





St. Lucie Planning

Transportation
Planning
Organization

Bike Rack Plan



Prepared by the St. Lucie Transportation Planning Organization

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TABLE OF CONTENTS

SEC.		PAGE
1.	INTRODUCTION	1
	Bike Travel and Bike Parking in the TPO area	1
	ŭ	
2.	PURPOSE, FRAMEWORK, AND METHODS	2
	Purpose of the Bike Rack Plan	2
	GIS Mapping Framework	2
	Bike Rack Database Selection Methods	2
3.	CONDITIONS AND RACK LOCATION RECOMMENDATIONS	3
	School Bus Stops	4
	Public Schools and School Board	5
	Park and Ride Lots	7
	Municipal Bus Stops	9
	Municipal Bus Terminals	9
	Municipal Parking Garages	8
	Commercial Centers	8
	Parks	8
4.	RACKS IN USE AND RACK RECOMMENDATIONS	9
	Type of Racks in Use	9
	Type of Rack Recommended	9
5.	MEDICAL CENTERS	11
	TRADITION	11
	LANNWOOD	11
	ST. LUCIE	11
6	GREENWAY AND TRAIL CORRIDORS	12
7.	RACK INNOVATION	12
	Racks That Attach to Existing Sign Post Infrastructure	12
8.	CORRIDOR RECOMMENDATIONS	12
9.	CONCLUSION/RECOMMENDATIONS	13
	Leadership in Energy & Environmental Design Guidelines	13

APPENDICES

- Appendix A Transit Points of Interest
- Appendix B Municipal Bus Stops (240 of 240)
- Appendix C School Bus Stops (147 of 5,090)
- Appendix D Source of Website Address for Recommendations
- Appendix E Additional Photos

1. INTRODUCTION

Bike Travel and Bike Parking in the TPO Area

The TPO area offers great potential for every-day bicycle travel. With our population density, traditional neighborhoods, five (5) major activity centers, downtown business district, sidewalk network, bicycle lane network, and public transportation routes, it is possible for most residents to travel to hospitals, shopping and work without ever driving.

The potential is supported by Florida's Energy & Climate Change Action Plan "... consider the impact on greenhouse gas emissions; increase transit ridership; increase the percentage of people that walk, bicycle, carpool, vanpool, or telecommute; ... develop and implement policies and strategies that include program funding and financial incentives that expand non-automobile infrastructure ..."

Bicycling is a sensible mode of transportation in the area because:

- 64% of trips, by any mode of transportation, are under five miles
- 68% of residents live within two miles of a bus stop
- 72% of residents live within one mile of a multi-modal facility such a sidewalk, bicycle lane, paved multi-use path, or bus stop that will seamlessly connect us to shopping centers, hospitals, and recreation areas.

Surveys indicate that one of the barriers to bicycle travel is the lack of secure, safe, bicycle parking spots.

Commercial center before bike rack requirements



Typical school bus stop



The Bike Rack Plan supplements the Bicycle Pedestrian Facilities Inventory, Transportation Disadvantaged Services Plan, the Go2040 long range plan, and comprehensive plans of local municipalities. It identifies general locations for bicycle racks in public right-of-way adjacent to bus stops in residential and commercial activity centers. Therefore, municipal bus stops, and school bus stops are a major component of the plan. Buses connect residential areas to schools and commercial centers. However, few bicycle racks are available for those interested in using bicycles to get to and from bus stops.

2. PURPOSE, FRAMEWORK, AND METHODS

Purpose of the "Bike Rack Plan"

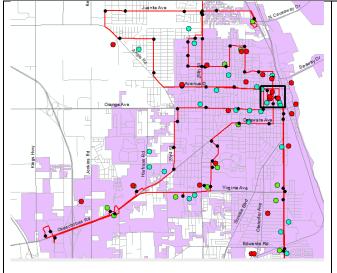
- Raise awareness of the need for secure bike racks
- · Raise awareness of the current lack of bike racks
- Recommend locations for bike racks in public right-of-way

In 2015, TPO staff finished the process of conducting a complete inventory of the area's Walk/Bike Network. Staff updated the St. Lucie Bicycle Facilities Map, updated the TPO's List of Priority Projects, and updated the TPO's Transportation Improvement Program.

Next, staff completed the process of identifying and mapping gaps in the existing Walk/Bike Network and developed the Bicycle/Pedestrian Needs map for the 2040 Long Range Transportation Plan (LRTP). Staff then began the process of identifying and mapping the TPO area's activity centers and Environmental Justice Areas identified in the LRTP. The addition of the "Bike Rack Plan" is part of a complete alternative transportation plan that will result in connecting biking and walking, public transit options, carpooling, and telecommuting.

GIS Mapping

Figure 1 below is an example of one of the base maps that were created. A box is drawn around a dense cluster of points mentioned above.



GIS Layers:

Streets and Major Roads (line file)

Bus Routes (line file)

Transit Points of Interest (point file)

Food Pantries (point file)

Public Bus Stops (point file)

Critical Facilities (point file)

Municipal Boundaries (polygon file)

Bike Rack Database

After the completion of the base maps, staff created a database combining information on bus stop locations and points of interest to be studied for bicycle rack needs. Appendices A, B, and C contain tables with addresses and recommendations for each location that was inventoried for the plan.

3. CONDITIONS AND RACK LOCATION RECOMMENDATIONS

During the 2014/2015 fiscal year, staff conducted inventory of parks, community centers, libraries, city offices, and public right-of-way. This inventory entailed visual observations of existing bicycle accommodations throughout the area. Staff observed that there are relatively few bike racks being used in relation to bicycle parking in general. Bicycle racks that are present at public locations are:

- Placed in locations that are inconvenient to access
- Of an outmoded design
- Not visible along routes traveled by bicyclists

More importantly, however, staff noted that the bus stops frequented by the transportation disadvantaged and school age children lack bicycle racks. Many parks, playgrounds, and schools lack appropriate bicycle racks.

Because of the lack of parking opportunities, staff noticed a prevalence of bicycles chained to signposts, lampposts, and fences. Cyclists often have to resort to utilizing these items to the secure their bikes for lack of a better alternative.

The following photos show a typical 20 student school bus stop on a local road in Port St. Lucie. There is no room on the road to safely walk or ride a bicycle. Children walk or ride in the path of oncoming vehicles or in the drainage ditch, at dawn, and dusk, to get to and from a school bus stop. Most of the 240 public bus stops are adjacent to a sidewalk.

- There are 240 public transit bus stops in the TPO area (ridership statics TBD).
- There are 5,090 school bus stops in the TPO area (ridership statics TBD).

Bikes tend to be locked to sign posts and railings when a bike rack is not present. The following photos show typical existing conditions with red text used to identify the locations recommended for bike racks (see appendix 2 for the full list).

