

Facing Facts:

**Why would the U.S. Government permit FDOT to waste \$180 Million
to destroy sensitive, protected wetlands in the Florida Keys
for an unlawful road and bridge project
that does not accomplish its goals?**

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Executive Summary

The Florida Department of Transportation (FDOT) is proposing a \$180 million highway and bridge project between Key Largo and Florida City that purports to decrease hurricane evacuation clearance times, improve traffic safety, and “upgrade” the Jewfish Creek bascule bridge.

This document presents a compilation of facts and research showing the project cannot achieve its basic purpose but would have an overall adverse impact by:

- 1) Failing to adequately consider many less costly, available, and less-damaging alternatives which would achieve the goal of improved public safety;
- 2) Causing the unnecessary destruction of 106 acres of wetlands, adversely impacting essential fish habitat, impairing and disrupting special aquatic environments and wildlife habitat, including at least twelve endangered or threatened species, destroying acres of high-quality seagrass essential to the marine system on which the Keys economy depends;
- 3) Failing to deliver its purpose of faster hurricane evacuation to the mainland;
- 4) Installing design features which FDOT has previously declared “very dangerous”;
- 5) Providing many false “assurances” which are actually unsupported claims based on assumptions and predictions that have been factually disproved;
- 6) Failing to account for the negative impacts of increased vehicular and boat traffic in an ecosystem under stress;
- 7) Ignoring the “minimization” of environmental impacts required by Section 404 regulations;
- 8) Focusing on mitigation efforts which cannot ensure successful replacement of lost functions and values in compliance with the goal of “no overall net loss of wetlands in acreage *or* ecological functions”, failing to address those functions and values in sufficient detail;
- 9) Risking long-term environmental damage by using unproven methods and assumptions for its mitigations, the results of which cannot be known for decades—if ever;
- 10) Failing to account for the long-term maintenance requirements and costs of the mitigation plan;
- 11) Failing to perform cost/benefit analyses;
- 12) Inadequately assessing and reporting historical and archaeological artifacts;

- 13) Using an outdated 12-year old FEIS and its subsequent Reevaluation, failing to address significant changes in circumstances that require a Supplemental Environmental Impact Statement;
- 14) Ignoring the historical record and current events showing the Keys is an Area of Critical State Concern that has exceeded its capacity to withstand further development, dismissing the extensive long-term secondary and cumulative impacts of this project;
- 15) Failing to comply with essential elements of the governing regulations;
- 16) Wasting millions of taxpayer dollars, and that ...

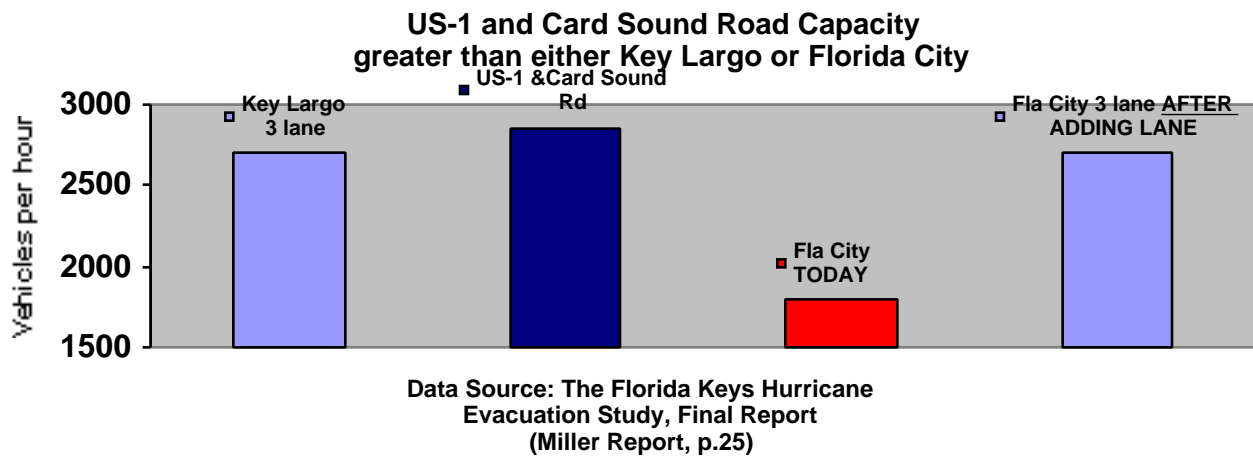
...these facts, taken together, offer compelling evidence that the project does not fulfill the stringent requirements for a Section 404 permit.

Stated Purpose for Proposed US 1 South Project (the 18-Mile Stretch): FDOT seeks a Section 404 permit for dredge and fill activities in Outstanding Florida Waters to improve traffic safety, provide improved emergency evacuation and upgrade the bridge at Jewfish Creek.

Hurricane Evacuation

The lead engineer responsible for “The Florida Keys Hurricane Evacuation Study” commissioned by FDOT (hereafter called “The Miller Report”)¹ has stated unequivocally that **this project, by itself, would not improve hurricane evacuation clearance time.**²

According to the “Miller Report”, the combined highway capacity of US-1 and Card Sound Road already exceeds the highway capacity in Key Largo and Florida City; hence, **there is no need for “additional evacuation capacity” on the Stretch.**³



“The Stretch” is **not** the critical evacuation link, as Table 18 shows. Why would FDOT Secretary José Abreu claim “little or no construction” would be required apart from this project⁴ when the Miller Report clearly shows that a marginally improved clearance time of 24:32 can be achieved **only** if nine more miles of highway and bridge construction are first completed, including additional lanes and bridges between Milemarker 85.6-90 and 105-106.3, **and** a third northbound lane is also constructed through Florida City to the Turnpike (where there are currently two). Then, according to the FDOT consultant, **ten more miles** of highway and bridge construction must also be completed between Milemarkers 80-85.6 and Milemarkers 100-105 to achieve a clearance time less than 24 hours for Monroe County (Appendix Table 18). The direct and indirect effects of these “Connected Actions” would require evaluation by the U.S. Army Corps of Engineers before a permit could be granted for this project based on hurricane evacuation (40 CFR 1508.25(a)(1)).

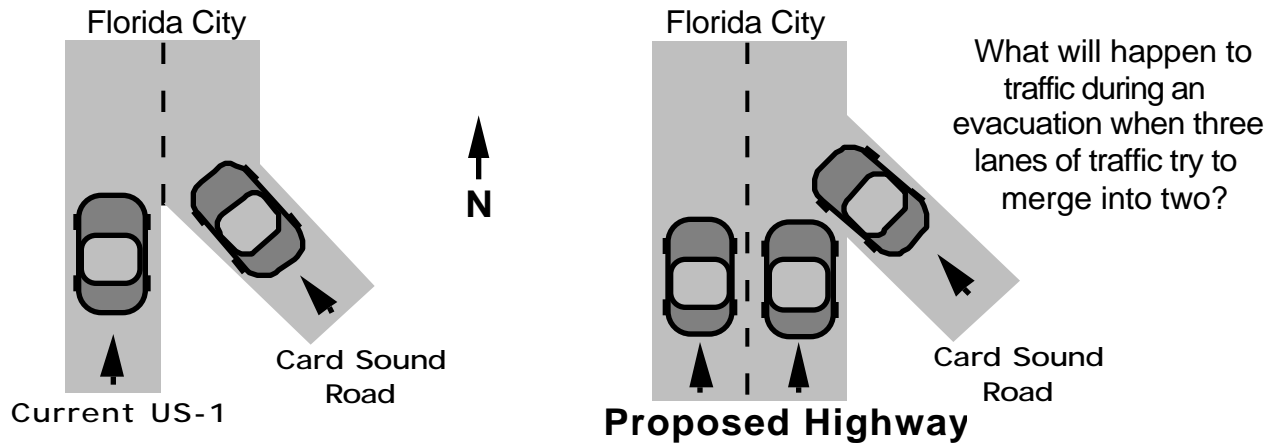
¹ Also referred to in FDOT, “SR-5/US-1 Project Reevaluation,” December, 2003, Appendix 12

² Vargas, Joaquin, PE, Miller Consulting, Inc. USACE Public Meeting Key Largo, FL. March 10, 2004

³ *The Florida Keys Hurricane Evacuation Study Final Report*, Miller Consulting, Inc. for Florida Department of Transportation, June 2001

⁴ FDOT Secretary Abreu in a letter to SFWMD Director Dean on April 15, 2004

The issue of the third northbound lane through Florida City is of critical importance. FDOT was cautioned eight years ago that before adding a third lane to the Stretch, “additional planning is needed to prevent a monumental bottleneck at the northern terminus of the project⁵ [because of the three-lanes-merging-into-two in Florida City]. Feeding three lanes of evacuating traffic into an already congested area that has only two lanes to receive them would guarantee a potentially life-threatening traffic jam. Indeed the public will have been led to believe that their evacuation problems have been solved by the construction of the “US-1 South” project, when in fact their evacuation problems would be compounded unless the Florida City project was completed first. In addition to environmental impacts, the Connected Actions required to improve evacuation clearance time would displace businesses and homeowners throughout Monroe County, and there are serious right-of-way, public interest, utility and environmental issues that would have to be resolved before a “third northbound lane” project could be built on US-1 through Florida City. At the time of this writing (September, 2004), FDOT has not even performed the preliminary design and environmental study required to determine this project’s feasibility.



From *The Florida Keys Hurricane Evacuation Study, Final Report*:

Question (Commissioner Williams):

Under present conditions the combined outbound flow of the 18-Mile Stretch (1500) and Card Sound Road (1350) is 2850, i.e., the two means of egress from the Florida Keys to Florida City already have more than adequate capacity to handle the addition of a lane at both ends (Key Largo and Florida City). Why is the addition of a second lane of northbound traffic needed on either Card Sound Road or the 18-Mile Stretch?

Response (Miller Consulting, Inc.):

Due to **lane balance**, the scenario stated in the question requires three lanes transitioning into two lanes.⁶

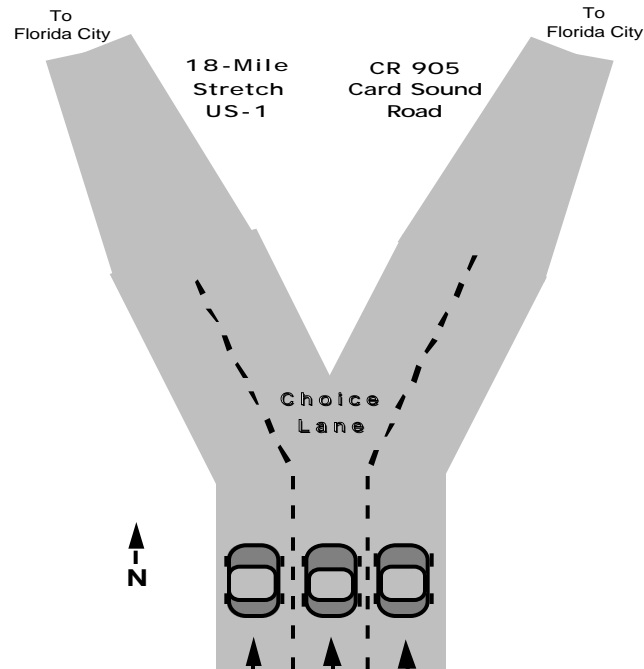
“Lane balance” is the term used by Miller and FDOT to argue that *if* a third evacuating lane were added in Key Largo *and* a third lane were also added in Florida City, those three lanes on either end of the Stretch/Card Sound would require three lanes in between -- on Card Sound Road and US-1. FDOT’s “lane balance” assertion has been disputed by Joseph Hummer, PE, Ph.D. and the Monroe County Sheriff who is charged with implementing

⁵ Division of Administrative Hearings, Claude B. Arrington, Administrative Law Judge, Case Nos: 95-5525, 95-5526, 95-5527, “Recommended Order,” p. 80

⁶ Ibid. Appendix F, Commissioner Nora Williams, Specific Comment F: Response, June, 2001

evacuation plans. Dr. Hummer's authoritative calculations show that a third evacuation lane in Key Largo is unnecessary. ⁷ If there are two lanes of evacuating traffic, there is absolutely NO need for a third lane between Key Largo and Florida City, since one lane of traffic can easily go on US-1 (the Stretch) and another can go onto CR 905/Card Sound Road.

However, in the unlikely event that three lanes were needed in Key Largo, Dr. Hummer explains that there are several reasons why the additional lane on the "Stretch" would still be unnecessary. The split at MM 106 (where US-1 and CR-905/Card Sound Road diverge



on their independent routes to Florida City) "could be rebuilt fairly easily to allow the middle of the three lanes to be a 'choice' lane, allowing drivers to choose between US-1 and CR-905. A second lane could be carried onto US-1 and onto CR-905 for a couple thousand feet beyond the split, where lane drops would bring each road back to one outbound lane. This design would eliminate the 'two full lanes feeding into one lane' scenario posed in the Miller Report. 'Choice' lanes with subsequent lane drops are an increasingly common element in arterial and freeway designs all over Florida and the U.S."⁸

⁷ Hummer, Joseph, PE, Ph.D., "Transportation Engineering Analysis of the Proposed Widening of US-1 Between Florida City and Key Largo," July, 2002. The author of this report is an experienced transportation engineer, fully qualified to conduct these analyses. Dr. Hummer has been researching, teaching, and consulting in traffic operations and safety for 20 years, the past 10 years on the faculty at North Carolina State University in a U.S. top-20 civil engineering program. Dr. Hummer has authored or co-authored over 40 peer-reviewed publications in traffic operations and safety, and has been Principal Investigator on over 20 research and extension projects for a wide variety of federal, state, regional, local, and private clients. He wrote six chapters and two appendices in the *Manual of Transportation Engineering Studies*, a widely-used book published by the Institute of Transportation Engineers and Prentice-Hall, including the chapter on traffic accident analysis. He has contributed to the research effort that resulted in major changes to the signalized intersection analyses in the *HCM 2000*, the premier guide on congestion and delay studies. Dr. Hummer's particular expertise is in the design and analysis of arterial highways like US-1; he has invented two new intersection designs that have been published in the peer-reviewed literature and one new freeway interchange design. He earned his Ph.D. in civil engineering from Purdue University in 1989 and gained his Professional Engineer license in North Carolina in 1990. He engaged in this effort for the Florida Keys Citizens Coalition and the Florida Keys Environmental Fund as a private consultant; North Carolina State University was not involved in any way in this effort.

⁸ Ibid, p. 19

Dr. Hummer notes that Keys residents and regular visitors are well aware that Card Sound Road exists as a viable alternate exit, and that official Monroe County policy dictates the use of Card Sound Road during evacuations. Tourists, who are evacuated well in advance of approaching storms in accordance with county policy, could be informed of the two-roadway choice with ITS signage on the approach to MM 106.6, where the Sheriff's Department will ensure that traffic makes use of both roads. 'Wardrop's Principle,' which has been well established in transportation planning for fifty years, dictates that traffic will assign itself to two competing routes such that the average travel time becomes equal on the two routes (see Papacostas and Prevedouros, *Transportation Engineering and Planning*, 2001, page 409 for example)."⁹

It is important to restate that in Miller's (and FDOT's) analysis of hurricane evacuation, there is no capacity requirement to justify the addition of wide shoulder on the Stretch,¹⁰ it is only the FDOT's "lane balancing" argument which underlies this costly and disruptive project. FDOT proposes to construct a multimillion-dollar shoulder solely to align with a roadway segment whose traffic can already be accommodated by the existing Stretch and Card Sound evacuation route, even if an extra lane were added in both Florida City and Key Largo.

But it is even more inconsistent that FDOT is proposing a \$180-million road configuration today which is nearly identical to a design they judged "unacceptable to sufficiently improve hurricane evacuation or traffic safety" nearly a decade ago.¹¹ When a very similar scheme was suggested as an alternative to their multi-lane proposal in 1996 a two-lane road with 10' paved shoulder-for-conversion-to-evacuation-lane was rejected by FDOT as unsafe and inadequate for hurricane evacuation. Unsafe and inadequate then, unsafe and unnecessary today.

A project of this magnitude must be well-justified. However, there are many examples where the FDOT seems to employ a "saying it's so makes it so" strategy which requires others to defer unquestioningly to their expertise. Despite all facts and evidence to the contrary, FDOT Secretary Abreu made the false assertion to the SFWMD that "the [Jewfish Creek bascule] bridge could break down in an open position (leafs up) just prior to an emergency evacuation."¹² According to Mike Bergin, Structural Materials Engineer for the state of Florida, who is on the team that has inspected this bridge, "**The Jewfish Creek bridge can be lowered manually in case of failure.**"¹³ The bascule bridge at Jewfish Creek has a special gear drive that makes it possible to be lowered for an emergency. Other types of bascule bridges could be stuck in an open position, but not this bridge. This is just one of many patently false and misleading statements offered by the FDOT to justify this unjustifiable waste of fiscal and natural resources.

Despite Secretary Abreu's protests to the contrary, it has been clearly demonstrated by the FDOT's own engineering consultants (and other experts) that **no hurricane evacuation clearance time benefit can be achieved by this project.** It cannot be considered "clearly in the public interest" to permit FDOT to destroy 106 acres of protected wetland and waste millions of taxpayer dollars in order to achieve zero improvement in hurricane evacuation times.

⁹ Ibid

¹⁰ The Miller Report

¹¹ State of Florida, Administrative Hearing, Recommended Order, pp 31-33 (1997)

¹² FDOT Secretary Jose Abreu, letter to Henry Dean, Director, SFWMD, April 15, 2004

¹³ Phone conversation between Mr. Bergin and Mr. Miller, May, 2004

Traffic Safety

A roadway design very similar to this project was determined to be **unsafe** by FDOT and their safety experts eight years ago when a ‘wide southbound shoulder with median barrier’ was under discussion:

“Head-on collisions could be prevented by separating north and southbound lanes; however, given the existing volume of southbound traffic, some drivers caught behind slow vehicles typically will attempt to pass on the shoulder which is very dangerous. Even minor accidents on the southbound lane could completely obstruct traffic, and emergency vehicles would have great difficulty reaching the scene.”¹⁴

Under the misnomer “two lane safety project” this same very dangerous design is being imposed on the Keys in 2004: a two-lane road divided by a solid concrete barrier, wide shoulders inviting dangerous passing maneuvers, and emergency vehicles prevented from safe and ready access to accidents—including those which FDOT expects to occur as a direct result of the barrier/shoulder design. In fact, Florida traffic crash reports that **“overtaking on right’ appears to be the most important contributing factor in traffic fatalities as it relates to aggressive driving.”¹⁵**

Safety is not increased by semantics or by deliberately installing unsafe design elements.

But there **are** practical, less costly, less damaging alternatives which could in fact improve safety on this road using targeted common sense approaches which have not even been evaluated or adequately considered—as required by law. Many are enumerated in the Alternatives section of this document.

Without a hurricane evacuation clearance time benefit (**and there is none**: experts agree that this road is **not** the critical evacuation link—particularly because of the massive bottleneck in Florida City), this project is almost entirely based on the traffic safety analysis of Raul Driggs, the expert on whom FDOT relied to determine the need for this \$180 million dredge and fill project since the 1980s.

In determining the relative safety of the Stretch, the following summarizes Mr. Driggs expert opinion given in sworn deposition in 1996¹⁶:

The Stretch was compared against typical two-lane rural roads in the state
I don’t know what a ‘typical’ road is
I don’t know what a ‘rural’ road is
I don’t know if the Stretch is a typical rural road
I don’t know which roads or how many roads the Stretch was compared with
You can’t compare different kinds of roads because that’s apples and oranges.

