
GREATER PINE ISLAND COMMUNITY PLAN UPDATE

INTRODUCTION TO THIS PLAN UPDATE

Pine Island, Little Pine Island, and Matlacha share many characteristics and are collectively called Greater Pine Island, or simply Pine Island. These islands are located west of Cape Coral and mainland Lee County but inside the string of barrier islands.

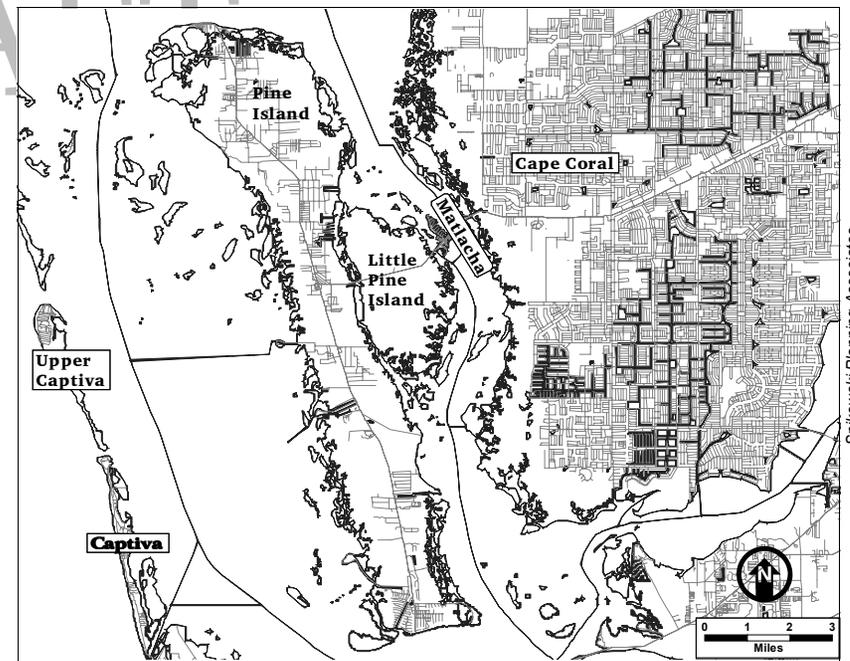
While geographically separate, Pine Island is part of unincorporated Lee County and is governed by its board of county commissioners. Although without legal self-determination, Pine Islanders have always been vocal about public affairs, especially planning and zoning. Pine Islanders formulated the original “future land use map” for Pine Island that was adopted by Lee County into its 1984 comprehensive plan (the original Lee Plan). Five years later, a community plan prepared by the Greater Pine Island Civic Association was the basis for a complete section of the Lee Plan (now under Goal 14) dedicated to the future of Pine Island.

The opening statement of that plan explains its purpose:

GOAL 14: To manage future growth on and around Greater Pine Island so as to maintain the island's unique natural resources and character and to insure that island residents and visitors have a reasonable opportunity to evacuate when a hurricane strike is imminent.

Over ten years have passed since Goal 14 and its supporting policies and maps were adopted. Many of those policies are still pertinent; a few have not been implemented fully. However, due to the passing of time, new factors have arisen that require an overall examination of the plan. The explosion of agricultural activity on the northern half of Pine Island was not anticipated. Residential growth has been slightly slower than expected. And traffic on Pine Island’s only link to the mainland has increased, reaching target levels that were set in the 1989 plan to indicate the imminent overloading of the road system.

This current plan update begins with a general description of Greater Pine Island and its residents, past and present. Each major planning issue is then discussed in detail: traffic, hurricane evacuation, town and country boundaries, environment, and community design. This plan update concludes with specific recommendations to Lee County for changes to the Lee Plan and the land development code.



Spikowski Planning Associates

PINE ISLAND – THE PLACE AND THE PEOPLE

Pine Island is physically separated from the rest of Lee County. Situated within the estuary formed by Charlotte Harbor, Pine Island Sound, and San Carlos Bay, Pine Island differs in geography from both mainland to the east and barrier islands to the west, though sharing some of the characteristics of each. It is a 10,000- to 12,000-year-old accretion island of some 33,620 acres, over a third of it mangrove forest and the remainder upland (originally slash pine and palmetto, now mostly cleared for agriculture or developed).

Pine Island's ecosystem is unique. Its mangrove shoreline and seagrasses just offshore play a vital role in the cycle of all aquatic life, supporting fishing interests both commercial and recreational. These plants are important elements in the well-being of the entire estuary, serving as filtration system, aquatic nursery, and feeding ground. Seagrasses in Charlotte Harbor have declined by 29% over the last 40 years; much of the decline was caused by dredging and maintenance of the intracoastal waterway.

Within recent years large areas of pine forest have been cleared for agriculture. Currently over 3,600 acres are in agricultural use, with 36% in rangeland, 35% in nurseries, 21% in groves, and 5% in vegetables. The moderating influence of surrounding waters on the climate creates ideal growing conditions for certain tropical fruits such as mangoes, carambola, and lychees (99% of Lee County's tropical fruit acreage is on Pine Island). Ornamental palms of several varieties are now being widely grown on Pine Island. The tradeoff is this: every acre of land cleared for agriculture is an acre lost to its natural inhabitants. Furthermore, the extent of damage from fertilizers, herbicides, and pesticides draining into the estuary is not known. Efforts to monitor these conditions are modest and underfunded.

Pristine areas remaining on the island provide a haven for an

abundance of wildlife, much of endangered and threatened — bald eagle, wood stork, osprey, ibis, heron, egret, pelican, manatee, alligator, gopher tortoise, eastern indigo snake, and beautiful pawpaw, to name a few.

Pine Island's history sets it apart. Archaeological finds in Pineland confirm the existence of one of the most important sites of the Calusa Indians, dating back more than 1,500 years. Digs and educational tours at the Randell Research Center are ongoing, as well as efforts by the non-profit Calusa Land Trust to purchase the remaining portions of a cross-island canal constructed by the Calusa. The Pineland site is on the National Register of Historic Places.

Later settlers, appearing on the scene late in the 19th century and early in the 20th, contributed their own colorful chapter to the history of the island, eking out a hardscrabble subsistence fishing and farming. By the early 20th century, citrus and mango groves were planted near Pineland and Bokeelia. Many descendants of the pioneering families still live on the island.

Pine Island differs from other communities in Lee County in the needs, interests, and aspirations of its people. Its population is diverse, made up of old commercial fishing families, a large population of retirees from the north, and younger working families with children attending school, families finding employment both on and off the island.

Each group harbors its own priorities and ambitions, yet they share common traits. They are independent-minded and they all chose to come to this place, for whatever other reasons, looking for privacy, a laid-back lifestyle, a setting of slash pine and open skies and blue water — qualities there for all to enjoy, whether by fishing the waters, or biking through the neighborhood, or simply returning from a hard day at the office or jobsite and crossing the bridge at Matlacha to find a refuge from heavy traffic and urban sprawl. Peace and tranquility brought them to

Pine Island, and that is what they value most.

Life on Pine Island mixes country living with the wonders of being surrounded by water, a fragile combination in coastal Florida. Without attention, the treasures of this unique place may be obliterated.

Looking east from the bridges at Matlacha, Pine Islanders see a vast expanse of sameness, a development form that suits the needs of others but that seems alien and a threat to Pine Islanders' vision of their own future.

Pine Island has two traffic problems resulting from the near-impossibility of widening Pine Island Road through Matlacha without destroying its historic district. This road is nearing its capacity for meeting the daily travel needs of Pine Islanders and local and out-of-town visitors, and it can barely handle the demand for evacuation of its low-lying areas in case of tropical storms and hurricanes.



Matlacha historic district, bisected by Pine Island Rd.

Photo courtesy of Mohsen Salehi & Bill Dubin

“Places like Matlacha are rare in this state, not just for its historical interest, but because the locals thrive by protecting the place. They like where they live and don’t want to change it. Tourists respond by coming just to hang out on the bridges yakking with fisherfolk, then staying to buy local crafts and eat the fish they’ve seen caught. They come because they want to feel part of a real place, a place that doesn’t put on mouse ears to pull them in.”

