8.5 Square Mile Area: Report to the County Manager

Prepared by: Miami-Dade Department of Environmental Resources Management
John W. Renfrow, P.E., Director
ERM January 1999
REPORT TO THE COUNTY MANAGER ON THE 8.5 SQUARE MILE AREA
Prepared by the Department of Environmental Resources Management
January 1999

The purpose of this report is:

1. to summarize the public agency actions over the last ten years which have addressed the problem of restoring historic flows to NE Shark River Slough and the effects of the restoration on the 8.5 Square Mile Area, and

2. to present DERM’s recommendation in light of this history and the means of implementing DERM’s recommendation.

During the past forty years, construction of the L-31N levee and other flood control structures has profoundly altered the quantity, distribution, and timing of water flows within the Everglades ecosystem. More recently, restoration of the Everglades has become a national priority. The re-establishment of historic water flows in the Shark River Slough is crucial to the successful restoration of the Everglades ecosystem. The 8.5 Square Mile Area lies in the path of these historic water flows, thereby increasing the complexity of flow restoration.

Following is a summary, in chronological order, of key public agency actions and policy decisions over the last decade which have addressed the restoration of historic flows to NE Shark River Slough and the effects of the restoration on the 8.5 Square Mile Area.

BACKGROUND

In 1989, Congress passed the Everglades National Park Protection and Expansion Act which provided for the restoration of historic flows in the Shark River Slough region and expanded the boundaries of the Park to the western edge of the 8.5 Square Mile Area (SMA). The 1989 Act also directed the Secretary of the Army to determine if restoration of historic water flows would adversely affect the 8.5 SMA. If the Secretary found that adverse impacts would occur, the Army was to construct a flood protection system for the developed portion of the 8.5 SMA.

In 1992, the U.S. Army Corps of Engineers designed a plan for the 8.5 SMA, as part of the restoration project titled Modified Water Deliveries to Everglades National Park. Under this plan, the Corps would provide a perimeter canal and levee around the 8.5 SMA to mitigate for any incremental flooding that would occur as a result of the restoration of historic flows to Northeast Shark River Slough. However, this canal and levee system was not designed to protect the area from the historic flood levels, which have occurred in the 8.5 SMA, nor did the design address water quality impacts or secondary local costs, which would be borne by Miami-Dade County.
After this project design was completed, a computer model was developed to replicate conditions in the historic Everglades system. The model predicted higher water levels and flows than had been considered originally and the hydrologic restoration targets for NE Shark River Slough were increased to those predicted by the computer model. In order to provide flood mitigation as originally planned, the perimeter canal/levee system would have to be redesigned to accommodate the increased water levels.

Concerns over the impacts that the Corps' mitigation project would have on Everglades restoration efforts and the project's failure to address potential water quality impacts and flood protection for the 8.5 SMA led to the establishment of the Governor's East Everglades 8.5 Square Mile Area Study Committee in 1994. In April 1995, the Governor's Committee published recommendations addressing flood protection, urban services, and voluntary land acquisition. The Committee recommended a conceptual flowway buffer on the western side of the 8.5 SMA as an alternative to the Corps' original canal/levee system.

Subsequently, the South Florida Water Management District hired a consulting firm, PEER Consultants, to evaluate whether the flowway buffer concept would work and to design a technical solution that would permit hydropattern restoration of Everglades National Park while providing flood protection for lands within the 8.5 SMA.

Working with an interagency team*, the consultant evaluated six design alternatives, as follows:

- Alternative 1. the original Corps canal/levee design,
- Alternative 2. a modified version of the Corps Flood Mitigation Plan,
- Alternative 3. the Governor's Committee flowway/buffer proposal,
- Alternative 4. a modified version of the flowway/buffer proposal,
- Alternative 5. a seepage barrier alternative, and
- Alternative 6. total buyout of the 8.5 Square Mile Area.

The consultant reported that the cost to build and operate the flood protection system ranged from $39 million for Alternative 1 to $180 million for Alternative 5. With regard to flood protection, PEER Consultants documented that Alternatives 1, 3, and 5 failed to provide flood protection for the 8.5 SMA. Alternatives 2 and 4 provided flood protection for most of the 8.5 SMA. However, subsequent evaluation determined that Alternatives 2 and 4 had negative impacts on hydropattern restoration within Everglades National Park (see Attachment A).

Another important step toward implementing the recommendations of the Governor's Committee, was the development of a Statement of Principles to articulate the responsibilities of Miami-Dade County and the South Florida Water Management District with regard to land acquisition, roadways, secondary drainage facilities and funding mechanisms. It provided for land acquisition from willing sellers with funding from several federal, state and local sources, including the Miami-Dade Wetland Trust Fund. In June 1996, the Miami-Dade County Board of County

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*Interagency team members were: Everglades National Park, U.S. Department of Interior; U. S. Army Corps of Engineers, U. S. Fish and Wildlife Service; South Florida Water Management District; Florida Department of Environmental Protection; Miami-Dade Department of Environmental Resources Management.
Commissioners unanimously adopted a resolution (R-639-96) “authorizing the County Manager to execute the Statement of Principles for Interagency Cooperation on the 8.5 Square Mile Area.” Since late 1997, DERM has evaluated parcels of land for potential acquisition and worked collaboratively with The Nature Conservancy to acquire lands within the 8.5 SMA with funds from the Wetlands Trust Fund.

In the fall of 1998, the interagency team decided to use a computerized decision model to assist with the selection of the six alternatives that had been evaluated by the PEER Consulting team. The Corps of Engineers engaged the firm of Montgomery Watson for this evaluation. The following criteria were used: impact on landowners, effect of the C-111 project, time to completion, costs, flood damages, Everglades hydropattern restoration, post project wetlands outside of Everglades National Park, water quality impacts, habitat impacts, and local secondary costs. Under this evaluation, the full buyout, Alternative 6, scored the best and the original Corps design, Alternative 1, scored the lowest. As shown in Attachment A, the full buyout, Alternative 6, scored highest because it would have the lowest impacts to hydropattern restoration in Everglades National Park and there would be no secondary local costs.

The projected local secondary costs are of particular concern to Miami-Dade County. Many landowners in the 8.5 SMA have expressed a strong desire for flood protection and urban services. It would cost approximately $140 million to build roads that would meet minimum County standards, and an additional $14 million to construct a secondary drainage system to provide protection from a one in ten year storm. Neither the federal government nor the South Florida Water Management District would pay for these local secondary costs. There would be insufficient revenue generated by the residents of the 8.5 SMA to pay for the roads and secondary drainage. If it is assumed that the area would be developed at a density of one unit per five acres and that the value of the homes would be similar to the value for residences on five acres in the Redlands, and if it is further assumed that the residents would vote to tax themselves through a special taxing district, there would still be a shortfall of about $100 million. (See Attachment B). The cost of that shortfall would ultimately be borne by the entire Miami-Dade County community.