¹⁴ FDOT Fact Sheet, 1996

¹⁵ Florida Dept. of Highway Safety & Motor Vehicles, “Aggressive Driver Study”. 1999

¹⁶ Raul Driggs testimony. State of Florida Division of Administrative Hearings. DOAH Case: 95-005524.1996 (pgs. 48-49, 60, 71, 100, 109)

How thorough, accurate, and definitive an analysis could Mr. Driggs have performed if he was unable to answer these most fundamental questions? When asked if these questions had any consequence, in the very same sentence the FDOT's safety expert said all of the following: "to me it's irrelevant, it's not irrelevant, it's significant but I guess 'significant' is a sneaky word."¹⁷

The uniqueness of the 18-Mile Stretch raises some fundamental questions about the validity of such comparisons:

Even elementary children in math class aren't allowed to simply write "My answer is 6", but must explain how that answer was obtained. FDOT must not be permitted to force a project of this magnitude on the Florida Keys based on oblique references to "similar" but unspecified facilities.

Where in the state is there another 'rural road' truly equivalent and comparable to the US1/18-Mile Stretch? And how can a project of this magnitude be predicated on anything less than absolutely valid data?

The historical record shows a very consistent pattern over time and argues for a more targeted approach to safety on this road. In his deposition Mr. Driggs explained that since the 1980s when these safety analyses began, one of the most problematic accident sites on the Stretch is not actually *on* the Stretch, but is a "four-lane urban segment" in Key Largo which he characterized as "a transition zone, not really typical of the rest of the roadway."¹⁸ This finding still obtained in 2002 when a subsequent analysis was performed by Dr. Joe Hummer.¹⁹

To no one's surprise Mr. Driggs and Dr. Hummer both noted that the historic drawbridge and adjacent segments have consistently been the number one site for accidents on the Monroe County portion of the Stretch over decades— mostly rear-end collisions, as Mr. Driggs explained, because "the traffic is coming and all of a sudden they have to stop because of the signal, because the bridge is opening."²⁰ FDOT confirms this finding in both their Project Needs Summary and Project Reevaluation: "a large portion of the crashes (mostly rear-end collisions) along the Monroe County segment are attributed to the Jewfish Creek Bascule Bridge."²¹ A simple warning system installed at the approaches at any time over the past 20 years would have reduced or prevented those "all of a sudden" accidents, **but this very practical and cost-effective countermeasure was never undertaken.**

The obvious question is: since the number of accidents along the Monroe County portion of the Stretch (the lower 7.5 miles) is being used to justify this \$180 million dredge and fill project, where in the state is there a comparable rural road with an ADT of 18000 in an Area of Critical State Concern, a drawbridge *without* a warning signal, and a high-accident 'four-lane *urban* segment which is not typical of' the rest of the subject road?

In context of all the above, given the uniqueness of the 18-Mile Stretch, it is logical to question whether the "statewide rural road average" which the Stretch has been compared against may be less than a valid comparison. At a minimum, the FDOT should

¹⁷ Ibid, pg 109 and following

¹⁸ Ibid, pg. 66-68

¹⁹ Hummer, Joseph, Ph.D., PE, "Transportation Engineering Analysis of the Proposed Widening of US-1 Between Florida City and Key Largo," July, 2002, pg. 22

²⁰ Ibid, pg 102

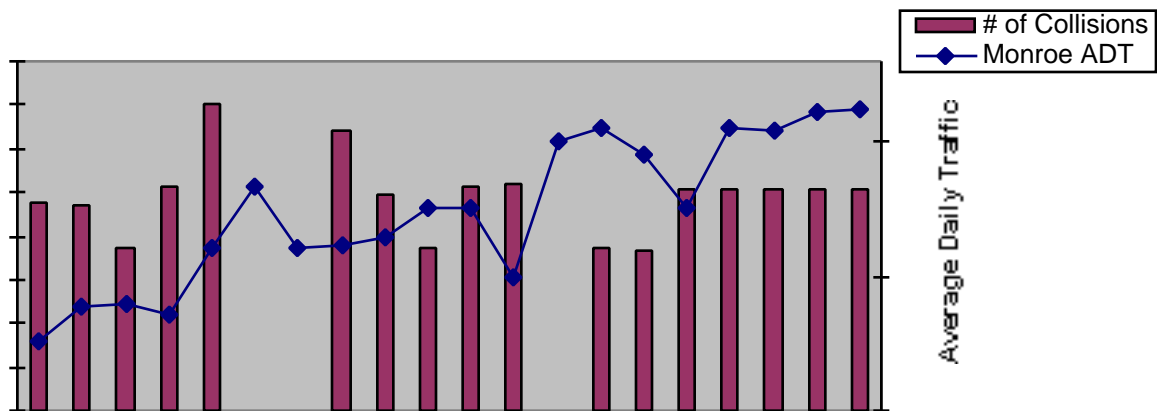
²¹ Project Reevaluation, p.8

produce their original baseline data and clearly show the equivalency and typicality of the set of comparison roads.

This project has a long history. And there is a long and growing list of false “assurances” FDOT has given over the years on various aspects relating to this project. In their Project Needs Summary the FDOT confidently asserted:

“In summary, as more vehicles use the existing roadway, the quality or level of traffic service will continue to decline. As the level of service continues to decline, accident frequency and severity will increase.” (p.16)

As it turns out, not just one but both of these statements were subsequently proven false by the most unimpeachable witness of all: history.²² Average Daily Traffic has more than doubled on the Stretch since 1982 and yet the number of accidents and fatal crashes have remained fairly constant over time—as seen in the following graphs obtained from FDOT, Dept. of Highway Safety, and FHP records.



Number of Accidents on the 18-Mile Stretch 1982 to 2001

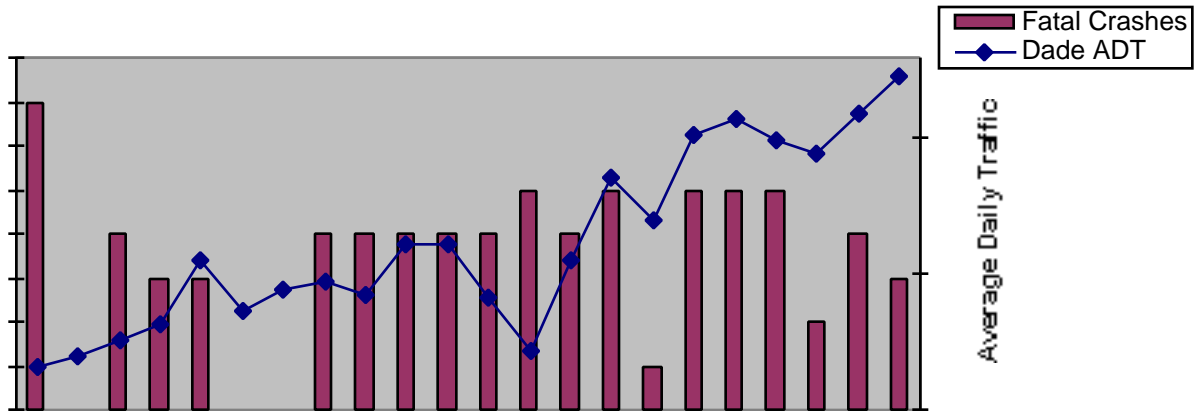
Perhaps Mr. Driggs summed it up best when he said that "even on the most perfect road you're going to have accidents".²³

But as the charts clearly show, contrary to FDOT’s expectation, there has been no increase in either frequency or severity of accidents as the traffic on the Stretch increased by 200%.²⁴

²² 2003 Monroe County Public Facilities Capacity Assessment Report, 2003 Arterial and Travel Time/Delay Study, URS Inc. In 2001 Monroe County determined a level of service B on this corridor, a significant improvement over time and a drastic departure from FDOT’s dire level F prediction.

²³ Driggs deposition, 1996, pg. 87

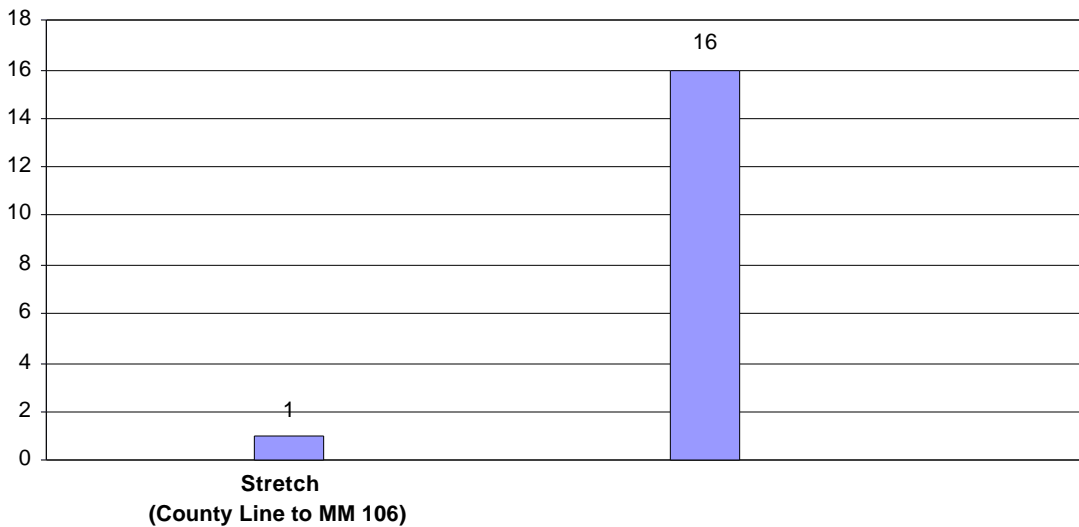
²⁴ Unfortunately, there are a few gaps in the charts because FDOT no longer makes these public records available to the public—or even to other agencies who might provide them to the public. The FDOT has reported significantly different crash figures for the same time period in different publications and presentations. The “average of 101 accidents between 1997 and 2001” was given during the FDOT’s Powerpoint presentation at the USACE public meeting in March, 2004, so that is the figure charted here as their most recently obtainable data.



Fatal Crashes on the 18-Mile Stretch 1982 to 2003

There is a significant disparity between FDOT’s alarming references to the Stretch as “death alley”²⁵ and law enforcement officers’ expert evaluation. Florida Highway Patrol Captain Lathrop concludes that “crash figures do not seem excessive” for the Stretch in view of the high volume of traffic on this road.”²⁶ Captain Lathrop also reports that “...speeding motorists are a continuing problem on the 18-mile stretch...” but that of the 16 fatal crashes that occurred in all of Monroe County in 2002, only one occurred on the Stretch. **This single fatality was the result of a bicycler crossing in and out of traffic.** Three of 90 Dade County fatalities occurred on the Dade segment of the Stretch, which contains two mile-long passing lanes.

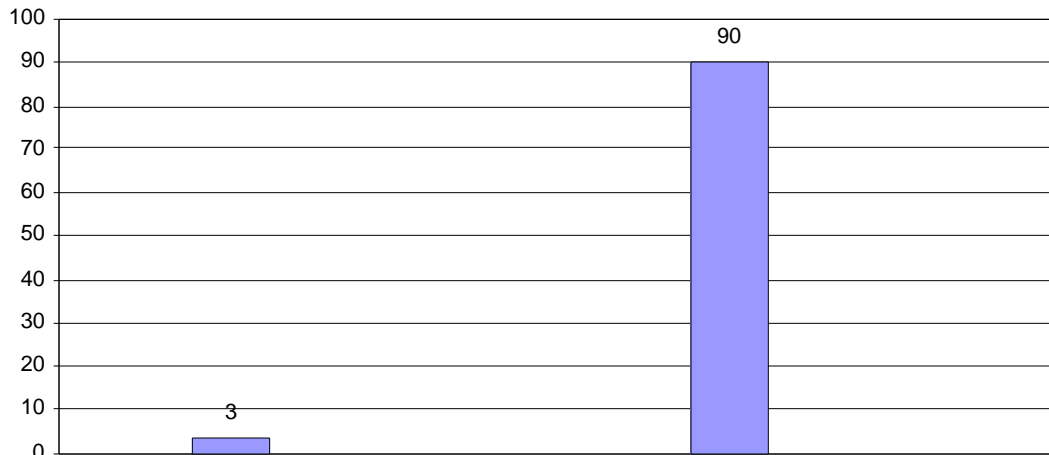
2002 Fatality Comparison Stretch & Monroe County



Source: Florida Highway Patrol

²⁵ State of Florida Administrative Hearing Recommended Order (1997) Attachment F, pg. 74
²⁶ Captain Mary Lathrop, Troop E, FHP, letter to Hal Heim, December 24, 2002, Appendix A

2002 Fatality Comparison Stretch & Miami-Dade County



Source: Florida Highway Patrol

People die on the Stretch because of speeding, alcohol impairment, and careless/impatient recklessness. Concrete can't address the behavioral causes for automobile accidents. National road researchers say that "Police enforcement is especially important to deter inappropriate and excessive speed, which is a major contributor to rural road crashes. Effective enforcement with appropriate penalties and publicity can bring about long-term behavior modification of drivers."²⁷ In a letter to a concerned Keys resident in 2001 Lieutenant Colonel Paul Taylor, Acting Director of the Florida Highway Patrol, was emphatic in his agreement: **"It has been proven over and over that strict enforcement of traffic laws will deter violators and decrease the loss of life in motor vehicle crashes in Florida." Not 'might' deter and decrease, will deter and decrease.** And yet with all the expressions of concern about safety on the Stretch, there is almost *no* enforcement on the road—just the present proposal to pour \$180 million of concrete through protected wetlands and to disrupt transit on this major throughway for five years of construction, in order to build a road which cannot even accomplish its stated goals.

How much more cost-effective would it be to target the 'cause' rather than the 'effect'? There are many practical lower-cost alternatives for improving safety on rural roads.

Meanwhile, the public is being misled and misinformed about what this dredge and fill project will actually accomplish, being promised what research shows it cannot deliver. As the above charts clearly illustrate: "just saying it's so doesn't make it so."

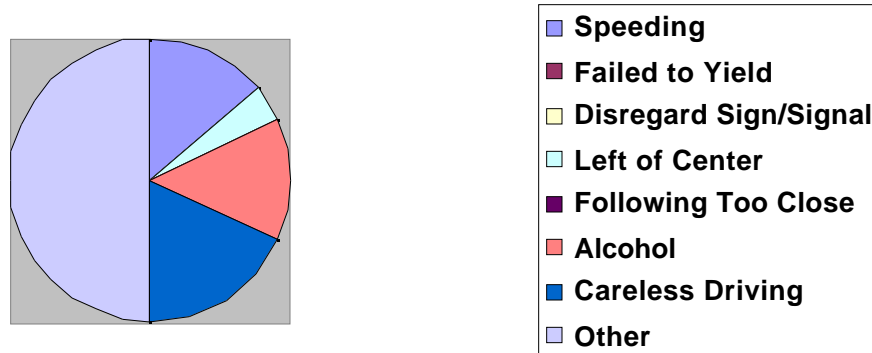
If safety is the real goal, the pertinent questions to be asked are: Where specifically are most accidents occurring on the Stretch, and what are the causal factors in those accidents? This kind of careful analysis employs a common-sense and targeted approach to identifying the actual problem spots and addressing them at the source, improving safety on the road in a manner which would truly minimize adverse effects on the environment at a fraction of the cost to taxpayers.

²⁷ <http://www.tfsrc.gov/pubrds/septoct99/ruralrds.htm>

'Total number of accidents' tells us nothing about the distribution of those accidents, where they are happening, and why they are happening. Careful analysis of this information is vital to determining the most practical and effective solutions to improve safety on the Stretch.

The pie chart below shows the major behavioral causes for fatal accidents in Monroe County in 2002. This is consistent with Judge Arrington's Findings of Fact in 1996: "High rates of speed and impaired drivers contribute to the accident rates along the corridor."²⁸

Contributing Causes of Fatal Crashes Monroe County 2002



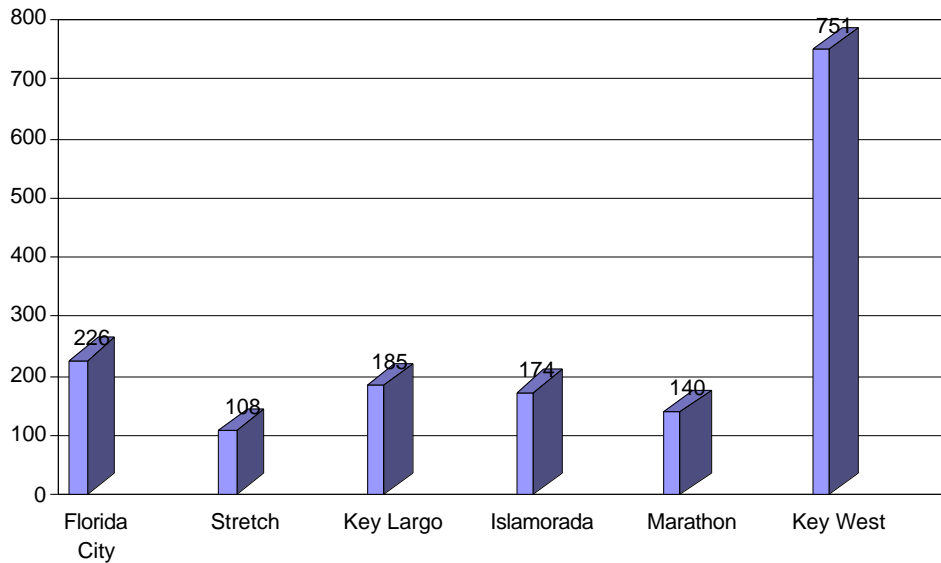
Source: Florida Dept. of Highway Safety & Motor Vehicles

The same pattern of accidents Mr. Driggs described in his 1980s analysis and subsequent update in 1996 is still evident today. Because the Stretch traverses an exceptionally fragile Area of Critical State Concern, this road should be made safer through practical and less damaging measures targeted to specific problems.

At the March 10, 2004 USACE Public Hearing held in Key Largo, the FDOT asserted that an average of 101 accidents per year on the Stretch from 1997-2001 warrants this extensive dredge and fill project. However, Dept. of Highway Safety data show that fewer accidents occur on the Stretch than other reporting sites in Monroe County.

²⁸ Recommended Order, Findings of Fact #217, p.75

Crash Comparison Florida City to Key West 2002



Source: *Traffic Crash Facts 2002*. Florida Dept. of Highway Safety & Motor Vehicles

Data indicate that the safety ratio for the Stretch is improving²⁹, is likely to improve further after the Intelligent Transportation System is installed in the summer of 2004, and would most certainly improve with visible, publicized enforcement on the road.

At the federal level, the United States Department of Transportation recognizes that “speeding is a complex problem” which cannot be solved by more concrete alone because it involves “many factors—personal behavior, vehicle performance, roadway characteristics, and enforcement strategies.”³⁰ (*emphasis added*)

Studies show that ‘faster and wider’ concrete will not eliminate the reckless causal factors responsible for most accidents, and suggest that the particular design features of this road will only exacerbate aggressive driving behaviors.

According to Traffic Engineer Walter Kulash of the Atlanta, Orlando and West Palm Beach Engineering firm *Glattig, Jackson, Kercher Anglin, Lopez, Rinehart, Inc.*:

“It can definitely be said that removing the vegetation will encourage speeding. Vegetation provides a sense of containment to the road, and therefore becomes a factor in informing drivers of the de facto design speed, in much the same way as parked vehicles, street furniture, buildings and guard rails do.

