parking Study*. March 21, 2005.

6. PARKING SYSTEM RECOMMENDATIONS

The current parking system is operated by 4 different branches of the City, which makes a coordinated parking policy difficult. Many of the issues facing our transportation system will be addressed more-effectively by developing a coordinated parking system. The following recommendations are for managing the parking system to reduce congestion, raise revenue, and increase the quality of life.

- 1. Consider Tax Impact-** the City should be careful to consider the impact of parking spaces on taxes. If parking lots were a lucrative business, the private market would supply enough spaces for everyone. However, parking is expensive and drivers are not willing to pay the actual cost of parking. The City of Key West provides parking to residents and tourists for free and for a small fee. The land each parking space consumes is worth \$4,400. The City is subsidizing the cost of parking. Demanding more parking spaces that are paid for and subsidized by the City will increase City costs and potentially lead to an increase in taxes for both drivers and non-drivers.
- 2. Consolidate Parking Management-** the City of Key West should manage all of its parking policies and revenues using a central management system that allows the City to decrease congestion and raise revenue simultaneously. A parking revenue fund should be created that allows the City to track and invest parking revenue with an overall goal of decreasing congestion.
- 3. Increase Meter Costs-** people are encouraged to shop for a parking meter space because they are cheaper than lots and potentially closer to the destination. Increasing the cost will convince some drivers to use lots and some to use alternative transportation.
- 4. Encourage Garage and Lot Use-** worker permits could be purchased for commuters, and/or residential passes could be used to park for free or reduced costs in lots. Tourists should also be encouraged to use lots to decrease congestion and increase neighborhood parking.
- 5. Limit Meter Times-** spaces at meters are difficult to find because there is no time limit, and, consequently, little turnover. This increases congestion because people drive around searching for spaces and encourage turnover.
- 6. Manage Metered Parking Permits-** parking permits for meters encourage people to drive because they can park in the space for no cost or at a reduced rate. These permits also do not create high turnover rates. The meter permit costs should be increased to better correspond to the value of the space.
- 7. Commit to a Residential Parking Program-** the City must decide whether to continue to allow people to reserve residential parking spaces using trash cans, cones, and signs. This issue will compound in the future unless it is either codified or eliminated. The City should also monitor the residential parking program and continue to reevaluate its commitment to providing free, convenient parking to every resident of the County who desires it.
- 8. Commit to Alternative Transportation-** every person that rides a bicycle, takes the bus, walks, or hires a taxi instead of driving frees up 1 parking space. Modes that do not require parking should be encouraged. The City should immediately improve the bicycle and pedestrian network and increase transit frequency. In addition, the City should develop policies that encourage affordable private transit and taxi service. These

initiatives may be funded through an increase in parking costs. The City should explore the possibility of increasing competition and decreasing rates for taxi companies by offering more licenses.

- 9. Move Hazardous On-Street Parking to Lots-** on-street parking on narrow roads is hazardous for drivers, bicyclists, and pedestrians. One example is on Greene Street near Duval. These hazardous spaces should be moved to parking lots. This policy will make the roads safer, more visually appealing, and less congested.
- 10. Establish an Optimal Number of Parking Spaces-** most residents feel that Key West has too much traffic. The congestion and resulting aggressive driving threatens bicyclists and pedestrians. The laid back lifestyle that Key West is famous for is being threatened by the big city problem of congestion. A town with no parking spaces will not have a congestion problem while a town with too many free parking spaces will be congested. Somewhere in the middle of these two extremes is the optimal number. The City should establish the number and develop policies to achieve it. Adding parking spaces will induce demand for parking and increase congestion while removing parking spaces will decrease demand for parking and decrease congestion.
- 11. Develop Parking Information Systems-** basic data should be readily available concerning parking, such as how many spaces are available in Old Town Garage or when is the peak period for metered parking. Once this data is collected, it can be analyzed to develop parking policies that utilize parking spaces more effectively. In addition, the information from the analysis can be disseminated to the public so that they can make informed decisions about when and where to park and how much it will cost. Parking websites, telephone lines, and brochures will help decrease congestion by guiding people to available parking spaces. For instance, imagine a computer screen in a hotel lobby that shows actual parking space availability in the City owned lots. The tourist could then decide to drive and park in an open lot or use another option because parking is too scarce.
- 12. Large Vehicles-** tickets should be issued for vehicles that are too large for the parking spaces because these vehicles create dangerous situations by blocking sidewalks, bicycle lanes, and travel lanes. City code currently requires that every vehicle be parked wholly within metered parking spaces⁵⁰.
- 13. Shared Parking-** the Land Development Regulations should be amended to allow businesses to share parking spaces. The current regulations require parking that may be empty or is underutilized for a large portion of the day. There is no reason why businesses with opposite hours cannot share parking spaces, such as a movie theater and an office. This is a waste of land and a waste of resources. Shared parking will increase the development potential of land, increases the appeal of development because parking lots will be smaller, and increases walking and bicycling because destinations are not separated by large parking lots.
- 14. Small Vehicles Only on Corners-** tall vehicles parked on corners create a dangerous situation for pedestrians, bicyclists, and other drivers because the vehicles must enter the road see around the tall vehicle. The City should maintain safe lines-of-sight by designating the parking spaces immediately adjacent to intersections and driveways for small vehicles. Such designations include bicycle parking, moped parking, and compact vehicles.