— Florida writer Herb Hiller

The main mechanism currently protecting Pine Island from overdevelopment that would worsen the existing congestion and evacuation hazard has been Policy 14.2.2, found in the Lee Plan as follows:

POLICY 14.2.2: *In order to recognize and give priority to the property rights previously granted by Lee County for about 6,800 additional dwelling units, the county shall consider for adoption development regulations which address growth on Pine Island and which implement measures to gradually limit future development approvals. The effect of these regulations would be to appropriately reduce certain types of approvals at established thresholds prior to the adopted level-of-service standard being reached, as follows:*

- *When traffic on Pine Island Road between Burnt Store Road and Stringfellow Boulevard reaches 810 peak hour, annual average two-way trips, the regulations shall provide restrictions on further rezonings which would increase traffic on Pine Island Road.*
- *When traffic on Pine Island Road between Burnt Store Road and Stringfellow Boulevard reaches 910 peak hour, annual average two-way trips, the regulations shall provide restrictions on the further issuance of residential development orders (pursuant to the Development Standards Ordinance), or other measures to maintain*

the adopted level of service, until improvements can be made in accordance with this plan.

Ten years after this policy was adopted, here are the critical facts:

- Of the “6,800 additional dwelling units” cited in Policy 14.2.2, about 6,650 still can be built at any time.
- Official Lee County traffic counts in 1999 show that the 810-trip threshold has been exceeded for the second consecutive year.
- There are no plans (and no practical way) to widen Pine Island Road between Burnt Store Road and Stringfellow Boulevard.

Given these facts, it is clear that further increases in traffic are inevitable as property rights previously granted are exercised. The question is: how many *more* development rights will Lee County grant on top of those already existing?

The conflict between these two realities—impending population growth on the island on the one hand, traffic exceeding limits established by the Lee Plan on the other—is the dilemma faced by residents of the island, and by Lee County, in the coming years. The proposals advanced below represent the best efforts of Pine Islanders to deal with this conflict and to manage growth responsibly in the coming decades.

Growth is inevitable. Pine Islanders recognize that as a fact of life, but they seek a kind of responsible growth that preserves and enhances the best features of Greater Pine Island, features that make it unique among these United States.

EXISTING PRIVATE PROPERTY RIGHTS

[tabulations in preparation]

POTENTIAL NEW DEVELOPMENT RIGHTS

[tabulations in preparation]

TRANSPORTATION CONSTRAINTS

Access to Pine Island was strictly by boat until 1926 when the causeway carrying Pine Island Road was built through the mangrove islands that became Matlacha. With road access, modern development became practical.

For many decades, this two-lane road was sufficient to meet all demands placed upon it. Although there have been occasional discussions about a second bridge to Pine Island, the hurdles facing such a plan have always been insurmountable.

Constraints on access to Pine Island

As the years progressed, traffic on Pine Island Road has continually increased. By general county standards, the current congestion would warrant plans to widen this road to four lanes, and funds to do so would be found by juggling Lee County's capital improvements budget. In fact, this widening would be forced by Lee County's general road planning priorities, which require that all development and building permits be stopped once traffic on a road exceeds the road's full capacity, a congestion level known as "Level of Service E" (LOS "E").

However, Lee County has formally designated certain roads that cannot (or should not) be widened as "constrained." According to Lee Plan Objective 22.2: "Reduced peak hour levels of service will be accepted on those constrained roads as a trade-off for the preservation of the scenic, historic, environmental and aesthetic character of the community." The Matlacha section of Pine Island Road has been designated as "constrained" since 1989.¹ Since that time, Lee County has also designated the heart of Matlacha as a historic district, further protecting the

community from road widening that would damage its character.

The 810/910 rule in Lee Plan Policy 14.2.2

Origin of Policy 14.2.2

In 1989, Lee County was negotiating with the state over details of its new comprehensive plan, including the concept of constrained roads. Much of the controversy centered around another constrained (but much more heavily congested) road, Estero Boulevard at Fort Myers Beach. Community sentiment there strongly favored enduring the road congestion rather than widening Estero to four lanes, in part because the congestion was limited to the winter season when there was no hurricane evacuation threat. To reflect that sentiment, Lee County decided to sanction very extreme levels of congestion on constrained roads.²

For most of Lee County's islands, a "constrained" designation on their access road caused few or no problems. At Fort Myers Beach, nearly all land was already developed, and the existing traffic congestion was accepted as the price of a prosperous tourist economy. Bonita Beach, Captiva, and Boca Grande were nearly at buildout and under strict growth controls, so loosening the road standards would not increase traffic congestion. Sanibel, as its own city, would not be affected at all.

Only on Pine Island could the constrained designation have had tragic consequences. On Pine Island, vast tracts of land were still undeveloped; and the seasonal population extremes, while significant, weren't as great as the other island communities, leaving a larger percentage of Pine Island's population subject to summertime evacuations.

¹ Pine Island Road from Shoreview Drive west to Little Pine Island, according to Lee Plan Table 2(a)

² Specifically, 85% more traffic than the roads were designed to handle would (at least theoretically) be allowed.

To avoid these effects on Pine Island, Lee County needed to supplement the constrained designation to keep it from allowing more development than the road system could handle. The county chose to modify a 1988 proposal from the Greater Pine Island Civic Association which was designed to gradually limit development on Pine Island as Pine Island Road began to approach its capacity. The proposal would have prohibited rezoning most additional land for development when 80% of one measure of road capacity was used up, and prohibited approvals of new subdivisions, even on land already zoned, when 90% was used up.³

Those percentages were based on the road's capacity at LOS "D," which at the time was defined as representing:

*"...high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level."*⁴

Under the conditions existing on Pine Island Road, LOS "D" was defined by Lee County as occurring when 1,010 vehicles per hour used the road during the busiest hours in the winter.

To make sure that these limits wouldn't be ignored when they were reached, the state land planning agency insisted that the Lee Plan convert those percentages to very specific traffic levels at the automatic traffic count station in Matlacha. Thus, 80% was converted to 810 vehicles per peak hour, and 90% was

converted to 910 vehicles.⁵ These levels were then adopted into law as Lee Plan Policy 16.2.2 (later renumbered to 14.2.2).

Physical changes to Pine Island Road since 1989

During 1991 and 1992, Lee County reconstructed Pine Island Road from Burnt Store Road to Stringfellow Road. The county elevated flood-prone segments and widened the travel lanes to twelve feet. Within Matlacha, French drains were installed and the pavement was extended beyond the travel lanes in some places for parking. Outside Matlacha, the shoulders were widened to eight feet (four feet of which was paved) and the drainage ditches were improved.

These improvements had already been designed by late 1989 and a consultant to Lee County had analyzed whether they would increase the traffic-handling capacity (known as the "service volume") of Pine Island Road. If they would have actually increased the road's capacity, the 810 and 910 figures might have been increased accordingly. The consultant concluded that they would not increase capacity:

*"The reconstruction currently underway on Pine Island Road west of Burnt Store Road will raise the elevation of the roadway and widen the lanes to standard widths. Neither of these improvement will, according to the 1985 Highway Capacity Manual, affect the service volumes."*⁶

³ *Pine Island Land Use Study – Issues and Recommendations*, prepared by Carron Day for and with the assistance of the Greater Pine Island Civic Association, January 1988.

⁴ *Support Documentation for the Traffic Circulation Element*, for revisions adopted January 31, 1989, prepared the Lee County Division of Planning and Department of Transportation and Engineering, pages III-5, III-6, and III-10.

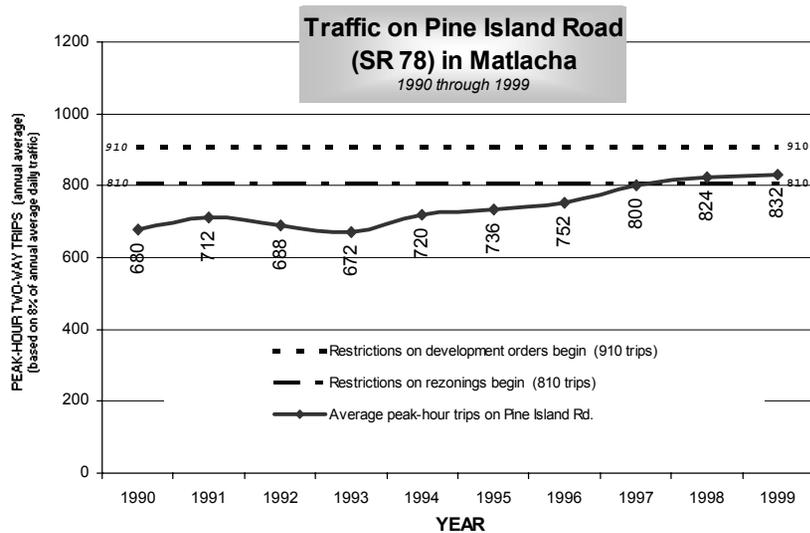
⁵ *Proposed 1990 Revisions to the Lee Plan, Volume 1, Traffic Circulation Element*, prepared by David Plummer and Associates, September 1990, pages III-4 and B-6.