The ultimate decision on the appropriateness of any alternative resides with the U. S. Army Corps of Engineers and the U. S. Department of Interior. On November 12, 1998 the Water Management Board voted for full buyout as the Locally Preferred Alternative. The District’s approval was contingent upon successfully entering into funding agreements with both the federal government and Miami-Dade County. The Department of Interior has indicated that they are willing to provide 50% ($60 million) of the total acquisition costs (see attached letter from Secretary Babbitt, Attachment C). The District, the Department of the Interior and the Corps are working towards an August 1999 deadline to meet the requirements for implementing Alternative 6 as the Locally Preferred Alternative. These requirements include final approval of a funding agreement, a Post Authorization Change report, and supplemental National Environmental Protection Act documentation for the new Locally Preferred Alternative.
RECOMMENDATION

DERM staff have participated in all of the interagency efforts described above. At each stage, staff have reviewed the design alternatives and made recommendations on the technical studies. It is DERM’s position that full buyout is the best of the proposed alternatives for the 8.5 SMA. Because the County, along with the state and the nation will benefit from this solution, the County should participate as a partner in the acquisition of the 8.5 SMA.

The full buyout alternative was selected by the District Board as the Locally Preferred Alternative because it has the least impact on Everglades hydropattern restoration and can be accomplished in a relatively short time period. The lack of water quality impacts, the absence of the need for flood protection and the fact that there would be no local secondary costs for roads or local drainage facilities also weighed in the Board’s decision. Everglades National Park, Dept. of Interior, supports the evaluation process, described above, and the District’s selection of Alternative 6 as the Locally Preferred Alternative. (See attached letter from Everglades National Park Superintendent Richard Ring, Attachment D.)

IMPLEMENTATION OF RECOMMENDATION

The County’s share in this acquisition can be funded from two sources which could provide $20 million. Three million dollars is available from the Wetlands Trust Fund. The Environmentally Endangered Lands (EEL) Acquisition Trust Fund can provide $17 million once the project is approved through the established EEL process, which is described below. With these funds, the County can enter into a funding agreement with the South Florida Water Management District.

Staff from DERM, the County Attorney’s Office, and the Water Management District will develop a Memorandum of Understanding that will describe the County’s and the District’s respective roles and responsibilities for land acquisition in the 8.5 SMA. We anticipate that the District will handle all aspects of the acquisitions. County funds will be transferred to the District in scheduled increments. The $3 million from the Wetlands Trust Fund will constitute the first transfer. The District will be able to use these funds to purchase properties in the 8.5 SMA and to pay for all associated acquisition costs such as appraisals and title fees. The agreement will also describe any restrictions that may be placed upon the use of these funds by the Board of County Commissioners.

The process for obtaining EEL funds is established in Chapter 24A of the County Code. First, an application to place the 8.5 SMA project on the EEL Acquisition list will be prepared by DERM staff and submitted for review by the Land Acquisition Selection Committee (LASC). The staff proposal will include vacant parcels and wetlands in the 8.5 SMA that have an assessed value of about $17 million. Staff will propose that these lands be bought as “buffer” lands for the NE Shark River Slough and Everglades National Park. While the lower lying lands in the western portion of the 8.5 SMA will be restored as wetlands, they will also serve to buffer the park lands to the west from the agricultural lands to the east. EEL funds will be used to acquire undeveloped parcels from willing sellers.
The LASC will review the proposal, conduct a field inspection and hold a public workshop in January. As required by Chapter 24A, the Department Directors of DERM, Planning and Zoning and Parks, will assist the County Manager in preparing a recommendation on the proposal for submittal to the LASC prior to their advertised public hearing in February. After hearing public testimony, the LASC will make a recommendation to the Board of County Commissioners. The Board's approval of the recommendation is required to place the project on the EEL Acquisition List, making EEL funds available for the acquisition.
Alternative Plan Evaluation & Summary

Eight and One-Half Square Mile Area

Prepared for:

U.S. Army Corp of Engineers, Jacksonville District
and the
District Review Team

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Based on the recommendations of the Governor’s Committee on the 8.5 SMA, six alternatives were developed for evaluation in SFWMD’s contract with PEER Consultants, P.C. The six alternatives are consistent with the goals and objectives and the selection criteria agreed upon by the DRT. Detailed descriptions of these alternatives can be found in “Alternative Land Use Analysis: Eight and One-Half Square Mile Area, Final Report” (PEER Consultants, August 1998). A summary of each alternative follows:

**Alternative 1 - USACE Flood Mitigation Plan**

Alternative 1, also known as the USACE Flood Mitigation Plan, specifies the construction of a canal and levee at the interface of the ENP and the north and west sides of the 8.5 SMA. The purpose of the canal will be to collect and convey seepage waters from the interface area of the park with the 8.5 SMA for ultimate discharge back into the Northeast Shark Slough via L-31N and L-29 canals. Two pump stations, S-356 and S-357, will be built to assist in accomplishing this. The corresponding levee will be constructed to limit the quantity of surface water flow from the park into the canal. No buffer is specified.

This alternative will create a transition zone within ENP, preventing the attainment of Natural Systems Model (NSM) water levels within a transition area established between the park and the 8.5 SMA. The close proximity of a seepage collector canal having a design water level of 4.5 feet NGVD, coupled with high seepage volumes from the park, will have a negative impact on hydropattern restoration efforts on adjacent ENP lands.

**Alternative 2 - Modified USACE Flood Mitigation Plan**

The primary difference between Alternative 1 and Alternative 2 is the direct pumpage of seepage back into the Park at three points along the levee, rather than a single discharge to the north into the L-31N canal. No buffer is specified. The objective is to return the seepage back to the ENP in a manner that would be compatible with ENP restoration both in terms of water quality and hydropattern. G-211 would be left in place as a drainage divide in L-31 N. It would open only for water supplies deliveries to the southern reach of L-31N. Seepage from the 8.5 SMA would be collected in L-31N, where it could be discharges south in accordance with C-111 and Taylor Slough restoration programs.

Although this alternative returns the seepage water closer to its source, it still causes hydropattern impacts and disrupts natural flow patterns along large segments of the canal/levee alignment.
Alternative 3 - Water Preserve Area

Alternative 3 creates a water preserve area that consists of shallow impoundments between ENP and the remaining developed areas of the 8.5 SMA. This area is also referred to as a buffer and retention/detention area by the ENP. Although the perimeter levee still exists on the west side of the 8.5 SMA, the seepage collector canal has been moved to the east side of a second, internal, levee. All seepage from the park as well as the buffer is returned to the buffer via three pump stations discharging from the internal seepage collector canal into the buffer area. The buffer allows for the diminishment or elimination of the transition area within the park on the west side of the perimeter levee. This buffer also extends for the entire length of the interface between the park and the 8.5 SMA, thereby allowing for the transitioning of water levels within the buffer instead of within the park. The alternative also allows for the water discharged from the buffer to be released into the C-111 Project Area, once water quality criteria are met, thereby following a more natural flow regime. Stations G-211 and S-311 would remain in place and be used only for water supply deliveries.

Alternative 4 - Modified Water Preserve Area

Alternative 4 has all of the components of Alternative 3 with a realignment of the internal canal and levee. The realignment allows for the protected area of the 8.5 SMA to correspond to the higher ground surface elevations, but also places the seepage collector canal adjacent to the boundary of ENP on the more northern segment. East of the internal levee is the collection canal with two pumps. The northern pump and the southern pump would return seepage back to the water preserve area. G-211 and S-331/S-173 would remain in place and be used primarily for water supply deliveries.

