

December 3rd

2003

**FLORIDA KEYS WASTEWATER
DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT (SEA)**

KEY LARGO WASTEWATER PROJECT

**PROPOSED BY THE KEY LARGO WASTEWATER TREATMENT DISTRICT IN
COORDINATION WITH MONROE COUNTY**

DRAFT SEA PUBLIC COMMENT WORKSHOP

**December 3, 2003
Key Largo**

PUBLIC MEETING PACKAGE

- **Agenda**
- **Workshop Guidelines**
- **Obtaining the SEA and Offering Comments**
- **Comment Form**

DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT (SEA) PUBLIC MEETING

AGENDA

Objectives

- Provide an overview of SEA findings for the Proposed Key Largo Wastewater Project
- Provide an opportunity for public questions and comments on the SEA

6:30 Welcome and introductions

Background presentations

- FEMA Unmet Needs grant funding and wastewater projects
- FEMA environmental review process
- Programmatic Environmental Assessment (PEA) for Wastewater Management Improvements in the Florida Keys

Questions/Comments

7:00 Key Largo Wastewater Project SEA

- Purpose and Need
- Alternatives Considered
- Environmental Consequences (to include discussion of endangered species and hardwood hammock habitat, project costs, and provisions for low income homeowners)

Questions/Comments

8:30 Conclusions/outcome of FEMA environmental review process

Timeline for project implementation

Questions/Comments

9:00 Adjourn

* Copies of the PEA for Keys-wide wastewater improvements and the SEA for Key Largo will be available for use during the meeting.

WORKSHOP GUIDELINES

The purpose of today's workshop is to answer questions about the SEA and to hear and explore as fully as possible your comments. We will highlight recurring themes or concerns as we proceed, but we do not need to reach agreement. To help achieve these purposes, we suggest the following guidelines.

- Respect differing perspectives.
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- Speak one person at a time. Please raise your hand to speak.
- Explain your thinking.
- Offer constructive suggestions.
- Share the airtime – say everything that needs to be said, concisely.
- Help your facilitator.

WHERE TO GET THE NEPA DOCUMENTS

The Final Programmatic Environmental Assessment (FPEA), the signed Programmatic Finding of No Significant Impact (FONSI), and the SEA may be viewed and downloaded at the following website:

<http://www.fema.gov/ehp/docs.shtm>

The SEA is also available for viewing at the Key Largo Branch Library, 101485 Overseas Highway, Key Largo

WHERE TO OFFER ADDITIONAL COMMENTS

ON THE SEA

Comments can be offered at the public workshops or in writing to the FEMA official listed below no later than December 19, 2003.

FEMA: Ms. Science Kilner, Lead Environmental Specialist
FEMA Region IV – Federal Insurance and Mitigation Division
3003 Chamblee Tucker Road
Atlanta, Georgia 30341
Fax: (770) 220-5440

ON SPECIFIC PROJECTS

**Florida Department of
Community Affairs**
Miles Anderson, Planning Manager
255 Shumard Oak Blvd
Tallahassee, FL 32399
(850) 922-44442

Key Largo Wastewater Treatment District
Robert Sheets, District Manager
Government Services Group
1500 Mahan Drive, Suite 250
Tallahassee, FL 32308
(850) 681-3717

Monroe County
George Garrett, Director of Marine Resources
2798 Overseas Highway
Marathon, FL 33050
(305) 289-2500

DRAFT SEA PUBLIC COMMENT WORKSHOPS

Key Largo

COMMENT FORM

Please use this form to offer additional comments. Please identify the SEA section, issue, analysis, or finding to which your comments apply.

Name (optional): _____

Contact information (optional): _____

COMMENTS: _____

Additional space available on the back of this form.

FINAL

Programmatic Environmental Assessment

WASTEWATER MANAGEMENT IMPROVEMENTS IN THE FLORIDA KEYS



The NEPA Process

NEPA is the National Environmental Policy Act of 1969, established by Congress to ensure that environmental policy considerations are taken into account before undertaking federal agency projects. The Council on Environmental Quality issued regulations implementing NEPA that require all projects supported by federal funds to follow the NEPA process. By following this process, all environmental and public involvement requirements defined by state and federal mandates are satisfied to ensure the integrity of the project and protection of the public. The objective of the NEPA process is to assess the significant impacts a project may have on the quality of the human and natural environment. Accordingly, the Federal Emergency Management Agency (FEMA) prepared this final Programmatic Environmental Assessment (PEA) on the effects of implementation of a range of wastewater collection, treatment, and disposal alternatives proposed in the Florida Keys.

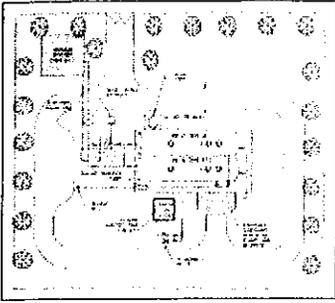
Because the actions proposed for funding under this final PEA-and their impacts-can vary based on location, alternatives, and other site-specific criteria, a supplemental environmental review (SER) document will be prepared for each individual project covered by this final PEA. The resulting SERs will tier off of this final PEA, in accordance with 40 Code of Federal Regulations Part 1508.28, and will consist of either a Supplemental Environmental Assessment or Environmental Impact Statement (EIS). Projects determined to potentially have significant effects will go through the EIS process as required by NEPA. Each SER will include a project- and site-specific public involvement component that will allow the public to comment on each proposed project and its potential environmental effects.

Abstract

In response to Hurricane Georges damages and losses, Congress enacted Public Law 106-31, Emergency Supplemental Appropriations Act for Fiscal Year 1999, to fund long-term disaster recovery projects in Florida counties whose needs were unmet through primary disaster relief funds. Monroe County was included among the counties eligible for "Unmet Needs" funding. FEMA, the State of Florida, and the affected counties established the funding priorities.



Monroe County requested that wastewater management improvement projects be considered for this funding, since many existing wastewater facilities in the county are not storm-resistant. In addition to achieving FEMA's long-term disaster recovery goal, these projects were proposed because of increasing concerns over degraded nearshore water quality, partly caused by poor wastewater treatment and disposal practices. Moreover, the State of Florida recently mandated more stringent wastewater treatment standards for Monroe County. FEMA has received grant applications from the Village of Islamorada and the Florida Keys Aqueduct Authority, henceforth referred to as the "project applicants," requesting federal assistance to upgrade or replace existing wastewater treatment facilities in



their service areas. The alternatives evaluated in this document and in the SER documents include:

Alternative 1 – No Action

FEMA would not provide funding assistance to project applicants for the proposed wastewater management improvements. The applicant (i.e., Monroe County, cities, private wastewater utility operators, business owners, and homeowners) would have to use alternate funding sources to finance the large capital costs of improving their wastewater treatment systems to meet the Florida Statutory Treatment Standards by 2010. Communities that currently use on-site systems, such as cesspools and septic systems, to manage wastes would have to construct either community or regional wastewater treatment plants (WWTPs), install on-site wastewater nutrient reduction systems (OWNRS), and/or upgrade or rebuild existing WWTPs.

Alternative 2 – Centralized Wastewater Treatment Plant

The project applicants, with FEMA funding, would construct new community or regional WWTPs or upgrade existing facilities at selected locations in the Lower, Middle, and Upper Keys. Wastewater effluent would be collected through either vacuum pumping or a low-pressure grinder pump system. Once treated to Advanced Wastewater Treatment standards, wastewater effluent would be disposed into the ground through shallow injection wells or made available for reuse. The project applicants (or their successor entity) would be responsible for facility construction, operation, and maintenance.

Alternative 3 – On-Site Treatment Upgrades

The project applicants would use FEMA funding to upgrade on-site wastewater treatment systems, such as cesspools and septic tanks with drainfields, to clustered OWNRS. OWNRS are engineered treatment systems that, at a minimum, meet Best Available Technology treatment standards, and discharge treated wastewater through either a subsurface drip irrigation systems or shallow injection well. Clustered OWNRS can range in capacity from serving two to about 50 homes.

Affected Environment and Environmental Consequences

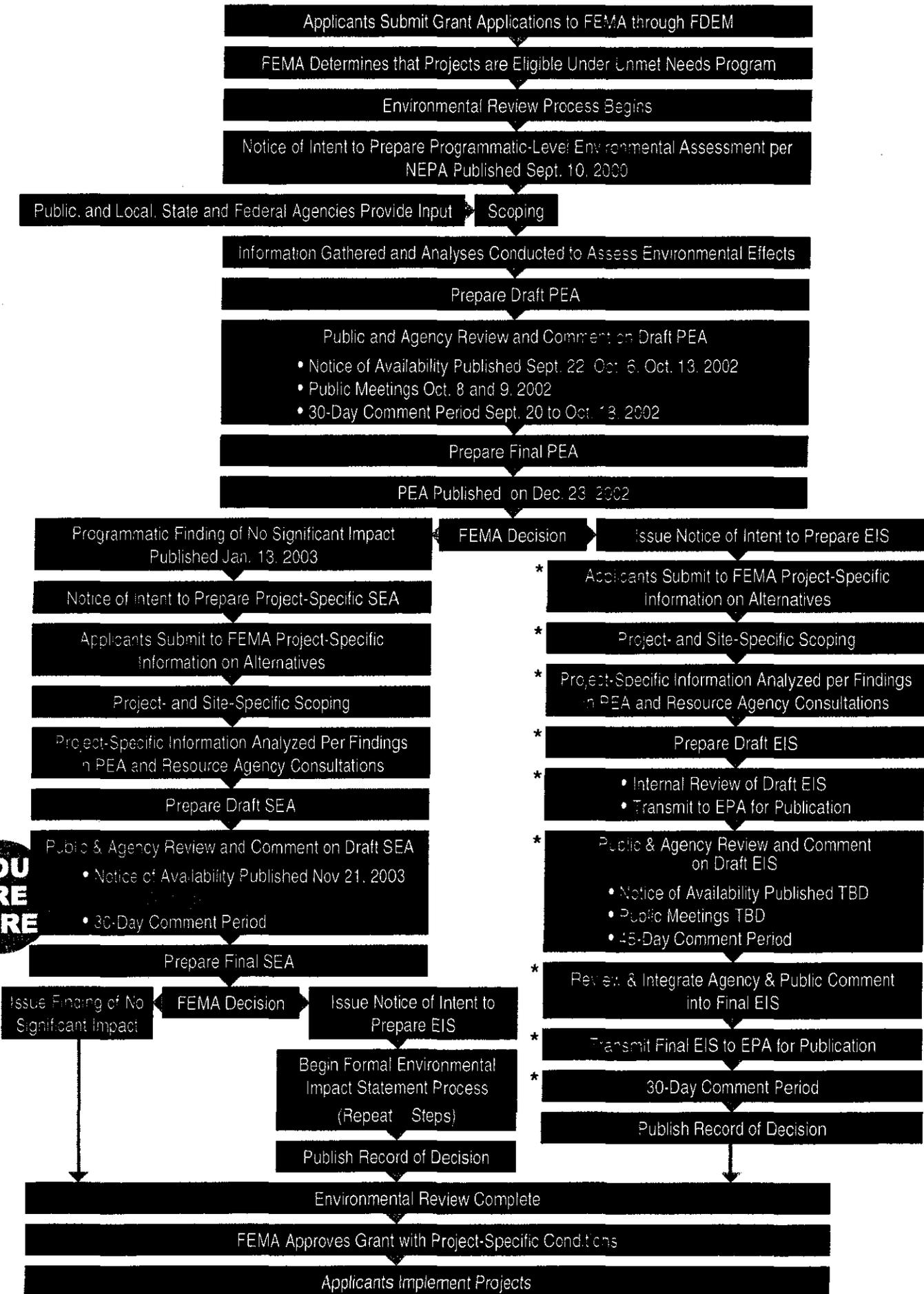
This final PEA studies the affected environment, including: Topography, Soils, and Geology; Water Resources and Water Quality; Biological Resources; Air Quality; Cultural Resources; Socioeconomics; Hazardous Materials; Demographics and Environmental Justice; Infrastructure; Land Use and Planning; and Noise and Visual Resources. A summary of the potential effects of the above project alternatives on the resource areas is described below. Project-specific effects would be discussed in each SER document.

Topography, Soils, and Geology

WWTP and OWNRS projects' effects on topography and soils are expected to be minimal. Soils would be temporarily disturbed; however, implementation of mitigation measures would decrease the adverse effects from temporary construction activities. Regarding geology, the potential effects (sinkholes) from the use of shallow injection wells are expected to be minimal. Project applicants would be required to conduct geotechnical studies and incorporate the findings into the design and construction of any proposed shallow injection wells.



FEMA Program/Environmental Review Process



WASTEWATER MANAGEMENT IMPROVEMENTS IN THE FLORIDA KEYS

KEY LARGO WASTEWATER TREATMENT



FEMA

Abstract

In response to damages and losses from Hurricane Georges, Congress enacted Public Law 106-31, Emergency Supplemental Appropriations Act for Fiscal Year 1999, to fund long-term disaster recovery projects in Florida counties whose needs were unmet through primary disaster relief funds. Monroe County was included among the counties eligible for "Unmet Needs" funding and requested that wastewater management improvement projects be considered for this funding since many existing wastewater facilities in the county are not storm-resistant.



Since then, the Federal Emergency Management Agency (FEMA) has received a grant application from the Florida Keys Aqueduct Authority, prepared in coordination with Monroe County and the Key Largo Wastewater Treatment District (KLWTD), requesting Federal assistance to build a new wastewater treatment plant (WWTP) to service two communities, Key Largo Trailer Village and Key Largo Park, in Key Largo in the Upper Keys. FEMA prepared this draft Supplemental Environmental Assessment to address the

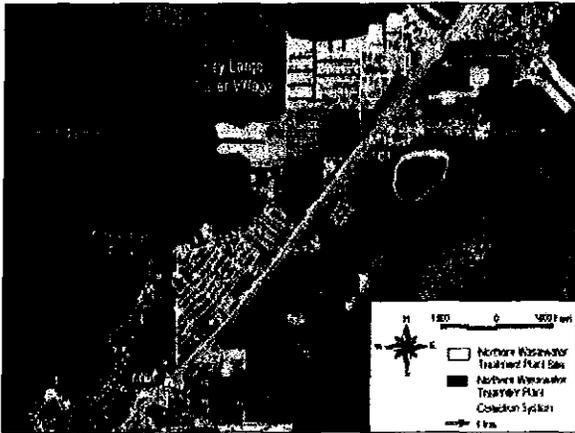
likely effects of implementing three alternatives proposed in Key Largo. The alternatives evaluated in this document include:

Alternative 1 – No Action Alternative

FEMA would not fund any wastewater treatment project within Key Largo. Alternate funding sources (such as other grants) would be needed to finance the large capital costs of constructing a wastewater treatment system to meet the Florida Statutory Treatment Standards by 2010. Until alternate funding is secured, environmental degradation would continue.

Alternative 2 – Centralized Wastewater Treatment Plant, Northern Site Alternative (Proposed)

The KLWTD would use FEMA funding to install a wastewater collection system and build a new community WWTP on the ocean side of U.S. Route 1 at about Mile Marker (MM) 100.5. This site is about 2.6 acres. Wastewater effluent would be collected through a vacuum pump system. Following tertiary treatment, wastewater effluent would be disposed through two shallow injection wells. KLWTD would be responsible for facility construction, operation, and maintenance.



Alternative 3 – Centralized Wastewater Treatment Plant, Southern Site Alternative

The KLWTD would use FEMA funding to install a wastewater collection system, build a vacuum pump station (VPS) at MM 100.5, install a wastewater transmission system between the VPS and WWTP, and build a new community WWTP at MM 98. This site is about 3 acres. Following tertiary treatment, wastewater effluent would be disposed through two shallow injection wells. The KLWTD would be responsible for facility construction, operation, and maintenance.

Alternatives 2 and 3

For both Alternative 2 and Alternative 3, potential project effects on topography, soils, and geology; wetlands and floodplains; hazardous materials and wastes; infrastructure; land use and planning, noise and visual resources within the project areas are expected to be minor. Appropriate mitigation measures would reduce any potential adverse effects of the project alternatives on these resources. Effects on water resources and water quality, marine biological resources, and public health are anticipated to be beneficial. Effects on air quality and cultural resources would be negligible. Adverse socioeconomic effects would be mitigated with the use of FEMA grant funding, making the system capital costs associated with Alternatives 2 and 3 affordable to service recipients. Moreover, to further reduce adverse economic effects to low-income service recipients, an assistance program has been developed to ensure wastewater costs are not disproportionately high or adverse to this population.



Under Alternative 2, adverse effects on terrestrial biological resources and special status species from WWTP construction would be mitigated through a conservation easement on 19 acres of “high-quality” hardwood hammock; tree transplanting plans; restoring 2.6 acres of hardwood hammock; and compliance with Florida Department of Environmental Protection Environmental Resource Permits, Monroe County Land Development regulations, and with the U.S. Fish and Wildlife Service Biological Opinion.

Under Alternative 3, effects on terrestrial biological resources are expected to be minor. Appropriate mitigation measures would reduce any potential adverse effects.

Water Resources and Water Quality

The conversion of cesspits and septic tanks to systems that meet recent state-mandated, more stringent treatment standards are expected to substantially reduce nutrient and pathogen loading from Keys wastewater sources, thereby improving inland, nearshore, and offshore water quality.



Biological Resources

The proposed projects' overall effects on biological resources are expected to be generally beneficial. The improved wastewater management would reduce nutrient and pathogen contamination of nearshore waters, which would positively affect nearshore marine habitats, including seagrass meadows and coral reefs. The proposed wastewater project sites may result in some minor terrestrial habitat losses; however, most activities would be in developed, disturbed areas with low habitat value. Conscientious site selection, implementation of appropriate mitigation measures, and coordination with responsible agencies such as the U.S. Fish and Wildlife Service and National Marine Fisheries Service would minimize potential adverse impacts.

Air Quality

Air quality effects from the proposed projects are expected to be negligible.

Cultural Resources

Wastewater project activities may result in ground disturbing activities that could impact historical and archaeological resources, if present. Implementation of mitigation measures, appropriate site selection, and coordination with the Florida State Historic Preservation Officer would minimize these potential impacts.

Socioeconomics

It is expected that risks to public health, in terms of potential viral and bacterial infections, would be reduced as a result of the proposed wastewater projects because of better wastewater treatment and resulting improved water quality. This would likely increase the number of visitors to beaches that formerly posted advisories against entering the water. These water quality improvements would also benefit commercial fisheries that are currently being adversely affected by nutrient pollution. Implementation of WWTPs or OWNRS projects would likely result in increased wastewater management costs, particularly to service recipients that currently have cesspits or septic systems. However, grant funding assistance is expected to reduce the capital costs so that the wastewater service would be affordable to service recipients.

Hazardous Materials

Potential project effects from hazardous materials are not expected.

Demographics and Environmental Justice

Implementation of the proposed wastewater projects would equally benefit, through improved water quality, the various demographic groups in the Keys. The likely increase in wastewater management costs could have a highly disproportionate and adverse economic effect on low-income service recipients. The low-income population cannot afford an increase in wastewater management costs above their present wastewater costs. Accordingly, assistance guidelines have been outlined to further reduce the economic impact of wastewa-

ter projects to qualified low-income service recipients for FEMA-funded projects. The levels of assistance are based on the U.S. Department of Housing and Urban Development's very-low and low family income levels.

Infrastructure

The construction of wastewater system components would temporarily increase the traffic to and from the construction sites. A minor, temporary disruption in wastewater service and other utilities would occur during construction activities. Potential long-term project effects on infrastructure are expected to be minimal.

Land Use and Planning

Installing new WWTPs, upgrading existing WWTPs, and converting OWTS to OWNRS is not expected to change the county's existing land use and growth patterns. Growth projections are based on the present Rate of Growth Ordinance permitting system that limits growth in Monroe County. The effect of the proposed wastewater projects on special status lands such as areas managed under the Coastal Zone Management Act, and Conservation and Recreation Lands is expected to be minimal, if any. The natural resource value of special status lands should benefit from these projects because they benefit from good water quality.

Noise and Visual Resources

Potential project effects are expected to be minimal. Odor control design features, visual screening, and other measures would mitigate these impacts.

Programmatic Finding of No Significant Impact (FONSI)

Based on the findings in the final PEA, a FONSI was issued by FEMA on January 13, 2003. The final PEA and signed FONSI can be viewed online at <http://www.fema.gov/eph/docs.shtm>.

Point of Contact:

Ms. Science Kilner, Lead Environmental Specialist
FEMA Region IV, Federal Insurance and Mitigation Division
3003 Chamblee Tucker Road
Atlanta, Georgia 30341
Fax: (770) 220-5440



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Key Largo

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Name (optional): _____

Contact information (optional): _____

COMMENTS: _____

Additional space available on the back of this form.



FEMA

November 21, 2003

Mr. Robert Sheets
Government Services Group
1500 Mahan Drive, Suite 250
Tallahassee, FL 32308

Re: Key Largo Wastewater Project under Public Law 106-31, Emergency Supplemental Appropriation Act for Fiscal Year 1999 (DR 1249 and DR 1259 Unmet Needs)

Dear Mr. Sheets:

Please find enclosed copies of the Draft Supplemental Environmental Assessment (DSEA) prepared for the proposed wastewater project serving Key Largo Trailer Village and Key Largo Park. This draft will be presented at the December 3rd public meeting and released for public comment beginning November 22nd. We have incorporated many of the comments you provided on the preliminary draft, we welcome any additional comments you may have as we work towards finalizing the document. You may wish to particularly focus on the Biological Resources, Socioeconomics, and Demographics and Environmental Justice Sections; as these sections discuss the most important issues raised to date. As you may recall, the preliminary draft was sent to you without any FEMA review/editing of our contractor's work. Accordingly our edits are now incorporated and some sections have changed a little to better represent the issue. The Biological Resources section has been substantially revised to better articulate the findings and mitigation measures for the Mile Marker 100.5 site. The DSEA is also being provided to Monroe County, and the Florida Division of Emergency Management for further comment.

If you have any questions, please contact Ms. Science Kilner at (770) 220-5357 or me at (770) 220-5432. Thank you for taking the time to review this document.

Sincerely,

A handwritten signature in black ink, appearing to read "William R. Straw".

William R. Straw, Ph.D.
Regional Environmental Officer

Enclosures

**DRAFT
SUPPLEMENTAL ENVIRONMENTAL
ASSESSMENT**

Proposed Wastewater Treatment System for
Key Largo Park and Key Largo Trailer Village
Key Largo Wastewater Treatment District,
Monroe County, Florida



FEMA

Prepared for
Federal Emergency Management Agency
Region IV
3003 Chamblee-Tucker Rd.
Atlanta, GA 30341

Prepared by
URS Group, Inc.
200 Orchard Ridge Drive, Suite 101
Gaithersburg, MD 20878

700 South Royal Poinciana Blvd. Suite 1000
Miami Springs, FL 33166

November 20, 2003



TABLE OF CONTENTS

Abstract	iv
Section 1	Introduction 1-1
1.1	Project Authority..... 1-1
1.2	Related Environmental Documents..... 1-1
1.3	Project Location..... 1-2
1.4	Purpose and Need 1-2
Section 2	Alternatives Analysis 2-1
2.1	Alternative 1 – No Action Alternative 2-1
2.2	Alternative 2 – New Wastewater Treatment Plant on Northern Site (Proposed)..... 2-1
2.2.1	Wastewater Collection System 2-4
2.2.2	Wastewater Treatment Plant 2-8
2.3	Alternative 3 – New Wastewater Treatment Plant on Southern Site 2-12
2.3.1	Wastewater Collection System 2-12
2.3.2	Vacuum Pump Station 2-13
2.3.3	Wastewater Transmission System 2-14
2.3.4	Wastewater Treatment Plant Southern Site 2-15
2.4	Alternatives Considered but Eliminated from Further Consideration..... 2-15
Section 3	Affected Environment and Environmental Consequences 3-1
3.1	Topography, Soils, and Geology..... 3-1
3.1.1	Topography..... 3-1
3.1.2	Soils..... 3-1
3.1.3	Geology 3-3
3.2	Water Resources and Water Quality 3-4
3.2.1	Groundwater 3-4
3.2.2	Inland, Nearshore, and Offshore Waters..... 3-5
3.2.2.1	Inland Waters 3-5
3.2.2.2	Nearshore and Offshore Marine Waters 3-5
3.2.2.3	Stormwater 3-6
3.2.3	Floodplains and Wetlands..... 3-7
3.2.3.1	Floodplains..... 3-7
3.2.3.2	Wetlands..... 3-8
3.3	Biological Resources 3-10
3.3.1	Terrestrial Ecosystem 3-11
3.3.1.1	Pine Rocklands and Tropical Hardwood Hammocks 3-12
3.3.1.2	Mangrove Forests and Salt Marshes..... 3-12
3.3.1.3	Freshwater Systems 3-13
3.3.1.4	Dunes and Coastal Ridges 3-13
3.3.2	Aquatic Ecosystem 3-13
3.3.2.1	Seagrass Beds and Sand Flats..... 3-13
3.3.2.2	Coral Reefs..... 3-14
3.3.2.3	Hardbottom..... 3-15
3.3.2.4	Sandy Bottom..... 3-15
3.3.2.5	Alternative 1 – No Action Alternative 3-15
3.3.2.6	Alternative 2 – New Wastewater Treatment Plant on Northern Site..... 3-15
3.3.2.7	Alternative 3 – New Wastewater Treatment Plant on Southern Site..... 3-16
3.3.3	Special Status Species..... 3-17
3.3.3.1	Alternative 2 – New Wastewater Treatment Plant on Northern Site..... 3-18
3.3.3.2	Alternative 3 – New Wastewater Treatment Plant on Southern Site..... 3-19

TABLE OF CONTENTS

3.4	Air Quality	3-20
3.5	Cultural Resources	3-20
3.6	Socioeconomic Resources	3-23
	3.6.1 Tourism	3-23
	3.6.2 Fishing Industry	3-25
	3.6.3 Local Fees and Taxes	3-25
	3.6.3.1 Existing Wastewater Management Costs in the KLTV and KLP Service Area	3-25
	3.6.4 Public Health	3-27
3.7	Demographics and Environmental Justice	3-28
	3.7.1 Population and Race	3-28
	3.7.2 Income and Poverty	3-29
3.8	Hazardous Materials and Wastes	3-32
3.9	Infrastructure	3-33
	3.9.1 Traffic and Circulation	3-33
	3.9.2 Utilities and Services	3-34
3.10	Land Use and Planning	3-34
3.11	Noise and Visual Resources	3-38
	3.11.1 Noise	3-38
	3.11.2 Visual Resources	3-40
Section 4	Cumulative Effects	4-1
4.1	Topography, Soils and Geology	4-1
4.2	Water Resources and Water Quality	4-1
4.3	Biological Resources	4-1
4.4	Air Quality	4-2
4.5	Cultural Resources	4-2
4.6	Socioeconomics	4-2
4.7	Demographics and Environmental Justice	4-2
4.8	Hazardous Materials and wastes	4-3
4.9	Infrastructure	4-3
4.10	Land Use and Planning	4-3
4.11	Noise and Visual Resources	4-3
Section 5	Public Participation	5-1
Section 6	Mitigation Measures and Permits	6-1
6.1	Mitigation	6-1
6.2	Permits and Licenses	6-1
Section 7	Consultations and References	7-1
Section 8	List of Preparers	8-1

List of Tables, Figures, and Appendices

Tables

Table 2-1	Service Area Flow & Equivalent Dwelling Units (EDU) Estimates
Table 3-1	FDEP Injection Well Forms
Table 3-2	Observed Plant Species
Table 3-3	Project Area Businesses
Table 3-4	Fiscal Year 2003 – HUD's <i>Low-Income</i> and <i>Very Low-Income</i> Limits, Monroe County, Florida
Table 3-5	Alternatives 2 and 3 <i>Low-Income</i> and <i>Very Low-Income</i> Funding Assistance for the System Capital Cost

Figures

Figure 1-1	Project Vicinity Map
Figure 2-1	Key Largo Wastewater Service District
Figure 2-2	Alternative 2 Wastewater Treatment Plant (WWTP) Site Location Map
Figure 2-3	Typical Building Construction
Figure 2-4	Alternative 2 WWTP Site
Figure 2-5	Proposed Key Largo WWTP Site Preliminary Drawings
Figure 2-6	Alternative 3 WWTP Site Location Map
Figure 2-7	Vacuum Pump Station Preliminary Drawings
Figure 2-8	Alternative 3 WWTP Site
Figure 3-1	Project Area Soils
Figure 3-2	Project Area Floodplains
Figure 3-3	Project Area Vegetation
Figure 3-4	Project Area Benthic Habitats
Figure 3-5	Project Area Land Use

Appendices

Appendix A	Acronyms and Abbreviations
Appendix B	Agency Coordination Letters
Appendix C	Site Photographs
Appendix D	Public Notice
Appendix E	Public Comments
Appendix F	Regulated Keys Fisheries Species
Appendix G	Key Largo Cultural Resources Consultation Correspondence
Appendix H	Biological Assessment for the Wastewater Treatment Plant Site – Mile Marker 100.5, Key Largo, Florida
Appendix I	U.S. Fish and Wildlife Service Biological Opinion
Appendix J	Key Largo Wastewater Treatment District Low Income Assistance Program



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The KLWTD would use FEMA funding to install a wastewater collection system and build a new community WWTP on the ocean side of U.S. Route 1 at about Mile Marker (MM) 100.5. This site is about 2.6 acres. Wastewater effluent would be collected through a vacuum pump system. Following tertiary treatment, wastewater effluent would be disposed through two shallow injection wells. KLWTD would be responsible for facility construction, operation, and maintenance.

Alternative 3 – Centralized Wastewater Treatment Plant, Southern Site Alternative

The KLWTD would use FEMA funding to install a wastewater collection system, build a vacuum pump station (VPS) at MM 100.5, install a wastewater transmission system between the VPS and WWTP, and build a new community WWTP at MM 98. This site is about 3 acres. Following tertiary treatment, wastewater effluent would be disposed through two shallow injection wells. The KLWTD would be responsible for facility construction, operation, and maintenance.

Alternatives 2 and 3

For both Alternative 2 and Alternative 3, potential project effects on topography, soils, and geology; wetlands and floodplains; hazardous materials and wastes; infrastructure; land use and planning, noise and visual resources within the project areas are expected to be minor. Appropriate mitigation measures would reduce any potential adverse effects of the project

alternatives on these resources. Effects on water resources and water quality, marine biological resources, and public health are anticipated to be beneficial. Effects on air quality and cultural resources would be negligible. Adverse socioeconomic effects would be mitigated with the use of FEMA grant funding, making the system capital costs associated with Alternatives 2 and 3 affordable to service recipients. Moreover, to further reduce adverse economic effects to low-income service recipients, an assistance program has been developed to ensure wastewater costs are not disproportionately high or adverse to this population.

Under Alternative 2, adverse effects on terrestrial biological resources and special status species from WWTP construction would be mitigated through a conservation easement on 19 acres of "high-quality" hardwood hammock; tree transplanting plans; restoring 2.6 acres of hardwood hammock; and compliance with Florida Department of Environmental Protection Environmental Resource Permits, Monroe County Land Development regulations, and with the U.S. Fish and Wildlife Service Biological Opinion.

Under Alternative 3, effects on terrestrial biological resources are expected to be minor. Appropriate mitigation measures would reduce any potential adverse effects.

1.1 PROJECT AUTHORITY

In 1998, after Hurricane Georges, Congress enacted Public Law 106-31, Emergency Supplemental Appropriations Act for Fiscal Year 1999, to provide additional monies for long-term disaster recovery projects in the State of Florida. Congress allocated the funds to assist counties whose needs were not met through allocation of primary disaster relief funds. The Federal Emergency Management Agency (FEMA) earmarked this Unmet Needs money for the counties most impacted by Hurricane Georges, including Monroe County. FEMA, the State of Florida, and the impacted counties determined funding priorities.

Monroe County requested that wastewater management improvement projects be considered for disaster funding since many existing wastewater facilities in Monroe County are not storm-resistant, do not provide adequate wastewater treatment, and contribute to degraded water quality in the Keys. Since then, the Florida Keys Aqueduct Authority (FKAA), through the State of Florida Department of Community Affairs (DCA), has applied for FEMA funding assistance to build a wastewater treatment system that would service Key Largo Trailer Village (KLTV). It should be noted that although the FKAA initiated the funding request, the Key Largo Wastewater Treatment District (KLWTD) would implement the project, as it is now the wastewater authority for Key Largo. Moreover, the FEMA-funded wastewater treatment plant (WWTP) would also provide service to Key Largo Park (KLP), whose wastewater collection system is being funded by the Florida Department of Environmental Protection (FDEP). The project is intended to improve wastewater treatment and ultimately water quality in the Florida Keys, and assist residents in meeting State-mandated water quality targets as set forth in the Florida Statutory Treatment Standards of 2010. Specifically, wastewater treatment systems must treat discharge to advanced wastewater treatment (AWT) or best available technology (BAT) standards. For facilities that treat over 100,000 gallons per day (gpd), the AWT standards are 5 mg/L Biological Oxygen Demand (BOD), 5 mg/L Total Suspended Solids (TSS), 3 mg/L Total Nitrogen (TN), 1 mg/L Total Phosphorus (TP); and for facilities treating less than 100,000 gpd the BAT standards are 10 mg/L, 10 mg/L, 10 mg/L, and 1 mg/L, respectively.

1.2 RELATED ENVIRONMENTAL DOCUMENTS

URS Group, Inc. (URS) prepared a Programmatic Environmental Assessment (PEA) for FEMA in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and FEMA regulations (44 CFR Part 10, Environmental Considerations). These laws and regulations require FEMA to take into account environmental considerations when funding any Federal actions. The PEA, finalized on December 23, 2002, provides a framework to address impacts associated with a range of wastewater treatment projects in the Florida Keys. PEA Section 1.7 (Water Quality Protection Measures at the Local, State, and Federal Levels) provides a more detailed discussion of water quality protection measures at Federal, State, and local levels.

This Supplemental Environmental Assessment (SEA) tiers from the PEA for Wastewater Management Improvements in the Florida Keys (URS, 2002a) and hereby incorporates the PEA by reference, in accordance with 40 CFR Part 1508.28.

1.3 PROJECT LOCATION

The project areas encompass the neighborhoods of KLTV and the KLP (the service area), portions of the U.S. Route 1 (US-1) right-of-way (ROW), the proposed wastewater treatment plant (WWTP) site at Mile Marker (MM) 100.5, and the alternate site at MM 98, which are all located in the central portion of Key Largo, in part of the Florida Keys chain known as the Upper Keys (Figure 1-1). US-1, the main thoroughfare in the Keys, bisects Key Largo into the ocean side and the bay side. Although artificial waterways have been constructed on both sides of the island, most of the land is on the ocean side (Figure 1-1). The project areas are located in Sections 33, 32, 28, 29, and 6; Township 61 South; and Range 39 East.

1.4 PURPOSE AND NEED

PEA Section 1.9 (Purpose and Need for Action) describes the purpose and need for action. In particular, the purpose of the KLWTD project is to reduce wastewater nutrient loading at selected Monroe County “hot spots,” thereby improving water quality. These “hot spots” are believed to contribute to water quality degradation.

As described in PEA Section 2.1 (Alternative Development Background), “hot spots” represent priority areas where the high concentration of people and poor existing wastewater treatment practices justify the installation of a more advanced wastewater treatment system within that area. In 2000, the Monroe County Sanitary Wastewater Master Plan (MCSWMP) ranked the KLTV as the second most critical “hot spot” in the Upper Keys, and the fourth most critical “hot spot” Keys-wide. KLP is ranked 15th in the Upper Keys and 27th Keys-wide (PEA Appendix C, Hot Spot Locations). The “hot spot” ranking is linked to the use of cesspools and septic systems as the primary wastewater treatment systems at KLP and KLTV.

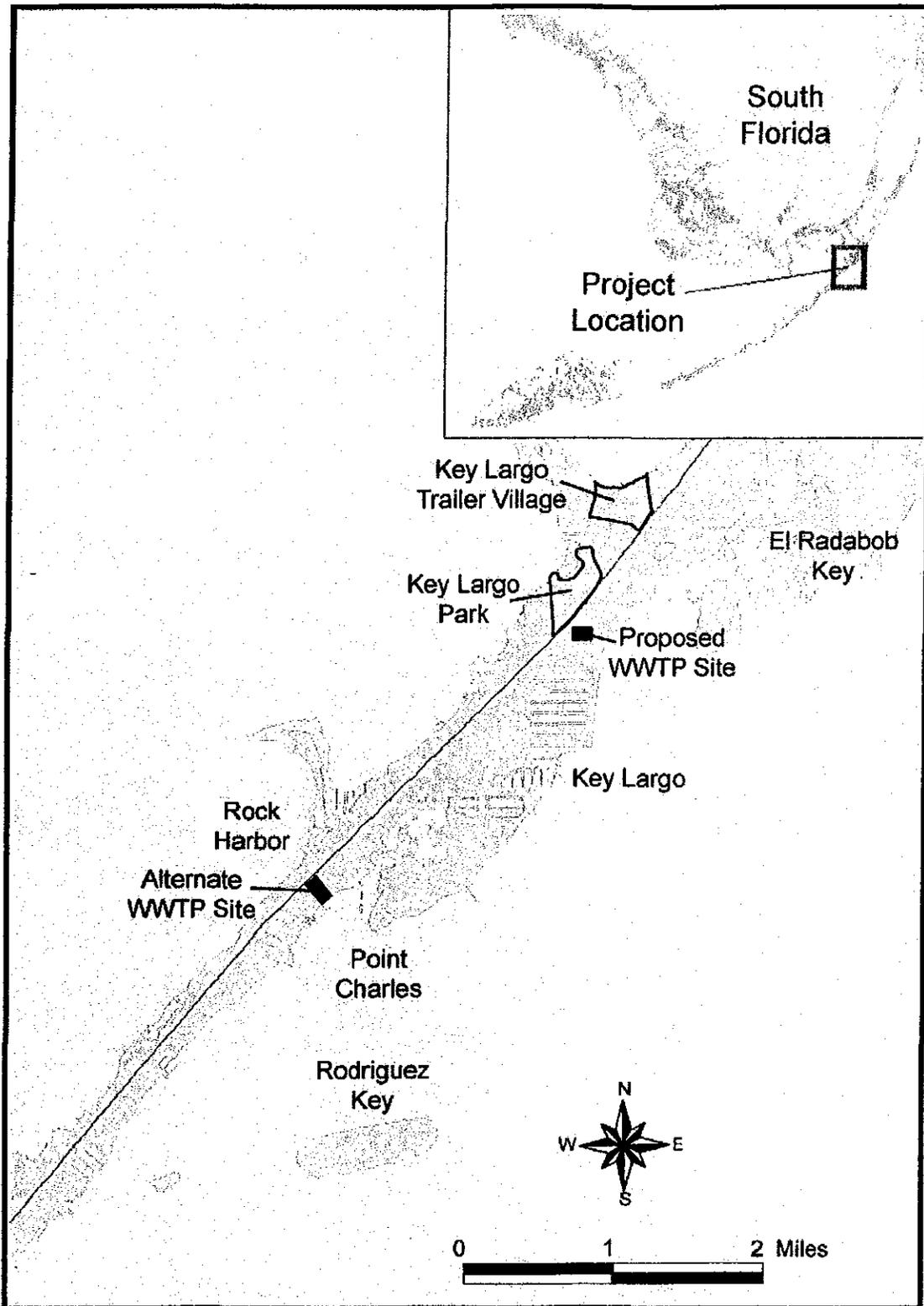


Figure 1-1. Project Vicinity Map



NEPA, CEQ regulations implementing NEPA (40 CFR Parts 1500 to 1508), and FEMA regulations for environmental compliance (44 CFR Part 10) direct FEMA to investigate and evaluate project alternatives. FEMA evaluated alternatives identified in the Monroe County Sanitary Wastewater Master Plan (2000) and in the PEA for the proposed Key Largo Wastewater Management System. In the following sections, FEMA considered and evaluated three alternatives in detail: No Action, New Wastewater Treatment Plant on Northern Site (MM 100.5), and New Wastewater Treatment Plant on Southern Site (MM 98). While FEMA funding would be applied only to the KLV collection system and WWTP construction, this document considers the effects to the KLP service area as well because it will be served by the same WWTP. These are viewed as “connected actions” under NEPA, despite separate funding. FDEP will fund the KLP collection system.

2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

As discussed in PEA Section 2.3.1 (No Action Alternative), FEMA would not provide funding assistance to the KLWTD for the proposed action. In order to meet Florida Statutory Treatment Standards of 2010, KLWTD and service area residents and businesses would need to identify another funding source for upgrading currently inadequate wastewater treatment systems.

2.2 ALTERNATIVE 2 – NEW WASTEWATER TREATMENT PLANT ON NORTHERN SITE (PROPOSED)

PEA Section 2.3.3 (Centralized Wastewater Treatment Plant Alternative) describes Alternative 2. KLWTD would use FEMA funds to build a wastewater collection system, vacuum pump station (VPS), and wastewater treatment plant (WWTP) in Key Largo (Figure 2-1).

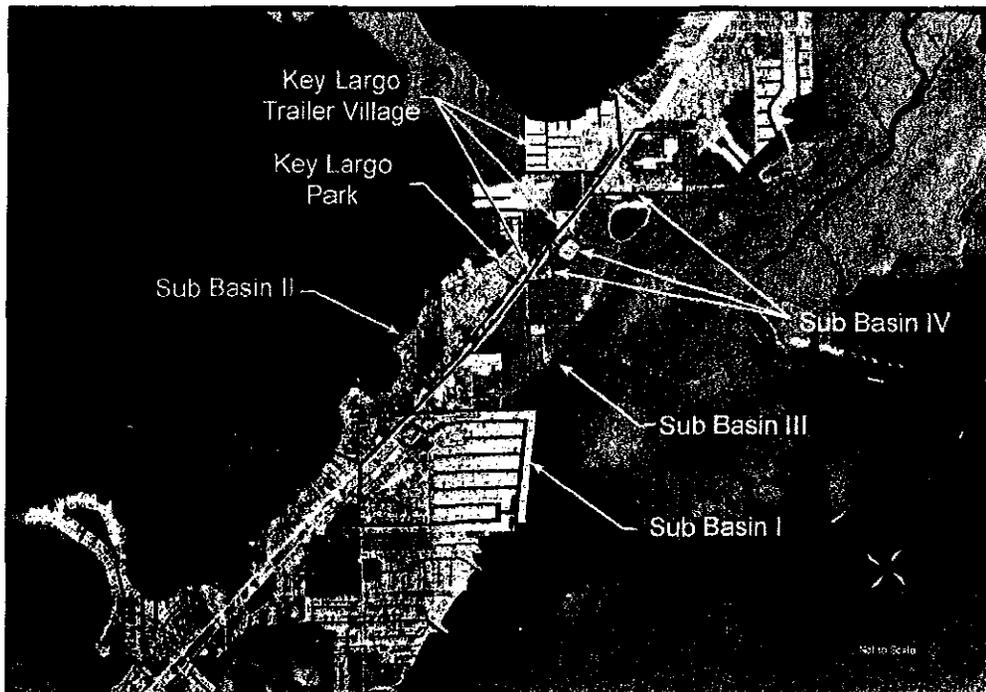


Figure 2-1. Key Largo Wastewater Service District (Boyle, 2003)

SECTION TWO

Alternatives Analysis

Table 2-1. Service Area Flow and EDU Estimates (Boyle, 2003)

Design Parameter	Units	Key Largo Park Flow Contribution ¹			Key Largo Trailer Village Flow Contribution				Subtotal	Total
		Developed	Future	Subtotal	Residential		Commercial			
					Developed	Future	Developed	Future		
No. of Equivalent Dwelling Units (EDUs)	N/A	226	57	283	445	5	61	56	567	850
Flow Contribution per EDU @ Maximum Month Average Daily Flow (MMADF)	gpd/EDU	232.5	232.5	N/A	201	201	232.5	232.5	N/A	216
MMADF/Annual Average Daily Flow (AADF) Factor	N/A	1.5	1.5	N/A	1.5	1.5	1.5	1.5	N/A	1.5
Flow Contribution per EDU @ AADF	gpd/EDU	155	155	N/A	134	134	155	155	N/A	144
MMADF	gpd	52,545	13,253	65,798	89,445	1,005	14,183	13,020	117,653	183,450
	gallons per minute (gpm)	36	9	46	62	1	10	9	63	127
AADF	gpd	35,030	8,835	43,865	59,630	670	9,455	8,680	78,435	122,300
	gpm	24	6	30	41	0	7	6	42	85
Peak Hour/AADF Peaking Factor for Peak Hour	N/A	3.75	3.75	N/A	3.75	3.75	3.75	3.75	N/A	3.75
Peak Hour without Equalization	gpd	131,363	33,131	164,000	223,613	2,513	35,456	32,550	226,000	459,000
	gpm	91	23	114	155	2	25	23	157	319
Flow Contribution per EDU @ Peak Hour	gpd	581	581	N/A	503	503	581	581	N/A	540

¹ Key Largo Park EDU count total includes 23 EDUs (20 developed + 3 future) from the Sunset Waterways subdivision.

The VPS and WWTP would be built at MM 100.5. KLWTD would design the proposed WWTP to meet the Florida Statutory Treatment Standards of 2010 for effluent disposal to shallow injection wells. The new system would serve about 426 mobile homes, single family homes, multi-family homes, commercial buildings, and vacant lots (parcels) (FKAA, 2002).

KLWTD would implement the proposed Key Largo WWTP in two phases. Phase I would have a design capacity of about 150,000 gpd and would provide new service to residents and business owners in KLTV and KLP (FKAA, 2002). Wastewater flows for residences and businesses in the Phase I service area, obtained from the MCSWMP (Monroe County, 2000; Boyle, 2003), were used to estimate the number of equivalent dwelling units (EDUs), as summarized in Table 2-1. The 426 parcels equal about 850 EDUs. Based on estimates of the developed and future EDUs within the Phase I service area, the total estimated annual average daily flow (AADF) was calculated as 122,300 gpd (Boyle, 2003). The flow from the developed EDUs is about 104,000 gpd or 69 percent of the plant's Phase I capacity. Consequently, about 46,000 gpd AADF, or 31 percent of the WWTP capacity, is available for future connections. The plant capacity available for future connections is not strictly allocated to the KLTV and/or KLP service areas and could be available to other areas.

KLWTD designed the Phase I WWTP with the potential for expansion in modular increments to the Phase II capacity of 2.25 million gallons per day (MGD). Should funding become available, the Phase II WWTP would be capable of serving the entire Key Largo Wastewater Service District that extends from about MM 91 to MM 106.5 (Figure 2-1) (FKAA, 2002).

Build-out flow estimates for the entire Key Largo Wastewater Service District are:

EDUs	2,430 units
AADF	377,000 gpd
MMADF	565,000 gpd
Peak Hour Flow	1,413,750 gpd

About 467 cesspools and septic systems currently utilized by property owners in the Key Largo Phase I service area would be removed (FKAA, 2002). Pursuant to the Florida Department of Health (DOH) requirements, each property owner would be responsible for decommissioning and abandoning his/her existing on-site system.

2.2.1 Wastewater Collection System

KLWTD would place wastewater collection mains within the limits of public road rights-of-way (ROW) throughout the service area in front of the residences and businesses to be served (Figure 2-2). The streets within the KLTV subdivision consist of paved roads with platted ROW widths between 40 and 50 feet (FKAA, 2002). Most construction would be done on one side of the road, reducing traffic disruption. In some cases, KLWTD would place the wastewater collection mains on the opposite side of the ROW from an existing potable water main. Separate collection systems would serve KLTV and KLP. KLWTD would provide vacuum collection main stub-outs to the existing residential side streets on the bay side (west) of US-1 to facilitate the future extension of wastewater collection and transmission services to the KLP and Sunset Waterways subdivisions.

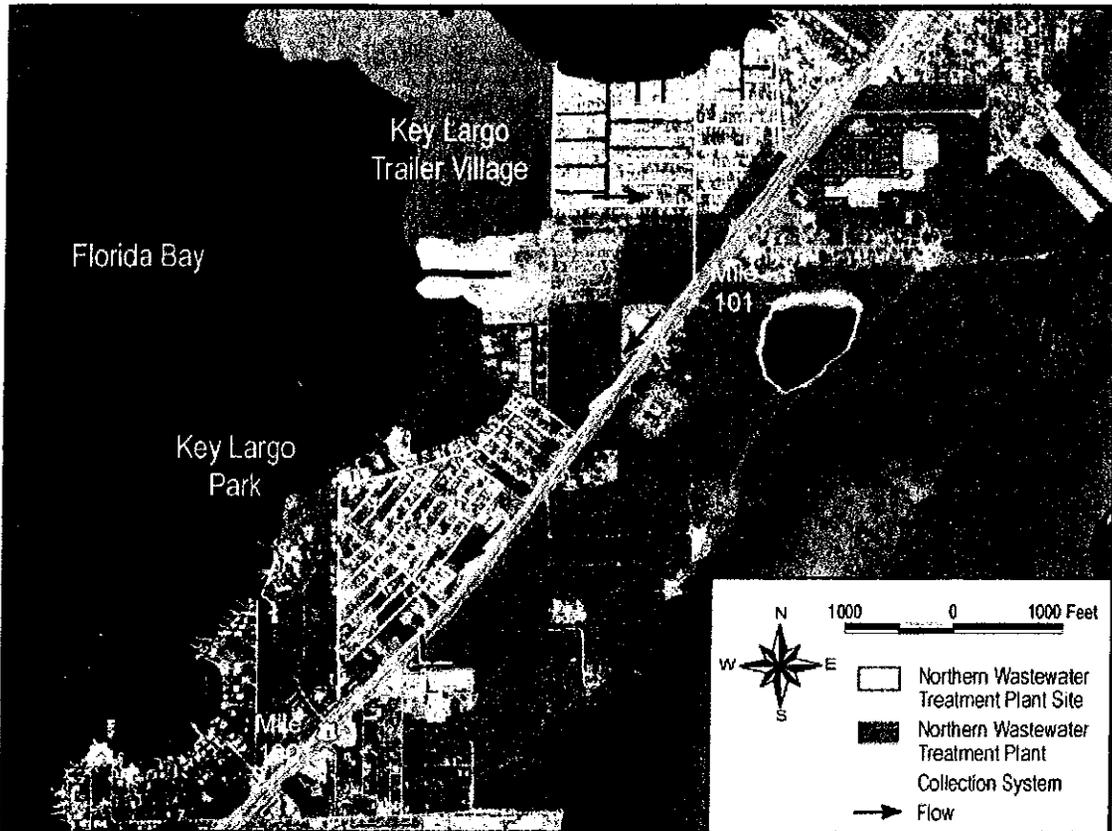


Figure 2-2. Alternative 2 Wastewater Treatment Plant (WWTP) Site Location Map

A transmission main about 4,800 feet long would convey wastewater from the KLTV to the WWTP. KLWTD would install the transmission main along the northern ROW of US-1 and would also serve existing commercial property along US-1. Service laterals consisting of polyvinyl chloride (PVC) pipe would be provided up to the ROW line (Figures 2-3a and b). Property owners would be responsible for constructing individual connections to the service laterals. Special plumbing fixtures or electrical connections would not be required at houses or mobile homes; existing fittings are adequate. KLWTD would excavate about 1,800 cubic feet of soil for the installation of vacuum sewer mains, vacuum pits, buffer tanks, and gravity service laterals. The majority of the excavated material would be used as backfill material for pipe and vacuum pit excavations. Excess excavated material would be used for foundations and grading at the treatment plant site.

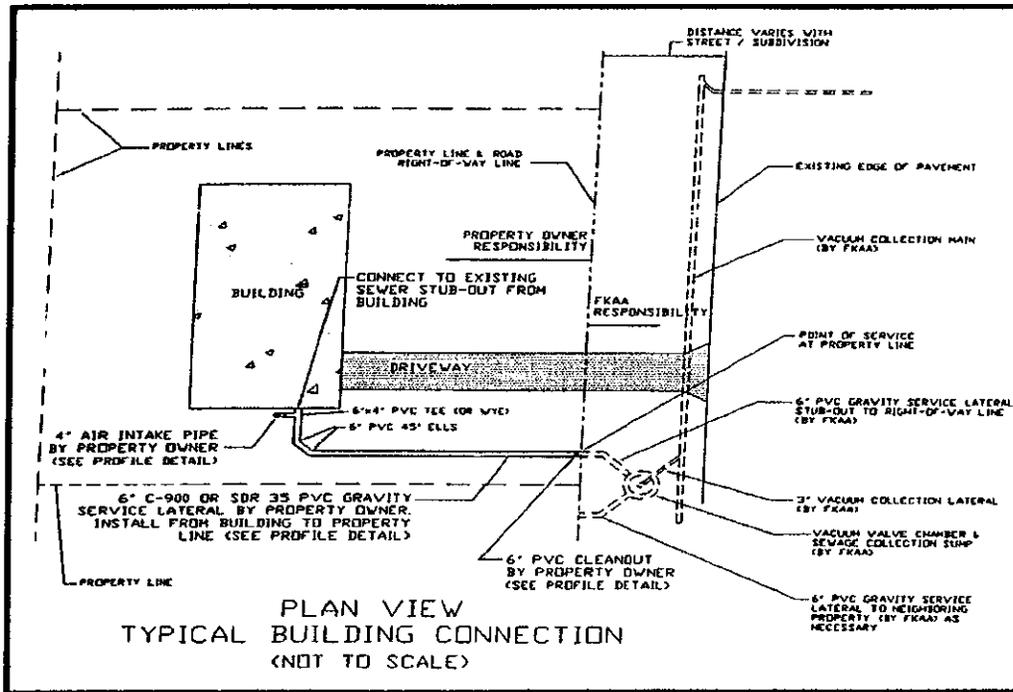
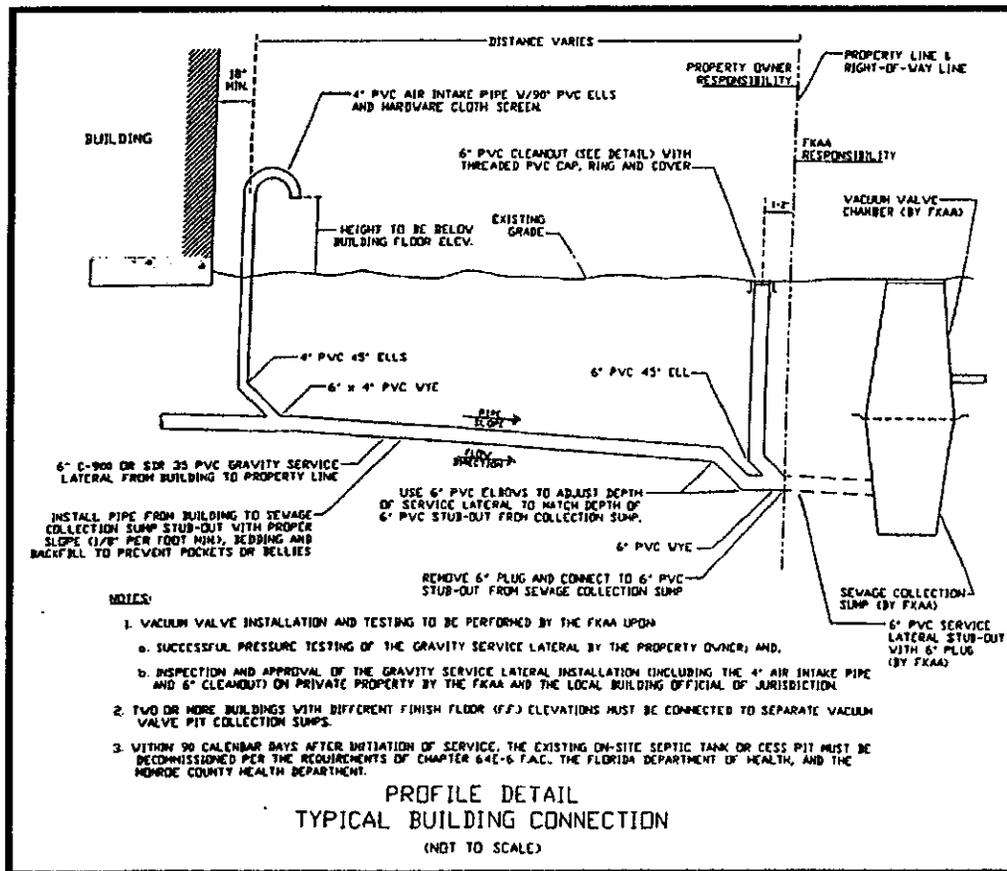


Figure 2-3a. Typical Building Connection (Plan View)



NOTES:

1. VACUUM VALVE INSTALLATION AND TESTING TO BE PERFORMED BY THE FKAA UPON
2. SUCCESSFUL PRESSURE TESTING OF THE GRAVITY SERVICE LATERAL BY THE PROPERTY OWNER; AND,
 - a. INSPECTION AND APPROVAL OF THE GRAVITY SERVICE LATERAL INSTALLATION (INCLUDING THE 4" AIR INTAKE PIPE AND 6" CLEANOUT) ON PRIVATE PROPERTY BY THE FKAA AND THE LOCAL BUILDING OFFICIAL OF JURISDICTION.
2. TWO OR MORE BUILDINGS WITH DIFFERENT FINISH FLOOR (FF) ELEVATIONS MUST BE CONNECTED TO SEPARATE VACUUM VALVE PIT COLLECTION SUMPS.
3. WITHIN 90 CALENDAR DAYS AFTER INITIATION OF SERVICE, THE EXISTING ON-SITE SEPTIC TANK OR CESS PIT MUST BE DECOMMISSIONED PER THE REQUIREMENTS OF CHAPTER 64E-6 F.A.C., THE FLORIDA DEPARTMENT OF HEALTH, AND THE MONROE COUNTY HEALTH DEPARTMENT.

The proposed collection system would consist of a vacuum sewer system with gravity collection mains and/or service laterals, sewage holding sumps and vacuum valve pits, vacuum collection mains and a VPS building, as described in PEA Section 2.3.2.1.1 (Vacuum Pumping).

Residential sewage would flow by gravity into a vacuum valve pit, the lower portion of which is a fiberglass holding sump and the upper portion of which includes a vacuum valve. Two or more homes would be serviced by one vacuum valve pit. When wastewater in the holding sump rises to a preset level, a sensor extending from the valve chamber into the holding sump detects the liquid level in the sump, and the vacuum interface valve is pneumatically opened. Differential air pressure propels the sewage from the sump through the valve and into 3-inch or larger PVC vacuum wastewater collection mains.

KLWTD would build vacuum mains about 3 feet below existing surface elevation throughout the service area. The system would transport wastewater from the collection mains to the wastewater collection tank at the VPS by the introduction of air into the collection main from successive open/close cycles of the vacuum valves in the system.

A VPS, located within the treatment plant site, would generate the negative pressure necessary for the vacuum collection mains. The station would draw raw sewage through the collection mains and pump it to the treatment plant. The station would be built as a slab-on-grade building, between 1,000 to 3,000 square feet in area, and would have two 430-cubic feet per minute (cfm) vacuum pumps, two 320-gpm discharge pumps, a 6,300-gallon collection tank, and an emergency generator. Discharge pumps connected to the vacuum collection tank would transfer sewage to the treatment plant. The vacuum pumps, operating at about 15 horsepower, could be increased to 75 horsepower as total head conditions increase in the transmission force main due to flows from future wastewater projects in the Key Largo Wastewater Service District. A separate concrete pad external to the station would accommodate odor control equipment (either a vapor phase activated carbon filter or a biological filter) for the treatment of air discharged from the collection tank by the VPS blowers. Initially the station would have capacity for the Phase I service area. Additional equipment (vacuum and discharge pumps) may be added in the future to expand service to the entire Key Largo Wastewater Service District.

2.2.2 Wastewater Treatment Plant

KLWTD would build the WWTP on currently undeveloped Monroe County lands, on the ocean side of Key Largo at MM 100.5 (Figures 2-2 and 2-4). The proposed plant site is a 1,200-foot by 1,600-foot by 2,000-foot, triangular, 22-acre open space containing mostly high-quality hardwood hammock habitat. KLWTD would build the WWTP on about 2.6 acres, in a roughly L-shaped configuration. The remaining 19.4 acres would remain in an undeveloped conservation easement. The northwestern property boundary borders US-1, and the southern property boundary is adjacent to an existing FCAA facility and undeveloped lands. Private residences are about 350 feet west of the site. The Florida Straits are the closest water body to the site, about 1,500 feet east. Florida Bay is about 2,500 feet west of the site (FCAA, 2002).

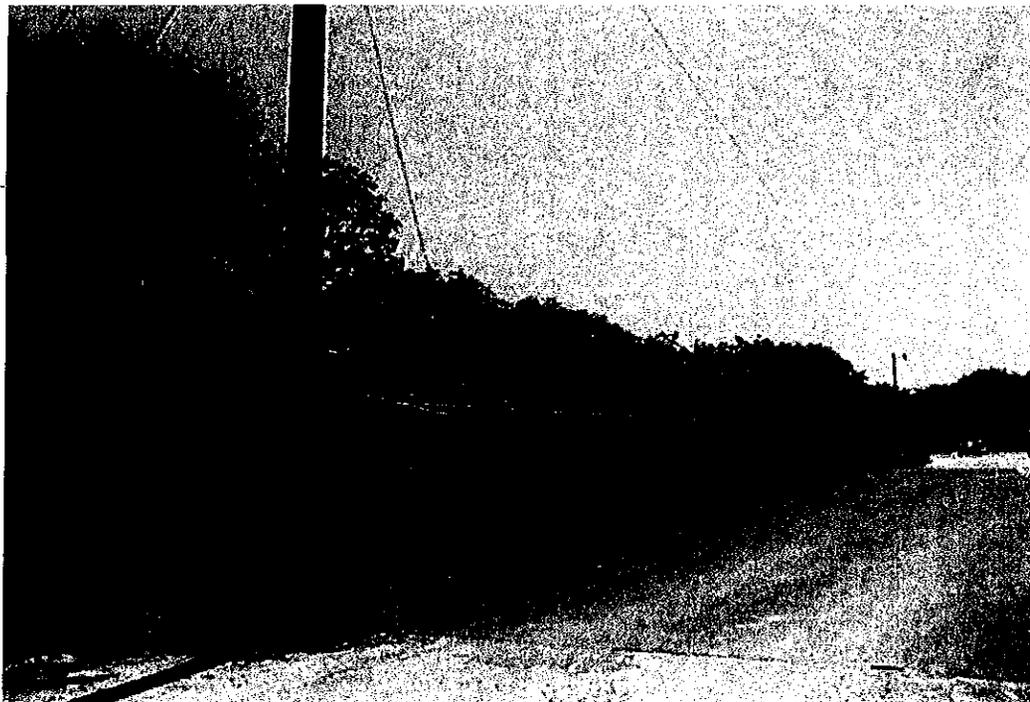
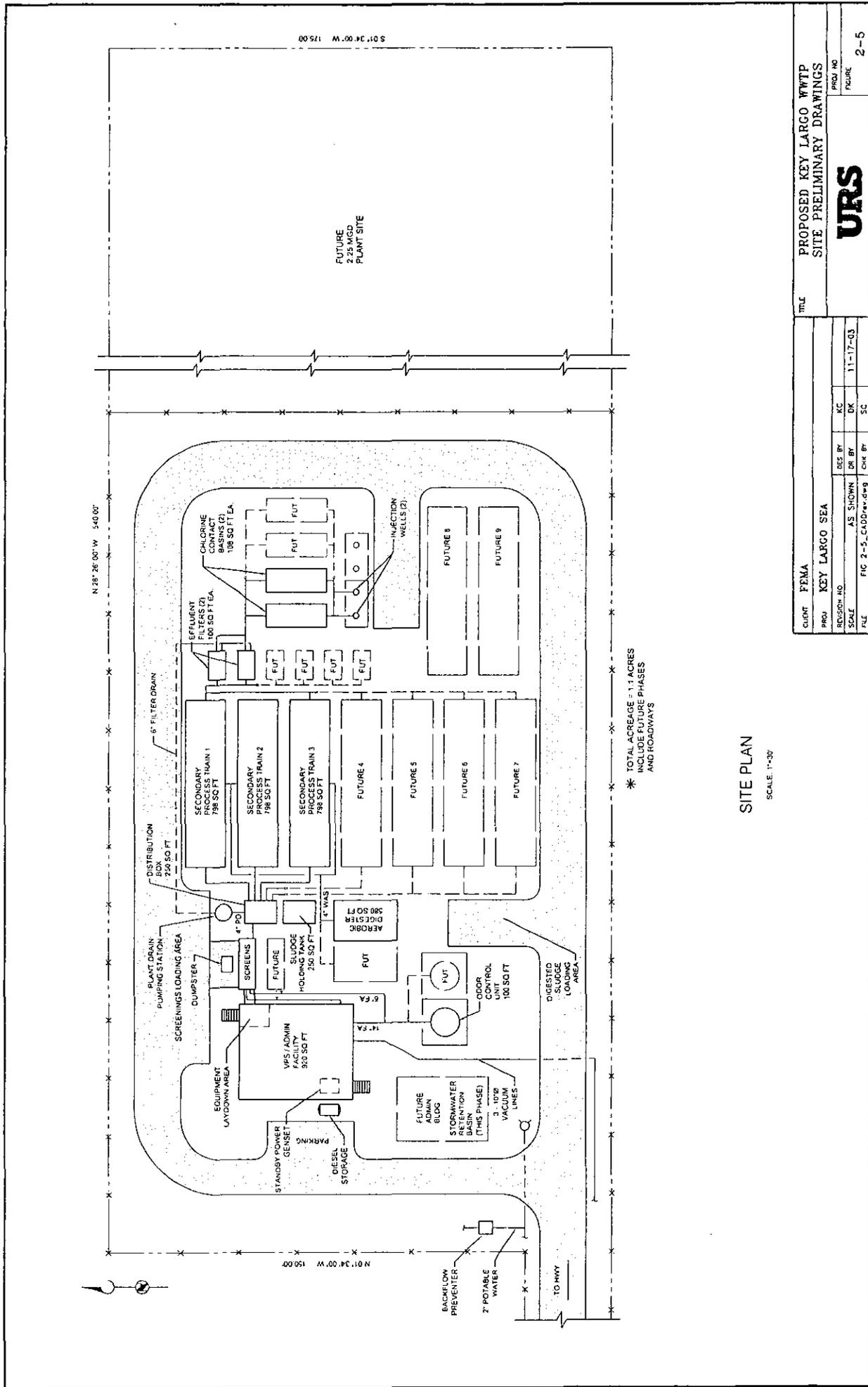


Figure 2-4. Alternative 2 WWTP Site

The WWTP would provide primary treatment, biological treatment, solids removal, nitrogen and phosphorus removal, filtration, effluent disinfection and disposal to shallow injection wells (Figure 2-5). Effluent discharged would meet the 2010 Florida Statutory Treatment Standards for AWT of 5 mg/L BOD, 5 mg/L TSS, 3 mg/L TN, and 1 mg/L TP. An in-line magnetic flow meter would measure, record, and total the amount of raw sewage flow from the pump station into the WWTP. Influent wastewater screening (either manual or automatic) would remove large particulate matter prior to entering WWTP. KLWTD would collect pretreatment screenings in a collection hopper or trash receptacle for collection and hauling to an FDEP-permitted sanitary landfill facility for disposal (FCAA, 2002). If necessary, alkalinity of the influent wastewater would be buffered using sodium hydroxide.



SITE PLAN
SCALE: 1"=30'

CLIENT: FEMA		TITLE: PROPOSED KEY LARGO WWTTP SITE PRELIMINARY DRAWINGS	
PROJ. NO.: KEY LARGO SEA	DES. BY: AS SHOWN	DR. BY: DK	CHK. BY: SC
REV. NO.: 11-17-03	SCALE: AS SHOWN	FIGURE: 2-5	FIGURE: 2-5
FILE: FIG 2-5_CADD.dwg			

The buffering process would use all available sodium hydroxide; the system would not discharge excess sodium hydroxide to the environment. The sodium hydroxide would immediately dissolve and be consumed and would no longer be an active compound in the environment (Garcia, Pers. Comm., 2003). Components of the sodium hydroxide feed system, if needed, would include storage drums, metering pumps, small diameter PVC piping and valves, and a small containment area with a concrete slab and curb, electrical power, and controls (FKAA, 2002).

The WWTP would likely treat wastewater using the sequencing batch reactor with aluminum sulfate (alum) addition and conventional filters, or the upflow sludge blanket filter process with alum addition and conventional filters. Other possible methods of treatment include the modified Ludzak-Ettinger process, the Bardenpho process, and the immersed membrane bioreactor. The WWTP would use two or three parallel process trains, each with equal-sized biological reactor systems, so that if one system were out of service, the remaining train(s) would be capable of treating the system design flow (FKAA, 2002).

Additional treatment would include the addition of metal salts, such as alum, sodium aluminate, ferric chloride, ferrous chloride, ferric sulfate, or ferrous sulfate to reduce the total phosphorus of the wastewater to 1 mg/L. The alum would coagulate excess phosphorus and would be disposed of with the decanted sludge (Garcia, Pers. Comm., 2003). KLWTD would dispose of sludge at landfills or apply it to designated lands in compliance with local, State, and Federal laws.

Components of a liquid metal salt feed system would include storage drums, metering pumps, small diameter PVC piping and valves, a containment area with a concrete slab and curb, electrical power, and controls. The system may also need filtration to produce effluent with TSS of not more than 5 mg/L, remove soluble effluent phosphorus concentrations in excess of 1 mg/L, and remove unsettled phosphorus precipitate discharged from the settling tank. The system would need two automatic backwashing filter units. KLWTD would size the units such that, with one filter out of service, the remaining unit would have sufficient capacity to receive flow equal to not less than 75 percent of the design capacity of the treatment plant (FKAA, 2002).

Effluent disinfection would occur in a disinfection contact tank using one of three methods: calcium hypochlorite tablets or briquettes, commercial grade or on-site generated sodium hypochlorite, or ultraviolet radiation. The system would dissolve calcium hypochlorite, and sodium hypochlorite dissolved in the effluent stream to render potential biological pathogens harmless. The fate of this material would be in the form of dissolved hypochlorite, sodium, and calcium ions in the effluent stream. Ultraviolet irradiation, a passive disinfection treatment process, does not add materials to the effluent. The system would maintain a minimum concentration of 0.5 mg/L total chlorine residual after 15 minutes of contact time at peak hourly flow. In recent years, ultraviolet irradiation has become the preferred method of disinfection due to the hazards associated with the handling and storage of chlorine (Weiler Engineering, 2003). The system would dispose of effluent by gravity flow into two 8-inch-diameter shallow disposal wells, cased and grouted to 60 feet below land surface (bls), with a gravel-packed open hole section from 60 feet to 90 feet bls. Shallow wells would have a capacity of 400 gpm each. KLWTD would also build one 3-inch groundwater monitoring well with a 10-foot bls cased depth and a 30-foot bls total depth. The system would direct recycle flows, including filter backwash and digester decant, back to the head of the treatment plant for processing (FKAA, 2002).

Stabilization of residual bio-solids would occur via the aerobic digestion process. An aeration system in the aerobic digester would mix and aerate the residual bio-solids. Residual bio-solids would return to the plant for treatment. A draw-off pipe located near the base of the tank would remove settled bio-solids and sludge from the digester, and the bio-solids and sludge would be loaded into tanker trucks for disposal. KLWTD would haul the bio-solids and sludge to one of three Monroe County Solid Waste Transfer Stations. The waste would subsequently be trucked from the Transfer Station to the Miami-Dade Water and Sewer Department South District WWTP, in Florida City. KLWTD would enter into an agreement with the accepting municipality prior to WWTP start-up (Shimokubo, Pers. Comm., 2003). Based on the estimated volume of excess bio-solids generated by the wastewater treatment process and a maximum thickened sludge concentration of 2.0 percent in the aerobic digester, sludge hauling is estimated to be required once per month using a 5,000-gallon capacity tanker truck (FKAA, 2002).

The specific solids handling system for the WWTP has not yet been determined. However, evaluation and cost comparison for solids handling systems and disposal alternatives typically favor belt filter press dewatering, Class B lime stabilization, and truck hauling of cake to land application sites as the most favorable treatment and disposal method. Lime stabilization would occur at facilities with capacities less than 0.5 MGD as a batch process using bagged lime. Facilities with capacities greater than 0.5 MGD would integrate automatic lime storage and feed systems (Weiler Engineering, 2003).

In addition to the new treatment plant, other site design elements would include parking and paved access roads, as well as storage space for maintenance equipment, treatment chemicals, and other operations materials. KLWTD would floodproof or elevate the finished floor elevation of buildings subject to occupancy, as well as structures containing electrical equipment or process equipment. KLWTD would operate the facility on a permanent basis and would automate the system based on pre-set vacuum and collection tank levels. The facility would have station controls that are resistant to fire, wind, and flood (FKAA, 2002).

Because the proposed WWTP and service areas are located in the 100-year floodplain, the design provisions of the Monroe County Floodplain Ordinance would apply. Furthermore, because of Federal funding, per Executive Order 11988 (Floodplain Management), as implemented in FEMA's regulations at 44 CFR Part 9, wastewater treatment facilities are considered critical facilities and therefore subject to more stringent flood protection requirements. Specifically, KLWTD would floodproof the WWTP and its critical operating components to the 500-year flood, as outlined at 44 CFR Part 9.11.

KLWTD would construct the WWTP, including sewer line placement, in about 12 months. Construction equipment would likely include a backhoe, trenching machine, bulldozer, crane, pile driver, drilling rig, front-end loader, street sweeper, boring machine, and paving machine. Construction would also require trucks to transport equipment and materials to and from the project sites. The proposed site would also have an area that would be used as a temporary staging area for construction equipment and building materials. The lifespan of the treatment plant would be between 30 and 50 years (FKAA, 2002).

2.3 ALTERNATIVE 3 – NEW WASTEWATER TREATMENT PLANT ON SOUTHERN SITE

Alternative 3 is described in PEA Section 2.3.2 (Centralized Wastewater Treatment Plant Alternative). KLWTD would apply FEMA funding to build a VPS at MM 100.5, and a wastewater transmission system (WTS) extending from the VPS to a new community WWTP at MM 98.0 (Figure 2-6).