Figure 1: School bus stop at Cameo Boulevard and Gulfpoint Drive

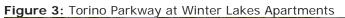




School Bus Stops

Figure 2: Savona Boulevard & Girard Avenue school bus stop shelter











Public Schools

Figure 5: St. Lucie West Centennial High School



Figure 6: Fort Pierce Central High School



Figure 7: Manatee Elementary School



Figure 8: Bayshore Elementary School



Figure 9: Forrest Grove Middle School



Figure 10: St. Lucie West Middle School



Figure 11: Southern Oaks Middle School 1 bicycle per 10 students crossing 25th St. / St. James Dr.



Figure 12: Former Orange Blossom Mall, City of Fort Pierce







Park and Ride Lots

Figure 13: The Park & Ride at 2300 Virginia Ave





Figure 14: Park & Ride Lot at Bayshore Boulevard and Chandler Terrace





Municipal Bus Stops

Figure 15: Route 6 at Ravenswood Pool





Municipal Bus Terminals



Figure 17: Port St. Lucie (Deacon Avenue) Terminal Figure 18: Fort Pierce Avenue D Bus Terminal



Municipal Parking Garages

Figure 19: Port St. Lucie Civic Center





Commercial Centers

Figure 21: Coco Vista Center





Municipal Parks

Figure 22: Sportsmans Park Little League Game



Figure 23: Kiwanas Park



Figure 24: Girl Scout Friendship Park



Figure 25: Mary Ann Cernuto Park



Figure 26: Swan Park



Figure 27: Fred Cook Park)



4. RACKS IN USE AND RECOMMENDATIONS

Type of Racks Currently in Use

The following racks are considered outdated by bicycle organizations and major cities. They don't support the bicycle at two points on the frame. Since most modern bikes have quick-release wheels, these are not a secure racks. Wheels can be bent using these racks.



Typical "Ribbon Rack" at area supermarket locations. Ribbon racks are marginally acceptable, and areas already served by ribbon racks are a lower priority for remediation. In most cases, a single the rack installed at a school bus stop is simply too small for the number of students riding to the school bus stop.



Typical "Dish Rack" at area schools and parks. This style of rack is designed such that the bike's front wheel is chained to the rack. Cyclists often end up mounting the bike on the rack with the front wheel over the top the rack, in order to secure the bike's frame. Since most modern bikes have quick-release wheels, this is not a secure rack.



Typical "Fence Rack" This style of rack is designed such that the bike's front wheel is chained to the rack. Cyclists often end up mounting the bike on the rack with the front wheel over the top the rack, in order to secure the bike's frame. Since most modern bikes have quick-release wheels, this is not a secure rack.

Type of Rack Recommended

The City of Los Angeles Department of Transportation (LADOT) offers bicycle parking at its Metro-link Stations and Park and Ride lots. Inverted-U bicycle racks are available at many stations. Inverted-U racks support the bicycle at two points on the frame and accept a variety of bicycle locks including u-locks and all cables and chains.

The LADOT Sidewalk Bike Parking Program uses an inverted-U bicycle rack. It is 36" high constructed of 2 3/8" galvanized pipe and holds two bikes. Users are able to lock both the wheels and frame of the bicycle to the rack. The rack has no sharp edges or moving parts and is virtually maintenance free.

Figure 28: Inverted-U bicycle racks









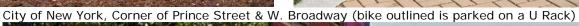




Figure 29: Inverted-U bicycle racks











5. MEDICAL CENTERS

Figure 30: Tradition Medical Center (U racks visible from sidewalk, street, and parking lot)





Figure 31: St. Lucie Medical Center Figure 32: Lannwood Regional Medical Center





6. GREENWAYAND TRAIL CORRIDORS

Figure 32: Figure Green River Pkwy. (Treasure Coast Loop Trail)

Figure 33: North Hutchinson Island A1A East Coast Greenway





7. RACK INNOVATION

Racks That Attach to Existing Sign Post Infrastructure

The bike rack below is designed for existing sign posts. It supports the bicycle at two points on the frame and accepts a variety of bicycle locks. The colored "Cycleparks" can also double as markers for bike routes, leading cyclists down a particular path.







8. CORRIDOR RECOMMENDATIONS

With the establishment of transit stops along the following routes, they are expected to serve as key multimodal corridors for the TPO area. Therefore, to ensure that transit service encourages additional ridership, a coordinated effort among the transit provider, school board, municipalities and TPO is paramount to the plan's success.

<u>25th Street</u>: This corridor is parallel to US 1 and expected to have a higher concentration of transit by 2035. This corridor should serve as a key multimodal corridor for the County with continuous bicycle lanes and sidewalks and interconnections to surrounding residential areas for safe and convenient access to transit stops for area residents. Bus shelters and bicycle racks should be prioritized along this corridor to improve transit user conditions and increase the share of "choice" riders.

<u>US 1</u>: Support enhanced transit along US 1 and the US 1 retrofit project. Similarly to 25th Street, bus shelters and bicycle racks should be prioritized along this corridor as well as interconnecting the corridor to surrounding residential areas via bicycle and pedestrian networks. These networks will also increase the likelihood of an area resident walking to the US 1 corridor for shopping trips.

<u>Torino Parkway/California Boulevard</u>: These corridors are identified as future transit corridors. Bus shelters, <u>bicycle racks</u> and other improvements should be planned in coordination with the transit agency to increase the share of "choice" riders. These roads travel through dense residential areas and will provide convenient transit access to a substantial number of households.

<u>Lakewood Park Transit Route:</u> These corridors are identified as future transit corridors. Bus shelters, <u>bicycle racks</u> and other improvements should be planned in coordination with the transit agency to increase the share of "choice" riders. These roads travel through dense residential areas and will provide convenient transit access to a substantial number of households.

<u>St. Lucie School Board Major Bus Routes</u>: Many of these corridors through dense residential areas are identified as existing or future sidewalks corridors. Bus shelters, and bicycle racks should be planned in coordination with the school board.

9. RECOMMENDATIONS

The following recommendations are based on Leadership in Energy & Environmental Design (LEED) Guidelines. LEED, is a green building certification program that recognizes best-in-class building strategies and practices. The intent of LEED Guidelines is to reduce automobile use for a continual decrease in pollution levels.

For Commercial/Institutional Buildings, bike racks should be provided for 5% or more of all building occupants, measured during peak use, and secure bike racks should be within 200 yards of an entrance to the building.

For Residential Buildings, there should be covered facilities for bike racks for 15% of the occupants, and secure bike racks within 200 yards of an entrance to the building.

According to National Bicycle Associations, when municipalities have bike racks it is best to publicize them so that pedestrians and bicyclists can find them easily. Use signs to direct cyclists to the parking. The location of bicycle racks can be publicized in marketing, advertising and informational pamphlets like the St. Lucie Bicycle Facilities Map.

