

APPENDIX A: TRANSPORTATION DATA AND ANALYSIS

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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 necessi-

tated by Lee County’s concurrency standards, 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 1989.¹⁹ 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 (see map of historic district on page 26).

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.²⁰

¹⁹ Pine Island Road from Shoreview Drive west to Little Pine Island, according to Lee Plan Table 2(a)

²⁰ Specifically, 85% more traffic than the roads were designed to handle would (at least theoretically) be allowed.

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 build-out 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 alarming 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.

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 road capacity was used up, and prohibited approvals of new subdivisions, even on land already zoned, when 90% was used up.²¹

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.

²¹ *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.

Small increases in traffic flow will generally cause operational problems at this level."²²

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 specific vehicle counts at the nearest permanent traffic count station, which is located on Little Pine Island at the western edge of Matlacha. Thus, 80% was converted to 810 vehicles per peak hour, and 90% was converted to 910 vehicles.²³ 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

²² *Support Documentation for the Traffic Circulation Element*, for revisions adopted January 31, 1989, prepared by the Lee County Division of Planning and Department of Transportation and Engineering, pages III-5, III-6, and III-10.

²³ *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.

“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.”²⁴

Current traffic conditions on Pine Island Road

Since 1990, traffic on Pine Island Road in Matlacha has increased by about 22%. Figure A-1 shows the average counts for each year, with a visual comparison to the 810 and 910

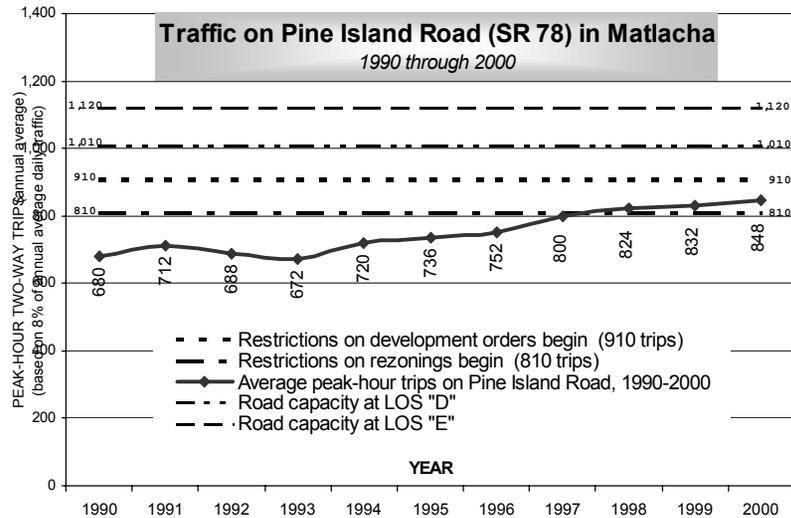


Figure A-1, Traffic on Pine Island Road in Matlacha, 1990 through 2000

²⁴ Proposed 1990 Revisions to the Lee Plan, Volume 1, Traffic Circulation Element, prepared by David Plummer and Associates, September 1990, page B-4.

thresholds in Policy 14.2.2. The 810 threshold was surpassed in 1998, 1999, and 2000.

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 or commuting patterns.

The largest traffic flows through Matlacha are eastbound during the morning rush hours and westbound during the afternoon rush hours, as shown in Figure A-2. Afternoon peaks are slightly higher than morning peaks. This pattern is similar year around, with the peaks more pronounced during the less busy months.

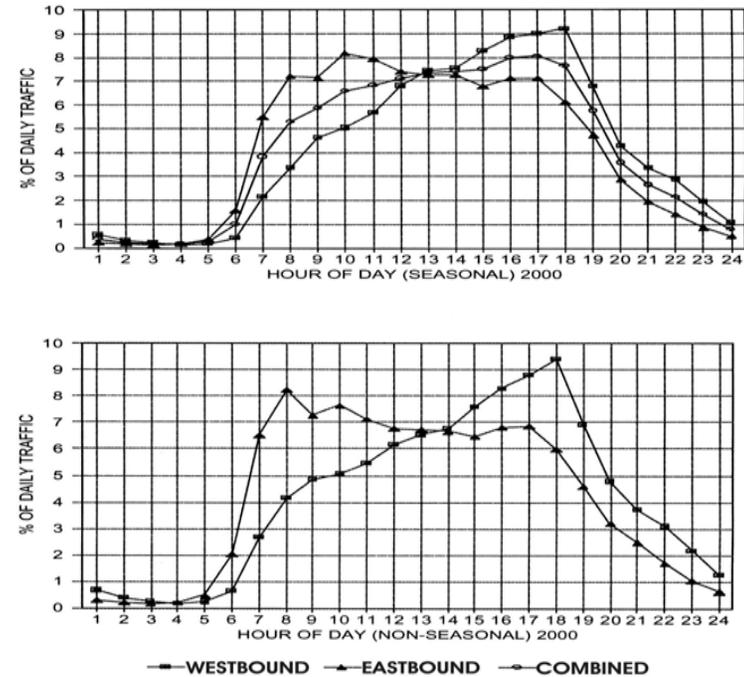


Figure A-2, Directional flow and hourly variations in Matlacha, 2000T

Traffic flow through Matlacha is affected by several other factors. The drawbridge is opened an average of two or three times each day to accommodate boaters, blocking traffic in both directions. School buses make about 30 trips each day, with about half occurring during peak traffic periods each day. Because there are no medians on Pine Island Road, traffic must stop both directions when school buses are loading. Public transit is very sparse at present and has inconsequential effects on traffic flow.