⁵⁰ *Code of Ordinances*. City of Key West. Volume I. Section 70-159(a).

7. USER GROUP RECOMMENDATIONS

An efficient parking system is essential for the transportation network of any city. The City of Key West should strive to meet the parking needs of user groups while simultaneously maintaining the quality of life, safety, and desirability of the City. The previous sections outlined the parking situation and presented recommendations for improving the overall parking situation. This section builds on this information by making recommendations to meet the needs of different user groups.

Neighborhood Residents

There are roughly 8,500 residents of Old Town and they demand parking near their homes⁵¹. Many homes in Old Town do not have driveways because of the small lot sizes. New and redeveloped homes are required to have driveways, but not all of them are used to store automobiles. When the person owns a boat, the boat typically is parked in the driveway and the automobile is stored on the public street. In addition, some people have redeveloped their driveways, opting to build a swimming pool or gazebo instead of parking a vehicle. The land is worth at least \$4,400, which is a high price to pay for a parking space- especially when the City provides free parking on the street.

The neighborhood-parking situation is a philosophical issue that is best handled in the political setting. The heart of the issue is whether residents without enough space to park their vehicles on their property should be guaranteed free parking on City property. This issue becomes controversial when the average price of a parking space is at least \$4,400 because the person with parking on his/her property pays this cost while the user of the City street does not.

The City has many strategies that can be pursued to alleviate the residential parking situation. Refer to the *Residential Parking Study*⁵² for an in-depth analysis of the residential parking situation. Specific recommendations for addressing the residential parking demand are presented below.

- 1. Enforce Existing Program-** disallow people to reserve parking spaces, issue tickets to violators, and remove derelict vehicles. This will free some parking for residents of Monroe County and help to alleviate some of the parking pressure.
- 2. Add Residential Spaces-** most blocks in the residential parking program contain a combination of residential-only spaces and spaces for everyone. Converting the unmarked spaces to residential will add more residential spaces to the parking supply.
- 3. Meter All Other Spaces-** spaces not in the residential parking program are currently available to anyone for free. These spaces should be metered because they encourage savvy drivers to search for them.
- 4. City Only-** there are 78,000 residents of Monroe County who own 54,000 vehicles⁵³. All of these residents are able to obtain a residential parking permit and park in residential spaces free of charge. The parking program can be changed to only allow the estimated 12,840 automobiles owned by residents of Key West to park in residential spaces. This would eliminate over 40,000 vehicles from eligibility and would have a substantial impact on the residential parking scarcity, parking lot occupancy, and parking meter and lot revenues.

⁵¹ www.census.org. Census Tracts 9723 through 9726. Accessed June 14, 2005.

⁵² Key West Planning Department. *Residential Parking Study and Appendix*. March 21, 2005.

⁵³ www.census.gov. Accessed June 14, 2005.