Staff recommends the "Bike Rack Plan" to be included as part of a complete alternative transportation plan that will identify the merits of bike racks connecting biking and walking, public transit options, school bus stops, and carpooling.

Appendix A "Points of Interest" shows a Y in the Rack Column if a rack is existing rack at the building and a Y in the Add Rack at the column if a rack is recommended.

Appendix B "Municipal Bus Stops" shows a Y in the Rack Column if a rack is existing rack at a building near the bus stop and a Y in the Add Rack column if a rack is recommended.

Appendix C "School Bus Stops" shows a Y in the Rack Column if a rack is existing rack at a building near the bus stop and a Y in the Add Rack column if a rack is recommended.

Appendix A

Transit Points of Interest

Name/Address	Rack	Add Rack	Location
Taylor Creek Commons	Υ		1851 N US Highway 1
Zora Hurston Library	Υ		3008 Avenue D
Lincoln Park Academy	Υ		1806 Avenue I
Ilous Ellis Park	Υ		1301 Avenue M
Florida Community Health Center		Υ	1505 Delaware Ave
Lawnwood Regional Medical Center	у		1700 S 23rd St
County Building	Υ		2300 Virginia Ave
Indian River State College	Υ		3209 Virginia Ave
Walmart	Υ		5100 Okeechobee Rd
Golden Corral			5091 Okeechobee Rd
Orange Blossom Business Center		Υ	4200 Okeechobee Rd
Eastport Plaza	Υ		9100 S US Highway 1
County Annex Building		Υ	1664 SE Walton Rd
Midport 1 & 2		Υ	Village Green Dr & Royal Green Cir
St Lucie Medical Center		Υ	1800 SE Tiffany Ave
CVS Pharmacy	Y		9801 S US Highway 1
Town Center	Υ		10101 S US Highway 1
Adams Place			1605 SE Port St Lucie Blvd
Boulevard Shoppes	Υ		1720 SE Port St Lucie Blvd
Quadros Professional Center		Υ	1591 SE Port St Lucie Blvd
Rivergate Plaza	Υ		1125 SE Port St Lucie Blvd
City Fountain Center		Υ	1160 SE Port St Lucie Blvd
Port St Lucie Community Center	Y		2195 SE Airoso Blvd
Camri Center		Υ	1920 SE Port St Lucie Blvd
Walmart	Υ		10855 S US Highway 1
Sam's Club		Υ	10900 S US Highway 1
Treasure Coast Square Mall	Υ		3174 NW Federal Hwy, Jensen Beach
La Buena Vita			8601 S US Highway 1
Spanish Lakes Riverfront			S US Highway 1 & Los Lagos Ln
Best Western			7900 S US Highway 1
Prima Vista Crossing		Υ	7576 S US Highway 1
St Lucie Square		Υ	6666 S US Highway 1
Kitterman Plaza		Υ	6641 S US Highway 1
Twin Vee			3101 S US Highway 1
Sabal Palm Plaza		Υ	2551 S US Highway 1
Kmart Plaza	Υ		2111 S US Highway 1

Name/Address	Rack	Add Rack	Location
Benton Building		Υ	337 N US Highway 1
Chase Bank			130 S Entrada Ave
Sportsman Park	Υ		201 NW Prima Vista Blvd.
Port St Lucie Library	Υ		180 SW Prima Vista Blvd
Dorchester Strip Mall		Υ	445 NW Prima Vista Blvd
Cornerstone Pediatrics			380 SW Prima Vista Blvd
Martin Memorial Health Systems		Υ	1095 NW St Lucie West Blvd
Cashmere Corners		Υ	880 SW St Lucie West Blvd
CVS Pharmacy			1300 SW St Lucie West Blvd
Shoppes at St Lucie West	Υ		1317 NW St Lucie West Blvd
Publix	Υ		1333 NW St Lucie West Blvd
LA Fitness	Υ		1367 NW St Lucie West Blvd
St Lucie County Annex	Υ		250 NW Country Club Dr
Walmart	Υ		1675 NW St Lucie West Blvd
Lake Whitney		Υ	501 NW Lake Whitney Pl
150 Chamber Ct			150 Chamber Ct
Super Play	Υ		1600 NW Courtyard Cir
Chili's			2050 NW Courtyard Cir
Hilton Garden Inn		Υ	8540 Commerce Centre Dr
IRSC			500 NW California Blvd
Tradition Field	Υ		525 NW Peacock Blvd
Port St Lucie City Hall	Υ		121 SW Port St Lucie Blvd
Wendy's			270 SW Port St Lucie Blvd
Victoria Square	Υ		247 SW Port St Lucie Blvd
Bravo Supermarket			2820 SW Port St Lucie Blvd
CVS Pharmacy			2873 SW Port St Lucie Blvd
Walmart	Υ		1850 SW Gatlin Blvd
Landing at Tradition	Υ		10720 SW Village Parkway
Post Office		Υ	5000 W Midway Rd
Sheriff's Dept.		Υ	4700 W Midway Rd
New Horizons		Υ	4500 W Midway Rd
Health Dept.		Υ	5150 NW Milner Dr
Social Security Administration		Υ	6810 S US Hwy 1
Post Office		Υ	1805 Orange Ave
Goodwill		Υ	
FAU's Harbor Branch Oceanographic Institute	Υ		
Lakewood Park Regional Park Pool	Υ		5990 Emerson Ave
Fairwinds Golf/Club House/Pro	Υ		4400 Fairwinds Dr
Lakewood Park Branch Library	Υ		7605 Santa Barbara Dr

Appendix B

Municipal Bus Stops (sample below is 240 of 240 municipal bus stops)

The letter Y in the Rack column means a rack is at a building near the bus stop

A letter Y in the Add column means a rack at the stop should be a priority based on location type