This alternative has the advantages of creating a buffer between the park and the developed areas but the realignment also allows for the creation of a transition area within the park along the northern alignment in which hydropattern impacts will occur. Although the pump station locations allow for pumping only into the buffer, the seepage collector canal still has the potential for impacts within the park. It is doubtful that NSM water levels could be attained within the park along this alignment.

Alternative 5 - Seepage Barrier

Alternative 5 creates a seepage barrier along the entire length of the west side of the 8.5 SMA. The seepage barrier is designed to prevent any seepage losses from the park into the 8.5 SMA. No buffer is specified. The seepage barrier would be accomplished by the installation of a curtain wall through the center of a levee constructed on the outer perimeter of the 8.5 SMA. This design is experimental and its ability to control all seepage from occurring is unproven. However, if proven capable this alternative allows for the restoration of hydropatterns within ENP along the entire alignment of the 8.5 SMA as well as the maintenance of flow regimes consistent with more historical patterns.
Alternative 6 - Total Buyout

Alternative 6 specifies the acquisition of all lands within the 8.5 SMA. No structural features are specified. This alternative, in effect, creates the largest buffer area between the park and the developed areas of any of the six alternatives considered. All modifications to flow regimes within ENP would be eliminated except for the transitional area along the L-31N alignment present in all of the alternatives considered. The uncertainties associated with Alternative 5 would also be eliminated. Once land is acquired, the agency (or agencies) responsible for the acquired land would be required to develop a management plan for the area including a long-term maintenance program to complement restoration activities taking place in ENP.

No Action Alternative

The no action plan is the USACE Mitigation Plan and is evaluated herein as Alternative 1. All plans, including the no action plan, will allow the restoration of Northeast Shark River Slough. Each alternative was evaluated with the assumption that water conditions in the adjacent slough would be similar to those that occurred in the natural, pre-project condition. The NSM was utilized for this evaluation.

With respect to the larger, interagency decision making process, the no action plan would consist of continued utilization of the existing water management facilities and operational strategies. This was not considered to be the no action alternative for this evaluation for the following reasons:

a. Continuation of the status quo is not the SFWMD Governing Board's sole decision. If SFWMD chose to do nothing, the other partner agencies would choose another alternative. In fact, the USACE and ENP have been authorized to implement the Modified Water Deliveries to ENP Project. The Corps' mitigation plan would be constructed as a part of this project.

b. The cost of this no action plan would not be acceptable. Significant restoration of Northeast Shark River Slough (ENP Expansion Area) and implementation of the Modified Water Deliveries to ENP Project would be precluded. In addition to resulting in a continuation of the ongoing degradation of the natural resources in the southern Everglades, extinction of the Cape Sable seaside sparrow would be a certainty according to the US Fish and Wildlife Service. Unacceptable cultural impacts may also be incurred.
This section describes the process used to evaluate the alternatives and synthesize the results into a format that aided in the identification of a plan for the 8.5 SMA. The structure of the decision model is shown in Figure 4-1 displaying (left to right) the goal (i.e., selection of the alternative which best satisfies the selection criteria), the performance criteria and the six alternatives under consideration. To determine which is the preferred alternative, each alternative is ranked according to its composite score relative to the criteria. This process entails combining the normalized criteria weights with normalized value functions, which are based on the DRT’s evaluation of each alternative’s performance relative to each criterion, to generate a decision score.

![Decision Model Structure](image)

**Figure 4-1. Decision Model Structure**

### 4.1 Criteria

The first step in the decision analysis process was to develop criteria upon which the decision would ultimately be based. Criteria were selected by the team to reflect key concerns and performance needs. A key attribute of each criterion was its ability to differentiate between alternatives.

The project objectives identified for evaluation in the PEER Contract were used as selection criteria. Additionally, the DRT identified several other criteria that were
relevant to the selection of the plan. The selection criteria established for this model were defined as follows:

- **Impact on Landowners.** Refers to the number of residences that need to be acquired or moved in conjunction with a specific alternative.

- **Cape Sable Sparrow Habitat.** Refers to the protection of habitat or potential habitat of the cape sable sparrow inside and adjacent to the 8.5 SMA.

- **Time to Completion.** Refers to the amount of time in years required to complete the implementation of a specific alternative. The amount of time required to complete implementation of an alternative is important to the evaluation process since excessive delays may lead to unacceptable natural resource damage and cultural impacts.

- **Cost.** Refers to the costs in millions associated with implementation of a specific alternative.

- **Flood Damage.** A goal of the alternative land use analysis for the 8.5 SMA is to “provide flood protection up to 40% of standard project flood levels to lands in the 8.5 SMA.” Flood damage criteria are used to assess the performance of the alternatives relative to the flood protection goal. The lands east of L-31N, directly to the east of the 8.5 SMA, are assumed to have adequate flood protection. Flood damage for the 8.5 SMA is defined as flooding for longer duration than in the area east of L-31N.

Two simulation periods were evaluated using the NSM. The first period, from August 1981 to January 1982, included the most severe rainfall event (Tropical Storm Dennis) in the available data set. Flood damage for this period is defined as more than 10 days of flooding. The second period, from February to July 1982, included more typical storms (in June and July). Any flooding during this period is defined as flood damage. Two sub-criteria have been utilized in the decision model as described below:

**Severe:** Refers to flood damage caused by extreme rainfall events (hurricanes, tropical storms, etc...).

**Normal:** Refers to flood damage caused by typical storms.

- **Impacts on ENP Hydropattern Restoration.** Restoration of hydropatterns within Everglades National Park will be considered successful only when the water levels within all areas within the park boundary have attained values as predicted by the NSM. This assumption is consistent with modeling assumptions used by PEER and the restoration targets established and used by the Central and Southern Florida Project Comprehensive Review Study (i.e., Restudy). Any structural or operational component, which diminishes or eliminates the ability to attain NSM water levels within the boundaries of ENP, is considered an adverse impact.
Restoration of hydropatterns within ENP will be enhanced through limitations on seepage from the park to the 8.5 SMA. Any structural or operational component, which diminishes or eliminates the ability control seepage from ENP, is considered an adverse impact.

Restoration of hydropatterns within ENP will be enhanced through designs that produce natural marsh flow regimes and minimize the direct impact of any particular structural operation. Any structural or operational component, which diminishes or eliminates the ability produce natural marsh flow regimes within the boundaries of ENP, is considered an adverse impact.

Restoration of hydropatterns within ENP will also be enhanced through the creation of a buffer zone between the park boundary and the developed areas of the 8.5 SMA. This assumption also infers that the buffer will minimize or eliminate any “transitions” in water levels (real or modeled) due to the different management objectives of the park and the 8.5 SMA. Any structural or operational components, within the boundaries of ENP, which allows for the creation of these “transition zones”, will be considered an adverse impact.

The ranking system used (ranging from maximum (worst) to minimum (best)) was based on the relative impact of a given alternative had on ENP hydropattern restoration and the assignment of a ranking was based on assumptions specified above.

- **Post-project Wetlands (non-ENP)**. Refers to the number of acres of wetlands following implementation of an alternative within the 8.5 SMA.

- **Water Quality Impacts**. Refers to the impacts to water quality that would result in exceedance of water quality standards as established in state law in the settlement agreement. A verbal scale was used to evaluate this criterion. The scale included minimum, low, moderate, high and maximum where a rating of minimum ranks highest.