⁶ *Proposed 1990 Revisions to the Lee Plan, Volume 1, Traffic Circulation Element*, prepared by David Plummer and Associates, September 1990, page B-4.

Current traffic conditions on Pine Island Road

Since 1990, traffic on Pine Island Road in Matlacha has increased by about 22%. Figure 1 shows the average counts for each year, with a visual comparison to the 810 and 910 thresholds in Policy 14.2.2. The 810 threshold was surpassed in 1998 and 1999.

These significant traffic increases occurred during a decade where there was relatively little new subdivision or condominium development on Pine Island. Population increases resulted mostly from the construction of new homes on pre-existing vacant lots. Other traffic increases may have resulted from difficult-to-quantify changes in tourism, commuting, or shopping patterns.



Changes since 1989 in methods of analyzing road capacity

In 1990 Lee County began using a different method for determining the capacity of roads, using the 1985 *Highway Capacity Manual* instead of the earlier 1965 *Highway Capacity Manual*.⁷ Lee County decided to base the 810/910/1010 figures for Pine Island Road on the earlier method for determining capacity, to keep future technical changes in analytical methods from changing their policy decision on how to manage growth on Pine Island.

The earlier method was based primarily on physical characteristics of the road, such as the number of lanes, the width of the lanes, and lateral clearance from obstructions such as parked cars or pedestrians. Pine Island Road west of Burnt Store Road was designated as a major collector road in a “type 5” rural area. (If Pine Island Road through Matlacha had been a standard arterial road, rather than a collector road, its LOS “D” capacity would have increased 45%, to 1,460 vehicles per hour.)

The remainder of the Lee Plan used the newer method, which determined capacity on arterial roads about equally by the number of lanes and by the length of delays caused by intersections. For most urban roads, delays at traffic signals are the major cause of delays, so the number and timing of traffic signals became a major factor for determining road capacity. The newer method also assumes that left turn bays are provided at intersections and are adequate to prevent a following vehicle from having to slow down or stop.

⁷ Since that time, further modifications have been made in a 1994 *Highway Capacity Manual* and a 1997 *Highway Capacity Manual Update*, all published by the Institute of Transportation Engineers.

Under the newer method, there is no straightforward reduction in capacity for collector road characteristics; the reductions must be computed through a sophisticated traffic analysis. Matlacha has no traffic signals, no major crossing streets, and no left-turn bays, making the new method inaccurate without a full analysis.

In order for the new method to accurately forecast the capacity of Pine Island Road, it must be carefully adjusted to factor back in the various obstructions to free-flowing traffic through Matlacha (no left-turn bays or passing lanes; reduced speed limit; cars backing into the road from parking spaces; frequent driveways; presence of pedestrians; etc.). These adjustments require more data than is currently available, for example the free flow speed, peak-hour characteristics of traffic flow, and the adjusted saturated flow rate.

In the absence of this data, it is instructive to compare the capacity of Pine Island Road using the older methodology with the capacity of Estero Boulevard at Fort Myers Beach, as computed by the Lee County department of transportation. (Estero Boulevard is the same width and has many of the same constraints as Pine Island Road through Matlacha; due to very heavy demand, its traffic flow completely breaks down most days from late January into April, with traffic flowing in a stop-and-go pattern between about 10:00 AM and 6:00 PM.)⁸

**OLD CAPACITY METHODOLOGY
(used for Pine Island Road in the 1989 Lee Plan)**

<u>LEVEL OF SERVICE</u>	<u>Peak-hour trips (both directions)</u>	<u>COMMENTS:</u>
LOS "E"		<i>LOS "E": full capacity; traffic flow breaks down with small increases in traffic</i>
LOS "D"	1,010	<i>LOS "D": high-density but stable flow</i>
90% of "D"	910	(development order restrictions begin)
80% of "D"	810	(rezoning restrictions begin)

**NEWER LEE DOT CAPACITY METHODOLOGIES
(for Estero Boulevard)**

LOS "E"	1,780	full capacity of uninterrupted and undivided two-lane road near the coast (1995 Lee DOT study)
LOS "E"	1,424	full capacity of Estero Boulevard south of Donora, based on 20% reduction (1995 Lee DOT study)
LOS "E"	1,316	full capacity of Estero Boulevard between Donora and Crescent, based on 30% reduction (1995 Lee DOT study)
LOS "E"	1,240	full capacity of Estero Boulevard (1997 Lee DOT study based on new data)

⁸ A summary of this data is provided in the Fort Myers Beach Comprehensive Plan, pages 7-B-15 through 7-B-20.

Physical alternatives to improve access to Pine Island

Four different types of access improvements to Pine Island are described in the following sections, followed by preliminary comments on the impacts of each.

Access improvements could have a variety of physical impacts. These impacts would primarily occur in Matlacha if the existing 66-foot right-of-way were to be reconfigured or widened; they would be primarily environmental if an entirely new access road were created.

Within the existing right-of-way

Two possible reconfigurations have been identified that could fit within the existing 66-foot right-of-way (approximately the distance between the existing utility poles):

1. **CONVERT TO THREE LANES:** The existing pavement, including the paved shoulders, is about 32 feet wide. It could be rebuilt and reconfigured to three lanes of almost 11 feet each, and the unpaved shoulders could be paved to serve as breakdown lanes or sidewalks. The third travel lane could serve either as a two-way left turn lane or as a reversible lane for traffic in the busier direction.
2. **CONVERT TO FOUR LANES:** The road could also be reconfigured into an urban street with curbs and gutters. The existing right-of-way could accommodate up to four 11-foot lanes, two 2-foot concrete curbs and gutters, and two 9-foot raised sidewalks. This configuration would require extensive earthwork and metal railings, similar to the recently rebuilt San Carlos Boulevard as it approaches Fort Myers Beach.

Unless the bridges were widened as well, either approach would still face the bottleneck of having a three-lane or four-lane road narrow into two-lane bridges (similar to the Sanibel Causeway

which has two-lane bridges connecting to four-lane roads).

The three-lane approach would change the look and feel of Pine Island Road less than the four-lane approach. If the third lane were used for left turns, those turns would cause less interference with traffic flow (which will become increasingly important as congestion increases).

A third lane could also be reversible, used for travel in the direction of highest traffic flow. The center lane would be designated for one-way travel during certain hours of the day, and in the opposite direction during other hours. The outer lanes provide normal flow at all times.

There are various problems with reversible lanes, such as operational problems at each end of the reversible lane; enforcement difficulties; increased safety hazards; and unsightliness of lights and/or barriers that would be required.

It seems unlikely that a reversible lane would have enough benefits in Matlacha to offset the operational difficulties. The greatest benefit to a third lane would be for left turns during daily use, and for an additional lane off Pine Island during an evacuation.

Adding a third lane would cause a number of problems, however, including:

- Pedestrians trying to cross Pine Island Road would have to walk a greater distance, making the crossing less safe;
- The character of Matlacha would lose some of its village atmosphere and pedestrian orientation, replaced with a more highway-oriented character;
- Pedestrians would lose the use of the current paved shoulder, which functions as an informal sidewalk; and
- Businesses and homes would lose some of their parking area because the travel lanes would now be

using the previous paved shoulders outside the French drains.

The second reconfiguration, into four travel lanes, would significantly increase the traffic-carrying capacity of Pine Island Road, without any of the complexities of changing the directional pattern of the center lane every day.

Pedestrian safety would be improved by replacing today's informal drainage and sidewalk pattern with raised sidewalks. However, these sidewalks would now extend to the very edge of the right-of-way, putting them directly adjacent to many buildings whose fronts are on the right-of-way line. In business areas, this is appropriate for both the stores and the pedestrians, but in residential areas it would be very awkward for the residents (as well as the pedestrians).