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5. **Neighbors Only-** retool the parking program so that only people who live in the area may park. This will eliminate free parking for Monroe County residents who shop, visit friends, and go to work in the immediate area surrounding the parking program. This program will solve the parking issue for residents, but will eliminate parking available for other people. This program is not recommended because it does not treat all residents equitably.
6. **Purchase Parking Permit-** annual parking permits could be sold to anyone in the City or possibly Monroe County for a fee. Because of the high land value, the fair market value will be akin to a college campus, where they charge hundreds of dollars for the space. Non-residents could be charged more because they do not pay City taxes. Charging for permits is equitable because it will eliminate the concern of private citizens claiming public space for free, will raise money for maintenance of the spaces, and will decrease pressure on the parking system.
7. **Assign Parking Spaces-** public on-street parking could be assigned to different homes as individual parking spaces. This amounts to privatizing public land and the homeowners should be required to rent the rights to the space.
8. **Eliminate Driveway Requirements-** driveway curbcuts remove on-street parking in favor of private parking. Sometimes the curbcuts remain even though the driveway is no longer used to store automobiles. The City should consider waiving the driveway requirement or charging and impact fee when the curbcut eliminates on-street parking and embark on a program to allow parking in front of driveways that are no longer in use.
9. **Visitor Passes-** residences in the Residential Parking Program area could be provided with visitor passes that can be distributed to their visitors. These passes could allow visitors to park at meters or in specially marked visitor spaces located on each residential block. Visitor passes will not work if the City restricts all parking to residents of the immediate area because allowing visitors to park while excluding other residents of Key West is unfair.

Commuters

A grocery store with 20 employees and a limited amount of close parking will require its employees to park on the fringes of the lot to leave the best spaces for customers. Thus, workers not only have the ability to park a short distance from their workplace (a 5 minute walk is reasonable), but they have the *duty* to park further away than their customers.

Workers typically store their vehicles in a parking space for 6 to 10 hour periods. Convenient on-street parking should be used for high demand parking with frequent turnover (around 1 car per 2 hours). Worker vehicles should not occupy the high demand on-street spaces, but should park in more remote areas where the vehicles can be stored so that the parking in the highest demand is available for short visits by customers.

The City of Key West's parking policy with the demolition of the City Hall garage provides a perfect example of this concept. City employees must park in Old Town Garage, Truman Waterfront, or in the adjacent neighborhoods. The 3 closest blocks of parking meters were reserved for City-related business⁵⁴. The City recognized that employees should not occupy these high-demand spaces because no spaces would be leftover for those doing business at City Hall.

⁵⁴ "City Hall Garage." Press release from Michael Haskins, PIO. City of Key West. May 25, 2005.

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To effectively utilize the parking supply for commuters, the City has the following options.

- 1. Manage Parking Meter Passes-** reduce or eliminate the parking meter pass programs that allow free or reduced prices at meters. These programs encourage driving and encourage workers to park at the high-demand parking meters for minimal costs.
- 2. Use Parking Lots-** the parking garages and lots owned and operated by the City have lower occupancy rates than most of the on-street parking. The City can alleviate part of the residential parking problem and help commuters by allowing them to park in certain lots for free or at a greatly reduced rate. Traffic congestion will also be alleviated when commuters travel directly to a lot instead of circling blocks searching for free parking.
- 3. Create Viable Alternatives-** the most-sustainable solution is to provide cheap and convenient transportation options to commuters so that they can choose to arrive at work via alternative transportation modes, such as by using transit, walking, bicycling, taking a taxi, or carpooling.

Mobility Impaired

People with mobility impairments (disabled and elderly) are very sensitive to the distance between their transportation mode end point and final destination. The City should provide for their needs by implementing the following suggestions.

- 1. Designate Disabled Parking-** the City has been adding disabled parking when concerned citizens make a reasonable request. The City should embark on a program to designate a portion of all striped parking for people with disabilities. These spaces should be located as close to the anticipated destinations as possible.
- 2. Create Viable Alternatives-** the ability to move around on your own (auto-mobility) is a cherished freedom. Automobiles provide this freedom, but some people are not able to drive. The City should encourage the expansion of transit and taxi service for those with mobility impairments. Transit and taxis designed for the elderly and disabled are able to provide door-to-door service. This service is more valuable than driving and parking for someone with severe mobility impairments. Some communities subsidize taxi services because they recognize the difficulty of driving and parking for those with mobility impairments⁵⁵. The City should consider subsidizing taxi trips and/or providing other cheap and convenient options for the mobility impaired.