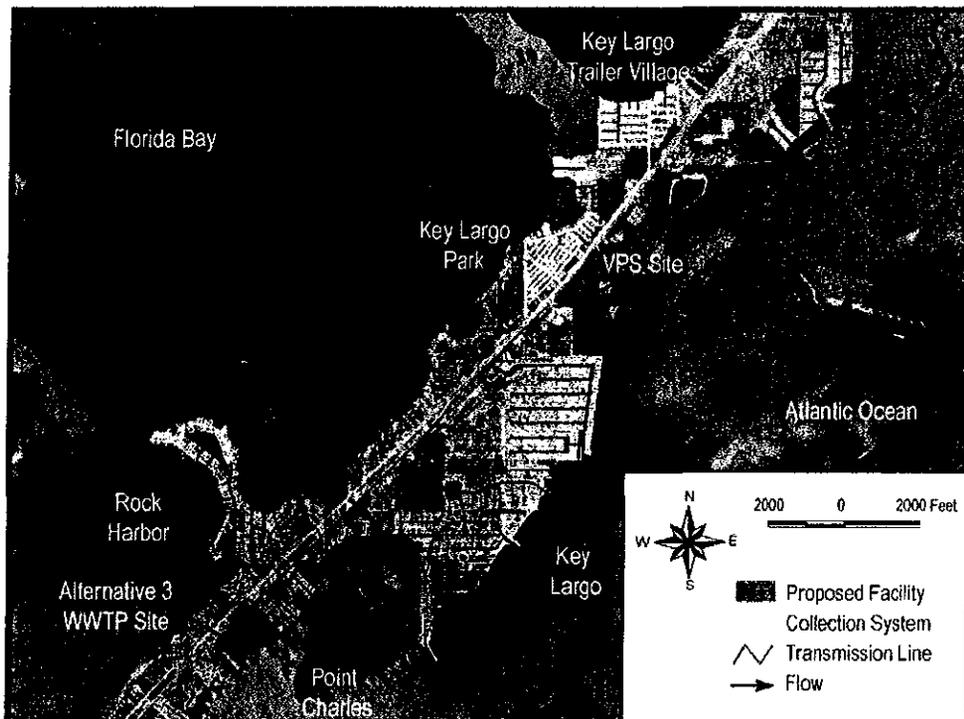


Figure 2-6. Alternative 3 WWTP Site Location Map

The basis of design for this alternative is similar to that used for Alternative 2. The total estimated AADF for the Phase I service area would be 122,300 gpd, with an ultimate plant capacity of 2.25 MGD. As in Alternative 2, about 467 on-site septic systems currently utilized by property owners in KLTV and KLP would be removed. Pursuant to the Florida DOH requirements, each property owner would be responsible for decommissioning and abandoning his/her existing on-site septic systems (FKAA, 2003).

Construction of the WWTP, including sewer line replacement, would take about 12 months. Construction equipment would likely include a backhoe, trenching machine, bulldozer, crane, pile driver, drilling rig, front-end loader, and street sweeper. Trucks would also be used to transport equipment and materials to and from work sites. The lifespan of the treatment plant would be between 30 and 50 years (FKAA, 2002).

2.3.1 Wastewater Collection System

The collection system would be similar to the one described in Section 2.2.1. Separate collection systems would serve the KLTV and KLP areas. (Figure 2-6). As in Alternative 2, a force main of about 4,800 linear feet would convey wastewater from the KLTV to the pump station. KLWTD

would locate the pump station at the proposed Alternative 2 treatment plant site, as described further in Section 2.2.2 of this document. KLWTD would provide service laterals, for connection to the collection system by residents, up to the property ROW line (Figures 2-3a and b). As in Alternative 2, connection to the collection system would be the responsibility of the property owner. The wastewater collection system would not require special plumbing fixtures or electrical connections because existing fittings are adequate.

2.3.2 Vacuum Pump Station

KLWTD would locate the VPS in the southwest corner of the WWTP site as described in Alternative 2 (Section 2.2.1; Figure 2-6). Site design elements would include the new pump station, influent vacuum mains, and discharge yard piping, site access, parking, and landscaping. The building size would be about 500 square feet. Equipment housed in the VPS would include two 430-cfm vacuum pumps, two 320-gpm discharge pumps, a 6,300-gallon collection tank, and an emergency generator (Figure 2-7). Vacuum blowers would create a vacuum of about 16 to 20 inches of mercury or 0.53 to 0.67 atmospheres, capable of extracting wastewater from the vacuum valve pits through the collection mains into the tank. The tank would provide adequate storage to allow the sewage pumps to operate. Vacuum pumps, operating at about 15 horsepower, would be capable of pumping about a 320-gpm peak hour wastewater flow rate, with one pump operational at peak hour flow and the second pump serving as a backup. The vacuum pumps could be increased to 75 horsepower as total head conditions increase in the transmission force main due to flows from future wastewater projects in the Key Largo Wastewater Service District.

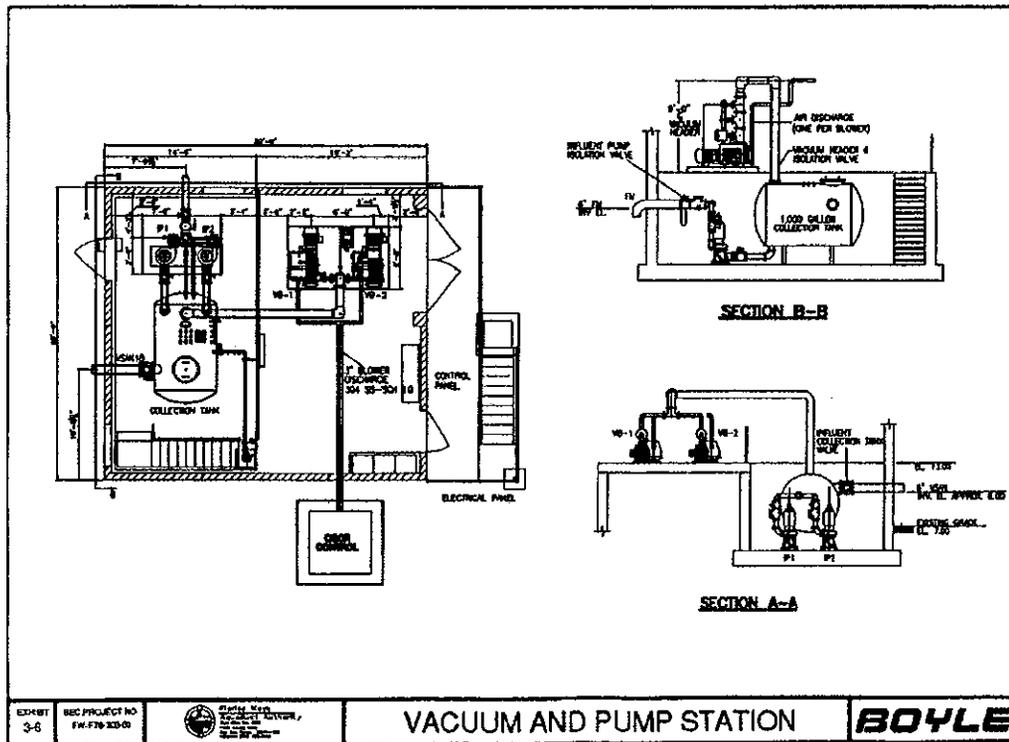


Figure 2-7. Vacuum Pump Station Preliminary Drawings

Wastewater discharge pumps would direct flow accumulated in the vacuum collection tank to the force main transmission system and ultimately to the new WWTP at MM 98.0. Each pump would be capable of about a 320-gpm peak hour wastewater flow. The VPS would utilize submersible pumps since they would be susceptible to inundation. To minimize odors, air discharged from the blower exhaust at the VPS would run through a filter such as an in-ground wood chip bed or packaged iron filings bed before emission. A separate concrete pad external to the station would accommodate odor control equipment for the treatment of air discharged from the collection tank by the VPS blowers. Initially the station would have the capacity for the Phase I service area; additional equipment (vacuum and discharge pumps) may be added in the future to expand service to the entire Key Largo Wastewater Service District.

The building that would permanently house the VPS would consist of a fixed slab-on-grade building. KLWTD would floodproof or elevate the finished floor elevation of buildings subject to occupancy, as well as structures containing electrical equipment or process equipment to provide protection to the 500-year flood. KLWTD would operate the facility on a permanent basis and would automate the system based on pre-set vacuum and collection tank levels. The facility would have station controls that are resistant to fire, wind, and flood (FKAA, 2002).

2.3.3 Wastewater Transmission System

The transmission main would begin at the pump station and run along US-1 to the new WWTP at MM 98.0 (Figure 2-6). The WTS would require about 13,200 linear feet of transmission force main, wastewater pumps, 8-inch force mains, transmission main valving, and appurtenances. Installation of the force main would require excavation of about 158,400 cubic feet of soil. The force main would be located a minimum of 5 feet from the shoulder of the roadway on the southern side of US-1. KLWTD would maintain a minimum separation of 10 feet between the wastewater force main and potable water mains per FDEP regulations, and clearance from other utilities or structures of at least 3 feet would be maintained to avoid interference during construction or maintenance. The force main would have isolation valves (plug valves) placed about 1,000 to 1,500 feet apart for maintenance and troubleshooting. KLWTD would install air release and vacuum valves at high points in the line and downstream of large elevation differences, as needed.

Force main routing is expected to be routine (at least 5 feet from the shoulder and consistent line and grade); however, the US-1 corridor is well developed, and most utilities are routed along this corridor either underground or aboveground on poles. Where necessary, conflicts with existing utilities and structures would be avoided by deflecting the pipeline route. Deflections and adjustments would require additional pipeline fittings, conflict structures, and use of US-1 which would include additional traffic control and roadway restoration. Approvals for working within the US-1 ROW would be obtained from the Florida Department of Transportation. Pipeline construction would follow the ROW of US-1 between MM 100.5 and MM 98. Pipelines would be installed pursuant to typical underground utility installation that includes well-bedded high-grade PVC pipe with at least 36 inches of properly compacted select fill.

2.3.4 Wastewater Treatment Plant Southern Site

Assuming successful acquisition, the wastewater treatment plant would be constructed on currently developed land on the ocean side of Key Largo at MM 98.0 (Figure 2-8). The proposed plant site is about 3.8 acres, and about 200 feet wide by 900 feet long, and is cleared of native vegetation. The site has been developed for boat and vehicle storage and miscellaneous usage. The western property boundary is along US-1; the northern and southern property boundaries border on undeveloped hardwood hammock habitat. The closest private residence is located about 100 feet west of the site. The closest water body to the site is the Straits of Florida, immediately to the east. Florida Bay is about 1,350 feet west of the site.



Figure 2-8. Alternative 3 WWTP Site

The basis of design and activities for building the alternate WWTP would be the same as those detailed for the northern WWTP site (Section 2.2.2).

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

Other technology alternatives were considered but eliminated from further consideration in PEA Section 2.4 (Alternatives Considered but Dismissed). In 2000, Monroe County evaluated a total of 15 sites on Key Largo for the WWTP and VPS and determined that the proposed site (MM 100.5) was most viable, with the MM 98 site as an alternate. Other site options were eliminated from consideration due to market availability issues as described in PEA Section 2.4 (Alternatives considered but Dismissed).

SECTION THREE **Affected Environment and Environmental Consequences**

This section describes environmental consequences of the No Action Alternative and the two action alternatives, and details the potential effects on the project areas' physical, natural, cultural, and socioeconomic resources. Discussion in this document includes direct, indirect, and cumulative effects.

3.1 TOPOGRAPHY, SOILS, AND GEOLOGY

3.1.1 Topography

Affected Environment

The existing environment is similar to that described in PEA Section 3.1.1.1 (Topography; Affected Environment). The highest elevations in the Upper Keys are about 16 to 18 feet above mean sea level (amsl) National Geodetic Vertical Datum (NGVD). Elevation in the service areas is about 3 to 4 feet amsl. The ground elevation is generally flat with a slight increase near US-1 (FKAA, 2002). The WWTP sites are relatively flat with little slope.

Environmental Consequences

Under the No Action Alternative, KLWTD would not receive FEMA funds for wastewater management. KLTV and KLP residents would still need to comply with Florida Statutory Treatment Standards of 2010. It is anticipated that once funding is secured, effects on topography would be similar to those under Alternatives 2 and 3.

Topographic effects of Alternatives 2 and 3 would be limited to temporary surface disturbances during the wastewater collection and transmission system construction. The Alternative 2 site would require site clearing, grubbing, and a possible minor increase elevation to achieve the final building grade. The Alternative 3 site may also require placement of clean suitable fill to achieve the final building grade.

Grading, including stormwater management collection, transmission, and retention requirements, would permanently change the surface topographic elevation of the sites, but this impact is minor because it would not significantly alter the existing flat surface topography of Key Largo.

3.1.2 Soils

Affected Environment

The existing soil conditions are similar to those described in PEA Section 3.1.2.1 (Soils; Affected Environment). Per the Farmland Protection Policy Act, there are no prime farmland soils on Key Largo. The project sites' soil type is the Pennekamp gravelly muck (Figure 3-1). Pennekamp Gravelly muck is a well-drained soil found on tropical hammocks in the Upper Keys. About 10 percent of the surface of this soil is covered with stones that are predominantly 10 to 20 inches in diameter. The seasonal high water table is at a depth of about 3.5 to 5.0 feet and the soils have a moderately rapid permeability (USDA, 1995). This soil type supports the growth of native vegetation. Another soil type in the project areas is the Udorthents-Urban Land Complex, which dominates the KLTV project area and coastal portions of KLP.

SECTION THREE **Affected Environment and Environmental Consequences**

Environmental Consequences

Under the No Action Alternative, KLWTD would not receive FEMA funds for wastewater management. KLV and KLP residents would still need to comply with Florida Statutory Treatment Standards of 2010. It is anticipated that once funding is secured, effects on soils would be similar to those under Alternatives 2 and 3.

Under both Alternatives 2 and 3, construction would disturb soils. KLWTD would use clean suitable fill to achieve the final elevation at the proposed Alternative 2 WWTP site. Fill would consist of fine sand, free of rubble, organics, clay, debris, and any other unsuitable material. In addition, KLWTD would excavate about 1,800 cubic feet of soil material to install vacuum sewer mains, vacuum pits, buffer tanks, and gravity service laterals. Under Alternative 3, KLWTD would excavate an additional 158,400 cubic feet of material for the installation of the WTS. Most of the excess excavated material would be used for backfill, and the remainder would be disposed of in suitable locations off-site.

FEMA recommends the implementation of appropriate best management practices (BMPs), development of an approved Erosion and Sediment Control Plan, and use of conventional site preparation techniques prior to and during construction to protect area water bodies and canals. Planned measures to control sediment from discharge to nearshore surface waters may include, but are not limited to, silt dams, barriers, and straw bales placed at the foot of sloped surfaces. Planned measures to control soil erosion may include, but are not limited to, grassing, mulching, watering, and seeding of on-site surfaces. Site preparation may include grubbing of vegetative roots and topsoil materials, followed by surface compaction and fill placement to attain the required construction elevation.

Applying BMPs and appropriate erosion mitigation measures would limit adverse soil effects during treatment system construction. Pennekamp gravelly muck and Udorthents-Urban land complex soils are well suited for urban development. Overall, no long-term adverse effects on soils are anticipated if site soil excavation, disposal, and erosion potential are managed in accordance with State standards and applicable BMP and erosion control guidelines.

3.1.3 Geology

Affected Environment

The existing geologic environment is similar to that described in PEA Section 3.1.3.1 (Geology). At the project areas, the upper stratum of bedrock is Miami Oolite, a very porous, solution-riddled, carbonate rock. Results of geotechnical test borings conducted at the proposed Alternative 2 WWTP site revealed a surface layer of fine sand with limestone fragments in the upper 1 to 5 feet bls, underlain by light tan medium- to well-cemented limestone to a depth of 25 feet bls. In one soil boring, a layer of peat was encountered at a depth of 2 feet bls. In another soil boring, a 1-foot thick layer of red silty clay was encountered at a depth of 2 feet bls. In addition, a layer of asphalt was encountered at the surface during another soil boring (Nutting Engineers, 2002). Geotechnical investigations have not been conducted at the Alternative 3 site; however, the site geology is expected to be similar.

SECTION THREE **Affected Environment and Environmental Consequences**

Environmental Consequences

Under the No Action Alternative, KLWTD would not receive FEMA funds for wastewater management. KLV and KLP residents would still need to comply with Florida Statutory Treatment Standards of 2010. It is anticipated that once funding is secured, effects on geology would be similar to those under Alternatives 2 and 3.

Both Alternative 2 and 3, with new WWTP construction, would have minor effects on geology. KLWTD would excavate soil to install the sewer mains at elevations 0- to 1-foot amsl NGVD along service area roads, and to remove existing cesspits and septic systems.

WWTP construction would require installation of one groundwater monitoring well and two shallow wells to dispose of treated wastewater effluent. The shallow injection wells would be cased and grouted to 60 feet bls, with a gravel-packed, open-hole section from 60 feet to 90 feet bls (PEA Section 2.3.2.2 [Wastewater Treatment Plant Effluent Disposal Options]). The shallow wells' effects on project site geology are expected to be minor and are discussed in PEA Section 3.1.3.2.2 (Centralized Wastewater Treatment Plant Alternative). The applicant is responsible for obtaining all applicable FDEP permits for Class V shallow injection wells (Table 3-1).

Table 3-1. FDEP Injection Well Forms

Form Title	Form Number
Application to Construct/Operate/Abandon Class I, III, or V Injection well Systems	62-528.900(1)
Certification of Class V Well Construction Completion	62-528.900(4)
Certification of Monitor Well Completion	62-528.900(10)

As discussed in PEA Section 3.1.3.2.2 (Alternative 2), aside from the potential impacts from injection well use, WWTP construction is not expected to adversely affect the project sites' geology. The environmental consequences to the geologic environment with shallow injection well use are expected to be limited to the effects of injection of relatively fresh effluent into brackish-to-saline water aquifers, which could affect the rate of limestone solution (dissolving). In mainland Florida, sinkhole development, especially in areas of declining water tables, has been a severe engineering problem. However, on Key Largo, the water table is usually about 5 feet below the ground surface, and water tables have not been declining (Nutting Engineers, 2002). Therefore, new and/or expanded sinkholes are not likely to result from either Alternative 2 or 3.

3.2 WATER RESOURCES AND WATER QUALITY

3.2.1 Groundwater

Affected Environment

The affected groundwater is described in PEA Section 3.2.2.1 (Groundwater). Throughout the project areas, the water of the Biscayne Aquifer ranges from brackish to saline and is of little potential utility except as input for desalination systems. Freshwater lenses have not been

SECTION THREE **Affected Environment and Environmental Consequences**

documented for the Key Largo area. Groundwater levels at the treatment plant site are usually about 5 feet below the existing ground surface (Nutting Engineers, 2002). Key Largo has 111 active shallow Class V injection wells throughout the island (U.S. Army Corps of Engineers/Florida DCA, 2003). The existing shallow injection wells are for on-site wastewater nutrient reduction systems (OWNRS).

Environmental Consequences

Under the No Action Alternative, KLWTD would not receive FEMA funding for wastewater management. Although service area residents would still need to comply with Florida Statutory Treatment Standards by 2010, removal of nutrient and pathogen inputs to the shallow groundwater of Key Largo would not occur until a funding source is secured. Therefore, local groundwater quality improvements would be delayed under the No Action Alternative.

Under both Alternatives 2 and 3, KLWTD would build a new WWTP to meet Florida Statutory Treatment Standards of 2010. Treated effluent would still have some nutrients, even under conditions that meet the Florida Statutory Treatment Standards. However, by removing the septic and cesspool systems, Alternatives 2 and 3 would reduce the overall nutrient and pathogen inputs to the shallow groundwater of the island, and overall local groundwater quality would improve. An analysis performed for a representative service area of the Keys demonstrated that wastewater treated to AWT standards would reduce the TN and TP concentrations in treated effluent by about 92 and 86 percent, respectively (PEA Appendix D [Water Quality Improvements Analysis]). In comparison, wastewater treated by septic systems reduces TN and TP concentrations by only 4 and 15 percent, respectively (Kruczynski, 1999).

3.2.2 Inland, Nearshore, and Offshore Waters

Affected Environment

The project area surface water resources include (1) canals for boat access to marinas and residential developments; (2) stormwater runoff to ditches and drainage systems in developed areas; and (3) nearshore and offshore marine waters.

3.2.2.1 Inland Waters

Inland waters in the project areas include artificial canals and enclosed water bodies, as described in PEA Section 3.2.3.1.1 (Inland Waters). About 10 artificial water bodies are in the KLTV project area. No artificial water bodies are in the KLP project area.

During a review of Outstanding Florida Waters in the Florida Keys, canals and other confined water bodies showing signs of eutrophication were listed as "Hot Spots" (refer to PEA Appendix C [Hot Spot Locations]). Monroe County (2000) ranked the KLTV as the second and fourth most critical "hot spots" believed to contribute to water quality degradation in the Upper Keys and Keys-wide, respectively. KLP is ranked 15th in the Upper Keys and 27th Keys-wide.

3.2.2.2 Nearshore and Offshore Marine Waters

Kruczynski (1999) and Szmant and Forrester (1996) determined that, in general, nutrient pollution emanating from the Keys has greater nearshore effects than offshore effects due to

SECTION THREE Affected Environment and Environmental Consequences

dilution by tides and currents. Offshore areas in the Middle Keys had higher nutrient levels than offshore areas in the Upper Keys. The higher nutrient levels were attributed to the relatively high nutrient-content of Florida Bay (Kruczynski, 1999; Szmant and Forrester, 1996).

Nearshore and offshore marine waters are described in PEA Section 3.2.3.1.2 (Nearshore and Offshore Marine Waters). The Florida DOH collects beach water quality data from the John Pennekamp State Park water quality monitoring station on the ocean side of Key Largo (MM 105). Located about 2.4 miles northeast of the proposed WWTP site, it is the closest monitoring station to the service areas. Since August 2000, five health advisories/warnings have been issued (DOH, 2003). Health advisories are issued by DOH when sampling results indicate that contact with the water at that site may pose increased risk of infectious disease, particularly for susceptible individuals. A poor rating is measured as 104 or greater of *Enterococcus* sp. or 400 or greater fecal coliform organisms per 100 milliliters of marine water (DOH, 2003). A poor rating requires re-sampling before issuing a health advisory. On six other occasions between August 2000 and June 2003, water at this site received a poor water quality rating, although a health advisory was not issued (DOH, 2003). No trends were observed regarding correlation with a particular time of year, or with poor water quality ratings for either fecal coliform or *Enterococcus* sp. categories.

The Water Quality Monitoring Project for the Florida Keys National Marine Sanctuary's Water Quality Protection Program maintains a monitoring station (Station 220) about 3 miles northeast of Key Largo, in Hawk Channel (Southeast Environmental Research Center [SERC], 2003). Established by the Environmental Protection Agency (EPA) in 1995, the project objective is to characterize Keys water quality status and trends. Although surface TN concentrations recorded at Station 220 between 1995 and 2003 fluctuate, they averaged 0.146 parts per million (ppm); these levels are less than the Keys-wide average of 0.176 ppm recorded over the same period. Surface TP concentrations recorded at Station 220 from 1995 to 2003 also fluctuate, but they averaged 0.007; these levels are comparable to the Keys-wide average 0.007 ppm recorded over the same time period (SERC, 2003). It is difficult to correlate these trends directly with nutrient loads from KLTV and KLP because of the distance of Station 220 from the service areas.

3.2.2.3 Stormwater

US-1 represents the topographic divide for each island, whereby lands on the bay side of US-1 drain mainly toward Florida Bay and lands on the ocean side of US-1 drain toward the Florida Straits (Monroe County, 2001). Stormwater runoff from roadways, bridges, driveways and yards, rooftops, and parking lots contributes to nearshore water nutrient loading. On-site wastewater treatment systems overflow during storm events and contribute nutrient pollution and fecal contamination to stormwater runoff. Stormwater management and water quality improvement projects have not been conducted within the project areas. However, a project to eliminate nuisance flooding is being planned for KLTV.

Environmental Consequences

Under the No Action Alternative, effects on surface water quality near Key Largo would likely continue due to nutrient and pathogen inputs from the island's on-site septic systems. Under this alternative, FEMA would not fund this wastewater management project. Service area residents would still need to comply with Florida Statutory Treatment Standards of 2010. Once FKAA

SECTION THREE **Affected Environment and Environmental Consequences**

secures funding, effects on surface waters would likely be similar to those under Alternatives 2 and 3.

Under both Alternatives 2 and 3, KLWTD would build a new WWTP to meet Florida Statutory Treatment Standards of 2010. Alternatives 2 and 3 would remove septic and cesspool systems from the service areas and would reduce the overall nutrient and pathogen inputs to inland, nearshore and offshore waters near the project area. Local water quality would improve. As described in PEA Section 3.2.3.2.2 (Environmental Consequences; Inland, Nearshore and Offshore Waters), improvements to water quality under Alternatives 2 and 3 would incrementally reduce wastewater TN and TP loadings on the order of 92 and 86 percent, respectively (PEA Appendix D). The effluent would be treated to the AWT standard, but would still contain some nutrients.

Alternatives 2 and 3 eliminate the nutrient pollution and fecal contamination of canal and nearshore waters caused by onsite systems in the service areas overflowing during storm events. Implementation of either alternative would not adversely affect stormwater flow quantity or quality, and is expected to have generally positive effects on the stormwater quality.

Under Alternatives 2 and 3, KLWTD would prepare and fully implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would include the use of appropriate BMPs, as required by FDEP National Pollutant Discharge Elimination System (NPDES) requirements to protect the project areas' surface waters. Planned measures and BMPs to control sediment from discharge to surface waters include, but are not limited to, silt dams, barriers, and straw bales placed at the foot of sloped surfaces.

3.2.3 Floodplains and Wetlands

Affected Environment

3.2.3.1 Floodplains

Executive Order (EO) 11988 (Floodplain Management) requires Federal agencies to minimize floodplain occupancy and alteration. Application of the EO 11988 Eight-Step Decision-Making Process, per 44 CFR Part 9, ensures that Federally funded projects comply with EO 11988. By its nature, the NEPA compliance process involves the same basic decision-making methods to meet its objectives as the Eight-Step Decision-Making Process. Therefore, FEMA has applied the Eight-Step Decision-Making process through implementation of the NEPA process.

PEA Section 3.2.4.1.1 (Floodplains) describes the affected environment related to floodplains. According to the National Flood Insurance Program Flood Insurance Rate Map, KLTV and KLP are in the FEMA-designated Zones AE and VE (a storm-surge hazard zone) (12087C1006G, FEMA 1995). The Alternative 2 WWTP site is located in the FEMA-designated Zones AE and X (12087C1006G; FEMA 1995). The Alternative 3 WWTP site is entirely in the FEMA-designated Zone AE (12087C1004G, FEMA 1995) (Figure 3-2). The highest elevation within the project areas is the centerline of US-1; the remainder of the land is at elevations less than 10 feet NGVD.

SECTION THREE **Affected Environment and Environmental Consequences**

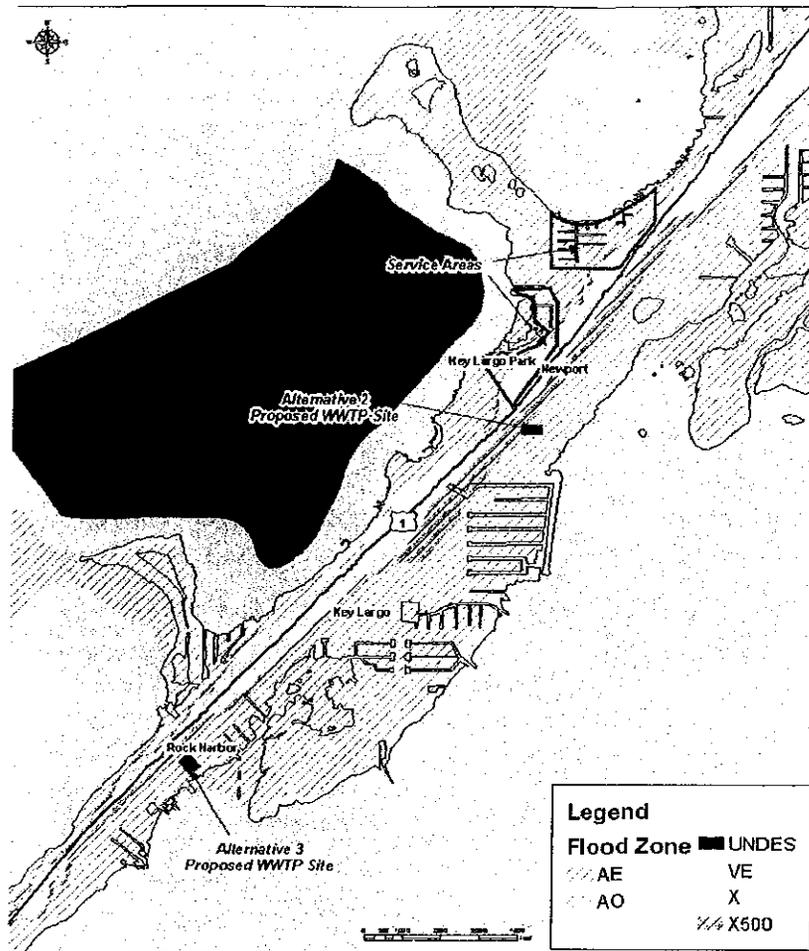


Figure 3-2 Project Area Floodplains

3.2.3.2 Wetlands

PEA Section 3.2.4.1.2 (Floodplains and Wetlands; Affected Environment-Wetlands) discusses wetland communities. Under EO 11990 (Wetland Protection), Federal agencies must minimize the destruction, loss, or degradation of wetlands and preserve and enhance their natural and beneficial values. FEMA applies the Eight-Step Decision-Making Process, required by 44 CFR Part 9, to comply with EO 11990, as described above.

A Biological Assessment (BA) was completed on October 25, 2000, by URS and the Monroe County Department of Marine Resources for the Alternative 2 site at MM 100.5. Field investigations were conducted by two URS biologists on April 24, 2003, to identify wetlands within the Alternative 3 project site at MM 98. No freshwater wetlands were identified within the WWTP project sites (Figure 3-3). The nearest wetland area to the Alternative 2 proposed WWTP site consists of mangroves bordering the ocean side, about 0.25 mile to the east. Fringing mangroves may occur along small ditches or swales extending into upland forests, but no wetland species extend near the vicinity of the site. The Alternative 3 site is completely developed but is bordered on its northern and southern sides by undeveloped lands that have coastal fringe wetlands. Field investigation photographs are in Appendix C.

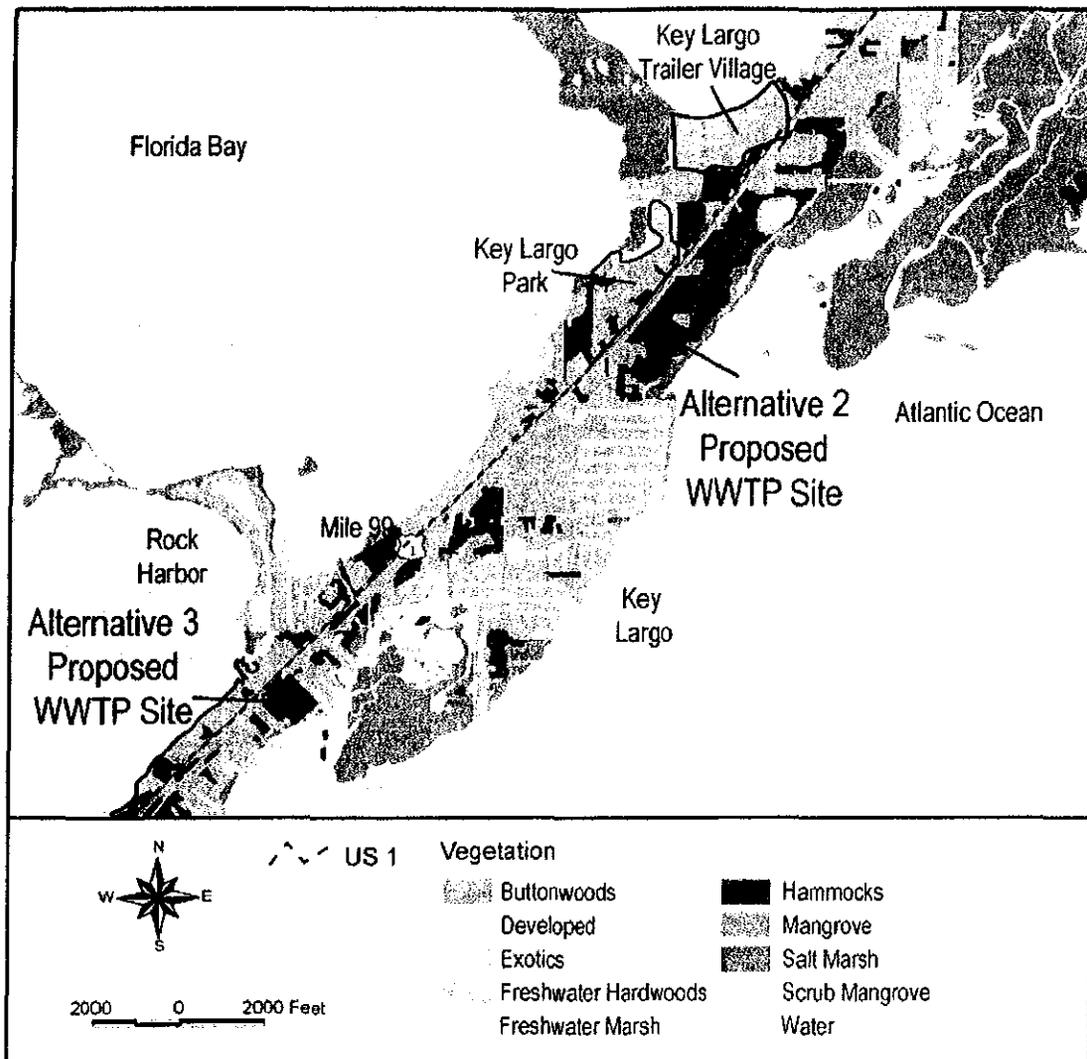


Figure 3-3 Project Area Vegetation (McNeese, 1998)

Environmental Consequences

Under the No Action Alternative, effects on floodplains and wetlands would ultimately be similar to Alternative 2 and 3. The No Action Alternative would have no notable effect on the floodplain. Without FEMA funding, water quality degradation would likely continue until KLWTD upgrades systems with another funding source; however, there would be negligible effects to coastal wetlands. In the absence of Federal funding, EO 11988 and 11990 would not apply. Wastewater system design would have to comply only with the Monroe County’s Floodplain Ordinance and be protected to the 100-year-flood level. Specific floodplain ordinance provisions are further described in PEA Section 3.2.4.2.1.

As discussed in PEA Section 3.2.4.2.2 (Centralized Wastewater Treatment Plant Alternative), implementation of Alternatives 2 and 3 would not have notable effects on floodplains. Since WWTPs are considered critical facilities, KLWTD would protect the plants and critical operating components to the 500-year flood, through elevation or floodproofing, to protect the federal

SECTION THREE Affected Environment and Environmental Consequences

investment from flood damages, per EO 11988 as outlined at 44 CFR Part 9.11. Because much of the Keys is in the 100-year floodplain, there are usually no practicable alternatives to siting wastewater facilities outside the floodplain. There is public concern that the proposed WWTP under Alternatives 2 and 3 would lead to further floodplain development by introducing key infrastructure, which is often linked to additional development. However, Keys development is not controlled by the addition of key infrastructure, but instead by Monroe County's Rate of Growth Ordinance (ROGO) permit allocation system, as described further in PEA Section 3.10 (Land Use and Planning). KLWTD proposes to build a wastewater treatment system in the Keys to effectively treat existing wastewater flows and comply with the Florida Statutory Treatment Standards of 2010; the improvements are not intended to introduce or support floodplain development. If growth and development in the floodplain occurring after implementation of either alternative, it would be the result of established county planning and would not be directly related to the proposed wastewater project. Given the above points, FEMA did not conduct an evaluation of secondary effects on floodplains with regard to the potential for increased development under the alternatives. It should be noted that KLP and KLTV are mostly built out, so additional development is unlikely (refer to Table 2-1).

No direct impacts on wetlands are anticipated, since there are no wetlands at either proposed WWTP site or along service area roads. Accordingly, coastal wetlands near the project sites would not be notably affected by construction.

As stated in PEA Section 3.2.2.2 (Inland, Nearshore and Offshore Waters; Environmental Consequences) the use of appropriate construction BMPs and development and full implementation of an FDEP- or South Florida Water Management District -approved Erosion and Sediment Control Plan are recommended prior to and during construction to protect area water bodies and wetlands. Planned measures to control sediment from discharge to nearshore surface waters include, but are not limited to, silt dams, barriers, and hay bales placed at the foot of sloped surfaces.

3.3 BIOLOGICAL RESOURCES

As in much of the Keys, humans have significantly altered the lands and waters within the Key Largo project area through development activities, including clearing, grading, dredging, and filling. Of the six major Keys-wide native (natural) terrestrial communities (i.e., pine rocklands, tropical hardwood hammocks, mangroves, salt marsh, freshwater systems, and dunes/coastal ridges) (further described in PEA Section 3.3.1.1, Terrestrial Environment), only one natural community (habitat) type, tropical hardwood hammocks, exists within the project sites. Two other habitat types, mangroves and salt marshes, exist near the proposed service areas. Of the four natural marine communities (seagrass beds and sand flats, coral reefs, hardbottom, and sandy bottom) that exist in the Keys, only coral reefs are not present near the project sites. Section 3.3.1 of this document and PEA Section 3.3 (Biological Resources) further discuss these terrestrial and marine habitats.

Per the Endangered Species Act (ESA) of 1973, URS completed a BA on October 25, 2000, in coordination with Monroe County, for the Alternative 2 WWTP site at MM 100.5. The BA fieldwork was done between June 29 and October 11, 2000. Although the MM 100.5 parcel covers about 22 acres, only 2.6 acres are needed for WWTP siting. Consequently, the study focused on the proposed construction area. The study included a census of all trees over 4 inches

SECTION THREE **Affected Environment and Environmental Consequences**

in diameter at breast height (DBH), all individuals (including seedlings) of State- or Federal-listed threatened or endangered plant species, and all woody plants protected under Monroe County's Land Development Regulations (Section 9.5) to determine presence and habitat suitability of special status species. The MM 100.5 site BA is in Appendix H.

On December 18, 2000, FEMA requested a formal consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the ESA because of the potential to impact Federally listed species. Based on the BA information provided, on June 11, 2001, the USFWS issued a Biological Opinion (BO) for the proposed construction on the Alternative 2 WWTP site. The BO is provided in Appendix I.

Similarly, URS completed a reconnaissance-level field survey of the Alternative 3 WWTP site at MM 98.0 on March 24, 2003, to verify vegetation type boundaries based on reviews of literature and photographs. The field survey photographs are in Appendix C.

Affected Environment

3.3.1 Terrestrial Ecosystem

Key Largo is highly developed. Pockets of tropical hardwood hammocks are scattered throughout the island. The Florida Keys Wetlands Advance Identification (ADID) mapping project shows the KLTV and KLP service areas as a developed land use cover; managed and ornamental vegetation dominate the service areas (McNeese, 1998; Figure 3-3).

The 2.6-acre construction area for the Alternative 2 WWTP is roughly L-shaped and is located at the southwest end of the 22-acre triangular parcel of undeveloped, Monroe County-owned land. This site is on the ocean side of Key Largo at MM 100.5 (Figure 2-2 and 2-4). The northwestern property boundary is along US-1, and the southern property boundary is north of an existing FCAA maintenance facility and undeveloped land. The 22-acre parcel has a hardwood hammock that qualifies as "high-quality hammock" under the Monroe County Land Development Regulations Environmental Design Criteria (URS, 2000). The proposed construction area is the most disturbed portion of the 22-acre parcel, showing evidence of clearing, debris dumping, and invasion by exotic (non-indigenous) plant species.

The Alternative 3 WWTP site is rectangular and covers about 3.8 acres. It is bounded by US-1 to the northwest, the Florida Straits to the southeast, and hardwood hammock to the northeast and southwest. The site is cleared, grubbed, and developed; it is presently used for boat and vehicle storage and miscellaneous uses. Boat repairs are done on site. Weedy vegetation is along the maintained US-1 ROW next to the property and areas along the property boundary. Access to the property shoreline was restricted due to dense mangrove growth on adjacent properties.

The roughly 2.5-mile Alternative 3 WTS corridor is within and/or next to the US-1 ROW, on the east (ocean) side of the roadway. FCAA would locate the force main a minimum of 5 feet from the shoulder of the roadway. Much of the vegetation next to the roadway consists primarily of grasses and weeds typical of maintained Keys ROWs. Lands next to the ROW are primarily developed with commercial or residential uses. From Atlantic Avenue (MM 99.5) to the service areas, the WTS corridor consists of dense commercial development. Vegetation on these parcels consists of common landscape plants and trees. An 8-foot wide bicycle/pedestrian trail is located

SECTION THREE **Affected Environment and Environmental Consequences**

along the transmission corridor, extending from Atlantic Boulevard (MM 99.5) past Central Avenue (MM 100.5), the southern boundary of the VPS site.

A discussion of several habitat types within or near the project areas follows.

3.3.1.1 Pine Rocklands and Tropical Hardwood Hammocks

PEA Section 3.3.1.1.1 discusses pine rocklands and tropical hardwood hammocks. Pine rocklands are limited in distribution throughout the Upper and Middle Keys and are not present within the project sites (Figure 3-3). Tropical hardwood hammocks exist on the Alternative 2 WWTP site. In addition, tropical hardwood hammocks border the Alternative 3 VPS, WTS, and WWTP site.

The Alternative 2 WWTP site is part of a 22-acre hardwood hammock that the Florida Department of Environmental Protection Conservation and Recreation Lands (CARL) Program had targeted for acquisition. Gumbo limbo (*Bursera simaruba*), poisonwood (*Metopium toxiferum*), pigeon plum (*Coccoloba diversifolia*) and willow busic (*Bumelia salicifolia*) dominate the canopy vegetation at this site. Exotic vegetation, including white leadtree (*Leucaena leucocephala*), Brazilian pepper (*Schinus terebinthifolius*), and sapodilla (*Manilkara zapota*) dominate approximately 0.41 acre along the southern fringe of the proposed 2.6-acre construction area. This fringe is about 500-feet along the common property line with the FCAA maintenance facility, which was previously cleared for a road and fence easement. The remaining 2.2 acres are higher quality hardwood hammock habitat with fewer exotic plants. The BA (Appendix H) provides a more detailed discussion of this site and a full listing of vegetation observed.

As stated above, the hardwood hammocks at the Alternative 2 WWTP site qualify as “high-quality hammock” under the Monroe County’s Land Development Regulations Environmental Design Criteria (see attachment to the BA, Appendix H). These county regulations require that 80 percent of the hardwood hammock within a proposed construction site be protected in its natural state (URS and Monroe County, 2000).

The Alternative 3 WWTP site is completely developed, and no hardwood hammock habitat is on site. However, the site is bordered on the northeast and southwest by low quality hardwood hammock altered by vegetation removal, and to the south by a forested fringe of coastal wetland vegetation with an open connection to the Florida Straits. Exotic plant species, such as Brazilian pepper and white leadtree are limited to roadside margins and a few individuals in the interior of the property.

Undeveloped lands next to the Alternative 3 WTS corridor are characterized as a degraded hardwood hammock affected by habitat fragmentation and infestation by invasive, exotic plant species. Species observed in these areas included gumbo limbo, pigeon plum, poisonwood, and Brazilian pepper. The Alternative 3 VPS was previously described under Alternative 2.

3.3.1.2 Mangrove Forests and Salt Marshes

Throughout the Keys, mangroves dominate most coastal vegetation communities. Mangroves exist along the edges of shorelines, bays, and lagoons, and on overwash areas throughout the Keys. PEA Section 3.3.1.1.2 (Mangroves) further discusses mangroves.

SECTION THREE **Affected Environment and Environmental Consequences**

Mangroves and salt marshes are not present within the project sites (Figure 3-3). However, fringing mangroves dominate shorelines near the Alternative 2 and 3 WWTP sites, and large mangrove communities border both the KLP and KLTV service areas (Figure 3-3). Three mangrove tree species—red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*) and white mangrove (*Laguncularia racemosa*)—are the dominant components.

A small salt marsh is located near the KLP service area (Figure 3-3). Salt marshes, which are not well developed in most of the Keys, usually consist of mostly single-species stands of black needlerush (*Juncus roemerianus*) and salt marsh cordgrass (*Spartina alterniflora*). Other common Keys salt marsh species include marsh elder (*Iva frutescens*), saltbush (*Baccharis halimifolia*), seaside goldenrod (*Solidago sempervirens*), salt grass (*Distichlis spicata*), sea purslane (*Sesuvium portulacastrum*), and mangroves. Sand or limerock areas at the upper end of the tidal zone may have sea ox-eye (*Borrhichia arborescens*), saltwort (*Batis maritima*), seablight (*Suaeda linearis*), and sea lavender (*Argusia gnaphalodes*).

3.3.1.3 Freshwater Systems

There are no freshwater wetlands at the project sites (Figure 3-3).

3.3.1.4 Dunes and Coastal Ridges

Dunes and coastal ridges are not present within the project sites (Figure 3-3).

3.3.2 Aquatic Ecosystem

Marine habitats are present within the artificial canals and marine waters around the Key Largo project sites. Seagrasses and hardbottom communities mixed with seagrasses dominate marine habitats near the project sites (Figure 3-4). A discussion of individual marine community types is below.

As described in PEA Section 3.3.3.1 (Special Status Species), essential fish habitat (EFH) present near the project sites consists of estuarine seagrass, marine live/hardbottom, mangrove, and marine water column. In the Keys, the Gulf of Mexico (GMFMC) and South Atlantic (SAFMC) Fishery Management Councils regulate fisheries. A compiled list of the fishery species under GMFMC and SAFMC management is in Appendix F.

3.3.2.1 Seagrass Beds and Sand Flats

Seagrass communities are the most common Keys marine community type. Interacting factors, including sediment depth, water quality, water depth, and current velocity, influence distribution of seagrass communities (Florida Marine Research Institute [FMRI], 2000). When seagrass meadows in low-energy environments are disturbed by high energy influences, seagrass growth can become patchy with areas of sandflats (FMRI, 2000). Keys seagrass communities are dominated by turtle-grass (*Thalassia testudinum*) and manatee-grass (*Syringodium filiforme*), with shoal-grass (*Halodule wrightii*) becoming dominant in areas with high nutrient loads (Fonseca et al., 1998).

Seagrass communities dominate both the western, bay side of the island and the eastern, ocean side near the project sites (Figure 3-4). This community type exists alone or in combination with

SECTION THREE **Affected Environment and Environmental Consequences**

hardbottom communities. PEA Section 3.3.1.2.1 (Seagrass Beds and Sand Flats) further describes the affected environment for seagrass beds and sand flats

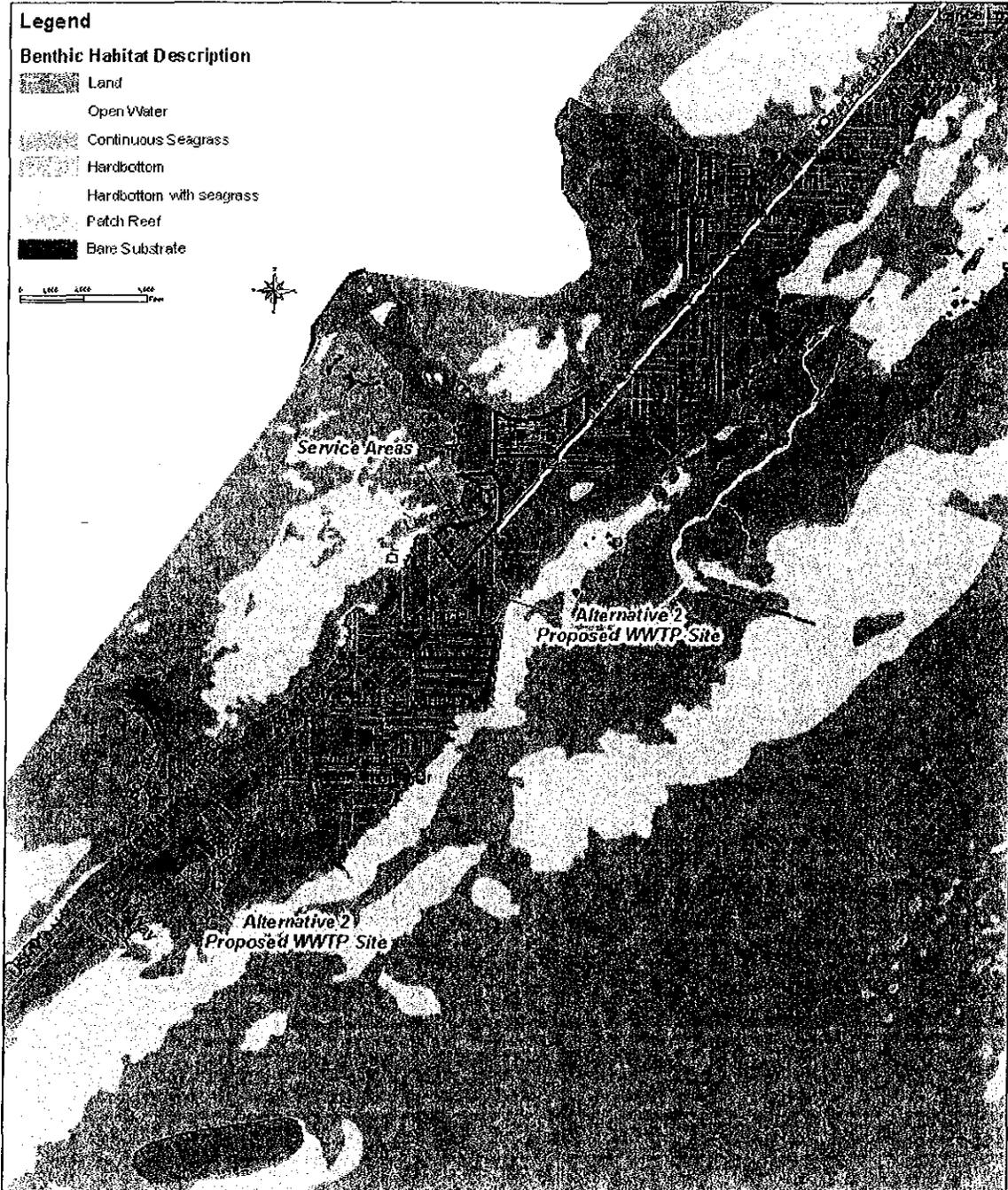


Figure 3-4. Project Area Benthic Habitats

3.3.2.2 *Coral Reefs*

In the Upper Keys, the reef tract forms an almost continuous community that extends from the south side of Hawk Channel at Caryfort Reef to Crocker Reef in the south. The reef tract is about 7 miles southwest of the proposed service areas and WWTP project sites. This area also has

many patch reefs and well-developed bank reefs (FMRI, 2000). Patch reefs exist seaward of Hawk Channel and inshore of the bank reefs, at depths of about 6 to 30 feet (Myers and Ewel, 1990). The closest patch reef to the proposed service areas and the Alternative 2 WWTP site is Mosquito Bank, about 3.7 miles to the southwest. The closest patch reef to the Alternative 3 WWTP site is in an unnamed area about 3.3 miles to the southwest (FMRI, 2000).

3.3.2.3 Hardbottom

Hardbottom habitats are solid, flat to low-relief, rock substrate composed of rock and/or rubble that is either exposed or covered with a thin layer of sediment (FMRI, 2000). Nearshore hardbottom is the dominant marine community throughout the Keys. Hardbottom communities are characterized by their proximity to shore, shallow depth, and visual dominance of octocorals (Chiappone and Sullivan, 1994). These communities exist within 1.25 miles of shore on either side of the Keys at depths of about 3 to 16 feet (Chiappone and Sullivan, 1996).

Hardbottom habitat is mixed with seagrass communities on both the bay and ocean sides of Key Largo near the project sites (Figure 3-4). PEA Section 3.3.1.2.3 (Hardbottom) further describes the affected environment for hardbottom communities.

3.3.2.4 Sandy Bottom

Bare bottom communities, over either calcareous muds and/or sands, lack algae and seagrasses. The associated flora and fauna is sparse and typically dominated by sponges, small corals, and calcareous algae (Chiappone, 1996).

Sandy bottom communities exist throughout the artificial waterways on Key Largo (see Figure 3-4). PEA Section 3.3.1.2.4 (Sandy Bottom) further describes the affected sandy bottom.

Environmental Consequences

3.3.2.5 Alternative 1 – No Action Alternative

Under the No Action Alternative, KLWTD would not use FEMA funds to implement improved wastewater management activities to meet the new Florida Statutory Treatment Standards of 2010. Without FEMA funds, the KLWTD would have to get other financing, which would delay wastewater treatment improvements. Adverse effects on nearshore marine ecosystems would continue as a result of septic tank and cesspools effluents, which continue to contribute to the eutrophication of nearshore marine waters. Once comprehensive wastewater treatment improvements are made, nearshore marine ecosystem benefits would be similar to those of Alternatives 2 or 3. Effects on upland ecosystems would depend mostly on the chosen WWTP locations.

3.3.2.6 Alternative 2 – New Wastewater Treatment Plant on Northern Site

Site preparation, including clearing and grubbing, would eliminate up to 2.6 acres of hardwood hammock at the proposed WWTP construction site. No other areas of this 22-acre parcel would be cleared. Construction activities would require authorization in the form of two Environmental Resource Permits (ERPs): one from the FDEP for stormwater-related features, and one from the Monroe County Growth Management Division.

SECTION THREE **Affected Environment and Environmental Consequences**

Section 9.5-345 of Monroe County's Land Development Regulations and the USFWS overlapping BO for the Alternative 2 WWTP site, which require minimizing development environmental effects, would regulate proposed construction on the Alternative 2 site. The following outlines adverse effect minimization measures mandatory for legal compliance (see BA in Appendix H and BO in Appendix I for further conservation and mitigation measure details). WWTP construction would be clustered into the lowest-quality portion of hardwood hammock on the 22-acre parcel. The undeveloped portion of the parcel would serve as a mitigation area for transplanting protected species, planting hardwood hammock species, and removing exotic and nuisance vegetation. The KLWTD would restore 2.6 acres of hardwood hammock and conserve the parcel's remaining 19.4 acres in an undeveloped conservation easement in perpetuity. Native hardwood hammock tree species, with a DBH greater than 3.5 inches would be transplanted or replaced within the remaining 19.4 acres or into landscaped areas. Finally, siting the WWTP next to the existing FKAA facility also serves as a hardwood hammock mitigation measure. Alternative 2 project implementation, as proposed, along with ERP, Monroe County Land Development Regulation, and USFWS BO compliance, before and during construction activities, is not expected to result in significant adverse effects to terrestrial ecosystems.

Although no direct effects on aquatic ecosystems would occur under Alternative 2, wastewater treatment improvements would indirectly affect the nearshore marine waters near KLTV and KLP. Treating wastewater to meet Florida Statutory Treatment Standards of 2010 would improve nearshore marine waters by reducing TN and TP loadings by about 82 and 86 percent, respectively (see PEA Appendix D [Water Quality Improvement Analysis]). Accordingly, reducing nutrient and pathogen loading would incrementally benefit all aquatic communities in the marine ecosystem dependent on good water quality; as further described in PEA Sections 3.2.3.1.2 (Nearshore and Offshore Marine Waters); 3.3.1.2 (Aquatic Environment); and 3.3.2 (Environmental Consequences). Coral reefs are located over 3 miles from the service areas and the Alternative 2 WWTP site in Hawk Channel. Removal of septic and cesspool systems would not directly benefit these coral reef systems due to the location of the service areas on the bayside of Key Largo and to the distance to the reefs. Likewise, the construction and operation of a WWTP at the Alternative 2 site would not have an effect on the coral reefs due to the distance between them. As further described in PEA Section 3.2.3.1.2 (Nearshore) and Offshore Marine Waters, recent studies have found a decreasing gradient in nutrients from nearshore to off-shore waters.

3.3.2.7 *Alternative 3 – New Wastewater Treatment Plant on Southern Site*

The effects of Alternative 3 on aquatic ecosystems would be similar to those of Alternative 2. The Alternative 3 WWTP site is completely developed, and WWTP construction would not require additional clearing or grubbing. Trenching activities from the proposed MM 100.5 VPS to the proposed WWTP site would occur in the mowed grass areas of US-1 ROW. After construction, this area would be seeded with grass and allowed to revegetate. The VPS would be sited in the southwest corner of the Alternative 2 WWTP site, immediately next to the FKAA facility. Construction would require clearing and grubbing of a small exotic plant -dominated vegetation area, as described under Alternative 2. Monroe County Land Development Regulations may require some hardwood hammock mitigation measures similar to those described under Alternative 2.

SECTION THREE **Affected Environment and Environmental Consequences**

3.3.3 Special Status Species

The ESA requires Federal agencies to consider effects of their actions on Federally threatened and endangered species and their designated critical habitats, and to take steps to conserve and protect these species and their habitat. Federal agencies must also comply with the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 et seq.), which requires the EFH identification for Federally managed fishery species and the implementation of measures to conserve and enhance this habitat per the Sustainable Fisheries Act (SFA) Public Law 104-297. PEA Section 3.3.3.1 (Special Status Species, Affected Environment) describes special status species.

In the State of Florida, wildlife and plants are regulated by two separate agencies. The Florida Fish and Wildlife Conservation Commission (FFWCC) regulates wildlife within the jurisdiction of the State of Florida under Chapter 68A-1.004, Florida Administrative Code (FAC). The Florida Department of Agriculture and Consumer Services regulates protected plant species under the Preservation of Native Flora of Florida Act (Chapter 5B-40, FAC).

Monroe County, through its Land Development Regulations, protects wildlife and protected plant species by requiring conservation and enhancement of environmentally sensitive lands. Hardwood hammocks are protected under Monroe County's Land Development Regulation Section 9.5-345 (Environmental Design Criteria), which is an attachment to the Biological Assessment in Appendix H. Monroe County has designated several plant species as Regionally Important (RI) plants.

Affected Environment

URS did biological investigations for both Alternative WWTP sites. As reported in the BA, biologists did not observe any plant or animal species listed as endangered or threatened by the USFWS on the Alternative 2 WWTP site (Appendix H), although hardwood hammock is suitable habitat for the Schaus' swallowtail butterfly (*Heraclides aristodemus ponceanus*), Stock Island tree snail (*Orthalicus reses*), and eastern indigo snake (*Drymarchon corais couperi*) (URS and Monroe County, 2000.) USFWS has listed both the Stock Island tree snail and the eastern indigo snake as threatened and the Schaus' swallowtail butterfly as endangered.

Biologists observed several State-listed threatened or endangered species at the Alternative 2 WWTP site. The threatened plant species included spicewood (*Calyptanthes pallens*), prickly pear (*Opuntia stricta*), blackbead (*Pithecellobium keyensis*), red ironwood (*Reynosa septentrionalis*), and spiny greenbrier (*Smilax havanensis*). The endangered species included cinnamon bark (*Canella winterana*), milkbark (*Drypetes diversifolia*), princewood (*Exostema caribaeum*), white ironwood (*Hypelate trifoliata*), white flower passion flower (*Passiflora multiflora*), hammock snout pea (*Rhynchosia swartzii*), mahogany (*Swietenia mahogani*) and thatch palm (*Thrinax radiata*). Additional State-listed plant species are known to exist in the nearby Newport Hammock CARL site and may also exist at the Alternative 2 WWTP site, per the FFWCC. These include yellowwood (*Schaefferia frutescens*, endangered), Simpson's prickly apple (*Harrisia simpsonii*, endangered), banded wild pine (*Tillandsia flexuosa*, endangered), wild cotton (*Gossypium hirsutum*, endangered), joewood (*Jacquinia keyensis*, threatened), wild dilly (*Manilkara bahamensis*, threatened), and golden leather fern (*Acrostichum aureum*, threatened). The Alternative 2 WWTP site hardwood hammock is suitable habitat for the white-crowned pigeon (*Columba leucocephala*), Florida tree snail (*Liguus fasciatus*), and Miami black-

SECTION THREE **Affected Environment and Environmental Consequences**

headed snake (*Tantilla oolitica*). FFWCC has listed the white-crowned pigeon and Miami black-headed snake are threatened and the Florida tree snail is a Species of Special Concern. The State also lists Schaus' swallowtail butterfly and Stock Island tree snail as endangered.

In addition to State- and Federal-listed threatened and endangered species, Monroe County has listed several plant species observed on the Alternative 2 WWTP site as RI (Regionally Important) species. RI species observed include inkwood (*Exothea paniculata*), black ironwood (*Kruigiodendron ferreum*), lancewood (*Nectandra coriacea*), capeweed (*Phyla nodiflora*), paradise tree (*Simarouba glauca*) and tallowwood (*Ximenia americana*). In addition, Monroe County has listed tropical hardwood hammock habitat itself for protection. Further Alternative 2 WWTP site special status species details are in the BA and BO in Appendices H and I, respectively.

Two URS biologists conducted a site visit on March 24, 2003, concurrently with vegetation and wildlife investigations, to evaluate the potential presence of protected species and suitable habitat for these species on the Alternative 3 WWTP site. The biologists did not observe any State- or Federal-listed threatened or endangered species in the proposed Alternative 3 WWTP and WTS construction sites. Vegetated portions of these proposed sites consist of disturbed weedy and landscape plants; therefore, no portions of the proposed construction sites are likely to provide nesting, roosting, or feeding habitat for any special status species that could exist in the Key Largo area. The Alternative 3 VPS would be built on a small portion of the Alternative 2 WWTP site. As noted above no Federally listed plant species were observed on the Alternative 2 site. Several State- and county-listed plant species may be present in the pest- and exotics- dominated construction area at the southwestern fringe of the parcel. This small area could support some State- or Federally listed threatened or endangered animal species, as described above.

Environmental Consequences

Under the No Action Alternative, FEMA would not fund the proposed wastewater management improvements in Key Largo, and KLTV and KLP residents would still need to comply with Florida Statutory Treatment Standards of 2010. As such, ESA Section 7 and EFH compliance would not be required unless there is other Federal funding. Effects on special status species, once funding is secured would likely be similar to those under Alternatives 2 and 3.

3.3.3.1 Alternative 2 – New Wastewater Treatment Plant on Northern Site

Per ESA Section 7, FEMA consulted the USFWS and the National Marine Fisheries Service (NMFS) regarding the potential effects of Alternative 2. On July 7, 2000, FEMA initiated informal consultation with the USFWS, then completed a draft BA and sent it to USFWS on October 30, 2000. On December 18, 2000, FEMA requested the informal consultation be elevated to a formal consultation because of the potential for "incidental take" of Federally listed species, including the Schaus' swallowtail butterfly, eastern indigo snake, and Stock Island tree snail. In this situation, "take" means harm through loss of 2.6 acres of direct habitat and by harassment to these species. Based on the BA information provided, on June 11, 2001, the USFWS issued a BO for the proposed construction on the Alternative 2 WWTP site. The USFWS concluded that Alternative 2 would "not likely jeopardize" the continued existence of either the Stock Island tree snail or the Schaus' swallowtail butterfly and would "not likely

SECTION THREE **Affected Environment and Environmental Consequences**

adversely affect” the eastern indigo snake. In addition, since the USFWS has not designated critical habitat for these species, none will be affected.

The USFWS’s conclusions are based upon two reasonable and prudent measures to minimize “take,” during Alternative 2 construction, of the Stock Island tree snail and Schaus’ swallowtail butterfly. These measures include restoring 2.6 acres of hardwood hammock habitat and placing the undeveloped 19.4 acres of hardwood hammock habitat under a conservation easement. Under the ESA, these are viewed as non-discretionary “terms and conditions,” which FEMA will require of the KLWTD for funding approval. Additional implementation details are in the BO (Appendix I). FEMA consulted the NMFS regarding the potential effects of Alternative 2 under ESA Section 7. In a letter dated June 5, 2003, FEMA initiated informal consultation with NMFS, provided its findings, and requested determination concurrence. NMFS concurred on November 19, 2003 that Alternative 2 would not likely affect threatened or endangered species under their jurisdiction. Similarly, on June 24, 2003, NMFS concurred with FEMA’s finding that Alternative 2 would “not likely affect” EFH; therefore, no further action is required under the MSA and the SFA. Agency coordination letters for this SEA are in Appendix B.

Several State special status species are known to exist or may exist at the Alternative 2 WWTP site. The FFWCC sent a letter to FEMA, dated July 14, 2000, stating opposition to building a WWTP on the proposed Alternative 2 site, due to the presence of important hardwood hammock habitat and State-listed plants and animals, and providing a copy of their comments to a separate Monroe County environmental assessment. The FFWCC sent this letter before FEMA had completed formal consultation with USFWS. On January 23, 2001, a copy of FEMA’s BA was provided to FFWCC for comment, and no comments were received. The mitigation measures outlined in the BA and the “reasonable and prudent measures” and “implementing terms and conditions” identified in the USFWS BO would minimize the loss of hardwood hammock habitat and State-listed plants and animals. On June 5, 2003, FEMA requested comment from the FFWCC on its intent to prepare this SEA. On July 1, 2003, the FFWCC reiterated its opposition to construction on the Alternative 2 site. Agency coordination letters are in Appendix B.

Adverse effects to Monroe County’s RI-listed plant species from construction of Alternative 2 would be mitigated through KLWTD compliance with the County’s Land Development Regulations and the mitigation measures identified in the BA and BO. Accordingly, Alternative 2 WWTP site construction as proposed, with Monroe County Land Development Regulation, and USFWS BA and BO compliance before construction activities, is not expected to result in significant adverse effects to special status species.

3.3.3.2 Alternative 3 – New Wastewater Treatment Plant on Southern Site

On June 5 and July 22, 2003, FEMA initiated consultation per ESA Section 7, with USFWS and NMFS, regarding Alternative 3 potential effects. As noted above, URS completed a biological evaluation of the WWTP site on April 24, 2003, and no State or Federally listed species were observed. The Alternative 3 VPS will be located on a small pest- and exotic plant-dominated portion of the Alternative 2 WWTP site. The USFWS concurred with FEMA’s finding of no effect for this alternative (Hobgood, Pers. Com., 2003).

NMFS stated in a June 24, 2003 response, that neither the construction nor operation of Alternative 3 would affect EFH; therefore, MSA and the SFA require no further action. NMFS

SECTION THREE **Affected Environment and Environmental Consequences**

concluded on November 19, 2003 that Alternative 2 would not likely affect threatened or endangered species under their jurisdiction.

On June 5, FEMA requested review of the project alternatives by FFWCC. On July 1, 2003, the FFWCC encouraged use of the Alternative 3 WWTP site because the potential for adverse effects on threatened and endangered species would be less at this site. Monroe County's Land Development Regulations may require some mitigation measures for protection of County RI-listed plant species at the Alternative 3 VPS Site. Accordingly, no notable adverse effects to special status species are anticipated for Alternative 3.

3.4 AIR QUALITY

Affected Environment

Air pollution within the project areas has not been extensively documented; however, motor vehicles are usually the primary source of air emissions. The FDEP has designated Monroe County as an air quality attainment area, meaning that air quality standards set by both FDEP and the EPA are maintained countywide (Monroe County, 1995). Air quality in the Florida Keys is generally excellent, and data from FDEP's two ambient air monitoring stations in Key West and Marathon indicate that particulate matter concentrations remain well below the State standards. The affected environment for air quality is similar to that described in PEA Section 3.4.1 (Air Quality, Affected Environment).

Environmental Consequences

Under the No Action Alternative, FEMA would not fund the proposed wastewater management improvements. KLTV and KLP residents would still need to comply with Florida Statutory Treatment Standards of 2010. It is anticipated that effects on air quality, once funding is secured, would be similar to those under Alternatives 2 and 3.

Under both Alternative 2 and 3, minor temporary adverse effects on air quality would occur during construction from increased exhaust pollutants and fugitive dust. These temporary effects could be mitigated through standard construction BMPs, including decreasing vehicle idle times and watering down construction areas. WWTP operations effects on air quality would be similar to those discussed in PEA Section 3.4.2.2 (Environmental Consequences, Alternative 2 – Centralized Wastewater Treatment Plant). The pump station minimizes odors by controlling air emissions from equipment. The only release of air occurs from the blower exhaust at the pump station, which passes through a biofilter before emission. In addition, an odor control system, such as an in-ground wood chip bed or packaged iron fillings bed, would be implemented to minimize odors. No long-term effects on air quality are anticipated.

3.5 CULTURAL RESOURCES

Affected Environment

PEA Section 3.5.1 (Cultural Resources, Affected Environment) provides an overview of Monroe County's cultural history. In addition to review under NEPA, consideration of effects on cultural

SECTION THREE **Affected Environment and Environmental Consequences**

resources is mandated under Section 106 of the National Historic Preservation Act (NHPA), as amended, and as implemented by 36 CFR Part 800. Requirements include identification of significant historic properties that may be affected by the proposed project. For the purposes of Section 106, historic properties are defined as archaeological sites, buildings, structures, districts, or sites that are listed in or are eligible for listing in the National Register of Historic Places (36 CFR 60.4).

As defined in 36 CFR Part 800.16(d), the Area of Potential Effect (APE) "is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist."

The APE for Alternatives 2 and 3 differ, and are described in Sections 2.2 and 2.3 respectively. However, the KLTV and KLP service areas are the same for both WWTP site alternatives. In addition to identifying historic properties that may exist in the proposed project's APE, the Federal agency must also determine, in consultation with the appropriate State Historic Preservation Officer (SHPO), what effect, if any, the action would have on historic properties. Moreover, if the project would have an adverse effect to these properties, the Federal agency must consult with the SHPO on ways to avoid, minimize, or mitigate the adverse effect.

Cultural Resources Assessments of Alternatives 2 and 3 were done by URS archaeologists. The purpose of these assessments was to assist FEMA's project planning, ensure NEPA and NHPA compliance, and provide the Florida SHPO at the Florida Division of Historic Resources (DHR) with information on potential cultural resource effects. The assessments included a search of the Florida Master Site File, maintained by the DHR. Files indicate that there are nine known historic properties near the APE for Alternative 2. The Florida Master File indicates that there are no known historic properties within or near the APE of Alternative 3.

DHR sites 8MO26, 8MO27, and 8MO1258 are located north of the proposed WWTP site for Alternative 2, across US-1, and between KLP and KLTV, in the Calusa Campground. DHR Site 8MO1258, a rock mound and midden, is a National Register-listed archaeological site. The two other DHR sites north of US-1, 8MO26 and DHR 8MO27, have been nominated to the National Register, but were not listed (Rock Mound National Register Nomination 1974). Both of these two sites are rock mounds with associated middens dating from the Glades period. Remains of these resources were observed and documented during a November 14, 2003 URS site visit in the Calusa Campground (see Appendix G).

Four of the other sites are likely related and are located northeast of the Alternative 2 proposed WWTP site. They are DHR sites 8MO2057 and 8MO2058, historic cisterns; 8MO2060, a historic pioneer domestic site; and 8MO2067, a historic cistern and home site, all of which are probably associated with the settlement of Newport Village. The two remaining prehistoric DHR sites, 8MO2061 and 8MO2066 are shell middens. A site-visit was conducted at the Alternative 2 WWTP site on January 10, 2001 by a URS archaeologist. The purpose of this survey was to identify visible cultural resources and to assess the necessity for a more detailed archaeological survey. URS staff conducted a pedestrian survey of the WWTP APE, noting soil conditions, signs of disturbance, and any visible evidence of cultural resources. No historic properties were observed during survey and the site conditions suggested a low probability for presence of significant cultural resources. The results of this survey were submitted to the DHR (See Appendix G, Cultural Resources Correspondence).

SECTION THREE **Affected Environment and Environmental Consequences**

A site visit was conducted by URS staff at the Alternative 3 site on April 24, 2003. The proposed WWTP site is about 200 feet wide by 900 feet long, covering 3.8 acres. The site has been cleared, grubbed, and developed. It is presently used for boat and vehicle storage. US-1 runs along the western property boundary; the northern and southern property boundaries border on undeveloped hardwood hammock habitat. The closest private residence is located about 100 feet (0.02 mile) west of the site. The closest water body to the site is the Straits of Florida, immediately east of the site. Florida Bay is located about 1,350 feet (0.26 mile) west of the site. Boats, trailers, lumber, and other construction debris are strewn about the entire property.

There is no source of potable water and no vegetation across most of the parcel. No historic features or historic properties were noted during the survey, and it is apparent that the area has been intensively used during the second half of the 20th century. The results of this survey were submitted to the Florida DHR (See Appendix G, Cultural Resources Assessment Survey).

Environmental Consequences

Under Alternative 1, the No Action Alternative, FEMA would not provide funds for wastewater management improvements. Key Largo residents would still need to comply with Florida Statutory Treatment Standards of 2010. It is anticipated that once funding is secured, effects on cultural resources would be similar to those under Alternatives 2 and 3.

The APEs for Alternatives 2 and 3 have been affected by modern disturbances. This coupled with the absence of visible cultural resources, the highly depleted or absent soils, and the lack of potable water, indicates that there is a very low probability of significant cultural resources occurring within the WWTP sites. The service areas are similarly disturbed from residential construction and road work. Therefore, no effect on historic, archaeological, or cultural resources is anticipated from either Alternative. In letters dated May 16, 2001, and August 18, 2003, respectively, the Florida DHR concurred with the findings that no historic properties were likely to be located within either the Alternative 2 or 3 WWTP sites (see Appendix G). Although the Calusa Campground is not incorporated in the currently proposed service areas, the above-described historic properties may be adversely affected if the KLWTD connects this facility to the KLTV or KLP collection system. The KLWTD would be advised to avoid sensitive archaeological features, have professional on-site archaeological monitoring during collection system work, and further coordinate activities with the SHPO.

Should any unanticipated historic or archeological materials be discovered during project work, however, all activities on the site shall be halted immediately and the KLWTD shall consult with FEMA, SHPO, and other appropriate agencies for further guidance. In addition, if human remains are discovered, Florida's unmarked human burial law will be implemented (Florida Statute Title XLVI, 872.05 Unmarked human burials), specifically:

When an unmarked human burial is discovered...all activity that may disturb the unmarked human burial shall cease immediately, and the district medical examiner shall be notified. Such activity shall not resume unless specifically authorized by the district medical examiner or the State Archaeologist. If the district medical examiner finds that the unmarked human burial may be involved in a legal investigation or represents the burial of an individual who has been dead less than 75 years, the district medical examiner shall assume jurisdiction over and responsibility for such unmarked human burial, and no other provisions of this section shall apply. The

SECTION THREE **Affected Environment and Environmental Consequences**

district medical examiner shall have 30 days after notification of the unmarked human burial to determine if he or she shall maintain jurisdiction or refer the matter to the State Archaeologist. If the district medical examiner finds that the unmarked human burial is not involved in a legal investigation and represents the burial of an individual who has been dead 75 years or more, he or she shall notify the State Archaeologist, and the division may assume jurisdiction over and responsibility for the unmarked human burial pursuant to subsection (6) [of Florida Statute 872.05]. When the division assumes jurisdiction over an unmarked human burial, the State Archaeologist shall consult a human skeletal analyst who shall report within 15 days as to the cultural and biological characteristics of the human skeletal remains and where such burial or remains should be held prior to a final disposition [Florida Statute Title XLVI, Chapter 872.05].

3.6 SOCIOECONOMIC RESOURCES

3.6.1 Tourism

Affected Environment

Tourist facilities on Key Largo are located on both the bay and ocean sides of the island and are concentrated along the US-1 corridor. Facilities include a dive shop, hotels and resorts, marina and boat ramp, and commercial businesses. Since about the 1950s, Key Largo shifted its economic focus to tourism and is now known as the “diving capital of the world” (FloridaKeys.com, 2003). Tourism is an important component of Key Largo’s economy, and many facilities take advantage of natural areas such as John Pennekamp State Park (ecotourism) and local marine resources. Table 3-3 lists tourist and commercial businesses located near the project sites and service areas.