The four-lane configuration would preclude any left-turn bays and would eliminate all parking from the right-of-way. The loss of parking would be a major disadvantage and would seriously damage, if not eliminate, the viability of many small businesses. Undoubtedly, the physical construction of a four-lane configuration would seriously damage Matlacha's village atmosphere and pedestrian orientation.

The increases in traffic capacity that four lanes would provide would be detrimental to the character of Matlacha but would have mixed impacts on the remainder of Greater Pine Island. If the increased capacity just led to approval of more development on Pine Island, the damage to Matlacha would have been for naught. If the increased capacity did *not* allow the development of more land on Pine Island, traffic congestion on Pine Island Road would be reduced, at least until existing subdivision lots are built upon and the new road capacity is fully utilized.

With a wider right-of-way

Some of the negative factors of a four-lane configuration could be offset by purchasing additional right-of-way, for instance to be used for a planting strips with trees that could separate the sidewalk from the travel lanes or from building fronts. However, the existing land-use pattern has very shallow lots that often back up to the waters of Matlacha Pass. Also, many of the existing buildings directly adjoin the existing right-of-way, so widening the right-of-way would involve altering or demolishing many buildings in Matlacha. A 1982 estimate suggested that expanding the right-of-way to 90 feet would require altering or removing as many as 75 businesses and homes in Matlacha.⁹

In 1990, Lee County designated the central portion of Matlacha as a historic district. This designation would not legally prevent Lee County from altering or demolishing historic buildings, but it indicates the historic value of many of Matlacha's buildings in addition to its unique village character.

Given these constraints, it is apparent that Lee County's 1989 decision to classify Pine Island Road as "constrained" (and therefore not subject to widening) was correct. It is possible that the benefits of a third lane through Matlacha might outweigh the disadvantages, and if so this improvement could be constructed. But building *four* travel lanes through Matlacha, either within the existing or a widened right-of-way, should not be considered to be a viable or practical option.

New bridge bypassing Matlacha

The capacity of Pine Island Road could also be increased by building a new bridge *around* Matlacha. A possible route would begin at about Shoreview Drive, run just south of Matlacha, and reenter Pine Island Road on Little Pine Island just west of the

⁹ *Pine Island at the Crossroads*, by William M. Spikowski, 1982, page 3.

Sandy Hook restaurant, a distance of just over 1½ miles.

A Matlacha bypass bridge could provide uninterrupted two-way traffic to and from Pine Island, or could provide one-way traffic, with the existing Pine Island Road serving traffic in the other direction. Two-way traffic is generally more convenient to the public. One-way traffic allows more cars to use the same amount of roadway, but would be very harmful to the businesses in Matlacha. Either scenario would create serious intersection impacts at each end, and could cause additional travel to connect motorists with their actual destinations.

Either scenario would also require widening of Pine Island Road beyond the ends of the bridge in order to take full advantage of the bridge's new capacity. This would be especially important between the eastern terminus and Burnt Store Road.

Pine Island Road is a county road west of Burnt Store Road, and any improvements to it would be constructed and paid for by Lee County. However, state and federal permits are required for all new bridges, especially those that would affect boat traffic. In 1972, Matlacha Pass became part of the state's 12,500-acre Matlacha Pass Aquatic Preserve to protect its estuarine and marine habitats in essentially natural conditions.

A Matlacha bypass bridge would have serious environmental impacts and there is no source of funds to build it (see cost data in Appendix B). Its increased traffic capacity might lead to approval of more development on Pine Island, negating its positive impacts on traffic flow and hurricane evacuation. If the increased capacity did *not* allow the development of more land on Pine Island, traffic congestion on Pine Island Road would be reduced substantially.

Entirely new bridge and entrance road

Another alternative involving a new bridge would be to extend Cape Coral Parkway westerly across Matlacha Pass, ending

about halfway between St. James City and Pine Island Center near the Masters Landing power line. This alignment would cross about two miles of wetlands and one mile of open water. A continuous bridge would be needed to avoid interference with tidal water flows in the wetlands and Matlacha Pass.

This alignment would extend into the Cape Coral city limits, adding an extra layer of regulatory issues. The new bridge would add traffic onto Cape Coral Parkway, which is planned to be widened to six lanes but cannot be widened further. This alignment would function well for traffic between St. James City, Cape Coral, and south Lee County.

This option, like the Matlacha bypass option, is currently cost-prohibitive and could have major environmental impacts on Matlacha Pass. Neither new-bridge option can be considered viable at this time.

Transportation policy alternatives

Since the 1989 update of the Greater Pine Island portion of the Lee Plan, a number of changes have been made to Pine Island transportation policies. Policy 16.2.3 committed Lee County to improving Pine Island Road by 1993 in four specific ways (all of which were completed before this policy was eliminated):

- Elevate the flood-prone segments.
- Widen the traffic lanes to twelve feet.
- Widen and improve the shoulders.
- Improve the intersection at Stringfellow Blvd.

Policy 16.2.4 committed Lee County to taking whatever additional actions were feasible to increase the capacity of Pine Island Road, specifically calling for the following measures to be evaluated:

- The construction of a bicycle lane which could serve as an emergency vehicle lane during an evacuation, thus freeing both traffic lanes for the evacuating population.
- The construction of two additional lanes around

Matlacha.

- The construction of left-turn lanes at intersections with local roads in Matlacha, or a continuous third lane.

Parts of Policy 16.2.4 were repealed in 1994 because the county concluded that: “The first two items would be prohibitively expensive. The existing pavement already accommodates emergency vehicles and two lanes of traffic.” The final item was retained in the policy because it had not been fully evaluated at that time (and apparently not since). Policy 16.2.2, later renumbered 14.2.2 and discussed at length earlier in this report, was retained unchanged because: “The extraordinary treatment of Pine Island Road in these policies is justified by the absence of other hurricane evacuation routes for Pine Island, Matlacha, and a large portion of Cape Coral.”¹⁰

Beginning in 1998, the 810-trip threshold in Policy 14.2.2 has been exceeded for two consecutive years. Once county officials became aware of this fact, they initiated an amendment to the Lee Plan to reevaluate Policy 14.2.2 “to reflect current road conditions.” The processing of that amendment has been delayed pending completion of this community plan update.

There are two fundamental questions that must be answered at this time regarding Policy 14.2.2:

#1: *Have any factors changed sufficiently since 1989 to warrant adjustments to the 810/910 thresholds in Policy 14.2.2?*

One relevant factor would be existing or planned improvements to the capacity of Pine Island Road. As discussed earlier, important improvements were made in 1991-92 including elevating flood-prone segments of the

road, but those improvements did not increase the capacity of the road during everyday conditions.

Another relevant factor would be better data or improved analytical methods for measuring congestion. A permanent traffic counter has been in place on Little Pine Island near Matlacha for over ten years, collecting traffic data 24 hours a day all year; no changes have been made to this counter. As to methods of interpreting this data, a more sophisticated method for analyzing the capacity of a road has become commonplace since 1989, but its basic assumptions are less relevant for Pine Island Road through Matlacha than the previous method, and no entity has attempted to collect enough specialized traffic data to properly apply it in Matlacha. It has been suggested that the new methodology might indicate that Pine Island Road has a greater capacity than the previous methodology, but the Lee DOT results using the new methodology on Estero Boulevard might indicate the contrary.

Regardless of the ultimate determination of the full capacity of Pine Island Road, Policy 14.2.2 was clearly contemplated to begin slowing development approvals on Pine Island at pre-determined points in time, that is, when traffic reached 80% and 90% of what was determined to constitute *dense but stable flow* (known as LOS “D”). Those points were not set to occur at 80% and 90% of full capacity of the road (LOS “E”), but an earlier time, in a clearly stated effort to “recognize and give priority to the property rights previously granted by Lee County for about 6,800 additional dwelling units....” There has been no evidence presented or discovered in the course of this planning process that any factors have occurred since 1989 that would justify changing the 810/910 thresholds in Policy 14.2.2.

¹⁰ EAR [evaluation and appraisal report] for Future Land Use, May 1994, section III, pages III-16 and III-17.

#2: Are any other changes to Policy 14.2.2 warranted?

Once the 810 threshold has been reached, Policy 14.2.2 calls for adoption of development regulations that provide “restrictions on further rezonings which would increase traffic on Pine Island Road.” When 910 has been exceeded, regulations are to “provide restrictions on the further issuance of residential development orders....”