“The best basis for establishing the impact on design speed of roadside vegetation is to be found in the AASHTO ‘Roadside Design Guide,’ the definitive guideline on roadside safety and elements of roadside design. The AASHTO roadside design guide finds that changes in the roadside enclosure (trees, embankments, or whatever) change the design speed, at the rate of around 3.3 miles per hour for every foot of additional distance. Thus, if removing the trees results in, in effect, a widening of the

²⁹ Project Reevaluation, p.8, comparing crash ratios in 1999, 2000, 2001 of 1.651, 1.257, 1154, respectively

³⁰ Alicandri, E. and Warren, D. “Managing Speed.” US DOT website <http://www/tfhrc.gov/pubrds/03jan/10.htm>

clear zone by ten feet (i.e., the zone along the road devoid of any feature), then the impact on design speed is 33 miles per hour -- a significant amount.”³¹

Therefore, removing the trees, shrubs and other vegetation that constitute a 75-foot wide “enclosure” along this road and replacing it with a 100-foot chainlink enclosure will not only be aesthetically unpleasing and environmentally damaging, it will encourage speeding.

In the expert opinion of transportation designers and emergency personnel, a concrete jersey barrier bisecting the corridor would preclude emergency vehicles and police officers from safe and ready access to accident sites and would hamper the ability of emergency vehicles to respond safely and quickly to an emergency.³² FDOT’s own safety analyst expressed this same opinion under oath.³³

A concrete barrier would obviously reduce the already low number of head-on fatalities on the Stretch, but studies suggest it would likely increase the number of accidents along the entire corridor as inattentive or reckless drivers strike the rigid barrier and lose control or grow impatient and attempt to pass on the shoulder. Research shows that vehicles with a high center of gravity are more likely to roll over in a collision with a barrier. Their rigidity also proves to be hazardous for vehicle occupants in severe impacts. A comprehensive study of six countries found that median barriers reduced severity of accidents, but **increased** accident rates by 30 percent.³⁴ And the barrier would then prevent emergency vehicles from reaching the scene of those accidents. How is safety improved by deliberately installing unsafe design elements, exchanging one type of collision for another?

It bears repeating that FDOT has long been aware of this dangerous set of conditions, yet they now endorse a wide shoulder on the northbound side of this project after determining in the mid-1990s that a wide shoulder southbound would have been unsafe and technically flawed: “...Due to the magnitude of the southbound volumes, the need for passing will likely produce passing attempts on the shoulders. This is a very dangerous condition especially considering the large number of trucks, recreational vehicles and trailer towing vehicles, which compound the problem.”³⁵

While the state of Florida has concluded that “overtaking on the right appears to be the most important contributing factor in traffic fatalities as it relates to aggressive driving”³⁶ the present FDOT project would add a wide shoulder on the right which, in combination with a solid jersey barrier, would invite and facilitate just such dangerous behavior. This shoulder will be of lesser depth and “unsuitable as a travel lane” *by design*.³⁷ This unsuitability will not stop impatient drivers (of all types of vehicles) from using it to pass on the right, or to move over so that others may pass them—and the result is likely to be more, not fewer, accidents on the Stretch.

³¹ Kulash, Walter, PE. Email to J. Hammerstrom, March 26, 2004

³² A. Henson, “Cape Cod Berm Reduces Head-On Fatalities”. *The Reporter*, March 26, 2004. Also Email to John Hammerstrom from Robert Mumford, March 27, 2004

³³ State of Florida Division of Administrative Hearings. DOAH Case: 95-005524. Raul Driggs. 1996

³⁴ “Forgiving Roadsides”, ETSC, Brussels, 1998

³⁵ Florida Department of Transportation, “SR-5/US-1 SOUTH TECHNICAL MEMORANDUM,” May 1995, pp. III-3-4.

³⁶ “Aggressive Driver Study”. Florida Dept. of Highway Safety & Motor Vehicles, 1999

³⁷ Public Notice, pg. 4

There has long been agreement that the approaches and intersections at Jewfish Creek are the scene of many rear-end collisions on the Stretch. However, in seeking a multi-lane permit in 1996 FDOT rejected a two-lane fixed bridge design, claiming that “it would not completely eliminate rear-end collisions at the bridge.”³⁸ And more recently Dr. Joe Hummer’s collision analysis findings (2002) indicate that the proposed \$70 million replacement bridge might prevent just fifteen rear-end collisions, an economic outcome which would not offset or justify the enormous capital expenditure, and that “the expense and disruption for wider shoulders does not seem justified by the relatively low numbers of single-vehicle and object collisions.”³⁹ Clearly, the massive roadwork project presently proposed by FDOT is the wrong solution for the problem.

Compelling recent research (July 2003) covering all 50 states over an 11-year period published in "Accident Analysis and Prevention" shows that new highway infrastructure **has not saved lives**. The author states: "...[nationwide] changes in highway infrastructure ...have not reduced fatalities and injuries and have even had the effect of increasing total fatalities and injuries."⁴⁰ Fatality reductions over the period were a function of "...increased seatbelt usage, reduced per capita alcohol consumption and improvements in medical technology."⁴¹ According to the author, "there is no question that 'non-concrete' approaches to safety are far more cost-effective."⁴²

Data and documents gathered over the years reveal numerous inconsistencies and contradictions, raising important questions about the validity of the assumptions on which the entire project is based. Achievement of the goal of public safety can be better accomplished through practical and less-costly alternatives targeted to the most frequent accident sites and their specific problems.

There are alternatives which could in fact improve overall safety on this road using common sense approaches which have not even been evaluated or adequately considered—as required by law.

In consideration of the above facts and data, the US-1 South project as proposed fails to achieve its purpose in compliance with federal regulations, and therefore does not meet the threshold of “need” for a dredge-and-fill permit in Outstanding Florida Waters.

Less Damaging Project Alternatives

EPA Section 404(b)(1)

40 CFR 230.10

(a) Except as provided under section 404(b)(2), **no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem**, so long as the alternative does not have other significant adverse environmental consequences.

(2) **An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.**

³⁸ Recommended Order, p. 32

³⁹ Hummer Report, July 2002, p. 27

⁴⁰ Noland, Robert, “Traffic fatalities and injuries: the effect of changes in infrastructure and other trends,” Accident Analysis & Prevention, July 2003, p. 610

⁴¹ Ibid.

⁴² Noland, Robert email message to John Hammerstrom, September 5, 2003

(3) In addition, where a discharge is proposed for a special aquatic site, **all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.**

FDOT has failed to adequately consider a multitude of alternatives that have the potential to be less damaging, less costly and deliver greater safety benefits. Specifically, FDOT has:

- failed “...to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment” (40 CFR 1500.2(e))
- not provided “...full and fair discussions of significant environmental impacts and inform[ed] decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment” (40 CFR 1502.1)
- not “rigorously explore[d] and objectively evaluate[d] all reasonable alternatives...”(40 CFR 1502.14(a))
- failed to “include reasonable alternatives not within the jurisdiction of the lead agency” (40 CFR 1502.14(c)) .

A generally accepted truism is “you can’t find what you’re not looking for”. Over the years, FDOT has made their resistance to alternatives surprisingly clear:

Since this project originated in 1986, every “alternative corridor” proposed by FDOT has involved significant widening of the roadway: predictions were based on assumptions which have been subsequently disproved, several of which were discussed earlier in this document.⁴³ Then, as now, FDOT did not “...assess the reasonable alternatives to the proposed action that will avoid or minimize adverse effects of these actions...” (40 CFR 1500.1 (e))

In a 2002 safety analysis of this highway, Joseph Hummer, Ph.D., PE, concluded:

“Before safety countermeasures are funded—especially countermeasures as expensive and disruptive as a new high fixed bridge and a median barrier—the FDOT must perform much more thorough analysis. That analysis should include other years of data and other variables. Countermeasures targeted at eliminating the fatal collisions, like the median barrier, should be based on reconstruction of those fatal collisions in much greater detail...Countermeasure development should also be guided by the results of field studies. Some of those field studies that appear to this author to be needed in this case include speed studies, conflict studies at the back of drawbridge queues, and sight distance studies.”⁴⁴

The many unevaluated safety alternatives discussed in this section have the potential to **avoid, minimize and/or reduce** the adverse direct and indirect impacts as required by law.

⁴³ Under NEPA, events indicating the truth or falsity of agency predictions should not be ignored. American Petroleum Inst. v. EPA, 540 F.2d 1023, 1034 (10th Cir. 1976), cert denied, 4 U.S. 922 (1977).

⁴⁴ Hummer, Joseph, Ph.D., PE, “Transportation Engineering Analysis of the Proposed Widening of US-1 Between Florida City and Key Largo,” July, 2002, p.28

Increased enforcement. If a reduction in accidents is the goal, the most obvious alternative to improving overall safety on the corridor is to increase the presence of safety officers. Estimates of current law enforcement presence on this road are appallingly low. Essentially, the roadway is “patrolled” by mainland-based officers on their way to/from work in Monroe County. For the Monroe County segment of the road one estimate is a “maximum of 20 hours” out of the 168 hours in a week.⁴⁵ As previously shown, most accidents are a direct result of speeding and reckless driving. It follows that continuous active law enforcement would go much farther to prevent aggressive driving and reduce accidents than providing a faster wider speedway on which to exceed the posted limit with impunity.

Increased enforcement of the existing road would reduce dangerous and aggressive driving *today*, and could be implemented at a fraction of the cost of this project. Enforcement would deliver a safer highway with no adverse environmental impacts. Based on the twenty year lifespan of FDOT’s US-1 South project, a calculation of 24/7 enforcement—including administration, \$50 per hour for salaries and benefits, and four vehicles (three and a spare)—would cost less than 10% of the project's \$180 million price tag.

Technology available today (particularly related to the Intelligent Transportation System discussed below) makes speed enforcement on a rural stretch of highway much easier and more effective than in 1992 when the Final Environmental Impact Statement was published.

The Cape Cod Model. Route Six on Cape Cod between Orleans and Dennis was an undivided, two-lane road which suffered an average of five fatalities per year. The Massachusetts Highway Department proposed a divided four-lane highway, just as the Florida Department of Transportation originally did for US-1 between Key Largo and Florida City. The similarities of these two roads are striking. They are both heavily-traveled [though Route 6 carries over 50% more vehicles daily], primary thoroughfares through environmentally sensitive areas with evacuation requirements and both have seasonal increases in average daily traffic. Robert Mumford, the Transportation Program Manager for the Cape Cod Commission, was largely responsible for the very practical, minimally damaging and very safe 34-foot wide paved 2-lane road (as compared to FDOT’s planned 54-foot wide project) that has been in place for a decade.

It is telling that FDOT Secretary Jose Abreu dismissed the Cape Cod Route 6 design as a possible alternative to the US-1 South project, mischaracterizing the road as “temporary” and incorrectly stating that the roadway “could act more as a hazard since sufficient ‘shy distance’ is not provided between the travel lane and the berm while offering opposing vehicles no protection.”⁴⁶

Mr. Mumford corrects the record: “The ‘Cape Cod System’ has been in place for over 10 years. I would not describe it as ‘temporary.’ Furthermore, the official Regional Transportation Plan (approved by the Cape Cod Metropolitan Planning Organization—including Massachusetts Highway Department) does not include any project or recommendation to change the current system.

“The road was widened by several feet to accommodate and provide adequate “shy distance” from the berm - approximately the same “shy distance” that would have been

⁴⁵ Anonymous Law Enforcement official, in conversation with J. Hammerstrom, March, 2004

⁴⁶ Abreu, Jose. Email to Joan Mowery Barrow, March 30, 2004

provided for Jersey Barriers. The combination of the modest widening, dual painted yellow lines on each side of the berm, the berm itself, road reflector/delineators, and the flexible stanchions have created, both physically and visually, greater separation of the two directions of travel. While no road is entirely risk free, this has greatly improved safety, making it the **safest section of Route 6 on Cape Cod.**



“As well as accessing emergencies on the highway, many emergency personnel were concerned about getting through this section of highway for access to Cape Cod Hospital. The example used is as follows: even a minor (non-injury) crash along the single lane highway could tie up traffic for miles if there was a Jersey Barrier. If an ambulance was enroute from the Outer Cape to Cape Cod Hospital (in Hyannis), it could be delayed by one of these minor crashes. With no Jersey Barrier, the ambulance can straddle the berm and travel down the center of the highway, when necessary, to get around tie ups.”⁴⁷ **In the 13 years since the safety-enhanced road was built, this section of Route Six has had no head-on fatalities.** You can view a four minute movie of this road with commentary by Mr. Mumford on the Internet at:

<http://homepage.mac.com/capetv/CapeCodBerm/iMovieTheater16.html>

Viewing it may require the installation of QuickTime, which is free and available for all computers at:

<http://www.apple.com/quicktime/download>

Secretary Abreu’s misstatements concerning safety on Cape Cod reveal the FDOT reluctance to see alternatives where they exist. Under NEPA, events indicating the truth or falsity of agency predictions should not be ignored (American Petroleum Inst. v. EPA, 540 F.2d 1023, 1034 (10th Cir. 1976), cert denied, 4 U.S. 922 (1977).

Alternatives to Replacing the Jewfish Creek Bridge With Proposed Fixed Span

Rear-end accidents occur as speeding drivers encounter a left-turning vehicle or queue of traffic stopped for an open bridge just around a curve in an otherwise straight flat road. For more than two decades FDOT has acknowledged that “a large portion of the crashes (mostly rear-end collisions) along the Monroe County segment are attributed to the

⁴⁷ Mumford, Robert, email to J. Hammerstrom, March 30, 2004

Jewfish Creek Bascule Bridge,”⁴⁸ but FDOT hasn’t installed warning lights to announce that the bridge is open and that traffic is stopped. “Friction at driveway access points for adjacent businesses”⁴⁹ along the bridge is another cause of accidents, but FDOT hasn’t improved the intersections in the interim to reduce such incidents.

Eliminating the northbound left turn at Gilbert’s (at the northern end of the existing drawbridge) would also eliminate a significant percentage of the accidents on the Stretch and save taxpayer dollars. FDOT should consider making necessary upgrades to the existing bridge, then putting in a turnaround lane further along up the “Stretch” rather than constructing the environmentally damaging and costly system of ramps and concrete they’re proposing.

It is important to note that *as a consequence of the project*, FDOT intends to build just such a turnaround for county school buses, which will no longer be able to turn around once the fencing is installed at Manatee Bay.⁵⁰ It simply makes more sense to build a turnaround in order to *eliminate* those dangerous left-turns, eliminate many accidents, and eliminate the negative environmental impacts of this project.

An Intelligent Transportation System (ITS) is slated for installation on this road by the end of this summer (2004), and that alone could improve safety considerably. FHA studies show that ITS signs informing motorists that the bridge is up would be effective in reducing many of the bridge-related accidents.

The Federal Highway Administration’s Intelligent Transportation System Database identifies successes of ITS applications around the world, including the following:

“An Institute of Transportation Engineers (ITE) synthesis study on automated enforcement lists two U.S. cities with automated speed limit enforcement programs, with documented **crash reductions of 40%** in Paradise Valley, Arizona, and **51%** in National City, California.

“Traffic surveillance, lane control signs, variable speed limits, and dynamic message signs (DMS) in Amsterdam, the Netherlands, have led to a 23% decline in the accident rate.” In England, variable speed limits supplemented with automated speed enforcement **have reduced rear-end accidents** on approaches to freeway queues [and presumably to drawbridges queues] **25%-30%**.

“A study of speed enforcement cameras along segments of Norwegian highways which met certain warrants regarding traffic speeds and accident rates prior to the deployment of cameras found a **26% decline in injury accidents**.

“Ramp rollover warning systems were installed at three exit ramps on the Capital Beltway around Washington, DC. Two of the systems used sensor and weigh-in-motion scales to determine vehicle speed and weight classification, and one system only used vehicle speed measurements to calculate the probability of a truck rolling over. If a truck was in danger, a roadside warning sign was activated. Prior to deployment there were 10 truck rollover accidents at these sites between 1985 and 1990. After deployment, **no accidents were recorded** between 1993 and 1997.

“An Idaho DOT study found significant speed reductions when weather-related warnings were posted on dynamic message signs...**vehicle speeds dropped 35%** to 35 mph when warning messages were displayed, compared to a 9% drop to 44 mph without the dynamic message signs.

⁴⁸ Project Needs Summary – Attachment R, p. 7

⁴⁹ Project Reevaluation,., p.9

⁵⁰ Project Reevaluation, p. 33

“A NHTSA modeling study indicated collision warning systems would be **effective in 42% of rear-end crash situations where the lead vehicle was decelerating, and effective in 75% of rear-end crashes where the lead vehicle was not moving. Overall, collision warning systems would be 51% effective.**”⁵¹

When surveyed, drivers said there would be fewer traffic violations with photo-enforcement devices since *drivers would obey traffic laws if they thought they were being watched, and that photo enforcement would increase driver awareness*⁵² (emphasis added)

Drawbridge Openings. US 1/SR 5 is the main throughway for conducting all business and travel essential to the life of the Keys. Presently, during peak travel periods on the weekends, the bridge can be opened twice an hour. This opening schedule wasn't a problem in 1970 when Jewfish Creek Average Daily Traffic counts were 4755. However, the number of vehicles on the Stretch has quadrupled, so “the way it's always been done” simply doesn't make sense in the present day context.⁵³

Since most boats demanding the bridge to open are recreational vessels (primarily sailboats) rather than primary or commercial, an exemption should be sought from the Coast Guard in the case of our unique situation reducing the frequency of bridge openings. To not do so would be another classic example of “the way it's always been done” thinking which clearly doesn't serve the greater public good.

Traffic flow is more frequently halted during peak travel periods on weekends and holidays, creating congestion and travel delay so that a recreational boater doesn't have to wait. Common sense would seem to dictate that since pleasure boats have alternative routes not available to vehicles, boat traffic should yield to vehicular traffic—not the other way around. Even in a free society, it is not unreasonable for the few to delay their leisure for the general welfare and safety of the many.

Revising the bridge opening schedule is possible according to the Coast Guard, who assess the competing demands of vessels/vehicles on a case by case basis:

“The regulations for drawbridges can be found in the Code of Federal Regulations 33 CFR 117. All drawbridges are regulated by the Coast Guard. Some have a scheduled opening and others are on demand. In most cases it has to do with the number of cars and number of vessels transiting an area. The Coast Guard will look at the information and determine whether a drawbridge needs to be regulated or not. If it is determined that a drawbridge will need to be regulated, due to current guidelines, it takes approximately a year from start to finish to get a regulation finalized.

As for your second question, **the regulation for any drawbridge can be changed as needed when vehicle traffic increases** and/or waterway usage changes.”⁵⁴ (emphasis added)

Adjusting the opening schedule would eliminate much of the distress around the current bascule bridge by reducing rear-end collisions and travel delay. This is another practical example of a simpler, less expensive, less adverse alternative to improving safety on the Stretch in accordance with Section 404 requirements.

⁵¹ http://www.mitrotek.org/its/benecost/BC_Update_2003/index.html, FHWA, Intelligent Transportation Systems Benefits and Costs, 2003 update, prepared by Mitrek Systems, Washington, DC

⁵² *National Survey Of Speeding And Other Unsafe Driving Actions. Volume III: Countermeasures.* <http://www.nhtsa.dot.gov/people/injury/aggressive/unsafe/counter/Chapt3.html>

⁵³ FDOT Transportation Statistics. Historical AADT Data. 1970-2002

⁵⁴ M. Lieberum. 7th Coast Guard District. Bridge Branch. Email to Rev. RH Smith, 3/29/04

Following the No Build/Rescheduling solution, the next “least adverse” alternative that would reduce impacts would be to install a slightly higher drawbridge. This would be permissible to the Coast Guard (minimum height for a new moveable bridge is 21 feet), would be high enough to allow many more vessels to pass underneath freely, but would still be in keeping with the character and scale of the surrounding area. A taller bridge with less frequent openings, combined with No Left Turn, would ensure a much safer and freer flowing Stretch, and would maintain linkage with the existing highway.