- **Effect on C-111 Project**. The Corps designed the Modified Water Deliveries to ENP Project (including the mitigation plan) before the preparation of the C-111 General Reevaluation Report was initiated. At that time, there was no option to discharge floodwater southward to C-111 without major modifications in the C-111 basin. Based on this constraint, the Corps designed a plan that would maintain S-331 as a divide structure during flood events, with no flood discharges to the south.

Since the conceptual plan for the C-111 Project has now been developed and authorized, several of the 8.5 SMA alternatives now being considered discharge excess water southward to the C-111 Project. The potential impacts of such discharges cannot be quantified at this time since the C-111 Buffer has not been fully designed. When the C-111 Project design is complete, it may be capable of accommodating the additional inflows with little or no impact. On the other hand, after water quality treatment requirements and technologies to be utilized in the Buffer are fully designed, the project may need modifications to accommodate the
additional inflows. Although quantification is not possible at this time, impacts to C-111 could be significant in terms of cost and time to implementation.

There are three qualitative magnitudes of impacts on the C-111 Project that has been identified: direct, minor, and no impact. These are defined as follows:

**Direct Impact:** These alternatives would discharge water from the western buffer of the 8.5 SMA plan directly into the C-111 Buffer.

**Minor Impact:** These alternative plans would shift the location of the divide structure (which normally remains closed during a flood) northward from S-331 to G-211. By shifting the location of the divide structure northward, a little more than 3 additional miles of flows in the L-31N borrow canal (the eastern boundary of the 8.5 SMA) would be discharged southward into C-111 under flood conditions.

**No Impact:** These alternatives are designed so that no additional flows are discharged southward to the C-111 basin during a flood condition. They call for pumping excess flood discharges from the L-31N borrow canal at its northern end into the L-29 borrow canal from which it would flow into Northeast Shark River Slough through the Tamiami Trail culverts. This concept is utilized in the Modified Water Deliveries to ENP General Design Memorandum.

- **Local Secondary Costs.** Local secondary costs are split into two categories, construction and operation and maintenance (O&M) costs, as described below.
  
  **Construction:** Non-federal and non-district construction costs (in millions) for secondary water drainage and roads.

  **O&M Costs:** Refers to O&M costs (in millions) incurred annually including police, fire and trash. Net Present Value (NPV) is calculated over 50 years at a discount rate of 3%.
### Table 4-3. Summary of Values for 8.5 SMA Decision Model

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Units</th>
<th>Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact on Landowners</td>
<td># of residences relocated</td>
<td>0   0  181  192   0   365</td>
</tr>
<tr>
<td>Cape Sable Sparrow Habitat</td>
<td>Qualitative</td>
<td>Low</td>
</tr>
<tr>
<td>Time to Completion</td>
<td>Years</td>
<td>3</td>
</tr>
<tr>
<td>Cost</td>
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</tr>
<tr>
<td>Flood Damage: Severe</td>
<td>Acres Flooded</td>
<td>3,056</td>
</tr>
<tr>
<td>Flood Damage: Normal</td>
<td>Acres Flooded</td>
<td>503</td>
</tr>
<tr>
<td>Impacts to ENP Hydropattern Restoration</td>
<td>Qualitative</td>
<td>Max</td>
</tr>
<tr>
<td>Post-project Wetlands (non-ENP)</td>
<td>Acres</td>
<td>397</td>
</tr>
<tr>
<td>Water Quality Impacts</td>
<td>Qualitative</td>
<td>Mod</td>
</tr>
<tr>
<td>Effect on C-111 Project</td>
<td>None/Minor/ Direct</td>
<td>None</td>
</tr>
<tr>
<td>Local Secondary Costs: Construction</td>
<td>$ Millions</td>
<td>155</td>
</tr>
<tr>
<td>Local Secondary Costs: O&amp;M</td>
<td>$ Millions</td>
<td>51.9</td>
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</table>

The rationale for these values is provided in Appendix A.

#### 4.5 Incorporation of Uncertainties

The consideration of uncertainties is critical to the decision process. When scoring the alternatives as described above, it may be difficult to determine precise performance of each alternative relative to a given criterion. This may be due to lack of knowledge about how a given alternative might perform or due to natural variance in the system being considered. For example, the cost estimate for an alternative might be determined to be accurate “plus or minus twenty percent”.

Evaluation of uncertainty may show that more information is needed regarding the performance of alternatives relative to evaluation criteria in order to conclusively identify the best plan. On the other hand, the evaluation may show that the highest ranking alternative is not sensitive to uncertainties in the selection criteria.
EVERGLADES NATIONAL PARK

LOCAL COST ANALYSIS
FOR IMPROVEMENTS AND SERVICES
IN THE 8.5 SQUARE MILE AREA, FLORIDA

FINAL REPORT

Prepared for
Everglades National Park
National Park Service

By
Science Applications International Corporation

Under Contract
GS-23F-8006H - Order No. 1443PX528098248

November 1998
5. CONCLUSIONS

This section presents a summary of the analysis of costs and revenues for local improvements and services. It also presents, for each alternative, total costs that include both local costs and the costs related to flood mitigation project features. The local costs were developed based on data and assumptions provided by NPS, DERM and SFWMD, which are included shown in the Information Summary (Appendix A). The flood mitigation project costs were developed in the PEER Report and were previously discussed in Section 2.

Table 5.1 summarizes annual costs, capital costs, bond issue limitation, and net present value of total local costs and flood mitigation project costs. These data is illustrated in Figures 5.1 to 5.4. To allow consistency and easy reference with the PEER Report, the results are presented for each alternative. Note that all local costs and revenues are identical for the three alternatives under Category 1 (Alternatives 1, 2 and 5). Similarly, all local costs and revenues for the two alternatives under Category 2 (Alternatives 3 and 4) are identical. This is due to the fact that local costs and revenues for alternatives under the same category are based on identical land use configurations.

Table 5.1 Summary of Costs and Revenues

<table>
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<tr>
<th></th>
<th>Current</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
<th>Alternative 4</th>
<th>Alternative 5</th>
<th>Alternative 6</th>
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<tr>
<td>Number of Residential Units (RUs)</td>
<td>365</td>
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<td>453</td>
<td>453</td>
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<td>Total Local Capital Costs</td>
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<td>$154,865,168</td>
<td>$60,071,881</td>
<td>$60,071,881</td>
<td>$154,865,168</td>
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<td>Total Bonding Ability</td>
<td>$0</td>
<td>$46,203,641</td>
<td>$46,203,641</td>
<td>$19,764,164</td>
<td>$19,764,164</td>
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<td>Total Annual Local Costs</td>
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<td>$1,973,484</td>
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<tr>
<td>Total Annual Local Tax Revenue, and Garbage &amp; Trash Fee</td>
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<td>$1,283,935</td>
<td>$1,283,935</td>
<td>$549,219</td>
<td>$549,219</td>
<td>$1,283,935</td>
<td>$0</td>
</tr>
<tr>
<td>NPV of Total Local Costs</td>
<td>N/A</td>
<td>$199,215,806</td>
<td>$199,215,806</td>
<td>$81,713,647</td>
<td>$81,713,647</td>
<td>$199,215,806</td>
<td>$200,692</td>
</tr>
<tr>
<td>NPV of Flood Mitigation Project Costs (PEER)</td>
<td>$0</td>
<td>$39,141,894</td>
<td>$76,434,161</td>
<td>$102,832,864</td>
<td>$86,900,312</td>
<td>$180,503,914</td>
<td>$112,689,057</td>
</tr>
</tbody>
</table>