Shoppers

The number of shoppers varies greatly by time of day and time of year. Shoppers are much more sensitive to the distance they park from the store than the worker because the shopper may be running a quick errand or may be leaving the store with an arm-full of groceries. This user group will pay premium prices for convenience because they demand the parking spaces in front of the shop doors. Options for ensuring available parking spaces for shoppers include the following.

- 1. Parking Meter Time Limits-** Key West parking meters have no real limit on the amount of time a vehicle may be parked as long as the meter is paid. Most other communities place a maximum time that a vehicle may be parked at a meter to encourage turnover. Without turnover at the meters, the meters are behaving more like parking lots designed

⁵⁵ Raleigh, NC's Accessible Raleigh Transportation (ART) program, for example.

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for vehicle storage. Placing time limits on meters will free up some spaces and create higher turnover for shoppers.

- 2. Increase Meter Prices-** the prices for meters encourage people to use meters as their first parking option because metered parking is cheaper than the parking lots. This situation should be reversed. Lots should be cheaper than meters because they are further away from the final destination. The most-convenient parking meters should be the most expensive parking spaces. This policy will ensure that there are available spaces near the stores for shoppers.
- 3. Create Viable Alternatives-** alternative transportation modes have a much lower parking requirement than personal automobiles. The parking shortage will be alleviated as viable alternatives are developed. Currently, shoppers have difficulty riding transit with the headways of roughly once per hour. Shoppers could use the bus if it arrived more frequently. Some shoppers currently use taxis to return home from the store. Finding methods of decreasing the price of hiring a taxi will encourage shoppers to use them.

Dining/Nightlife

Like shoppers, the number of people dining depends on time of day and time of year. People going out to eat or going out on Duval Street are not as sensitive to the proximity of the parking space as shoppers because they may visit multiple venues in the area, and walking down the street is often considered a pleasant activity during a night out on the town. This group is different because they are at leisure- enjoying the walk and the company instead of rushing between errands, rushing to go home, or concerned about being late to work. There is neighborhood concern about people using residential spaces while dining or enjoying the nightlife scene. Parking for this group can be improved in the following ways.

- 1. Encourage Parking Lot Use-** adjust the prices for parking lots to encourage their use during the evening. This group can use the same parking spaces vacated by commuters.
- 2. Create Viable Alternatives-** some communities have innovative transit systems specially designed for nightlife and entertainment. For instance, evening trolley rides can double as a transportation system and as a fun activity. Alternative transportation modes are especially important for people who are drinking. Every weekend people are arrested for driving drunk and many more are not caught. Providing affordable and convenient transportation alternatives greatly increases the safety of the community.

Sunset/Mallory Square

Perhaps the greatest strain on parking and the greatest cause of congestion in Key West is the thousands of people flocking to Mallory Square to watch the sunset. People shop, eat dinner, and arrive at work at different times, but most arrive at the sunset celebration within the same hour. This creates a peak demand for parking and places a great stress on the transportation system. During the winter, the Mallory Square traffic begins as most commuters are traveling home after work, which doubles the traffic congestion and creates tension between residents trying to park at home and people trying to park to watch the sunset.

- 1. Increase Information-** the Mallory Square parking lot is the smallest of the primary parking lots in the city, yet it has the highest occupancy. Frequently, traffic is backed up along Front Street because the lot is full and uninformed visitors do not know where to go next. The City has signs that point people to Mallory Square, but the signs do not indicate that the lot is 1/3 the size of Old Town Garage and frequently filled to capacity. The City

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should develop a real-time information system using the internet and a special phone number that tells people how many parking spaces are available at each parking lot and how much the lots cost. Disseminating this information will help decrease congestion because people will have a better idea of where parking spaces are available.