The digital image of 3 bridges above represents the relative size of 1) the existing bridge; 2) a 21-foot clearance drawbridge (the minimum size the Coast Guard will permit for a new moveable bridge should it become necessary to replace the existing historic bridge); and 3) the height of the 65-foot clearance bridge (the minimum height that the Coast Guard would approve for a fixed-span bridge). This image is not meant to represent the actual appearance of the bridge proposed by FDOT, but merely to serve as a size reference.⁵⁵

In the past ten years, nine new moveable bridges have been constructed between Jacksonville and Miami over the Atlantic Intracoastal Waterway. Those include: Indian River North, Jupiter Inlet, Venetian Causeway, 17th Street Causeway, Donald Ross, Hallandale Beach Blvd., Ocean Blvd., Orange Avenue and Royal Park bridges. **None of these bridges is over 25 feet.**⁵⁶ It can be done and has been done elsewhere in the state.

FDOT has clearly failed to consider, and has failed to inform the public that there are alternatives for the bridge as well as the road.

⁵⁵ Hammerstrom, J. Computer-generated image illustrates size difference between existing and proposed facilities

⁵⁶ Data provided by R. Overton, Bridge Management Specialist. US Coast Guard.

Refurbishing the existing bridge in conjunction with above suggestions would be the most practical way to avoid/minimize direct and indirect impacts to Outstanding Florida Waters.

A 65' fixed span bridge with 360' on-ramps and off-ramps is totally unnecessary and out of scale with the surrounding community, as well as being environmentally damaging. According to the Federal Highway Administration, "a transportation facility must fit the setting" and the aesthetic and safety principles of context-sensitive design should be vigorously promoted.⁵⁷

Context-Sensitive Design and Aesthetics

It has been observed that "state transportation planning agencies sometimes get stuck in reverse, wearing down communities by stubbornly defending preconceived ideas."⁵⁸ A community's pushback against an unwanted road typically meets with strong resistance from engineers who have spent a career designing and building highway systems around the one-size-fits-all notion that "more concrete" is the obvious answer to all transportation and safety problems. "It's as if planners sometimes utterly forget about people and places and focus only on pavement. Their old-school training encourages them to cling to the most stringent federal design guidelines as if they are dictates, even when they're usually presented as a range of options. [Consequently], there is a bunker mentality: as America rapidly leaves 60 years of bigger-is-better highway building behind, it's scaring the daylights out of planners who specialize in exactly that."⁵⁹

So it's not surprising that FDOT frequently invokes the term "best design standard" to support this unnecessary road widening. However, since Congress passed landmark laws in the 1990s encouraging landscape protection around new roads, the federal government has both encouraged and supported a new approach to road construction known as Context-Sensitive Design:

"Context-sensitive design replaces long-standing, one-size-fits-all designs that produce wide, flat, arrow-straight, high-speed, runway-like roads with something entirely different. It allows slower speeds, tighter curves, narrower lanes, and smaller shoulders in order to preserve the surroundings. It enhances rather than compromises safety while increasing mobility.⁶⁰

"CSD is "a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that **fits its physical setting** and preserves scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility. CSD is an approach that considers the total context within which a transportation improvement project will exist."— Federal Highway Administration⁶¹

⁵⁷ "US. DOT/FHWA website. "Context Sensitive Design: Thinking Beyond the Pavement"
<http://www.fhwa.dot.gov/csd/basic.htm>

⁵⁸ Michigan Land Use Institute Report. *People and Pavement: Transportation Designs That Respect Communities*, 2004, p.7

⁵⁹ Ibid

⁶⁰ Ibid, p.2

⁶¹ "US. DOT/FHWA website. "Context Sensitive Design: Thinking Beyond the Pavement"
<http://www.fhwa.dot.gov/csd/basic.htm>

It is important to note that while the FDOT rigidly clings to design standards of the past, the Federal Highway Administration in 1997 published its own guide called *Flexibility in Highway Design*, and is actually redefining the term 'design excellence' to mean: "Simultaneously advancing the objectives of safety, mobility, enhancement of the natural environment, and preservation of community values."⁶² Seppo Sillan, senior engineer at the Federal Highway Administration, sums up the challenge this way: "The problem in the near term is trying to convince all the chief executives of the various state DOTs that the context-sensitive design approach to project development is the only way they can get projects through in the future and that, in the long run, it saves resources..."⁶³

History of Context-Sensitive Design (CSD)

Pre-1991: States using federal funds must meet federal design standards for safety, high speeds, and room for the next 20 years of projected traffic

1991: Federal government allows flexible design for historic and scenic routes not on National Highway System (NHS)

1995: Government approves CSD for use on National Highway System

1998: Federal government launches CSD pilot program with Connecticut, Kentucky, Maryland, Minnesota, and Utah

2002: Federal Highway Administration says CSD deserves same vigor as 1956 founding of Interstate highway system

2004: President George W. Bush endorses flexible design in his "SAFETEA" bill as part of six-year renewal of federal transportation

Mary Peters, Director of the Federal Highway Administration stresses the importance of this new approach:

"Context-sensitive design is an approach that places preservation of historic, scenic, natural environment, and other community values on an equal basis with mobility, safety, and economics. We should seek to institutionalize the principles of CSD with the same commitment that drove the implementation of the Interstate Highway System."⁶⁴

In other words, CSD acknowledges that there is a linkage between highway construction and community stability. "A transportation system must fit its setting."

The Florida Keys Aesthetic

Section 404 Part 230.53 Aesthetics.

(a) Aesthetics associated with the aquatic ecosystem consist of the perception of beauty by one or a combination of the senses of sight, hearing, touch, and smell. Aesthetics of aquatic ecosystems apply to the quality of life enjoyed by the general public and property owners.

⁶² Ibid

⁶³ People and Pavement, pg. 5

⁶⁴ U.S. Department of Energy. <http://www.sustainable.doe.gov/management/geninfo2.shtml>

(b) The discharge of dredged or fill material can mar the beauty of natural aquatic ecosystems by degrading water quality, creating distracting disposal sites, **inducing inappropriate development, encouraging unplanned and incompatible human access, and by destroying vital elements that contribute to the compositional harmony or unity, visual distinctiveness, or diversity of an area.** The discharge of dredged or fill material can adversely affect the particular features, traits, or characteristics of an aquatic area which make it valuable to property owners

The Stretch is the signature gateway into the Florida Keys and should be a naturally and beautifully landscaped boulevard, not a high-speed racetrack. It is the clear line of demarcation, a buffer zone, between the culturally distinctive island way of life we are struggling to preserve and the rapid pace and congestion of urban life on the mainland. Concrete barriers and continuous chainlink fencing would mar the natural beauty treasured by residents and marketed to tourists worldwide. To contend as the FDOT does that it would be “a significant visual and aesthetic improvement to the scenic vistas along both sides of US 1”⁶⁵ to remove the native vegetation and its ecological functions, fragment wildlife habitat and impede migration patterns with concrete barriers and chain link fencing, and replace a historic bascule with an enormous fixed bridge out of all scale to the surroundings is semantic “spin” of the worst kind and a striking example of the truism: “saying it’s so *doesn’t make it so*”.

It must be remembered that the Stretch is not an isolated or discrete road unto itself, but is part of a unique “single highway which is at once main artery, rural road, commuter thoroughfare, and Main Street.”⁶⁶

The well-understood principle that a change in one part of an interconnected system will always lead to changes elsewhere in the system is echoed within the Corps’ own guidelines regarding wetlands:

“Although a particular alteration of wetland may constitute a minor change, the cumulative effect of numerous piecemeal changes can result in a major impairment of wetland resources. Thus, the particular wetland site for which an application is made will be evaluated with the recognition that it may be part of a complete and interrelated wetland area.” (33 CFR Part 320.4(b)(3))

Similarly, the Stretch is part of an interconnected whole and cannot be considered in isolation, according to NEPA guidelines. Some of the systemwide changes caused by this project, indirect and removed in distance and time from the project site, have the potential to be extremely damaging to the environment, the economy, and the public interest in the long run.

As noted by the principles of CSD, there is a direct link between transportation systems and community character:

“Sometimes roads are like rivers. Increase their flow too much and they can drastically reshape their surroundings. Pump up the traffic on a road through a small town, for example, and all sorts of new gas stations, billboards, and fast food outlets spring up; soon, the road widens and sprawl, like a mudslide, buries the town’s character, pride, and sense of place. Then the landscape starts striking back.

⁶⁵ Project Reevaluation, p.60

⁶⁶ 2003 Monroe County Public Facilities Capacities Assessment. II. Transportation Facilities

The driveways to the countless new strip malls chop up the roadside. Traffic congestion increases, accident rates soar, and drivers and pedestrians pay a heavy price in wasted time, frustration, injury, even death.”⁶⁷

This is exactly the situation in which we find ourselves today in the Florida Keys. We are at a critical crossroads in our history. The Stretch can be our lifeline or “the road to our ruin” unless wise and thoughtful decisions are made for the long-term health of the environment, which supports and sustains our community.

A **four-lane footprint** by any other name is still a double-wide swathe of concrete **through protected wetlands**. That is the objective reality, and a slippery slope for the future of the Florida Keys.

Indeed, it is a serious concern that a four-lane road *could* be placed on the footprint FDOT proposes for this project.

The problem is that once the wetlands are disturbed, their value diminishes and subsequent projects on that footprint will not have the same protections of the original proposal, making it easier to build on in the future. This potential for future impact requires the closest scrutiny. **Permits would be relatively easy to obtain for construction of a four-lane road on already-disturbed wetlands.**

Induced Vehicular and Boat Traffic & Growth

Army Corps of Engineers Standard Operating Procedures for the Regulatory Program Part I Policies and Procedures:

Both direct and indirect impacts must be evaluated within site-specific and cumulative impact contexts. One example of direct impact is the loss of habitat in the project footprint. Indirect impacts, on the other hand, are those removed in time and/or distance in relation to the permitted activity. And the action area always includes upland areas in the immediate vicinity of the waters of the United States where the regulated activity occurs.

FDOT’s stated intention is to “facilitate” boat and vehicular traffic by replacing the historic 12’ bascule bridge at Jewfish Creek with a 65’ fixed-span. This action would **not** constitute a positive benefit when evaluated in context of the entire transportation system and environment, of which this bridge is just a small part. Dr. Jerome Lorenz explains:

The EIS as conducted in 1992 does not address the secondary impacts of induced boat traffic, which in turn will affect the water quality and surrounding habitats. Both the Florida Keys National Marine Sanctuary and the Everglades National Park cite overfishing and bottom damage from novice or careless boaters and swimmers as critical problems in managing their respective resources.

The FDOT, however, has completely ignored such secondary impacts both in the EIS and in the Project Reevaluation. The Reevaluation incorrectly states that by eliminating certain boat access points, the number of boaters in Northeastern Florida Bay will be reduced. Rather than lessening traffic, the project will induce boat traffic. The Reevaluation also claims to have discussed “in detail the many developments that

⁶⁷ *People and Pavement*, p.2.

have occurred subsequent to the FEIS,” yet there is no mention of such induced boat traffic.

In addition, FDOT’s plans for a drawbridge spanning Jewfish Creek will encourage boat traffic both within Jewfish Creek and the Intercoastal Waterway. Currently, most of the larger vessels that traverse the Keys use Hawk Channel as the major thoroughfare. Hawk Channel is located on the Atlantic Ocean side of the Keys and is a deep (>20ft), wide, well marked channel that is easy to navigate and suitable for use by larger vessels. By removing the restriction to larger vessels at Jewfish Creek, many of these boats will navigate through the Intercoastal Waterway (ICW). This waterway is preferable to boaters as it is protected from the prevailing easterly winds and tends toward a “softer” ride. The ICW wanders through southern Biscayne Bay and Florida Bay and is very narrow and shallow in places. The innumerable propeller scars and criminal groundings in these bays are a testament to how difficult it is to navigate.

The induced boat traffic through the ICW, with concomitant increase in boat size, power and speed, will certainly result in more frequent and more damaging groundings within these sensitive protected areas. An SEIS must be conducted in order to consider these potentially devastating secondary impacts upon the surrounding marine environments.⁶⁸

Although FDOT predicts no increase in traffic over that which would occur without the project, a growing body of research contradicts this opinion: the removal of a delay-inducing drawbridge would attract additional traffic over that which would occur on the existing road and drawbridge⁶⁹.

Enclosed is an extensive, though not exhaustive, bibliography of Induced Traffic research (Appendix B). Thirty-seven of these peer-reviewed research papers were published *after* the FEIS was published for this project; thus these studies were neither available nor were they considered in the creation of the FEIS. These evidence-based effects are not addressed in FDOT’s 2003 Project Reevaluation:

“Induced Travel. A new transportation facility that generates travel time savings is perceived by travelers to reduce the price of travel. In response, they may demand more travel in one of two ways:

New trips. Completely new trips that did not occur previously.

Longer trips. Additional mileage for trips that already occur.

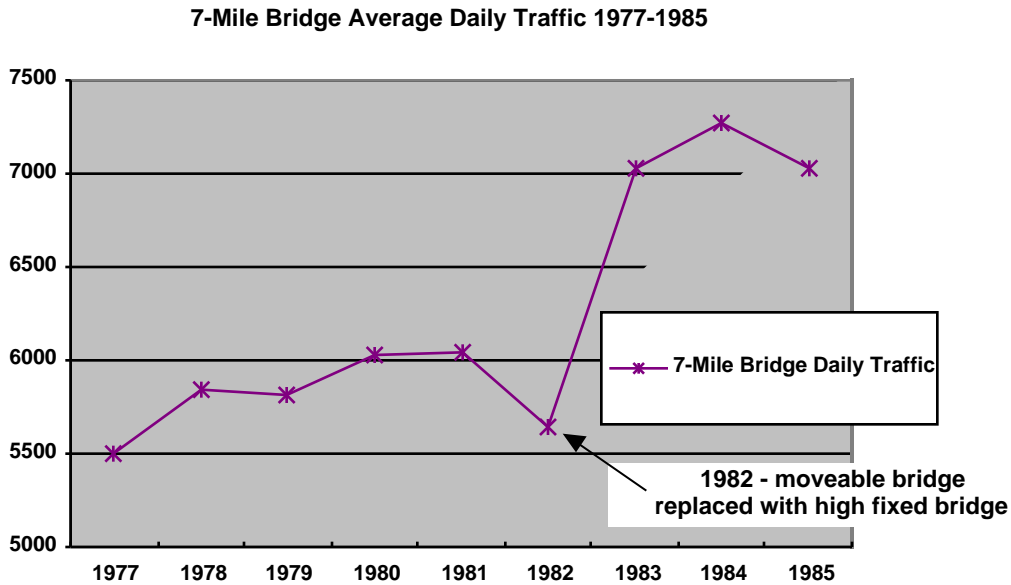
The magnitude of these changes in travel behavior may be greater in the long-term as consumers respond to shorter travel times by changing from more central to less central residential or job locations that increase trip lengths, and may be associated with more auto-intensive development patterns.”⁷⁰

⁶⁸ Dr. Jerome Lorenz, Research Director, Audubon Society, letter to USACE, May 28, 2004

⁶⁹ Noland, Robert B., and Lewison L. Lem, 2002, A Review of the Evidence for Induced Travel and Changes in Transportation and Environmental Policy in the United States and the United Kingdom, *Transportation Research D*, 7(1), 1-26. Also, email to John Hammerstrom, April 14, 2004. Robert Noland is currently Senior Lecturer in Transport and Environmental Policy at the Centre for Transport Studies within the Dept. of Civil & Environmental Engineering at Imperial College London. Previously, Dr. Noland was an analyst in the Policy Office of the US Environmental Protection Agency where he was involved in the formulation of TEA-21 and other transport policy initiatives.

⁷⁰ Assessing the Issue of Induced Travel: A Briefing on Evidence & Implications from the Literature Prepared for Washington Metropolitan Council of Governments by Transtech Management, Inc. & Hagler Bailly July 2001

Note the dramatic change in average daily traffic patterns recorded on the 7-Mile Bridge (in the Middle Keys) when the two-lane moveable bridge was replaced with a high fixed-span bridge in 1982:



Source: Florida Dept. of Transportation Statistics Office – Historical AADT Report

The drawbridge at Jewfish Creek is open between 4 and 5 minutes at a time. On high-traffic weekends and holidays it can be opened twice per hour, or 8 to 10 minutes per hour. During the week, the bridge is opened on demand for the same length of time. Replacing the drawbridge with a fixed-span bridge will deliver travel time savings. According to internationally recognized transportation expert Dr. Robert Noland and many others, this time savings would generate additional traffic.⁷¹

FDOT states, “During peak periods of navigational passage through Jewfish Creek, several vessels may be waiting on both sides for the bridge to open... Therefore, the existing bascule bridge over Jewfish Creek has a major impact on both vehicular and vessel traffic, especially during peak tourist periods...”⁷²

It follows that removing the bascule bridge and replacing it with a high, fixed span bridge would remove travel delay, and would increase both vehicular and boat traffic. There should be little argument that removing the very low and narrow 12-foot clearance drawbridge would precipitate more, larger, deeper and faster boats through this area. What then are the impacts of this increased boat traffic, including the probability of more prop scarring and the threat to endangered manatees?

Put another way: If the project is not intended to encourage boat and vehicular traffic, then the new bridge is unnecessary. However, if increased traffic is encouraged, or is a likely outcome of the project, then FDOT must address the causally-related secondary and cumulative impacts.

⁷¹ Noland, R and Lem, 2002. Also Email to J. Hammerstrom, April 14, 2004.

⁷² Project Reevaluation, p.10

Construction of a fixed-span bridge to replace the drawbridge at Jewfish Creek will create more traffic than would be the case if the project were not built. "Induced traffic is a widely recognized concept that describes transportation consumers' responses to new projects. When a new highway project is perceived to create travel-time savings, more drivers will drive more often and from farther away. The construction of FDOT's proposed new highway would connect an area of explosive growth in south Miami-Dade County with the Florida Keys - a worldwide travel destination that is trying to control growth."⁷³

The Transportation Director of Environmental Defense has expressed a concern to the Corps that the proposed project would cause **"substantial traffic growth beyond that being projected by FDOT. This in turn can be expected to cause immeasurable negative impacts on the environment, safety and on the communities."**⁷⁴ This is a legitimate concern given the FDOT's documented record of predictions, assumptions and assurances which were subsequently shown to be invalid or untrue.

"[Road projects induce traffic and development pressures]... first and most importantly, where they remove barriers for movement between an area where land prices are relatively high and the market is buoyant (but development is constrained) and another where land prices are lower and more development opportunities exist."⁷⁵ This accurately describes the dynamic between the Florida Keys and Miami-Dade on the mainland. The logical conclusion supported by substantial peer-reviewed research is: increasing the design speed and removing the drawbridge would remove the barrier of travel delay, and would exacerbate the population and development pressures Monroe County is struggling to control.

In order to remove the Area of Critical State Concern designation from the Keys, the DCA must determine that all local land development regulations and local comprehensive plans and the administration of such plans are adequate to protect the Florida Keys area.⁷⁶ In December, 2003, based on DCA's Year Six Florida Keys Annual Assessment Report staff recommendations were:

" Continue the Area of Critical State Concern designations for the Florida Keys...

" Monroe County has not made substantial progress based upon failure to enforce the habitat protection mechanism in law, as well as limited progress and commitment toward wastewater enhancements."

However, despite these troubling findings, the DCA rewarded Monroe County for their noncompliance by restoring some permits. The reality in 2004 is vastly different from the FDOT assurance in 1996 that "with or without this road project population pressures in Monroe County would be strictly limited by local growth ordinances and controls."⁷⁷ With the clarity of 20-20 hindsight, it is easy to see that once again FDOT's assurances were *not* reasonable.

⁷³ Michael Replogle, Transportation Director, Environmental Defense. Letter to US Army Corps of Engineers, Oct. 2003.