Figure 5.1 depicts projected local capital costs consisting of construction costs of roads and secondary drainage. In addition, the chart shows the county bond issue limitation. The local capital costs for Alternatives 1, 2 and 5 are highest and amount to about $155 million. The bonding ability is limited to approximately $46 million, leaving a potential unfunded cost of approximately $109 million. Alternatives 3 and 4 would result in projected local capital costs totaling about $60 million with a corresponding bond issue ability of a little under $20 million. The unfunded capital requirements are about $40 million for these alternatives. Finally, Alternative 6 would result in no local capital costs. The data used for Figure 5.1 is presented in Table 5.1.
Category 1 (Alternatives 1, 2 and 5) Projected Characteristics for the 8.5 Square Mile Area

### Land Use

<table>
<thead>
<tr>
<th>Land Use</th>
<th># of Sites</th>
<th>Size (in Acres)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Units (RUs)</td>
<td>1,059</td>
<td>5,032</td>
<td>See Reference (11).</td>
</tr>
<tr>
<td>Existing</td>
<td>166</td>
<td>566</td>
<td></td>
</tr>
<tr>
<td>Projected New</td>
<td>893</td>
<td>4,466</td>
<td></td>
</tr>
<tr>
<td>Agricultural</td>
<td>-0-</td>
<td>-0-</td>
<td>It is assumed that any agricultural use will be ancillary to a residential use.</td>
</tr>
<tr>
<td>Wetlands</td>
<td>2</td>
<td>397</td>
<td>It is assumed that the only wetlands remaining in the developed area would be the FAA site (306 acres) and the storm water treatment area (91 acres).</td>
</tr>
<tr>
<td>Vacant</td>
<td>1</td>
<td>120</td>
<td>It is assumed that there will be no vacant land within the developed area, except for the FPL right-of-way.</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>1,062</strong></td>
<td><strong>5,549</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Public Ownership**

|                  | 2          | 397             | FAA site (306 acres) and the storm water treatment area (91 acres). NOTE: These parcels are accounted for in the Wetlands land use category. |

### Costs for Local Services and Improvements

<table>
<thead>
<tr>
<th>Local Service</th>
<th>Capital Costs</th>
<th>Annual Costs/ O&amp;M</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Drainage</td>
<td>$14,748,168 or $13,926 / RU</td>
<td>352,467 / year</td>
<td>See Reference (8).</td>
</tr>
<tr>
<td>Roads to minimum county standards</td>
<td>$140,117,000 or $132,311 / RU</td>
<td>$1,200 / mile / year or $92,880 / year</td>
<td>The Office of Budget and Management advised DERM that the cost to maintain the section and ½ section line roads would be covered under countywide services revenue, and the cost to maintain the local roads would be covered under the unincorporated services revenue. See References (2) and (8).</td>
</tr>
<tr>
<td>Police</td>
<td>-0-</td>
<td>$857,790</td>
<td>The $857,790 is based on the per residential unit cost ($810) multiplied by the projected number of houses (1059). See Reference (3).</td>
</tr>
<tr>
<td>Fire Protection</td>
<td>-0-</td>
<td>$246,747</td>
<td>The $246,747 is based on the per residential unit cost ($233) multiplied by the projected number of houses (1059). See Reference (4).</td>
</tr>
<tr>
<td>Garbage and Trash</td>
<td>-0-</td>
<td>$423,600</td>
<td>The Miami-Dade Solid Waste Department would budget a cost of $400 per RU for garbage and trash pickup.</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>$154, 865,168 or $146,237 / RU</strong></td>
<td><strong>$1,973,484</strong></td>
<td></td>
</tr>
</tbody>
</table>
## Tax Revenue

<table>
<thead>
<tr>
<th>Type</th>
<th>Assessment (Taxable Value)</th>
<th>Tax Rate</th>
<th>Amount of Revenue</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>$184,814,562</td>
<td>5.313*</td>
<td>$932,824</td>
<td>See Reference (9) and (10).</td>
</tr>
<tr>
<td>Countywide</td>
<td>$184,814,562</td>
<td>6.023*</td>
<td>$1,057,481</td>
<td>See Reference (9) and (10).</td>
</tr>
<tr>
<td>Other Property Taxes</td>
<td>$184,814,562</td>
<td>12.143*</td>
<td>$2,131,993</td>
<td></td>
</tr>
<tr>
<td>Garbage and Trash</td>
<td></td>
<td></td>
<td>$351,111</td>
<td>Revenue generated from garbage and trash collection fee. See Reference (12).</td>
</tr>
</tbody>
</table>

* per $1000.00 of assessed value

## Special Taxing District Revenue

<table>
<thead>
<tr>
<th>Maximum Bond Revenue</th>
<th>Annual Debt Service (6% Interest, 30-Year Bonds)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>$46,203,641</td>
<td>$3,356,644</td>
<td>See Reference (13).</td>
</tr>
</tbody>
</table>
## Category 2 (Alternatives 3 and 4) Projected Characteristics for the 8.5 Square Mile Area

### Land Use

<table>
<thead>
<tr>
<th>Land Use</th>
<th># of Sites</th>
<th>Size (in Acres)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Units (RUs)</td>
<td>453</td>
<td>2,212</td>
<td>See Reference (5).</td>
</tr>
<tr>
<td>Existing</td>
<td>59</td>
<td>239</td>
<td></td>
</tr>
<tr>
<td>Projected New</td>
<td>394</td>
<td>1,973</td>
<td></td>
</tr>
<tr>
<td>Agricultural</td>
<td>-0-</td>
<td>-0-</td>
<td>It is assumed that any agricultural use will be ancillary to a residential use.</td>
</tr>
<tr>
<td>Wetlands</td>
<td>3</td>
<td>3,338</td>
<td>It is assumed that the only wetlands in the developed area will be the FAA site (306 acres) and the storm water treatment area (68 acres). The balance of the 8.5 SMA, 2,964 acres in the water preserve area, would be managed and maintained as short hydroperiod wetlands; See Reference (6).</td>
</tr>
<tr>
<td>Vacant</td>
<td>-0-</td>
<td>-0-</td>
<td>It is assumed that there will be no vacant land within the development area.</td>
</tr>
</tbody>
</table>

| Totals                  | 456        | 5,550           |                                                                          |

Public Ownership

| Public Ownership | 3          | 3,338           | FAA site (306 acres), the storm water treatment area (68 acres) and the water preserve area (2,964 acres). NOTE: These parcels are accounted for in the Wetlands land use category. |