Table 3-3. Project Area Businesses

Business Name	Location
Scotty’s Hardware	Key Largo Park
PYM Marine	Key Largo Park
Auto Doctor	Key Largo Park
Al’s Wrecker Service	Key Largo Park
Unique Marine	MM 100 Overseas Highway
Enterprise Car Rental	MM 99.5 Overseas Highway
Frank’s Key Cafe	MM 99.5 Overseas Highway
Le Shoppe Hair Salon	MM 99 Overseas Highway
Tropical Cleaners	MM 99 Overseas Highway
Shell Gas Station	MM 99 Overseas Highway
Ramada Hotel	MM 99 Overseas Highway
Holiday Inn	MM 99 Overseas Highway

SECTION THREE **Affected Environment and Environmental Consequences**

Table 3-3. Project Area Businesses

Business Name	Location
Citgo Gas Station	MM 99 Overseas Highway
Hess Gas Station	MM 99 Overseas Highway
TIB Bank	MM 99 Overseas Highway
DJ's Diner	MM 99 Overseas Highway
Key Largo Travel Lodge	MM 99 Overseas Highway
Yesterday's Consignment	MM 99 Overseas Highway
Pink Juntique	98725 Overseas Highway
Joyce Bennet School of Dance	MM 98.5 Overseas Highway
Thom Thumb Gas Station	MM 98.5 Overseas Highway
Papa John's Pizza	MM 98.5 Overseas Highway
Key Largo Boating Center	MM 98.5 Overseas Highway
Sea Trail Hotel	98620 Overseas Highway
Taco Bell	MM 98.5 Overseas Highway
Kentucky Fried Chicken	MM 98.5 Overseas Highway
Mermaid Marine Ship Store	MM 98.5 Overseas Highway
Discount Auto Parts	MM 98.5 Overseas Highway
NAPA Auto Parts	MM 98.5 Overseas Highway
Mel Harris's Boat Yard	MM 98 Overseas Highway
Ballyhoo Seafood Restaurant	MM 98 Overseas Highway
Tom Thumb Gas Station	MM 98 Overseas Highway

Environmental Consequences

Under the No Action Alternative, FEMA would not fund the proposed wastewater management improvements. Wastewater projects may be funded by local sources, which may increase local taxes. These costs could be passed on to Keys tourists through higher costs for hotels, food, and other goods and services. In addition, economic losses from decreased water quality, such as area beach advisories and storm damage of the existing wastewater infrastructure, would continue until wastewater improvements were implemented. It is anticipated that once funding is secured, effects to tourism would be similar to those under Alternatives 2 or 3.

Under Alternatives 2 and 3, adverse construction effects on Key Largo tourism would be short-term and minor. Collection system installation would temporarily hinder, but not obstruct, service area traffic movement. Appropriate signage and traffic management, as described in PEA Section 3.9.1 (Traffic and Circulation), would reduce the degree of this impact. Installation and operation of the treatment plant is not expected to impact tourism beyond those effects described in PEA Section 3.6.1.2.1 (Socioeconomic Resources; Tourism; Environmental Consequences – Alternative 2). Additionally, improved water quality in the Key Largo area may benefit the tourism industry by incrementally increasing tourist enjoyment of activities listed in PEA Section 3.6.1.1 (Tourism, Affected Environment).

SECTION THREE **Affected Environment and Environmental Consequences**

3.6.2 Fishing Industry

Affected Environment

Key Largo ranks as one of the best sport-fishing areas in the world (FloridaKeys.com, 2003). Species recreationally harvested around Key Largo include tarpon, bonefish, kingfish, dolphin, sailfish, wahoo, snapper, grouper, shark, and barracuda. Several fishing tournaments are held in Key Largo throughout the year (Keys Technologies, 2003). Commercially harvested species that may occupy the Key Largo nearshore waters include spiny lobster, white mullet, gray snapper, various flounder, shrimp and stone crab. In the 2000 Census, over 100 individuals in Key Largo listed their occupation as fisherman (U.S. Census, 2000) The affected environment for the fishing industry is described further in PEA Section 3.6.2.1 (Fishing Industry, Affected Environment).

Environmental Consequences

Under the No Action Alternative, FEMA would not fund wastewater management improvements. Any environmental benefits to the fishing industry would be delayed until funding was obtained for wastewater management improvements on Key Largo (as described in PEA Section 3.6.2.2.1, [No Action Alternative]).

Under both Alternatives 2 and 3, FEMA would provide funding to build a WWTP and or collection system. This project is expected to improve nearshore water quality, which in turn would incrementally benefit nearshore commercial and recreational species that are currently being adversely affected by poor water quality in the Key Largo area. Beneficial effects on commercial fishing are described in PEA Section 3.6.2.2 (Environmental Consequences). Furthermore, FEMA consulted the NMFS regarding the potential effects of Alternatives 2 and 3 on fisheries resources. The NMFS stated in their June 24, 2003, letter that neither alternative would be likely to affect EFH; therefore, no further action is required under MSA and SFA. Agency coordination letters for this SEA are in Appendix B.

3.6.3 Local Fees and Taxes

Affected Environment

Monroe County residents must pay county, State, and Federal taxes. The average property tax rate for all Monroe County districts is 13.4 percent of the appraised property value, excluding property tax deductions such as the homestead exemption (Monroe County, 2001b). Several governmental agencies within Monroe County affect the total property tax rate to provide revenue for local services. Additional details on local taxes are in PEA Section 3.6.3.1 (Local Fees and Taxes, Affected Environment).

3.6.3.1 Existing Wastewater Management Costs in the KLTV and KLP Service Area

For the purpose of this SEA, wastewater management cost discussions include reference to:

- 1) **system capital costs**, which include expenses associated with planning, designing, engineering, purchasing, building, and installing a wastewater treatment system, and

SECTION THREE **Affected Environment and Environmental Consequences**

the required wastewater conveyance piping in public ROWs and selected effluent disposal method;

- 2) **abandonment and lateral costs**, which include the expenses associated with removal and disposal of the existing wastewater treatment system and piping on service recipients' property for connection to a new system; and
- 3) **operation and maintenance (O&M) costs** for the new system.

Five basic types of wastewater systems are presently used in Monroe County: cesspits, septic tanks, on-site aerobic treatment unit (ATU), OWNRS, and centralized WWTPs. On Key Largo, cesspools and septic systems are currently utilized by property owners. Septic systems collect sewage in a tank and allow the liquid waste to filter through a drainfield into shallow soils and subsurface limestone. For septic systems in working condition, pumping to remove solid waste is needed only about every 6 to 10 years (D and D Enterprises, Inc., Pers. Comm., 2001). The cost to pump a standard 1,000-gallon septic tank, presently about \$300, would average about \$38 a year or a little over \$3 a month if pumped once every 8 years.

Almost all cesspits in the Keys are at residences built before 1970. From discussions with wastewater service companies in the Keys, it was found that "properly" functioning cesspits (i.e., those that drain and leach out effluent into the surrounding soil and subsurface limestone) do not need to be pumped out and consequently have little or no associated operation and maintenance costs. As most of them were installed more than 30 years ago, there are also currently no associated system capital costs. Cesspits are currently illegal to install in Monroe County and are being removed as part of the Monroe Cesspit Identification and Elimination Grant Program (discussed in detail in PEA Section 3.6.3.2.1 [Local Fees and Taxes, Environmental Consequences]).

For comparison, the average monthly wastewater rates for customers that currently use non-compliant WWTP systems in other parts of Monroe County are \$56, \$64, and \$55 per month for customers of Key Haven Utilities, Ocean Reef Club, and K W Resort Utilities, respectively.

As noted above in Table 3-3 and Section 3.6.1, there are numerous commercial businesses in the KLTV and KLP service areas. Like the residences in the service areas, most of these businesses currently use septic systems (Sheets, Pers. Comm., 2003b) Some of the larger hotels in Key Largo have their own advanced wastewater treatment systems, and would not require additional services.

Additional information related to local fees and taxes is in PEA Section 3.6.3 (Local Fees and Taxes).

Environmental Consequences

Under the No Action Alternative, FEMA would not fund the proposed wastewater management improvements. To achieve compliance with Florida Statutory Treatment Standards, residents and businesses would have to use other funding for improvements.

Economic effects of the No Action Alternative on local wastewater fees or taxes are difficult to quantify, as they will depend on the final costs of the 2010-compliant systems chosen, the amount of State and Federal grants and contributions, and the details of the chosen financing options, including applicable repayment terms. Based upon information in PEA Section 3.6.3.3,

SECTION THREE **Affected Environment and Environmental Consequences**

the No Action Alternative may result in higher wastewater management costs for KLTV and KLP service area residents and businesses than would be expected from either FEMA-funded Alternative 2 or 3. However, it should be noted that the KLWTD has adopted wastewater cost reasonableness goals (Resolution 2003-6) of \$2,700 per EDU for system capital costs and \$35 a month for O&M fees (KLWTD, 2003).

Under Alternatives 2 and 3, the estimated system capital cost and monthly O&M fee to service recipients after grant funding has been applied, is as noted above; \$2,700 per EDU and \$35 per month (with no capital costs included) for system capital costs and O&M fee, respectively. In addition, all property owners would be assessed a yearly tax of \$35 per \$100,000 of appraised property value (Sheets, Pers. Comm., 2003). Service area property owners would also pay for their on-site system abandonment and lateral connection costs, estimated between \$1,500 and \$5,000 per EDU depending on the type of existing on-site system and the amount of work needed to remove or abandon the system (PEA Section 3.6.3.2.2).

Under both Alternatives 2 and 3, businesses in the service areas would be assessed wastewater fees in the same manner as residential service recipients, with system capital costs following the rates outlined above and monthly O&M fees following a flow-based rate structure. The flow-based rate structure would follow the same per EDU cost as residential service recipients. Businesses that used more than one EDU worth of water would be charged accordingly. As an example, under Alternative 2, a business that generated 2.5 times the residential EDU amount would be charged 2.5 times the residential O&M rate or \$87.50. Those businesses whose wastewater discharge rates are less than their clean water consumption rates or businesses that operate under extenuating circumstances will have the opportunity to discuss their situation with the KLWTD and will have the option to petition for a wastewater flow analysis to determine wastewater generation (Sheets, Pers. Comm., 2003).

Also, under both Alternatives 2 and 3, service recipients unable to pay their system capital cost in full at the time of availability of service would be able to make amortized annual payments of principal plus interest (currently estimated at 5 percent) under a 20-year, non-ad valorem special assessment, which would be included on their annual property taxes (Sheets, Pers. Comm., 2003). Under Alternatives 2 and 3, this assessment would be about \$216.65 a year for 20 years.

Under both Alternatives 2 and 3, wastewater costs would be required to be within near the affordability threshold of 2 percent of Median Household Income (\$75 per month) and within the per EDU O&M (\$30-60 per month) and system capital cost ranges set forth in PEA Section 3.6.3 (\$3,000 to \$4,500, as spread over a 20-year term). Alternatives 2 and 3 are currently within these ranges. With the use of FEMA grant funding towards wastewater system costs for KLTV and KLP, no significant economic impacts to service recipients are expected.

3.6.4 Public Health

Affected Environment

As discussed in Section 3.2.2.2 (Nearshore and Offshore Marine Waters), beach water quality data has been collected since August 2000 by Florida DOH from the John Pennekamp State Park monitoring station on Key Largo (MM 105). On 11 separate occasions, these data indicated elevated levels of fecal coliform and *Enterococcus* sp. in the vicinity of the monitoring station

SECTION THREE **Affected Environment and Environmental Consequences**

that could potentially pose a health risk. Consequently, the Florida DOH issued five health advisories/warnings (DOH, 2003). The John Pennekamp State Park monitoring station is about 2.4 miles northeast of the Key Largo project site and is the closest monitoring station to the service area. Public health consequences from contaminated water are described further in PEA Section 3.6.4.1 (Public Health, Affected Environment).

Environmental Consequences

Under the No Action Alternative, it is likely that nearshore and offshore water quality conditions affecting public health would improve, but the rate of improvement depends on funding to implement wastewater management improvements. Available Keys data do not conclusively link instances of infection or health problems to groundwater or offshore contamination caused by current sewage treatment practices. However, as described in PEA Section 3.6.4.1 (Affected Environment), the presence of enteric microbes in canals and nearshore marine waters can pose a health risk through ingestion (e.g., while swimming), inhalation contaminated water spray (e.g., while boating), or eating contaminated seafood (Paul et al., 1995; Caffry, Pers. Comm., 2001). Therefore, it may be reasonably assumed that public health risks related to the presence of enteric microbes exist and would continue to exist under this No Action alternative.

Under Alternatives 2 and 3, project area residents would benefit from the reduction of sewage discharges that would result from implementation of improved wastewater treatment facilities. The environmental consequences of both Alternatives 2 and 3 are discussed further in PEA Section 3.6.4.2.2 (Alternative 2 – Centralized Wastewater Treatment Plant).

3.7 DEMOGRAPHICS AND ENVIRONMENTAL JUSTICE

Executive Order (EO) 12898 (Environmental Justice), entitled “Federal Action to Address Environmental Justice in Minority Populations,” directs Federal agencies “to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States...” EO 12898 also requires Federal agencies to ensure that public notifications regarding environmental issues are concise, understandable, and easily accessible. Accordingly, the socioeconomic and demographic conditions in the service area were examined, including alternative effects.

Affected Environment

3.7.1 Population and Race

Results from the U.S. Census (2000) were obtained for the Key Largo census designated place (CDP), which includes the project areas (KLTV and KLP, and WWTP sites). CDPs are delineated cooperatively by State and local officials and the U.S. Census Bureau, following Bureau guidelines. The total population of the Key Largo CDP is 11,886. The population is listed as 94 percent white and 2 percent other ethnic groups (U.S. Census, 2000).

SECTION THREE **Affected Environment and Environmental Consequences**

3.7.2 Income and Poverty

U.S. Census (2000) data for the Key Largo CDP indicates that about 31 percent of families had incomes less than \$35,000 per year, and about 32 percent had incomes between \$35,000 and \$59,999 per year. The remaining 37 percent had incomes greater than \$60,000. The corresponding average family size for the Key Largo CDP was 2.8 people.

As discussed in PEA Section 3.7 (Socioeconomics), a common indicator of income level used by government agencies is the county-specific estimated Median Family Income (MFI). In 2003, the annual MFI for Monroe County was estimated at \$56,500 (U.S. Department of Housing and Urban Development [HUD], see citation below Table 3-4.). The indicator known as the “poverty threshold” is set for the entire nation and, with the exception of Alaska and Hawaii, is not adjusted for local cost-of-living differences. For the year 2003, the poverty threshold was set at an annual income of \$15,250 for a household of three people (U.S. Census, 2003). In areas like the Keys, where the cost of living is higher than the national average, \$15,250 consequently buys less, effectively making a household near the poverty threshold in the Keys poorer than similar households in areas where the cost of living is lower. The Monroe County Housing Authority currently uses the first two tiers of HUD’s MFI-based income levels to administer its *low-income* assistance programs. To administer their programs fairly, HUD makes annual projections of MFI by county and adjusts for family size. The first two tiers of *low-* and *very low-income* levels are set as percentages of the county MFI. In 2003, the income limits for a family of three in Monroe County were \$40,700 for the *low-income* level and \$25,450 for the *very low-income* level. Table 3-4 below shows HUD’s FY 2003 *low* and *very low-income* levels for various family sizes in Monroe County.

Table 3-4. Fiscal Year 2003 – HUD’s Low-Income and Very Low-Income Limits, Monroe County, Florida – Median Family Income = \$56,500

	Number of People in Household							
	1	2	3	4	5	6	7	8
Low-Income	\$31,650	\$36,150	\$40,700	\$45,200	\$48,800	\$52,450	\$56,050	\$59,650
Very Low-Income	\$19,800	\$22,600	\$25,450	\$28,250	\$30,000	\$32,750	\$35,050	\$37,300

<http://204.29.171.80/framer/navigation.asp?charset=utf-8&cc=US&frameid=1565&lc=en-us&providerid=112&realname=HUD&uid=2318084&url=http%3A%2F%2Fwww.hud.gov%2F>

Published annually by U.S. Department of Housing and Urban Development.

MFI figures are projected from the most recent county-level census data.

Although no service area-specific statistics have been compiled to date, based on the above statistics and for project planning purposes, it is estimated that up to 25 percent of homestead-exempt homeowners in KLTV and KLP may be considered *low* and *very low-income*. As described in PEA Section 3.7, it has been determined that *low-* and *very low-income* service recipients would incur a financial hardship if their wastewater management costs increased.

SECTION THREE **Affected Environment and Environmental Consequences**

Environmental Consequences

The installation of wastewater systems that meet Florida Statutory Treatment Standards, under any of the alternatives, would improve water quality in shallow aquifers, canals, and nearshore marine waters, and, to a lesser extent, offshore marine waters. The resulting reduced fecal contamination and nutrient pollution would likely reduce adverse effects on public health. *Low-income* and minority populations are expected to benefit from these wastewater management improvements to the same degree as other Keys demographic populations.

Under the No Action Alternative, FEMA would not fund the proposed Key Largo wastewater management project. To comply with Florida Statutory Treatment Standards of 2010, KLTV and KLP residents and businesses would have to use other funding for improvements. As described in PEA Section 3.6.3 (Local Fees and Taxes), the No Action Alternative may result in higher wastewater management costs for KLTV and KLP residents and businesses than would be expected with the benefit of FEMA funding. Households at or below the *low-income* level would incur financial hardship if their wastewater management costs increase to levels that approximate the affordability threshold cited in PEA Section 3.6.3.1.2, of near 2 percent of Median Household Income (about \$75 per month) or even the KLWTD's adopted wastewater cost goals (Resolution 2003-6). Furthermore, all property owners are responsible for the costs to abandon their onsite system and connect to a WWTP collection system, estimated between \$1,500 and \$5,000. On October 15, 2003, the Monroe County Board of County Commissioners passed Resolution 471-2003, which included low income assistance provisions for wastewater projects. KLWTD has endorsed these provisions and developed a Low-Income Assistance Plan (Appendix J). If the KLWTD adheres to the above affordability and low-income assistance resolutions for the No Action Alternative, no disproportionately high or adverse effects on *low-income* populations are expected.

As described in Section 3.6.3.1, for Alternatives 2 and 3, the estimated per EDU system capital cost and monthly O&M fee to service recipients, after grant funding has been applied, would be about \$2,700 and \$35, respectively. There would also be the yearly tax of \$35 per \$100,000 of appraised property value. In addition, property owners would pay for their on-site system abandonment and lateral connection costs (\$1,500 to \$5,000).

Under Alternatives 2 and 3, the above costs would be reduced for *low-income* and *very low-income* service recipients in compliance with EO 12898. As described in PEA Section 3.7, the estimated amount of assistance available to cover the system capital costs for homestead-exempt *low-* and *very low-income* property owners under Alternatives 2 and 3 is shown in Table 3-5. *Low-income* property owners would receive assistance with at least 70 percent of their system capital cost and 70 percent of their existing system abandonment and lateral connection costs, up to \$3,000. *Very low-income* property owners would receive assistance with at least 90 percent of their system capital cost and 90 percent of their existing system abandonment and lateral connection costs, up to \$3,000. For *low-income* property owners, the estimated resulting system capital cost after assistance would be about \$810 in one payment or about \$65 a year for 20 years (about \$1,299.93 total). For *very low-income* property owners, the estimated resulting system capital cost after assistance would be about \$270 in one payment, or about \$21.67 a year for 20 years (about \$433.31 total).

SECTION THREE **Affected Environment and Environmental Consequences**

Table 3-5. Alternatives 2 and 3 *Low-Income* and *Very Low-Income* Funding Assistance for the System Capital Cost

	Amount of Assistance - % of Capital Cost Covered	Estimated System Capital Cost After Assistance	Estimated Annual Payment Assessed with Property Tax*
Low-Income Qualified Family	70%	\$810.00	\$67.78
Very Low-Income Qualified Family	90%	\$270.00	\$22.59

*Amortized annual payment of principal plus interest at 5% under a 20-year non-ad valorem special assessment.

Because the property owner's total cost for on-site system abandonment and lateral connection costs will vary from one property to the next, it is not possible to estimate the actual final costs to property owners with the assistance program. Nevertheless, the assistance program would cover at least 90 percent of this cost for *very low-income* property owners (up to \$3,000 total) and at least 70 percent of this cost for *low-income* property owners (up to \$3,000 total).

At this time, no programs would be available to help *low-* and *very low-income* populations to pay the monthly O&M fees.

Under Alternatives 2 and 3, property owners unable to pay their system capital cost in full at the time of availability of service would be able to make amortized annual payments of principal plus interest (at 5 percent) under a 20-year, non-ad valorem special assessment, which would be included on their annual property taxes (Sheets, Pers. Comm., 2003).

In resolution 471-2003, Monroe County adopted an Implementation Plan that is consistent with the above provisions, to assist Key Largo's low-income service recipients. This assistance will likely be funded through a Community Development Block Grant (KLWTD, 2003).

The Community Development Program Administrator in the Special Programs Office of the Monroe County Housing Authority would administer the *low-income* assistance program for Key Largo. The Implementation Plan would be administered according to the County's Housing Assistance Plan (HAP) (Amended). In part, the HAP states that all funds awarded would be in the form of grants to homeowners and loans to property owners providing rentals to qualified beneficiaries. The process for selecting, accepting, reviewing and approving requests for assistance is outlined in Appendix J (KLWTD, 2003).

FEMA does not have specific requirements under EO 12898 to assist *low-income* renters. KLWTD has committed to provide such assistance to homeowners who rent their property to income-eligible tenants. KLWTD intends to provide the same level of assistance to this renting population, as described above.

FEMA would require Monroe County/KLWTD to meet the above guidelines during project implementation in order for the KLWTD to receive grant funding. With the implementation of the FEMA assistance program and the use of grant funding, *low-income* or *very low-income* property owners would incur no highly disproportionate or adverse economic effects under either alternative.

SECTION THREE **Affected Environment and Environmental Consequences**

3.8 HAZARDOUS MATERIALS AND WASTES

Affected Environment

A Phase I Environmental Site Assessment was done by Environmental Consulting & Technology, Inc. (ECT) to evaluate possible hazardous materials and wastes at the Alternative 2 WWTP site. Phase I results indicated a low potential for site chemical contamination from onsite sources; little potential for offsite contamination from onsite sources; and little potential for site impact from offsite contaminant migration in surface and/or groundwater from adjacent sites within a 0.25-mile radius of the property (ECT, 2000).

Environmental Consequences

Under the No Action Alternative, effects related to hazardous materials and wastes are expected to be similar to Alternatives 2 and 3 described below. Wastewater sludge from the Keys would continue to be hauled to a transfer facility and taken to a wastewater facility in Miami-Dade County for treatment.

Under Alternatives 2 and 3, wastewater would be treated as described in Section 2.2.2 (Waste Water Treatment Plant). Additional environmental consequences of these alternatives are discussed in PEA Section 3.8.2.2 (Alternative 2 – Centralized Wastewater Treatment Plant Alternative). Decanted sludge would be temporarily stored in an aerated holding tank on-site, and the liquid sludge would be hauled by truck to one of the three Monroe County Solid Waste Transfer Stations, for eventual disposal at the Miami-Dade wastewater facility.

The most common hazardous materials that enter the wastewater systems are grease and typical household cleaning products (Rios, Pers. Comm., 2001). The effects of an inadvertent disposal of hazardous wastes into wastewater effluent is more likely to affect smaller plants than larger plants like that proposed under Alternatives 2 and 3, because the materials are usually more diluted in the larger plants. However, the frequency of these incidents at a smaller facility should be correspondingly lower, so there would likely be no net increase in potential concern. Hazardous materials that would enter the WWTP may kill the biological component that treats the wastewater. Wastewater contaminated with hazardous materials would have to be pumped out and sent to a larger treatment plant for reprocessing.

Treatment chemicals would be added at various points in the treatment process. Influent wastewater pH may be adjusted by adding sodium hydroxide, a buffering agent. The sodium hydroxide would immediately dissolve, raising and neutralizing the wastewater pH. To remove phosphorus from the wastewater, metal salts may be added to coagulate the excess phosphorus. The resultant sludge would be collected and disposed, as previously described, at a Miami-Dade wastewater facility. The metal salts would be disposed with this material and would not be released to the aquifer or aquatic environment. Disinfectants, such as sodium hypochlorite or calcium hypochlorite, may be added to kill remaining biologic pathogens as the wastewater effluent is released to the environment. These materials would dissolve and disinfect the organic materials. In the process of disinfection, by-products may be formed through the interaction of chlorine with dissolved organic in the wastewater. When the treated effluent is discharged, these by-products may be diluted, volatilized, or absorbed by nearby sediments and would not represent a potential hazard (U.S. Geological Survey, 2003).

SECTION THREE Affected Environment and Environmental Consequences

Because no recognized environmental conditions were found at the Alternative 2 WWTP site, no notable environmental effects or hazardous materials abatement are anticipated for construction. If the Alternative 3 WWTP site is selected, a Phase I Environmental Property Assessment would be conducted in accordance with American Society of Testing and Materials (ASTM E)-1527 before work begins, to identify site hazardous material contamination concerns. If contamination is found, abatement would be required before site work would begin. Since the Alternative 3 VPS is located on a portion of the Alternative 2 WWTP site, no hazardous materials concerns are anticipated for VPS construction.

3.9 INFRASTRUCTURE

3.9.1 Traffic and Circulation

Affected Environment

The project area is within the Tavenier Highway capacity segment (MM 91.5 to MM 99.5) and the Key Largo Highway capacity segment (MM 99.5 to MM 106). The 2001 level of service (LOS) for both segments of US-1 in the project area is Class A, classified as "good", with a travel speed criteria of 51 mph or greater; median speed through the segment was 54 mph (URS, 2002b). This LOS is above the LOS C standard (45.0 mph to 47.9 mph) adopted for Monroe County. County roads, such as those in KLP and KLTV, are subject to a lower standard (LOS D) than US-1. Based on the analysis found in the Technical Document of the Monroe County Year 2001 Comprehensive Plan, all County roads are operating at or above LOS D (Monroe County, 2002).

Environmental Consequences

Under the No Action Alternative, FEMA would not fund the proposed Key Largo wastewater management project. Therefore traffic and circulation effects would be delayed until funding is secured for system upgrades to the Florida Statutory Treatment Standards of 2010. Nonetheless, it is anticipated that effects would be similar to those under Alternatives 2 and 3.

Under Alternatives 2 and 3, construction traffic would temporarily increase during wastewater project implementation. Temporary construction traffic would increase near the proposed WWTP facility and would last for about 8 months from the start of construction. Construction activities are not expected to interrupt vehicular traffic on US-1. Collection system installation would temporarily hinder, but not obstruct, traffic movement to and from local businesses and residences in KLTV or KLP. Under Alternative 3, pipeline trenching activities for building the transmission system would not obstruct the access roads to US-1.

Public service disruptions from construction are expected to be brief and infrequent. During construction, minor detours may be needed to allow homeowners access to their property (FKAA, 2002). A traffic control plan would be developed and implemented as required by funding and/or permitting agencies. This plan would include specific information about temporary traffic control, alternate routes, staging area locations, and optimal working times to minimize traffic disruption. Construction activities in roadway ROWs would not be subject to Monroe County Land Development Regulations since development, as defined by the Monroe

SECTION THREE Affected Environment and Environmental Consequences

County Comprehensive Plan (Monroe County, 1995), excludes roads. Florida Department of Transportation permitting may be required for work in the US-1 ROW.

3.9.2 Utilities and Services

Affected Environment

Electricity, gas, and potable water services are discussed in PEA Section 3.9.2.1 (Public Utilities and Services, Affected Environment). There is an existing 12-inch water main in the east ROW of US-1 situated immediately adjacent to the Alternative 2 proposed WWTP site at MM 100.5. The main types of wastewater treatment systems in the service areas are septic tanks and cesspools. There are about 467 of these systems in the service areas (FKAA, 2003)

Environmental Consequences

Under the No Action Alternative, the KLWTD would not receive FEMA funds for wastewater management. However, KLTV and KLP residents would still be required to comply with the Florida Statutory Treatment Standards of 2010. Once an alternate funding source has been secured, it is anticipated that effects on services and utilities would be similar to those under Alternatives 2 and 3.

Under Alternatives 2 and 3, there would likely be temporary utility and service disruptions during construction. Key Largo is largely developed and has all utilities/services that would support the proposed wastewater treatment improvements. The KLWTD would contact the diggers/excavation utility hotline at the Sunshine State One Call Center at least 2 business days before construction to identify underground utilities that may be near the project sites and to ensure that there are minimal disruptions to services during wastewater project construction. Brief disruption to wastewater service will occur as residents and businesses connect to the new wastewater system. If proper utility notification and construction practices are observed, adverse long-term effects on service area utilities and services are not expected. Long-term beneficial effects from increased service reliability and uniform maintenance are expected as current wastewater treatment methods are discontinued and wastewater treatment becomes centrally operated. For both Alternatives 2 and 3, sewer collection mains would be installed with a 10-foot horizontal separation from the existing FKAA water system as required by FDEP. Proposed rule changes may revise the required separation of water and vacuum sewer collection mains to a 3-foot horizontal separation and 12-inch vertical separation. However, the current applicable rule requirements would be applied at the time of construction. No water service interruptions are expected.

3.10 LAND USE AND PLANNING

Affected Environment

Key Largo is part of unincorporated Monroe County. Zoning for the proposed Alternative 2 WWTP site is Suburban Commercial. Permitted land uses for the island include mobile homes, detached dwellings, vacation rentals, and commercial fishing uses. Figures 3-5a and 3-5b

SECTION THREE **Affected Environment and Environmental Consequences**

illustrates project site/area land uses. Zoning for the proposed Alternative 3 WWTP site is Urban Residential Mobile Home. The affected environment for land use and planning is further discussed in PEA Section 3.10.1 (Land Use and Planning, Affected Environment).

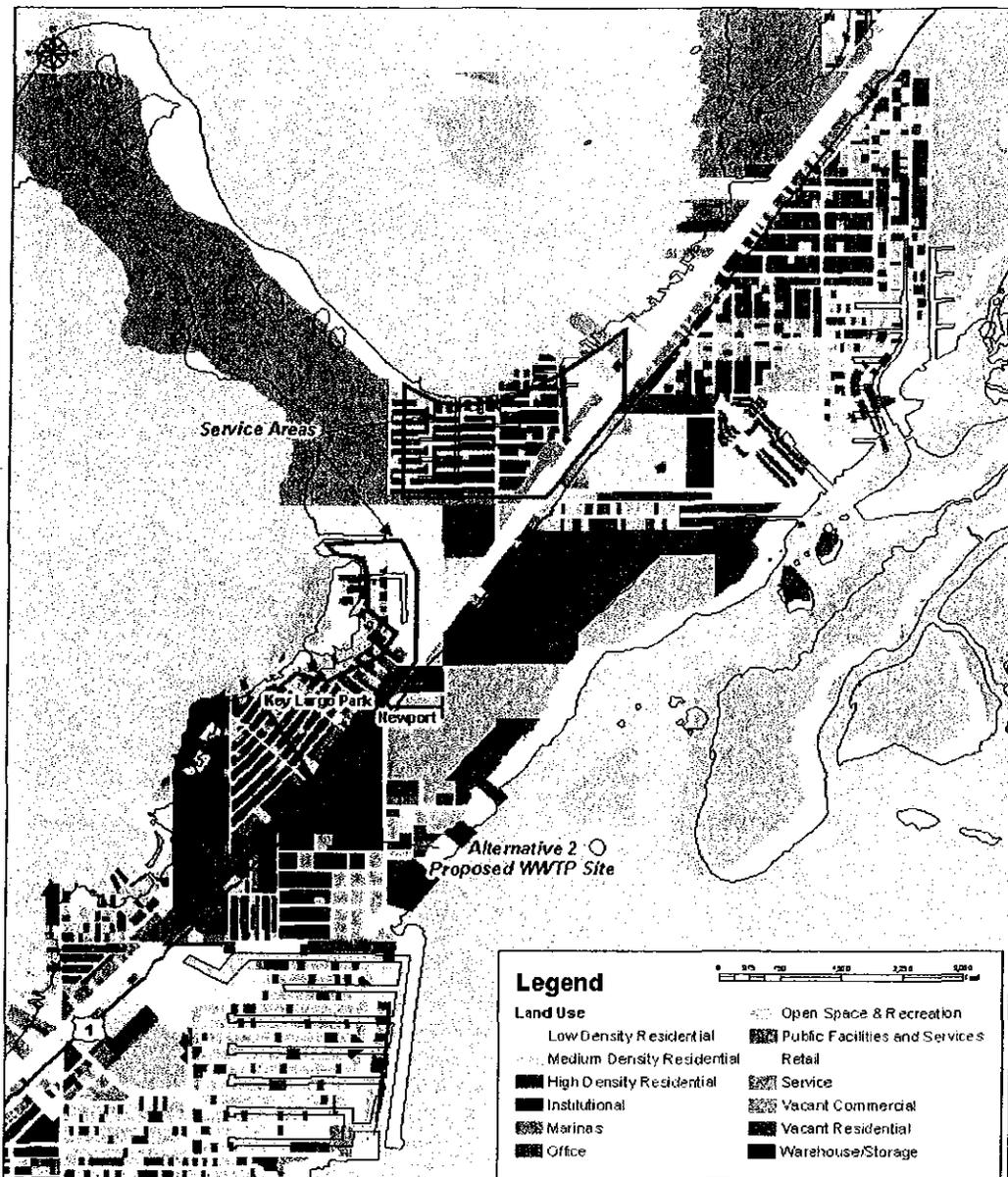


Figure 3-5a. Project Area Land Use. (Service Areas and Alternative 2 WWTP site)

SECTION THREE **Affected Environment and Environmental Consequences**

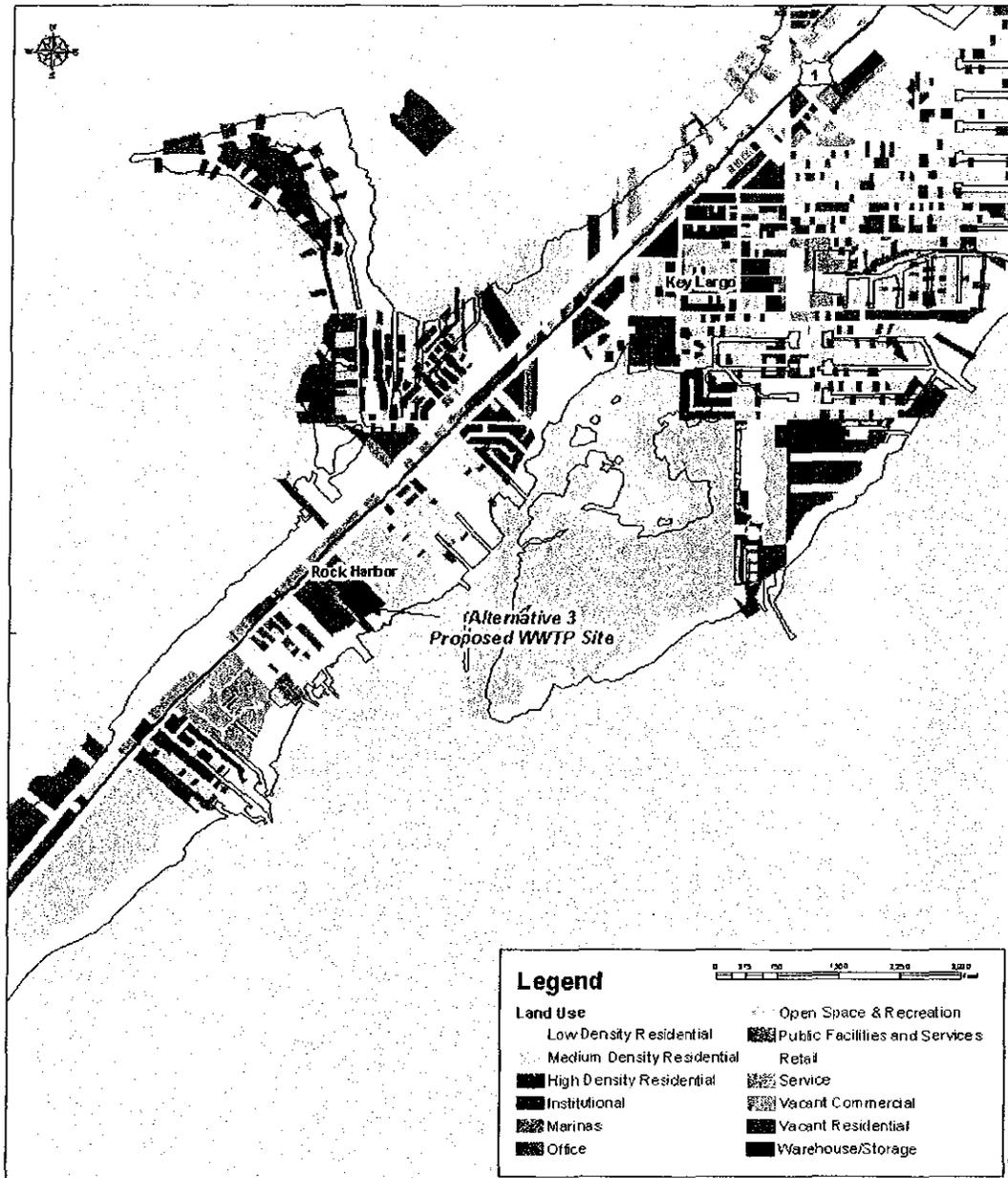


Figure 3-5b. Project Area Land Use. (Alternative 3 WWTP site)

State-identified CARL is not present in the service area. However, there are CARL lands near the Alternatives 2 and 3 sites. The Alternative 2 site borders the Newport Hammock site. The Newport Hammock site is a 191-acre high-quality hardwood hammock habitat parcel (FDEP, 2003). The FDEP considered purchase of the Alternative 2 site under the CARL program before Monroe County purchased it (FFWCC 2000, USFWS 2000). The Point Charles Hammock site is located next to the Alternative 3 WWTP site. The Port Charles Site is of lesser quality than the Newport Hammock site (FDEP, 2003). Two Coastal Barrier Resource System (CBRS) units (Coastal Barrier Resource Area Zones), FL-37 and FL-36P are located near the project sites

SECTION THREE **Affected Environment and Environmental Consequences**

(Reisinger, Pers. Comm., 2003). FL-37 is located near MM 96 and FL-36 is located near MM 102.

The portion of Key Largo associated with the project sites is located within a larger Planning Area Enumeration District 21 (located from approximately MM 99.5 to MM 112.5; Monroe County, 2002).

Environmental Consequences

Under the No Action Alternative, KLWTD would not receive FEMA funds for wastewater management. KLTV and KLP residents would still need to comply with Florida Statutory Treatment Standards of 2010. It is anticipated that once funding is secured, effects on land use and planning would be similar to those under Alternatives 2 and 3.

Under Alternative 2, the proposed WWTP would be on Monroe County property, which may be deeded to the KLWTD. In accordance with the Monroe County Comprehensive Plan (Sections 9.5-257.4 and 9.5-257.5), construction of a new treatment plant or pump station would not require amendments to the permitted land uses in areas zoned either Suburban Commercial or Suburban Residential as discussed in PEA Section 3.10.2.1 (Land Use and Planning – Environmental Consequences – Alternative 1).

Effects on land use and planning for Alternative 2 are further discussed in PEA Section 3.10.2.2 (Land Use and Planning, Environmental Consequences). Construction and operation of the WWTP would be consistent with the current land use at the adjacent FKAA maintenance facility.

Under Alternative 3, the property would have to be purchased by Monroe County or the KLWTD. In accordance with the Monroe County Comprehensive Plan (Sections 9.5-257.4 and 9.5-257.5), construction of a new treatment plant or pump station would not require amendments to the permitted land uses in areas zoned Urban Residential Mobile Home as discussed in PEA Section 3.10.2.1 (Land Use and Planning – Environmental Consequences – Alternative 1). Under this alternative, the VPS would be constructed at the Alternative 2 site. The effects on land use and planning would be similar to those previously stated.

Effects on land use and planning for Alternative 3 are further discussed in PEA Section 3.10.2.2 (PEA Section 3.10.2.2 (Land Use and Planning, Environmental Consequences). Construction and operation of the WWTP would be consistent with the current land use at this property.

As described in PEA Section 3.10 (Land Use and Planning), development within the Keys is not controlled by addition of key infrastructure, but instead by Monroe County's ROGO permit allocation system. Installing new wastewater treatment infrastructure in the Florida Keys is essential to effectively treat existing wastewater flows, and would introduce or support increased development. Therefore, growth and development occurring after implementation of either alternative would be the result of established county planning and not of the proposed wastewater management improvements.

Construction activities would be limited to the project sites and would not directly impact CARL lands. However, under Alternative 2, about 19 acres of the 22-acre parcel for the WWTP would be preserved in perpetuity under a conservation easement. Nearby CBRS units, would not be affected by either alternative or served by the proposed WWTP.

SECTION THREE **Affected Environment and Environmental Consequences**

FEMA consulted the Florida DCA on potential project effects. In a letter dated August 5, 2003, the Florida Office of Intergovernmental Programs, on behalf of DCA, FDEP and the South Florida Regional Planning Council, stated that for Alternatives 2 and 3, water quality improvement in the Keys was an agency priority and that it supports the proposed projects and they are consistent with the State's comprehensive coastal management program (Appendix B).

3.11 NOISE AND VISUAL RESOURCES

3.11.1 Noise

Affected Environment

Noise within the project areas has not been well documented but is associated primarily with traffic. Sensitive noise receptors are considered to be areas that sustain greater effects from noise sources than other areas (such as industrial areas). Sensitive receptors to noise typically include churches, schools, homes and residential areas, hospitals, and public facilities.

Potential noise receptors in the project areas were documented by URS on April 24, 2003. As discussed in PEA Section 3.11.1.1 (Noise), the KLTV and KLP service areas are urban residential and the overall noise level for this type of classification is moderately loud along a major roadway (US-1). These service area residents would be the noise receptors. The proposed Alternative 2 WWTP site consists of a 22-acre tropical hardwood hammock parcel, of which only 2.6 acres would be developed. This forested natural site may be considered a mixed urban commercial/residential area. The lots located north of the proposed project site are vegetated and provide a level of noise buffering for these properties. An existing FCAA facility and commercial businesses occur south of the proposed project site. Most of the noise at the proposed project site is from:

- General vehicle operation along US-1, about 20 feet west of the project site;
- FCAA facilities immediately south and adjacent to the site;
- The Keys sanitation waste transfer facility about 50 feet east of the site (across Central Avenue);
- Commercial businesses on the west side of US-1, about 100 feet from the site; and
- Commercial businesses about 880 feet south of the site.

Observed noise receptors near the project site include:

- Residents near of Central Avenue (the closest home is about 300 feet east of the site parcel);
- The Church of Christ at 100695 Overseas Highway, about 350 feet north of the site;
- Key Largo Church of the Nazarene, about 100 feet west of the site, on the west side of US-1;
- Key Largo Seventh Day Adventist Church, about 100 feet west of the site, on the west side of US-1; and

The Alternative 3 WWTP site consists of developed commercial land. Natural undeveloped lands, characterized as hardwood hammock habitat, border the site to the northeast and

SECTION THREE **Affected Environment and Environmental Consequences**

southwest. The site is bordered by the Atlantic Ocean on the east and US-1 to the west. The vegetation currently provides some noise buffering north and south of the site. The site may be considered a commercial area along a major roadway. As discussed in PEA Section 3.11.1 (Noise), the overall noise level for this type of classification is moderately loud. Noise characteristics at the Alternative 3 VPS site are as described under Alternative 2. Most noise at the WWTP site is from:

- General vehicle operation along US-1 about 20 feet west of the site;
- Commercial businesses adjacent to the site;
- A marina about 1,000 feet south of the site; and
- Commercial businesses adjacent to the WTS along US-1.

The only observed noise receptors near the project site are residents, the closest home is about 500 feet west of the project site on the west side of US-1.

Environmental Consequences

Under the No Action Alternative, the KLWTD would not receive FEMA funds for wastewater management projects. Service area residents would still need to comply with Florida Statutory Treatment Standards of 2010. It is anticipated that effects on noise levels, once funding is secured, would be similar to those under Alternatives 2 and 3.

Alternatives 2 and 3 would involve a similar range of construction activities and, the noise effects within the project areas would be similar as discussed in PEA Section 3.11.1.2 (Environmental Consequences). An increase in localized noise levels would occur at various locations throughout the approximate 8-month construction period (Teague, Pers. Comm., 2001). KLP and KLTV residents may experience disruptive noises during construction work hours, but these are permissible under current Monroe County Code (Article III, Sections 13-51 to 13-55). The potential for residents to experience hearing damage or loss due to construction noises is considered low.

Under Alternatives 2 and 3, construction and operation of the WWTP would have little impact on sensitive receptors due to their distance from the construction area. However, construction personnel would be required to observe the established noise ordinance of Monroe County Code to reduce disruptive noises to adjacent areas. For Alternative 2, it is anticipated that the FKA maintenance facility to the south and the undeveloped 19-acre parcel to the north and east of the site would provide adequate noise buffering from both plant construction and operation. For Alternative 3, it is anticipated that US-1 to the, vegetative areas on parcels to the north and south, and the Atlantic Ocean to the east would provide adequate noise buffering from both plant construction and operation. Should the adjacent lots be developed in the future, vegetative buffering may be required to mitigate potential noise pollution.

To protect against noise effects, construction workers and plant operators would be required to comply with applicable occupational safety regulations and implement appropriate noise control measures, such as wearing hearing protection (e.g., earplugs, ear muffs, a helmet, or canal caps) and limiting exposure times. If these measures are implemented during construction and operations, no adverse noise effects on workers are anticipated.

SECTION THREE Affected Environment and Environmental Consequences

3.11.2 Visual Resources

Affected Environment

As discussed in PEA Section 3.11.2 (Visual Resources), visual resources refer to the landscape character (what is seen), visual sensitivity (human preferences and values regarding what is seen), scenic integrity (degree of intactness and wholeness of landscape character), and landscape visibility (relative distances of seen areas) of a geographically defined "viewshed." A visual resources assessment was conducted for the project areas by URS on April 24, 2003.

Key Largo is largely developed and is dominated by residential areas, roadways, canals, and commercial structures. Remaining vegetation on Key Largo has many native plant species, although habitat fragmentation and invasion by exotic species is a problem. There are areas of mangrove fringe along both sides of the island.

The Alternative 2 WWTP site is a forested natural parcel that is designated a mixed urban commercial/residential land use along a major roadway. The site consists of undeveloped high-quality hardwood hammock habitat. Only 2.6 acres located on the southern boundary of the site are proposed for WWTP construction. The hardwood hammock habitat would offer natural buffering for aesthetics to the north, east, and west. No other natural aesthetic buffers exist between the project area and adjacent commercial properties to the south. Dominant features of the project site viewshed include:

- Overseas Highway (US-1);
- FCAA facility buildings and a large parking area;
- Commercial structures; and
- Undeveloped lands, including hardwood hammock.

The Alternative 3 WWTP site is a developed commercial area along a major roadway. The site is an open area with forested parcels to the north and south. The Atlantic Ocean and US-1 border the site on the east and west, respectively. The surrounding area consists of a mix between commercial areas, single-family homes, and undeveloped natural lands (predominantly hardwood hammock habitat). Dominant features of the project site viewshed include:

- Overseas Highway (US-1);
- Commercial structures;
- Marine waters;
- Undeveloped lands, including hardwood hammock.

Environmental Consequences

Under the No Action Alternative, the KLWTD would not receive FEMA funds for wastewater improvement projects. Service area residents would still need to comply with Florida Statutory Treatment Standards of 2010. It is anticipated that effects on visual resources, once funding is secured, would be similar to those under Alternatives 2 and 3.

Under the No Action Alternative, FEMA would not fund the proposed wastewater management improvements. The County (Monroe County, private wastewater utility operators, business owners, and homeowners) would have to obtain alternate funding to finance the large capital costs to improve their wastewater treatment systems to meet the Florida Statutory Treatment Standards of 2010. Communities that currently use on-site systems, such as cesspools and septic systems to manage wastes would have to build community or regional WWTPs, install and OWNRS. As a result, the cumulative effects on physical, biological, and socioeconomic resources would be similar for all alternatives, as discussed below. The Monroe County Planning Department provided the following list of infrastructure projects recently completed, under construction, or planned near the project area (Buckley, Pers. Comm., 2003):

- Tradewinds Hammocks-Phase I: 68-unit affordable housing project at MM 101.5; recently completed construction;
- Tradewinds Hammocks-Phase II: 52-unit affordable housing project at MM 101.5; in the planning phase; and
- KLTV Stormwater Management Project: installation of about 6,720 linear feet of vegetated, roadside swales to reduce nuisance flooding (in the planning phase - construction expected in fiscal year 2004).

4.1 TOPOGRAPHY, SOILS AND GEOLOGY

Construction of new wastewater treatment services on Key Largo would cumulatively increase the impervious surface area; however, the actual land area required for these activities is small (maximum of 2.6 acres) relative to the total surface area of the island. Soils would be temporarily disturbed during construction, but the implementation of standard construction BMPs for erosion and sedimentation control would decrease the potential for long-term surface soil erosion. No cumulative effects are anticipated for topography and geology.

4.2 WATER RESOURCES AND WATER QUALITY

Cumulative effects on water resources, including surface waters and wetlands, and water quality for the Florida Keys are discussed in PEA Section 4.2.2 (Water Resources and Water Quality). Considering Keys-wide wastewater and stormwater management activities and the Comprehensive Everglades Restoration Program (CERP), cumulative water quality improvements are expected in the service area, in the canals and nearshore marine waters and, to a lesser extent, in offshore marine waters. The KLTV stormwater project is an example of these actions.

4.3 BIOLOGICAL RESOURCES

Cumulative effects on marine biological resources are expected to be beneficial due to improved groundwater, surface water, and marine water quality and are further discussed in PEA Section 4.2.3 (Biological Resources). Implementation of Alternative 2 would eliminate about 2.6 acres of hardwood hammock habitat. This, combined with other development pressure in the Key Largo area, would have a negative cumulative effect on terrestrial biological resources in the area. Mitigation measures include: USFWS review of Monroe County Building Permits through a

previous formal consultation with FEMA for compliance with ESA and the implementation of Monroe County's tiering system whereby land use is mapped into three categories (Tier I Conservation, Restoration, Protection; Tier II Transition, Reduce Sprawl; and Tier III Redevelopment, Infill Development) and development is steered away from Tier I and II lands.

4.4 AIR QUALITY

Potential cumulative effects on air quality are expected to be minor and are discussed in PEA Section 4.2.4 (Air Quality).

4.5 CULTURAL RESOURCES

Because non-Federally funded wastewater projects under the No Action Alternative would not be subject to Section 106 review for potential effects on cultural resources, potential cumulative effects on historic and cultural resources may occur. Coordination and project review with the SHPO and the Monroe County Historic Preservation Society would reduce the effects on cultural resources from ground-disturbing activities associated with wastewater projects. Cumulative effects on cultural resources are not anticipated and are discussed in PEA Section 4.2.5 (Cultural Resources).

4.6 SOCIOECONOMICS

The implementation of improved wastewater services from the proposed and future projects would cumulatively improve ground and nearshore water quality and would help reduce the number of Keys' beach and canal health advisories. This would likely increase the number of visitors to beaches that formerly posted health advisories and/or reduce visitor pressure on alternate beaches and recreational activities, consequently having a positive effect on tourism. The cumulative effects of a strong tourism sector on the Keys economy would be positive, with a resulting increase in demand for goods and services. Water quality improvements would also benefit commercial and recreational fisheries to the extent they are currently being adversely affected by nutrient and biological pollution. Generally, it may be predicted that harvested species that occur in nearshore waters, such as spiny lobster, white mullet, gray snapper, various flounder, shrimp, and stone crab, would benefit from improved water quality. Benefits may range from relatively minor to potentially substantial improvements in harvest rates, thus benefiting the fishing industry, related industries, and consumers. With the use of FEMA funding to reduce the Key Largo wastewater project capital costs, no significant cumulative economic impacts on service recipients are expected.

4.7 DEMOGRAPHICS AND ENVIRONMENTAL JUSTICE

The wastewater facility siting is not expected to have any cumulative adverse effects on minority and/or *low-income* populations. Although implementation of any of the alternatives would generally result in increased wastewater disposal costs for service recipients, these costs would be substantially reduced for qualifying *low-income* homeowners through implementation of the PEA financial assistance guidelines. No significant adverse cumulative economic effects on *low-income* service recipients are expected from Alternatives 2 or 3. The PEA provisions would not be required for the No Action Alternative; consequently, cumulative economic effects on *low-*

income homeowners would depend on the chosen system and sponsor's rate structure. Cumulative effects on demographics and environmental justice are further discussed in PEA Section 4.2.7 (Demographics and Environmental Justice).

4.8 HAZARDOUS MATERIALS AND WASTES

Potential cumulative effects from hazardous materials and wastes are not expected under any of the alternatives, as discussed in PEA Section 4.2.8 (Hazardous Materials and Wastes).

4.9 INFRASTRUCTURE

Building wastewater facilities as proposed in Alternatives 2 or 3, in combination with other wastewater improvement activities throughout the Keys, would lead to an overall centralization of wastewater treatment systems as opposed to individual septic tanks and cesspits. This should improve the maintenance and servicing of wastewater systems and improve overall water quality throughout the Keys.

4.10 LAND USE AND PLANNING

The installation of new wastewater facilities is not expected to change the County's existing growth pattern. Since the proposed facilities are outside of conservation areas, CARL lands, and CBRS units, adverse cumulative effects on these special status lands are not anticipated. The Florida Keys Tidal Restoration Project, a component of the CERP, is located south of Key Largo; so no cumulative effects with this project would occur. PEA Section 4.2.10 (Land Use and Planning) further discusses the cumulative effects of the alternatives on land use and planning.

4.11 NOISE AND VISUAL RESOURCES

Potential cumulative effects from noise and on visual resources are expected to be minor and are discussed in PEA Section 4.2.11 (Noise and Visual Resources).



FEMA's public involvement activities for the proposed Key Largo wastewater project began with the publication of a Notice of Intent (NOI) (Appendix D) to prepare this Draft SEA. The NOI was published in *The Upper Keys Reporter* on May 30 2003 and in the *Key West Citizen* on May 27, 2003.

In addition to FEMA's public involvement, the FCAA, KLWTD, and Monroe County Board of County Commissioners have discussed this project during some of their regularly scheduled monthly public meetings over the past year. Similarly, Monroe County held a series of public meetings throughout the Keys during the development of the MCSWMP, as described in PEA Section 5 (Public Involvement).

The Draft SEA is being released November 21, 2003, for a 30-day intergovernmental review and public comment period. The Draft SEA is being sent to the agencies and organizations listed in Appendix B and will be available to the public at the Key Largo Branch of the Monroe County Public Library (101485 Overseas Highway, Key Largo, FL 33047). It is also available on the FEMA (www.fema.gov) website. Comments received to date are included in Appendix B. FEMA will hold a public meeting on the proposed project on December 4, 2003, at the Monroe County Key Largo Branch Library.

As part of its NEPA process, FEMA will review comments from the public and government agencies and will address these comments in the Final SEA. Monroe County held a series of public meetings throughout the Keys during the development of the MCSWMP, as described in PEA Section 5 (Public Involvement).



6.1 MITIGATION

To mitigate effects of the chosen alternative, the project applicant would be required to:

- Develop an approved Erosion and Sediment Control Plan;
- Implement appropriate BMPs during construction;
- Use conventional site preparation techniques before and during construction;
- Plant appropriate vegetative barriers around the WWTP site to reduce construction noise and obscure views from US-1 and adjacent residences;
- Develop and fully implement a Stormwater Pollution Prevention Plan, under FDEP NPDES requirements;
- Ensure that construction workers comply with the established noise ordinances and with all applicable occupational safety regulations;
- For Alternative 2, the WWTP site design must minimize construction effects to the hardwood hammock and to threatened and endangered species consistent with the BA and BO, including executing a conservation easement for 19.4 acres, restoring 2.6 acres of hammock, and transplanting key tree species from the construction area to the conservation area (See Appendices H and I);
- For Alternative 2, KLWTD would comply with Monroe County Land Development Regulations Environmental Design Criteria for High Hammock (see Appendix H);
- Limit residential service recipients' system capital costs to no more than those presented in the PEA Section 3.6.3.2.2 ([Centralized Wastewater Treatment Plant Alternative] \$4,500 per EDU after grant funding has been applied);
- Provide wastewater service (inclusive of any amortized system capital costs) at a cost that falls near the affordability threshold described in PEA Section 3.6.3.2.2 ([Centralized Wastewater Treatment Plant] \$75/month); and
- Implement financial assistance, for qualifying *low-income* and *very low-income* service recipients, for system capital and service lateral and onsite system abandonment costs consistent with guidelines and definitions as described in PEA Section 3.7.1.5 (Centralized Wastewater Treatment Plant Alternative).

6.2 PERMITS AND LICENSES

Permits required to build and operate the Key Largo Wastewater Treatment System are listed in PEA Appendix E (Applicable Permit Information). These permits may include an Application for a Domestic Wastewater Facility; Application to Construct/Operate/Abandon Class V Injection Well Systems; a Construction/Clearance Permit; a Certification of Construction Completion; an Authorization for Use; an Application for Plugging and Abandonment Permit; a Notification to the FDEP of Ownership; and a Certification of Monitor Well Completion. Construction activities would also require authorization in the form of two Environmental Resource Permits (ERPs); one from the FDEP and one from the Monroe County Growth

Management Division NPDES permit for stormwater discharges from construction activities. Siting the wastewater treatment system in the 100-year floodplain will require compliance with Monroe County's Floodplain Ordinance. Moreover, because it is considered a critical action under EO 11988, the plant and its critical operating components must be protected to the 500-year flood per 44 CFR Part 9.11.

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Technical Peer Review

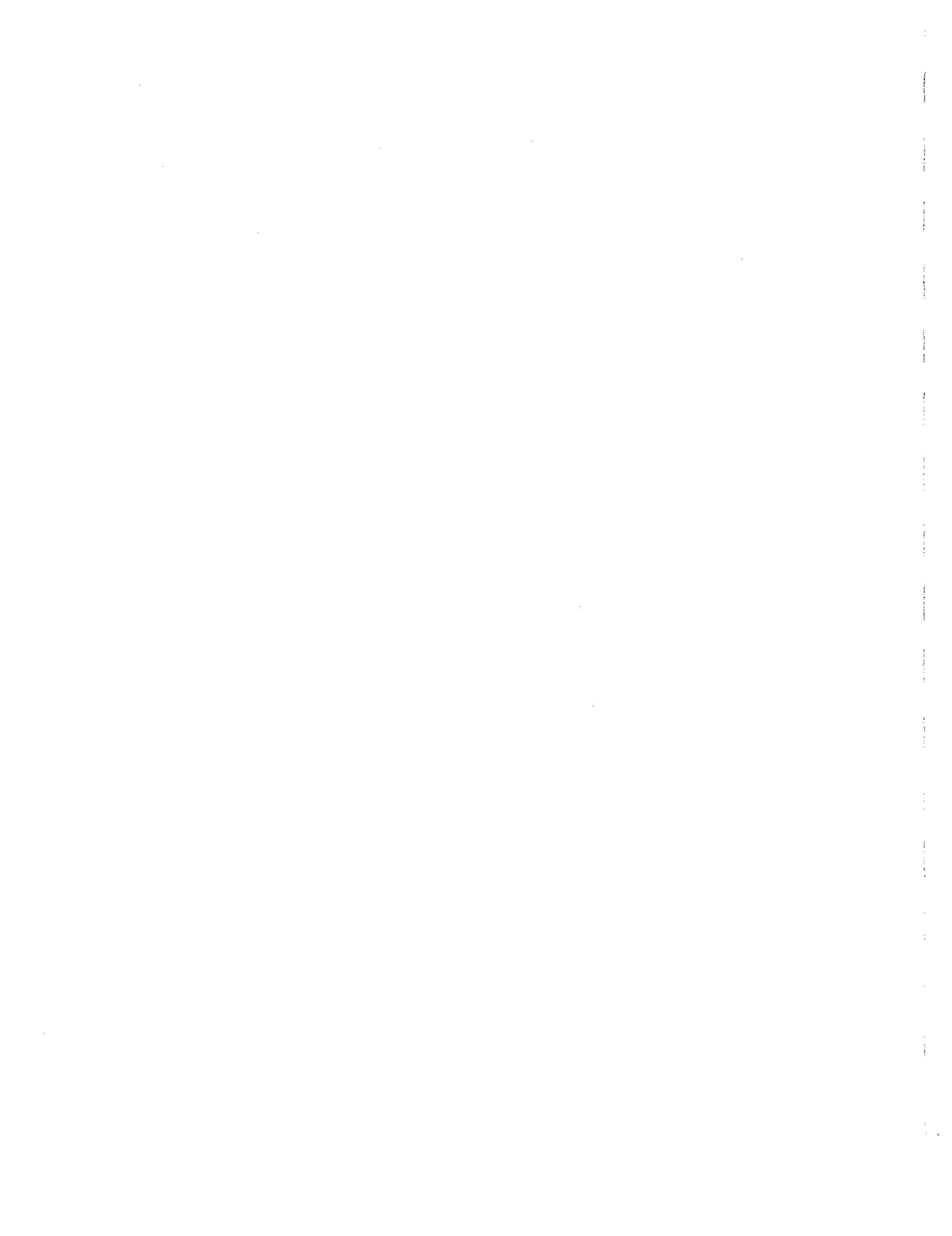
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Appendix A
Acronyms and Abbreviations

Appendix A Acronyms and Abbreviations

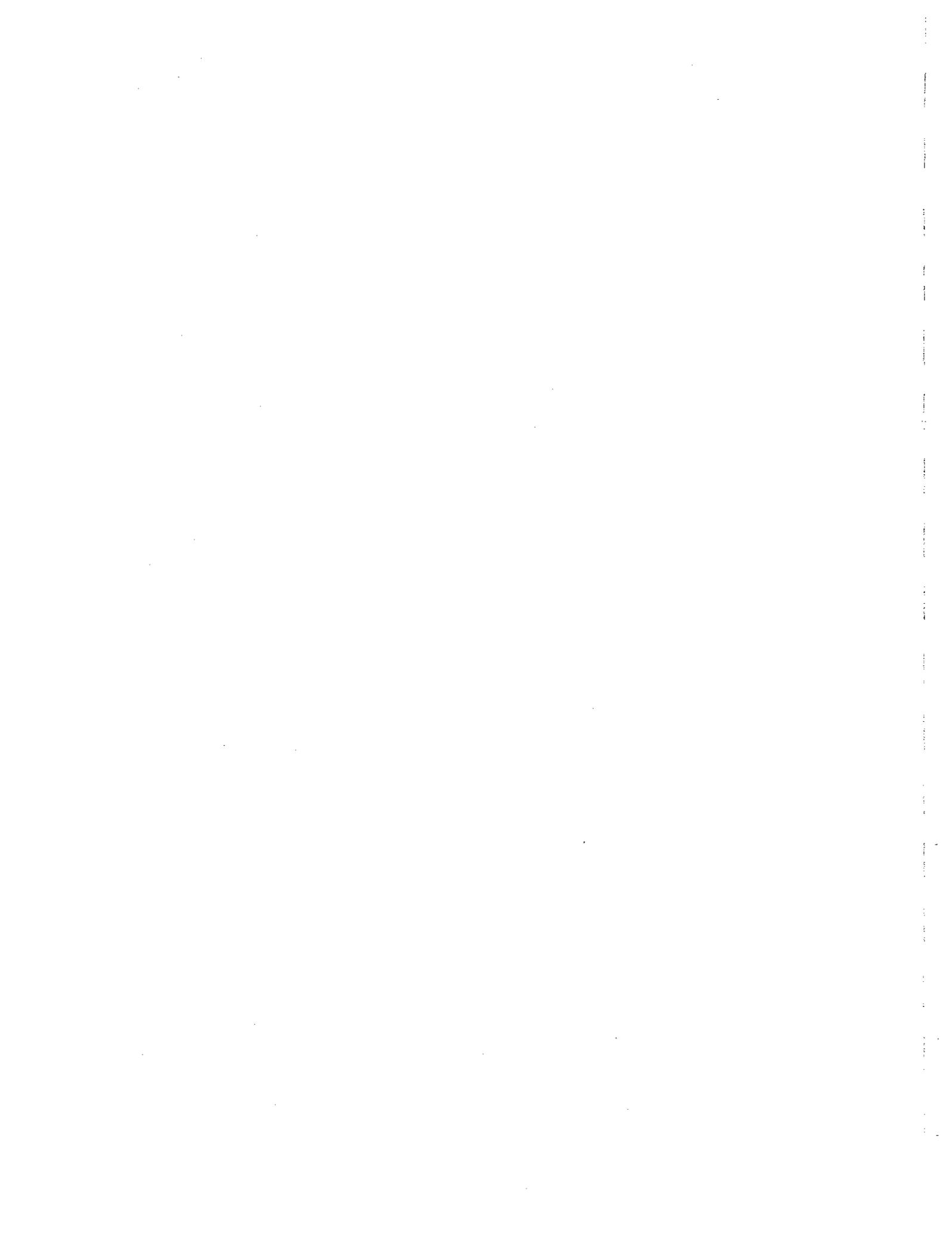
AADF	Annual Average Daily Flow
ADID	Florida Keys Advance Identification of Wetlands
alum	aluminum sulfate
amsl	above mean sea level
APE	Area of Potential Effect
ATU	Aerobic Treatment Unit
AWT	Advanced Wastewater Treatment
BA	Biological Assessment
BAT	Best Available Technology
bls	below land surface
BMP	Best Management Practice
BO	Biological Opinion
BOD	Biochemical Oxygen Demand
CARL	Conservation and Recreation Lands
CBRS	Coastal Barrier Resource System
CDP	Census Designated Place
CEQ	Council on Environmental Quality
CERP	Comprehensive Everglades Restoration Program
cfm	cubic feet per minute
CFR	Code of Federal Regulations
DBH	Diameter at breast height
DCA	Department of Community Affairs
DHR	Division of Historical Resources
DOH	Department of Health
ECT	Environmental Consulting & Technology, Inc.
EDU	Equivalent dwelling unit
EFH	Essential Fish Habitat
EO	Executive Order
EPA	Environmental Protection Agency
ERP	Environmental Resource Permit
ESA	Endangered Species Act
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
FFWCC	Florida Fish and Wildlife Conservation Commission
FKAA	Florida Keys Aqueduct Authority
FMRI	Florida Marine Research Institute
GMFMC	Gulf of Mexico Fishery Management Council
gpd	gallons per day
gpm	gallons per minute

Appendix A Acronyms and Abbreviations

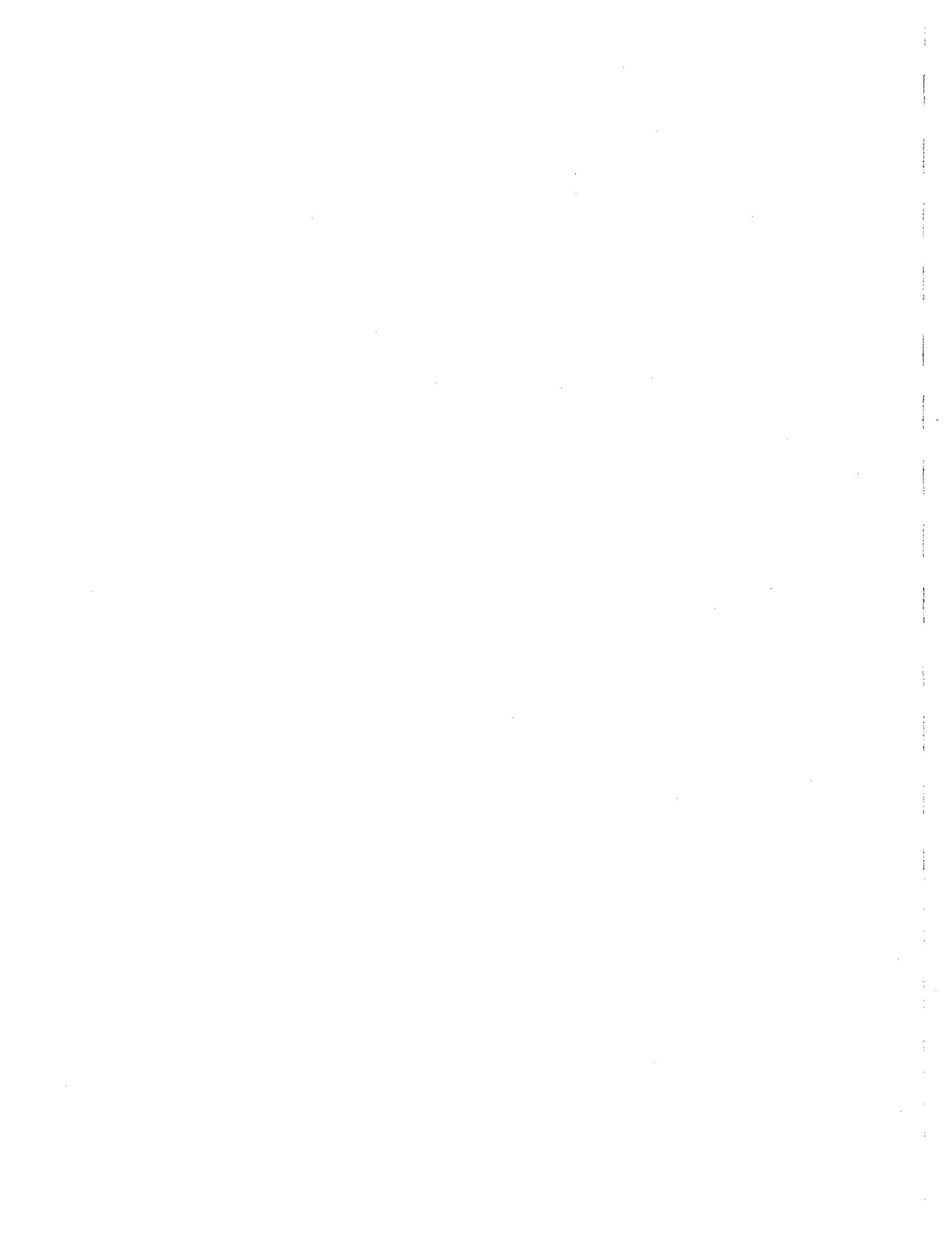
HAP	Housing Assistant Plan
HUD	U.S. Department of Housing and Urban Development
KLP	Key Largo Park
KLTV	Key Largo Trailer Village
KLWTD	Key Largo Wastewater Treatment District
LOS	Level of Service
MCSWMP	Monroe County Sanitary Wastewater Master Plan
MGD	Million Gallons per Day
mg/L	milligrams per liter
MFI	Median Family Income
ml	milliliters
MM	Mile Marker
MMADF	maximum month average daily flow
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanographic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
OWNRS	On-site wastewater nutrient reduction systems
PEA	Programmatic Environmental Assessment
ppm	parts per million
PVC	Polyvinyl Chloride
RI	Regionally Important
ROGO	Rate of Growth Ordinance
ROW	Right-of-Way
SAFMC	South Atlantic Fishery Management Council
SEA	Supplemental Environmental Assessment
SERC	Southeast Environmental Research Center
SFA	Sustainable Fisheries Act
SHPO	State Historic Preservation Officer
SWPPP	Stormwater Pollution Prevention Plan
TN	Total Nitrogen

Appendix A Acronyms and Abbreviations

TP	Total Phosphorus
TSS	Total Suspended Solids
URS	URS Corporation
US-1	U.S. Route 1
USFWS	U.S. Fish and Wildlife Service
VPS	Vacuum Pump Station
WTS	Wastewater Transmission System
WWTP	Wastewater Treatment Plant



Appendix B
Agency Coordination Letters



List of Agencies Contacted

Jay Slack, Field Supervisor
USFWS
South Florida Ecological Services Office
1339 20th Street
Vero Beach, FL 32960
cc: Phil Frank, Biologist
U.S. Fish and Wildlife Service
Winn-Dixie Plaza
Big Pine Key, FL 33043

Georgia Cranmore, Acting Assistant
Regional Administrator
NMFS, Southeast Region
Protective Resources Division
9721 Executive Center Drive North
St. Petersburg, FL 33702

Jocelyn Karazsia, Fishery Biologist
National Marine Fisheries Service
11420 N. Kendall Drive, Suite 103
Miami, FL 33176
cc: Rickey N. Ruebsamen, Acting Assistant

Regional Administrator
NMFS, Southeast Region
Habitat Conservation Division
9721 Executive Center Drive North, Suite
201
St. Petersburg, FL 33702

Dr. Janet Matthews, Director
State Historic Preservation Officer
Division of Historical Resources
R.A. Gray Building, Room 305
500 South Bronough Street
Tallahassee, FL 32399-0250
cc: Laura Kammerer, Section Administrator
Compliance and Review Section

Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Blvd.
Tallahassee, Florida 32399-2100

Mark Robson, Regional Director
Florida Fish and Wildlife Conservation
Commission
South Region
8535 North Lake Blvd.
West Palm Beach, FL 33412

Gus Rios, Branch Manager
FDEP, South District - Marathon Branch
2796 Overseas Highway, Suite 221
Marathon, FL 33050
cc: Richard Cantrell, South District Director
FDEP – South District Office
2295 Victoria Avenue, Suite 364
Fort Myers, FL 33902-2549

Cecilia Weaver, Acting Director
South Florida Water Management District
Florida Keys Service Center
80431 Old Hwy.
Islamorada, FL 33036

John Studt, South Permits Branch Chief
U.S. Army Corps of Engineers
Regulatory Permits Division
4400 PGA Blvd., Suite 500
Palm Beach Gardens, FL 33410
cc: Vic Anderson

U.S. Army Corps of Engineers
Marathon Regulatory Office
2796 Overseas Highway, Suite 221
Marathon, FL 33050-4276

Heinz J. Mueller, Chief
US EPA, Region 4
Office of Environmental Assessment
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

Appendix B
Agency Coordination Letters

Gerald Briggs, Chief
Florida Department of Health
Bureau of Onsite Sewage, HSES
4052 Bald Cypress Way, Bin #A08
Tallahassee, FL 32399-1713

Bart Bibler, Chief
Florida Department of Health
Bureau of Water Programs, HSEW
4042 Bald Cypress Way
Tallahassee, FL 32311

Teresa Tinker, Policy Coordinator
Growth Management and Strategic Planning
Office of the Governor
1501 Capitol
Tallahassee, FL 32399-0001

Miles Anderson
Division of Emergency Management
Florida Department of Community Affairs
2555 Shumard Oak Blvd.
Tallahassee, FL 32399-2100



Federal Emergency Management Agency
Region IV – Federal Insurance and Mitigation Division
3003 Chamblee Tucker Road
Atlanta, GA 30341
Phone: (770) 220 5406
Fax: (770) 220 5440

July 21, 2003

Mr. Allen Webb
U.S. Fish and Wildlife Service
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960-3559

RE: NEPA Notice of Draft Supplemental Environmental Assessment (SEA); and ESA Section 7 Informal Consultation Request for the Bay Point Key/Saddlebunch Key Wastewater System, Monroe County, Florida

Dear Mr. Webb

The purpose of this letter is to provide your agency with notice that URS Group, Inc. (URS), on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA); pursuant to the National Environmental Policy Act; for the Bay Point Key/ Saddlebunch Key Wastewater System, Monroe County, Florida. A Programmatic Environmental Assessment (PEA) (referenced in the attachments) evaluating the environmental effects of wastewater management alternatives on a broad scale was completed in December 2002. The Draft SEA tiers from the PEA and evaluates three wastewater management alternatives proposed for Bay Point Key/Saddlebunch Key: No Action (Alternative 1); Centralized Wastewater Treatment Plant located on Bay Point Key (Alternative 2); and New Wastewater Transmission System Construction (Alternative 3). At this time, FEMA requests your concurrence with their findings of not likely to adversely effect in compliance with Section 7 of the Endangered Species Act and the Migratory Bird Treaty Act (MBTA) for the three alternatives under review.