⁷⁴ Ibid

⁷⁵ The Standing Advisory Committee on Trunk Road Assessment, "Trunk Roads and the Generation of Traffic", December, 1994, Paragraph 4.60

⁷⁶ http://www.myflorida.com/myflorida/cabinet/agenda03/1216/agenda_ac.html

⁷⁷ FDOT "Fact Sheet" 1996

In fact, there is a tragic disparity between the rhetoric of growth management and the reality, as Monroe County Planning Director Marlene Conaway acknowledges: "...the current regulations are not preserving areas of re-growth hammock that, if they are allowed to continue to grow, could connect patches and reduce the fragmentation...New development impacting significant upland habitat areas is currently receiving ROGO allocations, which is causing further fragmentation and degradation of the remaining viable hammocks. It is clearly evident...that quality, irreplaceable upland habitat is being incrementally lost or negatively impacted on a lot by lot by lot basis. The existing permit allocation system and environmental regulations have been unable to adequately protect this upland habitat."⁷⁸

In other words, Monroe County is an Area of Critical State Concern which has exceeded its capacity to withstand development⁷⁹, and yet continues to develop.

The economy and quality of life in the Florida Keys are directly linked to the health of the environment. The Outstanding Florida Waters impacted by this project are components of a fragile ecosystem already stressed. 30% of our coral reef, the 3rd largest in the world, has died. 80% of our rare tropical hammocks, found nowhere else on the US mainland, have been razed for development. Our nearshore waters are contaminated with viruses and fecal bacteria that pose ongoing health threats to residents and visitors, despite promises from government agencies that effective wastewater systems are on the horizon. Beach closings are increasingly common, and the small-town island aesthetic which has traditionally characterized our communities is being threatened with extinction by the demands of unmanaged growth and unsustainable tourism which harm our island resources. The state and county are presently engaged in multimillion-dollar damage control to conserve what remains and attempt to repair/restore that which has been badly degraded by the impacts of rapid growth and development.

Therefore, limiting factors which protect communities from these ever-increasing population demands and development pressures provide a positive benefit in the long-term and should not be eliminated without full consideration of the intended—and unintended—consequences for the ecosystem and the communities it sustains.

Furthermore, a very high percentage (42%, according to the 2000 census) of housing units are "vacant" in the Upper Keys (Islamorada and north). Facilitation of transportation between Miami-Dade County and Monroe County could lead to a population increase which would have significant adverse and unintended consequences which have not been evaluated ~ even if Monroe County's growth management efforts are successful and new construction is restricted.

Consequently, the stage is set for conversion of the Upper Keys to a bedroom community for Miami-Dade. Given the explosive growth taking place in South Florida this project could likely trigger such an effect. There can certainly be no reasonable assurances to the contrary. The devastating impact on water quality in the Keys is not difficult to imagine. Nearly a decade ago the Governor and his Cabinet adopted the following findings of fact:

405. The ability of the nearshore waters of the Florida Keys to withstand additional degradation from sewage treatment practices and stormwater management in the Florida Keys has already been reached or even exceeded. Not only does the evidence support a finding that the nearshore waters cannot tolerate the impacts

⁷⁸ Richard Grosso, Esq. letter to Colonel Carpenter, September 5, 2003

⁷⁹ Florida Keys Carrying Capacity Study

from sewage treatment and stormwater from additional development, but it also supports a finding that existing sewage and stormwater from existing development in the Florida Keys is degrading the nearshore waters at or over its carrying capacity.

408. The nearshore waters of the Florida Keys are already in a stage of critical eutrophication and this deterioration continues to worsen. The problem cannot be remedied without ending pollution from existing development and curtailing further development until solutions to the nutrient loading caused by sewage and stormwater are implemented.

These are stunning pronouncements. Made even more so when we remember that a decade has passed and those solutions to the nutrient loading problem have not yet been implemented, and that the situation has only worsened. Our nearshore waters are contaminated with viruses and fecal bacteria, which pose ongoing health threats to residents and visitors. Despite promises from government agencies that effective wastewater systems are on the horizon, we are many years into the crisis, and still many years from its resolution.

So it defies all reason that FDOT should receive consideration for an unnecessary roadway system which would not achieve its own purpose but could in all likelihood exacerbate Keys water quality problems to an extent which would not possibly be offset by swales and drains on the 18-Mile Stretch. FDOT does not address this very real environmental effect. However, the SFWMD and the US Army Corps have a mandate to do so in order to accomplish the goals of "no net loss" and the restoration and preservation of natural systems. This project is inconsistent with those goals. In the Florida Keys, the environment is the economy—and must be protected not just for our pleasure, but for our survival.

Currently, the potential travel delay caused by intermittent opening of the Jewfish Creek drawbridge discourages many potential commuters. Installation of a fixed-span bridge and a higher-design speed road would likely spur an increase in commuters, increasing the permanent population in the Upper Keys substantially. Similarly, the project would likely generate an increase in daytrippers and urban dwellers eager to escape their congestion but instead bringing it with them into the Keys every weekend.

FDOT incorrectly asserts that "...property adjacent to the project either is in public ownership, is slated for public ownership, is undevelopable submerged lands, or to the extent theoretically developable is regulated and designated by comprehensive plan against such development."⁸⁰

In the most recent two-year period, 16,000 new homes have been built within 12 miles of Florida City and another 14,000 are planned in the area. In March, 2004, a DRI project was announced that would move the urban boundary of Miami-Dade County 1.5 miles further south of Florida City into those "undevelopable wetlands". This major development includes 4200 single family homes, 1800 multi-family homes, 300,000 square feet (six acres) of commercial space, two schools, 240 hotel rooms and a cinema multiplex, with a projected population of 18,000—over 50% more than the population of Key Largo, and over twice the population of Florida City at the northern end of the project.⁸¹ And yet it is only 20% of the population growth already approved or under construction immediately

⁸⁰ Project Reevaluation, p.96

⁸¹ <http://www.miami.com/ml/d/miamiherald/news/8181097.htm>, Miami Herald, March 14, 2004

to the north of the Keys. The assumption that there will be no secondary impacts from this FDOT project because of the existence of “growth management regulations” in Miami-Dade County is simply wrong.

FDOT has failed to address the “...growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate...” (40 CFR 1508.8(b)). In particular, FDOT has not addressed the dynamic land use changes that are taking place in Miami-Dade County that would increase pressure on Monroe County were transit between the two counties to be facilitated.

Since the “assurances” of growth control offered by FDOT and Judge Arrington in his 1997 Recommended Order, rapid growth and damaging development *has* occurred in the Florida Keys despite governmental regulations and agencies’ best intentions to restrain it. **Growth management regulations are temporary. Infrastructure is permanent.** Indeed, DCA has recently reversed their position on the “inviolability” of Monroe County’s evacuation limitation. Having found the county **out of compliance** and showing no significant improvement toward accomplishing the mandated goals of the workplan, DCA amazingly *rewarded* Monroe County by proposing a 25% *increase* in development which was approved by the Cabinet in March, 2004. **Clearly, the direct, secondary and cumulative impacts of causally-related growth cannot be confidently avoided by reliance on transitory regulations and agencies.**

Stewardship of Significant Historical and Archaeological Artifacts

FDOT is required to address “The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant ...historic resources” (40 CFR 1508.27(b)(8)).

The Florida State Historic Preservation Officer (SHPO) has received an application for the “Bridges of the Florida East Coast Railway...from Key Largo to Key West” submitted by the National Park Service. The application has been recommended for approval by the Monroe County Historic Preservation Commission. A supplementary “Preliminary Site Information Questionnaire” has been submitted for the original 1906 Florida East Coast Railway bridge abutment. FDOT fails to mention that the most recent survey (MO01469) indicates that this artifact is eligible for local designation and for listing on the National Register as a contributing part of a district.

It is not clear what FDOT’s plans are for the abutment and locking mechanism still in its original location under the south end of the existing bascule bridge at Jewfish Creek. The July, 2003 ERP states: “The Jewfish Creek Bridge structure will be utilized for disposal at the Long Key Artificial Reef Site and portions will be preserved at the Pioneer Museum in Homestead.”⁸² The Pioneer Museum has indicated that they have not been contacted for such preservation and have no idea what they would do with such an artifact.⁸³

Five months later, the December, 2003 Project Reevaluation states: “...in coordination with the Historical Preservation Society of the Upper Keys, the Department agreed to remove and preserve the locking mechanism from the old railroad bridge abutment during

⁸² FDOT, “Environmental Resources Permit Application,” July 23, 2003, p.21

⁸³ Phone conversation between J. Hammerstrom and R. Nauman of the Pioneer Museum, February, 2004

construction. The locking mechanism will be relocated to a suitable preservation site to be designated by the Historical Society of the Upper Keys.”⁸⁴ The Historical Preservation Society of the Upper Keys indicated that there is no such agreement.⁸⁵

Notwithstanding the downplayed description in the Project Reevaluation, the bridge abutment at Jewfish Creek represents the **oldest artifact in the entire bridge system**, and its relocation would significantly degrade its historical value.

Attachment B.3 of the Project Reevaluation describes another artifact, archaeological site 8DA5981. FDOT states that “it was determined by the SHPO that this site is not eligible for listing on the NRHP and the project will not impact any archaeological sites (See Appendix 10).”⁸⁶

However, FDOT failed to include another important statement from the Archaeological Site Form for 8DA5981: “...because of its association with Flagler’s Florida East Coast Railway and its potential to yield information about early twentieth century lifeways [sic] in the Everglades, any future proposed construction in the reported location of the house site should be preceded by additional historical research and archaeological testing.”⁸⁷

A local Monroe County reporter recently uncovered a potential historic site that is very likely to be adversely affected by the “US-1 South” project.⁸⁸ The article describes a large area adjacent to the existing US-1 roadbed. It appears that the site was created as a part of the Florida East Coast Railway project. Since the existing highway is built on the railroad bed created by Henry Flagler, there is a very high likelihood that there was a physical connection between the recently discovered artifacts and the existing roadbed. It is actually difficult to imagine how they wouldn’t be connected. If that is the case, FDOT’s planned expansion of the existing roadbed would negatively impact these artifacts.

FDOT’s Project Reevaluation does not address this potential historic site.

Without ascertaining the value of these artifacts and their relationship to the expanded “US-1 South” project footprint, it would not be in the public interest for this project to be given permit approval.

“Unavoidable” Impacts

Nearly two decades ago FDOT determined that a four-lane Stretch was essential for the public safety. Their argument then, as now, was that they had designed the least-damaging project possible but that there were “unavoidable impacts”. Every subsequent alternative corridor FDOT considered for the US-1 South Project has involved major widening and costly construction through wetlands, an action which “should be discouraged as contrary to the public interest” [33CFR Part 320.4(b)(1)]. Then, as now, the FDOT default position was that “the road must be widened”⁸⁹ [to a four-lane footprint], claiming to have “explored all reasonable alternatives”⁹⁰ [to a three-lane roadway with ultra-wide shoulders] and that “FDOT can do nothing else to minimize the

⁸⁴ Project Reevaluation, p.36

⁸⁵ Phone conversation between J. Hammerstrom and J. Wilkinson of the Historical Preservation Society of the Upper Keys, February, 2004

⁸⁶ Project Reevaluation, p.37

⁸⁷ Florida Division of Historic Resources, “Archaeological Site Form 8DA5981,” 6/26/95, p.4

⁸⁸ Gibbs, Steve, “The Free Press” July 14, 2004

⁸⁹ Recommended Order, pg. 29

⁹⁰ Ibid, pg. 31

impacts of the project and still address the needs for the project.”⁹¹ It is important to note that each subsequent modification contradicted those prior assurances. And facts show that the project does *not* in fact meet its identified needs.

The Historical Record Shows the Unreliability of “Unavoidability”

In 1988, FDOT claimed 250 acres of **unavoidable** wetland impacts⁹²
In 1992, FDOT claimed 164 acres of **unavoidable** wetland impacts
In 1994, FDOT claimed 149 acres of **unavoidable** wetland impacts
In 2003, FDOT claims 86 acres of **unavoidable** wetland impacts

In 1988, 1992, and in 1994, if these so-called “unavoidable” impacts were not scrutinized, and if objections had not been raised, the project would have needlessly destroyed as many as 250 acres of wetlands. Given the present state of knowledge and available technologies and methodologies, it is reasonable to conclude that practical alternatives have not been adequately considered to avoid the impacts proposed by the 2003 proposal. FDOT has not demonstrated a credible use of the word “unavoidable”.

Environmental Impacts & Mitigation

South Florida Water Management District Basis for Review 4.3 Mitigation:

Protection of wetlands and other surface waters is preferred to destruction and mitigation due to the temporal loss of ecological value and uncertainty regarding the ability to recreate certain functions associated with these features. Mitigation will be approved only after the applicant has complied with the requirements of subsection 4.2.1 regarding practicable modifications to eliminate or reduce adverse impacts.

In certain cases, mitigation cannot offset impacts sufficiently to yield a permissible project. Such cases often include activities which significantly degrade Outstanding Florida Waters, adversely impact habitat for listed species, or adversely impact those wetlands or other surface waters not likely to be successfully recreated.

33 CFR 320.4(r)(1) Consideration of mitigation will occur throughout the permit application review process and includes avoiding, minimizing, rectifying, reducing, or compensating for resource losses. Losses will be avoided to the extent practicable.

40 CFR Part 1508.20 - Mitigation includes:

- a. **Avoiding the impact altogether by not taking a certain action or parts of an action.**
- b. **Minimizing impacts** by limiting the degree or magnitude of the action and its implementation.
- c. **Rectifying the impact** by repairing, rehabilitating, or restoring the affected environment.
- d. **Reducing or eliminating the impact over time** by preservation and maintenance operations during the life of the action.
- e. **Compensating for the impact** by replacing or providing substitute resources or environments.

⁹¹ Ibid, pg. 33

⁹² Recommended Order, Findings of Fact #52

Army Corps of Engineers Standard Operating Procedures for the Regulatory Program: PART I Policies and Procedures

“The Corps regulates the total aquatic environment, not just wetlands. Often other aquatic resources such as seagrass beds, submerged fresh water aquatic vegetation, and hard bottom areas are as or more ecologically valuable than wetlands.”

Many different categories from the Environmental Protection Agency’s Part 230 Section 404 (b)(1) list of “special aquatic environments” all converge in and around this one project area. The project traverses four different types of wetlands, vegetated shallows, mangroves, seagrass, and nonvegetated bottom/open-water habitats, Everglades National Park, the National Marine Sanctuary, adjacent and interconnected habitats of at least twelve threatened and endangered species including the American crocodile, hawksbill and Kemp’s Ridley sea turtles, loggerhead turtles, green turtles, Florida panther, West Indian manatees (and, indirectly, the Key Deer).

There is in the regulations a logical sequence of events which is mandated before a dredge-and-fill activity shall be permitted in Outstanding Florida Waters, and before there is any discussion of mitigation credit: there must be a clearly demonstrated need for the activity and there must be no other less damaging way to achieve the project goal.

As has been clearly shown, this project does **not** reduce hurricane evacuation clearance time at all. This project does **not** provide any traffic safety benefits that cannot be equally or better achieved for a fraction of the cost by alternative means which are far less damaging to special aquatic areas and other high value resources along the corridor. There are alternatives available that would very effectively improve road safety without doubling the width of the corridor and without doing costly and unnecessary environmental damage to an Area of Critical State Concern. Therefore the proposed US 1 South project does not and cannot achieve its stated goals, and is NOT clearly in the Public Interest as required by law for dredge-and-fill activities in Outstanding Florida Waters. Impacts are not “unavoidable” when a project is unjustified.

There are federal and state requirements that minimization of damage must *precede* mitigation, and that “minimization” of impacts must be compared to the least damaging **No Build** alternative.⁹³ However, FDOT seems to disregard this requirement, and claims to have “minimized” impacts of this project based on how bad it *could have been* had they been permitted to construct their original four-lane design a dozen years ago. This “it could have been worse” rationale is not the standard required by law.

It must be clearly understood that mitigations are legally required “payback” actions for damage done by a project; they would be entirely unnecessary apart from the project. Therefore, by law, mitigations cannot be used to *justify* a project. It is troubling that throughout their documentation and public testimony FDOT seems to be using “upfront mitigations” as leverage to try to coerce permits from regulatory agencies, although these actions were taken speculatively, and the FDOT can apply them to other projects.

In light of the fact that this project cannot achieve its primary goals, much too much has been made of the FDOT mitigations, particularly the so-called “upfront mitigations”. For SFWMD Staff to characterize FDOT’s upfront activities as important and noteworthy flies

⁹³ VanWagoner v FDOT and DEP, DOAH Case No. 95-3621; DOAH Case No. 95-3622, 1996

in the face of regulations.⁹⁴ Although such speculative acts are not supposed to influence agency decisions at all, clearly that is their intended outcome. It is troubling that FDOT's so-called "upfront mitigation successes" have been unduly emphasized by SFWMD Staff in their May 2004 report to the Board of Governors. Permit purchasing is in direct opposition to NEPA policy: "Agencies shall not commit resources prejudicing selection of alternatives before making final decision." (40 CFR 1502.2 (f)) A Section 404 permit cannot be bought, bartered, or "earned"; it must be well-justified and clearly in the public interest.

Of particular concern is a National Academy of Science Report that finds that wetland mitigations that "look good on paper" often fail to meet criteria established by the Army Corps of Engineers, and that the goal of "no net loss" of wetlands is not being achieved⁹⁵. [Subsequent to publication and dissemination of this document, President George W. Bush announced his administration's intention to *expand* protection of wetlands in the United States – April 22, 2004].

In an area of Critical State Concern where Outstanding Florida Waters, special aquatic environments, a threatened reef system, and endangered species/habitats are at stake, an extraordinary degree of certainty should be the standard of stewardship rather than optimistic "best of all possible worlds" and "it looks good on paper" assumptions and speculations.

Curtis Kruer is a consulting biologist who worked as field biologist for the US Army Corps of Engineers in the Keys from 1980-1988. His duty was overseeing permit compliance with FDOT's Keys Bridge Replacement Project (approximately 30 bridges). Kruer recalls: "The agencies were pretty aggressive then as compared to now but there were still constant problems at many bridges of prop dredging of seagrasses by work boats and tugboats, resuspended sediments from turbulence, overdredging of authorized work channels, illegal filling at work sites, solid waste discharge, stormwater runoff from work sites, wastewater discharge from tugboats, etc. etc. It was a constant problem and both the Corps and FDEP issued a number of notices of noncompliance and cease and desist orders. Over 30 acres of seagrass habitat was prop dredged in Niles Channel alone."

Many of the impacted seagrass sites persisted for years as mapped in:

Sargent, F.S., T.J. Leary, D.W. Crewz, and C.R. Kruer. 1995. Scarring of Florida's seagrasses: assessment and management options. Fla. Mar. Res. Inst. Tech. Rep. TR-1, Florida Dept. Env. Prot., St. Petersburg, FL. 37 pp. plus appendices.

And descriptions of the overall impacts and mitigation can be found in:

Lewis, R.R., C.R. Kruer, S.F. Treat, and S.M. Morris. 1994. Wetland mitigation evaluation report - Florida Keys bridge replacement. Rep. to the Fla. Dept. Trans., FL-ER-55-94, 88 pp. plus appendices.