Name/Address	Rack	Add	Location
		Rack	
County Annex Bldg. at Civic Center Pl & Walton Road	Υ	Υ	Bus Stop Transfer
Port St Lucie Intermodal Facility at Airoso Blvd & Deacon Ave	Υ		Bus Stop Transfer
Treasure Coast Medical Bldg. at Hillmoor Dr & Tiffany Ave			Bus Stop
Staples at US Highway 1 & Town Center Plaza			Bus Stop
S 23rd St & Virginia Ave		Υ	Bus Stop
Lawnwood Med Center at S 23rd St & Frist Blvd	Υ		Bus Stop
Birch St & Ormand Ave			Bus Stop
Kaufman Ave & Havana at Okeechobee Rd		Υ	Bus Stop
FL Community Health Ctr at Delaware Ave & 15th St			Bus Stop
Delaware Ave & Beach Ct			Bus Stop
N 7th St & Avenue B			Bus Stop
N 9th St & Orange Ave			Bus Stop
Orange Ave & N 15th St			Bus Stop
Orange Ave & N 24th St			Bus Stop
S 32nd St & Orange Ave			Bus Stop
S 32nd St & Delaware Ave		Υ	Time Point Stop
S 33rd St & Meadow Ln			Bus Stop
S 33rd St & Okeechobee Rd			Bus Stop
Orange Blossom Business Park at Okeechobee Rd & Hartman Rd		Υ	Bus Stop
Walmart at Okeechobee Rd & McNeil Rd	Υ	Υ	Time Point Stop
Wheeler Ter & Okeechobee Rd			Bus Stop
Crossroads Pkwy & Peters Rd		Υ	Time Point Stop
Crossroads Pkwy & Darter Ct			Bus Stop
Golden Corral at Okeechobee Rd & McNeil Rd			Bus Stop
IRSC at S 30th St & Virginia Ave	Υ	Υ	Time Point Stop
Avenue D & N 16th St		Υ	Bus Stop
Avenue D & N 24th St		Υ	Bus Stop
Zora Hurston Library at Avenue D & N 31st St	Υ		Bus Stop
N 39th St & Avenue G		Υ	Time Point Stop
Avenue Q & N 49th St			Bus Stop
N 53rd St & Juanita Ave			Bus Stop
Juanita Ave & N 47th St			Bus Stop
Juanita Ave & Essex Dr		Υ	Time Point Stop
Juanita Ave & E 21st Ct			Bus Stop
N 27th St & Avenue Q			Bus Stop
N 29th St & Avenue P			Bus Stop

Name/Address	Rack	Add Rack	Location
N 29th St & Avenue L			Bus Stop
Avenue I & N 24th St			Bus Stop
Avenue I & N 18th St			Bus Stop
N 17th St & Avenue O		Υ	Bus Stop
Avenue O & N 13th St		Υ	Bus Stop
N 13th St & Avenue H		Υ	Bus Stop
Avenue H & N 10th St		Υ	Time Point Stop
Housing Authority at N 7th St & Avenue G		Υ	Bus Stop
Benton Bldg. at AE Backus Ave & N 7th St		Υ	Bus Stop
Cash America at US Highway 1 & Citrus Ave		Υ	Bus Stop
K-Mart at US Highway 1 & Virginia Ave	Υ	Υ	Time Point Stop
Bank of America at Sabal Palm Plaza at US Highway 1 & Virginia ave		Υ	Bus Stop
Twin Vee at US Highway 1 & Edwards Rd			Bus Stop
US Highway 1 & Farmers Market Rd			Bus Stop
Treasure Coast Lexus at US Highway 1 & Midway Rd			Bus Stop
US Highway 1 & Rio Mar Dr		Υ	Bus Stop Transfer
Chase Bank at Entrada Ave & Eaton Dr		Υ	Bus Stop Transfer
Spanish Lakes Riverfront at US Highway 1 & Los Lagos Ln			Bus Stop
US Highway 1 & La Buena Vita			Bus Stop
CVS Pharmacy/Horizon Bay at US Highway 1 & Lyngate Dr			Bus Stop
Treasure Coast Square Mall at US Highway 1	Υ	Υ	Time Point Stop
Hess at US Highway 1 & Savanna Club Blvd			Bus Stop
Best Western at US Highway 1 & Mediterranean Blvd			Bus Stop
US Highway 1 & Dickson Dr			Bus Stop
US Highway 1 & Edwards Rd			Bus Stop
CVS Pharmacy at US Highway 1 & Virginia Ave	Υ	Υ	Time Point Stop
US Highway 1 & Atlantic Ave			Bus Stop
ISCC/FAU Colleges at California Blvd & Granville St	Υ	Υ	Bus Stop
Tradition Field at University Blvd & Stadium Dr	Υ	Υ	Time Point Stop
Midport Place 1 at Village Green Dr & Royal Green Cir		Υ	Bus Stop
N 29th St & Avenue I		Υ	Time Point Stop
Boulevard Shoppes at Port St Lucie Blvd & Lannewood St		Υ	Time Point Stop
QVC at Peacock Blvd & Business Center Dr			Bus Stop
Chili's at Courtyard Cir & St Lucie West Blvd		Υ	Time Point Stop
Superplay at Courtyard Cir & Peacock Blvd	Υ		Bus Stop
Walmart at Lake Charles Blvd & St Lucie West Blvd	Υ	Υ	Time Point Stop
Hilton Garden Inn at Champions Way & Reserve Blvd			Bus Stop
150 Chamber Ct Bldg. at Chamber Ct & California Blvd			Bus Stop
CVS Pharmacy at Bethany Dr & St Lucie West Blvd		Υ	Time Point Stop
Cashmere Corners at Cashmere Blvd & St Lucie West Blvd			Bus Stop

Name/Address	Rack	Add Rack	Location
Cornerstone Pediatrics at Prima Vista Blvd & Dorchester St			Bus Stop
Dorchester Strip Mall at Prima Vista Blvd & Dorchester St		Υ	Bus Stop
PSL Library at Ravenswood Ln & Prima Vista Blvd	Υ	Υ	Time Point Stop
Sportsman Park at Prima Vista Blvd & Ravenswood Ln	Y	Υ	Time Point Stop
Prima Vista Blvd & Floresta Dr			Bus Stop
Prima Vista Blvd & Naranja Ave			Bus Stop
Prima Vista Blvd & Rio Mar Ct			Bus Stop
Gatlin Blvd & Fondura Blvd			Bus Stop
Gatlin Blvd & Savage Blvd			Bus Stop
LA Fitness at Village Pkwy & Traditions Landings	Υ		Time Point Stop
Walmart at Gatlin Blvd & Brigantine Pl	Υ		Time Point Stop
Gatlin Blvd & Import Dr		Υ	Time Point Stop
Gatlin Blvd & Dakota St			Bus Stop
Gatlin Blvd & Savona Blvd		Υ	Bus Stop
CVS Pharmacy at Port St Lucie Blvd & Tulip Blvd		Υ	Bus Stop
Bravo Supermarket at Port St Lucie Blvd & Aviation Ave			Bus Stop
Port St Lucie Blvd & Cameo Blvd		Υ	Time Point Stop
Port St Lucie Blvd & Cameo Blvd			Bus Stop
Port St Lucie City Hall at Port St Lucie Blvd & Airoso Blvd	Υ		Bus Stop
US Highway 1 & Midway Rd	Υ	Υ	Time Point Stop
US Highway 1 & Rio Mar Dr			Bus Stop
Fort Pierce Intermodal at N 8th St & Avenue D	Υ		Bus Stop Transfer
Prima Vista Crossing at Prima Vista Blvd & US Highway 1		Υ	Bus Stop Transfer
Prima Vista Blvd & Peach St			Bus Stop
Prima Vista Blvd & Peach St			Bus Stop
Martin Medical Center at St Lucie West Blvd			Bus Stop
SLW Shoppes - Publix at St Lucie West Blvd & Bethany Dr	Υ	Υ	Time Point Stop
SLW Shoppes - LA Fitness at St Lucie West Blvd & Bethany Dr	Υ		Bus Stop
St Lucie County Annex at Country Club Dr & Amherst Dr			Bus Stop
Park & Ride at 25th St & Virginia Ave		Υ	PR
Port St Lucie Blvd & Floresta Dr			Bus Stop
Port St Lucie Blvd & Floresta Dr			Bus Stop
Rivergate Plaza at Port St Lucie Blvd & Seafury Ln	Υ	Υ	Time Point Stop
Eastport Plaza at US Highway 1 & Walton Rd		Υ	Time Point Stop
Midport Place 1 at Village Green Dr & Royal Green Cir			Bus Stop
Staples at US Highway 1 & Town Center Plaza			Bus Stop Transfer
Port St Lucie Intermodal Facility at Airoso Blvd & Deacon Ave			Bus Stop Transfer
Port St Lucie Blvd & Sansom Ln			Bus Stop
Port St Lucie Blvd & Sansom Ln		Υ	Time Point Stop
Floresta Dr & Verada Ave			Bus Stop