### Costs for Local Services and Improvements

<table>
<thead>
<tr>
<th>Local Service</th>
<th>Capital Costs</th>
<th>Annual Costs/ O&amp;M</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Drainage</td>
<td>$8,918,881 or $19,688 / RU</td>
<td>$249,966 / year</td>
<td>See Reference (7).</td>
</tr>
<tr>
<td>Roads to minimum county standards</td>
<td>$51,153,000 or $112,921 / RU</td>
<td>$1,200 / mile / year or $41,124 / year</td>
<td>The Office of Budget and Management advised DERM that the cost to maintain the section and ½ section line roads would be covered under countywide services revenue and the cost to maintain the local roads would be covered under the unincorporated area services revenue. See References (2) and (8).</td>
</tr>
<tr>
<td>Police</td>
<td>-0-</td>
<td>$366,930</td>
<td>The $366,930 is based on the per residential unit cost ($810) multiplied by the projected number of houses (453). See Reference (3).</td>
</tr>
<tr>
<td>Fire Protection</td>
<td>-0-</td>
<td>$105,549</td>
<td>The $105,549 is based on the per residential unit cost ($233) multiplied by the projected number of houses (453). See Reference (4).</td>
</tr>
<tr>
<td>Garbage and Trash</td>
<td>-0-</td>
<td>$181,200</td>
<td>The Miami-Dade Solid Waste Department would budget a cost of $400 per residential unit for garbage and trash pickup.</td>
</tr>
</tbody>
</table>

| Totals                         | $60,071,881 or $132,609 / RU | $944,769          |                                                                          |
Local Costs for Improvements & Services in the 8.5 SMA, East Everglades National Park, Florida

**Tax Revenue**

<table>
<thead>
<tr>
<th>Type</th>
<th>Assessment (Taxable Value)</th>
<th>Tax Rate</th>
<th>Amount of Revenue</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>$79,056,654</td>
<td>5.313*</td>
<td>$399,027</td>
<td>See Reference (9) and (10).</td>
</tr>
<tr>
<td>Countywide</td>
<td>$79,056,654</td>
<td>6.023*</td>
<td>$452,350</td>
<td>See Reference (9) and (10).</td>
</tr>
<tr>
<td>Other Property Taxes</td>
<td>$79,056,654</td>
<td>12.143*</td>
<td>$911,986</td>
<td>See Reference (9) and (10).</td>
</tr>
<tr>
<td>Garbage &amp; Trash</td>
<td></td>
<td></td>
<td>$150,192</td>
<td>Revenue generated from garbage and trash collection fee. See Reference (12).</td>
</tr>
</tbody>
</table>

*per $1000.00 of assessed value

**Special Taxing District Revenue**

<table>
<thead>
<tr>
<th>Maximum Bond Revenue</th>
<th>Annual Debt Service (6% Interest, 30-Year Bonds)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>$19,764,164</td>
<td>$1,435,845</td>
<td>See Reference (13).</td>
</tr>
</tbody>
</table>
Category 3 (Alternative 6) Projected Characteristics for the 8.5 Square Mile Area

### Land Use

<table>
<thead>
<tr>
<th>Land Use</th>
<th># of Sites</th>
<th>Size (in Acres)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Units (RUs)</td>
<td>-0-</td>
<td>-0-</td>
<td>All existing RUs would be purchased and removed.</td>
</tr>
<tr>
<td>Agricultural</td>
<td>1</td>
<td>1,780</td>
<td>Estimated by calculating the acreage of the 8.5 SMA over 7.0 feet NGVD, excluding the FAA site.</td>
</tr>
<tr>
<td>Wetlands</td>
<td>1</td>
<td>3,769</td>
<td>Estimated by calculating the acreage of the 8.5 SMA under 7.0 feet NGVD and including the FAA site (306 acres).</td>
</tr>
<tr>
<td>Vacant</td>
<td>-0-</td>
<td>-0-</td>
<td>Lands not leased for agriculture would be restored to short hydroperiod wetlands; See Reference (7).</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>2</strong></td>
<td><strong>5,549</strong></td>
<td></td>
</tr>
</tbody>
</table>

| Public Ownership       | 2          | 5,549           | The land in public ownership would be the wetlands area (3,769 acres; the FAA Site's 306 acres + 3,463 acres) and the agricultural area (1,780 acres). NOTE: These parcels are accounted for in the Wetlands and Agricultural land use categories. |

### Costs for Local Services and Improvements

<table>
<thead>
<tr>
<th>Local Service</th>
<th>Capital Costs</th>
<th>Annual Costs</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Drainage</td>
<td>-0-</td>
<td>-0-</td>
<td>No local costs.</td>
</tr>
<tr>
<td>Roads</td>
<td>-0-</td>
<td>$7,800</td>
<td>See Reference (2).</td>
</tr>
<tr>
<td>Police</td>
<td>-0-</td>
<td></td>
<td>Minimal costs in case of emergency.</td>
</tr>
<tr>
<td>Fire Protection</td>
<td>-0-</td>
<td></td>
<td>Minimal costs in case of emergency, brush fire, etc.</td>
</tr>
<tr>
<td>Garbage and Trash</td>
<td>-0-</td>
<td>-0-</td>
<td>No local service costs.</td>
</tr>
</tbody>
</table>

### Tax Revenue

<table>
<thead>
<tr>
<th>Type</th>
<th>Assessment (Taxable Value)</th>
<th>Tax Rate</th>
<th>Amount of Revenue</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>-0-</td>
<td>5.313*</td>
<td>-0-</td>
<td>There will likely be future tax revenue from properties leased for farming; however, there is insufficient information at the present time to project revenues. See Reference (9) and (10).</td>
</tr>
<tr>
<td>Countywide</td>
<td>-0-</td>
<td>6.023*</td>
<td>-0-</td>
<td>See Reference (9) and (10).</td>
</tr>
<tr>
<td>Other Property Taxes</td>
<td>-0-</td>
<td>12.143*</td>
<td>-0-</td>
<td>See Reference (9) and (10).</td>
</tr>
</tbody>
</table>

* per $1000.00 of assessed value
References

(1) Current Land Use Information

Three databases were used to develop the current land use information:
- 1994 Miami-Dade County Department of Environmental Resources Management (DERM) field evaluation
- Building permit and vested rights information from the Planning, Development and Regulation (PDR) Department – Miami-Dade County
- 1998 aerial photographs

(2) The Miami-Dade County Public Works Department reported to the Miami-Dade County Office of Budget and Management that for fiscal years 1994-95, 1995-96, and 1996-97, it cost $7,800 to maintain 6.5 miles of paved roads in the 8.5 SMA. This translates into $1,200 per mile. This maintenance cost does not include streetlights.

(3) Miami-Dade County Police Department data on the number of calls dispatched to the East Everglades area for calendar years 1995, 1996, and 1997 were analyzed to calculate an average annual cost of providing municipal-type police services to the 8.5 SMA. The annual number of calls dispatched to the 8.5 SMA was divided by the total number of calls dispatched throughout the unincorporated area of Miami-Dade County for each of those years to calculate the percentage of total service calls for the 8.5 SMA. The percentage derived was multiplied by the total number of officers assigned to the unincorporated area to calculate the number of officers needed by the region. This number was then multiplied by the average cost per officer to derive annual costs. The total cost for those three years was $887,200, for an average of $295,733 per year, or $810 per residential unit.

(4) Miami-Dade County Fire Department data were analyzed for calendar years 1995, 1996 and 1997 to calculate an average annual cost of providing fire/rescue services to the 8.5 SMA (See Memo from Mr. George Burgess to M.R. Stierheim’s dated July 7, 1998 in Appendix B). The annual number of calls dispatched to the 8.5 SMA was divided by the total number of calls dispatched throughout the unincorporated area of Miami-Dade County for each of those years to calculate the percentage of total service calls for the 8.5 SMA. The percentage derived was multiplied by the total number of fire personnel assigned to the unincorporated area to calculate the number of fire personnel needed by the region. This number was then multiplied by the average cost per person to derive annual costs. The total cost for those three years was $255,100, for an average of $85,033 per year, or $233 per residential unit.