To implement this policy, in 1991 Lee County amended its land development using the following language:

§2-48(2) When traffic on Pine Island Road between Burnt Store Road and Stringfellow Boulevard reaches 810 peak-hour annual average two-way trips, rezonings that increase traffic on Pine Island Road may not be granted. When traffic on Pine Island Road between Burnt Store Road and Stringfellow Boulevard reaches 910 peak-hour annual average two-way trips, residential development orders (pursuant to chapter 10) will not be granted unless measures to maintain the adopted level of service can be included as a condition of the development order.

The wording in this section was taken almost verbatim from Policy 14.2.2. This has become problematic because it is not self-evident which kinds of rezonings will “increase traffic on Pine Island Road.” The county’s usual method for enforcing traffic regulations is to request a traffic study from a development applicant, and then make a decision based on that study rather than on an independent evaluation of the facts. Local experience has demonstrated that self-serving traffic studies can be written that ostensibly prove anything, making this method very unsatisfactory.

A better approach would be for the regulations that implement Policy 14.2.2 to be more self-explanatory (while

still allowing an applicant to provide data if they think they qualify for an exception). For instance, it should be clear that some types of rezonings would have inconsequential or even positive effects on traffic on Pine Island Road. A convenience store in St. James City would serve only local residents and those passing by, and would attract no new trips onto Pine Island Road. A larger grocery store in St. James City would attract shoppers from a larger area, perhaps including some who currently drive to Matlacha or Cape Coral to shop for groceries, possibly *decreasing* traffic on Pine Island Road. However, a new hotel or marina on the same St. James City property would have a different effect. A new hotel or marina would undoubtedly serve some residents of St. James City and Pine Island Center, like a grocery store, but it would also attract users from throughout Lee County and beyond who would drive across Pine Island Road to spend a few nights or to launch a boat.

Thus an important distinction could be made in implementing Policy 14.2.2 between those land uses that primarily serve residents or visitors who are already on Pine Island, and land uses that primarily attract additional people across Pine Island Road. The following chart illustrates this distinction:

Land uses primarily serving residents & visitors:

- Convenience stores
- Grocery stores
- Hardware stores
- Service stations
- Hair salons

Land uses primarily attracting additional people:

- Hotels
- Marinas
- Tourist attractions
- Subdivisions
- Condominiums

This distinction would be clouded somewhat by other factors, particularly the size and location of commercial uses. For instance, a 20-seat restaurant on a St. James City canal would be unlikely to draw substantial traffic across Pine Island Road, while a 150-seat restaurant with a panoramic view and a large advertising budget may well draw customers primarily from off Pine Island. To reduce this problem, very small commercial uses might be exempted from this policy even if they are of a type that primarily attracts additional people. Another alternative might be to allow rezonings for commercial uses below a certain size if they are proposed on “infill” properties between other existing commercial uses, rather than opening new areas for commercial activities.

Recommended action on Policy 14.2.2

[to be decided]

HURRICANE EVACUATION

Pine Island has special problems relating to hurricane evacuation:

- (1) Updated evacuation estimates were recently provided for Pine Island by the Southwest Florida Regional Planning Council. In the event of a Category 2 hurricane coming from the most hazardous direction in November, over 21 hours could be required for evacuation—this includes 8 hours for preparation and 13 hours for movement of vehicles in rush-hour traffic conditions. (The length of this evacuation already exceeds the 18-hour evacuation standard in the Southwest Florida Strategic Regional Policy Plan.)
- (2) Any evacuation of Pine Island would include residents of Upper Captiva and Useppa.
- (3) The Matlacha drawbridge is a two-lane passage, creating a

bottleneck for vehicles exiting the island.

- (4) A potentially more dangerous bottleneck exists on the mainland to the east of the bridge. The SWFRPC study presumes that “a successful road network exists to take people to a safer place on higher ground.” But this network includes Burnt Store Road, subject to flooding in heavy rains such as those associated with hurricanes; Pine Island Road; and the Del Prado Extension. At the present time Pine Island Road is only two lanes as far east as Santa Barbara. A heavy influx of evacuees from low-lying areas of western Cape Coral can be expected to also end up on Pine Island Road, slowing traffic flow. Current plans are to widen the rest of Pine Island Road to four lanes to spur commercial development in northern Cape Coral, which ultimately may make the problem worse. (Past experience, on U.S.41 south of Fort Myers for example, suggests that road widenings do in fact attract further development, not an encouraging trend to Pine Islanders.)
- (5) Lee County planners might well consider the consequences of a Category 3 storm (as Donna was, in 1960), arriving in November from the southwest, making landfall not at Fort Myers Beach but at Boca Grande. Under this scenario, 14 designated shelters out of 34 would be unusable, and extensive stretches of all evacuation routes would be under water, according to Lee County Emergency Management maps. Under those conditions, Pine Island evacuees would be at the tail end of a queue made up of evacuees from much of Cape Coral and North Fort Myers, joined by many others from coastal areas as far south as Naples, all heading north on U.S. 41 and I-75, both of which are subject to flooding even in some tropical storms. There is serious potential for the resulting gridlock to trap tens of thousands of residents directly in harm’s way.

[remainder of analysis to be prepared]

TOWN AND COUNTRY ON PINE ISLAND

The essential character of Pine Island has always been the contrast among its three key parts. Surrounded by harbors and bays of unparalleled beauty, Pine Islanders live in a series of low-key settlements or “villages” that are separated by rural land. With dense mangrove forests creating barriers between most land and the water, the seven residential villages have formed in the locations with best access to the water (Bokeelia, Pineland, Matlacha, Flamingo Bay, Tropical Homesites/Manatee Bay, and St. James City). Only the “town center” at Pine Island Center is built away from the water, in favor of the only crossroads location on Pine Island. Between these villages there has always been the sharp contrast of rural lands, dominated by slash pine/palmetto habitats and some farming operations.

Pine Island has almost no beaches, few city services, and limited employment and shopping — yet it remains a highly desirable and relatively low-cost alternative to the formless “new communities” that have obliterated the natural landscape throughout coastal Florida.

The current Pine Island plan has been fairly successful in maintaining the distinct villages by defining their boundaries on a future land-use map. Only a single ten-acre amendment has been approved since 1989. However, the boundaries have not been reexamined for reasonableness during that period, so that effort has been undertaken as part of this plan update, as described in the next section.

Town (village) boundaries

The freestanding villages on Pine Island have been given one of three “future urban area” designations, with densities and total acreages summarized in the following table.

“Future Urban” designations on future land-use map	Residential density range (DU = dwelling unit)	Actual acres in Greater Pine Island
Urban Community	1 DU/acre to 6 DU/acre	1350 acres
Suburban	1 DU/acre to 6 DU/acre	1427 acres
Outlying Suburban	1 DU/acre to 3 DU/acre	1557 acres

“Urban Community” areas can have considerable concentrations of commercial uses, and thus were assigned to Pine Island Center and Matlacha, the commercial centers for all of Greater Pine Island.



Pine Island Center, looking south

Photo courtesy of Mohsen Salehi & Bill Dubin

“Suburban” areas are allowed similar densities for residential development, but with fewer commercial uses. This designation has been assigned to most of Bokeelia and St. James City, and smaller areas around the Pink Citrus, Flamingo Bay, and Pine-wood Cove mobile home parks.

“Outlying Suburban” areas are allowed half the density of “Sub-

urban” areas, but with comparably limited commercial uses. This designation was generally assigned to other settlements on Pine Island.

These future urban designations were generally drawn tightly around existing settlements. The exceptions are about 52 acres just north of Galt Island Avenue (northwest of St. James City); 95 acres centered around the Pine Island Village subdivision south of Flamingo Bay; and 162 acres south of Bokeelia and north of September Estates. The first two exceptions apparently had been made due to imminent development activity on those parcels, and both were reasonably logical extensions of existing settlements. However, little activity has taken place on either parcel, with extensive natural vegetation remaining.

The third exception, south of Bokeelia, is the most incongruous. This entire acreage is now in fairly intense agricultural use, with much of it cleared during the past decade. Apparently it was considered as a potential expansion of the Bokeelia urban area. Since that time, the landowners have clearly indicated a preference for agriculture, and have made no efforts to develop any of the land residentially. Thus these 162 acres should be reclassified to whatever designation is ultimately assigned to the rural lands to their east and west.