- 2. Do Not Build More Parking-** Key West has seen a steady increase in vehicle congestion and residents declare that congestion is a serious concern. Parking spaces, especially free ones, encourage people to drive more, which causes more congestion on the roads. A large parking lot at Mallory Square will drastically increase traffic and lead to more frequent traffic jams that frustrate tourists and residents, make the transit system slower and unreliable, and create dangerous situations for pedestrians and bicyclists.
- 3. Create Viable Alternatives-** the pedicabs are one example of the private market adjusting to the lack of parking around Mallory Square. Tourists staying at the Reach, for example, may not be able or willing to walk the mile to Mallory Square. Without the pedicab option, they would drive their personal cars and they would vie for the same parking spaces as people driving from Marathon. The pedicabs capture this trip and allow the vehicle to stay parked. A direct transit system and a safe bicycle and pedestrian system should be developed to provide alternative transportation options so that people do not feel as if they are required to drive to see the sunset. Another alternative is to provide a shuttle bus from major parking lots and/or large hotels so tourists do not feel that it is necessary to park at Mallory Square to see the sunset.

Tourists

Key West can have anywhere between 5,000 and 50,000 tourists at any given time and many of these travel to Old Town to enjoy the culture and activities. The majority of tourists do not demand parking immediately adjacent to their destination because, in most cases, they have no destination. Instead, they are trying to enjoy the character and ambience of Key West while strolling down the street shopping or looking for a place to dine. Their parking demand is for spaces that are safe, easy to find, and readily available. Tourists are also on vacation and more likely to use transportation modes that are easy and fun (such as Old Town Trolley, electric cars, and bicycles) because they do not have a specific time when they should be somewhere. These factors create an excellent opportunity for Key West to change tourist transportation habits from driving to using transit or other modes that do not require automobile parking.

- 1. Increase Information-** create a comprehensive parking website with real-time parking availability statistics, parking location, and prices. Create parking brochures that can be provided at all tourist facilities. Develop other programs that increase the information about parking.
- 2. Create Viable Alternatives-** one reason tourists visit Key West is because driving is not required, unlike the communities that they live in. The City should encourage tourists to use public or private transit, taxis, and other modes that do not require automobile parking spaces.

Guesthouses

Three thousand transient licenses are assigned to properties in Old Town. Neighborhood guesthouses typically do not have on-site parking that meets the demand of its guests. Many of these guesthouses are in beautiful, old buildings. The historic appearance and luscious landscaping of these homes, one of the foundations of Key West's desirability, would be lost if

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the buildings were surrounded by parking lots. Because the guesthouses are located downtown and in close proximity to most destinations, many of the guests walk or bicycle to their destinations. These guests do not require easy access to their vehicles, so their automobiles can be stored at another location. The following suggestions for improving guesthouse parking are offered.

- 1. Partnerships-** many hotels in New Town have excess parking capacity. The Holiday Inn Beachside is building a parking garage that will operate as a park and ride lot. Guesthouses could partner with hotels in New Town with excess parking capacity and allow their guests to store their vehicles in New Town parking lots. This partnership will increase the public appeal of the neighborhood guesthouses, decrease parking demand in Old Town, and help the receiving hotels by using their excess parking capacity.
- 2. Visitor Passes-** the Department of Transportation sells Old Town Garage parking passes to some guesthouses. This program should be expanded and guesthouses without access to parking spaces should be encouraged to purchase the passes.

8. CONCLUSIONS

Everyone wants free parking at their destination, including bicycles, mopeds, and automobiles. Key West is special because it is not necessary to drive everywhere you go, but more people are driving their automobiles every year. Parking spaces can be added to accommodate the desire for automobile parking, but adding more free parking will increase congestion in an already over-congested environment. Providing all of the desired free automobile parking is expensive and will decrease the quality of life. The City of Key West needs to manage the parking system in a holistic manner that allows it to provide a public service, raise revenue, manage congestion, and maintain the City's character and charm at the same time.

The only solution is to manage the transportation system as a whole instead of as individual parts. The parking responsibilities are spread across a large group and managed solely to generate revenue. Parking generates revenue, but it also generates traffic. The recommendations in this report provide for the needs of every user group while simultaneously decreasing congestion and increasing revenues. For the long run, alternative transportation modes must be improved and encouraged so that users have the ability to safely and quickly reach their destinations by walking, bicycling, riding transit, or using smaller vehicles.