FEMA is considering funding an application from the Florida Keys Aqueduct Authority (FKAA) to construct a wastewater treatment system that would serve residents of Bay Point and Saddlebunch Keys in the Florida Keys. The purpose of the FKAA project is to reduce wastewater nutrient loading at selected Monroe County-identified "hot spots" to improve water quality; these "hot spots" are believed to contribute to water quality degradation. The Monroe County Sanitary Wastewater Master Plan ranked Bay Point and Saddlebunch Keys as the 3rd most critical "hot spot" in the Florida Keys. The "hot spot" ranking is linked to the use of cesspools and septic systems as Bay Point Key and Saddlebunch Key's main wastewater treatment systems. FEMA would provide funding assistance to the FKAA as part of their effort to assist residents on Bay Point and Saddlebunch Keys in meeting the Florida Statutory

Allen Webb
ESA Section 7 Informal Consultation
July 21, 2003
Page Three

Indian hemp (*Sida rhombifolia*), common wireweed (*Sida acuta*), wedelia (*Sphagneticola trilobata*), capeweed (*Phyla nodiflora*), West Indian dropseed (*Sporobolus indicus* var. *pyramidalis*), bluestem grasses (*Andropogon* spp.), and crowfootgrass (*Dactyloctenium aegyptium*).

No federal- or State-listed wildlife species were observed on the preferred site. No jurisdictional wetlands or surface waters or other critical habitat were identified at this site.

Description of Alternate Sites

Under Alternative 3, a transmission system would be constructed from Bay Point Key to an existing treatment plant on Stock Island. Under this alternative, a site located Bay Point Key located at approximately MM 14.8, south of US-1 and east of West Circle Drive (previously described under Alternative 2) would be used for the placement of a vacuum pump station. In addition, an approximately 11-mile transmission system corridor to an existing treatment plant on south Stock Island would be required. Portions of the transmission force main would be slip-lined in an abandoned 18-inch FCAA water main that runs parallel to US-1. Areas not available for slip-lining would be trenched to accommodate the force main. The entire transmission system would be contained in the southern right-of-way (ROW) of US-1.

Much of the vegetation adjacent to the paved US-1 roadway, along the proposed transmission system route consists primarily of grasses and weeds typical of maintained ROW, grading south to a forested fringe of coastal wetland vegetation with an open connection to the Atlantic Ocean. Vegetation within the maintained ROW consists of Bermuda grass (*Cynodon dactylon*), St. Augustine grass (*Stenotaphrum secundatum*), and crowfootgrass. A few planted ornamentals consisting mainly of coconut palms (*Cocos nucifera*) are also present along portions of the 11-mile corridor. An 8-foot wide bicycle/pedestrian trail, extending from the Bay Point vacuum pump station site to Shark Channel, is located along the proposed transmission corridor.

Adjacent to the south of the maintained ROW, fringing coastal mangrove wetlands with open connections to the Atlantic Ocean form an almost continuous system from Bay Point Key to Shark Channel, broken only by a paved access road (Blue Water Drive) on Saddlebunch Key. The widths of the fringing coastal wetlands vary from approximately 10 feet to 40 feet. The tidal wetlands from Bay Point Key to Big Coppitt Key include the surface waters and mangrove islands of Saddlebunch 2, 3, 4, and 5 Bridge crossings. Dominant species within these coastal wetlands include red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*), buttonwood (*Conocarpus erectus*), and sea oxeye (*Borrchia frutescens*). Brazilian pepper and seagrape (*Coccoloba uvifera*) were also present along the outermost landward edge.

In an earlier related consultation, the U.S. Fish and Wildlife Service (FWS) rendered a Biological Opinion (BO) for the proposed action (Alternative 2) (June 11, 2001). However, since that time the scope of the project has been reduced from a regional wastewater treatment plant to a community-level wastewater treatment plant. Because of this change in scope, FEMA requests a reinitiation of that formal consultation. Although the plant size has changed, the actual impact footprint at the plant site will remain as previously described. In addition, FEMA requests your concurrence with their findings of not likely to adversely effect in compliance with Section 7 of the Endangered Species Act and the Migratory Bird Treaty Act (MBTA) for the alternative site under review.

FEMA is considering funding an application from the Florida Keys Aqueduct Authority (FKAA), in coordination with Monroe County and the Key Largo Wastewater Board (Board), via the Florida Division of Emergency Management, to construct a wastewater treatment system that would serve residents of two communities located on Key Largo in the Florida Keys. The purpose of the project is to reduce wastewater nutrient loading at selected Monroe County-identified "hot spots" to improve water quality; these "hot spots" are believed to contribute to water quality degradation. The Monroe County Sanitary Wastewater Master Plan ranked Key Largo Trailer Village as the 4th most critical "hot spot" in the Florida Keys. The "hot spot" ranking is linked to the use of cesspools and septic systems as Key Largo Trailer Village's main wastewater treatment systems. FEMA would provide funding assistance to the FKAA/Board as part of their effort to assist residents of Key Largo Trailer Village in meeting the Florida Statutory Treatment Standards of 2010 for wastewater effluent disposal to shallow wells. A description of the range of alternatives for the proposed wastewater treatment system is attached. Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the project vicinity and additional photographs of the site at MM 98 (Alternative 3) have also been attached. Your additional comments on the range of alternatives will be considered and incorporated into the final SEA document, which is slated for completion later this year.

Lists of special status species with the potential to occur in Monroe County were obtained from "Threatened and Endangered Species Software (TESS), Version 2.0," and from the FWS Threatened and Endangered Species Internet site.

On October 25, 2000, a Biological Assessment (BA) of the preferred site (alternative 2) was prepared by URS. On March 24, 2003, URS biologists Ramon Mendieta and Michael Breiner performed reconnaissance level field surveys at the alternate (3) site located near MM 98. The purpose of the BA and the reconnaissance level survey was to investigate the potential presence of Federally protected species and/or suitable habitat for these species at each of the sites. The following sites were investigated:

- **Preferred Site (Alternative 2) for Construction of a New Treatment Plant** – Wastewater Treatment Plant (WWTP) Preferred Site located on the oceanside (east) of US Route 1 (US-1) near mile marker (MM) 100.5; and

invasive, non-indigenous plant species. Species observed in these areas included gumbo limbo, pigeon plum (*Coccoloba diversifolia*), poisonwood, and Brazilian pepper.

The alternate treatment plant site is cleared, grubbed, and developed; it is presently used for boat and vehicle storage, and miscellaneous usage. Vegetation was observed growing along the maintained US-1 ROW adjacent to the property and along the property periphery.

Undeveloped lands east and west of the alternate WWTP site can be characterized as hardwood hammock habitat.

No Federal- or State-listed wildlife species were not observed on any of the alternate sites.

Anticipated Impacts to Special Status Species

The Preferred Site consists of high-quality hardwood hammock habitat likely to support federally listed threatened and endangered species that potentially occur in this portion of the Florida Keys. Under the FWS's BO, the Key Largo WWTP is not likely to jeopardize the continued existence of the Schaus swallowtail butterfly (*Heracles aristodemus ponceanus*) or the Stock Island tree snail (*Orthalicus reses*) nor is it likely to adversely affect the eastern indigo snake (*Drymarchon corais couperi*).

The Alternate site is completely developed and is not likely to support federally listed threatened and endangered species that potentially occur in this portion of the Florida Keys.

Under the No Action Alternative (Alternative 1), no changes would be made to the existing wastewater systems. It is likely that the benefits associated with improved water quality would be delayed and continued degradation in water quality would continue in the short-term.

Based on the results of the biological field visits, consultation with experts, and a review of special status species lists, FEMA finds that alternative 3 would not result in the take of federally listed threatened or endangered species or species protected under the Migratory Bird Treaty Act (MBTA), jeopardize the continued existence of these species, or adversely affect their habitat. As part of this consultation process, FEMA respectfully seeks written concurrence on this determination of no effect within 30 days to the letterhead address. Furthermore, we request confirmation that the Service still considers its June 2001 BO for Alternative 2 current. Should FEMA approve construction funding for this project, the Service's Recommendations, Terms and Conditions would become part of the grant approval requirements.

Allen Webb
ESA Section 7 Informal Consultation
July 21, 2003
Page Five

and rice rat have specific requirements for undisturbed nesting and foraging habitat, and any occurrences at these sites by these species would be transitory in nature.

The federally-threatened Stock Island tree snail (*Orthalicus reses reses*) may potentially occur in the area of the KWRU WWTP (Hipes et al, 2001), but due to the highly developed and urbanized environment it is unlikely that the site provides suitable habitat for this species.

The osprey (*Pandion haliaetus*) is listed by the State as a Species of Special Concern in Monroe County. One osprey nest was observed along the transmission system corridor on Boca Chica. Potential impacts to the osprey would be limited to temporary disruption of foraging along the fringe of mangrove trees directly adjacent to the construction area. No permanent impacts to the existing osprey nest are anticipated as a result of this project.

Additionally, due to its small size, proximity to US-1 and other developed areas and degraded habitat value due to exotic species invasion, the Preferred Site is not likely to provide significant nesting, roosting or foraging habitat for migratory birds or other transient species. The Alternate Site may provide some foraging habitat for migratory birds and other transient species, but no permanent impacts to foraging habitat are anticipated.

Under the No Action Alternative (Alternative 1), no changes would be made to the existing wastewater systems. It is likely that the benefits associated with improved water quality would be delayed and continued degradation in water quality would continue in the short-term.

Based on the results of the biological field visit, consultation with experts, and a review of special status species lists, FEMA finds that the proposed alternatives would not result in the take of federally listed threatened or endangered species or species protected under the Migratory Bird Treaty Act (MBTA), jeopardize the continued existence of these species, or adversely affect their habitat. As part of the informal consultation process, FEMA respectfully seeks written concurrence on this determination of no effect within 30 days to the letterhead address.





June 5, 2003

Georgia Cranmore, Acting Assistant Regional Administrator
NMFS, Southeast Region
Protective Resources Division
9721 Executive Center Drive North
St. Petersburg, FL 33702

RE: NEPA Notice of Draft Supplemental Environmental Assessment (SEA); ESA Section 7 Informal Consultation Request; and MSFCMA Consultation Request for the Key Largo Wastewater System, Monroe County, Florida

Dear Ms. Cranmore:

The purpose of this letter is to provide your agency with notice that URS Group, Inc. (URS), on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA); pursuant to the National Environmental Policy Act; for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates three wastewater management alternatives proposed for Key Largo: No Action (Alternative 1); Centralized Wastewater Treatment Plant located on Key Largo (Alternative 2); and New Wastewater Transmission System Construction (Alternative 3). At this time, FEMA requests your concurrence with their findings of no effect in compliance with Section 7 of the Endangered Species Act, and the Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act for the three alternatives under review.

FEMA is considering funding an application from the Florida Keys Aqueduct Authority (FKAA) to construct a wastewater treatment system that would serve residents of two communities located on Key Largo in the Florida Keys. The purpose of the FKAA project is to reduce wastewater nutrient loading at selected Monroe County-identified "hot spots" to improve water quality; these "hot spots" are believed to contribute to water quality degradation. The Monroe County Sanitary Wastewater Master Plan ranked Key Largo Trailer Village as the 4th most critical "hot spot" in the Florida Keys. The "hot spot" ranking is linked to the use of cesspools and septic systems as Key Largo Trailer Village's main wastewater treatment systems. FEMA would provide funding assistance to the FKAA as part of their effort to assist residents of Key Largo Trailer Village and Key Largo Park in meeting the Florida Statutory Treatment Standards of 2010 for wastewater effluent disposal to shallow wells. A description of the range of alternatives for the proposed wastewater treatment system is attached. Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the



Georgia Cranmore
NMFS, Southeast Region
June 5, 2003
Page 2 of 4

project vicinity has also been attached. Your comments on the range of alternatives will be considered and incorporated into the final SEA document, which is slated for completion later this year.

Current lists of special status species with the potential to occur in Monroe County were obtained from "Threatened and Endangered Species Software (TESS), Version 2.0," from the U.S. Fish and Wildlife Service (FWS) Threatened and Endangered Species Internet site (<http://endangered.fws.gov/>), as well as the internet sites for the Gulf of Mexico Fishery Management Council (<http://www.gulfcouncil.org/>) and the South Atlantic Fishery Management Council (<http://www.safmc.net/>).

On October 25, 2000 a Biological Assessment (BA) of the preferred site was prepared by URS. On March 24, 2003, URS biologists Ramon Mendieta and Michael Breiner performed reconnaissance level field surveys at the alternate site. The purpose of the BA and the survey was to investigate the potential presence of federally protected species and/or suitable habitat for these species at each of the sites. The following sites were investigated:

- **Preferred Site for Construction of a New Treatment Plant – Wastewater Treatment Plant (WWTP) Preferred Site** located on the oceanside (east) of US Route 1 (US-1) near mile marker (MM) 100.5; and
- **Alternate Site for a Vacuum Pump Station, and Corridor for Construction of a New Transmission System to a New Treatment Plant – Alternate Site** for a vacuum pump station, located on the oceanside (east) of US-1 at approximately MM 100.5; an approximately 2.5-mile corridor for wastewater transmission system that would be constructed along the east side of the US-1 right-of-way (ROW); and a new WWTP located on the oceanside of US-1 near MM 98.0.

Under Alternatives 2, no marine resources, tidal wetlands or other potential EFH typically occur within 150 feet of the proposed site. Under Alternative 3, the proposed WWTP site is located adjacent to the Straits of Florida. The site is completely developed; tidal wetlands or other potential EFH were not observed on site. Neither construction nor operation of either alternative would affect EFH. Further, as described in Section 3.3 (Biological Resources) and Section 3.6.2 (Fishing Industry) of the Programmatic Environmental Assessment for Wastewater Improvements in the Florida Keys, implementation of the either alternative is expected to improve nearshore water quality, by reducing nutrient loading. Seagrasses, mangroves and hardbottom habitats serve as



Georgia Cranmore
NMFS, Southeast Region
June 5, 2003
Page 3 of 4

critical nursery habitat for commercially significant fisheries species as well as several Federal and state-listed marine species. Their health is dependent to a large degree on water quality. Therefore, the implementation of the either alternative is expected to have a net positive effect on EFH as well as Federally-listed marine species.

In order to further ensure that EFH is not affected, FKAA would employ best management practices (BMPs) to prevent concrete, steel and other demolition debris, waste, and construction material from entering tidal wetlands and/or marine waters. These measures may include the deployment of silt screens, turbidity curtains, or other barriers prior to commencement of construction.

All equipment operating in the project area would be regularly cleaned, checked for leaks, and otherwise maintained. Equipment refueling would be done away from marine waters, and, in the unlikely event that a fuel leak or spill were to occur, adequate containment equipment and cleanup (absorbent material) supplies would be readily available at the worksite.

No species listed for protection at the State or Federal levels were observed in either of the proposed areas alternative sites. Based on the results of the biological field visit, consultation with experts, and a review of special status species lists, FEMA finds that the proposed alternatives would not result in the take of threatened or endangered species or species protected under the Migratory Bird Treaty Act (MBTA), jeopardize the continued existence of these species, or adversely affect their habitat.

As part of the informal consultation process, FEMA respectfully seeks written concurrence with this determination of no effect within 30 days to the letterhead address. If you have any questions or comments, please do not hesitate to contact me at (305) 884-8900, or Ms. Science Kilner, FEMA Lead Environmental Specialist, at (770) 220-5357. Thank you very much for your assistance.

Sincerely,

URS Group, Inc.

Ramon Merdieta
Environmental Scientist



Georgia Cranmore
NMFS, Southeast Region
June 5, 2003
Page 4 of 4

Attachments as noted

cc:

Rickey N. Ruebsamen, NMFS Southeast Region
Ms. Jocelyn Karazsia, NMFS
Science Kilner, FEMA Region IV, Lead Environmental Specialist
Stephen Carruth, URS Group, Inc., Environmental Planner



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 NATIONAL MARINE FISHERIES SERVICE
 Southeast Regional Office
 9721 Executive Center Drive North
 St. Petersburg, FL 33702
 (727) 570-5312; Fax 570-5517
<http://caldera.sero.nmfs.gov>

NOV 19 2003

F/SER3:DK

Ramon Mendieta
 Environmental Scientist
 URS Corporation
 Eastern Financial Building, Suite 1000
 Miami Springs, FL 33166

Dear Mr. Mendieta:

This correspondence is in reply to your June 5, 2003, letter on behalf of the Federal Emergency Management Agency (FEMA), and accompanying information, regarding the proposed Key Largo Wastewater System. FEMA has requested section 7 consultation from the National Marine Fisheries Service (NOAA Fisheries), pursuant to the Endangered Species Act of 1973 (ESA). The proposed action is FEMA funding of an application from the Florida Keys Aqueduct Authority (FKAA) to construct and operate a wastewater treatment system that would serve residents of two communities located on Key Largo in the Florida Keys. The NOAA Fisheries' consultation number for this project is I/SER/2003/00773; please refer to this number in future correspondence on this project.

The proposed action is FEMA authorization and funding assistance for a wastewater treatment plant to be constructed and operated by FKAA. This plant would serve two communities on Key Largo that are currently using cesspools and septic tanks, and have been identified as "hot spots" believed to contribute to water quality degradation in the area. With the treatment plant, the wastewater would be treated to meet the Florida Statutory Treatment Standards of 2010 for wastewater effluent disposal to shallow wells. There are two alternative sites analyzed for the treatment plant in Key Largo. The preferred site is on the oceanside (east) of US Route 1 (US-1) near mile marker (MM) 100.5, in a hardwood hammock area. The alternate site would have the vacuum pump station at the same area as the preferred site, connected via pipeline along US-1 with the treatment plant located on the east side of US-1 near MM 98.0 in an area that is already developed.

ESA-listed species under the purview of NOAA Fisheries which potentially occur in the vicinity of the project area include: the green (*Chelonia mydas*), loggerhead (*Caretta caretta*), Kemp's ridley (*Lepidochelys kempii*), leatherback (*Dermochelys coriacea*), and hawksbill (*Eretmochelys imbricata*) sea turtles; the smalltooth sawfish (*Pristis pectinata*); and the fin (*Balaenoptera physalus*), humpback (*Megaptera novaeangliae*), sei (*Balaenoptera borealis*), blue (*Balaenoptera musculus*), and sperm (*Physeter macrocephalus*) whales; and the smalltooth sawfish (*Pristis pectinata*). No critical habitat has been designated or proposed for listed species within the project area.

Construction of either one of the two alternatives will not occur in or over marine ecosystems. In addition, FKAA will employ best management practices (BMPs) to prevent concrete, steel, and any other debris or waste related to construction from entering any tidal wetlands or marine systems, and to keep construction machinery clean and free from leaking oil. Treated wastewater will be pumped into shallow



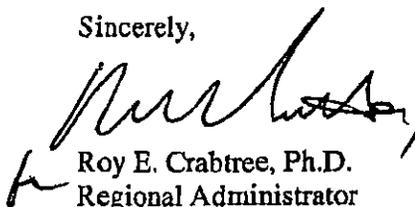
disposal wells. This project, when complete, will serve to improve water quality in an area that currently treats its sewage through the use of septic tanks and cesspools, and will, therefore, have a net benefit to marine ecosystems in the area. NOAA Fisheries, therefore, believes that the proposed action is not likely to adversely affect any listed species or designated critical habitat under our purview.

This letter concludes FEMA's consultation responsibilities under section 7 of the ESA for the proposed action for federally-listed species, and their critical habitat, under NOAA Fisheries' purview. Be advised that a new consultation must be initiated if a take occurs or new information reveals effects of the action not previously considered, or the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat is designated that may be affected by the identified action.

The action agency is also reminded that, in addition to its protected species/critical habitat consultation requirements with NOAA Fisheries' Protected Resources Division pursuant to section 7 of the ESA, prior to proceeding with the proposed action the action agency must also consult with NOAA Fisheries' Habitat Conservation Division (HCD) pursuant to the Magnuson-Stevens Fishery Conservation and Management Act's requirements for essential fish habitat (EFH) consultation (16 U.S.C. 1855 (b)(2) and 50 CFR 600.905-.930, subpart K). The action agency should also understand the ESA and EFH processes; that ESA and EFH consultations are separate, distinct, and guided by different statutes, goals, and time lines for responding to the action agency; and that the action agency will receive separate consultation correspondence on NOAA Fisheries letterhead from HCD regarding their concerns and/or finalizing EFH consultation. Consultation is not complete until EFH and ESA concerns have been addressed.

If you have any questions about EFH consultation for this project, please contact Ms. Jocelyn Karazsia, HCD, at (305) 595-8352. If you have any questions about this ESA consultation, please contact Dennis Klemm, fishery biologist, at the number above or by e-mail at Dennis.Klemm@noaa.gov.

Sincerely,



Roy E. Crabtree, Ph.D.
Regional Administrator

cc: F/PR3
F/SER43-Karazsia

File: 1514-22 O.3 FL.
O:\section 7\informal\00773 Key Largo Wastewater System.wpd



June 5, 2003

Ms. Jocelyn Karazsia
National Marine Fisheries Service
Division of Habitat Conservation
11420 N. Kendall Drive, Suite 103
Miami, Florida 33176

RE: NEPA Notice of Draft Supplemental Environmental Assessment (SEA); ESA Section 7 Informal Consultation Request; and MSFCMA Consultation Request for the Key Largo Wastewater System, Monroe County, Florida

Dear Ms. Karazsia:

The purpose of this letter is to provide your agency with notice that URS Group, Inc. (URS), on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA); pursuant to the National Environmental Policy Act; for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates three wastewater management alternatives proposed for Key Largo: No Action (Alternative 1); Centralized Wastewater Treatment Plant located on Key Largo (Alternative 2); and New Wastewater Transmission System Construction (Alternative 3). At this time, FEMA requests your concurrence with their findings of no effect in compliance with Section 7 of the Endangered Species Act, and the Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act for the three alternatives under review.

FEMA is considering funding an application from the Florida Keys Aqueduct Authority (FKAA) to construct a wastewater treatment system that would serve residents of two communities located on Key Largo in the Florida Keys. The purpose of the FKAA project is to reduce wastewater nutrient loading at selected Monroe County-identified "hot spots" to improve water quality; these "hot spots" are believed to contribute to water quality degradation. The Monroe County Sanitary Wastewater Master Plan ranked Key Largo Trailer Village as the 4th most critical "hot spot" in the Florida Keys. The "hot spot" ranking is linked to the use of cesspools and septic systems as Key Largo Trailer Village's main wastewater treatment systems. FEMA would provide funding assistance to the FKAA as part of their effort to assist residents of Key Largo Trailer Village and Key Largo Park in meeting the Florida Statutory Treatment Standards of 2010 for wastewater effluent disposal to shallow wells. A description of the range of alternatives for the proposed wastewater treatment system is attached. Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the

URS Corporation
Eastern Financial Building, Suite 1000
700 South Royal Poinciana Boulevard
Miami Springs, FL 33166
Tel: 305.884.8900
Fax: 305.884.2665



Ms. Jocelyn Karazsia
National Marine Fisheries Service
June 5, 2003
Page 2 of 4

project vicinity has also been attached. Your comments on the range of alternatives will be considered and incorporated into the final SEA document, which is slated for completion later this year.

Current lists of special status species with the potential to occur in Monroe County were obtained from "Threatened and Endangered Species Software (TESS), Version 2.0," from the U.S. Fish and Wildlife Service (FWS) Threatened and Endangered Species Internet site (<http://endangered.fws.gov/>), as well as the internet sites for the Gulf of Mexico Fishery Management Council (<http://www.gulfcouncil.org/>) and the South Atlantic Fishery Management Council (<http://www.safmc.net/>).

On October 25, 2000 a Biological Assessment (BA) of the preferred site was prepared by URS. On March 24, 2003, URS biologists Ramon Mendieta and Michael Breiner performed reconnaissance level field surveys at the alternate site. The purpose of the BA and the survey was to investigate the potential presence of federally protected species and/or suitable habitat for these species at each of the sites. The following sites were investigated:

- **Preferred Site for Construction of a New Treatment Plant – Wastewater Treatment Plant (WWTP) Preferred Site** located on the oceanside (east) of US Route 1 (US-1) near mile marker (MM) 100.5; and
- **Alternate Site for a Vacuum Pump Station, and Corridor for Construction of a New Transmission System to a New Treatment Plant – Alternate Site** for a vacuum pump station, located on the oceanside (east) of US-1 at approximately MM 100.5; an approximately 2.5-mile corridor for wastewater transmission system that would be constructed along the east side of the US-1 right-of-way (ROW); and a new WWTP located on the oceanside of US-1 near MM 98.0.

Under Alternatives 2, no marine resources, tidal wetlands or other potential EFH typically occur within 150 feet of the proposed site. Under Alternative 3, the proposed WWTP site is located adjacent to the Straits of Florida. The site is completely developed; tidal wetlands or other potential EFH were not observed on site. Neither construction nor operation of either alternative would affect EFH. Further, as described in Section 3.3 (Biological Resources) and Section 3.6.2 (Fishing Industry) of the Programmatic Environmental Assessment for Wastewater Improvements in the Florida Keys, implementation of either alternative is expected to improve nearshore water quality, by reducing nutrient loading. Seagrasses, mangroves and hardbottom habitats serve as



Ms. Jocelyn Karazsia
National Marine Fisheries Service
June 5, 2003
Page 3 of 4

critical nursery habitat for commercially significant fisheries species as well as several Federal and state-listed marine species. Their health is dependent to a large degree on water quality. Therefore, the implementation of the either alternative is expected to have a net positive effect on EFH as well as Federally-listed marine species.

In order to further ensure that EFH is not affected, FKAA would employ best management practices (BMPs) to prevent concrete, steel and other demolition debris, waste, and construction material from entering tidal wetlands and/or marine waters. These measures may include the deployment of silt screens, turbidity curtains, or other barriers prior to commencement of construction.

All equipment operating in the project area would be regularly cleaned, checked for leaks, and otherwise maintained. Equipment refueling would be done away from marine waters, and, in the unlikely event that a fuel leak or spill were to occur, adequate containment equipment and cleanup (absorbent material) supplies would be readily available at the worksite.

No species listed for protection at the State or Federal levels were observed in either of the proposed areas alternative sites. Based on the results of the biological field visit, consultation with experts, and a review of special status species lists, FEMA finds that the proposed alternatives would not result in the take of threatened or endangered species or species protected under the Migratory Bird Treaty Act (MBTA), jeopardize the continued existence of these species, or adversely affect their habitat.

As part of the informal consultation process, FEMA respectfully seeks written concurrence with this determination of no effect within 30 days to the letterhead address. If you have any questions or comments, please do not hesitate to contact me at (305) 884-8900, or Ms. Science Kilner, FEMA Lead Environmental Specialist, at (770) 220-5357. Thank you very much for your assistance.

Sincerely,

URS Group, Inc.

Ramon Mendieta
Environmental Scientist



Ms. Jocelyn Karazsia
National Marine Fisheries Service
June 5, 2003
Page 4 of 4

Attachments as noted

cc: Rickey N. Ruebsamen, NMFS Southeast Region
Science Kilner, FEMA Region IV, Lead Environmental Specialist
Stephen Carruth, URS Group, Inc., Environmental Planner



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, Florida 33702

June 24, 2003

Mr. Ramon Mendieta
URS Corporation
Eastern Financial Building, Suite 1000
700 South Royal Poinciana Boulevard
Miami Springs, Florida 33166

Dear Mr. Mendieta:

The National Marine Fisheries Service (NOAA Fisheries) has reviewed the June 5, 2003, **Notice of Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida**, which you provided. By letter dated February 18, 2003, to the Federal Emergency Management Agency (FEMA), we provided comments on the September 20, 2002, Draft Programmatic Environmental Assessment (PEA) for the Proposed Wastewater Treatment Improvements in the Florida Keys, Florida. In addition, by letters dated February 27, 2003, March 17, 2003, and May 29, 2003, to URS Corporation, NOAA Fisheries provided comments on the Draft Supplemental Environmental Assessments for the Conch Key, the Plantation Key, and the Bay Point Saddlebunch Key Wastewater Systems, respectively, in Monroe County, Florida.

According to the information you provided, URS Group, Inc., on behalf of FEMA, is preparing a SEA for the Key Largo Wastewater System in Monroe County, Florida. FEMA is considering funding an application from the Florida Keys Aqueduct Authority (FKAA) to construct a wastewater treatment system that would serve residents of two communities on Key Largo in the Florida Keys. The purpose of the FKAA's project is to reduce wastewater nutrient loading at selected Monroe County identified "hot spots," thereby improving water quality. These hot spots are believed to contribute to water quality degradation. The Monroe County Sanitary Wastewater Master Plan ranked Key Largo as the 4th most critical hot spot in the Florida Keys. The hot spot ranking is linked to the use of cesspools and septic systems as Key Largo Trailer Village's principal means for wastewater treatment.

The Draft SEA evaluates three wastewater management alternatives proposed for Key Largo. These alternatives include, Alternative 1: No Action; Alternative 2: Centralized Wastewater Treatment Plant located on the Northern Side; and Alternative 3: New Wastewater Treatment Plant on the Southern Side. These three alternatives are briefly described below.



The No Action Alternative would not provide funding assistance to the FKAA for the proposed wastewater management project. In order to meet the Florida Statutory Treatment Standards of 2010, the FKAA and service area, residents would need to identify another source of funding for upgrading currently inadequate wastewater treatment systems.

The New Wastewater Treatment Plant on the Northern Site (Alternative 2 and the Preferred Alternative) would involve construction of a new wastewater collection system, vacuum pump station, and wastewater treatment plant (WWTP) that would be located on Key Largo. This alternative would be designed to meet the Florida Statutory Treatment Standards of 2010, for effluent disposal to shallow injection wells. The new system would service about 500 land parcels, or about 1,000 people, within the service area. Through this alternative, approximately 467 cesspools and septic systems would be removed from property owners in the service area.

The New Wastewater Treatment Plant on the Southern Side (Alternative 3) would involve construction of a vacuum pump station and a wastewater transmission system extending from the vacuum pump station to a new community WWTP. Like Alternative 2, approximately 467 cesspools and septic systems would be removed from property owners in the service area.

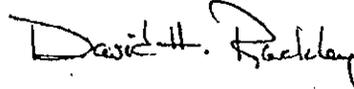
According to the information provided, no marine resources, tidal wetlands or other potential Essential Fish Habitat (EFH) exist within 150 feet of the proposed site of Alternative 2. Under Alternative 3, the proposed WWTP is located adjacent to the Straights of Florida. The site is completely developed and tidal wetlands or other EFH were not observed at the site. Neither construction or operation of either Alternative 2 or 3, would affect EFH. Furthermore, Alternatives 2 and 3 are expected to improve nearshore water quality by reducing nutrient loading. Through execution of either alternative, a net positive effect on EFH is expected, given that the health of seagrass, mangrove, and hardbottom habitats is dependent, to a large degree, on water quality. In addition, the FKAA would employ best management practices, as outlined in the information provided, to further ensure that EFH is not affected.

NOAA Fisheries concurs with the determination that construction of a Key Largo Wastewater System would have a beneficial effect with regard to EFH. Nearshore marine habitats including seagrass communities and coral reefs are likely to benefit as a result of reductions in total suspended solids, nutrients, and pathogens that are expected in connection with wastewater improvement activities.

In conclusion, NOAA Fisheries supports improvement of the existing wastewater treatment facilities Keys-wide, including the proposed improvements at Key Largo. Reducing nutrient loading into nearshore waters from outdated septic systems and cesspits should result in improved water quality and positive effects on EFH and other NOAA Fisheries-trust resources in the Florida Keys.

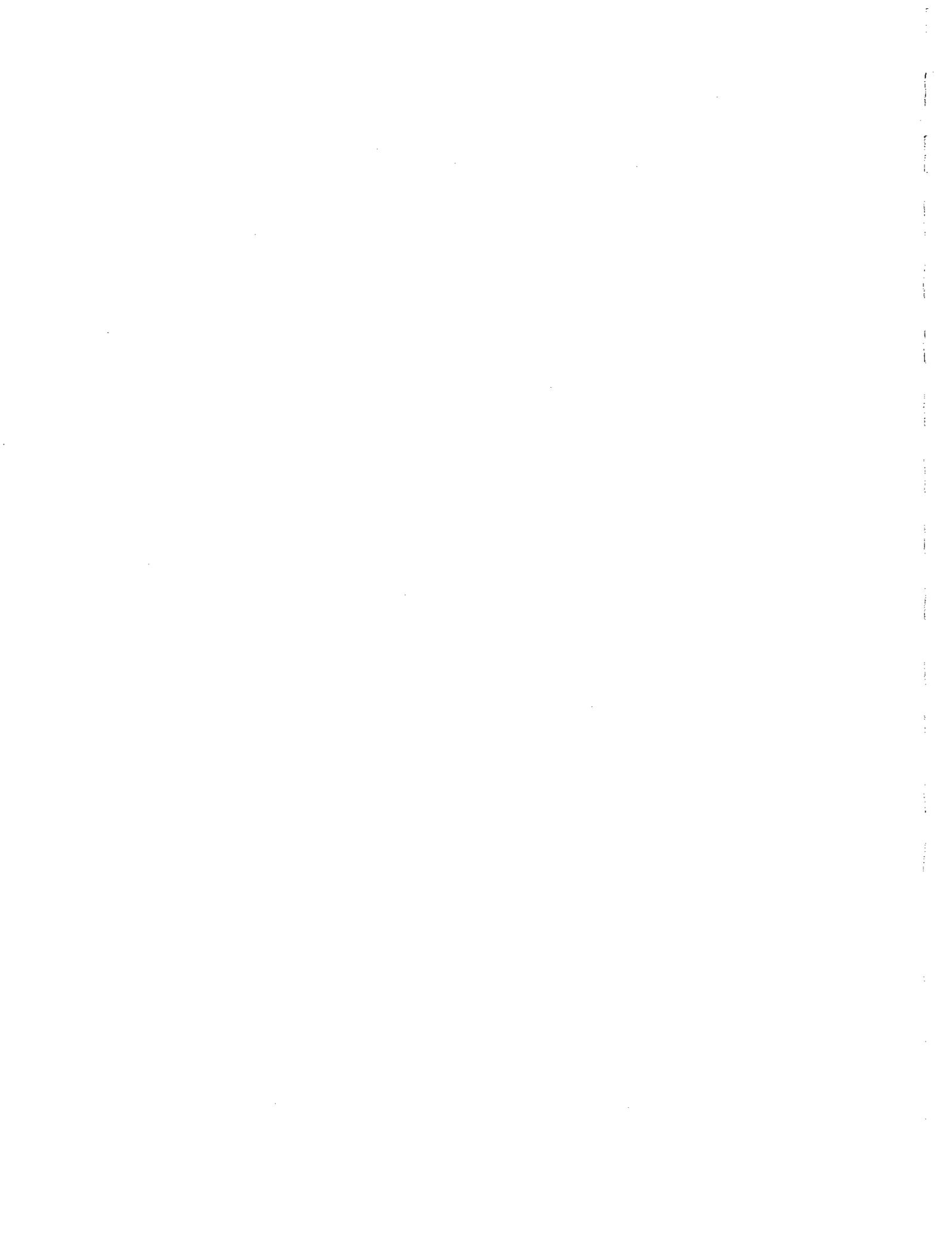
At this time, we do not have specific comments or recommendations to provide. We look forward to working with FEMA and URS, Inc., as you develop more detailed information. If we can be of further assistance, please advise. Related comments, questions or correspondence should be directed to Ms. Jocelyn Karazsia in Miami, Florida, at (305) 595-8352.

Sincerely,



Frederick C. Sutter III
Deputy Regional Administrator

cc:
EPA, Marathon
DEP, Marathon
FFWCC, Tallahassee
FWS, Big Pine Key
F/SER4
F/SER45-Karazsia



FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION



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OFFICE OF ENVIRONMENTAL SERVICES
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July 14, 2000

Mr. John B. Copenhagen, Regional Director
Federal Emergency Management Agency
3003 Chamblee Tucker Road
Atlanta, GA 30341-4130

Re: Preliminary Environmental Assessment
Proposed Wastewater Treatment Plant Site
Key Largo, Florida

Dear Mr. Copenhagen:

The Office of Environmental Services of the Florida Fish and Wildlife Conservation Commission would like to submit to you our comments concerning the referenced document. Our office has participated in several previous meetings pertaining to the siting of a sewage treatment plant, to be partially funded by FEMA, on Key Largo. Our staff was present at a recent interagency conference call hosted by the Florida Governor's office, and we participated in the interagency field inspection of the proposed site on July 10, 2000. We have also been following correspondence between your agency and the U. S. Fish and Wildlife Service (USFWS) pertaining to the potential need to prepare an Environmental Assessment for this project pursuant to the National Environmental Policy Act (NEPA) and to consult with USFWS under Section 7 of the U. S. Endangered Species Act. It appears that the referenced document may factor into FEMA's efforts to prepare an Environmental Assessment of the proposed site, and it also appears that present circumstances are compelling FEMA to expedite the process. Given these circumstances, we are providing you the following comments concerning the Preliminary Environmental Assessment prepared by Monroe County staff.

Listed Species

The Preliminary Environmental Assessment identifies a set of species listed by either State or federal agencies as endangered, threatened, or species of special concern as occurring, or potentially occurring, on the site. The list is not complete: First, the site contains potential habitat for the rim rock crowned snake (*Tanilla oolitic*), a species listed as threatened by the State of Florida due to the rapid rate of loss of its habitat. The rim rock crowned snake is endemic to a small area of southeast Florida, including the upper Keys. It is a secretive burrower

that occupies a variety of habitats including tropical hardwood hammocks. Second, the environmental assessment did not include a number of State-listed plants likely to occur on site. The proposed site for the Key Largo sewage treatment plant is a 22-acre parcel of land that has been targeted for acquisition by the State of Florida under the Conservation and Recreation Lands (CARL) program. The parcel is included within the larger 191-acre Newport Hammocks tract, a part of the Florida Keys Ecosystem CARL project. The Florida Keys Ecosystem CARL project ranks number two out of 32 priority projects identified for acquisition under the CARL program. The Newport Hammocks tract has been surveyed for the presence of rare and imperiled species by various biologists. The Florida Natural Areas Inventory element occurrence database indicates that the following listed plants occur on the Newport Hammocks tract: wild cinnamon (*Canella winteriana*, endangered), yellowwood (*Schaefferia frutescens*, endangered), Simpson's prickly apple (*Harrisia simpsonii*, endangered), whitish passionflower (*Passiflora multiflora*, endangered), milkbark (*Drypetes diversifolia*, endangered), banded wild-pine (*Tillandsia flexuosa*, endangered), wild cotton (*Gossypium hirsutum*, endangered), Florida thatch palm (*Thrinax radiata*, endangered), joewood (*Jacquinia keyensis*, threatened), wild dilly (*Manilkara bahamensis*, threatened), and golden leather fern (*Acrostichum aureum*, threatened). While these plants are known from the Newport Hammocks CARL site, they are not necessarily present on the proposed wastewater treatment plant site. Nevertheless, their potential presence should be discussed in the environmental assessment, and any surveys planned for the site should include these species as potential candidates.

The Preliminary Environmental Assessment provides a brief discussion of the potential presence of Schaus' swallowtail butterfly (*Heracles aristodemus ponceanus*) on the site. This butterfly is listed by State and federal agencies as an endangered species. This endangered species has been reintroduced to John Pennecamp Coral Reef State Park within two miles of the proposed site. This reintroduction effort has been successful thus far. While Schaus' swallowtail butterfly may or may not be present on the site at the present time, the potential exists for it to colonize this part of its historic range some time in the relatively near future. Similarly, the assessment contains a brief discussion of the potential presence of Stock Island tree snail (*Orthalicus reses reses*), a species listed as endangered by both State and federal agencies. While not known with certainty to be present at this site, the Stock Island tree snail is known to be present within one mile of the proposed sewage treatment site. If not present, the potential also exists for this species to colonize this site at some future date.

The Preliminary Environmental Assessment included a number of species of animals as potentially occurring on site that are very unlikely to be present. The following species probably do not occur on the site and should be withdrawn from further consideration: American alligator (*Alligator mississippiensis*), American crocodile (*Crocodylus acutus*), Florida brown snake (*Storeria dekayi vicia*), southeastern kestrel (*Falco sparverius paulus*), Arctic peregrine falcon (*Falco peregrinus tundrius*), southern bald eagle (*Haliaeetus leucocephalus*), least tern (*Sterna antillarum*), and roseate tern (*Sterna dougalli*). The Key Largo woodrat (*Neotoma floridana smalli*) and Key Largo cotton mouse (*Peromyscus gossypinus allapaticola*) are both listed as endangered by State and federal agencies, and the project site is within the historic range of these small mammals. However, at this point in time, these species are known to occur only in North

Key Largo. While this site probably should be surveyed for these endangered mammals, it is unlikely that they will be found.

Strategic Habitat Conservation Area

The Preliminary Environmental Assessment did not include a discussion of the ecological importance of this site as identified in our 1994 report entitled, "Closing the Gaps in Florida's Wildlife Habitat Conservation System." The purpose of this report was to assess the habitat conservation needs of rare and imperiled animals, plants, and natural communities in Florida. The report used a set of indicator species and communities to assess current levels of biodiversity protection and to identify lands in need of protection. Lands identified for protection were referred to as strategic habitat conservation areas, which were defined as privately owned lands that, taken in conjunction with existing publicly owned lands, have the best chances of meeting the long-term habitat needs of most components of Florida's biological diversity. The intent was that, if strategic habitats could be protected, future extinctions of plant and animal species in Florida could be averted.

The Closing the Gaps report identified the proposed sewage treatment plant site as a strategic habitat conservation area for white-crowned pigeon (*Columba leucocephala*, threatened), black-whiskered vireo (*Vireo altiloquus*, unlisted), and tropical hardwood hammock natural community. In our opinion, the importance of this site to the long-term conservation needs of biodiversity in Florida is clearly indicated by the presence of three of our indicator species and communities.

Current Status of the Tropical Hardwood Hammock Community

In our opinion, the Preliminary Environmental Assessment overlooks the significance of the proposed site within the context of the bigger picture of conservation of tropical hardwood hammocks as a rare natural community type. Tropical hardwood hammocks are the successional climax community of the rockland habitats of extreme south Florida. This community type supports a high diversity of plants and animals found nowhere else in the United States. A minimum of 30-40 years are needed for a hammock community to begin to mature following disturbance. Thus, the presence of a high quality tropical hardwood hammock on the proposed site attests to the time since last disturbance as well as the time frame over which the ecological conditions necessary to support associated rare and imperiled plants and animals have been developing.

The best remaining examples of tropical hardwood hammocks in the United States are found in the Florida Keys, and most of these are on Key Largo. While we have never seen an estimate of the original area of Florida covered by tropical hardwood hammocks, our inventories of vegetation types statewide indicated that there were no more than 15,345 acres remaining in Florida in the late 1980s, and almost all of it was found in the Keys. As of December 1999, only 8,137 acres of tropical hardwood hammock were protected by public ownership despite much of the remainder having been targeted for public acquisition for over 10 years. When compared with the status of other natural communities in Florida, these are alarmingly small numbers. The

only secure future for the rare tropical hammock community type hinges on land management practices on existing public lands and on land use decisions made for the development of private lands. The variety of rare and imperiled plants and animals found in tropical hardwood hammocks and the very limited amount of land available to support these species dramatically increases the ecological significance of remaining tracts such as the one on the proposed site.

Over years of human development, the tropical hardwood hammock community has become highly fragmented. That is, due to habitat loss, remaining patches have become smaller in size and isolated from one another. A consequence of converting large contiguous patches of habitat into small isolated fragments is that wide-ranging species with large area requirements (e.g., eastern indigo snake) are eliminated from smaller patches. As an example, the white-crowned pigeon typically does not forage in forest patches smaller than 12 acres. Past developments that have resulted in fragmentation effects at the project site include US 1 along the west boundary, the Florida Keys Aqueduct Authority facility to the southwest of the site, the road along the east boundary, and a small private development to the southeast of the site. Nevertheless, the tropical hardwood hammock on site is contiguous with a much larger patch of tropical hardwood hammock that extends to the northeast. A portion of the adjacent hammock is already in State ownership and is managed as part of John Pennekamp Coral Reef State Park. Thus, despite past disturbances surrounding the site, the proposed site is part of a much larger patch of tropical hardwood hammock, portions of which are in public ownership. This contiguity increases the likelihood that this site is used by species such as the indigo snake, and it enhances the overall ecological importance of the site for a variety of rare and imperiled species.

Potential for Residential Development

The Preliminary Environmental Assessment asserts that a minimum of eleven single-family homes could be permitted on the proposed site, and that the number could increase to as many as 22 single-family homes through the use of Transferable Development Rights (TDR). The assessment further states that, despite habitat constraints contained within the Monroe County Land Development Regulations (LDR), it is not practical to assume that the County could constrain the ultimate configuration of residential lots. The purpose for this statement is to suggest that the impacts to ecological resources associated with clearing 3.6 acres of tropical hardwood hammock in a rectangular patch would be less than those associated with conversion of the site to evenly distributed residential use. While these points are technically accurate, such a development scenario is highly unlikely to occur under the current regulatory environment existing in Monroe County.

Until such time as concerns over hurricane evacuation times are resolved, the Monroe County Rate of Growth Ordinance (ROGO) limits the number of building permits than can be issued throughout the Keys to 225 per year. The number that can be issued in the Upper Keys (excluding Islamorada) is 52 per year, and these are further limited to no more than 13 per quarter. Because the demand for building permits is greater than the supply, the ROGO provides for a point system to score individual permit applications based on site-specific conditions. Proposed developments having higher scores are more likely to receive one of the 13 building permits available quarterly. In general, positive points are assigned to projects that are in a

platted subdivision, have infrastructure available, that aggregate vacant lots, that employ TDRs, that incorporate water and energy conservation features, and have high integrity of construction. On the other hand, negative points are assigned to sites with high quality habitats (high quality hammock such as that on the proposed site has the highest rank), with threatened or endangered species or their habitats, that are on the State's CARL list, and that are in coastal high hazard areas.

A recent phone call to Monroe County staff verified that, during the last quarter, applicants allocated building permits in the Upper Keys had projects scoring a minimum of 18 ROGO points. Our staff applied the ROGO scoring system to a hypothetical building permit application for a single-family dwelling on the proposed site, and concluded that such an application would probably have a score of around -14 ROGO points. A few points could be added through density reduction, land dedication, TDRs, and perseverance, but these additional points probably would not even get the project into the plus column for ROGO points. In other words, the most well-designed single-family residence proposed for this site would likely fall far short of the number of ROGO points needed to obtain a building permit in today's competitive market. In fact, for the amount of money one would have to spend to obtain the maximum number of ROGO points at this site, a person could more than likely purchase an existing developable canal-front lot, and maybe even an ocean-front lot. Moreover, upon designing a project with the maximum possible ROGO points, the project would still likely fall short of the 18 points needed to obtain a building permit allocation for the last quarter.

For these reasons, we conclude that it is highly unlikely that the site proposed for the sewage treatment plant could actually accommodate the suggested 22 single-family dwelling units in today's regulatory environment. In fact, it is more likely that no one would even seek a building permit at this location because of the disincentives built into the system. However, even if we assume building permits could be obtained for at least a few single-family dwelling units, the amount of clearing on the site would still be limited to 4.4 acres by the 80% open space requirement in the Monroe County LDR. Section 9.5-345(a)(3) of the Monroe County LDR requires that developments on a site containing one ecologically sensitive habitat type shall be clustered in the least ecologically valuable area of habitat on the site. This means that single-family residences probably would have to be clustered in the southwest corner of the site near the Florida Keys Aqueduct Authority facilities, the portion of the site adjacent to the greatest amount of disturbance. We conclude from this language that, in the highly unlikely event that building permits could be obtained, the County has the regulatory authority to limit the footprint of the development to one similar to that of the proposed sewage treatment plant. Therefore, impacts from residential versus sewage treatment plant development may not be dissimilar.

Conclusion

The Preliminary Environmental Assessment prepared by Monroe County staff underrates the ecological importance of the 22-acre site proposed for a sewage treatment plant. The site is completely covered by mature tropical hardwood hammock, a very rare natural community type found almost exclusively in the Florida Keys. Fewer than 15,000 acres of tropical hardwood hammocks remain in the United States, and only 8,000 acres are currently in public ownership.

Mr. John B. Copenhagen

July 14, 2000

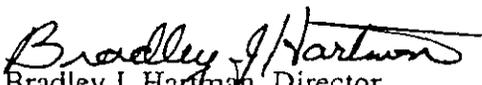
Page 6

This site is included within parcels targeted for acquisition as part of the CARL program's Florida Keys Ecosystem project, the number two ranked priority project for public land acquisition in Florida. The high ranking of this CARL project site is due largely to its recognized ecological values. The site is adjacent to and contiguous with lands owned by the State of Florida and managed by John Pennekamp Coral Reef State Park. The site is occupied by, or provides potential habitat for, numerous animals and plants listed by State or federal agencies as endangered, threatened, or species of special concern. Our own work has identified this site as a strategic habitat conservation area for three indicators of biodiversity, the white-crowned pigeon, black-whiskered vireo, and tropical hardwood hammock natural community. The suggestion that siting a sewage treatment plant on this site will save the ecological resources from the impacts of dispersed residential development appears to be unfounded.

We urge you to consider these factors as you prepare your Environmental Assessment for the NEPA process. Moreover, we recommend against FEMA funding for land acquisition and construction of a sewage treatment plant at this site because of its high ecological values. Monroe County staff recommended two other candidate sites for this use, neither of which has the significant ecological values found on the 22-acre site.

If you need additional information or would like to discuss our concerns further, you may contact me at 850-488-6661.

Sincerely,


Bradley J. Hartman, Director
Office of Environmental Services

BJH/RK

cc: William Straw, FEMA
Science Kilner, FEMA
James Slack, FWS
Tom Grahl, FWS
Jeanette Gallihugh, FWS
Tom Beck, DCA
Eva Armstrong, DEP
Fran Mainella, DEP
Mimi Drew, DEP
Teresa Tinker, Governor's Office
Ralph Gouldy, Monroe County

URS

January 23, 2001

Mr. Randy Kautz
Florida Fish and Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, FL 32399-1600

Re: **Biological Assessment for Wastewater Treatment Plant Site – Mile Marker 100.5,
Key Largo, Florida**

Dear Mr. Kautz:

Per request of Ms. Science Kilner with the Federal Emergency Management Agency, Region IV, I've enclosed a copy of the Biological Assessment (BA) that URS completed in conjunction with Monroe County Department of Marine Resources.

This BA addresses the potential effects of constructing a proposed regional wastewater treatment system in Key Largo, Florida, with an emphasis on the specific site for a regional wastewater treatment plant selected by the Board of County Commissioners on May 18, 2000. This BA is based on existing documents and information, as well as site-specific information, for the treatment plant site that was developed by staff of the Monroe County Department of Marine Resources.

This document constitutes a Biological Assessment in accordance with the rules requiring federal agency consultation under the Endangered Species Act.

We welcome your comments on this document, if you so choose. Please send your comments to the address below. If you have any questions, please feel free to call me at (678) 356-8223.

Sincerely,

URS



Kenneth W. Branton
Senior Project Engineer

KWB/kwb
Enclosure

URS Corporation
5900 Windward Parkway, Suite 400
Alpharetta, GA 30005
Tel: 678.356.8300
Fax: 678.356.0055





June 5, 2003

Mark Robson, Regional Director
Florida Fish and Wildlife Conservation Commission
South Region
8535 North Lake Blvd.
West Palm Beach, FL 33412

**Subject: Notice of Draft Supplemental Environmental Assessment (SEA) for
the Key Largo Wastewater System, Monroe County, Florida.**

Dear Mr. Robson:

This purpose of this letter is to provide your agency with notice that URS Group, Inc., on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates several wastewater management alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives. At this time, FEMA requests your comments regarding the range of alternatives (attached). Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the project vicinity has also been attached.

In 1998, during the aftermath of Hurricane Georges, Congress allocated additional monies for long-term disaster recovery projects in the State of Florida to assist counties whose needs were yet unmet through allocation of primary disaster relief funds. This Unmet Needs money was earmarked for the counties most impacted by Hurricane Georges, including Monroe County. Monroe County requested that wastewater management improvement projects be considered for disaster funding since many existing wastewater facilities do not provide adequate collection, treatment, or disposal, and thus contribute to degrading water quality in the Florida Keys. Since then, FEMA has received a grant application from the Florida Keys Aqueduct Authority requesting Federal assistance to upgrade the current wastewater treatment facilities on Key Largo.

The National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR Parts 1500 through 1508), and FEMA regulations for NEPA compliance (44 CFR Part 10) direct FEMA and other Federal agencies to fully understand and take into consideration during decision making, the environmental consequences of proposed Federal actions (projects). Therefore, FEMA must comply with NEPA, and other applicable Federal laws and regulations,

URS Corporation
Eastern Financial Building, Suite 1000
700 South Royal Poinciana Boulevard
Miami Springs, FL 33166
Tel: 305.884.8900
Fax: 305.884.2665



Mark Robson, Regional Director
Florida Fish and Wildlife Conservation Commission
June 5, 2003
Page 2 of 2

before making Federal funds available for any disaster recovery and mitigation actions. A Programmatic Environmental Assessment (PEA) for Wastewater Management Improvements in the Florida Keys was prepared in accordance with these regulations, and provides a framework to address impacts of a range of wastewater treatment projects in the Florida Keys. In accordance with 40 CFR Part 1508.28, the Draft SEA for Key Largo tiers from the PEA, and addresses issues specific to this project location.

FEMA respectfully seeks your written comments within 30 days to the letterhead address. If you have any questions or comments, please do not hesitate to contact me at (305) 884-8900, or Ms. Science Kilner, FEMA Lead Environmental Specialist, at (770) 220-5357. Thank you very much for your assistance. Your comments will be considered during the Draft SEA preparation process.

Sincerely,

URS Group, Inc.

A handwritten signature in black ink, appearing to read 'R. Méndieta'.

Ramon Méndieta
Environmental Scientist

Attachments as noted

cc:

Science Kilner, FEMA Region IV, Lead Environmental Specialist
Stephen Carruth, URS Group, Inc., Environmental Planner

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION



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255 154th Avenue
Vero Beach, FL 32968
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FAX (772) 778-7227 SunCom 240-7227

July 1, 2003

Mr. Ramon Mendieta
URS Corporation
Eastern Financial Building
Suite 1000
700 South Royal Poinciana Blvd.
Miami Springs, FL 33166

Re: Draft Supplemental Environmental
Assessment for the Key Largo
Wastewater System, Monroe County

Dear Mr. Mendieta:

The Office of Environmental Services of the Florida Fish and Wildlife Conservation Commission has reviewed the proposed alternatives for the referenced project. Alternative 2 would impact approximately 2.6 acres of a 22 acre high-quality hardwood hammock owned by Monroe County. The tropical hardwood hammocks with the Florida keys are a unique and rapidly disappearing habitat and we would not be in favor of utilizing this hammock for a wastewater system. Alternative 3 would locate the proposed plant on a previously cleared 3.8 acre site. Therefore, we strongly recommend that Alternative 3, the southern site be utilized for the proposed project.

Sincerely,

A handwritten signature in black ink, appearing to read "Stephen R. Lau".

Stephen R. Lau
Biological Administrator

ENV 1-10-2
SRL/js



June 5, 2003

Florida State Clearinghouse
Department of Environmental Protection
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Subject: Notice of Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida.

Dear Sir or Madam:

This purpose of this letter is to provide your agency with notice that URS Group, Inc., on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates several wastewater management alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives. At this time, FEMA requests your comments regarding the range of alternatives (attached). Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the project vicinity has also been attached.

In 1998, during the aftermath of Hurricane Georges, Congress allocated additional monies for long-term disaster recovery projects in the State of Florida to assist counties whose needs were yet unmet through allocation of primary disaster relief funds. This Unmet Needs money was earmarked for the counties most impacted by Hurricane Georges, including Monroe County. Monroe County requested that wastewater management improvement projects be considered for disaster funding since many existing wastewater facilities do not provide adequate collection, treatment, or disposal, and thus contribute to degrading water quality in the Florida Keys. Since then, FEMA has received a grant application from the Florida Keys Aqueduct Authority requesting Federal assistance to upgrade the current wastewater treatment facilities on Key Largo.

The National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR Parts 1500 through 1508), and FEMA regulations for NEPA compliance (44 CFR Part 10) direct FEMA and other Federal agencies to fully understand and take into consideration during decision making, the environmental consequences of proposed Federal actions (projects). Therefore, FEMA must comply with NEPA, and other applicable Federal laws and regulations, before making Federal funds available for any disaster recovery and mitigation actions.

URS Corporation
Eastern Financial Building, Suite 1000
700 South Royal Poinciana Boulevard
Miami Springs, FL 33166
Tel: 305.884.8900
Fax: 305.884.2665



Florida State Clearinghouse
Department of Environmental Protection
June 5, 2003
Page 2 of 2

A Programmatic Environmental Assessment (PEA) for Wastewater Management Improvements in the Florida Keys was prepared in accordance with these regulations, and provides a framework to address impacts of a range of wastewater treatment projects in the Florida Keys. In accordance with 40 CFR Part 1508.28, the Draft SEA for Key Largo tiers from the PEA, and addresses issues specific to this project location.

FEMA respectfully seeks your written comments within 30 days to the letterhead address. If you have any questions or comments, please do not hesitate to contact me at (305) 884-8900, or Ms. Science Kilner, FEMA Lead Environmental Specialist, at (770) 220-5357. Thank you very much for your assistance. Your comments will be considered during the Draft SEA preparation process.

Sincerely,

URS Group, Inc.

A handwritten signature in black ink, appearing to read 'R. Mendieta', written over a horizontal line.

Ramon Mendieta
Environmental Scientist

Attachments as noted

cc: Science Kilner, FEMA Region IV, Lead Environmental Specialist
Stephen Carruth, URS Group, Inc., Environmental Planner



Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

David B. Struhs
Secretary

August 5, 2003

RECEIVED AUG 11 2003

Mr. Ramon Mendieta
Environmental Scientist
URS Corporation
Eastern Financial Building
Suite 1000
700 South Royal Poinciana Boulevard
Miami Springs, Florida 33166

Re: Federal Emergency Management Agency, Hazard Mitigation Assistance, Draft Supplemental Environmental Assessment (DSEA) for the Key Largo Wastewater System, Monroe County, Florida

SAI: FL2003061 12523C

Dear Mr. Mendieta:

The Florida State Clearinghouse, pursuant to Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated the review of the above-referenced Draft Supplemental Environmental Assessment (DSEA) for the proposed project.

The Department of Environmental Protection (DEP) outlines several concerns related to the proposed locations of the wastewater treatment systems, and enumerates the requirements for Advanced Waste Treatment, cross connection control and Environmental Resource Permitting. Please see the attached DEP memo for additional comments, concerns and details.

The Florida Fish and Wildlife Conservation Commission (FFWCC) indicates that the information provided is not sufficient for State review of the potential impacts to ecological resources at the candidate sites. Information on fish, wildlife and other environmental resources is missing from evaluation of the alternative project sites. The FFWCC has previously submitted its written opposition to the 22-acre site at Mile Marker 100.5 (Alternative 2) as well as its opposition to construction of the proposed wastewater treatment facility at this site. The Commission recommends that the proposed sewage treatment facility be constructed on the disturbed site at MM 98, Alternative 3. Please see the enclosed letter from the FFWCC for additional details.

The South Florida Water Management District (SFWMD) states that inadequate information has been provided from which to determine the environmental impacts of the project, and its consistency with the Florida Coastal Management Program. The District indicates that Alternative 1 has no details that can be assessed, and the fact that FEMA will not provide funding does not adequately explain this alternative. The SFWMD recommends that the DSEA describe the current system for wastewater

"More Protection, Less Process"

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Mr. Ramon Mendieta
August 5, 2003
Page 2

removal and treatment, and outline the requirements of the Florida Statutory Treatment Standard of 2010, and how it applies to this project. The District indicates that alternative 2 is confusing with respect to which numbers apply to Phase I and which numbers apply to phase II. Please see the enclosed letter from the SFWMD for additional issues and concerns.

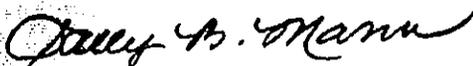
The South Florida Regional Planning Council (SFRPC) believes that the project will further its goals for a more livable, sustainable and competitive region and has summarized the relevant goals and policies that apply to this project. Please see the attached comments from the SFRPC and specific recommendations for complying with permitting requirements.

The Florida Department of Transportation (FDOT) states that the project may impact its road rights-of-way and may require permits. Lane closures or traffic channelization on the state roadway system may require permits from the FDOT permit Office. Please see the FDOT comments on the Clearinghouse printout for additional information.

Based on the information contained in the DSEA, and the comments provided by our reviewing agencies, as summarized above and enclosed, the state has determined that, at this stage, the above-referenced project is consistent with the Florida Coastal Management Program (FCMP). All subsequent environmental documents prepared for this project must be reviewed to determine the project's continued consistency with the FCMP. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent reviews. The state's final concurrence on the project's consistency with the FCMP will be determined during the environmental permitting stage.

Thank you for the opportunity to review this project. If you have any questions regarding this letter, please contact Mr. Bob Hall at 850/245-2163.

Sincerely,



Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/rwh
Enclosures

cc: Jim Golden, SFWMD
Gus Rios, DEP Marathon
Natalie R. Schneider, SFRPC
Brian Barnett, FFWCC
Sandra Whitmire, DOT

TO: Florida State Clearinghouse

FROM: Robert W. Hall, Environmental Specialist
Office of Intergovernmental Programs



DATE: August 5, 2003

PROJECT: Federal Emergency Management Agency, Hazard Mitigation Assistance,
Draft Supplemental Environmental Assessment (SEA) for the Key Largo
Wastewater System, Monroe County, Florida

SAI: FL200306112523C

The Department has reviewed the above-referenced project and offers the following comments.

Several major concerns have been expressed by the DEP Marathon office, and include the location of the vacuum station and wastewater treatment plant on the northern site, or the location of the vacuum station on the northern site with the treatment plant on the southern site. This location will disturb a high quality hardwood hammock, which may not be in compliance with the Monroe County Comprehensive Plan.

If there is to be dredging and filling of surface waters or impacts to wetlands, an Environmental Resource Permit will be required from the department's Marathon office. The NPDES office in Tallahassee will also be contacted to determine if the proposed projects will require NPDES permits for stormwater management.

The proposed treatment plants will be required to meet Advanced Waste Treatment (AWT) standards, and the wastewater collection system must meet the separation standards of Chapter 62-604, F.A.C., with prevention of cross connections between potable water mains and wastewater collection systems.

Please see the attached summary report for further details on the Florida Keys requirements for wastewater treatment, to include permitting requirements. For technical assistance with DEP's requirements please contact Mr. Gus Rios at 305/289-2310.

Key Largo Wastewater System SEA Comments
SAI #: FL03-2523C

General:

- ❖ The construction of the wastewater collection, treatment and disposal systems will require wastewater permits from the DEP's South District Office in Ft. Myers.
- ❖ On February 26, 2003, an application (application number: 211402-001) to construct a collection/transmission system was received in the Department's South District Office/Ft. Myers. Russell Eastenes is the Department engineer assigned to process the application. He will be responsible for reviewing the documents for compliance with all applicable Department regulations prior to issuing any permits. Since the application was received, the following activities have occurred:
 - On March 26, 2003, a Request for Additional Information (RAI) was sent by Russell Eastenes to the permittee.
 - On April 25, 2003, a response was sent to the Ft. Myers District office in response to the Department's 3/25/03 RAI.
 - On May 23, 2003, a second RAI was sent from Ft. Myers.
- ❖ Any dredging or filling in wetlands or surface waters will require Environmental Resource Permits (ERP) from the DEP's Marathon office.
- ❖ The location of the vacuum station and wastewater treatment plant on the Northern site or the vacuum station in this location (with the treatment plant on the Southern site) will disturb a high quality hardwood hammock. Please be advised that the Department of Community Affairs and Monroe County should be contacted to ensure compliance with the Monroe County Comprehensive Plan.
- ❖ The Department's NPDES Section in Tallahassee shall be contacted to determine if the construction projects will require NPDES permits for stormwater.

Alternative 2-new treatment plant and collection system

- ❖ Section 1.2 New wastewater treatment plant on Northern site
 - It is stated that Phase I will provide new service to residents and business owners in Key Largo Trailer Village and Key Largo Park, a flow of approximately 0.122 MGD. This size treatment plant will need to meet Advanced Waste Treatment (AWT) standards of 5 mg/L for Carbonaceous Biochemical Oxygen Demand (CBOD₅) and Total Suspended Solids (TSS), 3 mg/L Total Nitrogen, and 1 mg/L Total Phosphorus.
 - The Phase II wastewater treatment facility, capable of serving the entire Key Largo Wastewater Service District from the 91 Mile Marker to the 106.5 Mile Marker, with a capacity of 2.25 MGD will also be required to meet effluent AWT standards.
- ❖ Section 1.2.1 Wastewater collection system
 - The Department will require reasonable assurance that, pursuant to Chapter 62-604, FAC:
 1. separation distances between potable water mains and wastewater collection systems are maintained
 2. cross connections between potable water mains and wastewater collection systems shall be prevented
 - Regarding plumbing connections at individual homes, FAC Rule 62-604.100(1) states that any single, individual gravity service connection to a collection system sized and intended to serve a single building is exempted from the requirements of this rule. The Department of Health (DOH) is responsible for ensuring the homeowners' on site systems are properly abandoned in accordance with the requirements of FAC Rule 64E-6.011.
 - On page 5 it is stated that "vacuum collection stub-outs would be provided to the existing residential side streets on the bayside of US1 in order to facilitate the future extension of wastewater collection and transmission services to the Key Largo Park and Sunset Waterways subdivisions." Please be advised that any additional collection systems or modifications to existing systems will require Department permits.

Key Largo Wastewater System SEA Comments
SAI #: FL03-2523C

❖ Section 1.2.2 Wastewater Treatment Plant

- The location of the treatment plant on a lot that is comprised of high quality hardwood hammock will need to be coordinated with Monroe County and the Department of Community Affairs for compliance with the Monroe County Comp Plan.
- On Page 9, it is stated that "filtration may also be needed to produce effluent with TSS of not more than 10 mg/L." The facility, a 0.150 MGD facility, will need to meet AWT effluent standards of 5 mg/L TSS.
- Also on page 9 it is stated that "The effluent disinfection process would consume all calcium hypochlorite or sodium hypochlorite prior to effluent discharge." In accordance with F.A.C. Rule 62-600.440(4)(b), the effluent must maintain a total residual chlorine (TRC) of no less than 0.5 mg/L after 15 minutes of contact at peak hourly flow.

Alternative 3-New Wastewater treatment plant on Southern Site

❖ Section 1.3.2 Vacuum Pump Station

- the location of the vacuum pump station on a high quality hardwood hammock lot will need to be coordinated with Monroe County and the Department of Community Affairs for compliance with the Monroe County Comp Plan.

❖ Section 1.3.3 Wastewater Transmission System

- The Department will require reasonable assurance that, pursuant to Chapter 62-604, FAC:
 1. separation distances between potable water mains and wastewater collection systems are maintained
 2. cross connections between potable water mains and wastewater collection systems shall be prevented

❖ Section 1.3.4 Wastewater Treatment Plant

- The location results in the closest private residence being a distance of 100' away. This may provide a very good possibility for noise, lighting, odor complaints. F.A.C. Rule 62-600.400(2)(a) requires the facility shall be designed and located on the site so as to minimize adverse effects from odors, noise, aerosol drift and lighting.
- The basis of design comments for this facility are the same as those for the construction of the alternate location, and are:
 1. On Page 9, it is stated that "filtration may also be needed to produce effluent with TSS of not more than 10 mg/L." The facility, a 0.150 MGD facility, will need to meet AWT effluent standards of 5 mg/L TSS.
 2. On page 9 it is stated that "The effluent disinfection process would consume all calcium hypochlorite or sodium hypochlorite prior to effluent discharge." In accordance with F.A.C. Rule 62-600.440(4)(b), the effluent must maintain a total residual chlorine (TRC) of no less than 0.5 mg/L after 15 minutes of contact at peak hourly flow.





SOUTH FLORIDA WATER MANAGEMENT DISTRICT

3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045 • TDD (561) 697-2574
Mailing Address: P.O. Box 24680, West Palm Beach, FL 33416-4680 • www.sfwmd.gov

GOV 04-14

July 2, 2003

Ms. Lauren Milligan
Florida State Clearinghouse
Florida Dept. of Environmental Protection
3900 Commonwealth Blvd., MS 47
Tallahassee, FL 32399-3000

Dear Ms. Milligan:

**Subject: Key Largo Wastewater System, Monroe County
Supplemental Environmental Assessment [SAI#: FL200306112523C]**

In response to your request, South Florida Water Management District (SFWMD) staff has reviewed the Draft Supplemental Environmental Assessment (DSEA) for the above subject project for consistency with the Florida Coastal Zone Management Program (FCMP). The purpose of the DSEA is to evaluate several wastewater management alternatives proposed for Key Largo and the potential environmental consequences associated with the alternatives evaluated.

Projects reviewed by the SFWMD, pursuant to the FCMP, are reviewed for consistency with the provisions of Chapter 373, F.S. (Florida Water Resources Act of 1972, as amended), as well as the programs and regulations developed thereunder. Chapter 373, F.S. authorizes the SFWMD to regulate the withdrawal, diversion, storage, and consumptive uses of water, the construction and operation of stormwater management systems, and work in, on, or over surface waters or wetlands. Chapter 373, F.S. also authorizes the SFWMD to acquire and manage land, to conduct research and investigations into all aspects of water resource management, and to disseminate information relating to the water resources of the state to public and private users.

Based on an analysis of the mandatory enforceable provisions and recommended policies of the core FCMP statutes and implementing rules administered by the SFWMD, staff has determined that inadequate information has been provided to determine the consistency of this project with the FCMP. Although fairly detailed design information has been provided for the proposed wastewater treatment facilities, insufficient information has been provided regarding the potential environmental impacts associated with the construction of the proposed wastewater treatment facilities on the northern and southern sites. While the DSEA contains a number of references to the Programmatic Environmental Assessment (PEA) and the PEA may very well contain a more detailed evaluation of the potential environmental impacts associated with the construction of the proposed wastewater

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Jenny Dean, *Executive Director*

Ms. Lauren Milligan
July 2, 2003
Page 2

treatment facilities on the northern and southern sites, SFWMD staff reviewing the DSEA is not familiar with the PEA nor the information contained therein. Consequently, the SFWMD's review of the proposed project (see below) is based solely on the information contained in the DSEA.

General Comments

- (1) The DSEA does not include a detailed environmental assessment of any of the three alternatives. Current environmental conditions, the impacts and/or benefits of each alternative on the environment, and an environmental comparison of one alternative to another are not provided. In particular, there is no mention of groundwater and/or surface water impacts and/or benefits.
- (2) Alternatives 2 and 3 are essentially the same project located on different sites. The DSEA should evaluate alternatives using disposal methods other than shallow injection wells (e.g., reclaimed water). Please note that reclaimed water may be a more cost-effective alternative to shallow injection wells.

Alternative 1 – No Action Alternative

- (3) No details are provided for this alternative. Stating that FEMA will not provide funding is not an alternative. The DSEA should describe the current system for wastewater removal and treatment, outline the requirements of the Florida Statutory Treatment Standard of 2010, indicate how it applies to this project, and discuss the current and future environmental conditions and issues if no action is taken.

Alternative 2 – New Wastewater Treatment Plant on Northern Site

- (4) The entire description for Alternative 2 is very confusing with respect to which numbers apply to Phase I and which apply to Phase II. The DSEA does not specify whether the 2.6 acres required for the site is only for Phase I or for Phases I and II combined. No details are provided on the treatment equipment associated with Phase II or the actual Phase II construction except for "expansion of modular increments". The DSEA should either state that it only covers Phase I for Alternatives 2 and 3 and a supplemental EA will be performed for Phase II or it should address both Phases I and II in their entirety.
- (5) The success of this alternative (as well as Alternative 3) is dependent on the economic ability of the homeowners to decommission and properly abandon their existing on-site waste disposal systems and to connect to the service laterals. An economic analysis should be performed to verify that the residents will be

Ms. Lauren Milligan

July 2, 2003

Page 3

able to pay for the proposed wastewater improvements. Otherwise, a significant number of existing on-site waste disposal systems may not be properly decommissioned/abandoned. This could pose a continuing environmental risk to ground and surface water quality.

- (6) There is no mention of groundwater-related issues in the DSEA. The DSEA should include a discussion of groundwater levels on and in the vicinity of the proposed site and should address the potential impacts to ground water levels/quality during construction and operation of the proposed facilities.
- (7) The potential site for the pump station and treatment plant is described as a high quality hardwood hammock habitat. There is no mention of existing wildlife. There is no mention of the site's hydrology, existing surface water features, surface water conveyances, and drainage conditions. All of the potential impacts associated with the proposed pump station and treatment plant that will affect any of these environmental characteristics need to be identified. The DSEA should clearly state if any direct conveyances to the Straits of Florida (1,500 feet away) or to Florida Bay (2,500 feet away) are proposed. A plan for collecting and treating stormwater runoff should be included.
- (8) The potential impacts associated with injecting 400 gallon per minute (gpm) per well of effluent into the ground needs to be addressed as well as the quality of the water being injected compared to the current groundwater quality. The DSEA should address whether the site's geology supports shallow well injection.
- (9) The DSEA should include additional information to substantiate that one groundwater monitoring well be sufficient to monitor the effects of the shallow well injection and the operation of the wastewater treatment plant. Detailed design information should be included indicating that a monitoring well depth of 30 feet is sufficient for a 60 foot deep injection well with a 60 to 90 foot deep gravel-packed open hole section.
- (10) Peak hourly flows are reported in gallons per day (gpd). Peak flows are usually calculated on a daily basis, during morning hours, at noon, and in the afternoon, not for 24 hours.
- (11) The DSEA indicates that vacuum pumps will be used instead of submersible pumps. Consequently, the DSEA should confirm that the grade elevation for the proposed vacuum pumps is above maximum flood levels.