Other apparent anomalies are several large clusters of rural land that have been assigned the “Outlying Suburban” designation east and northeast of Pineland. Close examination shows that these areas have been subdivided into lots averaging one-half acre, and have been almost entirely sold off to individual purchasers. The largest area, just east of Stringfellow Road, is known as the Kreamer’s Avocado subdivision. The relatively few homes that have been built there enjoy a pleasant rural setting. However, any substantial increase in homebuilding will overtax the odd network of unpaved roads and reduce the rural atmosphere. At such time, residents could band together and pave the roads and install a modest drainage system through a spe-

cial taxing district. The seeming anomaly of the “Outlying Suburban” designation, however, is appropriate for the existing pattern of small subdivided lots.

The future of rural Pine Island

Outside the village boundaries, all high ground has been designated in the “Rural” category, where residential development is now limited to one dwelling unit per acre (1 DU/acre). Over the past ten years, “Rural” land between the villages has been converted to farmland, a trend that is continuing even today. This conversion has destroyed much of the remaining pine-and-palmetto habitat during a single decade, a period in which farming has been the most popular and economic use of rural land on Pine Island.

This increase in farmland is sometimes seen as preferable to more residential subdivisions, which cannot be supported by Pine Island’s limited road connections to the mainland. However, farmland can be converted to residential land very easily; the current comprehensive plan actually seems to encourage this by allowing residential development on one-acre lots without rezoning, even on active farmland. Most planning professionals agree that one-acre lots are too small to maintain the countryside and too large to create villages; yet that is the predominant residential density allowed on Pine Island today.

During this plan update process, Pine Islanders have carefully considered alternative growth-management techniques to replace the 1 DU/acre “Rural” category on Pine Island. While considering these alternatives, the public was made aware of the current regulatory climate. Regulations that are so strict as to essentially “take away” all rights to private property rights are illegal; such “takings” must be fully compensated to the landowner, an enormously expensive undertaking.

In addition, in 1995 the Florida legislature passed the Bert J. Harris, Jr. Private Property Rights Protection Act. This act

established a new standard for preventing overly strict regulations on land — any regulation that is determined to place an “inordinate burden” on a landowner may now require compensation, even though it isn’t a “taking” of all property rights. This act does not mean that land-use regulations cannot be made stricter, even if they lower the market value of land; but as a practical matter it will mean closer scrutiny of strict regulations, especially their potential to “inordinately burden” landowners *even if* the court decides that a particular regulation is valid and in the overall public interest.

Whether a new regulation places an “inordinate burden” on a landowner will be determined by the courts on a case-by-case basis. It is clear that the *amount* that the market value of land is lowered after a regulation is imposed will be a very important factor in this decision.

On Pine Island today, there is little market demand for residential development at densities of 1 DU/acre. A single new subdivision has been created at this density (Island Acres just south of the water treatment plant), and it has experienced little building activity even though its lots surround an attractive lake. The actual real estate market for large tracts of Pine Island land has three major types of buyers:

- Intensive agriculture users, who are planting tropical fruits, ornamental palms, and some vegetables;
- Land speculators, who often anticipate selling at a profit to a developer who would build dwelling units around a golf course; and
- New players in this market are public agencies, at present primarily Lee County’s “Conservation 2020” program which buys and preserves natural habitats.

These three types of buyers will establish the market value for large tracts on Pine Island in the absence of substantial demand for one-acre homesites.

The following sections consider five growth management techniques for Pine Island and two hybrid techniques. Any of these techniques could become part of the new comprehensive plan and its future land use map and would be implemented through subsequent changes to other county regulations. (Existing lots would presumably be “grandfathered in” even if they are now vacant.)

1. Conservation land purchases

Local citizens have a strong interest in preserving portions of the native landscape. In 1996, Lee County voters initiated the Conservation 2020 program and funded it with a half-mill property tax for seven years. In the past year Lee County has begun negotiating the purchase of several large Pine Island tracts for preservation under this program. The state of Florida also has a major land acquisition program; in fact they were equal partners with Lee County in purchasing a 103-acre preserve near St. James City in 1993 that provides a nesting habitat for bald eagles. The federal government is also increasing its role in environmental land acquisitions in southwest Florida.

Through their combined efforts, these programs could purchase major portions of Pine Island’s upland habitats over the next ten years. At present, about 2,800 acres of undeveloped native upland habitat remains, excluding that found on fragmented subdivision parcels. Almost all of this habitat is located in Pine Island’s “Rural” areas. Removing any or all of these tracts from the private land market would make their treatment under the comprehensive plan moot. This update to the comprehensive plan could help these agencies identify the most valuable native lands remaining on Pine Island and demonstrate a consensus of Pine Islanders that such purchases would be welcomed.

The positive features of this approach would be taking advantage of existing governmental priorities on habitat preservation and, as a fortunate byproduct, helping maintain the character of the rural portions of Pine Island and precluding residential

development. Extensive research on the physical characteristics of large tracts has been carried out recently by the non-profit Calusa Land Trust; their data could be used to help guide this effort. The effects on large landowners would be minimal because these acquisitions have historically been voluntary transactions with willing sellers.

Some negative features of this approach are the reliance on outside agencies that might decide to spend their acquisition funds outside Pine Island, or that might not complete their Pine Island purchases until such time as many natural habitats have been cleared for farming or have become overrun by invasive exotic vegetation.

2. Lower rural densities

An obvious alternative to the current “Rural” category on Pine Island is to simply lower the allowable density for residential development, to either 1 DU/20 acres (or /10 or /5 acres). There is ample local precedent for density reductions; in 1990, Lee County created a new “Density Reduction – Groundwater Resource” category, where density is limited to 1 DU/10 acres, and has applied it to about 74 square miles of land, mostly east of I-75 and south of SR 82 but also some land along the Charlotte County line near SR 31. Most of the remaining land within two miles of the Charlotte County line have been reduced to a density of 1 DU/5 acres.

In those cases the density reductions were made by the county to resolve a legal challenge by the state land planning agency against Lee County’s comprehensive plan. Although much of the motive for the reduction was to prevent further urban sprawl, in those cases the lands were selected based on proximity to shallow underground water sources that can be contaminated by urban development. Land values did not plummet after the reduction, as many landowners had claimed they would. Values were maintained because there were other viable purchasers for this land, including fill-dirt and limerock mines; the citrus and

tomato industries; government purchases of wildlife habitat and environmentally sensitive lands; and land speculators who anticipate fewer restrictions at some point in the future.

Although there are no comparable groundwater resource issues on Pine Island, there is an obvious public purpose to reducing densities that cannot be supported by adequate infrastructure (in Pine Island’s case, limited road access to the mainland). This distinction could be reflected by naming this new land-use category “Coastal Rural.”

The positive features of this density-reduction approach are simplicity and the local experience with this obvious method of controlling urban development where it does not belong. This approach furthers the important planning objective of clearly separating urban and rural uses, as called for in the state comprehensive plan and the state’s rules governing local comprehensive plans.

A significant negative feature is that it would not interfere with further habitat destruction that occurs when undisturbed lands are converted to agriculture. Also, it might be seen as overly harsh by large landowners, who also might characterize it as an unfair attempt to lower their land values to benefit future conservation purchasers of large tracts.

3. Clustering of development

Under current regulations, “Rural” lands are limited to 1 DU/acre, but there is no prohibition on requesting a rezoning that would allow the same number of dwelling units arranged differently, for instance with houses “clustered” on smaller lots surrounding a golf course. Such arrangements are voluntary on the part of the landowner and subject to approval through the formal rezoning process.

Clustering as currently practiced rarely preserves significant native habitats. In fact it is an inducement to develop the pre-

dominant Florida real estate form of the last two decades, country club communities surrounding golf courses, a development form that hardly matches the stated purpose of the “Rural” category.

The concept of clustering could, however, be modified to suit Pine Island conditions. For instance, clustering could be mandatory rather than voluntary, with fixed percentages of native habitats being retained within new developments. On very large tracts, houses might still be allowed around golf courses or fill-dirt lakes if the percentage of native habitat that must be retained was fairly low, such as 30%. Higher percentages, such as 70%, would preclude recreational facilities such as golf courses that consume large amounts of land, and thus could preserve more of the natural landscape.

The best feature of a modified clustering approach could be preservation of native habitats without outright purchase. Lee County’s considerable experience with clustered development and its flexible zoning categories can be used to accomplish this goal. Clustering is unlikely to trigger any claims under the Bert Harris Act, and would be prized by Pine Islanders (present and future) who place a high value on proximity to natural preserves.