(5) Projected residential units for Category 2 (Alternatives 3 and 4) were calculated as follows:

The 239 acre total for 59 legal structures within Alternative 4 was subtracted from the total developable acres (2,212 acres). The resulting 1,973 acres was divided by five to obtain a total of 394 additional single family residences that could be developed. Therefore, the total number of single family residences that could be developed under Alternative 4 would be 453, based on the assumption that Miami-Dade County would not
permit the residential use of any property less than five acres except on legally
grandfathered lots and assuming that the Federal government would not sell their holdings
around the FAA Doppler radar for security reasons. This estimate is based on the total
acreage available and does not include right-of-way acreage for infrastructure
improvements. The Land Use numbers and acreages reported during the October 13,
1998 Board of County Commissioners Public Workshop have been updated. As a result,
the number of legal residences decreased from 177 to 166 because an error in the database
was corrected that had listed some privately owned rights-of-way as legal residential lots
and the SFWMD has demolished some residential structures since the database was
developed. The assumptions used for Alternative 4 were also applied to Alternative 3 for
comparisons made in this report.

(6) Electronic correspondence from Mr. Frank Bernardino of the SFWMD dated September
4, 1998 (See Appendix B).

(7) With the assistance of the Public Works Department, DERM estimated the capital and
operating and maintenance costs of the secondary drainage project (dated September 9,
1998 – See Appendix B).

(8) DERM has calculated the linear footage of existing dirt roads and future roads needed to
access all properties under a 1 unit / 5 acre development scenario. Based on the current
topographic map available to DERM, there are 59,663 linear feet of sub-standard roads
within the developable portion of Alternative 4 below 7.0 feet NGVD and 121,278 linear
feet of sub-standard roads above 7.0 feet NGVD. The estimated cost of constructing a
road to minimum county standards is $400 per linear foot for lands below 7.0 feet, and
$225 per linear foot for land above 7.0 feet, for an estimated cost of approximately
$51,153,000. These costs are applicable only if Miami-Dade County assumes
responsibility for the operation and maintenance of the existing/proposed roads. If these
roads do become a county responsibility, they are required by county regulations to
conform to the county standards.

Based on the current topographic map available to DERM, there are 275,208 linear feet of
sub-standard roads within the developable portion of Alternative 5 below 7.0 feet NGVD
and 133,483 linear feet of sub-standard roads above 7.0 feet NGVD. The estimated cost
of constructing a road to minimum county standards is $400 per linear foot for lands
below 7.0-feet, and $225 per linear foot for lands above 7.0-feet, for a total estimated cost
of approximately $140,117,000.

(9) The assessment and the amount of budgeted revenue of the 8.5 SMA are based on the
taxable value for all properties in the 8.5 SMA, for current values, and the market value of
an average residence (3 bedroom / 2 bath) on five (5) acres in the Redlands for alternative
projections. The market value of an average residence on five (5) acres in the Redlands is
$174,518, based on a memo from Gwen Burzycki (DERM) dated October 7, 1998 (See
Appendix B). The amount of budgeted revenue is 95% of the levied tax in accordance
with state law. See Reference 10 for applicable state law.

Projected future tax revenue is higher than the amount expected. The actual tax revenue
received would be reduced by the following considerations:
Local Costs for Improvements & Services in the 8.5 SMA, East Everglades National Park, Florida

(a) Market value assessment, as listed for 1997 in the property appraiser's database, was used to calculate tax revenue. Taxable value is usually substantially less than market value because of exemptions such as agriculture, homestead, disabled, widow, veteran, etc.

(b) A 3% per annum cap on the rate of increase for assessed value applies to any homes in the region that qualify for homestead exemption. This cap was not taken into account when calculating future revenues. Actual future tax revenue would be reduced relative to the projections since any substantial increase in value attributed to changes in zoning and/or capital improvements to the region would not result in a comparable increase in the taxable value of homes that qualify for the cap.

(c) The projected future value of residential units was estimated by averaging the current value of primary residences (i.e., homes that have a current homestead exemption) on five (5) acre parcels in the Redlands. The actual future value in the 8.5 SMA is likely to be less because: 1) there is active small lot development in many parts of the Redlands, which increases the value of land near such development, and 2) the 8.5 SMA is located farther from development centers than lands in the Redlands.

(10) Tax Revenues were divided into three separate groups: Local Services; Countywide; and Other Property Taxes. Local Services is the portion of the property tax designated for the purpose of providing municipal services such as fire and police protection to the unincorporated area of Miami-Dade County. Countywide is the portion of the property tax designated for the purpose of countywide operations such as courts, jails, transportation, health care, and social services. Other Property Taxes is the remaining portion of the property tax, and includes taxes designated for the purpose of schools, debt service, library operations, and state/regional taxes.

(a) Local tax revenue was calculated using the combined 1998 millage rate for those categories in the property tax calculation that provide direct county services for the East Everglades 8.5 SMA (2.517, unincorporated area services such as police and local road maintenance + 2.796, fire/rescue = 5.313). Pursuant to state law (Ch. 129.01(2)(b), F.S.), a 0.95 multiplier was applied to the subtotal to reach final budgeted revenue projections. Other county property taxes (countywide operating, countywide debt, fire debt, library operations) that do not support municipal-type services have a combined millage rate of 7.262 and were not included as part of the local revenue projections.

(b) Countywide tax revenue was calculated using the 1998 millage rate for countywide services (6.023). Countywide services include courts, jails, transportation, health care, and social services. Countywide taxes would be used for maintenance of section and half-section roads in the East Everglades 8.5 SMA. Also, pursuant to state law (Ch.129.01 (2)(b), F.S.), a 0.95 multiplier was applied to the subtotal to reach final budgeted revenue projections. Other county property taxes (countywide debt, fire debt, library operations) that do not support municipal-type services have a combined millage rate of 1.239 and were not included as part of the countywide revenue projections.
(c) **Other property tax revenue** includes county taxes other than countywide operating (countywide debt, fire debt, library operations) that do not support municipal-type services; school board operating revenue and debt service; and state and regional taxes (Everglades Project, FIND, SFWMD). Pursuant to state law (Ch. 129.01(2)(b), F.S.), a 0.95 multiplier was applied to the subtotal to reach final budgeted revenue projections. The 1998 total millage rate for "Other Property Taxes" is 12.143. The total 1998 millage rate for unincorporated Miami-Dade County, including all state, regional, and local taxes, is 23.479.

(11) Projected residential units within Category 1 (Alternatives 1, 2, and 5) were calculated using the same formula that was used for Category 2 (Alternatives 3 and 4): The 566 acre total for 166 legal structures within Alternative 5 was subtracted from the total developable acres (5,032 acres). The resulting 4,466 acres was divided by five to obtain a total of 893 additional single family residences that could be developed. Therefore, the total number of single family residences that could be developed under Category 1 would be 1,059, based on the assumptions stated in Reference (5) above. As stated in Reference (6) this estimate has been updated to reflect corrections made to the database and lands that have been acquired by SFWMD. A comparison of the Land Use Categories outlined in this report and the Property Tax Database has revealed that 38 "other structures" have Homestead exemptions. DERM has asked the Planning and Zoning Department to determine if they are legal residences.