Kruer observes: "The problem with trying to see if their mitigation covers eventualities re construction impacts is that there's no way to predict how sloppy or clean their work might be. But a massive project like the Jewfish Creek bridge, unless done very, very carefully with unique equipment, will invariably impact the resource - but no one can say

⁹⁴ Memo to SFWMD Board of Governors from Terrie Bates through Chip Merriam dated May 18, 2004

⁹⁵ *Compensating for Wetland Losses Under the Clean Water Act*, National Academy of Science Report on Wetlands Mitigation, June 26, 2001.

how much. One common problem with mitigation is that "function" of mitigation sites vs. the impact site is often not assessed properly (if at all) - just an acre x acre comparison. FDOT and their consultants have a terrible track record of predicting the responses at seagrass and mangrove restoration sites - much of it is guesswork. For example saying they'll remove 2 acres of the Lake Surprise causeway and restore 2 acres of seagrass there is guesswork. A slight mistake with the restored topography and sediments (i.e. leaving rubble behind) and they'll get little if any seagrass as a result."⁹⁶

So, essentially, FDOT simply tells agencies that "mitigation will cover it". But biologist Kruer provides a reality check from the field and cautions that "no one knows. The truth is that the risks are great." Kruer provides as an example the current Navy dredging project in Key West Channel: "Probably the strictest permit and monitoring conditions ever on a Keys project were applied to this project, with scrutiny and oversight by numerous agencies including the FKNMS. But it didn't take very long for the dredge to wander out of the permitted dredge alignment and impact corals and hardbottom that were supposed to be safe. And like in Jewfish Creek - the work doesn't stop while agencies are trying to document the problems and figure out what to do. And of course restoration of such impacted areas is usually not an option - mainly because we don't know how."

From his unique perspective and firsthand frontline experience with projects such as this, Kruer concludes: "I would say the potential for both unforeseen, unmanageable direct and indirect impacts to marine resources in a highly sensitive marine environment, as well as the secondary impacts on Keys resources in general (i.e. see 6/2/04 Keynoter article re 1500 boats at the sandbar and seagrass flat off Windley Key) are adequate reasons to deny the permit."⁹⁷

• **Water Quality:** Water quality improvements are desperately needed and wanted in the Florida Keys - there is no question or argument about that. Eutrophication of our nearshore waters has been a well-known and expressed concern for a decade—at every level. However, the purpose for the FDOT US-1 project is given as "traffic safety" and "improved hurricane evacuation"— **NOT** its mitigations. And on *that* basis there is no clear and compelling need to destroy 106 acres of wetlands or to dredge and fill in Outstanding Florida Waters which merit the highest level of protection. **Water quality swales and berms for stormwater treatment are guaranteed to improve water quality; therefore, in an Area of Critical State Concern, they should be installed along the existing corridor without doing unnecessary damage to the surrounding ecosystem.**

It is a poor trade to allow the greater damage caused by this unnecessary and wasteful project in exchange for stormwater runoff treatment along the US 1 corridor. Should this road be permitted the increased stormwater and wastewater loads that will likely result Keys-wide will offset any benefit from swales and underdrains by an order of magnitude. Reasonable assurances cannot be made to the contrary. And given the present condition of Keys waters it would be irresponsible to take that unwarranted risk.

Consistent with the SFWMD goal of "protection and restoration of natural systems", any surface water management system should supplement and preserve the natural system already in place, not supplant or destroy it. The executive director of Reef Relief warns

⁹⁶ Email correspondence to John Hammerstrom/Carol Smith. June 2, 2004.

⁹⁷ Ibid.

that swales and underdrains “will not remove pollutants from the road as effectively as the existing mangroves do, [and that] removal of the mangrove fringe to widen the road will actually facilitate transport of stormwater runoff into waters of the endangered coral reef ecosystem of the Florida Keys... The coastal mangroves provide a breeding and nursery ground for the myriad species of marine life that later migrate to the coral reefs. These nearshore waters of the Florida Keys National Marine Sanctuary, including mangroves and seagrasses, provide 80 percent of the fish species in the U.S., and most commercially valuable fish species depend on these nearshore waters at some point during their development. ...Millions of dollars of funding have been dedicated to improving water quality in the Florida Keys National Marine Sanctuary by the US EPA, the state of Florida, Monroe County, and the various municipalities throughout the Keys. These efforts will be diminished by DOT’s plan to remove a critical length of mangrove fringe to widen U.S. One.”⁹⁸

- **Mangroves: Replacing the number of acres of mature mangroves does not replace the function of that habitat.** Young plantings have a low survival rate. Mangroves have a generally-accepted failure rate of 60% according to Katherine Gilbert of the Florida DEP, who estimates that **return of the function of mangroves may take 15 to 30 years.** Additionally, FDOT is not accounting for the flora and fauna that would be concurrently lost with the destruction of the 38 acres of mangroves. Many generations would also be lost during the 15-30 years while the function of the mangroves is lost. Combining these realities with the recently understood importance of mangroves to the ecosystem, it must be acknowledged that there will be an unacceptable net loss of wetland **function.** Therefore, we question the mitigation ratios and conclusion of a balance of “zero” acres of mangroves destroyed.⁹⁹

- New research published this year in the authoritative scientific journal **Nature** raises serious new concerns about destroying acres of mangroves that were not known at the time of the 1992 FEIS and are not reported in the 2003 Project Reevaluation.

“Mangrove forests are one of the world’s most threatened tropical ecosystems with global loss exceeding 35%. Juvenile coral reef fish often inhabit mangroves, but the importance of these nurseries to reef fish population dynamics has not been quantified. Here we show **that mangroves are unexpectedly important, serving as an intermediate nursery habitat that may increase the survivorship of young fish.** Mangroves in the Caribbean strongly influence the community structure of fish on neighboring coral reefs. In addition, the biomass of several commercially important species is more than doubled when adult habitat is connected to mangroves. **Current rates of mangrove deforestation are likely to have severe deleterious consequences for the ecosystem function, fisheries productivity and resilience of reefs.** Conservation efforts should protect connected corridors of mangroves, seagrass beds and coral reefs.”¹⁰⁰

FDOT does not address loss of **function** of wetlands, instead claims that mitigation is successful when the wetland is graded to its original elevation. However, anticipating “area of cover” alone is an insufficient performance criterion which jeopardizes full

⁹⁸ DeeVon Quirolo, Executive Director of Reef Relief. Letter to USACE June 2, 2004

⁹⁹ Project Reevaluation, p.47

¹⁰⁰ Mumby, Edwards, Arias-Gonza, Lindeman, Blackwell, Gall, Gorczynska, Harborne1, Pescod, Renken, Wabnitz & Llewellyn, “Mangrove s enhance the biomass of coral reef fish communities in the Caribbean,” *Nature*, February, 2004, p.533

replacement of lost wetlands and impacted *functions*, both at the mitigation site and *in the impacted area* as required to achieve the goal of “no net loss of wetlands”.

The concept of “temporary” impacts is noteworthy in regard to the return of function of wetlands. FDOT seeks 20 acres of “temporary” loss, but claims that mitigation is successful when the wetland is graded to its original elevation. However, anticipating “area of cover” alone seems an insufficient performance criterion which jeopardizes full replacement of lost wetlands and impacted *functions*, both at the mitigation site and *in the impacted area* as required to achieve the goal of “no net loss of wetlands”.

Because this project would be substantially larger than the existing footprint, and because of the concrete “Jersey” barrier, fencing and wildlife culvert crossings are planned on portions of the project, further fragmenting habitat and disrupting migration patterns in an attempt to “mitigate” the increased risk to wildlife caused by the greater footprint of the project. FDOT would remove the mangroves and other vegetation on the sides of the existing road, expanding the corridor to 100 feet from fence to fence -- at the narrowest point. At the widest point, in the passing zones, the fences will be positioned 130 feet from each other with only concrete and a little grass in between.

But apart from aesthetics, there are serious questions about the effectiveness of this fencing. The west side of the project would have fencing along the entire length of the 20.4-mile project. The East side would have continuous fencing for the upper half of the corridor, from Florida City to the C-111 canal. The East side south of the C-111 canal would only have fencing for 100 feet on either side of the 16 culverts, or 200 feet per culvert for at total fence coverage of 3200 feet, **leaving 45,000 feet of open space in 16 segments for wildlife to enter the road.** FDOT predicts that the water along the highway frontage on the East side south of the C-111 canal will deter wildlife from accessing the roadway. In fact there are few, if any, animals that are resident in the Keys for which water, particularly this very shallow water, is a barrier. Effective animal traps are designed on the principle of making an opening smaller than the total area of the trap, just like this fencing configuration.

The area in question is prone to wildfires, which raises serious concerns as well. Not only would the fencing make it difficult for firefighters to access the fires, but wildlife that can presently bolt across the open road and escape would in their panic likely be trapped along the fence rather than calmly seeking the nearest culvert.

Neither the ERP nor the Project Reevaluation discusses the “trap” characteristics of this fencing design with appropriate concern. This arrangement is dangerous for animals *and* occupants of vehicles that might collide with them.

Furthermore, much of this fencing installed directly in wetlands will be vulnerable to rapid corrosion. What provisions have been made to maintain the fence? What is the timeline involved for its installation? During construction, might the threat to wildlife actually increase?

In terms of human safety, after FDOT replaced a similar two-lane road with their four-lane “Alligator Alley” roadway, there was a substantial increase in both accidents and fatalities as speeding increased. The fatalities were mostly associated with rollover accidents that ended up in the wetlands on the side of that road. To compensate, FDOT has subsequently installed a cable-reinforced fencing system with strobe lights to alert passersby when a drivers loses control along Alligator Alley and hits the fence. And

though the frequency and severity of accidents *increased on this corridor after the widening/fencing*, FDOT boasts that the project was a safety "success" because the deaths, while more frequent, are no longer caused by *head-on accidents*.¹⁰¹ This is the same faulty logic that underlies the FDOT's 18-Mile Stretch project.

As has been clearly shown, this project does **not** provide traffic safety benefits that cannot be equally or better achieved for a fraction of the cost by alternative means which are far less damaging to special aquatic areas and other high value resources along the corridor. This project does **not** provide ANY hurricane evacuation benefit at all. Therefore the proposed US 1 South project does not and cannot achieve its stated goals, and is NOT clearly in the Public Interest as required by law for dredge-and-fill activities in Outstanding Florida Waters. In that context, and in an Area of Critical State Concern, *when many less adverse safety measures have not been evaluated or implemented*, it would be unconscionable to exchange high-functioning mangroves and vegetation for strobe-lit cable-reinforced fencing along the gateway to the Florida Keys.

In 1996, FDOT stated that the "25 hydrological culverts north of the C-111 Canal...will remain capped until further hydrological studies can be completed and input from all concerned regulatory agencies can be obtained."¹⁰² In the ERP and the Reevaluation however, FDOT claims that these culverts "will provide additional hydrological benefits to approximately 3,600 acres in the Model Lands area east of US-1."¹⁰³ The Project Reevaluation states that "...the culverts will not be used for water control until a management plan for the Model Lands Basin is developed by the appropriate regulatory agencies."¹⁰⁴ It would seem premature at best to give credit to this contingent feature of FDOT's mitigation effort.

In their comments on the original 1992 EIS, the Environmental Protection Agency noted several concerns about the efficacy of FDOT's claimed water flow restoration.

"1) Although most agencies agreed that the restoration of natural flow patterns to the project area would be beneficial to the general productivity of the same, the results of your analysis raise serious questions as to whether the preferred alternative (3) can accomplish the intended goals. A review of the model results appear to indicate that conveyance of fresh water to the area for such a short period of time may not be significant enough to produce the desired benefits and may not justify the impacts associated with their implementation."

"2) The report suggests that additional water may be supplied to the area by the District and suggests that during periods of sufficient rainfall in South Dade (0.1 inch event or greater) the pumps could be turned on and flows directed to the subject area. Where would the water come from? The operation of the system must not result in the drainage of other areas in southern Dade.

"3) We strongly suggest FDOT consider the construction of a salinity control structure on the Card Sound canal as part of this proposal or as an alternative to the same. In 1988, DERM prepared a study at the request of the USGS to close the gap on the circuit of the control structures S-18, S-18c and S-199. We believe that this

¹⁰¹ Tower, Debbie, FDOT, quote in Upper Keys Times article by Robert Silk, August 17, 2004

¹⁰² Recommended Order, Finding of Fact #75, p.35

¹⁰³ Project Reevaluation, p.69

¹⁰⁴ Project Reevaluation, p.21

would enhance existing or future fresh water heads in the area between US1 and Card Sound Road by reducing salt-water intrusion into the area.

“4) We suggest that the models be calibrated to more than one station if possible (a minimum of three stations is preferred). This is of particular importance when using the data to determine such variables as conveyance coefficients.

“5) Evaporation does not appear to be considered in your calculations. Although evaporation losses may not be significant for an event of such short duration as the one modeled, we recommend that FDOT demonstrate that this factor was considered.

“6) DERM questions the model assumption that the tail water in C-111 canal at S-197 is constant at 1.5 feet NGVD and are not aware of such data. We are therefore requesting documentation.”¹⁰⁵

In their comments on the original EIS, Florida Game and Freshwater Fish Commission had more criticism of the claimed water flow restoration:

“The WET II analysis led to the erroneous conclusion that wetlands impacted by the project have low to moderate value. This conclusion was apparently caused by a bias in the model that overemphasizes waterfowl usage, and by lack of adequate knowledge on recreational activity in the vicinity. In the opinion of Commission biologists familiar with the area, ratings for wildlife value should be rated at “moderate to high” based on the utilization by wading birds and endangered species. Recreational value should also be rated high, because of consistent and sometimes heavy use by fisherman, hunters, and birdwatchers. In addition, groundwater recharge and flood flow alteration should be considered moderate to high for most of the Dade County portion of the project.

“The hydrology study still lacks a key component. To properly evaluate the proposed flow enhancement of the basin east of US1 in Dade County, much more detail should be acquired on the topography of that basin. This information is necessary to adequately predict hydroperiod at small spatial scales, a factor that greatly influences the overall wildlife value of a wetland.”¹⁰⁶

As field biologist for ACOE Curtis Kruer was involved with all the tidal circulation and culvert work described by FDOT (back to ~1980), was responsible for some of it, and knows those sites very well. In his expert opinion: “The Boca Chica mitigation work is problematic as to what will result. Again FDOT is guessing as to what will result and what the long term maintenance requirements will be. One hurricane will close those culverts and if FDOT doesn't immediately open them up (hard to do after a hit from a big storm) the hypersalinity that will result over time will kill all the seagrass once again. Those are naturally hypersaline ponds (like the Salt Ponds in Key West) and "improved" circulation is not necessarily a good idea, a desired condition, or a long term one.”¹⁰⁷

¹⁰⁵ FDOT, “Final Environmental Impact Statement,” 1992, p.B-27

¹⁰⁶ Final Environmental Impact Statement, p.B-22

¹⁰⁷ Email correspondence from Curtis Kruer to John Hammerstrom/Carol Smith. Jun 2, 2004

Seagrass Losses in Florida (from the state/DEP website)¹⁰⁸:

“Seagrasses are a valuable part of Florida's marine environment, but they are disappearing at an alarming rate. Dredge and fill projects and degraded water quality, as well as other activities, are responsible for their precipitous decline.

“Seagrasses are important natural resources that perform many significant functions: 1) they help maintain water clarity by trapping fine sediments and particles with their leaves; 2) they can stabilize the bottom with their roots and rhizomes in much the same way that land grasses retard soil erosion; 3) they provide habitat for many fishes, crustaceans, and shellfish; 4) seagrasses and the organisms that grow on them are food for many marine animals, and most importantly; 5) they are nursery areas for much of Florida's recreationally and commercially important marine life.

“Seagrass leaves provide excellent protection for young marine animals from larger open-water predators. Some animals, such as manatees, eat seagrass blades. Other animals derive nutrition from eating algae and small animals that colonize seagrass leaves. These colonizing organisms provide an additional link in the marine food chain.

“The Seagrass community of south Florida is the largest seagrass meadow in the world and has helped create the world class fishing of the Florida Keys. (J. Fourqurean, WQPP, 1999)

“Many commercial fishery species rely on seagrass habitat during some part of their life cycles including pink shrimp, lobster, red fish, and stone crab.

“Seagrass habitat helps to support a thriving, multi-million dollar recreational fishery including flats fishing for bonefish and tarpon.

“The estimated total value for Monroe County in 1998 for seven seagrass dependent species added up to about \$53.5 million.

“More than 70% of Florida's recreational and commercial fish, crustaceans, and shellfish spend part of their lives in shallow water estuaries.

“Estimated value of the pink shrimp industry in Monroe County is \$13 million.

“Annual value of the stone crab fishery in Monroe County is estimated at \$17 million.

“The spiny lobster fishery in Monroe County is \$19 million.

“Snapper, including yellowtail and gray, bring in \$3.1 million annually to Monroe County.

“Over 30 species of tropical invertebrates dependent on seagrass habitats are collected in the Florida Keys for the marine collection industry yearly.

“Over \$200 million is spent yearly in Monroe County in the viewing of nature and wildlife.

“Our Seagrasses stabilize the bottom sediments and help to absorb excess nutrients from land run-off. Damaging Seagrass beds leads to continually re-suspend bottom sediments and nutrients that further damage the quality of our waters.

¹⁰⁸ <http://www.dep.state.fl.us/coastal/habitats/seagrass/>

“Our Seagrass community supports hundreds of species of fish at various stages of their lives. Without healthy Seagrass beds, these fish populations are compromised -- as is commercial and recreational fishing, our coral reefs, and our wading birds.

“In 1998 alone, seagrass communities in Monroe County supported an estimated harvest of roughly \$53.5 million for shrimp, stone crab, spiny lobster, yellowtail snapper, gray snapper, and blue crab! (FFWCC, Annual Landings, 1998)

“In south Florida there are over 30,000 acres with light, moderate, and heavy propeller scarring. There is scarring on every Seagrass bed! (Sargent, et. al 1995)

“Damaging Seagrass with your boat’s propeller will fragment the grass bed and severely restrict the movement of marine wildlife in needed habitat. This can create barren areas where fish and others once flourished.

“A moment’s carelessness can quickly impair this precious resource -- a propeller scar cut into seagrass today can be around in five years or longer!

‘Running aground costs millions of dollars each year to boaters in towing fees, propeller replacement, engine repair, and legal fines.

‘The shallow waters of south Florida pose a particular challenge - even to the most experienced boaters...

‘Grounding and prop dredging in seagrass habitat has consequences to both habitat and personal property.

“Damage to vessel engines, hulls, and propellers often occur when a vessel grounds in seagrass or shallow bottom habitat.

“Gouging of seagrass habitat by propellers damages the blades and underground roots of plants.

“Seagrasses require anywhere from 2 to 10 years to recover from propeller damage depending on the species of seagrass.

State of Florida/DEP Seagrass Website Summary:

“The inshore marine habitats of Florida represent a diverse, highly productive series of biological systems. Areas such as the Everglades and Florida Bay are unique in the Northern Hemisphere. The mangrove forests of south Florida, together with the wetlands systems of Florida's northern river estuaries, represent important habitats in terms of biological activity and diversity. Numerous species of economic importance are closely associated with specific basin features, climatological conditions, and water quality characteristics of Florida's inshore systems. The combination of wetlands, submerged aquatic vegetation, and phytoplankton productivity provides the conditions for proliferation and development of various life stages of migratory marine species that utilize such areas as nurseries and sanctuaries from predation.

“Recent rapid population increases along Florida's coasts—associated with urbanization, industrialization, and agricultural activities—have already taken a severe toll of the natural resources in such areas, as exemplified by the losses of emergent vegetation and submerged aquatic vegetation around the state in the past thirty to fifty years. The general lack of scientific data of sufficient scale and quality to evaluate insidious long-term anthropogenous changes in freshwater flows to marine systems

and water quality of the coastal habitats has contributed to an atmosphere of confusion and indecision on the part of those responsible for environmental policy.