Name/Address	Rack	Add Rack	Location
Floresta Dr & Cavern Ave			Bus Stop
West Virginia Ave & Floresta		Υ	Bus Stop
Crosstown Pkwy & Manth Ln		Y	Bus Stop
Crosstown Pkwy & Sandia Dr		Y	Time Point Stop
Crosstown Pkwy & Airoso Blvd		Y	Bus Stop
Airoso Blvd & Crosstown Pkwy		Y	Bus Stop
Airoso Blvd & Thornhill Dr		-	Bus Stop
Airoso Blvd & Thornhill Dr		Υ	Time Point Stop
Port St Lucie Intermodal Facility at Airoso Blvd & Deacon Ave	Y		Bus Stop Transfer
US Highway 1 & Tumblin Kling Rd	•		Bus Stop
US Highway 1 & Tumblin Kling Rd			Bus Stop
Kitterman Plaza at US Highway 1 & Kitterman Rd		Υ	Bus Stop
St Lucie Square Plaza at US Highway 1 & Kitterman Rd			Bus Stop
Prima Vista Crossing at Prima Vista Blvd & US Highway 1	Υ	Υ	Bus Stop Transfer
County Annex Bldg. at Civic Center Pl & Walton Road	Y	Y	Time Point Stop
	'	Y	•
Sam's Club at Lennard Rd & US Highway 1		Y	Bus Stop
Life Care Center at Jennings Road & US Highway 1 N 25th St & Juanita Ave		Y	Time Point Stop
		ı	Time Point Stop
Avenue Q & N 39th St		Υ	Bus Stop
Taylor Creek Commons at US Highway 1 & N Causeway Dr		Y	Bus Stop
Kaufman Ave & S 21st St		Y	Time Point Stop
City Fountain Center at Port St Lucie Blvd & Westmoreland Blvd		Y	Bus Stop
Port St Lucie Blvd & Bordeaux Ct		V	Bus Stop
Quadros Professional Center at Port St Lucie Blvd & Sidonia St		Y	Bus Stop
Port St Lucie Blvd & Adams Place		V	Bus Stop
Camri Center at Port St Lucie Blvd & Delano Rd		Υ	Bus Stop
Walmart at US Highway 1 & Lennard Rd	Y	.,	Bus Stop
Lennard Rd & Mariposa Ave		Y	Bus Stop
Lennard Rd & Melaleuca Blvd		Y	Bus Stop
CVS Pharmacy/Horizon Bay at US Highway 1 & Lyngate Dr		Υ	Bus Stop
Victoria Square at Port St Lucie Blvd & Trenton Ln			Bus Stop
Wendy's at Port St Lucie Blvd & Bayshore Blvd			Bus Stop
Port St Lucie Blvd & Dalton Ave			Bus Stop
Airoso Blvd & Christmas Ter			Bus Stop
Airoso Blvd & Eyerly Ave			Bus Stop
Airoso Blvd & Lakehurst Dr		Υ	Bus Stop
Lake Whitney at Lake Charles Blvd at Lake Whitney Pl			Bus Stop
Fort Pierce Intermodal at N 8th St & Avenue D	Y	Υ	Bus Stop Transfer
Fort Pierce Intermodal at N 8th St & Avenue D	Y		Bus Stop Transfer
Midport Place 1 at Village Green Dr & Royal Green Cir			Bus Stop

Name/Address	Rack	Add Rack	Location
Sam's Club at Lennard Rd & US Highway 1			Bus Stop
Port St Lucie Blvd & Delano Rd			Bus Stop
Lennard Rd & Grand Dr		Υ	Bus Stop
Tiffany Ave & Village Green Dr		Υ	Bus Stop
US Highway 1 & Rio Mar Dr			Bus Stop Transfer
Chase Bank at Entrada Ave & Eaton Dr			Bus Stop Transfer
Lennard Rd & Avalon Rd			Bus Stop
FT. PIERCE BLVD & BEL AIR AVE SB			Bus Stop
FT. PIERCE BLVD & WOODSMERE WAY NB			Bus Stop
FT. PIERCE BLVD & DELAND AVE SB		Υ	Time Point Stop
FT. PIERCE BLVD & EDEN RD NB			Bus Stop
LAKEWOOD PK LIBRARY SB	Υ	Υ	Time Point Stop
INDRIO XING		Υ	Time Point Stop
LAKEWOOD PK PLAZA			Bus Stop
HOLIDAY PINES			Bus Stop
PORTOFINO SHORES			Bus Stop
BUTTERFIELD DRUGSTORE			Bus Stop
ST. LUCIE BLVD & AIRPORT SB			Bus Stop
ST. LUCIE BLVD & INDUSTRIAL 33RD SB			Bus Stop
ST. LUCIE BLVD & N 25TH ST SB			Bus Stop
JUANITA AVE & 25TH ST SB		Υ	Time Point Stop
N. 25th ST. & AVE I NB/SB			Bus Stop
N. 25th ST. & AVE Q NB/SB			Bus Stop
N. 25th ST. & VALENCIA AVE NB		Υ	Time Point Stop
ST. LUCIE BLVD & HARSON WAY NB			Bus Stop
ST. LUCIE BLVD & HAMMOND RD SB			Bus Stop
ST. LUCIE BLVD & ROADRUNNER PK SB		Υ	Time Point Stop
FT. PIERCE BLVD & DELAND AVE NB		Υ	Time Point Stop
FT. PIERCE BLVD & HIBISCUS RD. NB			Bus Stop
FT. PIERCE BLVD & WOODSMERE WAY SB			Bus Stop
FT. PIERCE BLVD & GADDY ST. NB			Bus Stop
SOUTH POINT PLAZA NB/SB		Υ	Time Point Stop
Fort Pierce Intermodal at N 8th St & Avenue D	Υ		Bus Stop Transfer
FT. PIERCE BLVD & HIBISCUS RD. SB			Bus Stop
FT. PIERCE BLVD & EDEN RD SB			Bus Stop
LAKEWOOD PK LIBRARY NB	Υ	Υ	Time Point Stop
ST. LUCIE BLVD & ROADRUNNER PK NB			Bus Stop
ST. LUCIE BLVD & HAMMOND RD NB			Bus Stop