- (12) The DSEA should address whether the pretreatment screenings can be disposed of from the collection hopper or trash receptacle directly into a sanitary landfill without any treatment such as chlorination.
- (13) The SBR, USBF, Bardenpho, and Ludzak-Ettinger processes are not recommended for these applications. Conventional activated sludge or an immerse membrane bioreactor with nitrification and chemical addition for phosphorus removal offer more flexibility and ease of operation than the above-mentioned processes.
- (14) Disinfection with calcium hypochlorite tablets or briquettes is not cost-effective for plants larger than 100,000 gpd. Chlorine in liquid or gas form is acceptable; however, it is highly toxic and requires handling and storage facilities. Ultraviolet (UV) disinfection is the preferred method of disinfection in an environmentally sensitive area such as the Florida Keys.
- (15) On-site dewatering of the digested bio-solids (e.g., filterpress) may be more cost-effective than hauling 5,000-gallon/month of bio-solids to a municipality. This option should be considered.

Alternative 3 – New Wastewater Treatment Plant on Southern Site

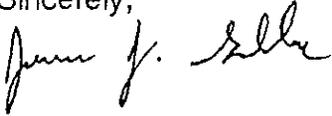
- (16) For Alternative 2 (northern site), the DSEA indicates that the finished floor elevations for the pump station and treatment plant will be built "above the base flood elevation of 8 feet National Geodetic Vertical Datum." However, for Alternative 3, which utilizes the same location for the pump station, the DSEA indicates that the pump station will be constructed "above the 100-year floodplain level." This discrepancy should be clarified.
- (17) Similar to Alternative 2, the DSEA does not include any information on the site's hydrology, existing surface water features, surface water conveyances, and drainage conditions.
- (18) The DSEA indicates that Alternative 2 requires 2.6 acres for both the Phase I pump station and the treatment plant. Alternative 3 requires 3.8 acres for the treatment plant only. The DSEA should specify if all of the southern site will be utilized for Alternative 3 and indicate if it is large enough for the Phase II expansion.
- (19) For Alternative 3, there is no mention of the injection wells, the number of wells, and where they will be located. In addition, there is no mention of the geology of

Ms. Lauren Milligan
July 2, 2003
Page 5

this site or an evaluation of the appropriateness of this site for shallow well injection.

If you have any questions concerning the above or if I can be of further assistance, please do not hesitate to contact me at (561) 682-6862.

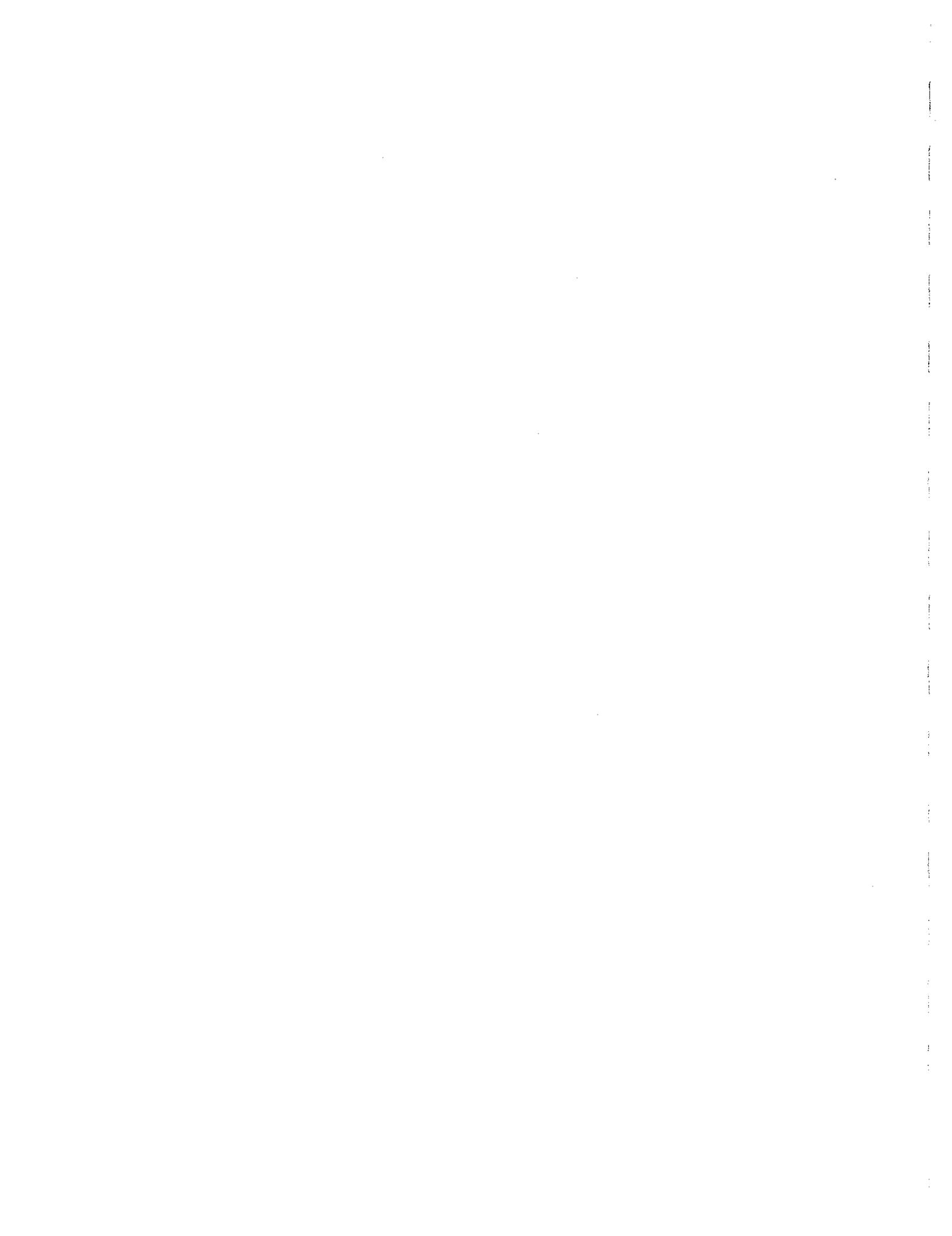
Sincerely,



James J. Golden, AICP
Senior Planner
Environmental Resource Regulation

/jjg

c: Ramon Mendiata, URS Corporation



FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION



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June 19, 2003

Ms. Lauren Milligan
Environmental Consultant
Florida State Clearinghouse
Department of Environmental Protection
3900 Commonwealth Boulevard, Mail Station 47
Tallahassee, FL 32399-3000

Re: SAI# FL200306112523C
Draft Supplemental Environmental Assessment (SEA)
Key Largo Wastewater System, Monroe County, Florida

Dear Ms. Milligan:

The Office of Environmental Services of the Florida Fish and Wildlife Conservation Commission has reviewed the referenced document, and submits the following comments.

As indicated in the cover letter to the Clearinghouse, URS Group, Inc., is preparing the Draft SEA on behalf of the Federal Emergency Management Agency (FEMA). URS indicates that the "Draft SEA evaluates several wastewater management alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives." URS further states that the information that has been submitted for review represents "only a portion of the Draft SEA."

The information submitted to the Clearinghouse is not sufficient for State review of the potential impacts of the proposed alternatives on the ecological resources of the candidate sites. The information that was submitted is limited to a set of engineering specifications for the proposed wastewater treatment facility. The portion of the Draft SEA submitted to the Clearinghouse contains almost no information concerning the fish, wildlife, or other ecological resources on the alternative project sites.

Nevertheless, we have been involved with the planning for this project since early in 2000, and we are very familiar with the alternative sites. Members of our staff have participated

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Ms. Lauren Milligan

June 19, 2003

Page 2

in numerous meetings pertaining to this project, we were present at a conference call sponsored by the Governor's Office, and we have conducted several field inspections of the proposed sites. On July 14, 2000, we sent a letter (attached) to Mr. John Copenhagen, Regional Director of FEMA, providing ecological resource information concerning the 22-acre site at Mile Marker (MM) 100.5 (Alternative 2 in the Draft SEA). We also registered our opposition to construction of the proposed wastewater treatment facility at this site.

A summary of our reasons for opposing construction of a sewage treatment facility at MM 100.5 is as follows. The 22-acre site is completely covered by mature tropical hardwood hammock, a very rare natural community type found almost exclusively in the Florida Keys. Fewer than 15,000 acres of tropical hardwood hammocks remain in the United States, and only 8,000 acres are currently in public ownership. This site is included within parcels targeted for acquisition by the State of Florida under the State's Florida Forever land acquisition program. This parcel is part of the Florida Keys Ecosystem project, which is on the A list, and its high ranking is due largely to its recognized ecological values. The site is adjacent to and contiguous with lands owned by the State of Florida and managed by John Pennekamp Coral Reef State Park. The site is occupied by, or provides potential habitat for, numerous animals and plants listed by State or federal agencies as endangered, threatened, or species of special concern. Our own work has identified this site as a strategic habitat conservation area for three indicators of biodiversity, the white-crowned pigeon, black-whiskered vireo, and the tropical hardwood hammock natural community. Earlier drafts of the environmental assessment for this project suggested that the best way to save the ecological resources of this site from the adverse impacts of potential residential development was to construct a sewage treatment plant on the site. However, we concluded that this assertion was unfounded. More detail concerning the ecological resource values of the MM 100.5 site are contained in the attached letter.

In contrast, the proposed site at MM 98 (Alternative 3 in the Draft SEA) includes 3.8 acres that have already been cleared, grubbed, and developed. The site is presently used for boat and vehicle storage and other uses. There would be virtually no impact to rare and imperiled species of fish and wildlife or natural plant communities associated with construction of a sewage treatment facility at the MM 98 site.

In summary, the submitted information contains no characterization of the ecological resources at the two sites proposed for construction of a sewage treatment facility on Key Largo. However, we are familiar with these sites and this project. We recommend that the proposed sewage treatment facility be constructed on the disturbed site at MM 98 (Alternative 3). We recommend against location of the facility in the 22-acre site at MM 100.5 (Alternative 2). The tropical hardwood hammock at MM 100.5 is a rare natural community type found only in extreme south Florida; it hosts several species of plants and animals listed as rare and endangered; it is contiguous with other hammock parcels that are contiguous with John Pennekamp Coral Reef State Park; and it is proposed for acquisition under the Florida Forever program.

Ms. Lauren Milligan
June 19, 2003
Page 3

Thank you for the opportunity to comment on this project. If you need additional information concerning this matter, please contact me or Mr. Randy Kautz at (850) 488-6661.

Sincerely,

A handwritten signature in cursive script that reads "Brian S. Barnett". The signature is written in black ink and is positioned above the printed name.

Brian S. Barnett, Interim Director
Office of Environmental Services

ENV 8-4/10
Attachment

South
Florida
Regional
Planning
Council



June 30, 2003

Ms. Lauren Milligan
Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, Mail Station 47
Tallahassee, FL 32399-3000

RE: SFRPC #03-0633, SAI #FL200306112523C, Request for comments on a Notice of Draft Environmental Assessment for the Key Largo Wastewater System, URS Group, Inc. on behalf of U.S. Department of Commerce - Federal Emergency Management Agency, Monroe County.

Dear Ms. Milligan:

We have reviewed the above-referenced program and have the following comments:

- Council staff believes the project will further our goals for a more livable, sustainable, and competitive region. The project is generally consistent with the goals and policies of the *Strategic Regional Policy Plan for South Florida*, particularly the following:

Strategic Regional Goal

2.2 Revitalize deteriorating urban areas.

Regional Policies

- 2.2.1 Give priority to development in areas that are blighted, characterized by underdevelopment or underemployment and are in need of redevelopment; among these, secondary priority should be given to areas within which adequate infrastructure and support services are either programmed or available.
- 2.2.2 Public facility and service providers should give priority to eliminating any infrastructure deficiencies which would impede rehabilitation or redevelopment of blighted areas.

Strategic Regional Goal

- 2.3 Enhance the economic competitiveness of the region and ensure the adequacy of its public facilities and services by eliminating the existing backlog, meeting the need for growth in a timely manner, improving the quality of services provided and pursuing cost-effectiveness and equitability in their production, delivery and financing.

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email: sfadmin@sfrpc.com, website: www.sfrpc.com

Ms. Lauren Milligan

June 30, 2003

Page 2

Regional Policies

- 2.3.3 The public sector should give priority to the funding of those improvements which support the general welfare of its citizenry and promote public goals, objectives and plans.
- 2.3.11 Give priority to the construction, maintenance or reconstruction of public facilities needed to serve existing development most effectively.
- 2.3.12 Provide incentives for development and redevelopment to use existing public facilities and services.
- 2.3.13 Local governments should provide centralized sewer service in areas where existing septic tanks are a problem and adopt and implement stormwater level of service standards consistent with those recommended by the South Florida Water Management District.
- 2.3.15 Impact review procedures shall consider the impacts of development on state, regional and local public facilities and services.
- 2.3.30 Local governments should establish as wide a range of financing methods for the provision of public facilities as possible. Where impact fees are assessed, procedures, schedules, and programs for the expenditure of these fees in a timely and equitable manner shall be developed.

Thank you for the opportunity to comment. If you require further information, please contact me.

Sincerely,



Natalie R. Schneider

Senior Planner

NRS/

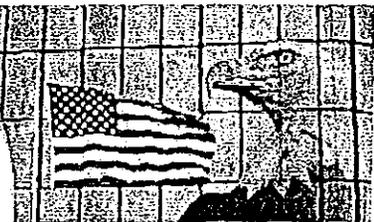
cc: Timothy McGarry, Monroe County Growth Management



Florida

Department of Environmental Protection

'More Protection, Less Process'



Categories | DEP Home | Contact DEP | Search | DEP Site Map

Project Information	
Project:	FL200306112523C
Comments Due:	July 09, 2003
Letter Due:	August 08, 2003
Description:	FEDERAL EMERGENCY MANAGEMENT AGENCY - HAZARD MITIGATION ASSISTANCE - DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT (SEA) FOR THE KEY LARGO WASTEWATER SYSTEM - MONROE COUNTY, FLORIDA.
Keywords:	FEMA - HAZARD MITIGATION - KEY LARGO WASTEWATER SYSTEM - MONROE COUNTY
CEQA #:	83.519
Agency Comments	
SOUTH FL RPC - SOUTH FLORIDA REGIONAL PLANNING COUNCIL	
No Final Comments Received	
MONROE -	
No Final Comments Received	
ENVIRONMENTAL POLICY UNIT - OFFICE OF POLICY AND BUDGET, ENVIRONMENTAL POLICY UNIT	
nc	
COMMUNITY AFFAIRS - FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS	
Released Without Comment	
FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION	
3-PAGE LETTER BY BRIAN BARNETT DATED JUNE 19, 2003 (PLUS ENCLOSURE)	
HEALTH - FLORIDA DEPARTMENT OF HEALTH	
NC	
STATE - FLORIDA DEPARTMENT OF STATE	
nc	
TRANSPORTATION - FLORIDA DEPARTMENT OF TRANSPORTATION	
<p>The purpose of this assessment is to evaluate several wastewater alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives. A Programmatic Environmental Assessment (PEA) for Wastewater Management Improvements in the Florida Keys was prepared in accordance with NEPA providing a framework to address impacts of a range of wastewater treatment projects in the Florida Keys. Alternatives identified in the Monroe County Sanitary Wastewater Master Plan (2000) and in the PEA are evaluated for the proposed Key Largo Wastewater Management System. 1. FDOT permits may be required for project-related activities, which occur within FDOT right-of-way. Therefore, it may be necessary to coordinate with the FDOT's Permit Office. 2. Should the need for lane closures or traffic channelization on the state roadway system arise, Maintenance-of-Traffic Plans may be necessary. Coordination with the FDOT Traffic Operations Office will be required. 3. Field assessment may be required to determine the presence of wetlands adjacent to the project corridor. Thank you for providing DEMO with the opportunity to comment. Should you have any questions please contact Xavier Pagan or Marjorie Bixby at (305) 470-5220.</p>	
ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION	
Memo attached outlining DEP concerns and requirements.	
SOUTH FLORIDA WMD - SOUTH FLORIDA WATER MANAGEMENT DISTRICT	

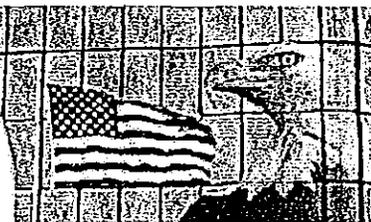
Letter faxed/mailed on 7/2/03



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Department of Environmental Protection

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Categories

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Project Comment Confirmation	
Project:	FL200306112523C
Due Date:	JULY 09, 2003
Description:	FEDERAL EMERGENCY MANAGEMENT AGENCY - HAZARD MITIGATION ASSISTANCE - DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT (SEA) FOR THE KEY LARGO WASTEWATER SYSTEM - MONROE COUNTY, FLORIDA.
Keywords:	FEMA - HAZARD MITIGATION - KEY LARGO WASTEWATER SYSTEM - MONROE COUNTY
Program:	83.519
Comment:	Memo attached outlining DEP concerns and requirements.
Comment Type:	FINAL
Comment Saved Date:	AUGUST 04, 2003

[Return to User Page](#)

For more information please contact the Clearinghouse Office at:

AGENCY CONTACT AND COORDINATOR (SCH)
 3900 COMMONWEALTH BOULEVARD MS-47
 TALLAHASSEE, FLORIDA 32399-3000
 TELEPHONE: (850) 245-2161
 FAX: (850) 245-2190

Visit the [Clearinghouse Home Page](#) to query other projects.

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COUNTY: MONROE - 2003-5190
 SAI - FEMA

DATE: 6/9/2003
 COMMENTS DUE DATE: 7/9/2003
 CLEARANCE DUE DATE: 8/8/2003
 SAI#: FL200306112523C

MESSAGE:

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNIT	RPCS & LOC GOVS
COMMUNITY AFFAIRS	SOUTH FLORIDA WMD	ENVIRONMENTAL POLICY UNIT	
ENVIRONMENTAL PROTECTION			
FISH and WILDLIFE COMMISSION			
HEALTH			
X STATE			
TRANSPORTATION			

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

- X Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.
- Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.
- Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.
- Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

FEDERAL EMERGENCY MANAGEMENT AGENCY
 - HAZARD MITIGATION ASSISTANCE - DRAFT
 SUPPLEMENTAL ENVIRONMENTAL
 ASSESSMENT (SEA) FOR THE KEY LARGO
 WASTEWATER SYSTEM - MONROE COUNTY,
 FLORIDA.

To: Florida State Clearinghouse

EO. 12372/NEPA Federal Consistency

AGENCY CONTACT AND COORDINATOR (SCH)
 3900 COMMONWEALTH BOULEVARD MS-47
 TALLAHASSEE, FLORIDA 32399-3000
 TELEPHONE: (850) 245-2161
 FAX: (850) 245-2190

- No Comment
- Comment Attached
- Not Applicable
- No Comment/Consistent
- Consistent/Comments Attached
- Inconsistent/Comments Attached
- Not Applicable

From:

Division of Historical Resources

Division/Bureau:

Bureau of Historic Preservation

Reviewer: SARAH JAYVING LUC 7/13/03

Date: 7/11/03

Jessie Suptee Matthews

62/39/5
 ROHA: 48MM

NHPA

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 BUREAU OF
 HISTORIC PRESERVATION

BH

COUNTY: MONROE

DATE: 6/9/2003

COMMENTS DUE DATE: 7/9/2003

CLEARANCE DUE DATE: 8/8/2003

SAI#: FL200306112523C

MESSAGE:

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNIT	RPCS & LOC GOVS
COMMUNITY AFFAIRS	SOUTH FLORIDA WMD	X ENVIRONMENTAL POLICY UNIT	
ENVIRONMENTAL PROTECTION			
FISH and WILDLIFE COMMISSION			
HEALTH			
STATE			
TRANSPORTATION			

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 - HAZARD MITIGATION ASSISTANCE - DRAFT
 SUPPLEMENTAL ENVIRONMENTAL
 ASSESSMENT (SEA) FOR THE KEY LARGO
 WASTEWATER SYSTEM - MONROE COUNTY,
 FLORIDA.

To: Florida State Clearinghouse

EO. 12372/NEPA Federal Consistency

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 TALLAHASSEE, FLORIDA 32399-3000
 TELEPHONE: (850) 245-2161
 FAX: (850) 245-2190

- No Comment
- Comment Attached
- Not Applicable
- No Comment/Consistent
- Consistent/Comments Attached
- Inconsistent/Comments Attached
- Not Applicable

From:

Division/Bureau: OPB. Env.
 Reviewer: M. J. Annen
 Date: 7/8/03

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 JUL 14 2003
 OIP/OLGA

RECEIVED

JUN 13 2003

OFFICE OF POLICY AND BUDGET
 ENVIRONMENTAL POLICY UNIT

BH

COUNTY: MONROE

DATE: 6/9/2003

COMMENTS DUE DATE: 7/9/2003

CLEARANCE DUE DATE: 8/8/2003

SAI#: FL200306112523C

MESSAGE:

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNIT	RPCS & LOC GOVS
COMMUNITY AFFAIRS	SOUTH FLORIDA WMD	ENVIRONMENTAL POLICY UNIT	
ENVIRONMENTAL PROTECTION			
FISH and WILDLIFE COMMISSION			
X HEALTH			
STATE			
TRANSPORTATION			

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Project Description:

FEDERAL EMERGENCY MANAGEMENT AGENCY
 - HAZARD MITIGATION ASSISTANCE - DRAFT
 SUPPLEMENTAL ENVIRONMENTAL
 ASSESSMENT (SEA) FOR THE KEY LARGO
 WASTEWATER SYSTEM - MONROE COUNTY,
 FLORIDA.

WWTTP EXPANSION

To: Florida State Clearinghouse

EO. 12372/NEPA Federal Consistency

AGENCY CONTACT AND COORDINATOR (SCH)
 3900 COMMONWEALTH BOULEVARD MS-47
 TALLAHASSEE, FLORIDA 32399-3000
 TELEPHONE: (850) 245-2161
 FAX: (850) 245-2190

- No Comment/Consistent
- No Comment
- Comment Attached
- Consistent/Comments Attached
- Not Applicable
- Inconsistent/Comments Attached
- Not Applicable

HSES Onsite Sewage Programs

From:

Dale Holcomb

Division/Bureau: 6-23-2003

Reviewer:

Date:

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JUN 30 2003

OIP/OLGA





SOUTH FLORIDA WATER MANAGEMENT DISTRICT

3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045 • TDD (561) 697-2574
Mailing Address: P.O. Box 24680, West Palm Beach, FL 33416-4680 • www.sfwmd.gov

GOV 04-14

July 2, 2003

Ms. Lauren Milligan
Florida State Clearinghouse
Florida Dept. of Environmental Protection
3900 Commonwealth Blvd., MS 47
Tallahassee, FL 32399-3000

Dear Ms. Milligan:

**Subject: Key Largo Wastewater System, Monroe County
Supplemental Environmental Assessment [SA#: FL200306112523C]**

In response to your request, South Florida Water Management District (SFWMD) staff has reviewed the Draft Supplemental Environmental Assessment (DSEA) for the above subject project for consistency with the Florida Coastal Zone Management Program (FCMP). The purpose of the DSEA is to evaluate several wastewater management alternatives proposed for Key Largo and the potential environmental consequences associated with the alternatives evaluated.

Projects reviewed by the SFWMD, pursuant to the FCMP, are reviewed for consistency with the provisions of Chapter 373, F.S. (Florida Water Resources Act of 1972, as amended), as well as the programs and regulations developed thereunder. Chapter 373, F.S. authorizes the SFWMD to regulate the withdrawal, diversion, storage, and consumptive uses of water, the construction and operation of stormwater management systems, and work in, on, or over surface waters or wetlands. Chapter 373, F.S. also authorizes the SFWMD to acquire and manage land, to conduct research and investigations into all aspects of water resource management, and to disseminate information relating to the water resources of the state to public and private users.

Based on an analysis of the mandatory enforceable provisions and recommended policies of the core FCMP statutes and implementing rules administered by the SFWMD, staff has determined that inadequate information has been provided to determine the consistency of this project with the FCMP. Although fairly detailed design information has been provided for the proposed wastewater treatment facilities, insufficient information has been provided regarding the potential environmental impacts associated with the construction of the proposed wastewater treatment facilities on the northern and southern sites. While the DSEA contains a number of references to the Programmatic Environmental Assessment (PEA) and the PEA may very well contain a more detailed evaluation of the potential environmental impacts associated with the construction of the proposed wastewater

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EXECUTIVE OFFICE

Henry Dean, *Executive Director*

Ms. Lauren Milligan
July 2, 2003
Page 2

treatment facilities on the northern and southern sites, SFWMD staff reviewing the DSEA is not familiar with the PEA nor the information contained therein. Consequently, the SFWMD's review of the proposed project (see below) is based solely on the information contained in the DSEA.

General Comments

- (1) The DSEA does not include a detailed environmental assessment of any of the three alternatives. Current environmental conditions, the impacts and/or benefits of each alternative on the environment, and an environmental comparison of one alternative to another are not provided. In particular, there is no mention of groundwater and/or surface water impacts and/or benefits.
- (2) Alternatives 2 and 3 are essentially the same project located on different sites. The DSEA should evaluate alternatives using disposal methods other than shallow injection wells (e.g., reclaimed water). Please note that reclaimed water may be a more cost-effective alternative to shallow injection wells.

Alternative 1 – No Action Alternative

- (3) No details are provided for this alternative. Stating that FEMA will not provide funding is not an alternative. The DSEA should describe the current system for wastewater removal and treatment, outline the requirements of the Florida Statutory Treatment Standard of 2010, indicate how it applies to this project, and discuss the current and future environmental conditions and issues if no action is taken.

Alternative 2 – New Wastewater Treatment Plant on Northern Site

- (4) The entire description for Alternative 2 is very confusing with respect to which numbers apply to Phase I and which apply to Phase II. The DSEA does not specify whether the 2.6 acres required for the site is only for Phase I or for Phases I and II combined. No details are provided on the treatment equipment associated with Phase II or the actual Phase II construction except for "expansion of modular increments". The DSEA should either state that it only covers Phase I for Alternatives 2 and 3 and a supplemental EA will be performed for Phase II or it should address both Phases I and II in their entirety.
- (5) The success of this alternative (as well as Alternative 3) is dependent on the economic ability of the homeowners to decommission and properly abandon their existing on-site waste disposal systems and to connect to the service laterals. An economic analysis should be performed to verify that the residents will be

able to pay for the proposed wastewater improvements. Otherwise, a significant number of existing on-site waste disposal systems may not be properly decommissioned/abandoned. This could pose a continuing environmental risk to ground and surface water quality.

- (6) There is no mention of groundwater-related issues in the DSEA. The DSEA should include a discussion of groundwater levels on and in the vicinity of the proposed site and should address the potential impacts to ground water levels/quality during construction and operation of the proposed facilities.
- (7) The potential site for the pump station and treatment plant is described as a high quality hardwood hammock habitat. There is no mention of existing wildlife. There is no mention of the site's hydrology, existing surface water features, surface water conveyances, and drainage conditions. All of the potential impacts associated with the proposed pump station and treatment plant that will affect any of these environmental characteristics need to be identified. The DSEA should clearly state if any direct conveyances to the Straits of Florida (1,500 feet away) or to Florida Bay (2,500 feet away) are proposed. A plan for collecting and treating stormwater runoff should be included.
- (8) The potential impacts associated with injecting 400 gallon per minute (gpm) per well of effluent into the ground needs to be addressed as well as the quality of the water being injected compared to the current groundwater quality. The DSEA should address whether the site's geology supports shallow well injection.
- (9) The DSEA should include additional information to substantiate that one groundwater monitoring well be sufficient to monitor the effects of the shallow well injection and the operation of the wastewater treatment plant. Detailed design information should be included indicating that a monitoring well depth of 30 feet is sufficient for a 60 foot deep injection well with a 60 to 90 foot deep gravel-packed open hole section.
- (10) Peak hourly flows are reported in gallons per day (gpd). Peak flows are usually calculated on a daily basis, during morning hours, at noon, and in the afternoon, not for 24 hours.
- (11) The DSEA indicates that vacuum pumps will be used instead of submersible pumps. Consequently, the DSEA should confirm that the grade elevation for the proposed vacuum pumps is above maximum flood levels.

- (12) The DSEA should address whether the pretreatment screenings can be disposed of from the collection hopper or trash receptacle directly into a sanitary landfill without any treatment such as chlorination.
- (13) The SBR, USBF, Bardenpho, and Ludzak-Ettinger processes are not recommended for these applications. Conventional activated sludge or an immerse membrane bioreactor with nitrification and chemical addition for phosphorus removal offer more flexibility and ease of operation than the above-mentioned processes.
- (14) Disinfection with calcium hypochlorite tablets or briquettes is not cost-effective for plants larger than 100,000 gpd. Chlorine in liquid or gas form is acceptable; however, it is highly toxic and requires handling and storage facilities. Ultraviolet (UV) disinfection is the preferred method of disinfection in an environmentally sensitive area such as the Florida Keys.
- (15) On-site dewatering of the digested bio-solids (e.g., filterpress) may be more cost-effective than hauling 5,000-gallon/month of bio-solids to a municipality. This option should be considered.

Alternative 3 – New Wastewater Treatment Plant on Southern Site

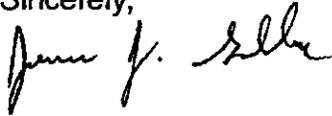
- (16) For Alternative 2 (northern site), the DSEA indicates that the finished floor elevations for the pump station and treatment plant will be built "above the base flood elevation of 8 feet National Geodetic Vertical Datum." However, for Alternative 3, which utilizes the same location for the pump station, the DSEA indicates that the pump station will be constructed "above the 100-year floodplain level." This discrepancy should be clarified.
- (17) Similar to Alternative 2, the DSEA does not include any information on the site's hydrology, existing surface water features, surface water conveyances, and drainage conditions.
- (18) The DSEA indicates that Alternative 2 requires 2.6 acres for both the Phase I pump station and the treatment plant. Alternative 3 requires 3.8 acres for the treatment plant only. The DSEA should specify if all of the southern site will be utilized for Alternative 3 and indicate if it is large enough for the Phase II expansion.
- (19) For Alternative 3, there is no mention of the injection wells, the number of wells, and where they will be located. In addition, there is no mention of the geology of

Ms. Lauren Milligan
July 2, 2003
Page 5

this site or an evaluation of the appropriateness of this site for shallow well injection.

If you have any questions concerning the above or if I can be of further assistance, please do not hesitate to contact me at (561) 682-6862.

Sincerely,



James J. Golden, AICP
Senior Planner
Environmental Resource Regulation

/jig

c: Ramon Mendiata, URS Corporation



June 5, 2003

Laura Kammerer, Section Administrator
Compliance and Review Section
Division of Historical Resources
R.A. Gray Building, Room 305
500 South Bronough Street
Tallahassee, FL 32399-0250

**Subject: Notice of Draft Supplemental Environmental Assessment (SEA) for
the Key Largo Wastewater System, Monroe County, Florida.**

Dear Ms. Kammerer:

This purpose of this letter is to provide your agency with notice that URS Group, Inc., on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates several wastewater management alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives. At this time, FEMA requests your comments regarding the range of alternatives (attached). Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the project vicinity has also been attached.

In 1998, during the aftermath of Hurricane Georges, Congress allocated additional monies for long-term disaster recovery projects in the State of Florida to assist counties whose needs were yet unmet through allocation of primary disaster relief funds. This Unmet Needs money was earmarked for the counties most impacted by Hurricane Georges, including Monroe County. Monroe County requested that wastewater management improvement projects be considered for disaster funding since many existing wastewater facilities do not provide adequate collection, treatment, or disposal, and thus contribute to degrading water quality in the Florida Keys. Since then, FEMA has received a grant application from the Florida Keys Aqueduct Authority requesting Federal assistance to upgrade the current wastewater treatment facilities on Key Largo.

The National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR Parts 1500 through 1508), and FEMA regulations for NEPA compliance (44 CFR Part 10) direct FEMA and other Federal agencies to fully understand and take into consideration during decision making, the environmental consequences of proposed Federal actions (projects). Therefore,

URS Corporation
Eastern Financial Building, Suite 1000
700 South Royal Poinciana Boulevard
Miami Springs, FL 33166
Tel: 305.884.8900
Fax: 305.884.2665



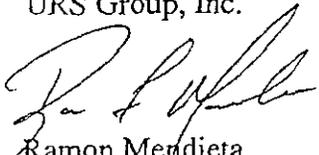
Laura Kammerer, Section Administrator
Compliance and Review Section
Division of Historical Resources
June 5, 2003
Page 2 of 2

FEMA must comply with NEPA, and other applicable Federal laws and regulations, before making Federal funds available for any disaster recovery and mitigation actions. A Programmatic Environmental Assessment (PEA) for Wastewater Management Improvements in the Florida Keys was prepared in accordance with these regulations, and provides a framework to address impacts of a range of wastewater treatment projects in the Florida Keys. In accordance with 40 CFR Part 1508.28, the Draft SEA for Key Largo tiers from the PEA, and addresses issues specific to this project location.

FEMA respectfully seeks your written comments within 30 days to the letterhead address. If you have any questions or comments, please do not hesitate to contact me at (305) 884-8900, or Ms. Science Kilner, FEMA Lead Environmental Specialist, at (770) 220-5357. Thank you very much for your assistance. Your comments will be considered during the Draft SEA preparation process.

Sincerely,

URS Group, Inc.



Ramon Mendieta
Environmental Scientist

Attachments as noted

cc: Science Kilner, FEMA Region IV, Lead Environmental Specialist
Stephen Carruth, URS Group, Inc., Environmental Planner



June 5, 2003

Miles Anderson
Division of Emergency Management
Florida Department of Community Affairs
2555 Shumand Oak Blvd.
Tallahassee, FL 32399-2100

**Subject: Notice of Draft Supplemental Environmental Assessment (SEA) for
the Key Largo Wastewater System, Monroe County, Florida.**

Dear Mr. Anderson:

This purpose of this letter is to provide your agency with notice that URS Group, Inc., on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates several wastewater management alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives. At this time, FEMA requests your comments regarding the range of alternatives (attached). Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the project vicinity has also been attached.

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URS Corporation
Eastern Financial Building, Suite 1000
700 South Royal Poinciana Boulevard
Miami Springs, FL 33166
Tel: 305.884.8900
Fax: 305.884.2665



Miles Anderson
Division of Emergency Management
Florida Department of Community Affairs
June 5, 2003
Page 2 of 2

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Sincerely,

URS Group, Inc.

Ramon Mendieta
Environmental Scientist

Attachments as noted

cc: Science Kilner, FEMA Region IV, Lead Environmental Specialist
Stephen Carruth, URS Group, Inc., Environmental Planner



June 5, 2003

Rebecca Jetton
Planning Manager
Marathon Regional Service Center
2796 Overseas Highway, Suite 212
Marathon, FL 33050

Subject: Notice of Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida.

Dear Ms. Jetton:

This purpose of this letter is to provide your agency with notice that URS Group, Inc., on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates several wastewater management alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives. At this time, FEMA requests your comments regarding the range of alternatives (attached). Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the project vicinity has also been attached.

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URS Corporation
Eastern Financial Building, Suite 1000
700 South Royal Poinciana Boulevard
Miami Springs, FL 33166
Tel: 305.884.8900
Fax: 305.884.2665



Rebecca Jetton
Planning Manager
June 5, 2003
Page 2 of 2

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FEMA respectfully seeks your written comments within 30 days to the letterhead address. If you have any questions or comments, please do not hesitate to contact me at (305) 884-8900, or Ms. Science Kilner, FEMA Lead Environmental Specialist, at (770) 220-5357. Thank you very much for your assistance. Your comments will be considered during the Draft SEA preparation process.

Sincerely,

URS Group, Inc.

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Ramon Mendieta
Environmental Scientist

Attachments as noted

cc: Science Kilner, FEMA Region IV, Lead Environmental Specialist
Stephen Carruth, URS Group, Inc., Environmental Planner



June 5, 2003

Gerald Briggs, Chief
Florida Department of Health
Bureau of Onsite Sewage, HSES
4052 Bald Cypress Way, Bin #A08
Tallahassee, FL 32399-1713

Subject: Notice of Draft Supplemental Environmental Assessment (SEA) for
the Key Largo Wastewater System, Monroe County, Florida.

Dear Mr. Briggs:

This purpose of this letter is to provide your agency with notice that URS Group, Inc., on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates several wastewater management alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives. At this time, FEMA requests your comments regarding the range of alternatives (attached). Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the project vicinity has also been attached.

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The National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR Parts 1500 through 1508), and FEMA regulations for NEPA compliance (44 CFR Part 10) direct FEMA and other Federal agencies to fully understand and take into consideration during decision making, the environmental consequences of proposed Federal actions (projects). Therefore, FEMA must comply with NEPA, and other applicable Federal laws and regulations,

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Gerald Briggs, Chief
Florida Department of Health
June 5, 2003
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Ramon Mendieta
Environmental Scientist

Attachments as noted

cc: Science Kilner, FEMA Region IV, Lead Environmental Specialist
Stephen Carruth, URS Group, Inc., Environmental Planner



June 5, 2003

Bill Causey, Superintendent
Florida Keys National Marine Sanctuary
P.O. Box 500368
Marathon, FL 33050

**Subject: Notice of Draft Supplemental Environmental Assessment (SEA) for
the Key Largo Wastewater System, Monroe County, Florida.**

Dear Mr. Causey:

This purpose of this letter is to provide your agency with notice that URS Group, Inc., on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates several wastewater management alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives. At this time, FEMA requests your comments regarding the range of alternatives (attached). Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the project vicinity has also been attached.

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Florida Keys National Marine Sanctuary
June 5, 2003
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Stephen Carruth, URS Group, Inc., Environmental Planner



June 5, 2003

Gus Rios, Branch Manager
Florida Department of Environmental Protection
South District - Marathon Branch
2796 Overseas Highway, Suite 221
Marathon, FL 33050

**Subject: Notice of Draft Supplemental Environmental Assessment (SEA) for
the Key Largo Wastewater System, Monroe County, Florida.**

Dear Mr. Rios:

This purpose of this letter is to provide your agency with notice that URS Group, Inc., on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates several wastewater management alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives. At this time, FEMA requests your comments regarding the range of alternatives (attached). Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the project vicinity has also been attached.

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Gus Rios, Branch Manager
Florida Department of Environmental Protection
June 5, 2003
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Ramon Mendieta
Environmental Scientist

Attachments as noted

cc:

Science Kilner, FEMA Region IV, Lead Environmental Specialist
Stephen Carruth, URS Group, Inc., Environmental Planner



June 5, 2003

Cecilia Weaver, Acting Director
South Florida Water Management District
10 High Point RD #B
Tavernier, FL 33070-2006

**Subject: Notice of Draft Supplemental Environmental Assessment (SEA) for
the Key Largo Wastewater System, Monroe County, Florida.**

Dear Ms. Weaver:

This purpose of this letter is to provide your agency with notice that URS Group, Inc., on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates several wastewater management alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives. At this time, FEMA requests your comments regarding the range of alternatives (attached). Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the project vicinity has also been attached.

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June 5, 2003
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Ramon Mendieta
Environmental Scientist

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Science Kilner, FEMA Region IV, Lead Environmental Specialist
Stephen Carruth, URS Group, Inc., Environmental Planner



June 5, 2003

Tim McGarry
Monroe County Growth Management Director
2798 Overseas Highway
Marathon, FL 33052

Subject: Notice of Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida.

Dear Mr. McGarry:

This purpose of this letter is to provide your agency with notice that URS Group, Inc., on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates several wastewater management alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives. At this time, FEMA requests your comments regarding the range of alternatives (attached). Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the project vicinity has also been attached.

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Monroe County Growth Management Director
June 5, 2003
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Ramon Mendieta
Environmental Scientist

Attachments as noted

cc: Science Kilner, FEMA Region IV, Lead Environmental Specialist
Stephen Carruth, URS Group, Inc., Environmental Planner



June 5, 2003

Teresa Tinker, Policy Coordinator
Growth Management and Strategic Planning
Office of the Governor
1501 Capitol
Tallahassee, FL 32399-0001

Subject: Notice of Draft Supplemental Environmental Assessment (SEA) for
the Key Largo Wastewater System, Monroe County, Florida.

Dear Ms. Tinker:

This purpose of this letter is to provide your agency with notice that URS Group, Inc., on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates several wastewater management alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives. At this time, FEMA requests your comments regarding the range of alternatives (attached). Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the project vicinity has also been attached.

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Teresa Tinker, Policy Coordinator
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June 5, 2003
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Ramon Mendieta
Environmental Scientist

Attachments as noted

cc: Science Kilner, FEMA Region IV, Lead Environmental Specialist
Stephen Carruth, URS Group, Inc., Environmental Planner



June 5, 2003

Richard Cantrell, South District Director
Florida Department of Environmental Protection
South District Office
2295 Victoria Avenue, Suite 364
Fort Myers, Florida 33902-2549

Subject: Notice of Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida.

Dear Mr. Cantrell:

This purpose of this letter is to provide your agency with notice that URS Group, Inc., on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates several wastewater management alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives. At this time, FEMA requests your comments regarding the range of alternatives (attached). Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the project vicinity has also been attached.

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Florida Department of Environmental Protection
June 5, 2003
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Ramon Mendieta
Environmental Scientist

Attachments as noted

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Science Kilner, FEMA Region IV, Lead Environmental Specialist
Stephen Carruth, URS Group, Inc., Environmental Planner



June 5, 2003

John Studt, South Permits Branch Chief
U.S. Army Corps of Engineers
Regulatory Permits Division
4400 PGA Blvd., Suite 500
Palm Beach Gardens, FL 33410

**Subject: Notice of Draft Supplemental Environmental Assessment (SEA) for
the Key Largo Wastewater System, Monroe County, Florida.**

Dear Mr. Studt:

This purpose of this letter is to provide your agency with notice that URS Group, Inc., on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates several wastewater management alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives. At this time, FEMA requests your comments regarding the range of alternatives (attached). Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the project vicinity has also been attached.

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John Studt, South Permits Branch Chief
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June 5, 2003
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Ramon Mendieta
Environmental Scientist

Attachments as noted

cc:

Vic Anderson, U.S. Army Corps of Engineers, Marathon Regulatory Office
Science Kilner, FEMA Region IV, Lead Environmental Specialist
Stephen Carruth, URS Group, Inc., Environmental Planner



June 5, 2003

Heinz J. Mueller, Chief
US Environmental Protection Agency, Region 4
Office of Environmental Assessment
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

**Subject: Notice of Draft Supplemental Environmental Assessment (SEA) for
the Key Largo Wastewater System, Monroe County, Florida.**

Dear Mr. Mueller:

This purpose of this letter is to provide your agency with notice that URS Group, Inc., on behalf of the Federal Emergency Management Agency (FEMA), is preparing a Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County, Florida. The Draft SEA evaluates several wastewater management alternatives proposed for Key Largo, and the potential environmental consequences associated with those alternatives. At this time, FEMA requests your comments regarding the range of alternatives (attached). Please note that this attachment represents only a portion of the draft SEA. Additionally, a street map of the project vicinity has also been attached.

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June 5, 2003
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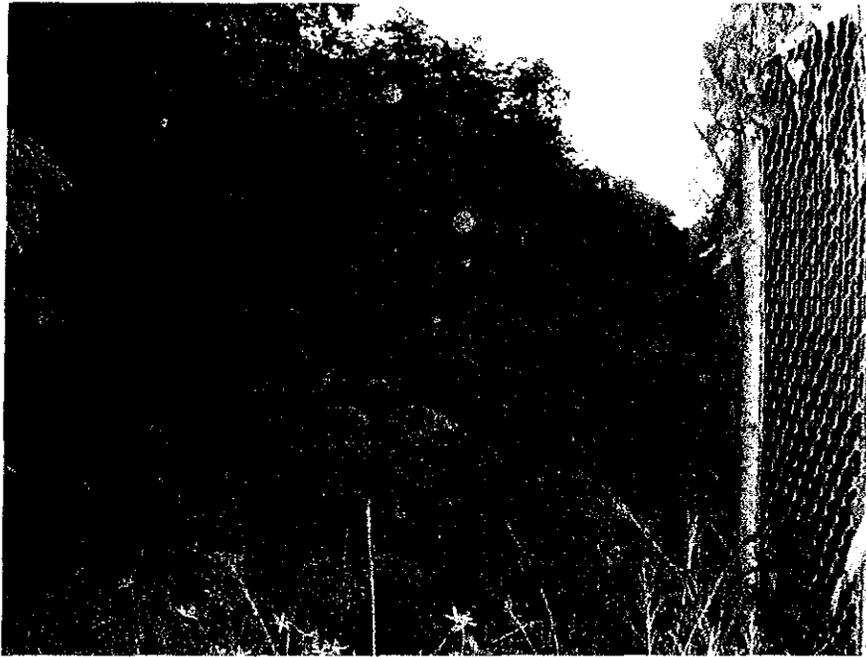
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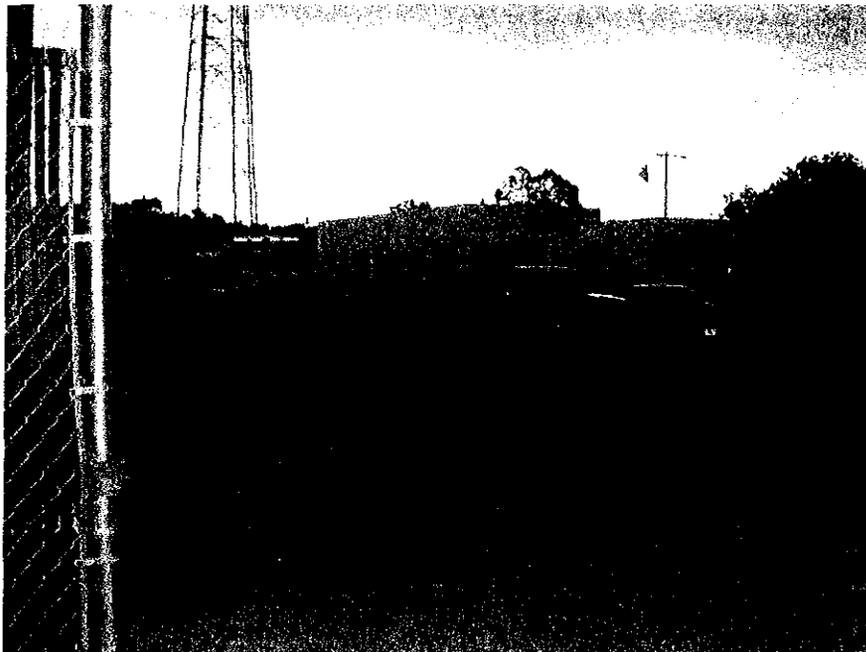
Science Kilner, FEMA Region IV, Lead Environmental Specialist
Stephen Carruth, URS Group, Inc., Environmental Planner

Appendix C
Site Photographs



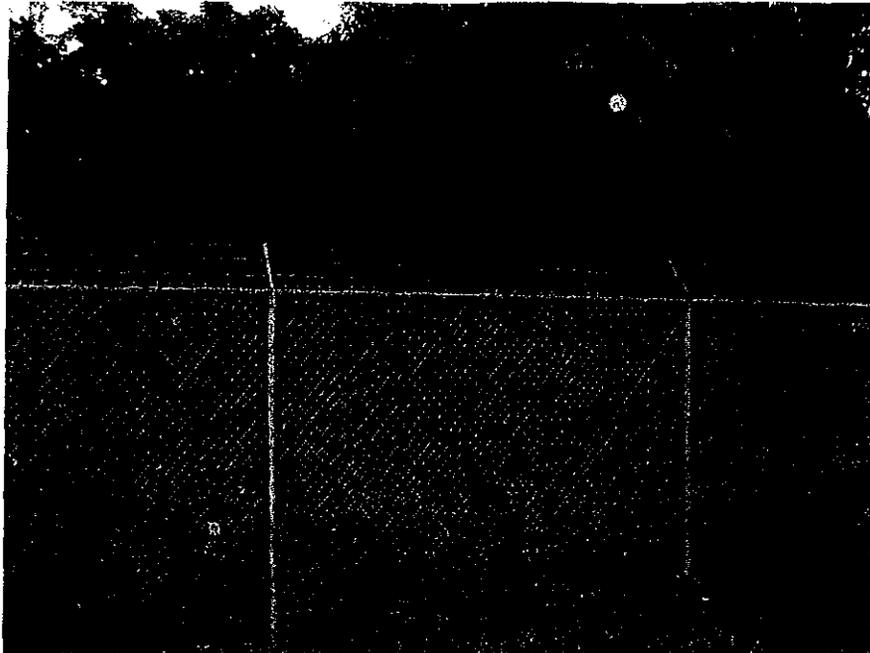


View of proposed Alternative 2 WWTP site – Southern edge along fence – facing East



View of FKAA facility from Alternative 2 WWTP site – facing South East

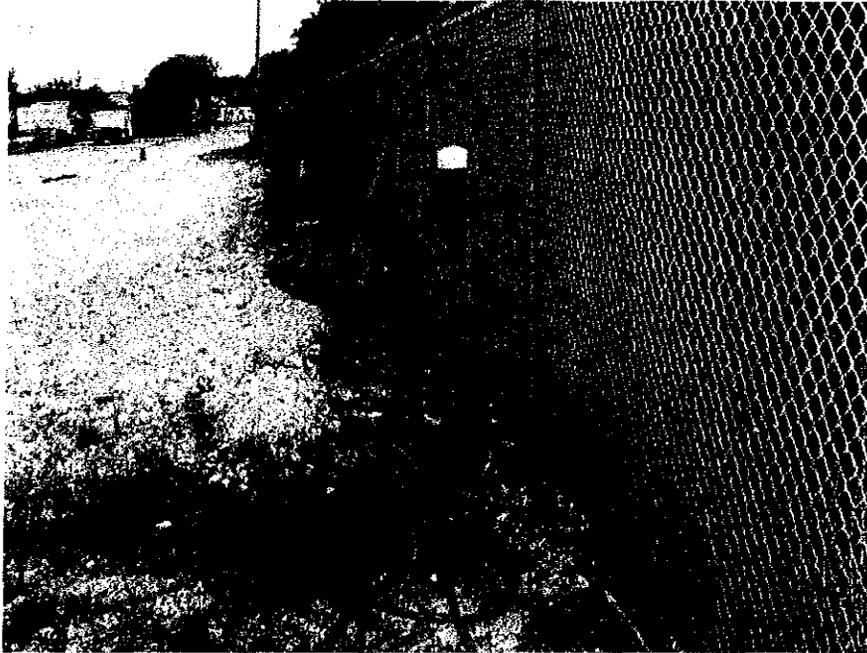
Appendix C
Site Photographs



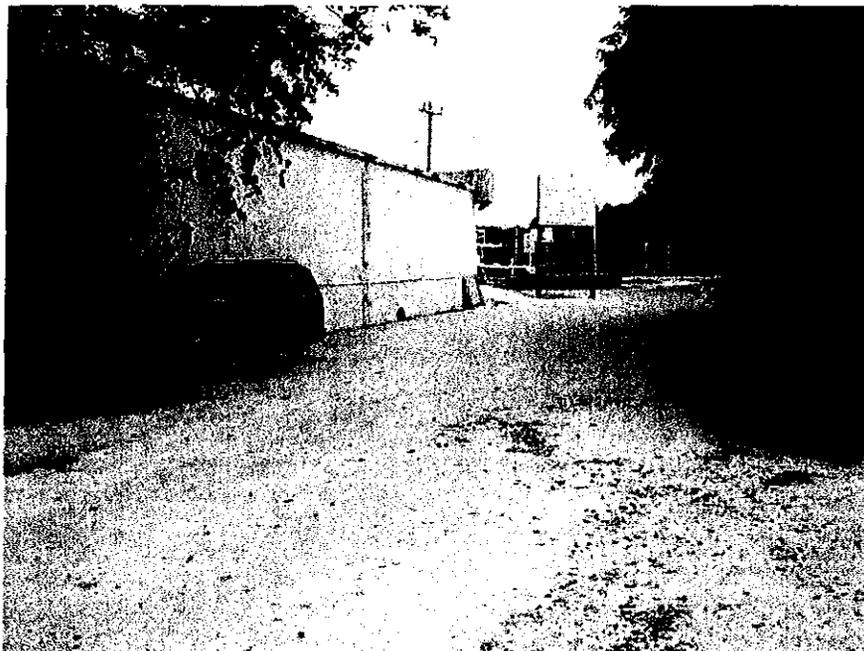
View from South edge of Alternative 2 site – facing North



View of Southern interior of Alterative 2 WWTP site – facing north



View of one of two wells located along fence adjacent to the south of Alternative 2 WWTP site – facing West



View of Commercial businesses adjacent to the southwest – facing Southwest

Appendix C
Site Photographs



View of western interior of Alternative 2 WWTP site – facing east



View of western interior of Alternative 2 WWTP site – facing East

Appendix D
Public Notice



**FEMA NOTICE OF INTENT TO PREPARE A
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED
KEY LARGO TRAILER VILLAGE AND KEY LARGO PARK WASTEWATER PROJECTS**

The Federal Emergency Management Agency (FEMA) has received a grant application from the Florida Keys Aqueduct Authority, in coordination with Monroe County and the Key Largo Wastewater Board; to fund construction of a wastewater plant and collection system serving Key Largo Trailer Village, Monroe County, Florida. The proposed project would be funded through FEMA 1249-DR Post Disaster - Unmet Needs funds, as noticed on August 6, 1999, in Vol. 64 No. 151 of the *Federal Register*. Matching funds will be provided through the Florida Division of Emergency Management (FDEM) and local sources. Additionally, the Florida Department of Environmental Protection (FDEP) is considering grant funding to the Board for construction of a wastewater collection system serving Key Largo Park, Monroe County, Florida. The FEMA funded wastewater plant noted above would also provide wastewater treatment for the Key Largo Park service area. The purpose of the projects is to improve nearshore water quality in the Key Largo area through higher wastewater treatment; consistent with the Monroe County Sanitary Wastewater Master Plan and to meet State requirements (Chapter 99-395 Laws of Florida) by 2010 per the *Monroe County Year 2010 Comprehensive Plan*.

FEMA has completed a Programmatic Environmental Assessment (PEA) for Wastewater Management Improvements in the Keys, for various wastewater projects including Key Largo. A Programmatic Finding of No Significant Impact has been issued for the PEA. These documents can be obtained by writing to the point of contact below or may be viewed and downloaded at the following website: <http://www.fema.gov/ehp/eaarchives.htm>.

FEMA hereby publishes its notice of intent to prepare a Supplemental Environmental Assessment (SEA) of the proposed actions on Key Largo, pursuant to the National Environmental Policy Act (PL 91-190) (NEPA) and associated environmental statutes, as implemented by FEMA's regulations 44 CFR Part 10; and in accordance with Presidential Executive Order 11988 (Floodplain Management); as implemented in 44 CFR Part 9. Although there is no FEMA funding in the FDEP funded Key Largo Park project, it is considered a connected action to the Key Largo Trailer Village project under NEPA; consequently the scope of the SEA will include both projects. This SEA will address the purpose and need of the proposed projects, project alternatives considered, the affected environment, project and site-specific environmental consequences, and impact mitigation measures. Once completed, the Draft SEA will be available for public review and comment; and a public meeting will be scheduled.

Project Alternatives:

Alternatives to be considered in the SEA include:

- 1) No Action Alternative: No FEMA/FDEM grant funding would be applied to the Key Largo service areas, which would continue to use their existing wastewater treatment systems, and funding would have to be obtained from other sources to meet the State 2010 requirements and deadline;
- 2) Action Alternative 1 (preferred): FEMA/FDEM grant funding is applied towards construction of a community wastewater collection system and treatment plant serving Key Largo Trailer Village; with the plant sited on the oceanside at Mile Marker 100.5 immediately northeast of Atlantic Drive, FDEP funding would be applied towards construction of a collection system serving Key Largo Park;
- 3) Action Alternative 2: FEMA/FDEM/FDEP grant funding would be applied as described under Alternative 2, but the treatment plant would be sited on the oceanside near Mile Marker 98 at 97951 Overseas Highway.

Comment Period:

Comments will be accepted from the affected public; local, state and federal agencies; and other interested parties in order to consider and appropriately scope and evaluate the likely effects of the proposed Key Largo project alternatives on the physical, biological, and social/built environment. Comments should be in writing, sent to the FEMA point of contact listed below, and postmarked within 15 days of publication of this notice.

Point of Contact:

Ms. Science Kilner, Lead Environmental Specialist
FEMA Region IV
3003 Chamblee Tucker Road
Atlanta, Georgia 30341
Fax: (770) 220-5440
science.kilner@dhs.gov



Appendix E
Public Comments



Appendix E Public Comments

Public comments resulting from the public comment period and public meeting will be summarized in the Final Supplemental Environmental Assessment.

Appendix F
Regulated Keys Fisheries Species



Appendix F
Regulated Keys Fisheries Species

<u>Species Common Name</u>	<u>Scientific Name</u>	<u>Managed By</u>
Almaco Jack	<i>Seriola rivoliana</i>	SAFMC, GMFMC
Albacore	<i>Thunnus alalunga</i>	GMFMC
Anchor Tilefish	<i>Caulolatilus intermedius</i>	GMFMC
Atlantic Angel shark	<i>Squatina dumeril</i>	GMFMC
Atlantic Bonito	<i>Sarda sarda</i>	GMFMC
Atlantic Sharpnose	<i>Rhizoprionodon terraenovae</i>	GMFMC
Banded Rudderfish	<i>Seriola zonata</i>	SAFMC, GMFMC
Bank Sea Bass	<i>Centropristis ocyurus</i>	SAFMC
Basking Shark	<i>Cetorhinus maximus</i>	GMFMC
Bigeye Sixgill Shark	<i>Hexanchus nakamurai</i>	GMFMC
Bigeye Sand Tiger Shark	<i>Odontaspis noronhai</i>	GMFMC
Bigeye Tresher	<i>Alopias superciliosus</i>	GMFMC
Bigeye Tuna	<i>Thunnus obesus</i>	GMFMC
Bignose Shark	<i>Carcharhinus altimus</i>	GMFMC
Black Grouper	<i>Mycteroperca bonaci</i>	SAFMC, GMFMC
Black Margate	<i>Anisotremus surinamensis</i>	SAFMC
Black Snapper	<i>Apsilus dentatus</i>	SAFMC
Black Sea Bass	<i>Centropristis striatus</i>	SAFMC
Blackfin Snapper	<i>Lutjanus buccanella</i>	SAFMC, GMFMC
Blackfin Tuna	<i>Thunnus atlanticus</i>	GMFMC
Blackline Tilefish	<i>Caulolatilus cyanops</i>	GMFMC
Blue Marlin	<i>Makaira nigricans</i>	GMFMC
Bluefin Tilefish	<i>Caulolatilus microps</i>	SAFMC
Bluefin Tuna	<i>Thunnus orientalis</i>	GMFMC
Blueline Tilefish	<i>Caulolatilus microps</i>	GMFMC
Blue Stripe Grunt	<i>Haemulon sciurus</i>	SAFMC
Caribbean Reef Shark	<i>Carcharhinus perezi</i>	GMFMC
Caribbean Sharpnose Shark	<i>Rhizoprionodon porosus</i>	GMFMC
Cero	<i>Scomberomorus regalis</i>	SAFMC
Cobia	<i>Rachycentron canadum</i>	SAFMC, GMFMC
Coney	<i>Epinephelus fulvus</i>	SAFMC
Cubera Snapper	<i>Lutjanus cyanopterus</i>	SAFMC, GMFMC
Dog Snapper	<i>Lutjanus jocu</i>	SAFMC, GMFMC
Dolphin Fish	<i>Coryphaena hippurus</i>	SAFMC
Dusky Shark	<i>Carcharhinus obscurus</i>	GMFMC
French grunt	<i>Haemulon flavolineatum</i>	SAFMC
Gag	<i>Mycteroperca microlepis</i>	SAFMC, GMFMC
Galapagos shark	<i>Carcharhinus galapagensis</i>	GMFMC
Golden Crab	<i>Chaceon fenneri</i>	SAFMC
Golden Tilefish	<i>Lopholatilus chamaeleonticeps</i>	SAFMC
Goliath Grouper	<i>Epinephelus itajara</i>	SAFMC
Goldface Tilefish	<i>Caulolatilus chrysops</i>	SAFMC
Graysby	<i>Epinephelus cruentatus</i>	SAFMC
Gray Snapper	<i>Lutjanus griseus</i>	SAFMC, GMFMC
Gray Triggerfish	<i>Balistes capriscus</i>	SAFMC, GMFMC

Appendix F
Regulated Keys Fisheries Species

<u>Species Common Name</u>	<u>Scientific Name</u>	<u>Managed By</u>
Greater Amberjack	<i>Seriola dummerili</i>	SAFMC, GMFMC
Hogfish	<i>Lachnolaimus maximus</i>	SAFMC, GMFMC
Jewfish Grouper	<i>Epinephelus itajara</i>	GMFMC
Jolthead Porgy	<i>Calamus bajonado</i>	SAFMC
King Mackerel	<i>Scomberomorus cavalla</i>	SAFMC, GMFMC
Knobbed Porgy	<i>Calamus nodosus</i>	SAFMC
Lane Snapper	<i>Lutjanus synagris</i>	SAFMC, GMFMC
Lesser Amberjack	<i>Seriola fasciata</i>	SAFMC, GMFMC
Longbill Spearfish	<i>Tetrapturus pfluegeri</i>	GMFMC
Little Tunny	<i>Euthynnus alletteratus</i>	SAFMC
Mahogany Snapper	<i>Lutjanus mahogoni</i>	SAFMC, GMFMC
Margate	<i>Haemulon album</i>	SAFMC
Misty Grouper	<i>Epinephelus mystacinus</i>	SAFMC, GMFMC
Mutton Snapper	<i>Lutjanus analis</i>	SAFMC, GMFMC
Narrowtooth Shark	<i>Carcharhinus brachyurus</i>	GMFMC
Nassau Grouper	<i>Epinephelus striatus</i>	SAFMC
Night Shark	<i>Carcharhinus signatus</i>	GMFMC
Ocean Triggerfish	<i>Canthidermis sufflamen</i>	SAFMC
Penaeid Shrimp	<i>Penaeus sp.</i>	SAFMC
Queen Snapper	<i>Etelis oculatus</i>	SAFMC, GMFMC
Queen Triggerfish	<i>Balistes vetula</i>	SAFMC
Red Drum	<i>Sciaenops ocellatus</i>	SAFMC, GMFMC
Red Grouper	<i>Epinephelus morio</i>	SAFMC, GMFMC
Red Hind	<i>Epinephelus guttatus</i>	SAFMC, GMFMC
Red Porgy	<i>Pagrus pagrus</i>	SAFMC
Red Snapper	<i>Lutjanus campechanus</i>	SAFMC
Rock Hind	<i>Epinephelus adscensionis</i>	SAFMC, GMFMC
Rock Sea Bass	<i>Centropristis philadelphicus</i>	SAFMC
Rock Shrimp	<i>Sicyonia brevirostris</i>	SAFMC
Sailfish	<i>Istiophorus playpteras</i>	GMFMC
Sand Tiger Shark	<i>Carcharhinus taurus</i>	GMFMC
Sevengill Shark	<i>Notorynchus cepedianus</i>	GMFMC
Sixgill Shark	<i>Hexanchus griseus</i>	GMFMC
Smalltail Shark	<i>Carcharhinus porosus</i>	GMFMC
Saucereye Porgy	<i>Calamus calamus</i>	SAFMC
Scamp	<i>Mycteroperca phenax</i>	SAFMC, GMFMC
Schoolmaster	<i>Lutjanus apodus</i>	SAFMC, GMFMC
Scup	<i>Stenotomus chrysops</i>	SAFMC
Sheepshead	<i>Archosargus probatocephalus</i>	SAFMC
Silk Snapper	<i>Lutjanus vivanus</i>	SAFMC, GMFMC
Skipjack Tuna	<i>Katsuwonus pelamis</i>	GMFMC
Snowy Grouper	<i>Epinephelus niveatus</i>	SAFMC, GMFMC
Spadefish	<i>Chaetodipterus faber</i>	SAFMC
Spanish Mackerel	<i>Scomberomorus maculatus</i>	SAFMC, GMFMC
Speckled Hind	<i>Epinephelus drummondhayi</i>	SAFMC, GMFMC

Appendix F Regulated Keys Fisheries Species

<u>Species Common Name</u>	<u>Scientific Name</u>	<u>Managed By</u>
Spiny Lobster	<i>Panulirus argus</i>	SAFMC, GMFMC
Swordfish	<i>Xiphas gladius</i>	GMFMC
Tiger Grouper	<i>Mycteroperca tigris</i>	SAFMC
Tilefish	<i>Lopholatilus chamaeleonticeps</i>	GMFMC
Tomtate	<i>Haemulon aurolineatum</i>	SAFMC
Vermilion Snapper	<i>Rhomboplites aurorubens</i>	SAFMC, GMFMC
Wahoo	<i>Acanthocybium solanderi</i>	SAFMC
Warsaw Grouper	<i>Epinephelus nigritus</i>	SAFMC, GMFMC
Wenchman Snapper	<i>Pristipomoides aquilonaris</i>	GMFMC
Whale Shark	<i>Rhincodon typus</i>	GMFMC
Whitebone Porgy	<i>Calamus leucosteus</i>	SAFMC
White Grunt	<i>Haemulon plumieri</i>	SAFMC
White Marlin	<i>Tetrapturus albidus</i>	GMFMC
White Shark	<i>Alosa sapidissima</i>	GMFMC
Wreckfish	<i>Polyprion americanus</i>	SAFMC
Yellowedge Grouper	<i>Epinephelus flavolimbatus</i>	GMFMC
Yellowfin Grouper	<i>Mycteroperca venenosa</i>	SAFMC, GMFMC
Yellowfin Tuna	<i>Thunnus albacares</i>	GMFMC
Yellowmouth Grouper	<i>Mycteroperca interstitialis</i>	SAFMC, GMFMC
Yellowtail Snapper	<i>Ocyrus chrysurus</i>	SAFMC, GMFMC



Appendix G
Key Largo Cultural Resources Consultation Correspondence





4005 Windward Plaza Drive
Suite 570
Alpharetta, GA 30005
Tel: (770) 777-7417
Fax: (770) 777-7491

Offices Worldwide

January 26, 2001

Ms. Laura Kammerer
Florida Department of State
Division of Historical Resources
500 South Bruno Street, Room 402
Tallahassee, Florida 32399-0250
(850) 487-2333

Subject: Formal Consultation on the Proposed Key Largo Wastewater Treatment Facility Site at Key Largo, Monroe County, Florida

Dear Ms. Kammerer:

URS Group, Inc. (URS), on behalf of the Federal Emergency Management Agency (FEMA) and the Florida Keys Aqueduct Authority (FKAA) is conducting an Environmental Assessment (EA) of an approximately 20 acres tract of land in Key Largo, Monroe County, Florida for use as a Wastewater Treatment Facility. The project site can be further described as being located on the eastern side of US Hwy. 1 at Mile Marker 100.5 on the island of Key Largo.

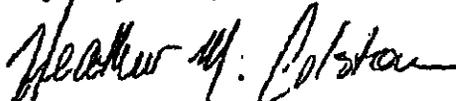
In compliance with NEPA, URS requests information on cultural resources within or near the project area including, but not limited to National Register listed or eligible properties, National Historic Landmarks, and Traditional Cultural Properties. In support of your review of this project, please find the enclosed materials:

- A topographic map outlining the Project Site.
- 35mm photographs of the project site and immediate vicinity.
- A detailed description of the project site and a preliminary cultural resources reconnaissance survey conducted by Nick Bon-Harper in January 2001.

Your review comments on this project would be greatly appreciated and will be incorporated into this assessment.

If you need additional information, please call me at (770) 777-7417.

Very Truly Yours,


Heather M. Colston
Staff Archaeologist

OPTIONAL FORM 99 (7-99)

11/16/03

FAX TRANSMITTAL

of pages

To	Star Carmuth	From	Jacana
Dept/Agency		Phone #	
Fax #	301 309 1879	Fax #	
NSN 7540-01-317-7388		5088-101	
GENERAL SERVICES ADMINISTRATION			

Enclosures

Cultural Resources Reconnaissance Survey of the Proposed Key Largo Wastewater Treatment Plant Site, Key Largo, Florida

A cultural resources reconnaissance survey was conducted on January 10, 2001, by Nick Bon-Harper. The aim of this survey was to identify visible cultural resources and assess the necessity for an intensive archaeological survey.

Description of Area:

The project area is located on the eastern side of US1 at mile marker 100.5 on the island of Key Largo. The project area covers approximately 20 acres in the form of a right-angle triangle, whose hypotenuse is marked by US1. From US1 the eastern boundary follows Central Avenue due south for approximately 400 meters. It then continues for a further 100 meters on the same line following an overgrown trackway. The Southern boundary runs due east along the northern perimeter of the Florida Keys Aqueduct Agency (FKAA) maintenance depot for 200 meters then continues on the same line along an overgrown track way for an additional 200 meters until it meets with the eastern perimeter. A small (50 x 50m) extension of the main project area protrudes from the southern perimeter along the eastern boundary of the FKAA depot. Almost the entire area is covered with dense semi-tropical vegetation. No sources of potable water occur in the project area.

Survey Methodology:

The area was surveyed at 50 meter intervals along 10 east-west transects. Transect 1 being defined by the southern boundary. Soil conditions, signs of disturbance and any visible evidence of cultural resources were noted. In addition to the ten transects, the small extension along the southern boundary was surveyed and the perimeter of the area was also inspected.

Results:

1) A significant portion of the project area has been subject to major disturbance. This disturbance is focused mainly in the southern third of the project area, but also occurs along the entire project boundary. The perimeter disturbance extends 10-15 meters into the project area, generally in the form of bulldozed piles of rock probably associated with the clearing of tracks and roadways. In addition to the bulldozer piles, numerous dumps of tires, construction and domestic waste occur particularly along the trackways bounding the southeast corner of the project. Along the southern boundary bulldozing disturbance extended up to 50 meters into the project area.

A number of large depressions were noted along the in the southwestern quadrant. These 'pits' were typically 10 to 15 meters in diameter and extended approximately 1 meter into the bedrock, which was at or near surface in all cases. All were flat bottomed with gently sloping sides. These pits appear to be of 'recent' date, the edges are still clearly defined

and bedrock is visible in all. It is thought probable the pits were mechanically excavated to provide material for road construction.

A number of smaller pits occur across the project area. These smaller pits are typically 1-3 meters in diameter and 0.5 - 1 meter deep. Fractured bedrock was noted in and around all of these pits. The vast majority of these smaller pits appear to have been formed by tree falls.

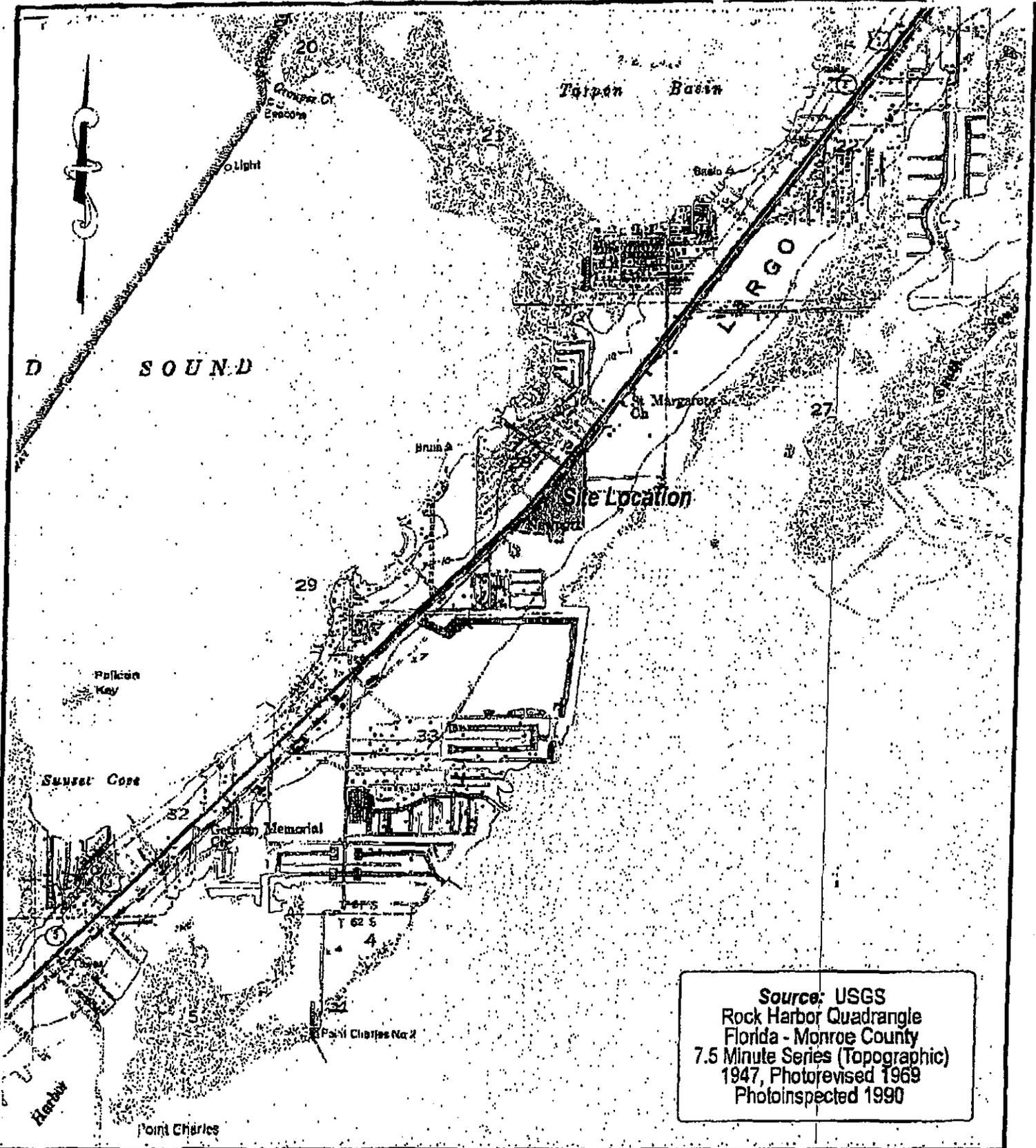
2) Soils throughout the area are extremely thin (50 - 75mm). Fractured bedrock is apparent at the surface across the entire area and parent material is exposed along the trackways and outcrops frequently in the southern half of the project area.

3) One *possible* habitation site was noted approximately 50 meters north of the FKAA depot. A small clearing approximately 10 meters across marked this site. Bulldozed piles of rock, along with construction materials and domestic refuse surrounded the clearing. Two fiberglass boats were abandoned in the clearing. The assemblage *may* indicate a habitation site, although it may well mark represent more illegal dumping of trash, and construction waste. All materials and artifacts noted could be dated to the 2nd half of the 20th century.

4) The only other signs of occupation were several itinerant camps in the northern third of the project area. At least two of these campsites are currently occupied, while others appear to have been inhabited until recently.

Conclusions and Recommendations:

Much of the project area has been affected by significant disturbance mainly in the form of bulldozing to clear roadways and tracks. Several large pits in the southwest of the area probably indicate 'borrowing' activity also associated with road construction. Soils across the area are thin, especially in the south where bedrock outcrops are frequent. A small clearing and associated debris in the south of the project area *may* indicate a habitation site dating to the 2nd half of the 20th century. However there are no in-situ remains and it is equally possible that the features represent illegal dumping of construction and domestic waste, which was frequently noted in other areas. The absence of visible cultural resources and the highly deflated soils and the lack of potable water indicate that there is a very low probability of significant cultural resources occurring within the project area. Therefore no further archaeological survey is recommended.