“Until now the trend has been to allow widespread environmental destruction by agricultural, industrial, and development interests and then, if there is adverse public response, to implement expensive mitigation procedures. Because inexpensive yet effective planning and management procedures have been neglected before the resource problems appear, serious environmental problems have occurred that often defy immediate solution...”¹⁰⁹

Effect of Proposed Bridge Construction on Seagrass

The Jewfish Creek bridge would be 1.5 miles long with 65 feet of clearance at its peak. A large portion of the bridge would cross the Lake Surprise Causeway at a height of approximately 12 feet. The paved area of the bridge deck at its narrowest point would be 55 feet, but because of the need for acceleration and deceleration lanes to service the proposed ramps, 80% of the bridge is closer to 80 feet in width. The four cloverleaf ramps extend to 360 feet at the widest point and are each approximately 50 feet wide at the narrowest point. The 360-foot width of the ramps includes a void between the main bridge and each of the four ramps as they curve away from the bridge toward the surface-level service road below the bridge. Calculation of the shadow would be difficult without the design software of FDOT. However, using the minimum width of the bridge itself as described and NOT including any shadow from the ramps, **the shadow of this bridge would cover at least ten acres, as compared to the removal of 5.4 acres of causeway and the “hoped for” colonization of that area.** Furthermore, the bridge is in a largely East-West orientation, which means that the shadow will remain in the same spot for greater lengths of time than if the bridge were oriented North-South.

Inconsistent with the goal of “no net loss of wetlands” it seems especially troubling that the seagrasses which would be lost at Lake Surprise include extremely valuable “climax community” turtlegrass which holds sediments in place, filters and cleanses water, and forms the base of the food chain. It is valuable to sea turtles, manatees and recreationally important fish and shellfish; however FDOT proposes to “replace” it by transplanting Cuban shoal grass at the Boca Chica mitigation site, a grass which is not as valuable to the marine system.¹¹⁰ This pioneer species of grass that grows in disturbed areas would not even be accessible to large fish and mammals such as turtles and manatees that currently use that which would be lost. This is a critical loss of seagrass function that is not offset by mitigation 120 miles to the southwest of the project site.

While seagrass viability following transplant can't be known for 20-50 years, FDOT would claim “successful completion” in 2012, eight years from today.¹¹¹

Serious negative consequences from direct impacts during construction over a period of many years cannot be reasonably assured.

¹⁰⁹ Ibid.

¹¹⁰ Project Reevaluation, p. 65

¹¹¹ Project Reevaluation, p.48

Using US Army Corps regulations as our guide, we believe we have discovered some striking parallels between FDOT's proposed Jewfish Creek bridge replacement and a similar application FDOT unsuccessfully made to replace a bascule bridge over Sarasota Pass connecting Anna Maria Island to the mainland at Bradenton. Many of the particulars in that case seem to have a correlate in this one, except that in the case of the Anna Maria bascule bridge, the permit application was denied on just TWO acres of lost seagrass. This is known as the "[VanWagoner case.](#)"¹¹² Below are Findings of Fact and Conclusions of Law from the VanWagoner case that have relevance to this project. The numbered text from this legal precedent is [highlighted in blue](#) to distinguish it from comments in this document.

- #92. The success of the proposed seagrass transplantation is speculative at best. Compared to the mangrove mitigation in these cases, [seagrass transplantation is complicated and remains experimental. Under the best of circumstances, seagrass transplantation is a complicated process that has not been demonstrated consistently to prevent net habitat loss.](#)

- #60. Seagrass aids water quality by filtering suspended material from the water column and stabilizing the bottom. The resulting improvements in water transparency increase the depths to which sunlight can penetrate. Seagrass are dependent on sunlight. Thus, the deeper that water transparency, water color, and other water-quality parameters allow sunlight to penetrate, the deeper the water in which seagrass can grow.

- #61. Seagrass is not hardy and is especially sensitive to changes in the amount of light that it receives. Submerged in water, seagrass can be killed by reductions in water transparency, such as those typically [*92] accompanying nutrient loading (which can lead to phytoplankton in the water blocking light generally and epiphytes on the seagrass leaves directly interfering with the plant's absorption of light). [Seagrass can also die off due to the introduction or resuspension of sediments in the water column, which may result from stormwater runoff, agricultural drainage, boat prop dredging, and construction or demolition activities.](#)

- #63. [Relatively small reductions in sunlight can destroy seagrass over a wide area. If, while all other factors remain constant, reductions in transparency or increases in turbidity reduce by one foot the maximum water depth at which seagrass can grow, the effects may be widespread in estuarine bottoms, which are often \[*93\] gently sloped.](#)

- Shading from the proposed bridge will adversely affect seagrass, mangrove and other restoration efforts.

- #65. [Even a temporary loss of seagrass may change background conditions to discourage recolonization. Once the seagrass in an area is destroyed, it is possible for bottom sediments to build up, turbidity to increase, and water transparency to decrease. This process may effectively prevent seagrass recolonization naturally or artificially through transplantation--at depths at which seagrass previously grew. If an area is so](#)

¹¹² VanWagoner v FDOT and DEP, DOAH Case No. 95-3621; DOAH Case No. 95-3622, 1996

well-flushed as to remove sediments, the loss of the stabilizing bottom vegetation may result in erosion, critically deepening the water depth so that seagrass cannot capture enough light to recolonize the area.

Given FDOT's failure to monitor and control the exotics which now flourish along the existing corridor, and heeding the cautions above regarding negative consequences of over-flushing and post-storm hypersalination of an area, the Boca Chica mitigation site being flushed in perpetuity by FDOT suggests the very real potential for failure at that site.

- #72. If seagrass did not survive the construction and demolition, DOT supplied no reasonable assurance of recolonization given prevailing conditions, such as reduced sunlight from the new bridge and either turbidity from stirred-up, unstabilized sediments or deeper water from erosion. If seagrass did survive the construction and demolition, DOT supplied no reasonable assurance that the long-term sunlight reductions caused by the new bridge would permit the seagrass to survive.

- There is an "assumption" or a "hope" that the seagrass will recolonize, but no guarantee of restored ecological function. Recolonization generally leads to a lower quality seagrass than that destroyed.

- #74. Stormwater contaminants include a wide variety of potentially toxic materials, such as road materials, tire materials, lubrication, road cleaners, paint, building materials, and virtually anything that might be loaded onto vehicles using the bridge. Common runoff contaminants are heavy metals, hydrocarbons, oil and grease, zinc, and copper.

- For over 60 years the existing bridge **has dumped untreated stormwater into the water below**. (Or 98 years since the original Florida East Coast Railway bridge was built at this location)

- #108. There are no data concerning the chemical composition of the sediments in the vicinity of the bridge. There are no data as to the extent to which these sediments may have been contaminated over the years by stormwater-borne heavy metals or oil and grease. There are no data describing the sediments by grain size and percentage of fine organic materials so as to indicate the susceptibility of bottom sediments to disturbances and the likelihood of the resuspension of contaminants into the water column.

- #78. It is more likely than not that this [seagrass] would not survive the proposed project, especially after consideration of the additional prop dredging from small boats finding it easier to bypass the channel and run under the higher bridge with wider spans.

- Additional prop dredging would stir up accumulated sediment toxic to seagrass as greater numbers of larger and faster boats find it easier to run under the higher bridge with wider spans. Would this not decrease the likelihood of seagrass recolonization and

survival, and potentially destroy even more seagrass than is being accounted for? FDOT has not/cannot provide assurance to the contrary.

- **Manatees. #102.** The risk of extinction heightens when the low reproductive rate and manatee mortality attributable to collisions with boats and barges are combined with the probable loss of seagrass, which provide both food and habitat for the manatee. Encouraging increased boat traffic through Jewfish Creek further imperils the already endangered manatee. Boats and manatees converge at this point. There is ample evidence Keys-wide that a “No Wake” sign is not an effective deterrent to boaters who feel the need for speed, particularly at night. **There is little doubt that a bridge with 65’ clearance will encourage and facilitate more, larger and faster boat traffic**, with significant adverse impacts that have not been addressed.

- **#156.** DOT cost estimates ignore environmental costs. Perhaps incapable even of approximation as to lost seagrass beds, degraded water quality, and reduced wildlife, including manatee, environmental costs can be partly quantified in terms of lost recreational opportunities, lost property values and business income in the event of degraded water bodies, and increased governmental expenditures to reverse environmental degradation.’

- **#164.** The proposed project is not clearly in the public interest when the scant benefits claimed by DOT are outweighed by the project's substantial environmental and other costs.

- **#165.** FDOT has...failed to provide reasonable assurance that the proposed project would not adversely affect the public welfare. To the contrary, a fixed-span, high-level bridge would likely destroy acres of seagrass, jeopardize water quality, endanger the already-endangered manatee, adversely affect the estuarine resources [*126] of Sarasota Pass, and detract from the island ambience.

- **#166.** DOT has failed to provide reasonable assurance that the proposed project would not adversely affect the conservation of fish and wildlife, including endangered or threatened species, or their habitats. To the contrary, the proposed project would probably destroy valuable seagrass habitat that is crucial to the welfare of manatee and other wildlife. During construction, the proposed project would directly endanger the manatee by narrowing an important manatee passageway so as to increase the chances of boat-manatee collisions and introducing dangerous construction equipment to the area.

- **#168.** DOT has failed to provide reasonable assurance that the proposed project would not adversely affect the fishing or [*127] recreational values or marine productivity in the vicinity of the proposed project. The likely permanent loss of 2.5 acres of seagrass would adversely affect marine productivity directly through loss of habitat and indirectly through probable reductions in water quality.

- **#170.** DOT has failed to provide reasonable assurance that the proposed project would not adversely affect the current condition and relative value of **functions being performed**

by areas affected by the proposed activity. The proposed project would probably destroy acres of well-functioning seagrass whose health is linked to the health of the estuary and all of its inhabitants and visitors.

- #184. DOT has failed to provide reasonable assurance that the project would not adversely affect the conservation of fish and wildlife or their habitats, the project would not adversely affect navigation, and the project would not adversely affect the fishing or recreational values or marine productivity of the area. **Additionally, the project would be permanent and would impact seagrass functioning at a high level [*134] in providing crucial habitat and food for a variety of wildlife, including manatee.**

Conclusions of Law:

#175. DOT has the burden of proving its entitlement to the permit. Department of Transportation v. J. W. C. Company, Inc., 396 So. 2d 778 (Fla. 1st DCA 1981).

#177. Rule 62-4.242(2)(a) states:

“No Department permit or water quality certification shall be issued for any proposed activity or discharge within an Outstanding Florida Waters, or which significantly degrades, either alone or in combination with other stationary installations, any Outstanding Florida Waters, unless the applicant affirmatively demonstrates that:

The proposed activity or discharge is clearly in the public interest

#179. Rule 62-4.242(2)(b) acknowledges that it may be necessary to permit "limited activities or discharges" in Outstanding Florida Waters to allow for or enhance public use. But if the activity or discharge is not in compliance with Rule 62-4.242(2)(a), then **Rule 62-4.242(2)(b) provides that there must be "no [*131] alternative to the proposed activity, including the alternative of not undertaking any change, except at an unreasonably high cost."**

#180. DOT cannot meet the two-part test for water quality. First, it has failed to provide reasonable assurance that the proposed project is clearly in the public interest.

#184. DOT has failed to provide reasonable assurance that the project would not adversely affect the conservation of fish and wildlife or their habitats, the project would not adversely affect navigation, and the project would not adversely affect the fishing or recreational values or marine productivity of the area. **Additionally, the project would be permanent and would impact seagrass functioning at a high level [*134] in providing crucial habitat and food for a variety of wildlife, including manatee.**

#193. **Minimization, which precedes mitigation, means the no-build alternative in which necessary bridge repairs could be undertaken with the mitigation of any environmental**

impacts. Because DOT has not minimized the impacts of the proposed project, it is premature to consider mitigation.”¹¹³

#164. DOT has failed to provide reasonable assurance that the proposed project would be clearly in the public interest.... the proposed project is not clearly in the public interest when the scant benefits claimed by DOT are outweighed by the project's substantial environmental and other costs.

#165. FDOT has...failed to provide reasonable assurance that the proposed project would not adversely affect the public welfare. To the contrary, a fixed-span, high-level bridge would likely destroy acres of seagrass, jeopardize water quality, endanger the already-endangered manatee, adversely affect the estuarine resources [*126] of Sarasota Pass, and detract from the island ambience.

#166. DOT has failed to provide reasonable assurance that the proposed project would not adversely affect the conservation of fish and wildlife, including endangered or threatened species, or their habitats. To the contrary, the proposed project would probably destroy valuable seagrass habitat that is crucial to the welfare of manatee and other wildlife. During construction, the proposed project would directly endanger the manatee by narrowing an important manatee passageway so as to increase the chances of boat-manatee collisions and introducing dangerous construction equipment to the area.

#168. DOT has failed to provide reasonable assurance that the proposed project would not adversely affect the fishing or [*127] recreational values or marine productivity in the vicinity of the proposed project. The likely permanent loss of 2.5 acres of seagrass would adversely affect marine productivity directly through loss of habitat and indirectly through probable reductions in water quality.

#170. DOT has failed to provide reasonable assurance that the proposed project would not adversely affect the current condition and relative value of **functions being performed by areas affected by the proposed activity**. The proposed project would probably destroy acres of well-functioning seagrass whose health is linked to the health of the estuary and all of its inhabitants and visitors. Problems include a failure to collect and analyze data on the suitability and need of the main transplant receiving site for seagrass transplants, a reliance on seagrass recolonization under the existing and proposed bridges where seagrass is unlikely to grow, a failure to identify success criteria, and a failure to prepare realistic alternative and contingency seagrass mitigation plans in the likely event of the failure of the main receiving site and under-bridge sites.

The proposed project is certain to degrade certain of these values, such as biological integrity and turbidity (during demolition) and is likely to degrade many other of these values, including turbidity prior to demolition. Moreover, DOT has not shown that the no-build alternative is not an economically feasible alternative to the proposed project.

¹¹³ VanWagoner v. Department of Transportation, DOAH Case No.95-3621; DOAH Case No.95-3622

#144. AASHTO standards call for a minimum width of the travel lanes plus three feet per side. But AASHTO standards recognize that reasonably adequate bridges . . . that meet tolerable criteria may be retained. Some of the non-technical factors that should be considered are the esthetic value and the historical significance attached to famous structures, covered bridges, and stone arches.

#153. Last, DOT argues that cost efficiency demands the removal of the Anna Maria Island Bridge, which has undergone expensive repairs in the recent past. DOT generally decides to replace rather than rehabilitate a structure when rehabilitation is projected to cost 60 percent or more of the cost of a new structure.

US-1 Project: Curiously, FDOT has not shown any such calculations for this project. Sixty percent of the \$70 million price tag for this bridge would be \$42 million. That would buy a lot of rehabilitation, with no direct impacts. For the entire US 1 South project FDOT did *not* poll the public on this matter as is required by the NEPA process for Environmental Impact Statements. Instead, FDOT seems determined to force this project on the community without informing the public of the various alternatives previously discussed in this document.

#156. DOT cost estimates ignore environmental costs. Perhaps incapable even of approximation as to lost seagrass beds, degraded water quality, and reduced wildlife, including manatee, environmental costs can be partly quantified in terms of lost recreational opportunities, lost property values and business income in the event of degraded water bodies, and increased governmental expenditures to reverse environmental degradation.'

Cost/Benefit Analysis

FDOT introduces the subject of economic losses, stating that “from 1997 through 2001 the average economic loss due to crashes is approximately \$12 million.”¹¹⁴ This raises the question: why didn’t FDOT go to the next stage and analyze the costs of alternatives compared to the calculated benefits? Cost/benefit analyses are an essential part of any business decision, and yet there is no sign of these calculations in FDOT’s application.

In his 2002 safety analysis of the US-1 South proposal Dr. Joseph Hummer concludes: “Before safety countermeasures are funded—especially countermeasures as expensive and disruptive as a new high fixed bridge and a median barrier—the FDOT must perform much more thorough analysis.”¹¹⁵ Based on his extensive experience in this field, Dr. Hummer surmises that if a comprehensive safety analysis and cost/benefit analysis were done, [FDOT’s proposed fixed bridge at Jewfish Creek] would likely be exposed as inefficient.”¹¹⁶

Dr. Robert Noland offers the following cost-benefit analysis for the project using FDOT's estimates and projections: “If we assume a discount rate of 3% (which is high) and that accident costs escalate at 5% per year (over FDOT’s \$12 million estimate), and we assume a

¹¹⁴ Project Reevaluation, p.9

¹¹⁵ Hummer, Dr. Joseph, Ph.D., PE. “Transportation Engineering analysis of the Proposed Widening of US-1 Between Florida City and Key Largo,” July, 2002, p. 28

¹¹⁶ Hummer, Joseph, Ph.D., PE, email to J. Hammerstrom, March 22, 2004

project life of 20 years, then to break even [this project needs] to reduce accident costs by 68%.” **Has FDOT provided cost-benefit calculations to demonstrate this sizeable reduction in accident costs?**

The Environmental Protection Agency’s “Total Cost Assessment” considers the total cost to society of environmental damage. Conspicuously absent from FDOT’s proposal is the lifecycle cost of maintaining the mitigations, including seagrass transplantation at Boca Chica “in perpetuity”. The actual dollar cost of the long-term mitigation efforts should be included with the “price tag” of \$180 million taxpayer dollars. Comparing the true and total costs of this project to the cost/benefits of alternatives is necessary to make a full and accurate evaluation, and should be required of a Section 404 applicant. No “hidden” or undeclared costs should be diverted to the taxpayer in lieu of a complete cost-benefit analysis of available alternatives and lifetime mitigation costs.

During the period of years when the safety analysis was performed on the Stretch head-on accidents represented 3% of the total on the road from 1989-93. When enforcement and other proven countermeasures haven’t even been evaluated, what is the appropriate threshold to warrant the tremendous expense and disruption of a Jersey barrier through the wetlands in terms of cost/benefit? Especially given the domino effect of this measure: the barrier requires widening the road, which requires removal of the mangrove fringe and its water-filtering/nursery-providing functions in order to install a chainlink fence which will further fragment endangered species habitat and disadvantage firefighters who need to access and control the many brushfires that occur along this corridor during the dry season.

New Circumstances and Information That Require an SEIS

In the May 2004 IERP recommendation to the board, South Florida Water Management District Staff summarily dismiss the likely secondary impacts of this project by reference to Judge Arrington’s 1996 opinion that there would be no such impacts. However, as has been shown, there are numerous factually disproved assertions and predictions contained in the Recommended Order. This evidence alone clearly demonstrates the fallibility of “reasonable assurances”. It is also important to note that while Judge Arrington deferred to FDOT and gave their assurances full benefit of the doubt, he still determined that during the 20-50 years required for the mitigation areas to achieve full functional value this project would result in a net loss of wetland function,¹¹⁷ and yet he recommended issuance of a permit anyway. Given the present state of knowledge and current environmental conditions, in context of the historical record and the sensitive location of this project, SFWMD’s reliance on the dated and flawed Arrington decision is unwarranted and irresponsible.