Changes since 1989 in methods of analyzing 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*.²⁵ 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 was designated as a major collector road in a “type 5” rural area.

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 caused by the red cycle of traffic signals are a major limitation on the number of vehicles that can traverse those roads; thus the number and timing of

²⁵ 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 Transportation Research Board.

traffic signals becomes a major factor in 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.

Under the newer method, there is no straightforward reduction in capacity for a road with typical collector-road characteristics; the reductions must be computed through a sophisticated traffic analysis. The new method, without adjustments, may even understate the capacity of Pine Island Road as it crosses Little Pine Island. However, it is primarily within Matlacha itself that the bottlenecks occur. Within Matlacha there are no traffic signals, no major crossing streets, and no left-turn bays, yet there are multiple intersecting streets and driveways. With all of these factors, the new method, unless adjusted for those factors, would not provide a reasonable measurement of traffic capacity.

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 Beach²⁶, as

²⁶ 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. A summary of this data is provided in the Fort Myers Beach Comprehensive Plan, pages 7-B-15 through 7-B-20.

computed by the Lee County department of transportation, as shown in Table A-1. The latest and most thorough study, completed in 1997, suggests that Estero Boulevard’s capacity using the new method is only about 10% larger than the comparable capacity for Pine Island Road using the old method.

TABLE A-1

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

LEVEL OF SERVICE	Peak-hour trips (both directions)	COMMENTS:
LOS “E”	1,120	<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)

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 walkways. 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 the traffic signals 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 park-

ing 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 were provided *without* allowing an additional increment of development on Pine Island, traffic congestion on Pine Island Road would be reduced, although it would reappear as existing subdivision lots are built upon and the new road capacity begins to be used up.

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 if the right-of-way were expanded from 66 to 90 feet, as many as 75 businesses and homes in Matlacha would have to be altered or removed.²⁷

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.

²⁷ *Pine Island at the Crossroads*, by William M. Spikowski, 1982, p. 3.

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 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 is generally regarded as being harmful to businesses along the route. 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 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 (as are both bridges). Any improvements would be constructed and paid for by Lee County. Because major bridges are beyond the ability of the county to afford with current revenue sources, they are built with the proceeds from selling bonds, which are then paid back over time (usually with tolls, although they can also be repaid through special taxes or assessments).

One recent and one planned bridge can illustrate the magnitude of how expensive new bridges are to construct.

A new bridge was completed in 1999 over eastern Pensacola Bay. This bridge is about 3.5 miles long and cost \$54 million to build; it was funded through a \$95 million bond issue. (At present, only half of the expected users are paying the \$2 toll,

and the bridge's owner, the Santa Rosa Bridge Authority, is unable to repay its bonds, which run for another 30 years.)

For the last two years Lee County has been considering rebuilding the Sanibel Causeway and its three bridges. Replacing the main bridge alone is estimated by the county to cost \$45 million for a higher and wider drawbridge or \$77 million for an even higher fixed bridge.

State and federal permits are required for all new bridges, and are difficult to obtain, especially for a new bridge through the Matlacha Pass Aquatic Preserve.

A Matlacha bypass bridge would have serious environmental impacts and there is no realistic source of funds to build it. 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 were provided *without* allowing an additional increment of development on Pine Island, traffic congestion on Pine Island Road would be reduced substantially.

At least at present, building a new bridge around Matlacha is not a feasible option.

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.

At present there is a narrow earthen dam through the mangroves that support an access road for maintaining the power line. If this fill were allowed to remain in place, it may be able

to support a two-lane access road for the new bridge, thus reducing the cost of this alternative.

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 more 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.”²⁸

Beginning in 1998, the 810-trip threshold in Policy 14.2.2 has been exceeded each year. 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 if better traffic data were now available, especially if such data would allow a more sophisticated analysis of existing or future congestion. A permanent traffic counter has been in place on Little Pine Island at the western edge of 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 significantly greater capacity than indicated by the previous methodology, but the most recent Lee DOT work suggests only 10% higher capacity even on Estero Boulevard when using the new methodology.

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 at a slightly 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....” No technical factors or changes since 1989 have been discovered in the course of this planning process that would justify abandoning the 810/910 thresholds in Policy 14.2.2.

²⁸ 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 code 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 require a traffic study from a development applicant and then to make a decision based on that study, rather than on an independent evaluation of the facts. This approach delegates this important analysis to the private party having the biggest stake in its outcome and is not likely to result in sufficient objectivity.

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 could have a different effect. A large 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. For instance, the following commercial uses would primarily serve residents and visitors: grocery, hardware, and convenience stores; hair salons; and service stations.

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 or a small inn are desirable Pine Island businesses that would be unlikely to draw substantial traffic across Pine Island Road. However, a 150-seat restaurant with a panoramic view (or a chain hotel) with a large advertising budget may well draw customers primarily from off Pine Island. To reduce this problem, some small commercial uses might be exempted from this policy even if they are of a type that primarily attracts additional vehicular trips. Other

alternatives would be to allow minor rezonings below a certain size if they are proposed on “infill” properties between existing development at similar intensities (rather than expanding or intensifying already-developed areas), or if their characteristics are such that traffic during the busiest peak hours would not be increased.

In summary, none of the available options for adding significant road capacity to Pine Island are practical. Building four travel lanes through Matlacha, either within the existing or a widened right-of-way, would seriously damage Matlacha’s village atmosphere and pedestrian orientation. Either new-bridge option would have serious environmental impacts and in any case there are no funds for such expensive undertakings. The increased traffic capacity of either bridge would most likely lead to approval of more development on Pine Island, negating the initial positive impacts on traffic flow and hurricane evacuation.