Source: USGS
 Rock Harbor Quadrangle
 Florida - Monroe County
 7.5 Minute Series (Topographic)
 1947, Photorevised 1969
 Photoinspected 1990

CLIENT: Federal Emergency Management Agency	
PROJECT: Key Largo Wastewater Improvement Project	
REVISION NO.:	DESIGNED BY: J. Anderson
SCALE: Approximate Scale 1"=2000'	DRAWN BY: J. Anderson
FILE: E:\Projects\FEMA\VI Keys\KLargoSite\map.ai	CHECKED BY: K. Branton

TITLE: Treatment Plant Site Vicinity Map	PROJ NO.: 89F195-411-00
URS	TASK: 00100
	FIGURE: 1.1

Page 1

Ent D: (FMSF only)



Survey Log Sheet

Florida Master Site File
Version 2.0 9/97

Survey #: (FMSF only)

Consult *Guide to the Survey Log Sheet* for detailed instructions.

Survey Project (Name and project phase) Key Largo Wastewater Treatment Plant, Florida

Report Title (exactly as on title page) Supplemental Environmental Assessment: FEMA 1249-DR-FL Unmet Needs

Report Author(s) (as on title page— individual or corporate; last names first) URS Corporation

Publication Date (year) 2001 Total Number of Pages in Report (Count text, figures, tables, not site forms) N/A

Publication Information (If relevant, series and no. in series, publisher, and city. For article or chapter, cite page numbers. Use the style of *American Antiquity*; see *Guide to the Survey Log Sheet*.) URS Corporation, 2001, Supplemental Environmental Assessment: FEMA 1249-DR-FL Unmet Needs. URS Corporation, Alpharetta, Georgia. Submittal to FEMA Region IV. Forthcoming.

Supervisor(s) of Fieldwork (whether or not the same as author(s); last name first) Bon-Harper, Nicholas and Cassedy, Daniel F., Ph.D.

Affiliation of Fieldworkers (organization, city) URS Corporation, Raleigh, North Carolina

Key Words/Phrases (Don't use the county, or common words like *archaeology, structure, survey, architecture*. Put the most important first. Limit each word or phrase to 25 characters.) Key Largo Wastewater Treatment Plant

Survey Sponsors (corporation, government unit, or person who is directly paying for fieldwork)

Name Federal Emergency Management Agency, Region IV

Address/Phone 3003 Chamblee-Tucker Road, Atlanta, Georgia 30341, (770) 220-3422

Recorder of Log Sheet Colston, Heather M.

Date Log Sheet Completed 05 / 09 / 2001

Is this survey or project a continuation of a previous project? No Yes: Previous survey # (s) (FMSF only)

Counties (List each one in which field survey was done - do not abbreviate; use supplement sheet if necessary)

Monroe County

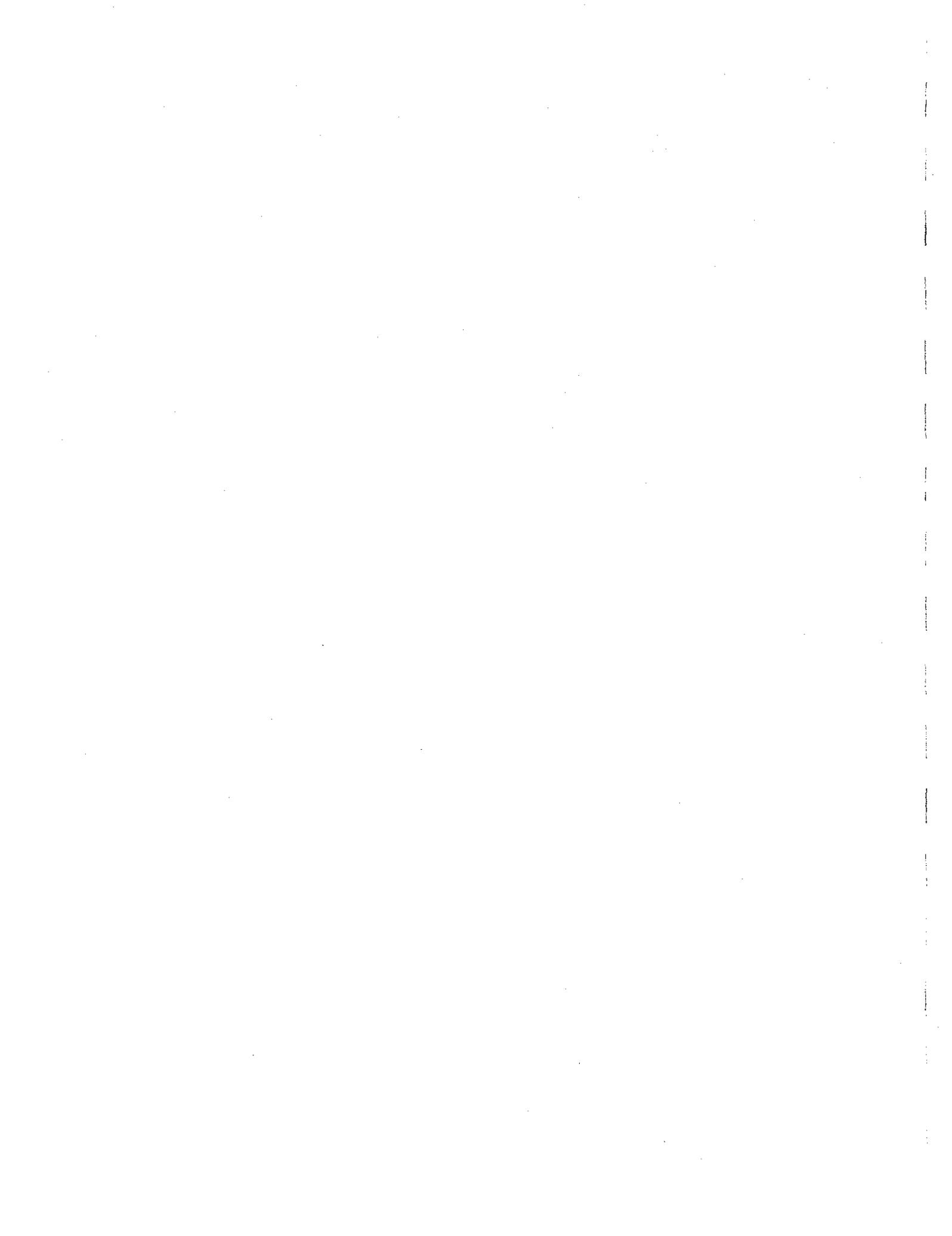
USGS 1:24,000 Map(s) : Map Name/Date of Latest Revision (use supplement sheet if necessary):

Rock Harbor Quadrangle, 7.5 Minute Series, 1947, Photorevised 1969, Photoinspected 1990

Dates for Fieldwork: Start 01 / 10 / 2001 End 01 / 10 / 2001 Total Area Surveyed (fill in one) _____ hectares 20 acres

Number of Distinct Tracts or Areas Surveyed 1

If Corridor (fill in one for each): Width _____ meters _____ feet Length _____ kilometers _____ miles



DIVISIONS OF FLORIDA DEPARTMENT OF STATE

- Office of the Secretary
- Office of International Relations
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- Division of Cultural Affairs
- Division of Historical Resources
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- Division of Bond Finance
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- Department of Law Enforcement
- Department of Highway Safety and Motor Vehicles
- Department of Veterans' Affairs

FLORIDA DEPARTMENT OF STATE

Katherine Harris
Secretary of State

DIVISION OF HISTORICAL RESOURCES

Ms. Heather M. Colston
URS
4005 Windward Plaza Drive, Suite 570
Alpharetta, GA 30005

May 16, 2001

RE: DHR Project File No. 2001-01544
Additional Information Received by DHR May 10, 2001
Cultural Resources Reconnaissance Survey of the Proposed Key Largo Wastewater Treatment Plant Site, Key Largo, Florida. By URS, January 2001.

Dear Ms. Colston:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), as well as the provisions contained in Chapter 267.061, *Florida Statutes*, implemented through 1A-46, *Florida Administrative Code*, we have reviewed the results of the field survey of the referenced project and find them to be complete and sufficient.

We note that no historic structures or archaeological sites were located as a result of the above field survey. We concur with the findings and determinations in the report. It is therefore the opinion of this agency that no historic properties are likely to be located within the proposed project area.

If you have any questions concerning our comments, please contact Ms. Robin Jackson, Historic Sites Specialist, by electronic mail at rjackson@mail.dos.state.fl.us, or at 850-487-2333 or 800-847-7278. Thank you for your interest in protecting Florida's historic properties.

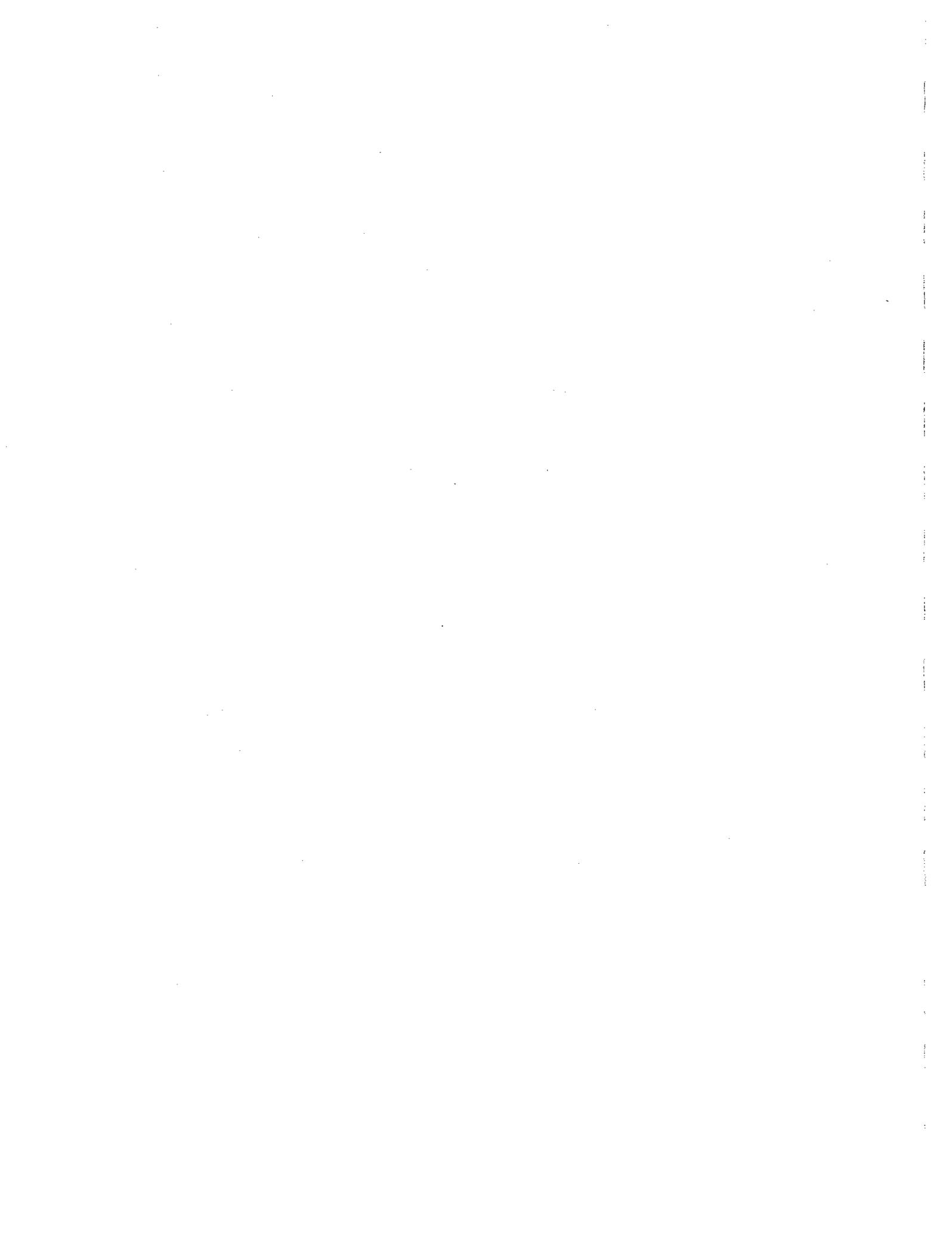
Sincerely,

Janet Snyder Matthews, Ph.D., Director
Division of Historical Resources
State Historic Preservation Officer

JSM/Jrj

R.A. Gray Building • 500 South Bronough Street • Tallahassee, Florida 32399-0250 • <http://www.flheritage.com>

- Director's Office
(850) 488-1480 • FAX: 488-3355
- Archaeological Research
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- Historic Preservation
(850) 487-2333 • FAX: 922-0496
- Historical Museums
(850) 488-1484 • FAX: 921-2503
- Historic Pensacola Preservation Board
(850) 595-5985 • FAX: 595-5989
- Palm Beach Regional Office
(561) 279-1475 • FAX: 279-1476
- St. Augustine Regional Office
(904) 825-5045 • FAX: 825-5044
- Tampa Regional Office
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RECEIVED JUL 08 2003

FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Mr. Ramon Mendieta
URS Corporation
Eastern Financial Building, Suite 1000
700 South Royal Poinciana Boulevard
Miami Springs, Florida 33166

June 26, 2003

RE: DHR Project File Number: 2003-4954
Received by DHR June 9, 2003
Federal Emergency Management Agency
Notice of Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System, Monroe County

Dear Mr. Mendieta:

Our office received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended and *36 CFR Part 800: Protection of Historic Properties*. The State Historic Preservation Officer is to advise Federal agencies as they identify historic properties (listed or eligible for listing, in the *National Register of Historic Places*), assess effects upon them, and consider alternatives to avoid or minimize adverse effects.

Alternative 1 – No Action Alternative; It is the opinion of this office that this alternative will have no effect on historic properties.

Alternative 2 – New Wastewater Treatment Plant on Northern Site and Alternative 3 - New Wastewater Treatment Plant on Southern Site; Based upon comparison with environmentally similar areas of Monroe County, it is our opinion that the possibility of encountering a prehistoric archaeological site at the project locations is sufficiently high to justify a professional archaeological and historical survey prior to any ground disturbing activities.

Since potentially significant archaeological and historic sites may be present, it is our recommendation that, prior to initiating any project related land clearing or ground disturbing activities within the project areas, they should be subjected to a systematic, professional archaeological and historical survey. The purpose of this survey will be to locate and assess the significance of historic properties present. The resultant survey report shall conform to the specifications set forth in Chapter 1A-46, *Florida Administrative Code*, and will need to be forwarded to this agency in order to complete the process of reviewing the impact of this proposed project on historic properties.

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

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Historic Preservation
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Historical Museums
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Palm Beach Regional Office
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St. Augustine Regional Office
(904) 825-5045 • FAX: 825-5044

Tampa Regional Office
(813) 272-3843 • FAX: 272-2340

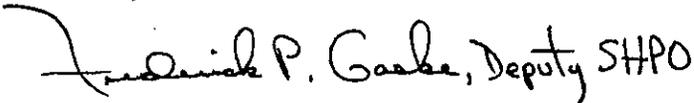
Mr. Mendieta
June 26, 2003
Page 2

The results of the investigations will determine if significant historic properties would be disturbed by this project. In addition, if significant remains are located, the data described in the report and the consultant's conclusions will assist this office in determining measures that must be taken to avoid, minimize, or mitigate adverse impacts to historic properties listed, or eligible for listing in the *National Register of Historic Places*, or otherwise of historical or architectural significance.

Because this letter and its contents are a matter of public record, consultants who have knowledge of our recommendations may contact the project applicant. This should in no way be interpreted as an endorsement by this agency. The *Registry of Professional Archaeologists* (RPA) is the national certifying organization for archaeologists. A listing of archaeologists who are RPA members living or working in Florida can be accessed at <http://dhr.dos.state.fl.us/bhp/compliance>. In addition, the complete RPA Directory of Certified Professional Archaeologists is available at www.rpanet.org.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservation Planner, by electronic mail sedwards@dos.state.fl.us, or at 850-245-6333 or 800-847-7278.

Sincerely,


Janet Snyder Matthews, Ph.D., Director, and
State Historic Preservation Officer



FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Mr. Ramon Mendieta
URS Corporation
Eastern Financial Building, Suite 1000
700 South Royal Poinciana Boulevard
Miami Springs, Florida 33166

July 22, 2003

RE: DHR Project File Number: 2003-4954-B
Additional Information Received by DHR July 10, 2003 *SAC 7/22/03*
Federal Emergency Management Agency
Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System,
Monroe County

Dear Mr. Mendieta:

Our office received and reviewed additional information for the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended and *36 CFR Part 800: Protection of Historic Properties*.

We note that *Alternative 2 – New Wastewater Treatment Plant on Northern Site* project area has previously been surveyed (*Cultural Resources Reconnaissance Survey of the Proposed Key Largo Wastewater Treatment Plant Site -#6185*). No historic properties were recorded within the proposed project area. Therefore, it is the opinion of this office that Alternative 2 will have no effect on historic properties. We wish to withdraw our survey recommendations of June 26, 2003 for the Alternative 2 project area.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservation Planner, by electronic mail sedwards@dos.state.fl.us, or at 850-245-6333 or 800-847-7278.

Sincerely,

*Janet Snyder Matthews, Ph.D., Director, and
State Historic Preservation Officer*

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

Director's Office
(850) 245-6300 • FAX: 245-6435

Archaeological Research
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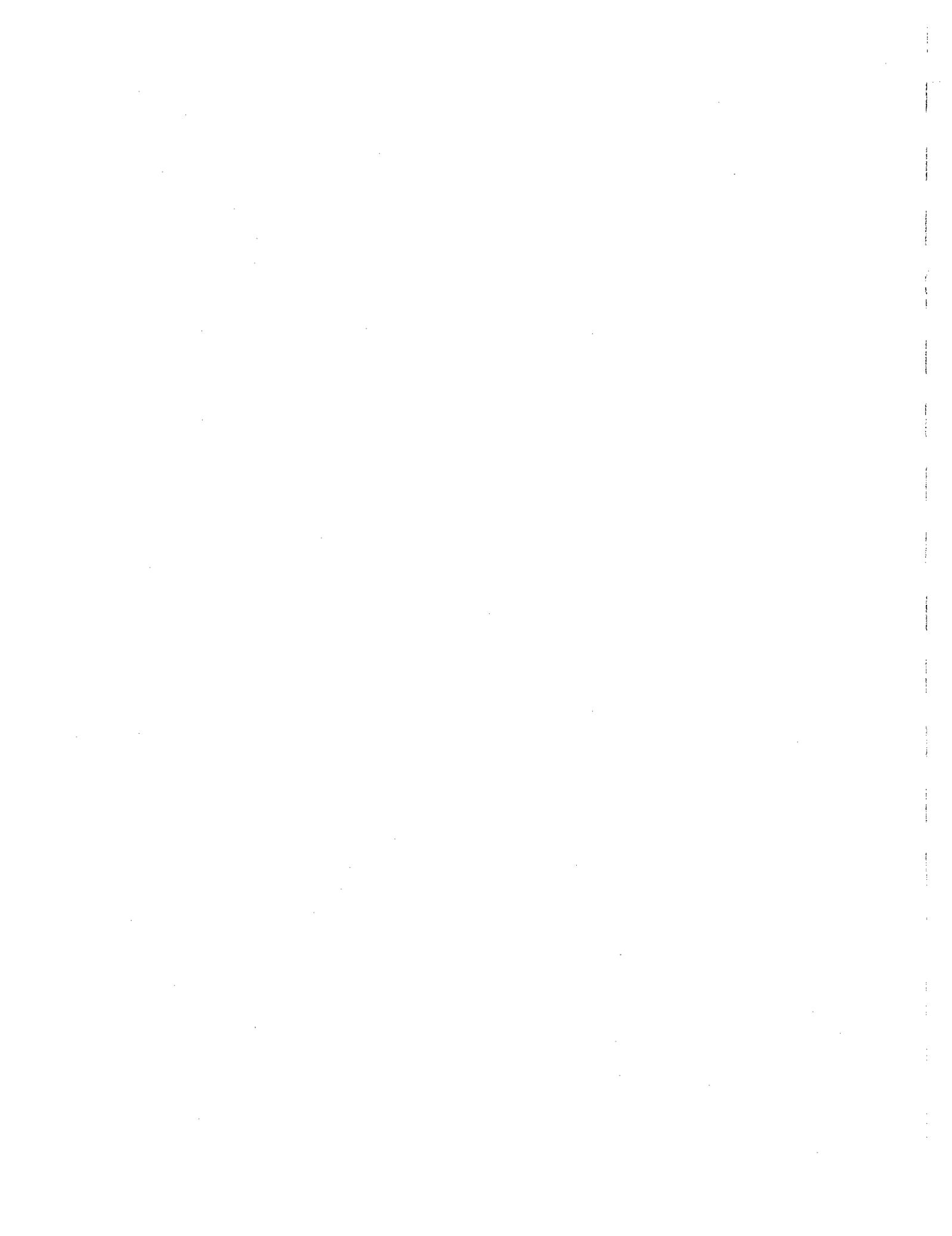
Historic Preservation
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Historical Museums
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Department of Veterans' Affairs

FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

July 22, 2003

Ms. Cassandra Michaud
URS Corporation
7101 Wisconsin Ave., Ste 700
Bethesda, MD 20814
Fax # 301-656-8059

Dear Ms. Michaud:

In response to your inquiry of July 17, 2003, the Florida Master Site File lists no previously recorded cultural resources in the following parcel of Monroe County:

T62S, R39E, Section 06

In interpreting the results of our search, please remember the following points:

- Areas which have not been completely surveyed, such as yours, may contain unrecorded archaeological sites, unrecorded historically important structures, or both.
- As you may know, state and federal laws require formal environmental review for some projects. Record searches by the staff of the Florida Master Site File do not constitute such a review of cultural resources. If your project falls under these laws, you should contact the Compliance Review Section of the Bureau of Historic Preservation at 850-245-6333 or at this address.

Sincerely,

Neal Engel, 850-245-6440
Data Analyst, Florida Master Site File
Division of Historical Resources
R. A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250

State SunCom: 205-6440
Fax line: 850-245-6439
Email: fmsfile@dos.state.fl.us
Web: <http://www.dos.state.fl.us/dhr/msff>

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Tampa Regional Office
(813) 272-9843 • FAX: 277-7240





August 5, 2003

Janet Snyder Matthews, Ph.D.,
State Historic Preservation Officer
Division of Historical Resources
R. A. Gray Building, Room 305
500 South Bronough Street
Tallahassee, FL 32399-0250

**Subject: Supplemental Environmental Assessment and Cultural Resources
Assessment, Key Largo Wastewater Treatment System, Monroe County,
Florida
DHR Project File Number: 2003-4954**

Dear Dr. Matthews:

This letter is to supply your office with additional information regarding a FEMA proposed Wastewater Treatment System on Key Largo in Monroe County, Florida. A Draft Supplemental Environmental Assessment (Draft SEA) is being prepared, and this document evaluates proposed wastewater management alternatives serving two neighborhoods in Key Largo. Recently, an additional Wastewater Treatment Plant (WWTP) site alternative (Alternative 3) was added to the Draft SEA. The following are the results of a cultural resource assessment for that Alternative and respond to your letter of June 26, 2003.

Pursuant to 36 CFR Part 800.2(a)(3), URS Group, Inc., on behalf of the Federal Emergency Management Agency (FEMA) Region IV, has performed a cultural resource assessment for the Alternative 3 site of the proposed Wastewater Treatment System. The assessment has been prepared in accordance with applicable state and federal standards by investigators who meet *The Secretary of Interior's Professional Qualification Standards*, per 36 CFR Part 61, in the discipline of archaeology.

The purpose of this assessment is to assist FEMA's project planning regarding the proposed wastewater treatment system on Key Largo, to ensure compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA), and to provide your office with information regarding possible impacts to cultural resources. The Alternative 2 site has been previously surveyed for the presence of cultural resources and the results of this work were submitted to your office under separate cover.

Concurrence on the findings of that work was stated in a letter from your office dated May 16, 2001 (DHR Project File No. 2001-01544) and again on July 22, 2003 (DHR Project File No 2001-4954-B).

Project Description

Alternative 3 consists of constructing a WWTP on a site to the south of the Alternative 2 site (Mile Marker 100.5) on Key Largo. The plant would be constructed on currently developed land, on the Oceanside of Key Largo at MM 98.0 (Figure 1). The WWTP, as with Alternative 2, would provide primary treatment, biological treatment, solids removal, nitrogen and phosphorus removal, filtration, effluent disinfection, and disposal to shallow injection wells. In addition to the new treatment plant, design elements at the site would include parking and paved access roads, as well as storage space for maintenance equipment, treatment chemicals, and other operations materials. The service areas, Key Largo Trailer Village and Key Largo Park, are delineated on the attached figure and are the same as those served by the previously reviewed Alternative 2 site. The wastewater collection and conveyance system would be installed throughout the service areas in existing utility or road right-of-ways.

Background Research and Site Visit

Research at the Florida Master Site File, maintained at the State Historic Preservation Office, indicates that there are no known historic properties within Township 62S, Range 39E, and Section 6 (Attachment A). The proposed project is located within this Section. Additionally, there are no historic properties located within one mile of the proposed project area.

URS staff conducted a site visit on April 24, 2003. The proposed plant site is a 200-foot wide by 900-foot long, 3.8 acre site, which is cleared, grubbed, and developed. It is presently used as a boatyard (Figure 2). U.S. 1 runs along the western property boundary; the northern and southern property boundaries border on undeveloped hardwood hammock. The closest private residence is located approximately 100 feet (0.02 miles) west of the site. The closest water source to the site is the Straits of Florida, immediately east of the site. Florida Bay is located about 1350 feet (0.26 miles) west of the site. Boats, trailers, lumber, and other construction debris is strewn about the entire property (Figures 3 and 4).

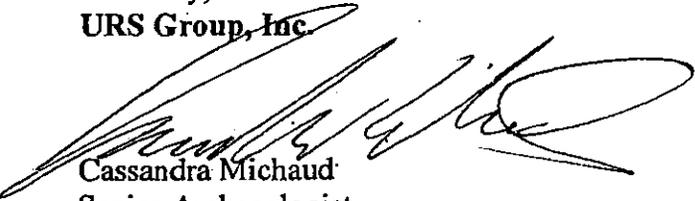
There is no source of potable water and no vegetation across most of the parcel. No historic features were noted during the visit. No historic properties were noted during the survey and it seems clear that the area had been intensively used during the second half of the 20th century. No subsurface testing was done on this parcel because of the extent of previous surface disturbance from site grubbing and grading.

Findings

Based on the background research and fieldwork, FEMA has determined that the proposed Alternative 3 action will have no affect on historic properties, and respectfully requests your review of these findings and you to return any comments within the next 30 days. All original fieldnotes and site photographs will remain with our office. Although it is not anticipated cultural resources will be discovered should the Alternative 3 site be selected, FEMA's grant approval will be conditioned on the subgrantee halting work should unexpected discoveries be made during construction, including human remains, and consulting with FEMA and your office.

If you have any questions regarding this project, please contact me at 301-652-2215 or Ms. Science Kilner, FEMA Lead Environmental Specialist, at 770-220-5357. Thank you for your continued assistance with this project.

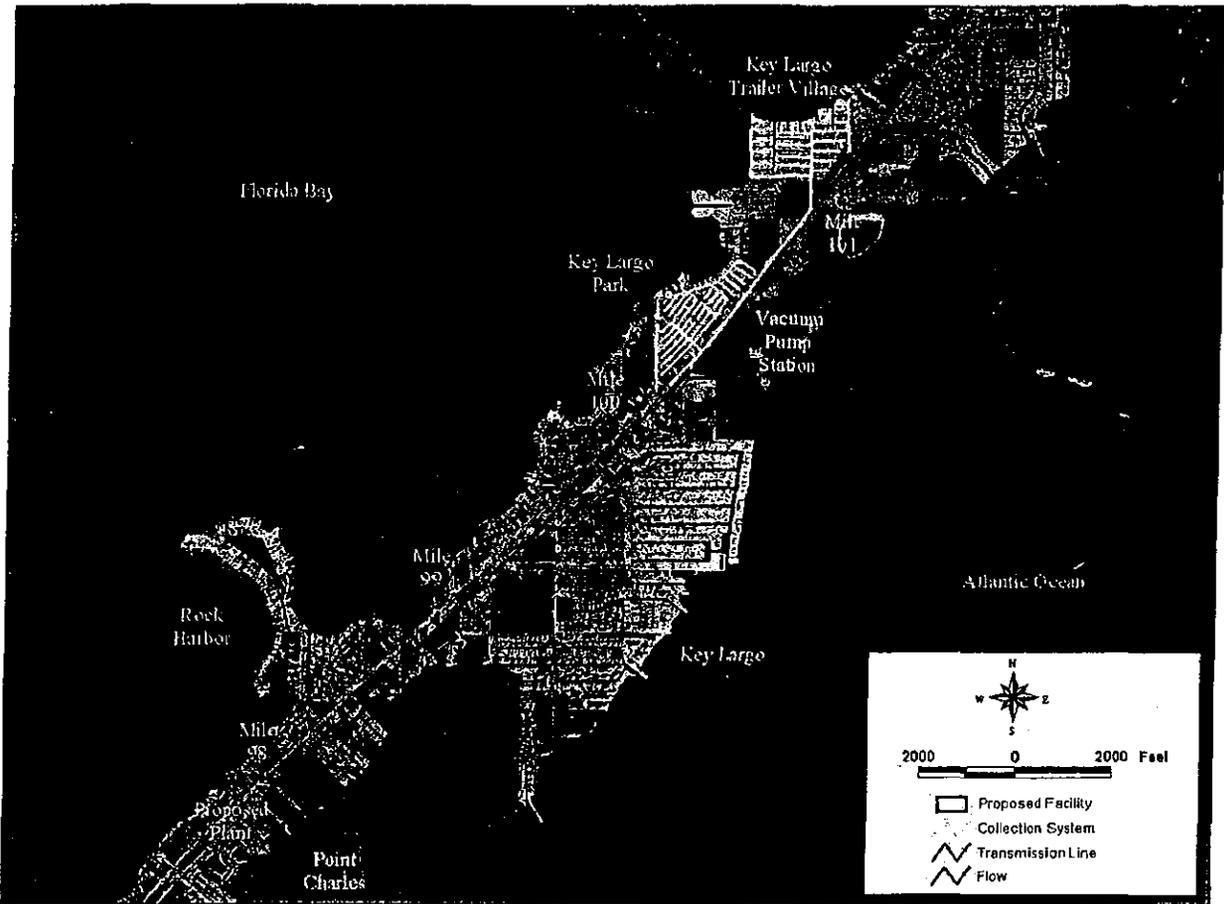
Sincerely,
URS Group, Inc.



Cassandra Michaud
Senior Archaeologist

attachments

cc: Ms. Science Kilner, FEMA Region IV, Lead Environmental Specialist
Mr. Stephen Carruth, URS Group, Inc., Environmental Planner
Mr. Ramon Mendieta, URS Group, Inc., Project Environmental Scientist



Alternative 3 Project Area

CLIENT		FEMA		TITLE		Project Location Map – Alternative 3		
PROJ		WWTP – Key Largo						
REVISION NO		DES BY						PROJ NO
SCALE		DR BY						FIGURE
FILE		CHK BY						1

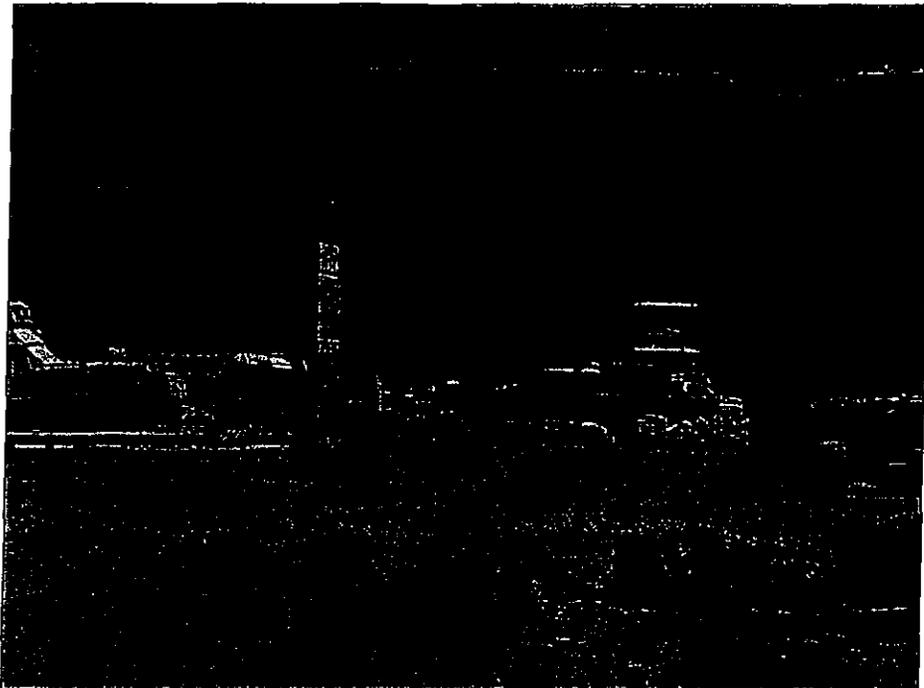


Figure 2: View of Alternative 3 WWTP site taken from across US-1, looking east.

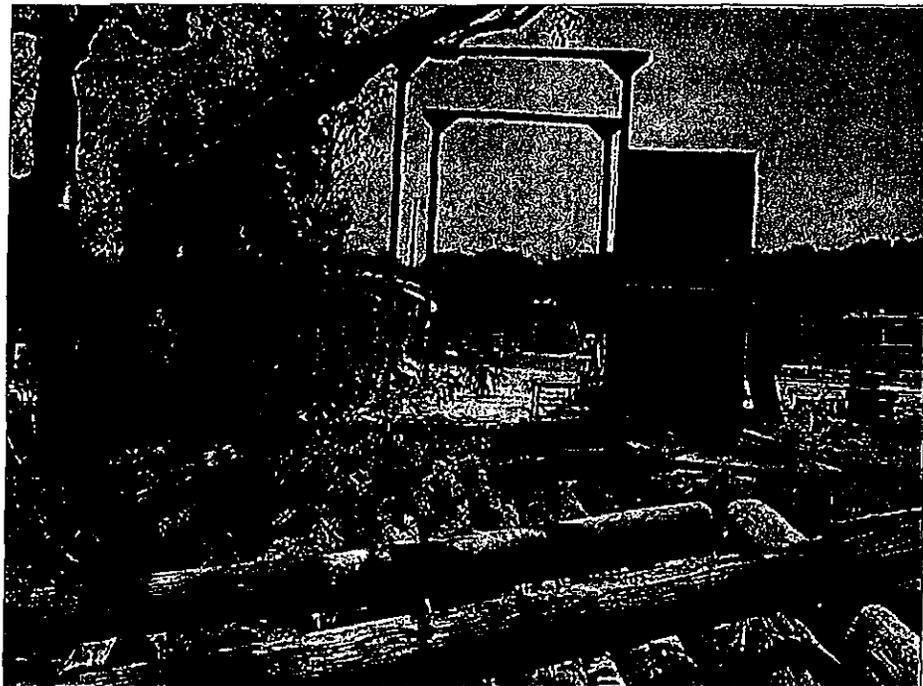


Figure 3: Lumber and other debris present in proposed Alternative 3 WWTP area, looking south.



Figure 4: View of proposed Alternative 3 WWTP site, looking south

URS

Attachment A
Site Files Letter





FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
 Secretary of State
 DIVISION OF HISTORICAL RESOURCES

Mr. Ramon Mendieta
 URS Corporation
 Eastern Financial Building, Suite 1000
 700 South Royal Poinciana Boulevard
 Miami Springs, Florida 33166

August 18, 2003

RE: DHR Project File Number: 2003-4954-C
 Additional Information Received by DHR August 11, 2003
 Federal Emergency Management Agency
 Draft Supplemental Environmental Assessment (SEA) for the Key Largo Wastewater System,
 Monroe County

Dear Mr. Mendieta:

Our office received and reviewed additional information for the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended and *36 CFR Part 800: Protection of Historic Properties*. The State Historic Preservation Officer is to advise Federal agencies as they identify historic properties (listed or eligible for listing, in the *National Register of Historic Places*), assess effects upon them, and consider alternatives to avoid or minimize adverse effects.

Based on the additional information provided by Ms. Cassandra Michaud of your company, it is the opinion of this office that the *Alternative 3 - New Wastewater Treatment Plant on Southern Site* project will have no effect on historic properties.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservation Planner, by electronic mail sewards@dos.state.fl.us, or at 850-245-6333 or 800-847-7278.

Sincerely,

Janet Snyder Mathews, Ph.D., Deputy SHPO

Janet Snyder Mathews, Ph.D., Director, and
 State Historic Preservation Officer

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

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Appendix H
Biological Assessment for the Wastewater Treatment Plant Site – Mile Marker
100.5, Key Largo, Florida



DRAFT

Biological Assessment for the Wastewater Treatment Plant Site – Mile Marker 100.5 Key Largo, Florida



Prepared for
Federal Emergency Management Agency, Region IV
3003 Chamblee-Tucker Road
Atlanta, Georgia 30341

October 25, 2000

URS

5900 Windward Parkway
Suite 400
Alpharetta, Georgia 30005
678.356-8300

TABLE OF CONTENTS

ACRONYMS	iii
1.0 INTRODUCTION	1
2.0 BACKGROUND	4
2.1 Need for and History of Project	4
2.2 Regional Characterization	4
3.0 PROJECT DESCRIPTION	6
3.1 Site Location	6
3.2 Proposed Action	6
3.3 Construction and Operation Actions	15
4.0 SITE SPECIFIC INFORMATION	16
4.1 Survey Methods	16
4.2 Affected Habitats	16
4.3 Protected Species	26
4.4 Other Information and sources	30
5.0 ANALYSIS OF POTENTIAL EFFECTS	32
5.1 Direct and Indirect Effects	32
5.2 Cumulative Effects	34
5.3 Consideration of Mitigation and Conservation Measures	36
5.4 Determination of Effect	39
6.0 INCIDENTAL TAKE EVALUATION	41
7.0 CONCLUSIONS	42
8.0 LITERATURE CITED	43

Appendices

Appendix A List of Endangered, Threatened, and Regionally Important Species Located in the Upper Florida Keys	44
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List of Figures

Figure 1.1: Key Largo Wastewater Improvement Project -Treatment Plant Site Vicinity Map.....2

Figure 1.2: Key Largo Wastewater Improvement Project - Treatment Plant Site Location Map ...3

Figure 3.1: Aerial View of the Treatment Plant Site and Surrounding Area in Key Largo.....7

Figure 3.2: Key Largo Wastewater Treatment Plant Site - Surrounding Development Patterns, Subdivision Boundaries, and County/State Land Ownership8

Figure 3.3: Project Site and Surrounding Habitat Characteristics9

Figure 3.4: Aerial View – Project Site & Construction Area Boundaries11

Figure 3.5: General Shape and Boundaries of Project Construction Site12

Figure 3.6: Small Scale View of Construction Area.....13

List of Tables

Table 4.1: List of Plants and Animals Located on the Key Largo Wastewater Treatment Plant Site19

Table 4.2: Overstory (>4” DBH) Trees Found Within Proposed Construction Site24

Table 4.3: Protected Plant Species Identified for Transplantation/Replanting25

Table A.1: List of Endangered, Threatened, and Regionally Important Species Found in the Upper Florida Keys45

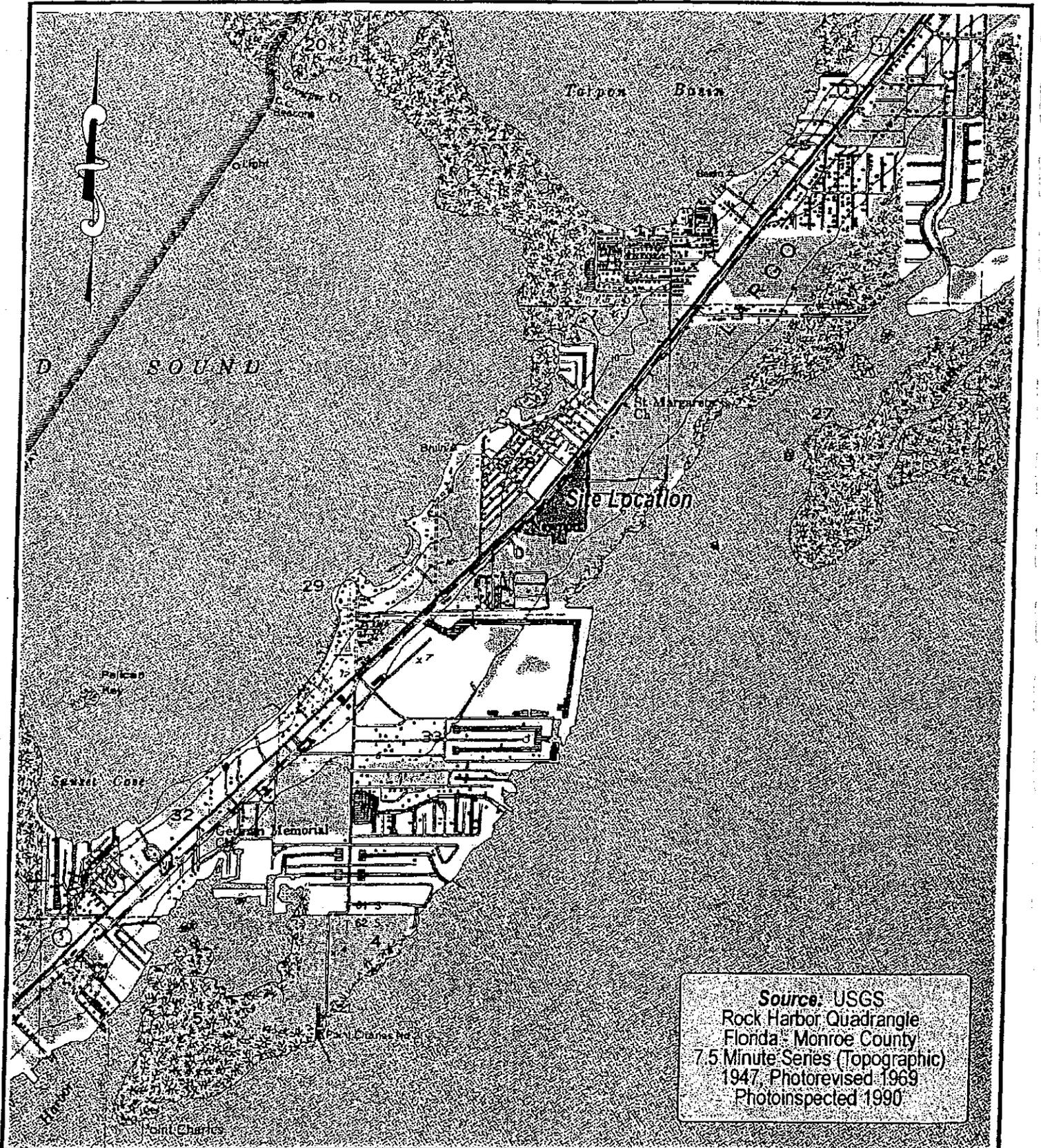
ACRONYMS

AWT	Ambient Water Treatment
CARL	Conservation and Recreation Lands
CBOD	Chemical Biological Oxygen Demand
DBH	diameter at breast height
FDACS	Florida Department of Agriculture and Consumer Services
FEMA	Federal Emergency Management Agency
FFWCC	Florida Fish and Wildlife Conservation Commission
FGFCC	Florida Game and Fresh Water Fish Commission
FKAA	Florida Keys Aqueduct Authority
FNAI	Florida Natural Areas Inventory
ha	hectare
ROGO	Rate of Growth Ordinance
SC	Suburban Commercial
SHCA	Strategic Habitat Conservation Area
SR	Suburban Residential
SRF	State Revolving Fund Program
TDR	Transferable Development Rights
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey

1.0 INTRODUCTION

This document is a Biological Assessment of the potential effects of constructing a proposed regional wastewater treatment system in Key Largo, Florida, with an emphasis on the specific site for a regional wastewater treatment plant selected by the Board of County Commissioners on 18 May 2000. The proposed 22-acre treatment plant site is located in Section 28, Range 39, Township 61 at Mile Marker 100.5 on the oceanside of U.S. Highway 1 (Figure 1.1). Figure 1.2 shows the location of the site in relation to the proposed service areas and the Key Largo Wastewater District.

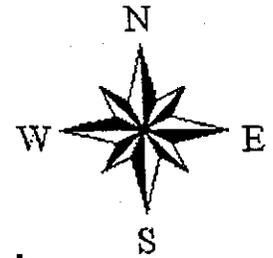
This Biological Assessment is being submitted by the Federal Emergency Management Agency (FEMA), and is based on existing documents and information, as well as site-specific information, for the treatment plant site that was developed by staff of the Monroe County Department of Marine Resources. This document constitutes a Biological Assessment in accordance with the rules requiring federal agency consultation under the Endangered Species Act.



CLIENT:	Federal Emergency Management Agency	
PROJECT:	Key Largo Wastewater Improvement Project	
REVISION NO.:	DESIGNED BY:	J. Anderson
SCALE:	DRAWN BY:	J. Anderson
FILE:	CHECKED BY:	K. Branton
E:\Projects\FEMA\FI Keys\KLargoSitemap.ai		

TITLE:	Treatment Plant Site Vicinity Map			
			PROJ NO.:	89FR954414.06
			TASK:	_00100
			FIGURE:	1.1

Key Largo Wastewater Improvement Project Treatment Plant Site Location Map



Gulf of Mexico

Florida Bay

Treatment Plant Site

Key Largo

Long Key

Marathon

Big Pine Key

Key West

Straights of Florida

	Key Largo Wastewater District
	Treatment Plant Site
	Florida Keys
	Southeast Florida

30

0

30

60 Miles



2.0 BACKGROUND

2.1 NEED FOR AND HISTORY OF PROJECT

Monroe County has been actively pursuing options for constructing a wastewater collection, treatment, and disposal system in the Key Largo area of the Florida Keys. After analysis of numerous potential sites, the Monroe County Growth Management Division staff, in coordination with the staff of the Florida Keys Aqueduct Authority (FKAA), identified three candidate sites for the Key Largo wastewater treatment plant. The Board of County Commissioners selected the proposed site discussed below and gave its approval to begin negotiating for acquisition of the site. The Commission also requested that the staff assess the site for any potential environmental permitting concerns.

On 28 June 2000, the Board of County Commissioners finalized its review of contract documents to complete the project. The Board validated contract negotiations between FKAA and the selected firm of Ogden Water Systems. In parallel with the selection of Ogden Water Systems, the county staff has been actively working on a review of the treatment plant site noted above.

The county provided information from its site assessment as part of the application for project approval in the State Revolving Fund Program (SRF), and to FEMA as a funding agency for the overall Key Largo Wastewater project. FEMA and its consultants have reviewed this data as well as other sources in compiling a Biological Assessment for the proposed wastewater treatment system.

2.2 REGIONAL CHARACTERIZATION

Physiography

The Florida Keys extend in an arch from Soldier Key in Dade County to the Dry Tortugas, almost 200 miles to the southwest. They represent an emergent feature of a prehistoric (\pm 100,000 years old) tropical marine environment, including what were then high energy back reef areas and a coral reef. Today, two carbonate formations, the Key Largo Limestone and the Miami Oolite formations represent these prehistoric environments. Because of the porous, highly permeable carbonate composition of the islands, little soil exists in the Keys. What soil does exist lies in a very thin layer within the tropical forests that characterize the islands.

Natural ground waters are limited in the Florida Keys. In the Key Largo Limestone Formation of the Upper Keys, permeability and porosity of the rock is so high that little fresh water is retained in the rock before mixing with sub-surface waters affected principally by tide (and rain water during the rainy season).

Biota - Animal Community

A tropical flora and a temperate fauna characterize the Keys. Most of the mammalian species have come over land bridges formed during Pleistocene glacial periods. Florida Bay, with the current Florida mainland and the Keys became a contiguous landmass during these glacial periods. With easy access, the temperate animals of the mainland of Florida populated the Keys.

As, warmer climates prevailed through the present, sea level has risen to cut the Keys off, stranding the mammalian, amphibian, and reptilian species that have come to reside here.

As a result, similar to island archipelagos elsewhere in the world, the Keys represent a rich environment for speciation, particularly for terrestrial animals that have difficulty crossing water bodies, and whose gene pools thus become largely isolated. Several mammal and reptile species in the Keys are considered endemic. Many, because of their limited population sizes, are also considered threatened by both natural and human events. Thus, at least ten species that live in the Keys are listed by the federal government as threatened or endangered.

Avian (bird) species are represented by both temperate and tropical species as well as migratory species during the winter. No bird species are considered endemic to the Keys, because of their ability to cross large water bodies. Most live throughout the south Florida area or the immediate Caribbean basin. Others stop during migrations between eastern North America, the Caribbean, and South and Central America.

Many avian species native to the region have been listed by the state or federal government as threatened or endangered because of broad environmental threats, including hunting, poaching, and loss or change of primary habitats caused by human development.

Biota - Plant Community

The principal native plant communities in the Upper Keys include coastal mangrove forests, south Florida pine flatwoods, and hardwood forests or hammocks. The tropical forests of the Keys, ranging from the higher elevation hardwood hammocks to the mangroves that lie along the island margins, are unique within the continental United States. They are clearly representative of the character of the Caribbean basin from which most of the plant species of the Keys originated. Large expanses of water have provided the means for genetic isolation and speciation. Thus, the Keys also have many plant species unique to the area that are listed as threatened or endangered by the state or federal government. The major threat to these plant species and the forest habitats of the Keys is land clearing. Commercial harvest or poaching, in the cases of many of the airplants and orchids residing in the Keys and south Florida, is also a significant concern.

Biota - Protected Species

A total of nine animal and two plant species occurring in the northern Florida Keys have been designated as endangered or threatened by the U.S. Congress and U.S. Fish and Wildlife Service (USFWS). The Florida Fish and Wildlife Conservation Commission (FFWCC) lists 16 non-marine animal species as endangered, threatened, or of special concern and the Florida Department of Agriculture has designated 83 plant species as endangered, threatened, or commercially exploited. Monroe County has also designated 68 plant species as being regionally important. Appendix A shows all of the terrestrial and inshore species within the northern Keys that are listed by these agencies. Species that may occur within the vicinity of the project site are identified in Section 4.0.

3.0 PROJECT DESCRIPTION

3.1 SITE LOCATION

The project location is shown on the USGS Rock Harbor Quadrangle Florida, Monroe County topographic map in Figure 1.1. Figure 3.1 is a 1995 color infrared aerial photograph showing the location of the site and surrounding natural habitats and developed areas. Surrounding land uses and major classes of property ownership are shown in Figure 3.2.

The treatment plant site is located near U.S. Highway 1 at approximately Mile Marker 100.5 in Key Largo. The treatment plant site is located on the oceanside of U.S. 1, the Overseas Highway, northeast of Waldorf Plaza and southwest of the Tradewinds Shopping Center. Adjacent to the site is a 2-acre property owned by the FKAA, used as a maintenance yard. Across U.S. 1 is Key Largo Park subdivision. State-owned lands, part of the Newport Hammock Conservation and Recreation Lands (CARL) purchase occur to the northeast, and several tracts of county-owned conservation lands are present south of the site. Figure 3.3 shows the land use and habitat cover in the surrounding region. Much of the site and the lands to the south and east are composed of hardwood hammock forest, while lands to the west and north are developed for residential and commercial use. The area immediately adjacent to the FKAA maintenance yard, which comprises the actual construction area, has been disturbed due to past clearing.

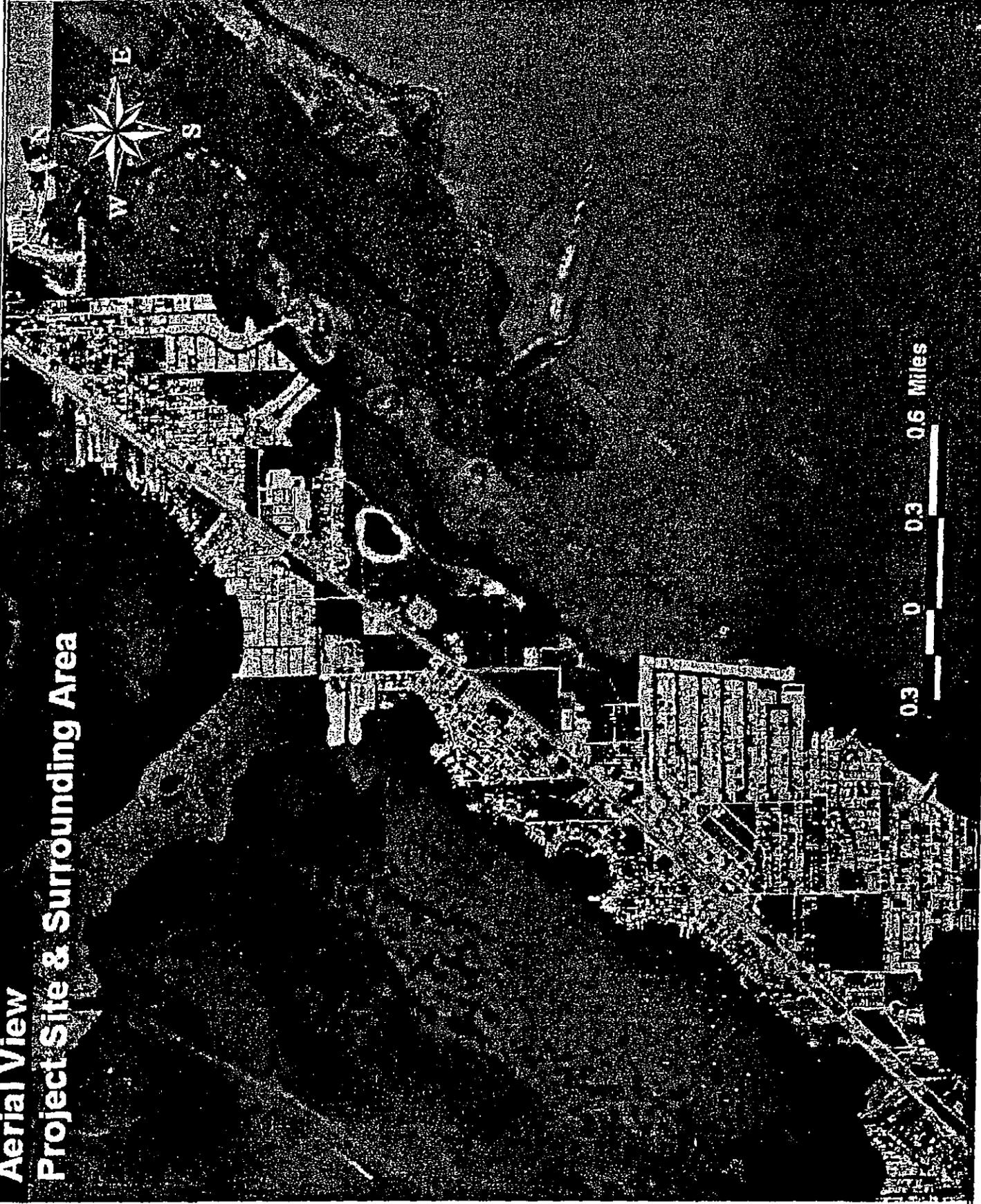
3.2 PROPOSED ACTION

General Project Description

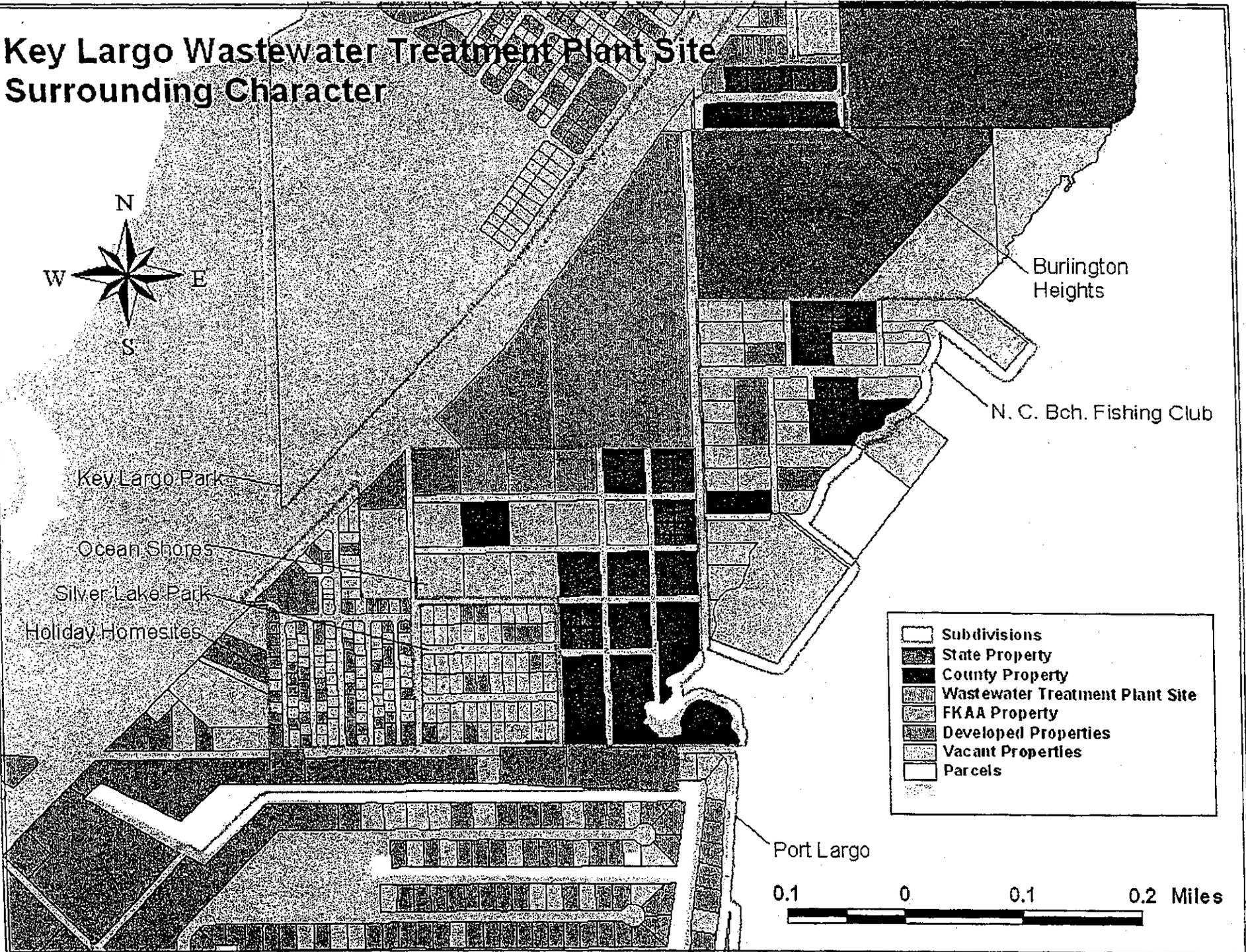
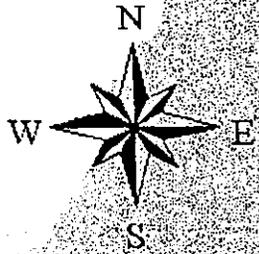
The project would involve construction of a 2.25 million gallon per day treatment plant, deep injection wells (~ 2,500 feet), cleared buffer areas, administration buildings and necessary parking areas. This facility would use a sequencing batch reactor with a Dual Sand filtration system. The project would also involve the construction and operation of a vacuum collection sanitary sewer system that would include approximately 15 vacuum pump stations, lift stations, and a vacuum sewer main. The project would serve approximately 13,602 existing residential units and 25,000 people in the Key Largo Wastewater District. This service area includes all lands east of Tavernier Creek from Tavernier to Key Largo with the exception of Ocean Reef. This area does not include approximately 114 residential units in a sparsely populated area north of the intersection of U.S. 1 and S.R. 905. These would be served by on-site units as part of a different (North Key Largo) project. Tertiary treated wastewater effluent would be disposed of through deep well injection. Digested and stabilized sludge would be hauled by truck to approved sludge facilities on the Florida mainland. Construction is expected to require approximately 12 months for the treatment plant, with an additional 12 months to complete hookup and testing. The operational life of the system is approximately 20 years.

The parcel of land that would be purchased for the project site (Figure 3.3) covers approximately 22 acres. The shape of the principal parcel is that of a right triangle with its hypotenuse, or long side, lying along the Overseas Highway in a northeast to southwest direction. The apex of the triangle points to the southeast toward the ocean. The principal parcel covers about 21 acres.

**Aerial View
Project Site & Surrounding Area**



Key Largo Wastewater Treatment Plant Site Surrounding Character



Burlington Heights

N. C. Bch. Fishing Club

Key Largo Park

Ocean Shores

Silver Lake Park

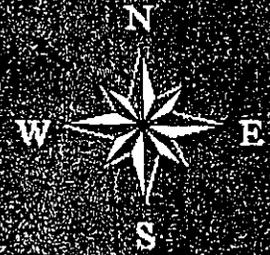
Holiday Homesites

- Subdivisions
- State Property
- County Property
- Wastewater Treatment Plant Site
- FKA Property
- Developed Properties
- Vacant Properties
- Parcels

Port Largo

0.1 0 0.1 0.2 Miles

Key Largo Wastewater Treatment Plant Surrounding Habitat



- | | |
|----------------|-----------------------|
| | Treatment Plant Site |
| | FKAA Site |
| | Parcels |
| Habitat | |
| | Water |
| | Mangroves |
| | Scrub Mangroves |
| | Salt Marsh |
| | Buttonwoods |
| | Dune |
| | Ridge/Hammock |
| | Hammocks |
| | Hammocks (CRB) |
| | Fresh water Marsh |
| | Fresh water Hardwoods |
| | Exotics |
| | Developed |



In addition, a 1-acre parcel to the east of the existing FKAA maintenance area property would be included in the treatment plant site to better allow the project to integrate with the FKAA property. With the exception of a 20 to 50 foot strip along the southern property line (which runs east-west) on the principal parcel and clearing on easements along the southern and eastern property line, the project site is characterized by high quality hardwood hammock. Figure 3.4 is a large-scale blow-up of the 1995 aerial photo, showing the project site and the proposed construction area.

Approximately 2.62 acres in a roughly L-shaped configuration wrapped around the FKAA property would be required for the construction and operation area. The remaining 19.38 acres would remain in a natural condition. Although the entire area within the 2.62-acre construction boundary might be cleared, a 25-foot zone along the property boundary is intended to be a buffer, which may not be needed for construction. If this buffer is not needed, the affected construction area may be decreased by approximately 0.31 acres. Figure 3.5 identifies the general shape and dimensions of the project construction area in relation to the entire project site. The proposed construction area deliberately uses the area on the project site with the greatest existing disturbance. Coincidentally, this would also allow common access to the two facilities and limit the need to clear lengthy access roads into the treatment plant area. It would also allow common FKAA administration of its Key Largo projects.

Figure 3.6 provides a detailed view of the project footprint, including transect lines used to identify and locate plant species within the proposed project construction boundaries. Table 3.1 defines the area of the project site and surrounding county lands, as well as the approximate acreage of all habitats characterizing these properties.

Land Use and Zoning Considerations

The wastewater treatment plant site and adjacent properties are zoned Suburban Residential (SR) and Suburban Commercial (SC). As such, the project can be permitted within either zoning district. Recent recommended text changes to the Monroe County Land Development Regulations provide more detail about the requirements of such a use within the SR or SC Districts. As proposed under current amendments to the County's Land Development Regulations, the project would require a Minor Conditional Use approval which entails a review by the Development Review Committee and final approval by the Director of Planning.

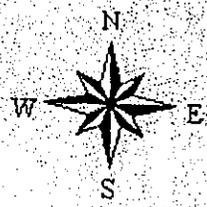
Surrounding Land Use Characteristics

An existing FKAA maintenance facility is on the immediate southwestern corner of the property along U.S. 1. In addition, there are several other public and private light industrial uses in that area. To the east, toward the ocean, are a number of private properties, including the Key Largo Gun Club, a waste handling facility, a private juvenile facility, and two or three private residences. The character of the area toward the ocean is one of rural or native character and little development. Surrounding the site are other parcels in state or county ownership, which provide ample buffering from adjacent uses. The state properties are a part of the Newport Hammocks CARL acquisition project.

**Key Large Wastewater Treatment Plant
Construction Area Boundaries**



Key Largo Wastewater Treatment Plant Site Large Scale View of Construction Area

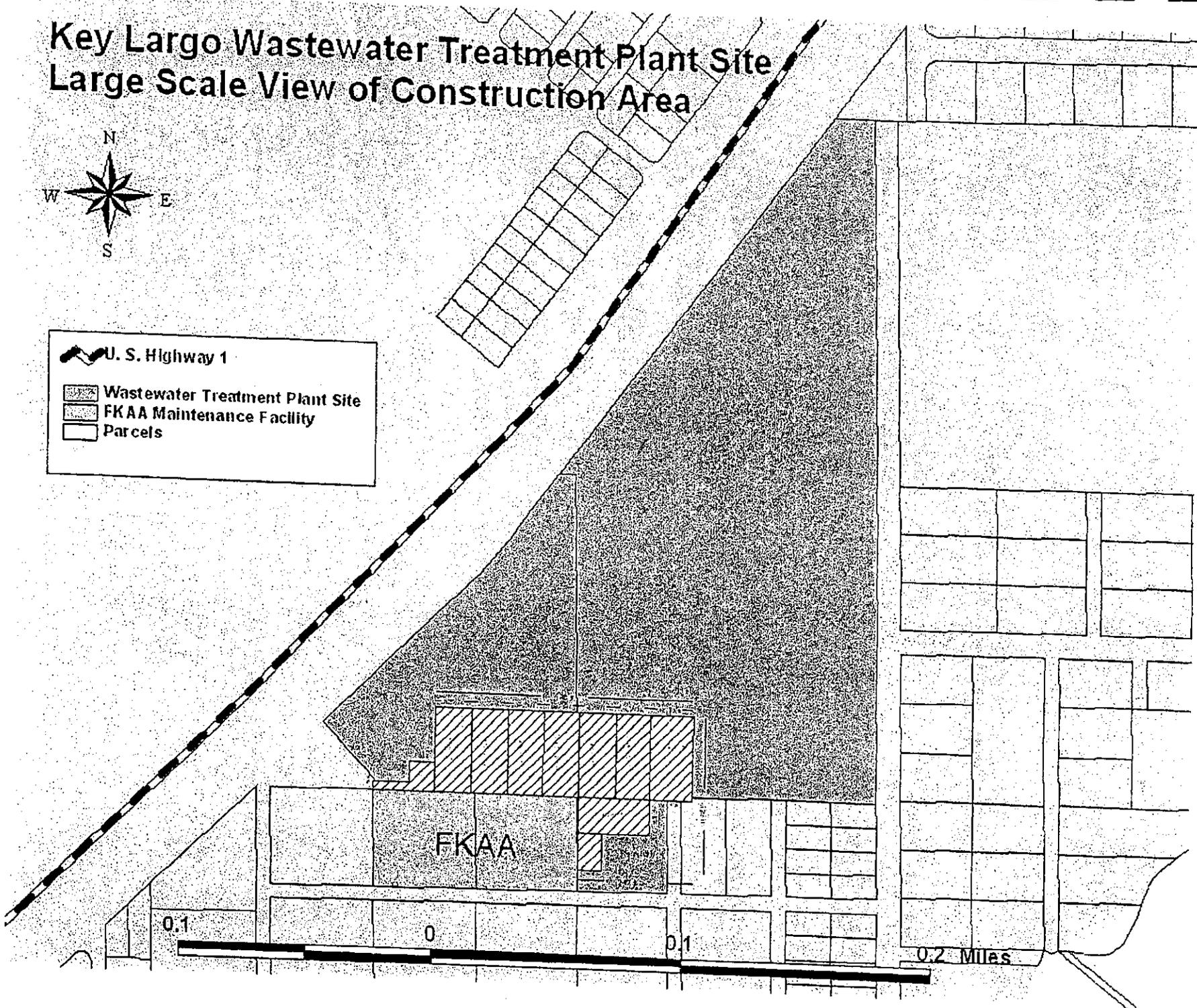


 U. S. Highway 1

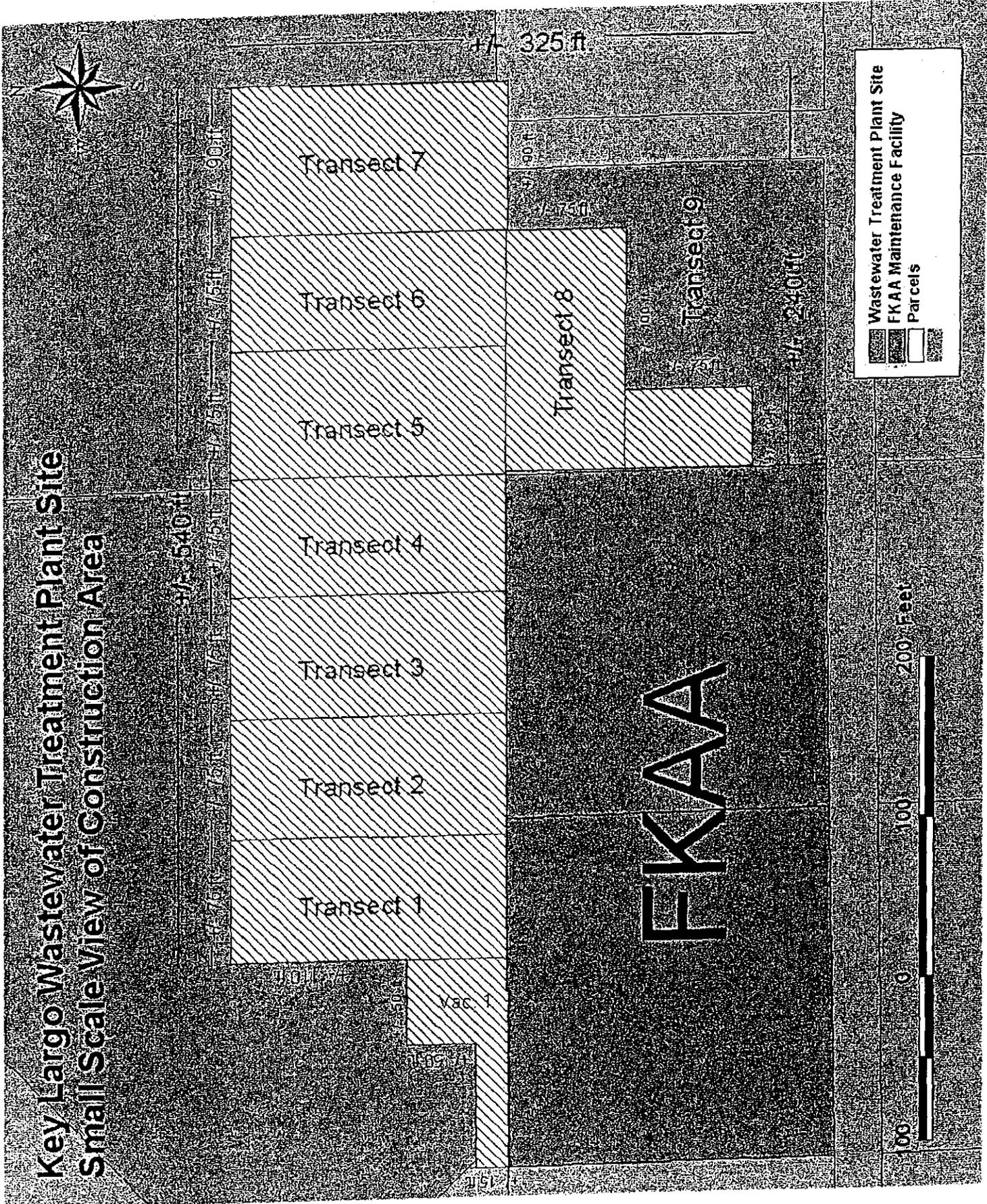
 Wastewater Treatment Plant Site

 FKAA Maintenance Facility

 Parcels



Key Largo Wastewater Treatment Plant Site Small Scale View of Construction Area



Wastewater Treatment Plant Site
FKAA Maintenance Facility
Parcels



3.3 CONSTRUCTION AND OPERATION ACTIONS

The project would involve the construction and operation of an advanced wastewater treatment plant with deep well injection of tertiary treated water. The county has consulted with its proposed design firm to develop a site plan that has reduced the actual construction area (limit of disturbance) to the minimum possible. Although the original design concept required an estimated 7-acre construction area, the construction area in the revised plan has been reduced to 2.62 acres. The proposed construction area location also has been revised to locate the site so that disturbance of tropical hardwood hammock communities has been minimized, based on diligent attention to defining the best location on the project site. Approximately 0.41 acres of the revised project construction area is essentially composed of exotic vegetation along the fringes of the hammock. By including this area in the 2.62-acre construction area, loss of hammock habitat has been reduced to about 2.21 acres. In addition, Monroe County Land Development Regulations (Section 9.5-344) require significant transplantation and/or replacement of native protected plants found within the hammock area. As a result, the county would transplant or replant over 1600 trees to adjacent cleared rights-of-way (disturbed and unimproved) to recover about 0.39 acres of disturbed area to native species at the margins of the project site, thus providing potential new hammock habitat. After this restoration is complete, the net loss of hardwood hammock is estimated to be about 1.82 acres. If the buffer area is not used, the net area may be as low as 1.51 acres.

4.0 SITE SPECIFIC INFORMATION

4.1 SURVEY METHODS

The county staff met on site, both independently and with sister agencies, to review proposed construction area footprints and to assess potential impacts to the native habitat on the site and to endangered species in the area.

As part of an assessment of the environmental components of the project site, several site visits were made by county biologists. Biologist Sandra Lee completed a preliminary site visit on 29 June 2000, followed by a more detailed survey on 6 and 10 July 2000 by Niko Reisinger. County biologist Ralph Gouldy also visited the site, with biologist Niko Reisinger and staff from the USFWS, FFWCC, FEMA, and FKAA on 10 July 2000. Niko Reisinger spent another full day on the site on 20 July 2000. The list of plants and animals found on-site is based on these visits to the site.

Specifically, county biologists have spent over 100 hours completing an environmental evaluation of the project site and construction area. During this review and because of the environmental character, quality, and sensitivity of the site, significant reductions have been made to the proposed construction area.

In addition to previous site general site visits, on 1 and 2 August 2000 county biologist Niko Reisinger, consulting biologist Bob Smith, and two members of a survey crew cordoned off the proposed construction site with heavy polypropylene rope. A total of ten (10) belt transects were created within this overall construction area. These transects ranged from 50 to 90 feet in width, and divided the construction area into ten subsections. All of the construction area was thus included in the survey, providing a census of all trees over 4" diameter at breast height (DBH) and listed plant species in the affected area. The boundaries of each transect were delineated using a continuous line of survey flagging tape. George Garrett and Niko Reisinger surveyed an additional part of the site on October 11, 2000.