In accordance with regulations, a Supplemental Environmental Impact Statement is required because:

- “As a general rule, a FEIS older than 3 years ... must be supplemented.” (AR 200-2 2-3e(1)).
- "Agencies ...Shall prepare supplements to... final environmental impact statements if: ... (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." (40 CFR 1502.9(c)(ii))

¹¹⁷ State of Florida, Administrative Hearing, Recommended Order, Finding of Fact #194 (1997)

- "Significant new circumstances or information arise which bear on the proposal or its impacts." (40 CFR 1501.7(c)). As discussed throughout this document, this is true in this case.
- AR 200-2 6-2(g) states that an EIS must be prepared when the "proposed action has the potential to...either establish a precedent for future action or represent a decision in principle about a future consideration with significant environmental effects." The direct, secondary and cumulative impacts of the additional road and bridge projects needed to deliver hurricane evacuation clearance time improvement have not been evaluated.
- FDOT has failed to address "...growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate..." (40 CFR 1508.8(b)). FDOT has not addressed the dynamic land use changes that are taking place in Miami-Dade County that would increase pressure on Monroe County were transit between the two counties to be facilitated.
- The substantial changes in land use, regulations, population growth, sensitivity of environmental resources, development patterns and public sentiment require a Supplemental Environmental Impact Statement. (AR 200-2, 6-5(k)). This regulation certainly describes the situation in Monroe and Dade counties, as discussed previously.
- FDOT's Environmental Impact Statement of 1992 has not fulfilled the requirement described in 40 CFR 1508.14: "When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment." In 40 CFR 1508.8, NEPA states "Effects and impacts...are synonymous. Effects includes ecological...aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative." The environment and the economy of the Keys are interrelated like few other places, and yet the FEIS and Project Reevaluation contain no discussion of these effects.
- Facilitated transit between the Keys and the mainland has the potential to adversely affect small businesses in the Keys that have higher costs than their counterparts on the mainland. Even with the existing road, there has already been a shift to using cheaper motels on the mainland and daytripping into the Keys. This situation would only be exacerbated by a faster wider corridor to Miami.
- FDOT has not addressed the "conflicts between the proposed actions and Federal, State, and local...land and airspace use plans, policies, and controls for the area concerned." (AR 200-2 D-7 (b)) Destruction of 105 acres of wetland habitat (85 permanently destroyed and 20 temporarily destroyed) is unconscionable while Monroe County and the State are spending millions of taxpayer dollars to save plots of habitat as small as 2 acres. In addition the induced traffic effects would undermine the local Livable CommuniKeys effort which includes "mitigating the impact of US 1 traffic" on residential communities along the corridor in the Upper Keys among its goals.¹¹⁸

¹¹⁸ Livable CommuniKeys Master Plan. Tavernier Creek to Mile Marker 97. Strategy 9.1. pg. 66 (2004)

- FDOT did not use a "...systematic interdisciplinary approach that ensures the integrated use of the natural and social sciences, planning and the environmental design arts." (PL 91-90; Sec 102 (2)(A)). They have not addressed the "Economic and Social Impacts."
- FDOT has not considered the extensive, peer reviewed research that shows the travel time savings from this project would induce traffic and precipitate unevaluated secondary and cumulative impacts.
- New research published this year in the authoritative scientific journal **Nature** raises serious new concerns about destroying acres of mangroves that were not known at the time of the 1992 FEIS and are not reported in the 2003 Project Reevaluation.

"Mangrove forests are one of the world's most threatened tropical ecosystems with global loss exceeding 35%. Juvenile coral reef fish often inhabit mangroves, but the importance of these nurseries to reef fish population dynamics has not been quantified. Indeed, mangroves might be expected to have negligible influence on reef fish communities: juvenile fish can inhabit alternative habitats and fish populations may be regulated by other limiting factors such as larval supply or fishing. Here we show **that mangroves are unexpectedly important, serving as an intermediate nursery habitat that may increase the survivorship of young fish.** Mangroves in the Caribbean strongly influence the community structure of fish on neighboring coral reefs. In addition, the biomass of several commercially important species is more than doubled when adult habitat is connected to mangroves. The largest herbivorous fish in the Atlantic, *Scarus guacamaia*, has a functional dependency on mangroves and has suffered local extinction after mangrove removal. **Current rates of mangrove deforestation are likely to have severe deleterious consequences for the ecosystem function, fisheries productivity and resilience of reefs.** Conservation efforts should protect connected corridors of mangroves, seagrass beds and coral reefs."¹¹⁹

- FDOT has obscured the impact of this project on significant historical and archeological resources. (AR 200-2 6-2 (a) and (b)). The status and worth of sites MO01469 and 8DA5981 have not been completely reported by FDOT.
- FDOT did not consult with the public as required: "When an EIS is being prepared, public involvement is a requisite element of the scoping process." (40 CFR 1501.7 (a)(1)). If FDOT consulted with the public, it was prior to the publication date of their 1992 FEIS, over 12 years ago, making those consultations invalid in the present context. Following seven years without public hearings (the most recent hearing having been held in September, 1996), FDOT held public informational meetings in response to public outcry; however, these were not public hearings and did not allow public exchange of viewpoints, and they were scheduled after the official comment period closing date for the final permit (January 15, 2004).

Dr. Jerome Lorenz, Research Director for the Audubon Society, provides the following assessment:

"The Environmental Impact Statement conducted for this project is now over 12 years old. It does not fully incorporate the Comprehensive Everglades Restoration Plan (CERP)

¹¹⁹ Mumby, Edwards, Arias-Gonza, Lindeman, Blackwell, Gall, Gorczynska, Harborne I, Pescod, Renken, Wabnitz & Llewellyn, "Mangroves enhance the biomass of coral reef fish communities in the Caribbean," *Nature*, February, 2004, p.533

passed in 2000. It does not consider the Florida Keys National Marine Sanctuary Management Plan that was implemented in 1996. It does not take into account the Florida Bay and Florida Keys Feasibility Study hydrologic modeling effort that is currently underway. It does not recognize the potential secondary impacts of the project in increasing boat traffic entering Florida Bay, Everglades National Park, and Biscayne National Park.

“We believe that the failure of FDOT to consider these numerous important elements in its 2003 Project Reevaluation requires the FDOT to perform a Supplemental Environmental Impact Statement (SEIS) before any permits are granted.

“An SEIS is needed to incorporate CERP and upcoming hydrological studies. Conclusions reached in the 1992 EIS were based on a Hydrology and Wetland Evaluation Report. We believe this report is wholly insufficient to address the impact of the highway expansion upon such a unique and ecologically important location. Indeed, comments from numerous federal agencies expressed concern over the accuracy and specificity of the Report. The National Park Service found “the model(s) applied in this study do not provide an accurate and complete analysis and we question many of the assumptions incorporated in the models.” The U.S. Army Corps of Engineers found the level of analysis to be very general. The National Oceanic and Atmospheric Administration stated in its comment letter, ‘The WER does not provide sufficient information for us to currently agree with the conceptual seagrass mitigation plan’ and that specific details be developed prior to finalizing the EIS and pursuing necessary permits. This was not done. The Florida Game and Fresh Water Fish Commission flatly found that the ‘WET II analysis led to the erroneous conclusion that wetlands impacted by the project have low to moderate values.’

“A further demonstration of the outdated nature of the 1992 FEIS is reflected in the treatment of the ‘embankment created by the C-111 spoil bank.’ The FEIS suggests that these Class III wetlands may be potentially damaged by salt water intrusion from storm surges accompanying major hurricanes. The spoil bank in question was removed in 1996. The PRR makes no mention of this potentially important alteration that has occurred since the 1992 FEIS.

“This project should not be permitted to go forward without a full understanding of the waters of southern Biscayne Bay, Florida Bay and its interconnectivity with the Florida Keys. Pursuant to the Comprehensive Everglades Restoration Plan, the Florida Bay and Florida Keys Feasibility study will be available by August 2005. This study will establish Florida Bay restoration targets, evaluate the effects of restoring the historical connectivity between Florida Bay and the Atlantic Ocean, and examine the volume of water planned for redirection to the Bay from the Comprehensive Everglades Restoration Plan and other efforts. It will then conclude if these flows are optimal, and if not, what the optimal volumes shall be. (See http://www.evergladesplan.org/docs/fs_fl_bay_feas_hires.pdf).

“The study will provide significant guidance for the proposed FDOT highway project to ensure long-term sustainability of the natural environment. Requesting permits without this vital information is premature and imprudent. FDOT should be required to conduct a Supplemental EIS upon completion of the Florida Bay and Florida Keys Feasibility Study.

“An SEIS is needed to incorporate the Florida Keys National Marine Sanctuary Management Plan (FKNMSMP). Pursuant to the Florida Keys National Marine

Sanctuary and Protection Act, Public Law 101-605 (1990), the FKNMSMP was adopted in 1996. The Management Plan recognized the importance of restoring historic freshwater flows to and through Florida Bay, and therefore implemented a Water Quality Action Plan to ensure protection. The U.S. Army Corps of Engineers a representative member of the Steering Committee for the Water Quality Protection Program, which seeks to pursue 'both short- and long-term solutions...at high levels of management' on water management issues affecting Florida Bay and other areas of the Sanctuary.

"A critical hydrologic connection between northeastern Florida Bay (Long Sound) and southern Biscayne Bay (Barnes Sound) historically occurred via multiple creeks in the vicinity of Manatee Creek (the county line between Miami-Dade and Monroe counties). These creeks were large enough to allow passage of small sailboats from one bay to another (as presented in Vincent Gilpens' "The cruise of the *Seminole* among the Florida Keys' March 10-April 5, 1905). This connection was destroyed in 1907 by the Flagler railroad construction. Currently, FDOT plans to place a single bridge at Manatee Creek and place box culverts at other historic creek locations in the Manatee Creek area. However, there is no evidence that these culverts will promote tidal flow within the Sanctuary. In addition, there is no evidence that the project will help restore historic freshwater flow from wetland areas on the western side of US1 to Barnes Sound and Card Sound, both of which are within the Sanctuary.

"Failure to ensure proper water deliveries to restore historic estuarine conditions in these areas, compounded by a failure to restore the Manatee Creek tidal connection, would fly in the face of the goals of the FKNMSMP and counteract many of the restoration measures already implemented. It is wholly unknown whether the current proposal of the FDOT will help restore historic flows in Florida Bay. The Army Corps of Engineers should not provide permits allowing FDOT to initiate its project without fully understanding its effects upon the water flow within the Florida Keys National Marine Sanctuary.

"An SEIS is needed to consider the impacts of induced boat traffic in the Florida Keys National Marine Sanctuary, Everglades National Park, and Biscayne National Park. The EIS as conducted in 1992 does not address the secondary impacts of induced boat traffic, which in turn will affect the water quality and surrounding habitats. Both the Florida Keys National Marine Sanctuary and the Everglades National Park cite overfishing and bottom damage from novice or careless boaters and swimmers as critical problems in managing their respective resources.

"The FDOT, however, has completely ignored such secondary impacts both in the EIS and in the Project Reevaluation. The Reevaluation incorrectly states that by eliminating certain boat access points, the number of boaters in Northeastern Florida Bay will be reduced. Rather than lessening traffic, the project will induce boat traffic. The Reevaluation also claims to have discussed "in detail the many developments that have occurred subsequent to the FEIS," yet there is no mention of such induced boat traffic.

"In addition, FDOT's plans for a drawbridge spanning Jewfish Creek will encourage boat traffic both within Jewfish Creek and the Intercoastal Waterway. Currently, most of the larger vessels that traverse the Keys use Hawk Channel as the major thoroughfare. Hawk Channel is located on the Atlantic Ocean side of the Keys and is a deep (>20ft), wide, well marked channel that is easy to navigate and suitable for use by larger vessels. By removing the restriction to larger vessels at Jewfish Creek, many of

these boats will navigate through the Intercoastal Waterway (ICW). This waterway is preferable to boaters as it is protected from the prevailing easterly winds and tends toward a “softer” ride. The ICW wanders through southern Biscayne Bay and Florida Bay and is very narrow and shallow in places. The innumerable propeller scars and criminal groundings in these bays are a testament to how difficult it is to navigate.

“The induced boat traffic through the ICW, with concomitant increase in boat size, power and speed, will certainly result in more frequent and more damaging groundings within these sensitive protected areas. An SEIS must be conducted in order to consider these potentially devastating secondary impacts upon the surrounding marine environments.

“The National Environmental Policy Act requires an SEIS be performed

“The FDOT has stated that there is no requirement to prepare a Supplemental Environmental Impact Statement over 12 years after the original EIS was promulgated and after significant legal changes in the protection and regulation of the natural resources have occurred.

“According to the National Environmental Policy Act (NEPA) of 1969, and subsequent case law, the agency must apply a ‘rule of reason’ on whether to prepare a supplemental EIS, and whether ‘the new information will affect the quality of the human environment in a significant manner or to a significant extent not already considered.’ Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 361 (1989). In addition, ‘NEPA imposes on federal agencies a continuing duty to supplement existing EIS’s in response to ‘significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.’ 40 C.F.R. § 1509(c)(1)(ii).” Idaho Sporting Congress Inc. v. Alexander, 222 F.3d 562, 566 (2000).

“The passage of CERP in 2000 and the FKNMS Management Plan in 1996 have established significantly new circumstances regarding the 18 mile stretch highway and the surrounding areas. In addition, conclusions reached by the ongoing Florida Bay and Florida Keys Feasibility Study will provide considerably greater understanding of the long-term impacts of the highway construction project. CERP is the largest restoration project ever to be implemented in the world. It would be highly injudicious to begin work on construction that will likely have detrimental effects on the success of CERP without fully understanding the ramifications of such a project.

“In applying a ‘rule of reason,’ FDOT should be required to prepare an SEIS in light of recent legal and scientific developments. Failure to do so will not only violate NEPA, but may cause irreparable damage to the surrounding ecosystems.

“NEPA also requires that agencies take a ‘hard look’ at environmental consequences of the project (see, e.g. Sierra Club v. U.S. Dept of Transportation, 2004 WL 614814 (2004)). FDOT cannot claim to have taken the requisite ‘hard look’ when it didn’t even have all pertinent information to make a decision. ‘NEPA emphasizes the importance of coherent and comprehensive up-front environmental analysis to ensure informed decision making to the end that “the agency will not act on incomplete information, only to regret its decision after it is too late to correct.”’ Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208 (1998), quoting Marsh, 490 U.S. 360 (1989). If FDOT is allowed to proceed without analyzing the upcoming Florida Bay and Florida Keys Feasibility Study, the hydrological system may suffer permanent injury. On the

other hand, by waiting for the release of the study, FDOT can ensure that its project is in compliance and conjunction with CERP.

“The 1992 EIS no longer effectively addresses the environmental impacts of the project, and has been outdated by subsequent ecological understanding of the surrounding areas. Allowing FDOT to move forward at this time will lead to a violation of NEPA, and will hinder all recent efforts to restore and protect the Florida Bay, the Florida Keys and the Everglades hydrological system

“We implore the U.S. Army Corps of Engineers to withhold permit authorization for the FDOT’s highway project until a Supplemental Environmental Impact Statement is conducted. The SEIS should (1) be based upon the upcoming results of the Florida Bay and Florida Keys Feasibility Study, (2) consider the mandates of CERP and the FKNMSMP, and (3) recognize the deleterious secondary impacts of increased boater traffic in Florida Bay.”¹²⁰

Summary

Section 404 Part 230.12 Findings of compliance or non-compliance with the restrictions on discharge.

(3) ...Specified as failing to comply with the requirements of these Guidelines where:

(i) **There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem**, so long as such alternative does not have other significant adverse environmental consequences; or

(ii) The proposed discharge will result in significant degradation of the aquatic ecosystem under section 230.10(b) or (c); or

(iii) The proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem; or

(iv) There does not exist sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with these Guidelines.

US Army Corps of Engineers Criteria for Evaluating Applications: The Public Interest Test

33 CFR Part 320 (a)

- (i) the public/private need for the proposed structure or work
- (ii) the practicability of using reasonable alternative methods to accomplish the objective of the proposed structure or work
- (iii) the extent or permanence of the proposed structure or work

Army Corps regulations are very clear that a permit will be denied if the discharges into the aquatic environment that would be authorized by such permit would not comply with the Environmental Protection Agency's 404(b)(1) guidelines.

33 CFR Part 320.4 (b)

¹²⁰ Dr. Jerome Lorenz, Director of Research, National Audubon Society, to Colonel Carpenter May 28, 2004.

(1) Most wetlands constitute a productive and valuable public resource, the unnecessary alteration or destruction of which should be discouraged as contrary to the public interest.

(4) No permit will be granted which involves the alteration of wetlands unless the district engineer concludes that the benefits of the proposed alteration outweigh the damage to the wetlands resource. In evaluating whether a particular discharge activity should be permitted, the district engineer shall apply the section 404(b)(1) guidelines (40 CFR Part 230. 10(a) (1), (2), (3)).

Environmental Protection Agency 404(b)(1)

40 CFR Part 230.10 (a) Except as provided under section 404(b)(2), **no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem**, so long as the alternative does not have other significant adverse environmental consequences.

(2) An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

40 CFR Part 230.12

(3) ...specified as failing to comply with the requirements of these Guidelines where:

(i) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as such alternative does not have other significant adverse environmental consequences

The language of the regulations is very clear. The proposed US-1 South project does not comply with the requirements for a Section 404 permit because it fails to provide the claimed benefits, does not meet the threshold of need, and therefore is not “clearly in the public interest” as is required for dredge and fill activities in Outstanding Florida Waters. Moreover, this project fails to adequately consider less damaging alternatives; fails to account for the negative impacts of increased vehicular and boat traffic in an ecosystem under stress, including areas of special aquatic concern and threatened/endangered species habitats; fails to address the cumulative direct and indirect impacts systemwide; relies on flawed and erroneous assumptions and predictions; fails to perform a cost/benefit analysis; fails to recognize the “significant new circumstances and information relevant to environmental concerns,”¹²¹ which require a Supplemental Environmental Impact Statement; and fails to comply with essential elements of the governing regulations.

Because this project does not meet the threshold of need, is permanent in nature, and causes greater adverse impacts than many available alternatives, it cannot satisfy the Section 404 requirement to be “clearly in the public interest”. Therefore, we respectfully urge the Corps to deny this permit.

April 18, 2004

(Revised/Updated September 6, 2004)

¹²¹ National Environmental Policy Act, 40 CFR 1502.9(c)(1)(ii)

**TABLE 18
FLORIDA KEYS HURRICANE EVACUATION STUDY
INDIVIDUAL IMPROVEMENTS SCENARIO (YEAR 2005)
NORMAL RESPONSE CURVE & HURRICANE CATEGORY 3-5**

Roadway Improvement	Clearance Time	Vehicles Stranded ⁸	
		24-Hours	18h 44m
Existing Roadway Network	25h 58m	2,690	12,170
Proposed Individual Improvements (cumulative)			
Add one lane MM 85.6 to 90.0 (from two existing lanes to 3 lanes) – construction or TSM	25h 38m	2,690	12,170
Add one lane through Florida City (from four existing lanes to 5 lanes) – construction or TSM	24h 32m	580	9,421
Add one lane 18-mile stretch (from two existing lanes to 3 lanes) – construction, compromise construction, or TSM			
Add one lane MM 105.0 to 106.3 (from four existing lanes to 5 lanes) – construction or TSM			
Add one lane MM 83.5 to 85.6 (from two existing lanes to three lanes) – construction or TSM	24h 04m	24	9,421
Add one lane MM 100.0 to 105.0 (from four existing lanes to five lanes) – construction or TSM	23h 42m	0	6,567
Add one lane MM 74.0 to 80.0 (from two existing lane to three lanes) – construction or TSM	22h 48m	0	5,387
Add one through lane at signal at Big Pine Key	22h 48m	0	5,387
Add one lane MM 47.0 to 48.0 (from two existing lanes to three lanes) – construction or TSM	22h 48m	0	5,387
Add one lane MM 54.5 to 74.0 (from two existing lanes to three lanes) – construction or TSM	21h 48m	0	5,367
Improve the Intersection of CR 905 / CR 905A	21h 48m	0	5,367
Add one lane MM 90.0 to 100.0 (from four existing lanes to five lanes) – construction or TSM	18h 44m	0	0

Source: Miller Consulting, Inc.

⁸ “Vehicles stranded” means the number of vehicles that are still traveling on the road 24 hours or 18 hours 44 minutes (recommended alternative) after a hurricane evacuation order is given.

Appendix A

Bibliography of Induced Travel

August, 2003

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