(12) The Miami-Dade County Office of Budget and Management advised that the revenue generated for collection of garbage and trash is based on $349 per residential unit. The difference between this figure and the $400 cost per unit that is budgeted by the Miami-Dade Solid Waste Department is derived from other revenue sources. Garbage and trash service is billed with the property taxes for unincorporated Miami-Dade County, therefore, pursuant to state law (Ch. 129.01(2)(b), F.S.), a 0.95 multiplier was applied to the subtotal to reach final budgeted revenue projections.

(13) Annual assessments for special taxing districts are used solely for debt service on the bonds issued under that taxing district. Bond revenue generated from a Special Taxing District is capped at 25% of assessed value (before tax exemptions are applied) of the properties in the taxing district. The formula for calculating each parcel's annual contribution for debt service varies with the type of capital project. Use of this optional source of revenue would have to be approved by the property owners in the 8.5 SMA.
Mr. Frank Williamson, Jr.,
Chairman, Governing Board
South Florida Water Management District
Post Office Box 248
Okeechobee, Florida 34973

Dear Mr. Williamson:

As you may know, the Fiscal Year 1999 Department of the Interior and Related Agencies Appropriations Act (P.L. 105-277) appropriated $60.0 million to the Secretary of the Interior for land acquisition assistance funding for the State of Florida. These funds are to be used for acquisitions within the Everglades watershed, which is defined by P.L. 105-277 as "lands and waters within the boundaries of the South Florida Water Management District, Florida Bay and the Florida Keys." This letter provides the Department’s position regarding the use of those funds for acquisitions in the Everglades watershed generally, as well as within the 8.5 Square Mile Area.

The appropriation of these funds continues our ability to maintain our successful partnership with the state in acquiring lands integral to the restoration effort. The Department’s ability to provide these funds to the state for land acquisitions within the Everglades watershed is, however, subject to the following statutory requirements: (1) that the state match any federal funds provided for land acquisition with its own state funds on a dollar-for-dollar basis; and (2) that any lands acquired pursuant to this authority will be managed in perpetuity for the restoration of the Everglades. Accordingly, the Department expects that any proposed acquisitions with these funds will meet these statutory requirements.

The Department understands that the Governing Board is considering alternatives for a locally preferred option for the Modified Water Deliveries Project. The Department understands that it is the intent of District staff to recommend full acquisition of the 8.5 Square Mile Area. The Department supports this approach. Accordingly, should the Governing Board approve the locally preferred option for full acquisition of the 8.5 Square Mile Area, the Department would provide federal funds for 50 percent of the project’s cost. Although we have not yet made a decision on precisely how the $60.0 million fiscal year 1999 appropriation should be spent in the Everglades watershed, we would consider the acquisition of the 8.5 Square Mile Area to be among the highest of restoration priorities and look forward to working with you to achieve this result. We look forward to working with you to review your funding needs for this purpose for this fiscal year.
The Department appreciates the efforts you and your staff have made during the past 2 years to fund individual land acquisition projects and the progress this has made towards Everglades restoration. Thank you for your efforts to restore the Everglades. We look forward to a continued partnership in this effort.

Sincerely,

[Signature]
Colonel Joe Miller  
District Engineer  
U.S. Army Corps of Engineers  
P.O. Box 4970  
Jacksonville, FL 32232-0019

Dear Colonel Miller:

The purpose of this letter is to request that the Corps of Engineers expeditiously undertake the necessary compliance and environmental analysis to review and approve the Locally Preferred Option (LPO) recently adopted by the Governing Board of the South Florida Water Management District (SFWMD). We believe that this LPO represents a viable alternative to the design for the Modified Water Deliveries (MWD) Project as it pertains to the flood mitigation system for the 8.5 Square Mile Area (8.5 SMA).

For several years, I have publicly and repeatedly stated that the mitigation features proposed for the 8.5 SMA do not represent a workable solution for the Park, the 8.5 SMA residents, Miami-Dade County, the SFWMD, or anyone seeking a sustainable approach to restoring Everglades National Park and the South Florida Ecosystem.

The current Corps design for this area calls for a flood mitigation levee and seepage collector canal system. These designs are specified in the both the General Design Memorandum (GDM) and associated Feature Design Memorandums (FDM’s) for the overall Modified Water Deliveries Project. The design allows for the collection and return of increased seepage waters from the park expansion area into Northeast Shark Slough via the S-356 and S-357 pump stations in the L-31N and L-29 canals. It prevents the regular flooding conditions that currently occur in the 8.5 SMA from getting worse as freshwater flows are restored to the northeast Shark Slough portion of Everglades National Park. It mitigates, and therein lies the problem.
Many residents did not understand the distinction between flood mitigation and flood protection. Almost all want or understand they would be getting full flood protection. The demands for full flood protection exist already and will grow in frequency and urgency as the area continues to grow. The only way to respond to continued demands for flood protection using the mitigation design would be to operate the system to remove more water than required for mitigation. This would result in features of a project built to restore water to the everglades entirely at the expense of the National Park Service being used in a way that would drain water away from the very area it was meant to restore. All for $40 million from the federal taxpayer. That’s not sustainable.

Further, in recent years, and as a result of the Central & South Florida Restudy, my staff and I have come to understand that full restoration of northeast Shark Slough will result in higher water levels than the current Modified Water Deliveries Project GDM anticipated. As a result of the hydrologic analyses performed by the SFWMD consultants (PEER Inc.), we do not believe that the current mitigation features are adequately sized to handle the flows we would need to eventually restore to Shark Slough.

It is also our position that the current design does not adequately integrate the MWD Project with the adjacent C-111 and Water Preserve Areas Projects, and would therefore diminish the benefits of these projects.

As a result, I cannot recommend that the Department of the Interior furnish the funding for the current mitigation component of the Modified Water Deliveries Project. For the past several years, I have strongly supported the search for a more sustainable solution through; the Governor’s Committee on the 8.5 SMA, the Governor’s Commission on a Sustainable South Florida, and the examination of a Locally Preferred Option by the SFWMD.

We believe the Southern Everglades ecosystem would be better served by a thorough redesign of the MWD Project features and by specifically implementing a Locally Preferred Option for the 8.5 Square Mile Area that is sustainable and considers all the public interest. We believe the SFWMD process to select a Locally Preferred Option has been extensive and that their proposal meets these objectives. The approval of this option coupled with improvements to the design of other Modified Water Deliveries Project features would be more compatible with the overall restoration goals for Shark Slough and with the C-111 and Water Preserve Areas Projects.

Everglades National Park is committed to working with the Jacksonville District of the Corps of Engineers and their local sponsor the SFWMD along with other interested agencies in expeditiously implementing the Modified Water Deliveries Project, including a sustainable approach to the 8.5 Square Mile Area. In that light, I ask to meet with you
at your earliest convenience. I would like to review and update the project schedules, funding needs, and coordination requirements between our offices in order to continue

Sincerely

R.G. R.

Richard G. Ring
Superintendent

Cc: Mr. Sonny Williamson
    Mr. Sam Poole
    Mr. Richard Pettigrew