Some negative features are that many tracts, especially those that have been farmed, have no native habitat remaining. Although habitat can be restored, restoration is more costly than preserving existing habitats. Also, protected habitats may end up being fragmented, which reduces their value to wildlife (compared to preservation purchases of entire large tracts).

4. Transferable development rights

The rights to develop a parcel of land can be permanently severed from that parcel and transferred to another parcel. This concept is called transferable development rights (TDR).

Lee County has had a TDR program for fifteen years. Wetlands are allowed only 1 DU/20 acres, but wetland owners who agree *never* to develop not only can transfer those development rights, but they actually get to multiply their density by a factor of four; they are allowed to sell the wetland development rights at a ratio of 1 DU/5 acres of wetlands. The development rights can be used at certain other locations in Lee County. The market value of these development rights is set by the private market; Lee County is not involved in the actual sale, only in approving the “receiving” locations, which are planned urban areas on the mainland.

Lee County’s first TDRs were created on Pine Island in the late 1980s. The undeveloped wetlands in the St. Jude Harbor subdivision were converted by the landowners into 436 TDR units. (In that single instance, the number of TDRs wasn’t based on acreage, but rather on the number of lots that the landowner had been trying to sell from that property.) However, to date the landowners have only been able to sell about a fourth of these TDRs, at an average price of around \$3,000 each.

TDR programs tend to be popular with the public and with elected officials because of their inherent sense of fairness, and the seeming ability to avoid creating winners and losers in the land-use planning process. They are less popular with landowners, who often fear they will be unable to sell them. The reason is that TDRs are valuable to buyers only when development rights are a scarce commodity, typically when local governments have strict regulations on development. Lee County’s regulations have never been very strict; consequently, TDRs have had only very limited success locally. (Some governments offer to buy and stockpile TDRs at some fixed price to create a minimum value for TDRs.)

A new TDR program for Pine Island would need to identify receiving locations other than those currently in use; otherwise the new TDRs would further flood the same market as the

current TDR program and therefore be unsaleable or saleable only at relatively low prices. TDRs would be quite valuable if they could be used to allow greater development on the barrier islands, but all of Lee County's islands suffer the same transportation constraints as Pine Island. TDRs would also be valuable in the areas where Lee County has restricted density levels to 1 DU/10 acres, but again those restrictions were placed for a purpose and it would be difficult to justify swapping unwanted development rights to another unsuitable location.

The most promising concept to make TDRs work on Pine Island would be to allow the new TDRs to be used in the existing villages on Pine Island. This approach would reinforce the current separation of urban and rural uses on Pine Island and would avoid competition with the existing TDR program, while not burdening any other part of Lee County with solving a Pine Island problem. However, the total amount of development would not be reduced if this approach were selected.

5. Controlling the rate of growth

Some communities establish a cap on the number of residential building permits that can be issued in each quarter or each year. A similar cap on commercial permits could be established so that commercial development does not outpace residential growth.

A side benefit of this approach in some communities is to allow a comparison of the quality of development applications and approve only those that best comply with community standards. On Pine Island, objective criteria could be established to measure the cumulative impact on Pine Island's environment, on hurricane evacuation plans, on availability of utilities and supporting infrastructure, and on overall conformance with the goals of the comprehensive plan. Permits could be issued at the end of each quarter to the highest scoring applicants until the quota for that quarter, perhaps 25 dwelling units, has been used up.

Rate-of-growth ordinances are usually established during periods of runaway growth to allow the government time to provide the needed roads and utilities.

The city of Sanibel adopted a rate-of-growth ordinance in the late 1970s. It was imposed through a citizen referendum during a period of very high growth shortly after the city's incorporation, with a limitation on building permits of 180 dwelling units per year. Every four months, all permit applications were compared, and up to 60 were issued. Preference was given to below-market-rate housing, single-family homes, and smaller condominium buildings. A "grading" scheme was used to reward quality development proposals, although this had only mixed results. The Sanibel ordinance was repealed when permit requests fell below the cap for several years in a row.

On a practical level, a positive feature of this approach for Pine Island is that it isn't really essential right now. Growth rates have been relatively slow during the past decade, so an annual cap that is suitable for the long term would probably be painless in the beginning, allowing refinement of the criteria before they result in rejection of applications.

Negative features are that this approach might be more difficult to defend in the absence of a runaway growth crisis and in the absence of specific infrastructure shortfalls that Lee County is in the process of correcting. Rate-of-growth ordinances are usually controversial and difficult to administer, and cause delays in the processing of even routine building permits. They tend to spur speculative building and can discourage individual lot owners who wish to build a home for themselves. Perhaps the biggest negative is that, in the absence of the other approaches suggested above, an annual growth cap would lead Pine Island to the same place as the current system, with the arrival time merely delayed.

6. Hybrid technique #1

These five techniques need not be applied in isolation. In fact, two hybrid solutions offer more promise than any single technique. The first hybrid would create two new categories for the existing “Rural” lands:

- Disturbed lands, which have been farmed or otherwise cleared of native vegetation, or which have advanced infestation of exotic trees. On these lands, agriculture would be allowed and encouraged. Residential densities would be lowered to 1 DU/10 acres. Given the strong local evidence that lands suitable for agriculture are worth more than their development value, Bert Harris Act claims would be unlikely to succeed. A later increase in residential density could be provided for if cleared lands were restored to native habitats through planting of native pines and palmettos; on tracts with hundreds of acres, such habitat restoration might be combined with a golf course, all built on previously disturbed lands.
- Undisturbed habitats, such as native slash pine and palmetto habitats. Agriculture and golf courses would be prohibited here. Residential density might stay at present levels, but new regulations would require development areas to be clustered to protect a high percentage, perhaps 70%, of natural habitats. Future conservation purchases would also be focused on these lands.

The positive features of this first hybrid approach are that it would encourage continued agricultural use on already-disturbed lands while diminishing the potential for residential development on those lands in the future. It would prohibit the destruction of undisturbed habitats where they still exist, while offsetting any resulting diminution of land value by maintaining current density levels there. Any actual development on undis-

turbed habitats would disturb far less land than would occur today by allowing today’s number of dwelling units to be placed on smaller lots. Public purchases of entire tracts for preservation would still be highly desirable and encouraged, but if those purchases do not take place, this alternate plan would ensure far more preservation than current regulations.

Some negative features are the complexity of the classification process and the need to establish two new land-use categories in the comprehensive plan instead of one (or none). It will seem counterintuitive to many to allow higher densities on natural habitats than on disturbed lands (although this serves as an incentive *not* to clear native habitats). This approach might be seen as overly harsh by owners of large disturbed tracts whose expectations are for urban development rather than agriculture.

7. Hybrid technique #2

The second hybrid technique is similar to the first but would require only one new category for existing “Rural” lands. The new category would attempt to maintain most of the benefits of the first hybrid, but in this case using a sliding scale of density rewards to *encourage* (rather than *require*) conservation of undisturbed habitats.

For instance, a tract with undisturbed native habitats might maintain today’s density of 1 DU/acre density if 70% of the undisturbed lands were preserved. Those dwelling units would be placed on the remaining 30% of the land, which would be possible by using lots that are smaller than today’s one-acre standard. (Table 1 shows that the resulting developed area, including its streets and stormwater detention areas, would use about 1/3 acre per lot, similar to many existing single-family neighborhoods on Pine Island.) If *less than 70%* of the lands were preserved, the allowable density would decrease, as shown in the table. If no undisturbed lands were preserved, the residential density would drop to 1 DU/10 acres.

TABLE 1

Assume % of native land saved or restored	Would then be assigned this gross density:	RESULTS ON 100 ACRES WOULD BE:			
		# of DUs	typical size per lot	acres preserved	acres for houses
0%	1 DU per 10 acres	10	10.0 acres	0	100
5%	1 DU per 9 acres	11	8.6 acres	5	95
10%	1 DU per 8 acres	13	7.2 acres	10	90
15%	1 DU per 7 acres	14	6.0 acres	15	85
20%	1 DU per 6 acres	17	4.8 acres	20	80
30%	1 DU per 5 acres	20	3.5 acres	30	70
40%	1 DU per 4 acres	25	2.4 acres	40	60
50%	1 DU per 3 acres	33	1.5 acres	50	50
60%	1 DU per 2 acres	50	0.8 acres	60	40
70%	1 DU per 1 acre	100	0.3 acres	70	30

Table 2 shows another variation which would require preservation of 85% of native lands in order to maintain today's density of 1 DU/acre. Under this scenario, the resulting developed areas would be limited to the remaining 15% of the land, whose developed area, including its streets and stormwater detention areas, would use about 1/6 acre per dwelling unit. At this density, the dwelling units might be in the form of townhouses or garden apartments.