Within this area, as shown in detail in Figure 3.6, all threatened, endangered, or regionally important plant and all endangered or threatened animal species were identified. Particularly, for animal species, the presence of snails or signs of Schaus' swallowtail butterfly were noted.

Based on this extensive site evaluation of the construction area, some adjustments to the proposed construction boundary were made to provide the current proposed construction boundaries. The proposed adjustments were identified by Niko Reisinger on 11, 14 and 15 August 2000.

4.2 AFFECTED HABITATS

The construction area is located on the edge of the hardwood hammock, adjacent to the existing FKAA maintenance area (Figure 3.5). The project site is part of a large hammock area of more than 12.5 acres. Thus, it qualifies as a "high quality hammock" under the County's Land Development Regulations Environmental Design Criteria. High quality hammock regulations

require that 80 percent of the hammock within a site area be protected in its natural state as noted previously above.

Several of the adjacent and nearby county, state, and privately owned vacant properties are also characterized by high quality hardwood hammock. These extend to the east, north, and south, as far as the shoreline margins of waterfront properties, where there is a transition into buttonwood and mangrove forests and salt marshes. At property margins and in cleared road easements (unimproved), exotic plant species intrusion exists, and significant amounts of debris have been dumped. As seen in Figure 3.1, several unimproved roads occur throughout the hammock communities.

Much of the surrounding hammock community appears to be approximately 40 years old since last clearing, based on tree sizes, species mix, and the continued presence of willow bastic. Willow bastic can be a dominant canopy tree up to about 30 years of forest age, then begins to die out as slower, taller growing trees shade it out. Leaf litter development is moderate, estimated to be between 2 and 4 inches in depth. The forest has a typical patchy distribution of canopy dominants. Some areas, notably towards Central Avenue to the north, are almost entirely dominated by wild tamarind, while other portions are dominated by gumbo limbo, poisonwood, or pigeon plum. The hammock appears to be dominated by somewhat younger trees towards its southern end, adjacent to the FKAA site and the proposed treatment plant site.

Within the construction area, a 20- to 50-foot wide strip along the common property line shared with the FKAA maintenance area is vegetated with exotic or pest plant species. This strip continues for the remaining length of the southerly property line of the project site. The road curves to the northeast into the center of the proposed site and is considered heavily disturbed with numerous dumpsites along this road and the FKAA property boundary. Apparently, this area was previously cleared as a road easement. There is also a 30-to 40-foot wide strip of disturbed land along the FKAA eastern property line. These areas are dominated by exotic species such as Brazilian pepper and sapodillo. Exotic species such as Brazilian pepper and sapadillo also have invaded parts of the adjacent hammock, particularly within the proposed construction area. At the end of the road, there is a partial clearing in which the surface soil has been pushed into piles at the clearing margin. There are at least two abandoned boats in this area. Sapodilla occurs in scattered locations throughout the hammock; it appears to be somewhat more concentrated towards the northern end. This plant is a sign of old homesteads, and is spread readily throughout high elevation hammocks by larger mammals. The trees seen were not large, with most under 12" DBH (diameter at breast height), but fruit is obviously being produced, based on the presence of seedlings and saplings in the forest.

Table 4.1 lists all plant and animal species found within the 22-acre plant site by county biologists during the field surveys. The table includes common and scientific names, and the status of each under federal and state protection (Endangered Species Act and Chapters 39-27 and 5B-40, F.A.C.) and the Monroe County Code has been identified.

Table 4.2 shows the distribution of trees over 4" DBH that were identified on the construction site in the survey by county biologists between 29 June- and 15 August, and on October 11, 2000. Based on this table, the proposed construction area is dominated by gumbo limbo, poisonwood, and wild tamarind trees. Other common overstory species include Jamaica

dogwood, and loblolly *pine*. Other species occurring in the understory, shrub, and seedling strata include blackbead, black ironwood, mahogany, and inkwood. A total of 687 trees with DBH greater than four (4) inches were identified in the construction area, for a density of approximately 261 trees per acre. The three dominant species constitute approximately 80% of the total density.

Table 4.3 shows a list of all individuals of species which the county feels should be protected, or are federal, state, or county protected plant species found within the construction area. In total, fourteen (14) species of protected plants were identified and tallied within the ten (10) transect areas. These include six species on the state list, three species on the county list of Regionally Important plants, and six additional species deemed important by the county. A total of 708 individuals of plant species protected under state, federal, or county regulations were noted. Forty-three of these are torchwood and wild lime, which are not protected themselves, but constitute a key habitat need for the Schaus' swallowtail butterfly.

Approximately 705 seedlings of the protected plant species also were noted. Large trees and seedlings were distinguished in the counts principally because of the ultimate means by which County Code would require their transplantation, replanting, or other means of protection. All gumbo limbos and seedlings identified in the transects were "flagged" for transplantation as were all torchwood, wild lime, and *Rhynchosia* vine plants. All other plants would be replanted in accordance with the mitigation recommendations seen in the final section of this document.

Table 4.1: List of Plants and Animals Located on the Key Largo Wastewater Treatment Plant Site

Common Name	Scientific Name	Status		
		St	Fed	MC
Insects				
Crab spider	<i>Gasteracantha cancriformis</i>			
Golden orb weaver	<i>Nephila clavipes</i>			
Green garden spider				
Cicadas	<i>Family Cicadidae</i>			
Grasshopper				
Orange Julia butterfly	<i>Dryas julia largo/celene</i>			
Yellow sulfur butterfly	<i>Pieridae family</i>			
Cabbage white butterfly	<i>Pieridae family</i>			
1/3" light blue butterfly	<i>Hemiargus ceraunus (?)</i>			
1/2" beige moth				
Brown dragonfly	<i>Suborder Anisoptera</i>			
Honey bees	<i>Apis mellifera</i>			
Mollusks				
Florida tree snail	<i>Liguus fasciatus, possibly v. pictus</i>	SSC		
Banded tree snail	<i>Orthalicus floridensis</i>			
Land hermit crab	<i>Cenobita clypeatus</i>			
Grey land crab	<i>Cardisoma guanhumi</i>			
Many-lined forest snail	<i>Drymaeus multilineatus</i>			
Cuban garden snail				
Reptiles				
Brown anole	<i>Anolis segrei</i>			
Green anole	<i>Anolis carolinensis</i>			
Black racer	<i>Coluber constrictor</i>			

Common Name	Scientific Name	Status		
		St	Fed	MC
Birds				
White crowned pigeon	<i>Columba leucocephala</i>	T		
Cardinal	<i>Cardinalis cardinalis</i>			
Red-bellied woodpecker	<i>Melanerpes carolinus</i>			
White-eyed vireo	<i>Vireo griseus</i>			
Plants				
Century plant	<i>Aguave sisalana</i>	Exotic		
Chaff flower	<i>Alternanthera ramosissima</i>			
Ragweed	<i>Ambrosia hispida</i>			
Torchwood	<i>Amyris elemifera</i>			
Marlberry	<i>Ardisia escallonioides</i>			
Crabwood	<i>Ateramnus lucidus</i>			
White beggar ticks	<i>Bidens alba</i>			
Borreria	<i>Borreria verticillata</i>			
Strongbark	<i>Bourreria ovata</i>			
Saffron plum	<i>Bumelia celastrina</i>			
Willow bustic	<i>Bumelia salicifolia</i>			
Gumbo limbo	<i>Bursera simaruba</i>			
Gray nickerbean	<i>Caesalpinia bonduc</i>			
Spicewood or Pale lidflower	<i>Calyptanthes pallens</i>	T		
Cinnamon bark	<i>Canella winterana</i>	E		
Jamaica caper	<i>Capparis cynophallophora</i>			
Limber caper	<i>Capparis flexuosa</i>			
Goatweed	<i>Capraria biflora</i>			
Balloon vine	<i>Cardiospermum halicacabum</i>			
Papaya	<i>Carrica papaya</i>	Exotic		
Cassia	<i>Cassia sp.</i>	Exotic		

Common Name	Scientific Name	Status		
		St	Fed	MC
Spurge	<i>Chamaesyce spp.</i>			
Snowberry	<i>Chiococca alba</i>			
Pigeon plum	<i>Coccoloba diversifolia</i>			
Green buttonwood	<i>Conocarpus erectus</i>			
Rattlebox	<i>Crotalaria pumula (?)</i>			
Royal poinsianna	<i>Delonix regia</i>	Exotic		
Beggars tick or Tick trefoil	<i>Desmodium canum</i>			
Milkbark	<i>Drypetes diversifolia</i>	E		
Devil's potato vine	<i>Echites umbellata</i>			
White stopper	<i>Eugenia axillaris</i>			
Spanish stopper	<i>Eugenia foetida</i>			
Dog fennel	<i>Eupatorium sp.</i>			
Seaside gentian	<i>Eustoma exaltatum</i>			
Princewood	<i>Exostema caribaeum</i>	E		
Inkwood	<i>Exothea paniculata</i>			RI
Strangler fig	<i>Ficus aurea</i>			
Shortleaf fig	<i>Ficus citrifolia</i>			
Milkpea	<i>Galactia speciformis</i>			
Chew stick	<i>Gouania lupuloides</i>			
Blolly	<i>Guapira discolor</i>			
Everglades velvetseed	<i>Guettarda elliptica</i>			
Rough velvetseed	<i>Guettarda scabra</i>			
Scorpion tail	<i>Heliotropium angiospermum</i>			
Lantern vine	<i>Herissantia crispa</i>			
White ironwood	<i>Hypelate trifoliata</i>	E		
Morning glory	<i>Ipomoea indica</i>			
Black ironwood	<i>Krugiodendron ferreum</i>			RI

Common Name	Scientific Name	Status		
		St	Fed	MC
Wild lantana	<i>Lantana involucrata</i>			
Wild bamboo	<i>Lasiacis divaricata</i>			
Peppergrass	<i>Lepidium virginianum</i>			
Lead tree	<i>Leucaena leucocephala</i>	PEST		
Wild tamarind	<i>Lysiloma latisiliquum</i>			
Red pea	<i>Macroptilium lathyroides</i>			
Sapodilla	<i>Manilkara zapota</i>	PEST		
Melanthera	<i>Melanthera sp.</i>			
Poisonwood	<i>Metopium toxiferum</i>			
Mouse's pineapple	<i>Morinda royoc</i>			
Lancewood	<i>Nectandra coriacea</i>			RI
African ground orchid	<i>Oeceoclades maculata</i>	Exotic		
Prickly pear	<i>Opuntia stricta</i>	T		
Virginia creeper	<i>Parthenocissus quinquefolia</i>			
✓ Many-flowered passion vine	<i>Passiflora multiflora</i>			
✱ Corky-stemmed passion vine	<i>Passiflora suberosa</i>	E*		
Capeweed	<i>Phyla nodiflora</i>			RI
Jamaican dogwood	<i>Piscidia piscipula</i>			
Cockspur	<i>Pisonia aculeata</i>			
Blackbead	<i>Pithecellobium keyensis</i>	T*		
Cat's claw	<i>Pithecellobium unguis-cati</i>			
Wild poinsettia	<i>Poinsettia heterophylla</i>			
Wild coffee	<i>Psychotria nervosa</i>			
Randia or White indigoberry	<i>Randia aculeata</i>			
Red Ironwood	<i>Reynosa septentrionalis</i>	T*		
Purple oysterplant	<i>Rhoeo discolor</i>	Exotic		

Common Name	Scientific Name	Status		
		St	Fed	MC
Plants				
Hammock snout pea	<i>Rhynchosia swartzii</i>	E		
Rougeplant	<i>Rivina humilis</i>			
Brazilian pepper	<i>Schinus terebinthifolius</i>	PEST		
Snake cactus	<i>Selinicereus spp. (?)</i>	Exotic		
Wireweed	<i>Sida acuta</i>			
Paradise tree	<i>Simarouba glauca</i>			RI
Spiny greenbriar	<i>Smilax havanensis</i>	T		
Smooth greenbriar	<i>Smilax laurifolia</i>			
Bahama nightshade	<i>Solanum bahamense</i>			
Potato tree	<i>Solanum erianthum</i>			
Blue porter weed	<i>Stachytarpheta jamaicensis</i>			
Pencil flower	<i>Stylosanthes hamata</i>			
Mahogany	<i>Swietenia mahogani</i>	E		
Yellow elder	<i>Tecoma stans</i>	Exotic		
Thatch palm	<i>Thrinax radiata</i>	E		
Soldier vine	<i>Tournifortia volubilis</i>			
Caltrop or Puncture vine	<i>Tribulus cistoides</i>			
Florida trema	<i>Tream micranthum</i>			
Wild grape	<i>Vitis rotundifolia</i>			
Sleepy morning	<i>Waltheria indica</i>			
Hog plum or Tallowood	<i>Ximenia americana</i>			RI
Wild lime	<i>Zanthoxylum fagara</i>			
E = Endangered T = Threatened SSC = Species of Special Concern C = Commercially Exploited RI = Regionally Important				

Table 4.2: Overstory (>4" DBH) Trees Found Within Proposed Construction Site

SPECIES	NUMBER OF PLANTS WITHIN AREA										
	TRANSECT NUMBER										
Plants - > 4" DBH	T1	T2	T3	T4	T5	T6	T7	T8	T9	V1	Total
Gumbo Limbo	43	46	24	32	31	11	25	10	4	1	227
Poisonwood	12	8	19	38	29	9	28	15	2	0	160
Jamaica Dogwood	4	8	10	25	6	2	6	2	4	0	67
Wild Tamarind	18	7	9	9	22	22	47	6	1	16	157
Pigeon Plum	0	3	6	2	2	0	0	2	0	0	15
Blolly	10	6	9	7	8	1	3	4	0	1	49
Strongbark	0	1	0	0	0	0	0	0	0	0	1
Spanish Stopper	0	0	2	1	0	0	0	0	0	0	3
Strangler Fig	1	0	0	2	0	0	0	0	0	0	3
Short Leaf Fig	3	0	0	0	2	0	0	0	0	0	5
Total	91	79	79	116	100	45	109	39	11	18	687

**Table 4.3: Protected Plant Species Identified for
Transplantation/Replanting**

SPECIES	NUMBER OF PLANTS IN AREA										
	TRANSECT NUMBER										
Plant - Protected	T1	T2	T3	T4	T5	T6	T7	T8	T9	V1	Total
Torchwood	3	2	3	0	0	4	0	3	0	0	15
Wild lime	5	3	3	2	1	1	6	7	0	0	28
Inkwood	3	0	33	8	8	0	3	4	0	0	59
Spicewood	1	0	8	7	1	1	2	0	0	0	20
Black ironwood	33	18	44	36	28	16	16	6	0	7	204
Blackbead	23	7	29	49	33	14	12	1	0	0	168
Cinnamonbark	0	0	0	1	7	1	6	11	0	0	26
Mahogany	5	10	50	25	9	9	17	33	5	1	164
Paradise tree	1	0	0	0	0	0	0	0	0	0	1
Red ironwood	0	0	0	0	0	1	1	2	0	0	4
Milkbark	6	0	0	0	0	0	0	0	0	0	6
Hammock snout pea	0	0	2	0	0	0	0	1	6	0	9
Corky passion flower	2	0	0	0	0	0	2	0	0	0	4
Sub-total	82	40	172	128	87	47	65	68	11	8	708
Plant - Seedlings											
Inkwood Seedlings	34	250	3	104	70	5	8	3	0	0	477
Black Ironwood Seedlings	4	28	20	16	0	2	4	4	0	2	80
Blackbead	0	0	0	5	5	0	0	0	0	0	10
Cinnamonbark Seedlings	0	0	0	0	0	0	3	1	0	0	4
Mahogany	1	11	46	27	0	2	1	0	0	0	88
Paradise Tree	3	0	0	0	0	0	0	0	1	0	4
Red Ironwood	0	0	0	0	5	29	2	0	0	0	36
Milkbark	3	0	0	0	1	0	0	2	0	0	6
Sub-total	45	289	69	152	81	38	18	10	1	2	705
Total	12	329	241	280	168	85	83	78	12	10	1413

4.3 PROTECTED SPECIES

Monroe County Land Development Regulations recognize all endangered and threatened plant and animal species and require protecting plant species through transplantation, replanting, or moving to off-site locations such as native plant nurseries.

The assessment of impacts following this section analyses specific and broad site impacts and provides the means to mitigate them.

Plant Species

Many of the plant species typical of tropical hardwood hammocks are unique to south Florida and the Florida Keys in particular. As such, the Florida Department of Agriculture and Consumer Services (FDACS) has identified many of the species found in these plant assemblages as endangered, threatened, or commercially exploited. Though the FDACS designation does not carry the weight of protection afforded animal species, they are none-the-less important for providing native Keys and migratory animals with forage, shelter, and breeding habitat. In addition to the state and federal lists of protected species, the county has also identified a list of plants of regional importance.

No plant species on-site are listed as endangered or threatened by the USFWS (USFWS, 1999; FFWCC, 1997). Seven species are listed as endangered and three as threatened by FDACS (Table 4.2). Six other species are considered as regionally important by Monroe County. Monroe County's Comprehensive Land Use Plan requires that if these species are to be cut, they must be "transplanted". Currently, other trees with DBH of 4 inches or greater must also be "transplanted". By Code, transplanting requires either actual physical transplant, (usually cost-prohibitive) or replacement with the same or equally rare species. If actual transplant is not done, replacement plants are required in a two-for-one ratio for on-site "transplant".

In case of potential use of the site by Schaus swallowtail butterflies, both torchwood and wild lime should be protected or "transplanted" if they are found within the clearing area, since these are key food sources for the butterfly. Due to the improbable availability of torchwood from commercial nurseries, county biologists suggest that additional wild lime be used as replacement plants for any torchwood found within the clearing area. Wild lime is also much better suited to withstand dryer conditions than torchwood, which usually only occurs in more mature hammocks. The perfect on-site locations to plant the "transplanted" trees are the rear road/southern boundary area, and then the continuation of Central Avenue.

Animal Species

The list of state and federally protected animal species potentially occurring on the site is shorter than the plant list. The Keys are clearly one of the foci for species protection because of the unique nature of tropical hammocks in continental North America and

because of the insular nature of island plant and animal assemblages. The site is not within or near any designated Critical Habitat for any species (USFWS, 1999).

Although a total of over 15 listed terrestrial animal species occurs in the northern Keys (Appendix A), the project site has been identified as potential habitat for only six state or federally listed species. Each relies on the tropical hammock forests of the Keys as principal habitat for some portion of its life history. The state and/or federally listed animal species identified as having the potential to exist on the site, based on range and observed characteristics of the habitat, are the Schaus' swallowtail butterfly, Florida tree snail, Eastern indigo snake, Miami black-headed snake, and white crowned pigeon.

The site may also support a transplanted population of the Stock Island tree snail, but inquiry of persons known to have moved snails in the past reveals that none are known to have been moved to this hammock. No evidence of this snail has been seen in the hammock to date.

In addition, the site is shown as potential habitat for the Key Largo woodrat and the cotton mouse on the county's endangered species maps. This is largely because the area historically supported both species and could potentially be used for recovery of the species in the future. No recent sightings are known to have occurred further south and west than the Port Bougainville area of the north Key Largo CARL project. This area is about 6 miles away from the site. The USFWS and FFWCC believe these two species to have been extirpated south of the U.S. 1/S.R 905 intersection (USFWS, 1999; Cox and Kautz, 2000), and these species are believed not to have potential for occurrence on the site.

The following describes species that may have potential to occur within the project site:

1. Schaus' Swallowtail Butterfly - *Heracles aristodemus ponceanus*:

Schaus' swallowtail butterfly is listed as endangered by both the state and federal governments. It is an intermediate sized Papilionid butterfly ranging from 45 to 55 mm in size. It is distinguished from its near relatives by the generally narrower oblique yellow bands on the dorsal surface of its wings and in the washed out background coloration of the wings (brown as opposed to black found in relatives). The "tail" located at the base of each wing is also, characteristically, longer and narrower than relative species.

The historic range of the Schaus' is very limited, ranging from southern Dade County into the northern Keys to just north of Lower Matecumbe. Currently, the species is limited to north Key Largo and Elliot Key, with occasional sightings in Key Largo. The Schaus' lives in hardwood hammock areas. It lays its eggs only on torchwood (*Amyris elemifera*) and wild lime (*Zanthoxylum fagara*), both of which are typical hardwood hammock plants and have been noted on the project site.

Although neither the Schaus' swallowtail butterfly nor any egg masses were observed during several site visits, they may occur on the site due to the presence of suitable habitat and known occurrence within the general region. A release of captive-raised Schaus' swallowtail butterflies was made between 1995 and 1997 at John Pennekamp State Park, approximately 2 miles to the north of this tract, and another release area was near Point Charles, a similar distance south of this site (USFWS, 1999). It appears unlikely that the butterflies could have migrated to this site because they would have had to pass through several existing subdivisions that lack suitable habitat conditions. Several site visits by county biologists seem to confirm this. However, further investigation into potential presence would be required prior to land clearing. In any case, protective measures would be taken to protect the plant host species.

2. Stock Island Tree Snail (*Orthalicus reces reces*):

This subspecies is listed as threatened by the federal government and threatened by the state. The genus *Orthalicus* is represented, (almost not at all) by the subspecies *O. reces reces*, whose native range includes only Stock Island and formerly Key West. Both the state and federal government protect this subspecies. Only the State of Florida protects relatives of this subspecies, including *O. reces nesodryas*, which is also very rare. Over the past 30 years, various collectors and interested parties have transplanted some of these snails to other parts of the Keys, either to protect them from development in their native range or because of their colorful appearance. The Stock Island tree snail is known to have been transported to John Pennekamp State Park, Caloosa Cove Campground, and several subdivisions on Key Largo (USFWS, 1999). County biologists were unable to find any reports of transport to this site, and found no evidence of occurrence on the site during the field surveys. The Recovery Plan for the Stock Island tree snail emphasizes recovery within the native range in the lower Keys, but includes provisions for habitat acquisition and restoration in other areas (USFWS, 1999).

3. Florida Tree Snail (*Liguus fasciatus*):

This species is listed by the state government as threatened, but is not listed by the federal government. The preliminary investigations by county biologists indicate that tree snails do inhabit the treatment plant site in Key Largo. Individuals of the genus *Liguus* are more common in the Keys, and two were seen on the property during the 6 July, 10 July, and 20 July 2000 site visits. One dead *Liguus* snail shell was identified within one transect, but it was quite old and deteriorated. In addition, one live specimen of *Liguus fasciatus*, possibly *v. pictus* was identified. The original site plan has since been modified so that the transect in which both of these were found is now out of the construction area. If additional snails were present on the site, their location must be in the higher limbs and branches of the hammock.

Tree snails generally are arboreal, although not exclusively, as they lay their eggs in the wet soil of the hardwood hammock leaf litter during the rainy season. Further

investigation would be required to determine the numbers and types of tree snails on the project site.

4. Eastern Indigo Snake (*Drymarchon corais couperi*):

The eastern indigo snake is listed by the both state and federal government as threatened. It is a large heavy bodied snake which is shiny black or bluish-black above and below. It is generally known as a docile animal that eats frogs, other amphibians, snakes (including rattlesnakes), birds, and small mammals such as rats.

Although the snake is found in an array of habitats in Florida, it tends toward moister habitats, such as pine flatwoods or tropical hardwood hammocks. Within the Florida Keys, it has been most prominently described from the Torch Keys to Big Pine Key, but it is also known to exist in Key Largo. Although two black racers were seen, no eastern indigo snakes were sighted during the preliminary inventory of the site. The eastern indigo snake generally has a requirement for a relatively large home range, generally in the range of 46 to 185 acres (USFWS, 1999). The Recovery Plan for the eastern indigo snake indicates that a minimum area of approximately 10,000 acres is needed to sustain a viable population of this species (USFWS, 1999), while the FFWCC habitat model for this species uses a 250-acre minimum size area to define potential habitat needs. Moler (1992) recommended that only areas >2,500 acres be proposed for conservation of the species. The site and adjoining hammock areas, including areas in private ownership, comprise an area of approximately 80 to 150 acres. Thus the site and adjoining habitat would not be expected to support a large population, and the probability of individuals occurring within the construction area at any particular time is believed to be low.

5. Miami Black-headed Snake (*Tantilla oolitica*):

This species is not listed by USFWS, but is listed by the State of Florida as threatened. Also known as the rimrock crowned snake, the Miami black-headed snake is a highly secretive fossorial (burrowing) species typically found in the deep leaf litter of hardwood hammocks. To date, very few of the species have actually been seen. In fact, its first description was in 1966. At that time only six specimens were known, five from the Miami area and one from Key Largo. Since then, three additional individuals have been collected on Key Largo and Grassy Key. The nearest Florida Natural Areas Inventory (FNAI) record of occurrence element is several miles north of this site.

Because few observations exist for this species, little is known about basic behavioral patterns, particularly feeding and reproductive characteristics. Relatives of the species typically eat termites, spiders, centipedes and other humus dwelling insects. This snake is believed to produce no more than three eggs at a time.

6. White Crowned Pigeon (*Columba leucocephala*):

The white crowned pigeon is listed by the State of Florida as threatened, but is not listed by USFWS. It generally resembles other pigeon relatives in shape, though with a

somewhat thinner head and neck than others. Its most prominent feature, from which it earns its name, is the white crown located on its head.

The species migrates to the Keys during the spring months. It makes nests amongst the isolated fringing mangrove areas. In the upper Keys, it can be seen moving back and forth in the early morning and late evenings, between the protective mangrove islands on which it nests to the hammock areas of the populated islands where it feeds on the many fruiting trees found there.

During the late summer into the fall, the species leaves the Florida Keys and nearby mainland areas migrating back into the Caribbean basin, including the Bahamas, Cuba, Puerto Rico, and the Dominican Republic. In those areas, lack of protection brings them under fire from hunters who relish them as food. A year round population of birds does seem to remain in the Keys in more limited numbers, particularly in the Lower Keys. Principal concern for the protection of the species in the Keys is for protection of its remaining mangrove and hammock habitats

The white crowned pigeon clearly inhabits the hammocks of the upper Keys. During the field surveys, approximately three pigeons were seen or heard entering or leaving the project site.

4.4 OTHER INFORMATION AND SOURCES

The proposed site is on the eastern edge of a relatively undisturbed tropical hardwood hammock habitat area that is one of the largest remaining examples of this community in the Florida Keys. A portion of the habitat, northeast of the project site has been purchased by the Florida Department of Environmental Protection under the CARL program, and is known as the "Newport Hammocks" site. Monroe County has also purchased smaller tracts of land in this system for conservation. These are generally to the south of the site in existing residential developments that have not reached "build-out" conditions. This system has been identified as a Strategic Habitat Conservation Area (SHCA) for the tropical hardwood hammock community and the white crowned pigeon by the Florida Game and Fresh Water Fish Commission (FGFCC) in *Closing the Gaps in Florida's Wildlife Habitat Conservation System* (Cox, et. al., 1994).

While the *South Florida Multi Species Recovery Plan* (USFWS, 1999) includes elements of identifying and conserving potential habitat areas for the Key Largo woodrat, Key Largo cotton mouse, eastern indigo snake, and Stock Island tree snail, the emphasis is placed on the North Key Largo area and other large blocks of land where these species are known to occur. Although the plan encourages acquisition of any available tropical hammock area, the project site is not identified as a critical or specific area for acquisition.

The *South Florida Multi Species Recovery Plan*, *Closing the Gaps in Florida's Wildlife Habitat Conservation System*, and *Habitat Conservation Needs of Rare and Imperiled Wildlife in Florida* are all sources of data used in preparing this Biological Assessment.

Much of the information in these reports is based on data maintained by the FNAI. The Federal and state status of species is based on *Florida's Endangered Species, Threatened Species, and Species of Special Concern* (Florida Game and Fresh Water Fish Commission, 1997) and the *South Florida Multi Species Recovery Plan*.

5.0 ANALYSIS OF POTENTIAL EFFECTS

5.1 DIRECT AND INDIRECT EFFECTS

Assessment of Construction and Operation Impacts

Some short-term adverse impacts can be expected in association with construction of the entire proposed project, primarily on the wastewater treatment plant site itself. In addition, some limited impacts may continue with the operation of the facility.

Impact to the remaining contiguous forest of the Keys and to the protected species associated permanently or seasonally must be noted. Construction of the project would require removing approximately 2.63 acres of forested area. However, based on current assessments, roughly 0.41 acres of this forested construction area consists of purely exotic pest plant species in a narrow boarder along two sides of the existing FCAA fence line. In addition, as further detailed below, the project would mitigate the loss of intact hammock area by removing additional exotics in previously cleared right-of-way areas along the margins of the property and transplanting or replanting protected species from the construction area. This transplantation area is approximately 0.39 acres in size.

Thus, as a result of the project, 2.63 acres would be cleared. Only 2.21 acres of this area would be tropical hardwood hammock. Offsetting the clearing of the 2.21 acres, the county would remove exotic plant species in adjacent area rights-of-way and would transplant/replant an area of approximately 0.39 acres. The minimal net reduction of hardwood hammock on the project site would total approximately 1.82 acres. If the potential buffer areas are not cleared, the reduction may be as low as 1.51 acres.

Indirect adverse effects are expected to be minimal. The primary potential indirect effect could be inducement of additional residential development in the area and resultant loss of hardwood hammock habitat. As discussed in Section 5.3, county growth management regulations would limit further hammock development. Coupled with the county's acquisition and conservation of additional hammock habitat in association with this project, it is expected that there would be no potential net effect or a slightly positive effect on hammock habitat area. Noise effects during operation may have potential to cause some disturbance to any foraging white crowned pigeons in the adjacent area, but the effect is considered to be minimal. Conversely, the presence of a county-maintained facility may discourage dumping of trash or other incursions by the public that may disturb the habitat.

Construction of this proposed facility would result in associated construction of sanitary sewer lines and pumping stations in the Key Largo service area and near the facility. It is expected that such facilities would be constructed in previously disturbed areas and existing easements. Construction effects would be temporary. Thus, no significant adverse impacts are expected from these associated facilities.

As discussed in Section 5.2, significant improvement in the quality of the discharge water is expected, and tertiary treated discharge waters would be disposed of through deep well injection. An indirect effect of this project thus should be an improvement in the quality of nearshore waters in the project area, and potential beneficial effects on species in these areas.

Some additional truck traffic would occur on U.S. 1 because of sludge disposal for the project. The number of trips is not currently known, but the total would represent an insignificant addition to the total traffic volume on U.S. 1. Thus this is not expected to significantly impact any listed species.

Project Land Area Requirements

For contiguous hardwood hammock areas, the Monroe County Land Development Regulations require that 80 percent (80 %) of the project site remains in its existing state. As such, the buildable area of the 22-acre project site is 4.4 acres. In addition, the county holds title to approximately 13.5 acres of contiguous property. Approximately 6.5 acres of these properties are hardwood hammock allowing an additional 1.3 buildable acres (at 80% open space/20% buildable area). Thus, up to 5.7 acres of buildable area are available cumulatively if necessary under county hammock protection regulations. The proposed action is expected to use less than 46% of the potentially buildable area of county lands. The project site and these adjacent county properties are shown in Figure 3.2 and Table 1.

The county would purchase the entire 22-acre tract for this project. The approximately 19 acres outside of the construction area would remain and be allowed to mature as natural tropical hardwood hammock. This would be dedicated as conservation land. The conservation portion of the site is adjacent to the larger portions of the undeveloped hammock and would provide a connection between state owned conservation lands northeast of the site and county owned conservation lands south of the site. Purchase and dedication of this site would result in an approximately 155% increase in county-purchased tropical hardwood hammock conservation lands in this area.

The site would also provide enough native habitat (required to remain by County Land Development Regulations) to provide visual, olfactory, and aesthetic buffering from adjacent subdivisions and uses in all directions, particularly the highway.

Based on the county's site surveys, no federally designated threatened or endangered animal species are believed to be present in or currently utilize the construction site. Thus the project is not expected to have significant impacts on any of these species.

Based on the habitat type and location, there is a possibility that other federal and state designated animal species may be present at times on the site. These include the eastern indigo snake, Florida tree snail, Miami black-headed snake, and white crowned pigeon. The county plans to use incremental land clearing procedures, described in Section 5.6 at this site. Such a process should minimize potential losses of these species. Some

displacement (approximately 1.82 acres) of habitat for these species would occur. This loss would be similar to or less than the amount of loss that would occur if the site were privately purchased and developed.

Interdependent and Interrelated Effects

Site impacts have been significantly minimized, in the construction design, attention to clearing requirements, site mitigation, actual construction, and in the development of operation and maintenance strategies. Some additional impacts would occur through construction of associated facilities, including sewer lines and lift stations. It is expected that almost all of this action would occur in existing right-of-way and in previously developed areas, so that impacts on protected species would be minimal.

Implementation of this project is expected to result in significant beneficial impacts to water quality and reduction of discharges of nutrients, bacteria, and other pollutants to the shallow aquifer and to nearshore waters of the Key Largo area. This is expected to result in improvements in habitat quality and reduction of stresses to nearby coral reefs, seagrass beds, and other marine communities.

Overall, the county believes that the benefits achieved from the project far outweigh the impacts in completing the project. Some 7,958 residential on-site wastewater systems along with approximately 1,133 equivalent commercial units would be replaced as part of the project. In addition, approximately 70 existing package plants equating to approximately 4,511 residential units would also be replaced. Amongst all of these units, an estimated 2,424 are cesspools. Thus, the wastewater systems in the entire area of Key Largo would be improved to meet the Ambient Water Treatment (AWT) Standard of 5 mg/l Chemical Biological Oxygen Demand (CBOD), 5 mg/l Total Suspended Solids (TSS), 3 mg/l Total Nitrogen (TN), and 1 mg/l Total Phosphorus (TP).

Total reduction in nutrient load as a result of project completion is significant. Within the project area, it is estimated that the current wastewater load of nitrogen is 113,300 pounds per year in the Key Largo project area. The estimated load reduction resulting from project completion is 96,950 pounds of nitrogen per year, an 86 percent reduction in nitrogen load. Similarly, the estimated phosphorous load is 27,680 pounds per year. The estimated load reduction resulting from project completion is 22,232 pounds of phosphorous per year, an 80 percent reduction in phosphorous load.

5.2 CUMULATIVE EFFECTS

Impacts to Endangered and Threatened Species

Reduction of remaining habitat in Florida and the Florida Keys is a problem facing most endangered or threatened species here, throughout the United States, and the world. The impact of an ever expanding and space and resource demanding human population is at the crux of the endangered species issue.

The Key Largo hardwood hammock system is one of the largest remaining expanses of this community type in the Keys. It has been estimated that there are about 4,000 hectares (ha) of tropical hardwood hammock remaining in the Keys and that most of this is now in publicly owned management areas. The project site represents less than 1% of the remaining hammock area of the Keys has been lost through development and clearing. The proposed project would represent an increase in loss of approximately 0.2%. Thus, this project represents no significant cumulative increase to existing losses. Additionally, the project is intended to serve existing development and no induced development is expected to occur as a result of the project. The unused portions of the property would be dedicated as conservation lands, resulting in an increase of over 100% in county-owned conservation lands in this system.

However, it is possible that the proposed facility would have capacity for serving additional units, and this could result in additional development pressures in the Key Largo area potential additional cumulative loss of natural habitats. However, county development regulations require preservation of 80% of hammock areas on any site, and the county Rate of Growth Ordinance (ROGO) also makes it unlikely that significant additional encroachments would occur as a result of development of the project. It is anticipated that any additional resultant development would occur in non-hammock areas within the limited service area of the project.

The county believes that it would be a good steward for the property in question, aside from the impacts that would initially be associated with construction of a wastewater treatment plant. Within the SR zoning category a minimum of eleven (11) single family homes could be permitted on the property. With the use of Transferable Development Rights (TDRs) as many as 22 units could be permitted within the buildable area of the site. Admittedly, the ROGO process would make it nearly impossible to place 22 homes on the site. However, the proposed project utilizes significantly less of the buildable area than allowed under County Code, and a similar level of impact can not be assured in the case of potential alternative uses of the site. The proposed project also restricts construction to the largely disturbed margins of the hammock adjacent to the existing maintenance area. Even under the habitat conservation constraints established in the Land Development Regulations as noted in Sections 9.5-344 and 345, it is unlikely that any alternative residential development of this site would result in a similar L-shaped clearing in the disturbed area adjacent to the existing maintenance.

In an island biogeography, space becomes all that more important, as in the Florida Keys. Area in such settings is limited and the impacts of habitat boundaries, or the clearing of habitat, creating new boundaries is significant. Frequently, the existence of "edges" is as important as the existence of sufficient necessary habitat. At the edges of a cleared hammock, additional light is allowed to penetrate, which may change animal behavior within the hammock area or at these new boundaries. There is additional opportunity for intrusion of exotic plant species, and overall changes in habitat structure and diversity can occur.

The project as designed minimizes edge impacts by locating the construction area near the FKAA site. In addition, transplantation and replanting would occur in areas that have been cleared in the past and currently contain significant numbers of exotic plant species and debris. This would reduce existing hammock disturbances and cleared edges.

5.3 CONSIDERATION OF MITIGATION AND CONSERVATION MEASURES

Protection of Endangered and Threatened Species

Minimal reduction of habitat would occur as a result of the completion of this project. However, some habitat loss is inevitable. Any similar project would do as much.

The project has been developed in such a way as to minimize habitat fragmentation, by avoiding the clearing of irregularly shaped areas within the project site. This would create greater than necessary boundary or edge effects within the hammock. Clearing would be carried out as close to adjacent developed areas as possible, thus minimizing the increase in the hammock area to edge length ratio. Hammock would be cleared so as to maintain the maximum hammock width and breadth, thus maintaining as much of the interior hammock character. Such site clearing constraints are clearly identified and required under the Monroe County Land Development Regulations, Sections 9.5-344 and 9.5-345. Both sections of the Code are provided for specific review in Attachment 1 and 2.

Some irregularities in edge boundaries have been recommended as seen in Figures 3.5 and 3.6. These occur in the areas of transects 8 and 9 where a "saw-tooth" clearing configuration was recommended. This results from the location and shape of the exotic plant species situated along the FKAA eastern fence boundary, the presence of large number of white ironwood in adjacent areas, and the presence of the two *Liguus* tree snails previously mentioned (also now outside the clearing area). The "saw-tooth" shape would maximally protect hammock in this area while eliminating exotics within the construction site.

The effort to minimize edge effect impacts in the hammock would also help maintain habitat and species integrity in the remaining hammock on site and in the surrounding area. This is particularly true for the white crowned pigeon, which relies on the unfragmented hammock areas as a source of food. Similarly, minimizing these impacts would leave the maximum habitat possible for the eastern indigo snake. Direct impacts to the white crowned pigeon can generally be avoided. Reduction in clearing area and minimization of fragmentation go a long way toward protecting the pigeon's habitat needs.

However, protection of any Schaus' swallowtail butterflies and tree snails that may be found on the site would be more difficult. Additional efforts would be made to avoid the host species of the Schaus' swallowtail butterfly, either by selective clearing or by restricting construction to areas where the host plant species do not occur. To further reduce construction impacts, all torchwood and wild lime plants within the clearing area

have been marked. These trees would be inspected for the presence of eggs, larvae or pupae prior to clearing. If any eggs, larvae or pupae are found, they would be allowed to hatch if possible, and fly away. Immediately prior to clearing, the plants would be re-inspected, and if unhatched larvae or pupae are found, the branch containing them would be removed and fastened to either existing torchwood or wild lime plants in the hammock preserve area. Finally, some replanting of these host species can be accomplished on the site or in adjacent cleared or disturbed hammock areas.

Although no tree snails were identified within the current construction boundary, an exhaustive effort would be made to locate any prior to clearing. It would be important to locate resident groups of the snail for potential removal. If found, snails would be moved to other areas of the project site or to adjacent hammock parcels during the rainy season when they aren't aestivating. All efforts would be made to locate tree snails and move them appropriately.

The Miami black-headed snake inhabits the deepest leaf litter; thus it is important to protect the oldest and best-developed portions of hammock areas. Because individuals of this species are difficult to find, it is important to construct the wastewater treatment plant in the youngest portions of the hammock where less humus exists. The selection of the area near the FKAA property and fence line in the area with most exotic plant species would assist in avoiding any potential snake habitat. Additionally, leaf litter from the native portions of the clearing area would be moved to replanting areas.

Evaluation of Site – Mitigation Measures

The project site was evaluated based on the availability of developable land, compatibility of adjacent land uses, critical environmental constraints, existence of known or probable endangered species or their habitat, and ease/cost of acquisition and site preparation. In addition, the county took significant public input on over seventeen sites throughout the Key Largo area. Concerns over placement of the facility near adjacent residential uses also was a significant concern for the County Commission, which ultimately led to the selection of this project site over others.

The county believes that the project can be completed on the project site and meet all applicable County Land Development Regulations. Serious concern for the protection of endangered and threatened species would be managed through prudent location and configuration of the construction boundaries within the project site as noted and shown in Figures 3.5 and 3.6. Additionally, species such as the tree snail would be moved, trees such as torchwood and wild lime would be avoided where possible, and these trees and well as other native fruit bearing trees would be replanted within landscape areas, adjacent disturbed areas, and perhaps on other adjacent properties. This would provide some mitigation for potential impacts to the Schaus' swallowtail butterfly, eastern indigo snake, Miami black-headed snake, and white crowned pigeon.

A number of mitigation measures would be undertaken to protect the integrity of the hammock, its species composition, and species diversity, and to ensure survival of the endangered and threatened species which inhabit the site. These include:

1. The recommended project construction area would be against the fence at the FKAA site. This would lessen hammock clearing, and comply with County Land Development Regulations clustering requirements, requiring the use of the most disturbed portions of the property first. In addition, from an aesthetic point of view, in its present recommended configuration would maintain the required U.S. 1 Scenic Corridor Buffer of 75 feet.

2. The area to be cleared has been marked with continuous flagging tape. A five-foot wide construction impact zone has been included in this area. As noted above, all trees to be "transplanted" (replanted) as well as all torchwood and wild lime plants within the construction area have been flagged for transplanting. The plants would be inspected for the presence of Schaus' swallowtail butterflies (all life stages) as well as the Florida tree snail and Stock Island tree snails just prior to preparation for clearing. The number of non-transplantable individuals of protected plant species identified in the construction area is approximately 1,100, thus requiring the replanting of 2,200 trees or seedlings in the transplantation/replanting area.

Snail transplant can be started immediately if the snails are not aestivating. In either case, any snails found would be moved on the branch of their host tree to the same species in other areas of the hammock. Butterfly removal, if needed, also would not occur until just before the clearing occurs, allowing any butterflies to hatch and fly off on their own. Flagging has already been done and an inventory of "transplantation" species has been completed.

3. All exotic vegetation on the road at the rear of the property and along the continuation of Central Avenue would be removed, as well as all previously dumped debris. These areas can then be prepared to receive the "transplanted" trees, including large gumbo limbo. Transplantation of these trees can be best accomplished by cutting, scoring the base, and removing part of the canopy. Preparation would require that trenched (preferably) holes be provided for all replacement plants, in a zigzag scattered pattern. In addition, all humus, which has been collected as part of the clearing effort, would be spread in the prepared transplantation area to promote new hammock growth. The humus is an excellent seed source for hammock species. No humus from the areas containing exotic vegetation would be used. This would also provide additional protection for the Miami black-headed snake.

4. Replacement of the non-transplantable tree species (identified in Table 4.3) would be completed in the same cleared areas as noted immediately above. Additional disturbed areas in the remaining 19 acres may also be identified and used for restoration plantings. Trees "transplanted" or replaced in this fashion would be replaced in a two-to-one ratio with the same or equally rare species.

5. Transplant of the *Rhynchosia* vines would be accomplished by hand, either into the hammock preserve, or pots for replanting into the hammock at a later date.

6. The county would contact a local native plant nurseryman to remove all tagged seedling-sized threatened, endangered or regionally important plants from the main treatment plant area. Similarly, any other seedlings desired by local nurseryman could also be removed from the construction area at the same time.

7. Within the construction area, the 20-foot wide area adjacent to the FKAA fence can be cleared by bulldozer. This area includes the southern edge of transects 1 through 6. All debris would be removed and soils from this area would be taken to a dump (after chipping if desired.) This area contains Brazilian pepper and leadtree that would otherwise tend to further invade the surrounding hammock. The initial 50 feet of transects 8 and 9 located along the FKAA easterly fence line would be cleared in the same way.

8. Immediately prior to clearing the remaining native hammock portions of the construction sites, the flagged wild lime and torchwood would be re-inspected for Schaus' swallowtail butterfly larvae, pupae or eggs.

The portion of the construction site would be hand cleared, leaving stumps intact. Once clearing is completed, the area would be left alone for at least 2 weeks to allow any snakes to leave the area, and to allow a biologist to re-inspect for tree snails.

After this waiting period, stumps would be removed, and the flagged gumbo limbo trees can be transplanted to the transplant areas. These large gumbo limbos would provide shade for other transplanted (mitigation) trees. The soils from the rear (northern) 70 feet of transects 1-7 should then be moved to the transplant areas. This would begin the normal soil building process, and hopefully preserve any Miami black-headed snakes that didn't leave the area.

The county would place conservation easements on the associated open space areas, which could be assumed to fit into the pattern of acquisition for the Newport Hammocks CARL project. This includes the unused area of over twenty acres within the project site and well over 28 acres in additional existing parcels in adjacent areas.

In addition, the county and the state would continue land acquisition efforts to expand the overall protection of endangered and threatened species and the habitat vital to their existence.

5.4 DETERMINATION OF EFFECT

Six state or federally listed animal species are believed to have potential for occurrence at or near the site. Only two, the Florida tree snail (state threatened) and the white crowned pigeon (state threatened) have been found at the site, and use appears to be limited. Field surveys conducted by county biologists found one live Florida tree snail specimen and

noticed a few white crowned pigeons entering the area to feed. Based on habitat characteristics of the site and range and presence data, the occurrence potential for the remaining potentially occurring species (Schaus' swallowtail butterfly, eastern indigo snake, Miami black-headed snake, and Stock Island tree snail) is considered to be low. Based on the proposed clearing guidelines and the relatively low occurrence potential and degree of use, impacts to these species are considered to be non-significant, and the proposed action should not jeopardize the existence of these species. No federally listed plant species are present on-site, but several species on the state or county lists are present. The county plans to transplant the individuals of these species or replace them with additional specimens on areas proposed for hammock restoration.

The project is considered Not Likely to Adversely Affect any of the species listed above, or any other federally listed species.

6.0 INCIDENTAL TAKE EVALUATION

There is a potential for incidental take for the Schaus' swallowtail butterfly (federally endangered), eastern indigo snake (federally threatened), and Stock Island tree snail (federally threatened). Based on field surveys conducted by county biologists, the potential for occurrence of the Schaus' swallowtail butterfly and Stock Island tree snail are considered to be very low. In addition, the county has proposed additional pre-construction surveys, relocation procedures, and sequential clearing designed to allow the eastern indigo snake time to re-locate before heavy equipment enters the site. Based on these factors, the potential for an incidental take for these species is low. Based on the small site and adjacent hammock area size and character and the large home range requirements of the eastern indigo snake, on a worst case basis, no more than one incidental take of an eastern indigo snake is likely. Since it is unlikely that any significant populations of the Schaus' swallowtail butterfly or Stock Island tree snail would remain undetected by the pre-construction surveys, any potential takes of these species should be minimal and limited to a few individuals.

7.0 CONCLUSIONS

The county firmly believes that the project fairly mitigates or offsets overall impacts that are occurring within the terrestrial and marine ecosystems of the Florida Keys because of the water quality improvements that would result from the project. The project would result in an 86 percent (96,950 lbs./year) reduction in wastewater nitrogen and an 80 percent (22,232 lbs./year) reduction in wastewater phosphorous.

The county has proposed mitigation and construction procedures intended to minimize habitat loss and to minimize the potential impacts to plant and animal species, particularly protected species. These include minimizing the impact area, siting the facility in the most disturbed portion of the site, restoration, and guidelines for clearing to minimize hazards to listed species.

Six state or federally listed animal species are believed to have potential for occurrence at or near the site. Only two, the Florida tree snail (state threatened) and the white crowned pigeon (state threatened) have been found at the site. Field surveys conducted by the county found one live Florida tree snail specimen and noticed a few white crowned pigeons entering the area to feed. Based on habitat characteristics of the site and range and presence data, the occurrence potential for the remaining potentially occurring species (Schaus' swallowtail butterfly, eastern indigo snake, Miami black-headed snake, and Stock Island tree snail) is considered to be low. Based on the proposed clearing guidelines and the relatively low occurrence potential and degree of use, impacts to these species are considered to be non-significant, and the proposed action should not jeopardize the existence of these species. The project is considered Not Likely to Adversely Effect any of these species.

Starting with an estimated 7-acre construction area, the construction area has been reduced to an area of 2.62 acres, with diligent attention to defining the best location on the project site for construction. Within this 2.62-acre construction area, approximately 0.41 acres is composed entirely of exotic vegetation. This reduces the direct impacts to tropical hardwood hammocks to about 2.21 acres. In addition, based on County Code requirements, significant transplantation or replanting of native protected plants found within the hammock area is required. The county would transplant or replace well over 2,000 trees and seedlings to adjacent cleared rights-of-way (currently disturbed and unimproved) to restore at 0.39 acres of disturbed area to hardwood hammock at the margins of the project site. The net impact to hardwood hammock is thus estimated to be about 1.82 acres.

The replanting effort would also reclaim disturbed areas within the overall "Newport Hammocks" area reducing existing fragmentation of this hammock area. The remaining portion of the property (approximately 19 acres) would be dedicated conservation land and would form a connection between the Newport Hammocks CARL property to the northeast and the county's existing conservation lands to the south of the site.

8.0 LITERATURE CITED

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APPENDIX A

List of Endangered, Threatened, and Regionally Important Species Located in the Upper Florida Keys

Table A.1: List of Endangered, Threatened, and Regionally Important Species Found in the Upper Florida Keys

Common Name	Scientific Name	Status		
		St	Fed	MC
Insects				
Schaus' swallowtail butterfly	<i>Heraclides aristodemus ponceanus</i>	E	E	
Fish				
Key silverside	<i>Menidia conchorum</i>	T		
Mollusks				
Florida tree snail	<i>Liguus fasciatus</i>	SSC		
Stock Island tree snail	<i>Orthalicus reces reces</i>	E	E	
Mammals				
Key Largo woodrat	<i>Neotoma floridana smalli</i>	E	E	
Key Largo cotton mouse	<i>Peromyscus gossypinus allapaticola</i>	E	E	
Reptiles				
American alligator	<i>Alligator mississippiensis</i>	SSC	T	
American crocodile	<i>Crocodylus acutus</i>	E	E	
Eastern indigo snake	<i>Drymarchon corais couperi</i>	T	T	
Miami black-headed snake	<i>Tantilla oolitica</i>	T		
Birds				
White-crowned pigeon	<i>Columba leucocephala</i>	T		
Arctic peregrine falcon	<i>Falco peregrinus tundrius</i>	T		
Southeast American kestrel	<i>Falco sparverius paulus</i>	T		
Southern bald eagle	<i>Haliaeetus leucocephalus</i>	T	T	

Common Name	Scientific Name	Status		
		St	Fed	MC
Least tern	<i>Sterna antillarum</i>	T		
Roseate tern	<i>Sterna dougallii</i>	T	T	
Plants				
Tamarindillo/Sweet acacia	<i>Acacia choriophylla</i>	E		
Long spined acacia	<i>Acacia micrantha</i>			RI
Sweet pine acacia	<i>Acacia pinetorum</i>			RI
Golden leather fern	<i>Acrostichum aureum</i>	E		
Giant leather fern	<i>Acrostichum danaeifolium</i>	C		
False foxglove	<i>Agalinis keyensis</i>			RI
Colic root	<i>Aletris farinosa</i>	T		
Pineland alamanda	<i>Angadenia berterii</i>	T		RI
Pond apple	<i>Annona glabra</i>			RI
Blodget's wild mercury	<i>Argythamnia blodgettii</i>	E		
Saltmarsh aster	<i>Aster tenuifolia</i>			RI
Pine pink	<i>Bletia purpurea</i>	T		
Borreria	<i>Borreria ocimoides</i>			RI
Borreria	<i>Borreria terminalis</i>			RI
Little strongback	<i>Bourreria cassinifolia</i>	E		
Rough strongback	<i>Bourreria radula</i>	E		
Blue hearts	<i>Buchnera elongata</i>			RI
Locust berry	<i>Byrsonima lucida</i>	E		
Yellow nickerbean	<i>Caesalpinia major</i>	E		
Fewflower holdback	<i>Caesalpinia pauciflora</i>	E		
Spicewood/Pale lidflower	<i>Calyptanthes pallens</i>	T		
Myrtle of the river	<i>Calyptanthes zuzygium</i>	E		
Cinnamonbark	<i>Canella winterana</i>	E		

Common Name	Scientific Name	Status		
		St	Fed	MC
Big Pine partridge pea	<i>Cassia keyensis</i>	E		
Dune lily-thorn	<i>Catesbaea parviflora</i>	E		
Butterfly pea	<i>Centrosima virginianum</i>			RI
Prickly apple	<i>Cereus gracillus</i>	E		
Barbed wire cactus	<i>Cereus pentagonus</i>	T		
Key tree cactus	<i>Cereus robinii</i>	E	E	
Spurge	<i>Chamaesyce adenoptera</i>			RI
Spurge	<i>Chamaesyce deltoidea ssp deltoidea</i>	E	E	
Spurge	<i>Chamaesyce garberi</i>	E	T	
Spurge	<i>Chamaesyce porteriana v. porteriana</i>	E		
Spurge	<i>Chamaesyce porteriana v. scoparia</i>	E		
Satinleaf	<i>Chrysophyllum oliviforme</i>	T		
Small's thistle	<i>Cirsium horridulum</i>			RI
Bull thistle	<i>Cirsium vulgare</i>			RI
Fiddlewood	<i>Citharexylum fruticosum</i>			RI
Autograph tree	<i>Clusia rosea</i>	E		
Silver palm	<i>Coccothrinax argentata</i>	T		
Coffee colubrina	<i>Colubrina arborescens</i>	E*		
Cuba colubrina	<i>Colubrina cubensis</i>	E		
Soldierwood	<i>Colubrina elliptica</i>	E*		
Dayflower	<i>Commelina erecta</i>			RI
Cordia bush	<i>Cordia globosa</i>	E*		
Orange geiger	<i>Cordia sebestena</i>		E	
Tickseed	<i>Coreopsis gladiata</i>			RI
Quail berry	<i>Crossopetalum ilicifolium</i>	E		
Rhacoma	<i>Crossopetalum rhacoma</i>	E		
Wild croton	<i>Croton humilis</i>	E*		

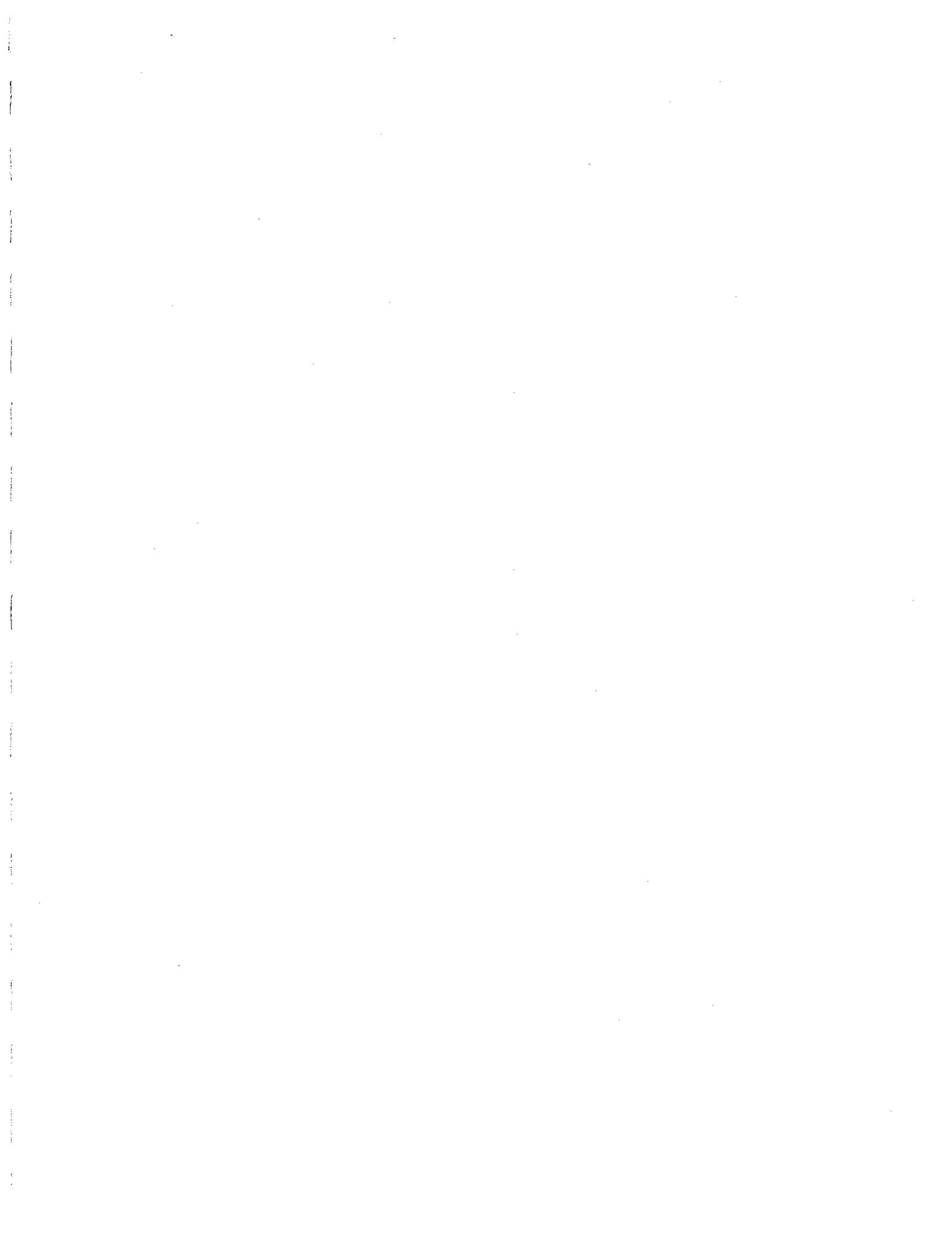
Common Name	Scientific Name	Status		
		St	Fed	MC
Cupania	<i>Cupania glabra</i>	E		
Blodget's milkweed vine	<i>Cynanchum blodgettii</i>	T*		
Hairnet vine	<i>Cynanchum palustre</i>			RI
Mitterwort	<i>Cynoctonum mitreola</i>			RI
Coin vine	<i>Dalbergia brownii</i>	E*		
Whitetop sedge	<i>Dichromena floridensis</i>			RI
Caribbean crabgrass	<i>Digitaria dolichophylla</i>	T*		
Keys varnish leaf	<i>Dodonaea elaeagnoides</i>	E		
Milkbark	<i>Drypetes diversifolia</i>	E		
Guiana plum	<i>Drypetes lateriflora</i>	T		
Dollar orchid	<i>Encyclia boothiana</i>	E		
Clamshell orchid	<i>Encyclia cochleata</i>	E		
Butterfly orchid	<i>Encyclia tampensis</i>	C		
Night scented orchid	<i>Epidendrum nocturnum</i>	E		
Rigid epidendrum	<i>Epidendrum rigidum</i>	E		
Black torch	<i>Erithalis fruticosa</i>	T		
Golden beach creeper	<i>Ernodea littoralis</i>	T		
Coral bean	<i>Erythrina herbosa</i>			RI
Redberry stopper	<i>Eugenia confusa</i>	E		
Red stopper	<i>Eugenia rhombea</i>	E		
Creeping morning glory	<i>Evolvulus sericeus v. sericeus</i>			RI
Creeping morning glory	<i>Evolvulus serius v. averyi</i>			RI
Creeping morning glory	<i>Evolvulus serius v. glaberrimus</i>			RI
Princewood	<i>Exostema caribaeum</i>	E*		
Inkwood	<i>Exothea paniculata</i>			RI
Florida privet	<i>Forestiera segregata</i>			RI
Milkpea	<i>Galactia parvifolia</i>			RI

Common Name	Scientific Name	Status		
		St	Fed	MC
Milkpea	<i>Galactia pinetorum</i>			RI
Milkpea	<i>Galactia prostrata</i>			RI
Milkpea	<i>Galactia regularis</i>			RI
Milkpea	<i>Galactia smallii</i>	E	E	
Galium	<i>Galium hispidum</i>			RI
Wild cotton	<i>Gossypium hirsutum</i>	E		
Lignum vitae	<i>Guaiacum sanctum</i>	E		
False boxwood	<i>Gyminda latifolia</i>	E		
Heliotrope	<i>Heliotropium polyphyllum</i>			RI
Golden aster	<i>Heterotheca graminifolia</i>			RI
Rose mallow	<i>Hibiscus poeppigii</i>	E		
Manchineel	<i>Hippomane mancinella</i>	E		
Diamond flower	<i>Houstonia nigricans v. floridana</i>			RI
White ironwood	<i>Hypelate trifoliata</i>	E		
Fringed star grass	<i>Hypoxis wrightii</i>			RI
Indigofera	<i>Indigofera keyensis</i>	E		RI
Indigofera	<i>Indigofera miniata</i>			RI
Curtis clustervine	<i>Jacquemontia curtissii</i>	T		
Havana clustervine	<i>Jacquemontia havanensis</i>	E*		
Bahama morning glory	<i>Jacquemontia pentanthos</i>	E*		
Joewood	<i>Jacquinia keyensis</i>	T		
Parasitic ghost plant	<i>Leiphaimos parasitica</i>	E*		
Blazing star	<i>Liatris chapmanii</i>			RI
Blazing star	<i>Liatris tenuifolius v. aphyllus</i>			RI
Sand flax	<i>Linum arenicola</i>	E		
Galdes lobelia	<i>Lobelia glandulosa</i>			RI
Wild dilly	<i>Manilkara jaimiqui</i>	T*		

Common Name	Scientific Name	Status		
		St	Fed	MC
Mastic	<i>Mastichodendron foetidissimum</i>			RI
Mayten	<i>Maytenus phyllanthoides</i>	T*		
Melanthera	<i>Melanthera aspera</i> v. <i>glabriuscula</i>			RI
Poor man's patches	<i>Mentzeli floridana</i>			RI
Cutleaf morning glory	<i>Merremia dissecta</i>			RI
Simpson stopper	<i>Myrcianthes fragrans</i>	T		
Sensitive plant	<i>Neptunia pubescens</i> v. <i>pubescens</i>			RI
Semaphore cactus	<i>Opuntia spinosissima</i>	E		
Prickly pear cactus	<i>Opuntia stricta</i>	T	T	
Keys jumping cactus	<i>Opuntia triacantha</i>	E		
Corky passionflower	<i>Passiflora suberosa</i>	E*		
Pectis	<i>Pectis leptcephala</i>			RI
Swamp bay	<i>Persea borbonea</i>			RI
Mahogany mistletoe	<i>Phoradendron rubrum</i>	E		
Five-petal leaf-flower	<i>Phyllanthes pentahyllus</i> v. <i>floridanus</i>			RI
Groundcherry	<i>Physalis angustifolia</i>			RI
Piriqueta	<i>Piriqueta caroliniana</i> v. <i>glabra</i>			RI
Piriqueta	<i>Piriqueta caroliniana</i> v. <i>tomentosa</i>			RI
Pineland pisonia	<i>Pisonia rotundata</i>	E*		
Blackbead	<i>Pithecellobium keyensis</i>	T*		
Everglades poinsettia	<i>Poinsettia pinetorum</i>	E		
Milkwort	<i>Polygala boykinii</i> v. <i>sparsifolia</i>			RI
Milkwort	<i>Polygala grandiflora</i>			RI
Buccaneer palm	<i>Pseudophoenix sargentii</i>	E		
Long-stalked stopper	<i>Psidium longipes</i>	T*		
Wild coffee/ Dull leaf	<i>Psychotria ligustrifolia</i>	E*		
Cretan break fern	<i>Pteris bahamensis</i>	T		

Common Name	Scientific Name	Status		
		St	Fed	MC
Rabbit tobacco	<i>Pterocaulon pycnostachyum</i>			RI
Red ironwood	<i>Reynosa septentrionalis</i>	T*		
Brown-nosed snout pea	<i>Rhynchosia cinera</i>			RI
Hammock snout pea	<i>Rhynchosia swartzii</i>	E*		
Royal palm	<i>Roystonea elata</i>	E		
Marsh pink	<i>Sabatia stellaris</i>			RI
Bahama sachsia	<i>Sachsia bahamensis</i>	E		
Pineland pimpernel	<i>Samolus parviflorus</i>			RI
Soapberry	<i>Sapindus saponaria</i>			RI
Maidenbush	<i>Savia bahamensis</i>	E*		
Inkberry	<i>Scaevola plumieri</i>	T		
Florida boxwood	<i>Schaefferia frutescens</i>	E*		
Scrub bluestem	<i>Schizachyrium sericatum</i>	E*		
Gulf greytwig	<i>Schoepfia chrysophylloides</i>			RI
Skullcap	<i>Scutellaria havanensis</i>	E*		RI
Bahama cassia	<i>Senna mexicana</i>	T*		
Teaweed	<i>Sida rubromarginata</i>			RI
Paradise tree	<i>Simaruba glauca</i>			RI
Blue-eyed grass	<i>Sisyrinchium arenicola</i>			RI
Greenbriar	<i>Smilax havanensis</i>	T*		
Potato tree	<i>Solanum donianum</i>	T*		
Necklace pod	<i>Sophora tomentosa</i>			RI
Buttonweed	<i>Spermacoce terminalis</i>	T*		
Parsley fern	<i>Sphenomeris clavata</i>	E		
Ladies tresses	<i>Spiranthes polyantha</i>	E		
Pride of Big Pine	<i>Strumpfia maritima</i>	E		
Everglades pencil flower	<i>Stylosanthes calcicola</i>	E*		RI

Common Name	Scientific Name	Status		
		St	Fed	MC
Pencil flower	<i>Stylosanthes hamata</i>			RI
Mahogany	<i>Swietenia mahogani</i>	E		
Abrupt-tipped maiden fern	<i>Thelypteris augescens</i>	T		
Shield fern	<i>Thelypteris kunthii</i>			RI
Brittle thatch palm	<i>Thrinax morrisii</i>	E		
Florida thatch palm	<i>Thrinax radiata</i>	E		
Reflexed wild pine	<i>Tillandsia balbisiana</i>	T		
Stiff wild pine	<i>Tillandsia fasciculata</i>	E		
Twisted/Banded air plant	<i>Tillandsia flexuosa</i>	E		
Giant wild pine	<i>Tillandsia utriculata</i>	E		
Sea lavender	<i>Tournefortia gnaphalodes</i>	E		
Pineland noseburn	<i>Tragia saxicola</i>	T		
West Indies trema	<i>Trema lamarckianum</i>	E*		
Florida gamma grass	<i>Tripsacum floridanum</i>	E		
Pearl berry/ Tear shrub	<i>Vallesia antillana</i>	E*		
Worm-vine orchid	<i>Vanilla barbellata</i>	E		
Ironweed	<i>Vernonia blodgettii</i>	E*		RI
Tallowwood, Hogplum	<i>Ximenia americana</i>			RI
Florida coontie	<i>Zamia floridana</i>	C		
Florida arrowroot	<i>Zamia integrifolia</i>	C		
Satinwood/Yellow heart	<i>Zanthoxylum flavum</i>	E		
E = Endangered T = Threatened SSC = Species of Special Concern C = Commercially Exploited RI = Regionally Important				



Attachment 1

Section 9.5-344, Land Development Regulations
Transplantation Plan

Sec. 9.5-344. Transplantation plan.

- (a) A transplantation plan shall contain the following:
- (1) A survey indicating the location, size and species to be transplanted;
 - (2) Identification of the transplantation site including the ultimate location, size and species of all plants to be transplanted;
 - (3) The transplantation method to be employed, including:
 - a. A schedule, by week, of each step of the transplantation process and a specific completion date;
 - b. Demonstration of the qualifications and experience of the individual or firm performing the transplanting;
 - c. The means of excavating the plant materials;
 - d. Preparation of the site to which the plant material will be transplanted; and
 - e. A schedule of maintenance of the plant material after it has been transplanted;
 - (4) A written narrative description of the likelihood of the success of transplantation including a description of other successful transplantation of the species proposed to be transplanted.
- (b) All transplantation plans shall meet the following standards:
- (1) If, upon site evaluations and review of the narrative required in subsection (4) above, the proposed transplantation is deemed not feasible by the county biologist and preservation is not possible, replacement with nursery stock may be permitted pursuant to the standards listed below:
 - a. Nursery stock shall be of the same size as the plants required to be transplanted, or if of smaller size, shall be substituted at the ratio of two (2) nursery plants for every one (1) plant proposed for removal;
 - b. Nursery stock shall be of the same species whenever possible, or equally rare species as approved by the county biologist;
 - (2) All transplantation shall be on the development site unless there is no suitable planting area available;
 - (3) Transplantation plans shall be approved by the county biologist prior to issuance of a permit and shall be attached as a condition on the permit;
 - (4) All transplantation shall be completed prior to issuance of a certificate of occupancy (C.O.) for the site, or, where a C.O. is not applicable, within the time frame outlined in the transplantation plan.
 - (5) All transplantation shall meet a survival rate of eighty (80) percent.
- (c) Off site transplantation:
- (1) Receiver sites eligible for off site transplantation shall be either:

- a. Located within an area of publicly-owned (local, federal, or state) land which is designated solely for the purpose of reforestation, restoration and/or preservation; or
 - b. Located within a site owned by a private non-profit conservation organization where the site is designated for the sole purpose of reforestation, restoration and/or preservation.
- (2) Sites not eligible as receiver sites for off site transplantation:
- a. Any area designated for landscaping that serves an architectural or aesthetic purpose only;
 - b. Any area which is a required landscape or buffer area by county code (however, required scenic corridors are eligible);
 - c. Any area which would require clearing of native trees or habitat to make room for plants; and
 - d. Any area which is required for planting, restoration, or mitigation under the county land development regulations as part of or as a result of a code violation case.
- (3) Additionally, the off site transplantation area shall be either:
- a. Suitable for restoration to the same habitat type as the applicant's property, as confirmed by the county biologist after site inspection; or
 - b. Suitable for establishing new habitat, provided that it can reasonably be expected to support the applicable habitat type based upon site history and characteristics and is approved by the county biologist.
- (4) Off site transplantation methods:
- a. The transplantation plan shall be part of a written tri-party agreement or memorandum of understanding (MOU) between the applicant, the receiving (transplantation) site owner, and the county. The agreement or MOU shall be prepared by the applicant in a for acceptable to the county and should state responsibilities and include a copy of the transplantation plan.
 - b. All initial costs of transplantation, including materials, installation and labor required to establish the plants (initial watering, etc.) and to remove exotic vegetation to prepare the site, shall be the responsibility of the applicant and shall be calculated as follows in accordance with the terms of the agreement:
 - 1. For transplantable plant material, the applicant shall pay to the owner of the receiver site an amount equal to on hundred (100) percent of the cost of transport and delivery of the plants plus one hundred (100) percent of two (2) times the cost of a substitute nursery plant material (according to the ratios in subsection (b)(1)a. above) to cover labor and installation, plus, fifteen (15) percent of the cost of substitute nursery plant material to cover maintenance for one (1) year.

2. For nursery stock, the applicant shall pay to the owner of the receiver site and amount equal to one hundred (100) percent of the cost of plant materials (including transportation and delivery), plus one hundred (100) percent of two (2) times the plant material cost to cover labor and installation, plus fifteen (15) percent of the cost of substitute nursery plant material to cover maintenance for one (1) year.
- c. All physical maintenance and guarantees required by the transplantation plan after installation and establishment of plants shall be the responsibility of the owner of the receiver site.
 - d. As part of the guaranteed maintenance, the owner of the receiver site shall agree to keep it free of invasive exotic vegetation in perpetuity.
- (d) If none of the above alternatives are available then the applicant shall provide a fee equal to the cost of the replacement plants plus installation and maintenance, calculated in accordance with section (c)(4)b.2. above. This fee shall be held in an escrow account of similar instrument which shall be used by the county to restore and manage public lands in county or, at the discretion of the county, to a willing government agency or public or private conservation group for off-site replacement of the affected habitat. The county biologists shall prepare a fee schedule which shall be periodically revised based on the market costs for replacement plants and installation. The county shall adopt administrative procedures for management of the escrow account.
- (e) Inability to locate eligible off site transplantation area. Until the administrative procedures referenced in section (d) above are adopted, the following procedure shall be used when no other alternative is available. If the applicant demonstrates to the county the he/she has exhausted attempts to locate an off site transplantation area which meets the criteria of section (c) above, and is unable to locate a suitable site, the following method shall be employed:
- (1) The applicant shall submit to the county a transplantation plan which includes all of the items listed in subsection (a) above with the exception of the location of trees at the receiver site;
 - (2) The applicant should then arrange, with assistance from the county for removal of the plants from site by area nurseries, landscapers, and other individuals for future replanting;
 - (3) Prior to approval of final inspection for a certificate of occupancy, the applicant shall demonstrate that all of the required plants have been removed for transplantation by submitting receipts to the county from the above individuals which state the species and number of plants removed for transplantation.

(Ord. No. 33-1986, § 9-810; Amd. 1-2-96)

Attachment 2

Section 9.5-345, Land Development Regulations
Environmental Design Criteria
High Hammock (High Quality)

Sec. 9.5-345. Environmental design criteria.

No land, as designated on the existing conditions map and analyzed in accordance with the standards in section 9.5-339 and 9.5-340, shall be developed, used or occupied except in accordance with the following criteria unless the county biologist recommends an authorized deviation from the following criteria in order to better serve the purpose and objectives of the plan and the director of planning or planning commission approves the recommendation as a minor or major conditional use. No recommendation for an authorized deviation from these environmental design criteria shall be made unless the county biologist makes written findings of fact and conclusions of biological opinion which substantiate the need and/or benefits to be derived from the authorized deviation.

(a) *Clustering*: It is the purpose of this section to minimize the environmental impacts of development by encouraging design of a development on a parcel of land to incorporate clustering of the development away from the natural areas on the parcel that are the most susceptible to harmful development impacts. Clustering requirements shall apply to all development, including plat design, and shall be achieved in the following manner:

(1) When a parcel proposed for development contains more than one (1) habitat type, all development shall be clustered on the least sensitive portions of the parcel subject to the maximum net densities of section 9.5-262 and 9.5-269 and the performance standards of this section. For the purpose of this subsection, the relative sensitivity of separate habitat types shall be as listed below with subsection (a) being the most sensitive and subsection being the least sensitive. Development within the least sensitive habitat shall achieve the maximum density or intensity allowable by these regulations and shall fully utilize the buildable area of the habitat prior to expanding to the next least sensitive habitat type on the site. For proposed plats, these cluster requirements shall be applied such that the number of proposed lots are sized and configured to achieve the highest allowable density within the least sensitive habitat prior to locating additional lots within the next least sensitive habitat.