Appendix C

<u>School Bus Stops (Sample below is 147 of 5,090 School Bus Stops</u>

Name/Address	Rack	Add Rack	Location
CRNR SAVONA BLVD SW & ACKARD AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & ADCOCK AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & ALCANTARRA BLVD SW		Υ	SCHOOL BUS STOP
CRNR SAVONA BLVD SW & AMBOY AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & AXTELL AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & BABCOCK AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & BARGELLO AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & BECKER RD SW		Υ	SCHOOL BUS STOP
CRNR SAVONA BLVD SW & CENTURY AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & CENTURY AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & DALTON AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & DARTMOUTH AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & ECKARD AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & EMERALD AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & EMERALD AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & GIRARD AVE SW	Υ	Υ	SCHOOL BUS STOP
CRNR SAVONA BLVD SW & GLASTONBERRY AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & HALEYBERRY AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & HERALD RD SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & HUNNICUT AVE SW	Υ		SCHOOL BUS STOP
CRNR SAVONA BLVD SW & JERICHO AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & KAPOK AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & LAWNDALE AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & MANCUSO AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & MARMORE AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & MEDINA AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & MELROSE AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & PARMA AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & PARR DR SW-N of intersection		Υ	SCHOOL BUS STOP
CRNR SAVONA BLVD SW & PATRICIA AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & SAN ESTEBAN AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & SANTIAGO AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & STONY AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & WELLINGTON AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & WELLINGTON AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW & ZULETA AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW AND ADCOCK AVE SW			SCHOOL BUS STOP
CRNR SAVONA BLVD SW AND BARGELLO AVE SW			SCHOOL BUS STOP

CRNR SAVONA BLVD SW AND ECKARD AVE SW		SCHOOL BUS STOP
CRNR SAVONA BLVD SW AND FLETCHER LN SW		SCHOOL BUS STOP
CRNR SAVONA BLVD SW AND WELLINGTON AVE SW		SCHOOL BUS STOP
CRNR SAVONA BLVD SW AND ZULETA AVE SW		SCHOOL BUS STOP
CRNR AVENUE A & ANGLE RD	Y	SCHOOL BUS STOP
CRNR AVENUE B & 13TH ST N	<u> </u>	SCHOOL BUS STOP
CRNR AVENUE B & 13TH ST N		SCHOOL BUS STOP
CRNR AVENUE B & 13TH ST N		SCHOOL BUS STOP
CRNR AVENUE B & 13TH ST N		SCHOOL BUS STOP
CRNR AVENUE B & 19TH ST N	Y	SCHOOL BUS STOP
CRNR AVENUE B & 21ST ST N	'	SCHOOL BUS STOP
CRNR AVENUE B & 31ST ST N		SCHOOL BUS STOP
CRNR AVENUE B & 39TH ST N		SCHOOL BUS STOP
CRNR AVENUE B & 8TH ST N		SCHOOL BUS STOP
CRNR AVENUE B AND 10TH ST N		SCHOOL BUS STOP
CRNR AVENUE C & 10TH ST N		SCHOOL BUS STOP
CRNR AVENUE C & 101H 31 N	Y	SCHOOL BUS STOP
CRNR AVENUE C & 171H ST N	T	SCHOOL BUS STOP
CRNR AVENUE C & 21ST ST N CRNR AVENUE C & 23RD ST N		SCHOOL BUS STOP
CRNR AVENUE C & 2ND ST N		SCHOOL BUS STOP
CRNR AVENUE D & 26TH ST N		SCHOOL BUS STOP
CRNR AVENUE E & 10TH ST N		SCHOOL BUS STOP
CRNR AVENUE E & 10TH ST N		SCHOOL BUS STOP
CRNR AVENUE E & 10TH ST N		SCHOOL BUS STOP
CRNR AVENUE E & 18TH ST N		SCHOOL BUS STOP
CRNR AVENUE E & 21ST ST N		SCHOOL BUS STOP
CRNR AVENUE E & 22ND ST N		SCHOOL BUS STOP
CRNR AVENUE E & 23RD ST N	<u> </u>	SCHOOL BUS STOP
CRNR AVENUE E & 29TH ST N	Y	SCHOOL BUS STOP
CRNR AVENUE E & 2ND ST N		SCHOOL BUS STOP
CRNR AVENUE E & 6TH ST N		SCHOOL BUS STOP
CRNR AVENUE E & 8TH ST N		SCHOOL BUS STOP
CRNR AVENUE F & 29TH ST N	Y	SCHOOL BUS STOP
CRNR AVENUE F & 31ST ST N		SCHOOL BUS STOP
CRNR AVENUE F & 37TH ST N		SCHOOL BUS STOP
CRNR AVENUE G & 10TH ST N		SCHOOL BUS STOP
CRNR AVENUE G & 17TH ST N	Y	SCHOOL BUS STOP
CRNR AVENUE G & 17TH ST N		SCHOOL BUS STOP
CRNR AVENUE G & 22ND ST N		SCHOOL BUS STOP
CRNR AVENUE G & 24TH ST N		SCHOOL BUS STOP
CRNR AVENUE G & 29TH ST N		SCHOOL BUS STOP
CRNR AVENUE G & 7TH ST N		SCHOOL BUS STOP