This hybrid technique would also allow credits for restoration of native habitats on previously disturbed lands. The same benefits would be granted to restored land as to preserved land, using the same sliding scale.

TABLE 2

Assume % of native land saved or restored	Would then be assigned this gross density:	RESULTS ON 100 ACRES WOULD BE:			
		# of DUs	typical size per lot	acres preserved	acres for houses
0%	1 DU per 10 acres	10	10.00 acres	0	100
5%	1 DU per 9 acres	11	8.55 acres	5	95
15%	1 DU per 8 acres	13	6.80 acres	15	85
25%	1 DU per 7 acres	14	5.25 acres	25	75
35%	1 DU per 6 acres	17	3.90 acres	35	65
45%	1 DU per 5 acres	20	2.75 acres	45	55
55%	1 DU per 4 acres	25	1.80 acres	55	45
65%	1 DU per 3 acres	33	1.05 acres	65	35
75%	1 DU per 2 acres	50	0.50 acres	75	25
85%	1 DU per 1 acre	100	0.15 acres	85	15

The positive features of this second hybrid approach are that it diminishes the potential for residential development on agricultural land, while rewarding landowners who protect (or restore) their land's natural habitats. As with the first hybrid, actual development on undisturbed habitats would disturb far less land than would occur today by either allowing today's number of dwelling units to be placed on smaller lots, or by reducing the number of lots that are allowable. Public purchases of entire tracts for preservation would still be desirable, but regardless, this plan would encourage more preservation than current regulations.

As with the first hybrid, it will seem counterintuitive to many to allow higher densities on natural habitats than on disturbed lands (although this serves as an incentive *not* to clear native habitats). This approach might be seen as overly harsh by owners of large disturbed tracts whose expectations are for urban development rather than agriculture. Also, since clearing of

native habitats would not be prohibited, if landowners don't find the density rewards to be sufficiently valuable, the result might be the loss of remaining undisturbed lands on Pine Island.

Recommended option for rural lands

[to be decided]

ENVIRONMENTAL ISSUES

- Water quality in canal system?
- Stormwater runoff?
- Seagrass beds?
- Loss of biological diversity?

[to be written]

COMMUNITY DESIGN AND CHARACTER

- Protecting Pine Island's trees?
- Commercial design guidelines?
- Subdivision edges/walls?
- Pine Island – A vision for 2020?
- Jet-skis and airboats?
- Communication towers?

[to be written]

PLAN IMPLEMENTATION

- County-initiated rezonings?
- [others?]*

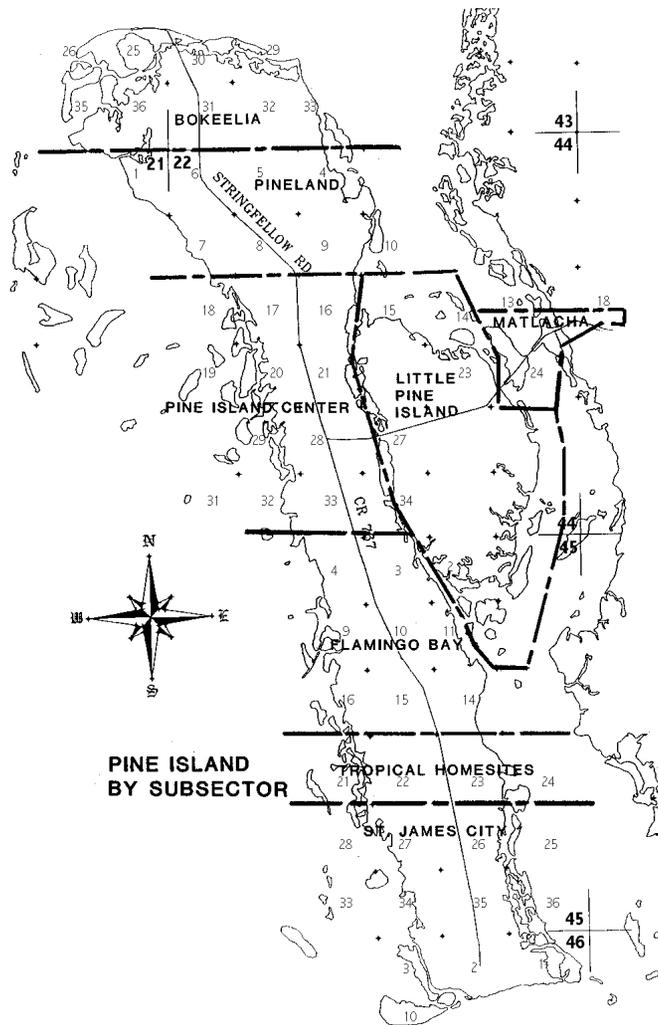
[to be written]

SUMMARY OF RECOMMENDATIONS

Lee Plan text and map changes
[to be written]

APPENDIX A: EXISTING LOTS (DEVELOPED AND VACANT)

[explain tabulations and map]



Section	Town ship	Range	Existing Dwelling Units	Total Platted Lots	Additional Units
Bokeelia sector:					
26	43	21	0	2	2
25	43	21	158	163	5
30	43	22	459	607	148
29	43	22	0	2	2
35	43	21	2	4	2
36	43	21	6	20	14
31	43	22	252	526	274
32	43	22	37	407	370
33	43	22	0	4	4

Bokeelia subtotals: 914 1,735 821

Pineland sector:					
1	44	21	0	4	4
6	44	22	167	665	498
5	44	22	23	313	290
4	44	22	0	8	8
7	44	22	62	312	250
8	44	22	42	475	433
9	44	22	27	244	217
10	44	22	1	1	0

Pineland subtotals: 322 2,022 1,700

Pine Island Center sector:					
18	44	22	0	0	0
17	44	22	35	138	103
16	44	22	180	502	322
15	44	22	0	0	0
19	44	22	0	0	0
20	44	22	2	23	21
21	44	22	363	838	475
29	44	22	0	10	10

28	44	22	288	686	398
27	44	22	0	6	6
31	44	22	0	0	0
32	44	22	2	2	0
33	44	22	3	42	39
34	44	22	0	22	22
P.I. Center subtotals:			873	2,269	1,396

Matlacha sector:

14	44	22	66	67	1
13	44	22		75	
18	44	23	106	156	50
23	44	22	24	40	16
24	44	22	455	694	239
Matlacha subtotals:			651	1,032	306

Flamingo Bay sector:

4	45	22	31	245	214
3	45	22	82	219	137
2	45	22	0	2	2
9	45	22	240	240	0
10	45	22	490	492	2
11	45	22	0	11	11
16	45	22	0	5	5
15	45	22	26	92	66
14	45	22	0	24	24
Flamingo Bay subtotals:			869	1,330	461

Tropical Homesites sector:

Section	Town ship	Range	Existing Dwelling Units	Total Platted Lots	Additional Units
21	45	22	0	0	0
22	45	22	26	68	42
23	45	22	233	645	412
24	45	22	0	0	0
Tropical Homesites subtotals:			259	713	454

St. James City sector:

28	45	22	0	0	0
27	45	22	1	5	4
26	45	22	12	58	46
25	45	22	0	0	0
33	45	22	1	1	0
34	45	22	11	111	100
35	45	22	323	859	536
36	45	22	0	0	0
3	46	22	0	3	3
2	46	22	1,163	1,877	714
1	46	22	194	299	105
10	46	22	0	0	0
St. James City subtotals:			1,705	3,213	1,508

Greater Pine Island totals:			5,593	12,314	6,646
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APPENDIX B: TRANSPORTATION DATA & ANALYSIS

Introduction

Corridor description (physical and operational)

Recent traffic counts on SR 78

Capacity of Pine Island Road through Matlacha

Typical road improvement costs

Road costs

Bridge costs

Access management strategies

GREATER PINE ISLAND COMMUNITY PLAN UPDATE

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