Name/Address	Rack	Add Rack	Location
CRNR AVENUE G & 7TH ST N:			SCHOOL BUS STOP
CRNR AVENUE H & 10TH ST N			SCHOOL BUS STOP
CRNR AVENUE H & 29TH ST N		Υ	SCHOOL BUS STOP
CRNR AVENUE H & 7TH ST N			SCHOOL BUS STOP
CRNR AVENUE H & DUNDAS CT			SCHOOL BUS STOP
CRNR AVENUE I & 12TH ST N			SCHOOL BUS STOP
CRNR AVENUE I & 12TH ST N			SCHOOL BUS STOP
CRNR AVENUE I & 19TH ST N		Υ	SCHOOL BUS STOP
CRNR AVENUE I & 21ST ST N			SCHOOL BUS STOP
CRNR AVENUE I & 23RD ST N			SCHOOL BUS STOP
CRNR AVENUE I & 24TH ST N			SCHOOL BUS STOP
CRNR AVENUE I & 37TH ST N			SCHOOL BUS STOP
CRNR AVENUE I & 39TH ST N			SCHOOL BUS STOP
CRNR AVENUE I & 7TH ST N			SCHOOL BUS STOP
CRNR AVENUE I & FEDERAL HWY N			SCHOOL BUS STOP
CRNR AVENUE I AND 37TH ST N			SCHOOL BUS STOP
CRNR AVENUE J & 31ST ST N			SCHOOL BUS STOP
CRNR AVENUE J & 37TH ST N			SCHOOL BUS STOP
CRNR AVENUE J AND 13TH ST N		Υ	SCHOOL BUS STOP
CRNR AVENUE K & 13TH ST N-J			SCHOOL BUS STOP
CRNR AVENUE K & 17TH ST N:		Υ	SCHOOL BUS STOP
CRNR AVENUE K & 19TH ST N			SCHOOL BUS STOP
CRNR AVENUE K & 22ND ST N			SCHOOL BUS STOP
CRNR AVENUE K & 29TH ST N		Υ	SCHOOL BUS STOP
CRNR AVENUE K & ANGLE RD		Υ	SCHOOL BUS STOP
CRNR AVENUE K & PALM WALK LN			SCHOOL BUS STOP
CRNR AVENUE K AND 27TH ST N			SCHOOL BUS STOP
CRNR AVENUE L & 13TH ST N			SCHOOL BUS STOP
CRNR AVENUE M & 10TH ST N			SCHOOL BUS STOP
CRNR AVENUE M & 22ND ST N			SCHOOL BUS STOP
CRNR AVENUE M & 29TH ST N		Υ	SCHOOL BUS STOP
CRNR AVENUE M & 31ST ST N			SCHOOL BUS STOP
CRNR AVENUE M & 37TH ST N			SCHOOL BUS STOP
CRNR AVENUE M AND 10TH ST N			SCHOOL BUS STOP
CRNR AVENUE M AND 37TH ST N			SCHOOL BUS STOP
CRNR AVENUE N & 29TH ST N		Υ	SCHOOL BUS STOP
CRNR AVENUE O & 13TH ST N		Υ	SCHOOL BUS STOP
CRNR AVENUE O & 15TH ST N			SCHOOL BUS STOP
CRNR AVENUE O & 17TH ST N			SCHOOL BUS STOP
CRNR AVENUE O & 17TH ST N		Υ	SCHOOL BUS STOP

CRNR AVENUE O & 22ND ST N			SCHOOL BUS STOP
Name/Address	Rack	Add Rack	Location
CRNR AVENUE O & 37TH ST N			SCHOOL BUS STOP
CRNR AVENUE O & 41ST ST N			SCHOOL BUS STOP
CRNR AVENUE O & BETHANY CT			SCHOOL BUS STOP
CRNR AVENUE O AND 13TH ST N		Υ	SCHOOL BUS STOP
CRNR AVENUE O AND 13TH ST N			SCHOOL BUS STOP
CRNR AVENUE P & 23RD ST N			SCHOOL BUS STOP
CRNR AVENUE P & 29TH ST N			SCHOOL BUS STOP
CRNR AVENUE Q & 16TH ST N			SCHOOL BUS STOP
CRNR AVENUE Q & 18TH ST N			SCHOOL BUS STOP
CRNR AVENUE Q & 19TH ST N			SCHOOL BUS STOP
CRNR AVENUE Q & 22ND ST N			SCHOOL BUS STOP
CRNR AVENUE Q & 29TH ST N			SCHOOL BUS STOP
CRNR AVENUE Q & 29TH ST N		Υ	SCHOOL BUS STOP
CRNR AVENUE Q & 33RD ST N			SCHOOL BUS STOP
CRNR AVENUE Q & 33RD ST N		Υ	SCHOOL BUS STOP
CRNR AVENUE Q & 35TH ST N			SCHOOL BUS STOP
CRNR AVENUE Q & 42ND ST N			SCHOOL BUS STOP
CRNR AVENUE Q & 43RD ST N			SCHOOL BUS STOP
CRNR AVENUE Q & 44TH ST N			SCHOOL BUS STOP
CRNR AVENUE Q & SOUTHWEST			SCHOOL BUS STOP
CRNR AVENUE Q AND 19TH ST N			SCHOOL BUS STOP
CRNR AVENUE Q AND 27TH ST N		Υ	SCHOOL BUS STOP
CRNR AVENUE Q AND 45TH ST N			SCHOOL BUS STOP

Appendix D

Source: of recommendations: http://biketallahassee.com/index.html http://www.slideshare.net/RaeLeighStarkAICP/bike-parking-guidefinal-2015 http://www.quincyma.gov/CityOfQuincy_Content/documents/Bicycle%20Parking%20Flan%20for%20Quincy.pdf http://www.fastcoexist.com/3029299/these-simple-devices-turn-every-sign-post-into-a-bike-rack http://www.commuterpage.com/pages/special-programs/tdm-for-site-plans/bicycle-parking-specifications/ http://nhts.ornl.gov/ http://www.stonnington.vic.gov.au/ http://www.oregon.gov/ODOT/HWY/BIKEPED/pages/parking.aspx http://ddot.dc.gov/page/bicycle-parking http://home.bikestation.com/locations http://ddot.dc.gov/node/477272 https://en.wikipedia.org/wiki/Bicycle_parking $\underline{http://www.nyc.gov/html/dcp/html/bicycle_parking/index.shtml}$ http://www.watertown-ma.gov/DocumentCenter/View/15634 http://suburbanassault.org/2013/06/25/bike-parking-build-it-and-they-will-come/ http://www.ibike.org/engineering/parking.htm

Appendix E

Design Fail vs. Smart Design





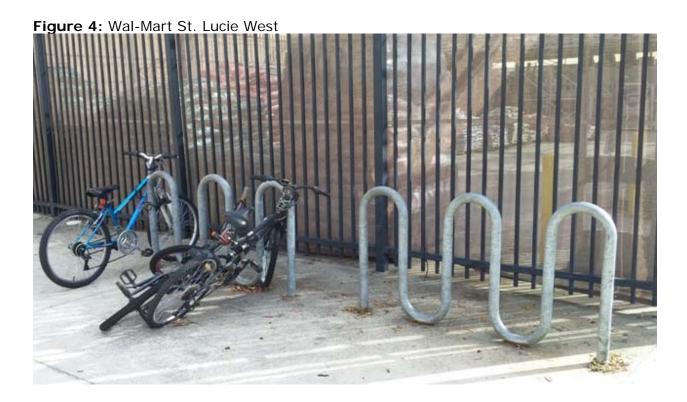


In Tallahassee, Local business owners are seeing more and more customers patronizing their businesses by bike. However, many public spaces, popular commercial districts, area parks and local attractions do not have sufficient bike parking to meet the current demand. Throughout the community, this has led to the rapid spread of the **4T epidemic Tying Things to Trees**. In response to community requests to increase local bicycle parking and avoid the continued abuse of trees and traffic signs, the Tallahassee City Commission approved the creation of the Bike Rack program in spring 2014. The bike rack program will provide public bike parking along public right-of-ways and in Place making districts throughout the MultiModal Transportation District (MMTD).

Figure 3: City of Tallahassee U Rack



The first phase of the bike rack program is focused on installations in the 18.2 mile MultiModal Transportation District (MMTD). The City of Tallahassee has ordered 100 new bike racks and installations are scheduled to begin in spring 2015.



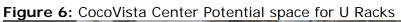




Figure 7: Centennial High School



Dysfunctional racks promote dysfunctional bicycle parking. Bikes fall and wheels get bent Bikes with removable wheels may have the frame stolen when only front wheel is secured. It is no wonder why these racks are usually hidden behind building.

Figure 8: Near a bus stop in St Lucie West Dish Racks cause bikes to be parked like this.

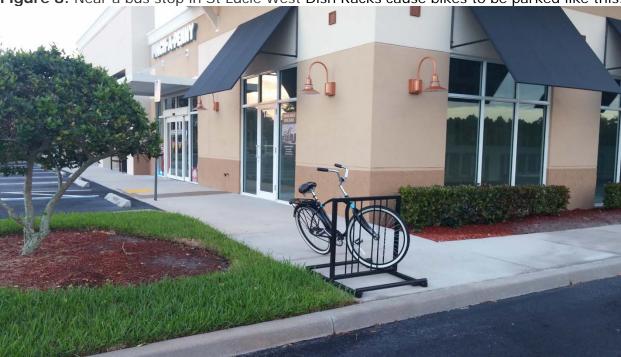


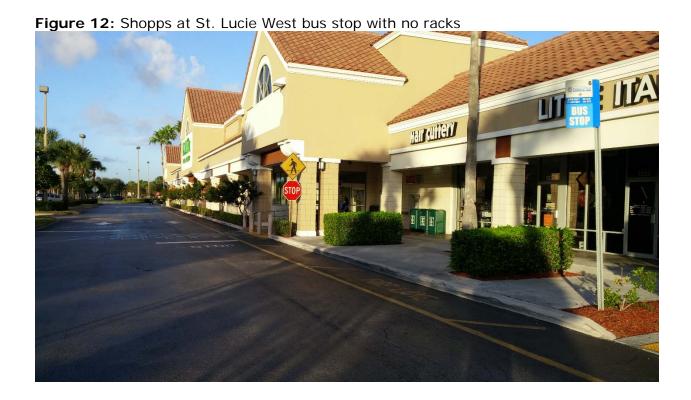


Figure 10: U Racks save sidewalk space. Two bikes can be parked side by side like this.

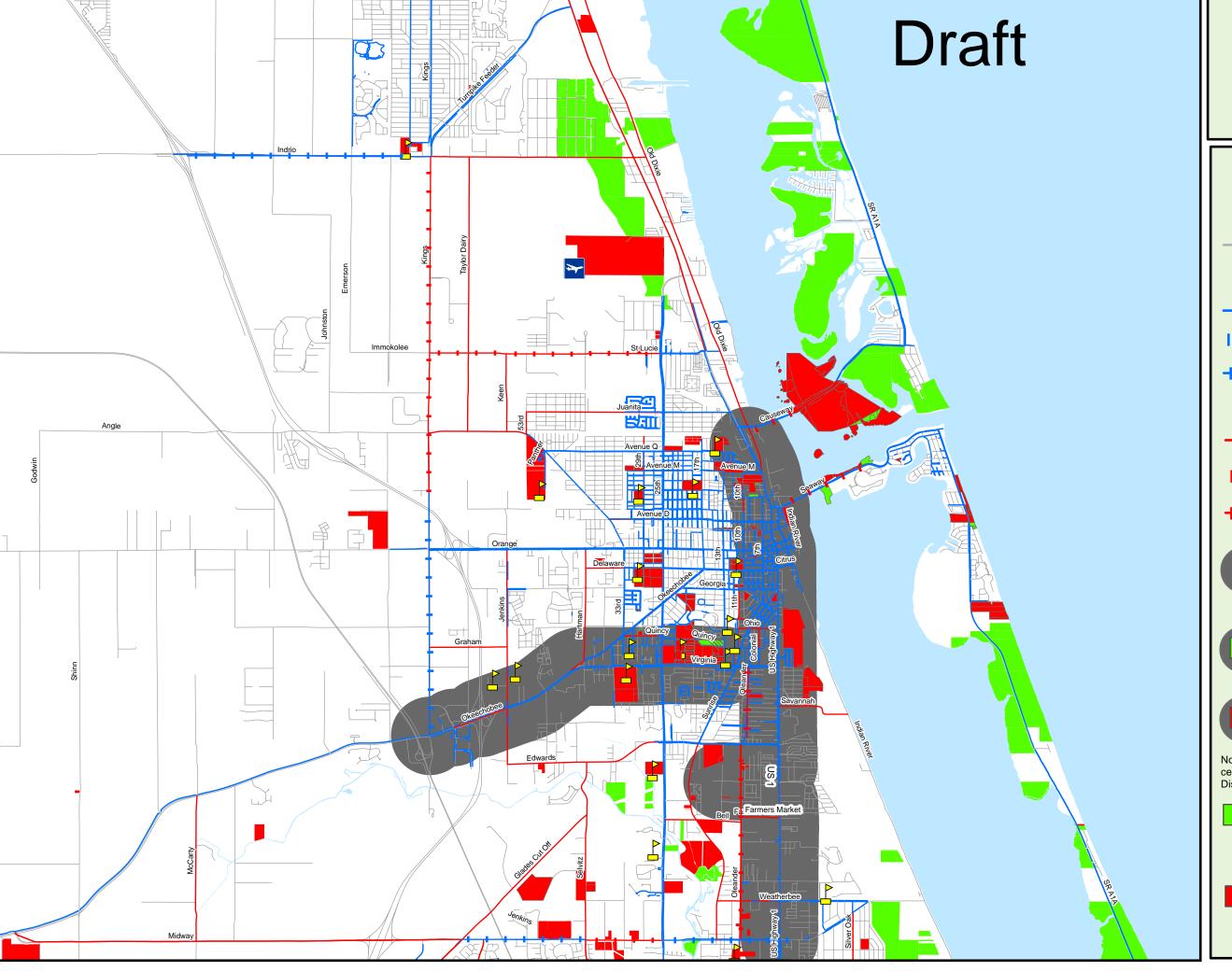


Figure 11: CocoVista Center





End



St. Lucie TPO
2040 Long Range
Transportation Plan (LRTP)
TPO Area North
Bicycle/Pedestrian Facility
Needs (Bicycle Racks)



bike lanes and bus stiops