- a. High hammock (high-quality);
- b. Palm hammock;
- c. Cactus hammock;
- d. Beach/berm;
- e. Pinelands (high-quality);
- f. Salt marsh and buttonwood wetlands;
- g. High hammock (moderate-quality);
- h. Low hammock (high-quality);
- i. Low hammock (moderate-quality);
- j. Pinelands (low-quality);

- k. High hammock (low-quality);
- l. Low hammock (low-quality);
- m. Disturbed beach/berm;
- n. Disturbed with slash pines;
- o. Disturbed with salt marsh and buttonwood;
- p. Disturbed with high hammock;
- q. Disturbed with low hammock;
- r. Disturbed;
- s. Disturbed with exotics.

- (2) In addition to the requirements of subsection (1) above, when a parcel proposed for development contains more than one (1) habitat type, the development shall be clustered within the least ecologically valuable area of each habitat as determined by the county biologist.
- (3) When a parcel proposed for development contains only one (1) habitat type, the development shall be clustered within the least ecologically valuable area of the habitat as determined by the county biologist.

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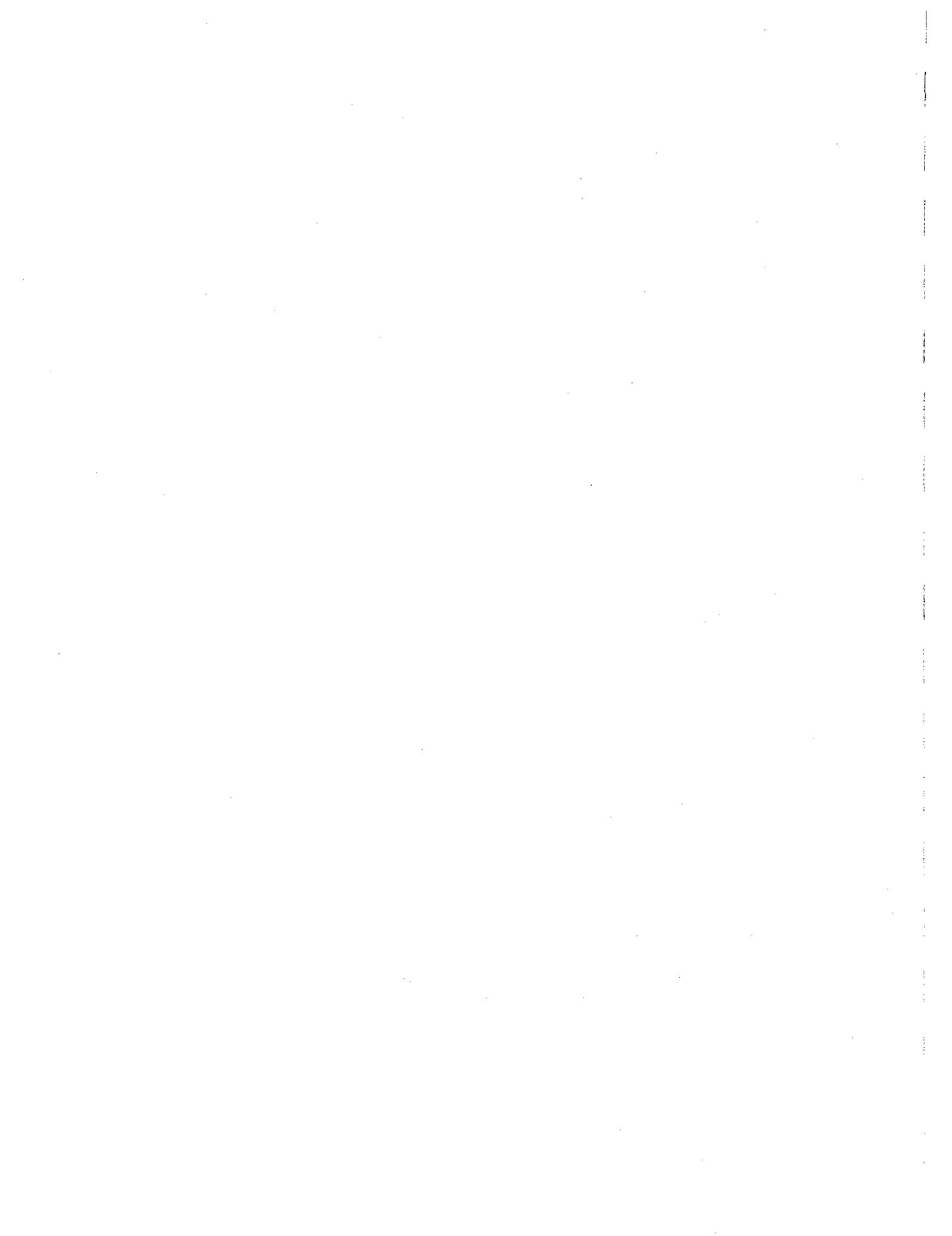
(c) *High Hammock (High-Quality)*: All structures developed, used or occupied on parcels of land that are evaluated as high-quality high hammock according to the habitat evaluation index set out in section 9.5-339 shall be designed, located and constructed such that:

- (1) All listed threatened, endangered, commercially exploited, and regionally important native plant species are preserved, protected, relocated or replaced with nursery stock of the same species or equally rare species suitable to the site pursuant to a transplantation program approved in accordance with section 9.5-344 of this division.
- (2) The edges and general dome configuration of the hammock are preserved in their natural form;
- (3) All native trees with a diameter at breast height (DBH) of greater than three and one-half (3 ½) inches shall be preserved, relocated or replaced with nursery stock of the same species or equally rare species suitable to the site at a ratio of two (2) replacements for every one (1) tree removed pursuant to a transplantation program approved in accordance with section 9.5-344 of this division.
- (4) All specimen trees shall be preserved in their natural condition;
- (5) All areas of required open space shall be maintained in their natural condition, including the preservation of midstory and understory vegetation;
- (6) All areas of required open space shall have minimum dimensions of two hundred (200) feet and a minimum of at least one-half acre;

- (7) The habitat of threatened and endangered animals shall be preserved;
- (8) All areas of disturbance shall be managed to avoid the introduction and/or establishment of invasive exotic species; and
- (9) All invasive exotic species shall be removed from the parcel proposed for development.
- (10) A construction impact zone is provided and construction barriers are required at the outer edge of the construction impact zone and shall be visible and of durable material such as wood, fabric, wire fencing, rope or wire cable: Barriers shall remain in place until final inspection for a certificate of occupancy has been approved.

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Appendix I
U.S. Fish and Wildlife Service Biological Opinion





**Federal Emergency Management Agency
Region IV**

3003 Chamblee Tucker Road
Atlanta, Georgia 30341-4130
Telephone: (770) 220-5406
Fax: (770) 220-5440

July 7, 2000

James J. Slack, Field Supervisor
U.S. Fish and Wildlife Service
South Florida Ecological Services Office
P.O. Box 2676
Vero Beach, FL 32961-2676

Re: FEMA 1249-DR-FL Unmet Needs - Florida Keys Aqueduct Authority
Key Largo Wastewater Treatment Plant

Dear Mr. Slack:

Thank you for your letter of June 23 to John Copenhaver. The Florida Keys Aqueduct Authority (Aqueduct Authority) has indeed requested funding from the Federal Emergency Management Agency (FEMA) through the Florida Division of Emergency Management (FDEM) for the referenced project. The project would be funded through Hazard Mitigation Grant Program Unmet Need funds appropriated after Hurricane Georges of 1998. The nature of the proposed project requires us to prepare an Environmental Assessment (EA) pursuant to the National Environmental Policy Act. Scoping for this effort was recently completed. Our agency has been aware of its obligations under Section 7 of the Endangered Species Act and had planned to coordinate with the U.S. Fish and Wildlife Service (FWS) as part of the EA. Circumstances require us to expedite our consultations for this particular project site.

Accordingly, FEMA would like to initiate informal consultation to determine if construction of a wastewater treatment plant at the Mile Marker (MM) 100.5 site in Key Largo has the potential to affect threatened or endangered species or their critical habitat, and to develop various mitigation measures if necessary. Monroe County is working with the Aqueduct Authority on this project and has prepared a Preliminary Environmental Assessment to provide FEMA and the Florida Department of Environmental Protection, who also funding this project, with a preliminary environmental evaluation of this project site. This document addresses points in your June 23rd letter and recommends additional biological evaluation of the site, which has been planned.

James Slack
July 7, 2000
Page 2 of 2

We anticipate sending additional information to your office shortly, for formal project affect determination. If you have any questions, please contact Science Kilner at (252) 641-5824 or Brett Bowen at (770) 220-5387. We look forward to our continuing consultation and thank you in advance for your attention to this project.

Sincerely,



William R. Straw
Regional Environmental Officer

WS:sk

Cc: Miles Anderson, FDEM
Phillip Worley, FDEM
George Garrett, Monroe County
Tim McGarry, Monroe County
Rowena Garcia, FWCC
Roger Braun, FCAA

Enclosure (1)



**Federal Emergency Management Agency
Region IV**

3003 Chamblee Tucker Road
Atlanta, Georgia 30341-4130
Telephone: (770) 220-5406
Fax: (770) 220-5440

October 30, 2000

James J. Slack, Field Supervisor
U.S. Fish and Wildlife Service
South Florida Ecological Services Office
PO Box 2676
Vero Beach FL 32961-2676

Re: FEMA 1249-DR-FL Unmet Needs - Florida Keys Aqueduct Authority
Key Largo Wastewater Treatment Plant

Dear Mr. Slack:

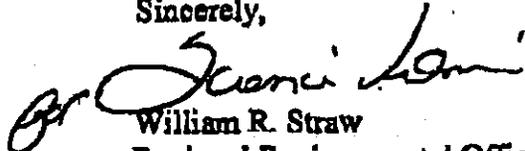
Please find enclosed, for your review and comments, a draft Biological Assessment (BA), part of our informal consultation initiated with your office on July 7 for the proposed Key Largo project. This BA was prepared in accordance with Section 7 of the Endangered Species Act, as amended (16 U.S.C. 1531 *et seq.*), and guidelines provided by Ms. Jeannette Gallibugh of your office. URS Corporation finalized this BA on our behalf, and Monroe County Department of Marine Resources provided most of the information and completed all fieldwork. The project site was viewed by both FEMA and URS staff on July 10.

When FEMA initiated this informal consultation, the Florida Keys Aqueduct Authority (FKAA) estimated construction of the wastewater treatment facility at the Mile Marker (MM) 100.5 site would impact approximately 7 acres of established tropical hardwood hammock. This estimate has been significantly reduced. A preliminary site design now indicates the facility will only require 2.6 acres for construction. In addition to reducing impact acreage, Monroe County has proposed 20 acres of conservation easement on the unused portion of the parcel, .4 acres of hammock restoration, and construction procedures to limit habitat loss and reduce adverse impacts to plant and animal species, particularly protected species that may use this parcel. Accordingly, our agency has determined that construction of the proposed FKAA Key Largo Wastewater Treatment Plant at MM 100.5 is not likely to adversely affect threatened or endangered species, or their proposed or designated critical habitat.

James Slack
October 30, 2000
Page 2 of 2

If you have any questions, please contact Ms. Science Kilner at (770) 220-5422. We appreciate your continuing consultation on this proposed project and look forward to receiving your comments.

Sincerely,



William R. Straw
Regional Environmental Officer

WS:sk

Cc: Miles Anderson, FDEM
Tim McGarry, Monroe County
Roger Braun, FCAA
Ken Branton, URS Corp.

Enclosure (1)



**Federal Emergency Management Agency
Region IV**

3003 Chamblee Tucker Road
Atlanta, Georgia 30341-4130
Telephone: (770) 220-5406
Fax: (770) 220-5440

December 18, 2000

James J. Slack, Field Supervisor
U.S. Fish and Wildlife Service
South Florida Ecological Services Office
P.O. Box 2676
Vero Beach, FL 32961-2676

Re: FEMA 1249-DR-FL Unmet Needs - Florida Keys Aqueduct Authority
Key Largo Wastewater Treatment Plant

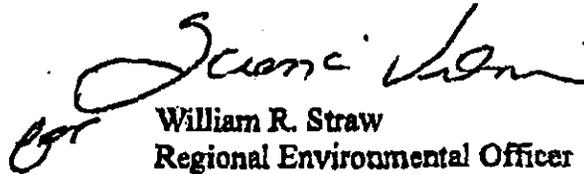
Dear Mr. Slack:

In accordance with Section 7 of the Endangered Species Act (16 U.S.C. 1531 *et seq.*), the Federal Emergency Management Agency would like to elevate the informal consultation initiated on July 7 to a formal consultation. This request is made pursuant to the conclusion in our Biological Assessment that there is potential, albeit very low, for incidental takes of federally threatened or endangered species during construction of the above project. These include Schaus' swallowtail butterfly, the eastern indigo snake, and Stock Island tree snail.

James J. Slack
December 18, 2000
Page Two

If you have any questions, please contact Ms. Science Kilner at (770) 220-5422. We look forward to receiving your biological opinion, along with any additional mitigation measures you propose, and thank you for your continued attention to this project.

Sincerely,


William R. Straw
Regional Environmental Officer

WS:sk

Cc: Miles Anderson, FDEM ✓
Phillip Worley, FDEM ✓
George Garrett, Monroe County ✓
Tim McGarry, Monroe County ✓
Randy Kautz, FWCC ✓
Roger Braun, FCAA ✓
Ken Branton, URS Corp. ✓
Phil Frank, USFWS - Marathon ✓



United States Department of the Interior



FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

December 20, 2000

William R. Straw
Regional Environmental Officer
Federal Emergency Management Agency
3003 Chamblee Tucker Road
Atlanta, Georgia 30341-4130

Log No.: 4-1-00-F-736
Dated: December 18, 2000
Applicant: Federal Emergency Management
Agency
County: Monroe

Dear Mr. Straw:

This letter acknowledges the Fish and Wildlife Service's (Service) receipt of your December 18, 2000, letter requesting initiation of formal consultation under section 7 of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). The consultation concerns possible effects of the proposed 2.6-acre Key Largo Wastewater Treatment Plant on the endangered Schaus swallowtail butterfly (*Heraclides aristodemus ponceanus*), the threatened Stock Island tree snail (*Orthalicus reses reses*), and the threatened eastern indigo snake (*Drymarchon corais couperi*). The proposed project is located adjacent to John Pennekamp Coral Reef State Park in the Florida Keys at Mile Marker 100.5, Key Largo, Monroe County, Florida.

The Service has received all of the information necessary to initiate formal consultation on the proposed action, as required in the regulations governing interagency consultations (50 CFR 402.14). Log number 4-1-00-F-736 has been assigned to the proposed project. Please refer to the log number in future correspondence regarding this consultation.

The Service has up to 90 days to conclude formal consultation with the Federal Emergency Management Agency (FEMA) and an additional 45 days to prepare our biological opinion (unless we mutually agree to an extension). Therefore, we expect to provide FEMA a biological opinion on or before May 4, 2001. The ESA requires that, after initiation of formal consultation, the Federal action agency make no irreversible or irretrievable commitment of resources that limits future options. This ensures that agency actions do not preclude the formulation or implementation of reasonable and prudent alternatives necessary to avoid jeopardizing the

continued existence of threatened or endangered species and to avoid destroying or modifying designated critical habitat.

Thank you for your cooperation in the effort to protect threatened and endangered species and their habitat. If you have any questions regarding this project, please contact Phil Frank in our Florida Keys Suboffice at (305) 872-2753.

Sincerely yours,

Kaloni D. Cairns

for James J. Slack
Field Supervisor
South Florida Ecological Services Office

cc:

Service, Ecological Services-Big Pine Key, Florida (Phil Frank)

FWC, Tallahassee, Florida (Randy Kautz)

Monroe County Growth Management, Marathon, Florida (Ralph Goulidy)



United States Department of the Interior



FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

June 11, 2001

William R. Straw
Regional Environmental Officer
Federal Emergency Management Agency
3003 Chamblee Tucker Road
Atlanta, Georgia 30341-4130

Log No.: 4-1-00-F-736
Dated: December 18, 2000
Applicant: Federal Emergency Management
Agency
County: Monroe

Dear Mr. Straw:

This document transmits the Fish and Wildlife Service's (Service) Biological Opinion based on our review of the Federal Emergency Management Agency's (FEMA) proposal to construct the Key Largo Wastewater Treatment Plant (WTP) and its effects on the endangered Schaus swallowtail butterfly (*Heraclides aristodemus ponceanus*), the threatened Stock Island tree snail (*Orthalicus reses*), and the threatened eastern indigo snake (*Drymarchon corais couperi*) in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1631 *et seq.*). Your request for consultation was received on December 18, 2000.

This Biological Opinion is based on information provided in the October 30, 2000, draft Endangered Species Biological Assessment (FEMA 2000), telephone conversations with FEMA and Monroe County representatives, species experts, members of the public, field investigations, and other sources of information. A complete administrative record of this consultation is on file at the Florida Keys Ecological Services Field Office on Big Pine Key, Monroe County, Florida.

Consultation history

The Biological Opinion presented here is the result of informal coordination and consultation between the Service and FEMA. This consultation history represents coordination letters and documents from this process.

On April 7, 2000, the Service sent a letter to Monroe County informing the County of the presence of several federally-listed threatened and endangered species on Key Largo, and expressing an interest in assisting the County in the selection of wastewater treatment plant facility locations.

On June 23, 2000, the Service sent a letter to FEMA identifying the possible use of Federal funds for the proposed Key Largo WTP. The Service requested that FEMA evaluate the proposed construction for impacts to threatened and endangered species and initiate consultation in accordance with section 7 of the ESA.

On July 7, 2000, FEMA sent a letter to the Service acknowledging that Federal funds through FEMA's Hazard Mitigation Grant Program were being used for the proposed Key Largo WTP, and requested initiation of formal consultation to determine if construction of the proposed project would result in adverse effects to threatened and endangered species. A preliminary environmental assessment prepared by Monroe County describing the location and environmental conditions of the proposed site was included for the Service's review.

On July 14, 2000, the Florida Fish and Wildlife Conservation Commission sent a letter to FEMA expressing a concern that the site selected for the Key Largo WTP at Mile Marker 100.5 on Key Largo was important habitat for both State and federally-listed threatened and endangered species and recommended against FEMA funding for the project at this location.

On July 28, 2000, the Service sent a letter to Carlton Fields, Attorneys at Law, informing them that the Service was consulting with FEMA on the Key Largo WTP; a Biological Opinion would be prepared, if necessary; and preparation of a Habitat Conservation Plan is not required by section 7 of the ESA.

On October 30, 2000, FEMA sent a draft Biological Assessment (BA) to the Service for the Key Largo WTP.

On December 14, 2000, the Service sent an email correspondence to FEMA requesting that FEMA initiate formal consultation for the Key Largo WTP since the BA for the project identified the potential for take of the Schaus swallowtail butterfly, the Stock Island tree snail, and the eastern indigo snake.

On December 18, 2000, FEMA sent a letter to the Service requesting initiation of formal consultation for the Key Largo WTP.

On December 20, 2000, the Service sent a letter to FEMA acknowledging receipt of FEMA's request for formal consultation for the Key Largo WTP. In that letter, the Service concluded that all necessary information for the consultation had been received and established a date of May 4, 2001, for the completion of the Biological Opinion.

BIOLOGICAL OPINION

Description of the proposed action

FEMA is proposing to construct the Key Largo WTP on a 23-acre tropical hardwood hammock parcel located at Mile Marker 100.5, Key Largo, Monroe County, Florida (Figure 1). Anticipated impacts of the project include destruction of 2.6 acres of tropical hardwood

Status of species/critical habitat

The Service has determined that the proposed action may adversely affect the Schaus swallowtail butterfly, the Stock Island tree snail, and the eastern indigo snake. Critical habitat has not been designated for any of these species.

Schaus swallowtail butterfly

A. Species description

The Schaus swallowtail is a large blackish-brown butterfly with contrasting markings that are mostly dull yellow (Service 1999). Their antennae are black with a yellow knob that has a black tip. Their forewings have a dull yellow median band from the apex to about midpoint of the inner margin, with a short side branch to costa about 1/3 distance from the apex. Their subterminal and terminal lines consist of lunular yellow spots from apex to anal angle. Their hindwings have a yellow median band continuing that of the forewing, and a submarginal row of large yellow lunular spots; the concavities of a deeply scalloped outer margin have yellow edging. Their blackish tail is straight-edged (not teardrop-shaped), and is bordered with yellow. The tails have a hollow red spot along the anal margin just above the anal angle, with bluish scaling.

The underside of a Schaus swallowtail wing is yellow with black shading mostly in the median and submarginal areas of the forewing, and in the terminal area and tails of the hindwing. A dull brownish red median band extends from costa to inner margin of the hindwing, narrowing before touching these margins. There is extensive bluish scaling along the outer edge of the reddish band of the wing. The wingspan is 2.9 to 4 inches (8.6 to 9.5 cm) (Covell 1985).

The Schaus swallowtail butterfly is most easily confused with the giant swallowtail butterfly (*Heraclides cressphontes*) Cramer, which is widespread in eastern North America and also occurs in habitat occupied by the Schaus swallowtail. The two butterflies are easily separated by size and color: the giant swallowtail is larger than the Schaus swallowtail and is more nearly coal-black with brighter yellow lines. The giant swallowtail has a broader median forewing band that is more broken into spots, and is less separated from the submarginal band toward the apex. The giant swallowtail antennae are solid black and its tail is teardrop-shaped, yellow inside bordered with black edging. The reddish markings on the underside of its wings are less brownish and much less extensive than on the Schaus swallowtail (Service 1999).

B. Life history

Distribution and habitat: The present distribution of the Schaus swallowtail butterfly is limited to undisturbed tropical hardwood hammocks in insular portions of Miami-Dade and Monroe counties from Elliott Key in Biscayne National Park in the northeast southwest to northern Key Largo (Service 1999 - Figure 1). Individuals have been seen in and adjacent to the Crocodile Lakes National Wildlife Refuge. Captive bred butterflies have been released on six sites in North Key Largo.

height of 10 feet or more during the hot afternoon on bright days, sometimes descending into open spaces to investigate any other *H.c. ponceanus* (Rutkowski 1971). Emmel (1985a) also notes that male Schaus swallowtail butterflies are remarkably adapted to flight within hardwood hammocks and are able to pick their way among branches and around spider webs.

The Schaus swallowtail butterfly spends much of its time within hammocks, particularly where sunlight penetrates to give a dappling effect (Emmel 1985a). Courtship has been observed along narrow trails cut through the hammock (Rutkowski 1971). Open areas, such as trails or clearings within or near the dense hammock, are requisite for courtship activity and nectaring. These open areas may be natural or man-made. The Schaus swallowtail butterfly appears to be strictly diurnal.

While no mass migration of the Schaus swallowtail butterfly has ever been reported, an individual was followed as it crossed a half-mile expanse of Biscayne Bay between two islands (Brown 1973). In 1986, a Schaus swallowtail butterfly was seen crossing about 360 meters from Old Rhodes Key to Swan Key (Service 1999). These observations suggest that these butterflies can travel across open water for a considerable distance among the upper Keys and may be able to travel to and from the mainland.

Adult Schaus swallowtail butterflies are active primarily in May and June, with most sightings recorded between mid-April and mid-July (Service 1999). A few August and September records suggest either delayed-emergence during a year or a facultative second brood (Service 1999, Brown 1976).

There is only one generation of Schaus swallowtail butterflies per year and adults are short-lived (Emmel 1985a). There is some evidence from rearing that diapause may extend for at least 2 years (Grimshawe 1940). If this occurs in natural populations, the Schaus swallowtail butterfly could survive extreme droughts in the season following its larval development by delaying emergence, perhaps until July-September or later (Rutkowski 1971). Some adults are active during July-September as well as during the normal flight period of late April through early July (Brown 1973).

Feeding: Young caterpillars use tender, young leaves of plants, such as wild lime, and will avoid tougher, older leaves. However, fifth (final) instar larvae have been observed eating tougher older leaves of torchwood and prickly-ash (Service 1999, Rutkowski 1971). Adults have been observed taking nectar from blossoms of guava, cheese shrub, blue porterweed (*Stachylarpheta jamaicensis*), sea grape, dog's tail (*Heliotropium angiospermum*), lantana (*Lantana involucreta*), salt-and-pepper (*Melanthera nivea*), and wild coffee (Emmel 1986a, Service 1999, Rutkowski 1971).

Reproduction: While mating has not been observed in the wild, oviposition in nature has been described. The Schaus swallowtail butterfly uses torchwood and wild lime to deposit its eggs (Grimshawe 1940, Rutkowski 1971, Brown 1973). These food plants are either at the edge of hammocks along trails impartially sheltered by the canopy or they are in the hammocks proper, at the edge of a clearing or where a fairly large opening in the canopy exists. Females deposit

D. Analysis of the species likely to be affected

The current range of the Schaus swallowtail butterfly includes hardwood hammock on the upper Florida Keys from Lower Matecumbe Key north to Elliot Key. Habitat loss from development, pesticide use, and over-collecting are the primary causes for this subspecies decline. Hammock fragments such as the action area are increasingly rare in the upper Keys as a result of development activities and acquisition of the remaining patches for conservation is a high priority. The proposed project would adversely affect the Schaus' swallowtail butterfly through the loss and degradation of the remaining habitat on-site from secondary effects including microhabitat alteration, increased edge effects, and exotic species such as fire ants.

Stock Island tree snail

A. Species description

The Stock Island tree snail was first described by Say in 1830 based on a snail that was probably collected from Key West. That specimen was lost and the species was later described by Pilsbry around 1946 using a snail from Stock Island. The Stock Island tree snail is a subspecies in the genus *Orthalicus*. Pilsbry wrote that he believed *Orthalicus* migrated through tropical America on floating trees that were later blown ashore.

Pilsbry (1946) described the Stock Island tree snail as having a shell that is rather thin and light, less solid than [other] races of [*Orthalicus*]. White to warm buff, this tint deepening near the lip or behind the later varices; stripes... purplish brown, running with the growth-lines, the stripes and the streaks often interrupted between the bands, and mostly not extending below the lower one; growth-rest varices usually 2 to 4 on the last whorl; three spiral bands, the upper and lower interrupted, are indicated, but weaken with age. Apex white. Aperture showing the varices, bands and streaks vividly inside; columella white, straightened above; parietal callus white, or dilute chestnut in old shells. The characteristics that most distinguish this species from *O. reses nesodryas* are the white apex and white columella and parietal callus. These characteristics are chestnut-brown or darker in *O. reses nesodryas*.

B. Life history

Distribution and habitat: Historically, Stock Island tree snails were found only on Stock Island and Key West. Today, snails are only found in small numbers on Key West and in a few hardwood hammocks in the upper Keys. They feed on epiphytic growth on hardwood tree trunks, branches, and leaves. The Stock Island tree snail survives best in higher-elevation hammocks (minimum elevations of 5-11 feet) that support relatively large amounts of lichens and algae.

Larger trees support more Stock Island tree snails than smaller trees because they provide the snails with an increased surface area for foraging (Deisler 1987). There is no evidence that Stock Island tree snails prefer certain tree types or species (Deisler 1987), although they seem to prefer trees with smooth bark over trees with rough bark.

The primary threats to the survival and recovery of the Stock Island tree snail include loss of habitat from development, application of pesticides, fragmentation of habitat, and predation by black rats (*Rattus rattus*) and fire ants (*Solenopsis invicta*). Increased urbanization in the Keys over the last 30 years has led to the destruction, fragmentation, and reduction in quality of habitat throughout its historic and present range. Pesticide use near known sites of the Stock Island tree snail has impacted populations either by poisoning animals directly or altering reproduction. Trash and debris piles have also served as a food source and provided home sites for black rats which prey on the snail. Illegal collecting of Stock Island tree snail has reduced snail populations and contributed to the extirpation of the snail from Stock Island (Service 1999). The population on Key Largo is at-risk due to extensive habitat loss and fragmentation, making preservation of the remaining large contiguous forest fragments essential (Forys *et al.* 1996).

D. Analysis of the species likely to be affected

The current range of the Stock Island tree snail includes only hardwood hammock fragments where the species has been relocated by collectors and conservationists. The subspecies is believed to be extirpated from its historic range, and the long-term survival of the taxon is doubtful. Hammock fragments, such as the action area, are increasingly rare in the upper Keys as a result of development activities, and acquisition of the remaining patches for conservation is a high priority. The proposed project would adversely impact the Stock Island tree snail through a direct loss of individuals and also through the degradation of the remaining habitat on-site from secondary effects including microhabitat alteration, increased edge effects, and exotic species such as fire ants.

Eastern indigo snake

A. Species description

The eastern indigo snake ranges from the southeastern United States to northern Argentina (Service 1999). This species has eight recognized subspecies, two of which occur in the United States: the eastern indigo and the Texas indigo (*D. c. erebennus*) (Service 1999). At one time, the eastern indigo snake occurred in the coastal plain of the southeastern United States, from South Carolina to Florida and west to Louisiana.

The eastern indigo snake is the largest non-venomous snake in North America, obtaining lengths of up to 104 inches (Service 1999). Its color is uniformly lustrous-black, dorsally and ventrally, except for a red or cream-colored suffusion of the chin, throat, and sometimes the cheeks. Its scales are large and smooth (the central 3-5 scale rows are lightly keeled in adult males) in 17 scale rows at midbody. Its anal plate is undivided.

In the Keys, adult eastern indigo snakes seem to have less red on their faces or throats compared to most mainland specimens (Service 1999). Several researchers have informally suggested that lower Keys eastern indigo snakes may differ from mainland snakes in ways other than color.

Reproduction: Eastern indigo snakes breed between November and April, with females depositing 4-12 eggs during May or June (Service 1999). Young hatch in approximately 3 months from late May through August with peak hatching activity occurring between August and September, while yearling activity peaks in April and May (Service 1999). There is no evidence of parental care although the snakes take 3 to 4 years to reach sexual maturity (Service 1999).

Female eastern indigo snakes can store sperm and delay fertilization of eggs; there is a single record of a captive snake laying five eggs (at least one of which was fertile) after being isolated for more than 4 years (Service 1999). There is no information on eastern indigo snake lifespan in the wild, but in captivity an eastern indigo snake lived 25 years, 11 months (Service 1999).

C. Status and trends

The eastern indigo snake was listed as a threatened species on January 31, 1978 (43 FR 4028). This snake was listed because of dramatic population declines caused by habitat loss, over-collecting for the domestic and international pet trade, and mortalities caused by rattlesnake collectors who gas gopher tortoise burrows to collect snakes (Service 1999). When the eastern indigo snake was listed, the main cause of its population decline was over-collecting for the pet trade.

The eastern indigo snake was listed based on habitat loss, over-collecting for the pet trade, and mortality from gassing gopher tortoise burrows to collect rattlesnakes. At the time of listing, the main factor in the decline of the eastern indigo snake was attributed to exploitation for the pet trade. Law enforcement has reduced pressure from the pet trade, but loss of habitat remains a major threat to the long-term survival of the species. The primary threats to the survival and recovery of the eastern indigo snake on the Keys are habitat loss due to development. The already greatly reduced population on Key Largo is at-risk due to extensive habitat loss and fragmentation, making preservation of the remaining large contiguous forest fragments essential.

The status of the eastern indigo snake is not well documented in the Keys, but it is believed to be nearly extirpated. Based on anecdotal information, the Keys population has declined over the last two decades. Currently, the eastern indigo snake probably only occurs on North Key Largo in the upper Keys, and on the larger keys from Big Pine Key through Lower Sugarloaf Key in the Lower Keys. Habitat loss, collecting, and road kills are likely causes for the observed decline, a trend further amplified by the small size of these islands relative to mainland habitat conditions.

The eastern indigo snake utilizes a majority of the habitat types available in the Keys, but tends to prefer open, undeveloped areas (Service 1999). Because of its relatively large home range, this snake is especially vulnerable to habitat loss, degradation, and fragmentation (Service 1999) on these small islands. Low density residential housing is also a threat to this species, increasing the likelihood of snakes being killed by property owners and domestic pets. Extensive tracts of wild land are the most important refuge for large numbers of eastern indigo snakes (Service 1999).

forests than mangrove forests. Residential housing projects have severely deforested the hammocks on Plantation Key (which has suffered a 70 percent loss of its seasonal forests) and Lower Matecumbe Keys.

Schaus swallowtail butterfly

Although population numbers of the Schaus swallowtail butterfly fluctuate year to year, between 1924-1981 there has been a general decline in range and numbers. The Schaus swallowtail butterfly has been considered rare on Key Largo since the mid-1970s. This species was listed as threatened on April 28, 1976, because of population declines caused by the destruction of its tropical hardwood hammock habitat, mosquito control practices, and over-harvesting by collectors (41 FR 17740). The Schaus swallowtail butterfly was reclassified to an endangered species on August 31, 1984, because its numbers and range had declined dramatically since its first listing (49 FR 34504).

Tropical hardwood hammock suitable for Schaus swallowtail butterfly has been reduced by an estimated 57 percent in Biscayne National Park and 83 percent for Key Largo. The decline has been attributed primarily to habitat destruction. North Key Largo contains a large, relatively contiguous expanse of tropical hardwood hammock habitat, but habitat on Key Largo south of C.R. 905 is highly fragmented and greatly reduced from historic levels, placing greater importance on the preservation of the larger tracts of hardwood hammock habitat remaining on Key Largo.

The majority of the Schaus swallowtail butterfly population is found on Adams, Elliott, Old Rhodes, Swan, and Totten Keys within Biscayne National Park. Between 1985 and 1990, the Elliott Key population fluctuated between 600 to 1,000 adults annually, with smaller populations of at least 50 to 100 individuals on each of the other Keys. Hurricane Andrew temporarily reduced the Biscayne National Park's population in 1992 to 58 identified individuals; however, in 1994 the population rebounded to over 600 and is presumed stable (Emmel 1995a).

Within the major keys of Biscayne National Park (Elliott, Old Rhodes, Totten, and Adams Keys) and on northern Key Largo, the two food plants of the Schaus swallowtail butterfly seem adequate to support a healthy population. High numbers of individuals sighted in 1985 indicate that the Schaus swallowtail butterfly population is still capable of periodic peaks. Following 3 years of reintroductions, results of a 1997 season census indicate that the total annual population in the wild has increased to at least 1,200 butterflies (Emmel 1995b).

Prior to human influences, populations of this butterfly were probably subject to naturally occurring population depressions caused by hurricane damage, drought, and rare freezes (Covell 1976). The influence of the Labor Day Hurricane of 1935 on the Lower Matecumbe Key population was documented by Grimshawe (1940), though the claim that the species became extinct was incorrect (it was found there and on Key Largo in succeeding years) (Henderson 1945). The results of Grimshawe's careful searching were negative; however, the before and after surveys demonstrated that the hurricane had a detrimental effect on the biota of the Keys southwest of Key Largo.

the project site, and (4) the loss of 23 acres of habitat targeted for acquisition and management by Florida's Conservation and Recreational Lands (CARL) program which serves to aid in the recovery and survival of these species.

B. Analysis for effects of the action

The primary effect of the proposed action is the loss of 2.3 acres of tropical hardwood hammock habitat important for the long-term survival and recovery of Schaus swallowtail butterfly and Stock Island tree snail. In addition to the direct loss of habitat, the proposed action will also result in the additional degradation and fragmentation of the remaining 23 acres of habitat that comprise the action area.

C. Species response to a proposed action

Habitat loss resulting from the proposed action will affect Schaus swallowtail butterfly and Stock Island tree snail populations in the Keys by reducing the carrying capacity of the habitats to sustain viable populations of these species. Habitat loss has been cited as the principle threat to these species, altering their ability to feed, reproduce, disrupting movement routes, and altering habitat composition through the introduction of exotic plant species. Protection of habitat is considered essential for preventing the extinction of these three species.

In addition to a reduction in total carrying capacity, the proposed action will also contribute to the general reduction in the ranges of these species by further fragmenting suitable habitat. Habitat fragmentation is a severe threat to the ability of tropical hardwood hammock to sustain viable populations of Schaus swallowtail butterfly and Stock Island tree snail. Habitat fragmentation can result in secondary impacts that degrade habitat quality for these species including increased light penetration, reduced humidity, altered plant species composition, and introduction of exotic species (e.g., imported red fire ants, exotic invasive plants).

Another effect of the action has been to prevent this 23-acre parcel of habitat from being acquired by the CARL program with subsequent management as a protected area. The South Florida Multi-Species Recovery Plan (Service 1999) for these species identifies habitat acquisition and management as a primary recovery objective for the Schaus swallowtail butterfly and Stock Island tree snail. The action area was targeted by the CARL program for acquisition and has been surveyed and appraised in anticipation of a purchase agreement. Actions by the Monroe County Board of County Commissioners and FEMA to construct the proposed action have prevented this pending purchase and placed the long-term conservation prospects for this property into doubt.

Cumulative Effects

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this Biological Opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

take should be minimized by implementation of the following reasonable and prudent measures. The incidental take is expected to be in the form of harm and harassment.

Amount or extent of take anticipated

The Service anticipates incidental take of Schaus swallowtail butterfly and Stock Island tree snail associated with the direct loss of 2.6 acres of habitat. Incidental take should be minimized by implementation of the following reasonable and prudent measures. The incidental take is expected to be in the form of harm and harassment. The Service determined that this level of take is not likely to result in jeopardy to these species.

Reasonable and prudent measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of Schaus swallowtail butterflies and Stock Island tree snails associated with the proposed action.

1. Restore an area of hardwood hammock habitat equal to the area lost (2.6 acres) as a result of the proposed action in order to replace the habitat functions essential to the long-term conservation of the species in the action area. *1.3 mi² of habitat*
2. Preserve the 23 acres of the action area not required for construction of the proposed action to prevent any further adverse impacts and to ensure proper long-term management of the habitat.

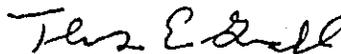
Terms and conditions

In order to be exempt from the prohibitions of section 9 of the ESA, FEMA must comply with the following terms and conditions, which implement the reasonable and prudent measure described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. FEMA shall locate a site or sites totaling 2.6 acres for hardwood hammock habitat restoration on the island of Key Largo. The site should consist of habitat conditions currently unsuitable for the Schaus swallowtail butterfly and Stock Island tree snail, but through restoration actions could be reasonably expected to support these species. The selected site must be approved by the Service.
2. FEMA shall coordinate with the CARL program or another suitable environmental lands management program to receive title to the 23 acres of hardwood hammock in the action area not proposed for development. Coordination with the Florida Department of Community Affairs and Monroe County Growth Management should be initiated to address issues related to the Monroe County Comprehensive Plan open space requirements.

Thank you for your cooperation in the effort to protect threatened and endangered species and their habitats. If you have any questions regarding this project, please contact Tom Grahl at (561) 562-3909, extension 236.

Sincerely yours,



James J. Slack
Field Supervisor
South Florida Ecological Services Office

cc:

FWS, Big Pine Key, FL

FWS, ARD-ES, Atlanta, GA

Florida Keys Aqueduct Authority, Key West, FL (Jack Teague)

Monroe County Growth Management, Marathon, FL (Tim McGarry)

EPA, Marathon, FL (Bill Kruczinsky)





January 23, 2001

Mr. Randy Kautz
Florida Fish and Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, FL 32399-1600

Re: **Biological Assessment for Wastewater Treatment Plant Site – Mile Marker 100.5,
Key Largo, Florida**

Dear Mr. Kautz:

Per request of Ms. Science Kilner with the Federal Emergency Management Agency, Region IV, I've enclosed a copy of the Biological Assessment (BA) that URS completed in conjunction with Monroe County Department of Marine Resources.

This BA addresses the potential effects of constructing a proposed regional wastewater treatment system in Key Largo, Florida, with an emphasis on the specific site for a regional wastewater treatment plant selected by the Board of County Commissioners on May 18, 2000. This BA is based on existing documents and information, as well as site-specific information, for the treatment plant site that was developed by staff of the Monroe County Department of Marine Resources.

This document constitutes a Biological Assessment in accordance with the rules requiring federal agency consultation under the Endangered Species Act.

We welcome your comments on this document, if you so choose. Please send your comments to the address below. If you have any questions, please feel free to call me at (678) 356-8223.

Sincerely,

URS

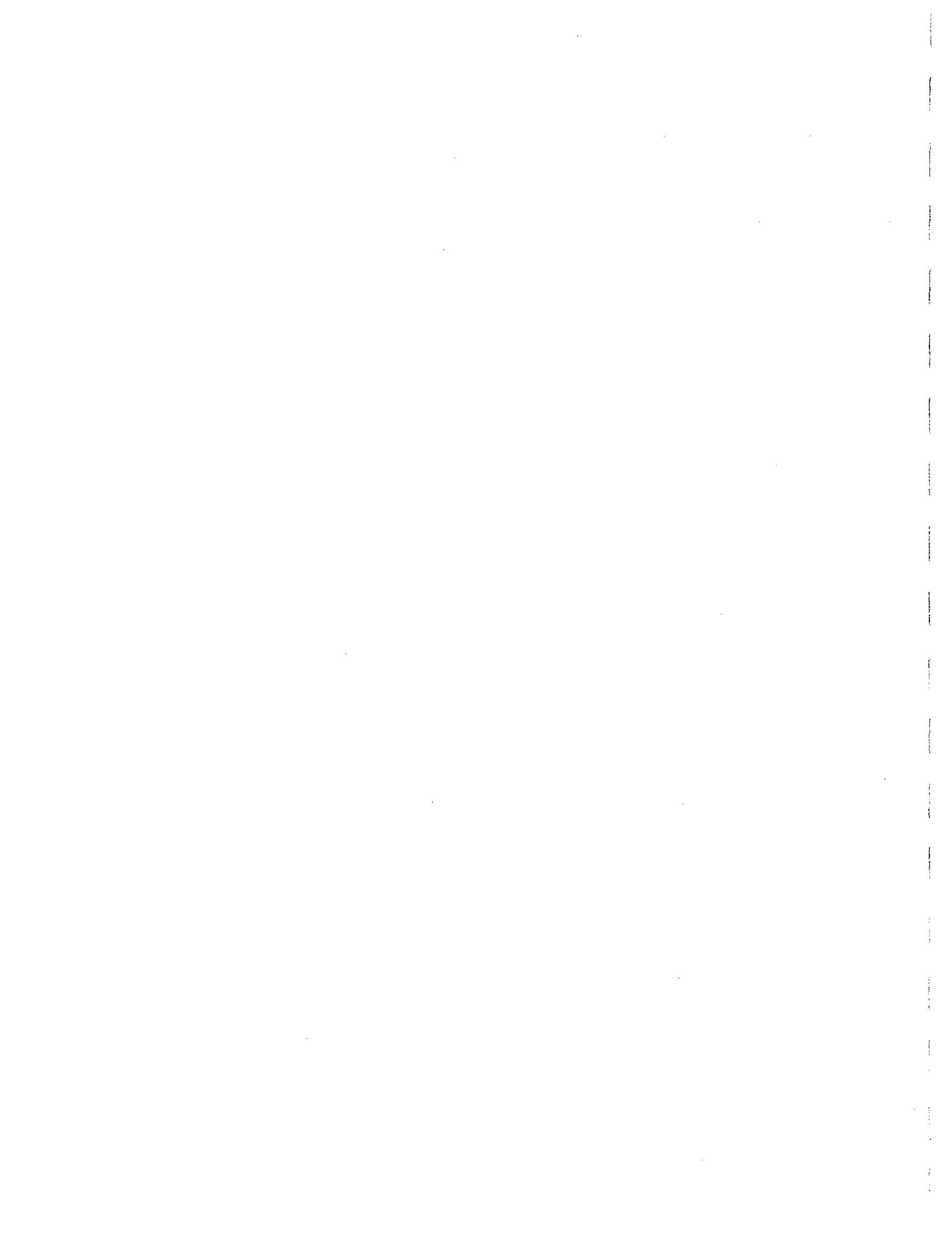
Kenneth W. Branton
Senior Project Engineer

KWB/kwb
Enclosure

cc: Ms. Science Kilner (w/o Atch)

Appendix J

Key Largo Wastewater Treatment District Low Income Assistance Program



**Key Largo Wastewater Treatment District –
Low Income Assistance Program Per EO 12898 (Environmental Justice)**

The following summarizes the Monroe County Housing Authority's (HA) Implementation Plan for financial assistance to qualifying *low-* and *very-low income* Bay Point service recipients.

The HA will conduct a survey to collect relevant demographic data from the Bay Point service area residents. The data will help determine the number of assistance program applicants and the funding level needed to meet the FEMA environmental justice compliance requirements. This survey will also provide an advanced funding availability announcement to qualified service recipients.

The application process will begin after WWTP construction has been contracted. The process will be based on Monroe County's Housing Assistance Plan. Assistance Program availability will be advertised in local papers; along with other outreach activities such as press releases, public meeting announcements, and pertinent non-profit organization notifications. There will be a minimum sixty (60) day application period.

The application will consist of a cover letter, application instructions, an application form (for information on address, household composition, income level, and status [owner occupied, primary residence or owner renting to eligible tenant]), a release form, a resident income certification form, a social security consent for release of information form, and a statement of no tax return form. The HA's Special Programs Office (SPO) will work with each applicant to ensure application sufficiency. After the application period has closed and all applications are completed, the SPO will send a letter to each applicant informing them whether they have or have not met the eligibility requirements.

The HA's Assistance Program primary eligibility criteria are as following:

- Priority #1
 - Single family
 - Owner occupied
 - Primary residence
 - Contain Housing Code violations, Housing Quality Standards violations,
 - Health/Safety violations, or has sewer connection requirements.
- Priority #2
 - Property owners
 - Single family or multifamily rental property occupied by qualified beneficiaries
 - Has sewer connection requirements

Applications received within the application period which meet the primary criteria above will be prioritized based on the scoring system outlined below. Funding will be distributed starting with applicants having the greatest priority score, followed by lower priority scores until all available funding has been expended.

Priorities and associated points:

- Elderly (one owner greater than 62 years old) 10
- Disabled household member 10
- Documented Multiple Housing Code violations 10
- Very low income 5
- Children in household (greater than 2) 5
- Length of ownership between 0 and 5 years 0
- Length of ownership between 6 and 10 years 2
- Length of ownership between 11 and 15 years 3
- Length of ownership greater than 15 years 5
- Single head of household (2 or more persons) 5

Note: In the event of tie scores, very low-income households will receive priority.

The Assistance Program will fund sewer connection and on-site system abandonment/removal costs. Priority #1 applicants will receive assistance in the form of a grant. Priority #2 applicants would receive assistance in the form of a loan. Applicants would execute a note secured by a mortgage on the subject property. The term of the note will be for five (5) years at zero (0) percent interest and will require no regular payments. The principal balance will be forgiven by 1/5th annually on the anniversary date. The mortgage will contain affordability covenants that require that during the term of the loan, the property shall be rented on an annual lease to very low- and low-income households subject to annual income certification. The SPO will coordinate all payments through the County.

An order-of-merit listing with qualified applicants will be prepared for approval by the CATF and forwarded to the BOCC for conflict of interest resolution and approval. Based on available funding and the number of listed applicants, a household dollar amount will be awarded to each applicant.

When the funding allocation for each household is known, the SPO will send a commitment letter to the household, including instructions on plumber contracting. The SPO will work with the applicant to ensure plumber work is completed appropriately (i.e. permits obtained, county inspections made, DOH certifications received for system abandonment, etc.) and that services are paid in a timely manner. The Assistance Program will be funded through funding requests to DCA for a combination of the individual funding amount awarded to the eligible household and the plumbing contractor costs.



faith

Key Largo Wastewater Treatment District Board of Commissioner's Meeting Agenda

3:00 PM Wednesday, December 3, 2003

Key Largo Public Library, 101485 Overseas Highway
Key Largo, Monroe County, Florida

- A. Call to Order
- B. Pledge of Allegiance
- C. Public Comment
- D. Additions, Deletions or Corrections to the Agenda * Mike Madden FL League of Cities
- E. Minutes – Draft October 15, 2003
- F. Action Items
 - 1. Action on a Secondary Treatment Process
 - 2. Action on KLWTD Work Authorization WEC 04-01 with Weiler Engineering Corporation for Investigation of the Calusa Campground
 - 3. Action on the Line of Credit
 - 4. Approval of Resolution 2003-22 to facilitate and encourage efficient and effective communications between the Board and General Manager
 - 5. Action on the Monroe County Land Transfer (Restrictions to MM 100.5 WWTP Site)
- G. General Manager's Report
 - 1. Status Report on the KLWTD Transition Plan
 - 2. KLWTD Board Meeting Schedule for 2004
- H. Legal Counsel's Report
 - 1. Report on Fluidyne warranty and PES/Randazza warranty
 - 2. Report on Monroe County Land Transfer
 - 3. Report on question of mandatory hook-ups for commercial property
- I. Engineer's Report for period ending 11-19-03
- J. Commissioner's Items
 - 1. Discussion to establish the domestic service lateral connection to be in front of and on the same side of the street/road as the property owner's dwelling – Commissioner Wilkinson
 - 2. Discussion of Roberts Rule of Order – Chairman Bauman
 - 3. Discussion of Payments to GSG – Chairman Bauman
- K. Meeting Adjournment

Key Largo Wastewater Treatment District

Guest Sign In Sheet

Wednesday, December 3, 2003

****Please Print****

<u>Name & Company</u>	<u>E mail</u>	<u>Phone</u>
1. GLEN CALLTHARP - FLUIDYNE	ptiflorida@aol.com	941.342.8915
2. Norm Hatch	Normhatch@aol.com	872-9917
3. Jack Thorley Marine Bank	jthorley@ourmarinebank.com	664-4727
4. Nos Espat RAUANA	TBOOCEAR@AOL.com	813 677 0041
5. Chuck Wilde F.L.C.	CWILDE@FLCITIES.COM	8004456748
6. Jon Morrison F.L.C.	JMORRISON@FLCITIES.COM	407-245-0725
7. Dave Andrews - Mull Assoc	info@mullcpa.com	852-4833
8. Pete Kinsley / Hassell	pmkinslee@thekassellco.com	904-357-4868
9. Stu Oppenheim / Brown & Caldwell	soppenheim@brwnclld.com	305-418-4090
10. Brandy	Coral Shores H.S.	
11. Ed	Coral Shores H.S.	
12. Burke Cannon	Resident	
13. Steve Gibbs	" " / Reporter	
14.		
15.		
16.		
17.		
18.		
19.		
20.		

Faith Doyle

From: David Miles [DMiles@govserv.com]
Sent: Tuesday, November 25, 2003 12:21 PM
To: Faith Doyle
Subject: RE: 1st draft of 12/3 KLWTD agenda

Faith, at the request of Jerry Wilkinson, I have asked Mike Madden at the Florida League of Cities Risk Management Services to have a staff member attend the meeting on December 3rd and give a brief description of our insurance policies in a Q & A format.

-----Original Message-----

From: Faith Doyle [mailto:FDoyle@govmserv.com]
Sent: Tuesday, November 25, 2003 8:17 AM
To: Charles Sweat; David Miles; Ed Castle; Gary Bauman (E-mail); Jeff Weiler (E-mail); Robert Sheets; Thomas Dillon
Subject: 1st draft of 12/3 KLWTD agenda
Importance: High

Gentlemen,

Please review and advise.....

<<KLWTD draft December 3 .doc>>

TOM.....please let me know ASAP if you have items to include.....

JEFF/ED..... please let me know ASAP if you have items to include.....

PLEASE NOTE THAT AT THE 11/19 MEETING THE BOARD DIRECTED THAT NO ITEMS ARE TO BE ADDED AFTER CLOSE OF BUSINESS ON WEDNESDAY -- this coincides with when I send the 'blue books' out.....

After staff's review this will go to the Board with requests for any additional Commissioner items.

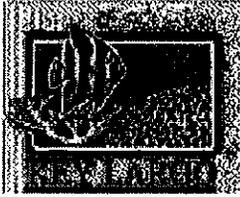
Thanks!!!!

Faith Doyle
Clerk to the Board
c/o Government Services Group, Inc.
614 N. Wymore Road
Winter Park, FL 32789
Phone (407) 629-6900
Fax (407) 629-6963
Cell (321) 246-0059

KLWTD Board Meeting December 3, 2003

Item E

Draft October 15, 2003 Minutes



DRAFT
**Key Largo Wastewater Treatment District
Board of Commissioner's Meeting Minutes**

**4:00 PM Wednesday, October 15, 2003
Key Largo Civic Club, 209 Ocean Bay Drive
Key Largo, Monroe County, Florida**

Board Members Present

Andrew Tobin, Chairman
Gary Bauman
Cris Beaty
Charles Brooks
Jerry Wilkinson

Staff Present

Robert E. Sheets, General Manager
Charles L. Sweat, Director of Operations
Terry Lewis, Attorney (via telephone until 4:40 pm)
Ed Castle, PE, District Engineer (via telephone until 4:40 pm)
Faith Doyle, Board Clerk

Guest Present

Ms. Science Kilner, FEMA (via telephone until 4:30 pm)
Lawrence Frank, FEMA (via telephone until 4:30 pm)
Dr. Straw, FEMA (via telephone until 4:30 pm)
Miles Anderson, DCA (via telephone until 4:30 pm)
Joan Drejerski, Key Largo resident
Gaile Jelink, Key Largo resident
Robert E. Burt, Key Largo resident
Charles Fishburn, Key Largo resident
Doris Kendall, Key Largo resident
Dirk M. Smits, Esq.
James Lupino, Esq.
Thomas Dillon, Esq.

A. Call to Order

Chairman Tobin called the meeting to order at 4:00 p.m.

B. Pledge of Allegiance

All stood and recited the Pledge of Allegiance.

C. FEMA teleconference concerning the Environmental Assessment

The FEMA call began at 4:00 p.m. Mr. Sheets stated that the Chair had requested that he keep in close contact with FEMA due to the concerns of the Board. Mr. Sheets

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stated that the delay in approving the site could cause construction delays and possible grant default.

Ms. Science Kilner stated that the draft Environmental Assessment ("EA") was being developed from the information received. However, the low-income plan was still needed. Mr. Sheets stated that the 70/30 funding plan was on the BOCC agenda. Mr. Sheets stated that the implementation plan is forthcoming. Ms. Kilner stated that the implement plan must be solid and where the dollars are coming from must be certain. Mr. Sheets stated that the County would be the implementing arm for the program. Ms. Kilner stated the design and engineering of the projects should be reviewed. Ms. Kilner questioned if the conceptual plan was close to the original preliminary design that was done by Boyle Engineering. Mr. Ed Castle stated that it was close to the Boyle design. Mr. Kilner stated that she had received WEC's comments on the draft EA. Mr. Sheets informed Ms. Kilner that the Board would hold a Special meeting on October 17 to decide technologies. Ms. Kilner requested that she be updated as soon as possible after the special meeting concerning the actions taken by the Board. Ms. Kilner stated that she required confirmation of the rates. Mr. Sheets inquired if the meeting minutes supporting the approval of the resolution and a copy of the approved resolution would meet the requirement. Ms. Kilner stated that the items would be sufficient and requested they be forwarded immediately so that Dr. Straw could begin his review of the documents.

Dr. Straw stated the his questions on the draft were the alternative site, the rate structure and the low and very low income plan and that once the information was received a first final draft could be generated within several weeks. Dr. Straw stated that if there were no un-for-seen disasters he would be able to give the KLWTD EA immediate attention. FEMA is considering holding the public hearing the first week in December. Dr. Straw stated that an issue arising from Hurricane Isabella set the schedule back. Mr. Sheets stated that the KLWTD requested that if the public hearing could coincide with a regular Board meeting it would be beneficial. Dr. Straw stated that if all additional information is received quickly the December 3 meeting would work. Ms. Kilner agreed that if all information was received by November 1 the regular KLWTD December 3 meeting would be used for the EA public hearing.

Commissioner Brooks asked if there would be a 30-day comment period after the public hearing. Ms. Kilner stated that the comment period starts two weeks prior to the hearing and continues two weeks after and then after the hearing she must incorporate the public comments into the document and finalize the draft, which could take approximately 30 days. Ms. Kilner gave a projected final draft date of the 1st week of January 2004 before FEMA approves the grant to be issued by the State, assuming the public hearing is held in December and no emergency disasters arise.

Commissioner Brooks asked for a date that construction could begin. Mr. Sheets asked when the "fonsi" would be issued. Dr. Straw stated approximately the first week in January 2004. Mr. Sheets asked if once the "fonsi" is issued could DCA begin phase 2. Mr. Miles Anderson stated that a temporary contact would be drafted and the environmental condition added. It would then be forward to the KLWTD to be executed. An approximate date of mid to late February 2004 was given for the start of construction.

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Commissioner Wilkinson stated that he was aware that the public has concerns with both sites. Ms. Kilner stated that she was aware of comments received 3 years ago when the County proposed the site, however, FEMA has gone through the processes of due law and adhered to the Endangered Species Act and an opinion was given. The mitigation measures stated in the opinion will need to be met. Also, per the Environmental Policy Act, FEMA will accept the comments but if the project is implemented with the mitigation steps specified the project would be funded. Discussion ensued concerning the previous and potential public comments. Ms. Kilner stated that if the Board wants to see the comments she would forward a copy to them.

Commissioner Wilkinson stated concern for the property owners who are renting to others and getting subsidies that take away from the true resident owners. Discussion ensued on the renters issue. Ms. Kilner notes that FEMA requirements are only for homesteaded properties and that the law doesn't permit FEMA to go further.

Mr. Sheets asked if FEMA would provide a document showing the dates discussed and the things required to be forwarded by the KLWTD. Ms. Kilner stated that the draft September 10 document and cover letter provide this information. Dr. Straw stated that the tentative December 3, 2003 date could be committed to writing with the caveat that if a disaster arises it may be delayed.

Commissioner Brooks asked how much notice is given to the public prior to the meeting. Dr. Straw stated two weeks or approximately November 15, 2003 for a December 3, 2003 meeting. Ms. Kilner stated that she would give the board an opportunity to comment on the notice.

Chairman Tobin requested that the survey concerning shared driveway access from Chris Santee be added to a future agenda. Chairman Tobin stated that Mr. Santee would like direction on how this issue will be resolved.

Mrs. Doris Kendall of Key Largo asked if she could address the Board concerning the location of the proposed treatment plant. Chairman Tobin stated that the proposed site is at mile marker 100.5.

Chairman Tobin asked Mr. Dirk Smits to approach the Board at 4:35.

Chairman Tobin stated that no formal procedure was drafted on conducting the interviews but the manager suggested that qualification be discussed first and then costs second. Chairman Tobin stated that Mr. Smits had previously volunteered his rates, but the other candidates were not asked to do so.

Chairman Tobin suggested the Board rank the interviewees by preference and then discuss costs. Chairman Tobin asked the rest of the Board for their comments.

Commissioner Brooks assumed that the interviews would take place then after they depart there would be a discussion. The balance of the Board members agreed.

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Mr. Smits stated that he had previously forwarded his resume. The members of the Board stated that they had received it. Mr. Smits stated that he was a resident of Key Largo, the chair of the Florida Bar Grievance Committee and a volunteer mediator. Mr. Smits stated that he is a member of the San Pedro Catholic Parish. Mr. Smits is currently working with Vernis and Bowling P.A. as the manager with five associate attorneys under his supervision at the local office. His experience relevant to the KLWTD would be that he is a government practitioner with approximately half of his work relating to government as general counsel to the Mosquito Control Board, the Monroe County School Board and the Layton City Counsel. Mr. Smits noted that he has been requested to be legal counsel for the Monroe County Code Enforcement Office.

Mr. Terry Lewis excused himself from the meeting at 4:40 p.m. noting that if further assistance was required of him he would be available until 6:15 pm.

Mr. Ed Castle excused himself from the meeting at 4:40 p.m.

Mr. Smits stated that he is familiar with the Sunshine Law, public law, contract, ethics and Roberts Rules of Order. Mr. Smits showed the Board examples of the City of Layton new members handbooks and an introduction to the Sunshine Law and public records. He has great experience with the Sunshine Law and has responded to hundreds of public records requests. Mr. Smits stated that he is familiar with procurement law, bid protests, procurement methods and contracting for public entities and the bonding requirements for various projects. Mr. Smits summarized the details of the sunshine violation brought against him. Mr. Smits thanked the Board for their consideration.

Commissioner Bauman asked if Mr. Smits personally represents the government entities he named. Mr. Smits stated that he has contracted with them, they are regular clients and he is personally attending most of the meetings. If not Mr. Scott Black or Dennis Reich are his government associates. Commissioner Bauman asked if he would be attending the KLWTD meetings. Mr. Smits answered in the affirmative.

Commissioner Beaty asked how his firm was selected for the position on the Mosquito Board. Mr. Smits stated that he answered an ad in the paper and then interviewed. Commissioner Beaty asked how many hours a month he worked for the mosquito board on a monthly basis. Mr. Smits stated that it fluctuates but on average outside of the meetings 8 -10 hours a month.

Commissioner Brooks asked about the affiliate offices in Florida and if there was a mechanism in place to avoid travel to Tallahassee if business would need to be done there. Mr. Smits stated that he had contacts in Tallahassee to assist with getting things done and to save recourses. Commissioner Brooks asked if Mr. Smits was aware of how the KLWTD Board has worked with at least two meetings a month that last four to five hours and in an effort to contain costs are looking for a local lawyer that will be economical to review the mundane items. However, if KLWTD gets into a legal issue, is he willing to go through the meeting and if things arise during the meeting be available to deal with them. Mr. Smits stated that he likes to hear the history of the Board to understand the Board's concerns and that comes from attending the meetings.

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Commissioner Brooks asked where Mr. Smits' offices were located. Mr. Smits stated at the 81 mile marker and that there is 24 hours a day, 7 days a week access to him at the quoted price.

Commissioner Wilkinson stated that the other members had asked questions that provided him with most of his answers. Commissioner Wilkinson asked if Mr. Smits had in-house legal resource available to him. Mr. Smits answered in the affirmative. Commissioner Wilkinson asked if Mr. Smits was a litigator and if he had any other wastewater districts as clients. Mr. Smits stated he did not directly but had experience with independent special districts. Commissioner Wilkinson asked about copying, typing and incidental expenses. Mr. Smits stated that these would be considered extra and will be charged for. Commissioner Wilkinson asked about extra meetings in the upper Keys. Mr. Smits stated that it was his understanding that the Board met monthly, however the retainer would cover the two regular meetings a month and the telephone access. Commissioner Wilkinson asked if the Board would be charged for routine matters. Mr. Smits stated that if research was required there would be a charge but for a logical follow up from a meeting there would not be a charge. Mr. Smits stated that at a minimum any tasked items would result in a budget being provided to the Board for approval. Commissioner Wilkinson asked if reviewing a route contract would incur a charge. Mr. Smits stated that it would be charged for. Resolution is a logical extension of the meeting per se as is a change order per Mr. Smits. Commissioner Wilkinson asked if review of the minutes is part of the meeting agenda. It is considered part of the meeting and not charged for per Mr. Smits. Commissioner Wilkinson asked how Mr. Smits would handle a potential conflict of interest. Mr. Smits stated he did not believe there were presently any conflicts and if any arise he must disclose them. Commissioner Wilkinson asked if a litigator was needed what would Mr. Smits charge. Mr. Smits stated that it would be \$95 an hour plus costs.

Chairman Tobin stated he was glad to see Mr. Smits being candid to say he was not an expert in wastewater issues. Chairman Tobin questioned the corporate structure of Vernis & Bowling. Chairman Tobin asked if Mr. Smits was familiar with Roberts Rules of Order and posed several questions to Mr. Smits. Chairman Tobin asked Mr. Smits' views on preparation of basic resolutions being done by staff. Mr. Smits stated that he would have no conflict with this. Chairman Tobin asked Mr. Smits about his appointment as a special prosecutor for Monroe County. Mr. Smits stated that presently he had only been assigned one case. However, if a conflict arises he would bow out.

Commissioner Brooks reaffirmed Mr. Smits' quoted price of \$95 an hour with a \$400 per month retainer for meetings, phone calls and logically connected items like the meeting minutes and agenda. Mr. Smits confirmed the information. Chairman Tobin asked how emails would be handled. Mr. Smits stated that he could not be used as a conduit to the members but simple questions asked as one-way communication is okay, not two-way through the lawyer. Commissioner Bauman asked if it should be a police activity to update all members simultaneously. Mr. Smits stated that if one member gets information all should get it to keep the same information in front of all members.

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Commissioner Brooks asked about the potential conflict issue. Mr. Smits stated that he has a screening method to avoid conflicts. Mr. Smits stated that as special prosecutor with the County they have many to choose from so he can avoid conflicts.

Chairman Tobin thanked and excused Mr. Smits at 5:20 p.m.

Ms. Doris Kendall asked to address the Board. Chairman Tobin would like to hold public comment until after the time specific interviews. Ms. Kendall requested that Mr. Smits be present for her comments. Chairman Tobin stated that it was a professional courtesy for the attorneys to interview individually. Discussion on public comment ensued. Chairman Tobin stated that comments would be taken later in the meeting.

Mr. James Lupino addressed the Board beginning at 5:25 p.m. Chairman Tobin asked indulgence for the delay due to the need to teleconference with the FDEP on a pressing issue. Mr. Lupino introduced himself and stated that he arrived in the Keys in 1989 and has practiced since 1977. He had been in house legal counsel for a cement and lumber firm and has been in private practice since 1980 and in his current partnership since 1995. He currently serves the boards of the Florida Board of Governors and is Chairman of Key Largo Chamber of Commerce. Mr. Lupino's primary area of practice is Business Law with specialty in contracts, construction, real estate and litigation.

Commissioner Wilkinson asked Mr. Lupino if he had experience with the Florida Public Government laws. Mr. Lupino stated he had very little direct experience but had land use experience and he is familiar with Monroe County Ordinances. Commissioner Wilkinson asked if he had legal resources available throughout the state. Mr. Lupino stated that as a member of Florida Board of Governors of the Bar Association he has contract with attorneys from all circuits of the state. Commissioner Wilkinson asked if Mr. Lupino would attend all meetings, which can be more than twice a month. Mr. Lupino stated that if something comes up he has back up. Mr. Lupino had anticipated that the Board would meet twice a month. Commissioner Wilkinson asked about fees. Mr.

Lupino stated he would work out a billing hourly rate and a retainer is negotiable. Commissioner Wilkinson asked how additional cost would be accounted for. Mr. Lupino stated that soft costs and hard costs are out of pocket in advance and that soft costs are computed at a fixed percentage. Mr. Lupino stated that attending additional meetings outside of the Keys are negotiable and travel and expenses would be reimbursable. Commissioner Wilkinson asked about routine matters resulting from the meeting. Mr. Lupino stated that these items would be at the hourly rate unless otherwise negotiated, as would he for drafting resolutions. Commissioner Wilkinson asked about litigation rates. Mr. Lupino stated there could be a sliding scale negotiated but if there is a lawsuit to be litigated it is a risk and would be charged at the full rate.

Commissioner Wilkinson asked Mr. Lupino's view on a board member having access to legal council. Mr. Lupino stated that routine telephone calls or email related to an agenda item would not necessarily be billed, but 4-5 phone calls a day from each member would be billable.

Commissioner Wilkinson asked if Mr. Lupino had any conflicts if representing KLWTD. Mr. Lupino stated there would potentially be one with Caffinetti and his stating it was for

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disclosure. Mr. Lupino stated that he is on the Wastewater Committee for the Chamber of Commerce so he may need to bow out of certain votes posed to the Chamber's Committee.

Commissioner Brooks asked if Mr. Lupino is willing to sit through 4-5 hour meetings. Mr. Lupino stated he would. Commissioner Brooks asked if Mr. Lupino would attend all meetings. Mr. Lupino stated that he would make every attempt but would provide a replacement if he were not available. Commissioner Brooks asked Mr. Lupino's philosophy on how a Board should operate concerning preparing a resolution. When and how should the attorney be involved and if the process should involve the manager. Mr. Lupino stated that it would be the Board's preference however, the attorney should be involved but the level of involvement determined by the Board. The manager would draft it and then legal counsel would review it.

Commissioner Bauman is concerned with the Sunshine Law issue and having government experience. Mr. Lupino stated that although government was not a primary area of his practice he doesn't anticipate there will be much difference but he is willing to learn. Commissioner Bauman asked if Mr. Lupino's learning curve would be considered off the clock and he desires to know all costs in advance. Mr. Lupino stated that he would provide an estimate prior to starting tasks for the Board's decision-making process. Commissioner Bauman asked how Mr. Lupino would distinguish a personal request for a Board request. Mr. Lupino stated that he and staff should follow official votes of the Board.

Commissioner Beaty asked if voted on directives would be the only directives followed. Mr. Lupino stated yes, that votes on directives would be best but he would use his discretion. Commissioner Beaty asked for Mr. Lupino's approximate fees. Mr. Lupino stated that his normal hourly rate is \$295 per hour but a proposed concept for attending regular meetings assuming he leaves his office at 3:30pm and is not home until 8:00pm would suggest \$100 an hour for attendance and for lightweight work perhaps ½ of his hourly rate, for travel he would reduce the hourly rate by a percentage and for litigation representation it would be charged at the full hourly rate.

Commissioner Beaty asked what Mr. Lupino would envision for most time spent working for the Board. Mr. Lupino stated that at present he would assume most of the time would be for attending meetings.

Chairman Tobin stated that his main concern is how to use the attorney's time efficiently and asked Mr. Lupino's views on interacting with the Board outside of the meetings. Mr. Lupino stated that if calls are often and would interfere with his normal business then something would need to be changed. Chairman Tobin asked his opinion on how to keep all members on the same page. Mr. Lupino stated that it is hard even if a summary of the conversation is forwarded to all with a one on one conversation it is almost impossible, however emails addressed to the attorney and copy to all and responses sent to all may be sufficient. Chairman Tobin asked if Mr. Lupino would feel comfortable in debates with Monroe County concerning loan agreements, ordinances and business with the DCA and FEMA along with meeting growth management plans and conditional use permitting for the construction of the plant. Mr. Lupino stated that

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he interacts with the BOCC on a regular basis and would feel comfortable dealing with the other government entities.

Mr. Sheets asked if Mr. Lupino was familiar with the requirements for reimbursement under Act 112. Mr. Lupino was familiar with them. Mr. Sheets asked about his representation of Metcalf and Eddy who was selected by the CCNA process to enter into a Standard Engineering Agreement and what his position would be if the contract comes before the Board. Mr. Lupino stated that he couldn't represent Metcalf and Eddy in front of the Board.

Chairman Tobin thanked Mr. Lupino and concluded the interview at 6:00 p.m.

Chairman Tobin recessed the meeting at 6:00 p.m.

Chairman Tobin reconvened at 6:13 p.m.

Chairman Tobin introduced Mr. Thomas Dillon at 6:15 p.m.

Mr. Dillon thanked the Board for opportunity to meet with them and then stated that as one of the newest attorneys in the Keys this was an opportunity he didn't expect, he looks forward to working with the Board. Mr. Dillon stated that he had provided his resume by email for consideration. Mr. Dillon stated that he had worked in public and private settings and had been involved with procurement, bidding and bid protests. Mr. Dillon had practiced in California and Alaska. Mr. Dillon stated that he believes he can make positive contributions to the KLWTD and that his philosophy is to assist his clients to achieve their objectives. He would concentrate on knowing the Board's goals and the individual member's goals as long as they are not illegal or immoral while doing them the most cost effective way. Mr. Dillon stated that he is not afraid to give business advice, along with legal advice, but knows the difference between the two. Mr. Dillon stated that most of what he has learned about the agency has been from newspaper articles. He would try to assist the Board in resolving the questions facing the board and he realizes the importance for a public agency to be cost efficient. Mr. Dillon stated that his proposed fee structure would be to charge \$100 per meeting and that prior to conducting excessive research he would determine if the Board as a whole has requested the task be done. Otherwise, an estimate of time required to complete a task would be presented to the Board for consideration. Mr. Dillon stated that he would familiarize himself with Florida Law at his own cost. Mr. Dillon also stated that he would charge \$95 an hour for the first 15 hours of work for the KLWTD and \$135 an hour for any hours over 15 a month and the contract would be at will. Mr. Dillon thanked the Board for their consideration and stated that he would be pleased to answer questions.

Commissioner Brooks asked how the number of hours for tasks would be determined. Mr. Dillon stated that it would be determined per task and he added that after talking with Chairman Tobin he had been informed that not many months have 15 hours of activity a month. Commissioner Brooks reconfirmed Mr. Dillon's prices as \$95 an hour for the first 15 hours per month, \$135 an hour for each additional hour and each meeting would be charged at a flat fee of \$100 per meeting. Mr. Dillon confirmed the information as correct.

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Commissioner Brooks asked if Mr. Dillon would be willing to sit for a 5-hour meeting for \$100 per meeting. Mr. Dillon answered in the affirmative. Commissioner Brooks asked if Mr. Dillon had worked with similar boards. Mr. Dillon stated that he worked with public agencies in Alaska using their Sunshine and Public Stewardship Laws and has been on the Parks and Recreation Board for the City of Anchorage. Also, for last five years he consulted with the Alaska Supreme Court on procurement issues by email but did not attend board meetings. Mr. Dillon stated that none of Alaska State agencies have board meetings.

Commissioner Brooks asked Mr. Dillon if he was aware of how stringent the Florida Sunshine Law was. Mr. Dillon stated Alaska's Sunshine Law was not as strict as Florida's and that what he has read on the Florida law it is very strict. Mr. Dillon stated that with the Board meeting twice a month it should avert trouble.

Commissioner Wilkinson asked about Mr. Dillon's experience with Florida law. Mr. Dillon stated that he is lacking except for the research he had done in preparation for today. Commissioner Wilkinson asked if he had access to law libraries for research. Mr. Dillon stated that he has signed up for Lexus and Nexus. Commissioner Wilkinson asked if he had experience with local codes. Mr. Dillon stated that unfortunately his information on specific local ordinances is limited he has planning and zoning experience from other communities. Mr. Dillon plans on attending all KLWTD meetings. Commissioner Wilkinson asked if Mr. Dillon had litigation experience. Mr. Dillon stated that he does, but he tries to keep clients out of litigation because it is costly. Commissioner Wilkinson asked how additional expenses would be charged. Mr. Dillon stated that they are considered overhead and if an unusual expenditure arose it would be stated in the task estimate, otherwise Mr. Dillon would absorb the expense.

Commissioner Wilkinson asked about charges for attending meetings or function in the upper Keys. Mr. Dillon stated that it would be part of the 15 hours at \$95 but not travel. Commissioner Wilkinson questioned travel to Miami. Mr. Dillon stated that for an overnight stay he would request payment for the expenses but not for travel.

Commissioner Wilkinson asked about mundane versus in depth research. Mr. Dillon stated that reasonable request would be at the general rate. Mr. Sheets asked if Mr. Dillon would expect the Board to pay for his learning curve. Mr. Dillon stated that the learning of the local laws and agencies would be on his time.

Commissioner Wilkinson asked his charge on special research such as reviewing or requesting an attorney general opinion. Mr. Dillon stated it would be \$95 for the first hour unless it was over the 15th hour.

Commissioner Wilkinson asked the charge for reviewing routine resolutions that are constructed during the meeting. Mr. Dillon stated that it is considered part of the meeting.

Commissioner Wilkinson asked the charge for preparing a contract for an outside party. Mr. Dillon stated that it would be \$95 for the first 15 hours and then \$135 above 15 hours per month as it would be for litigation, and routine emails and phone calls from key staff.

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Mr. Dillon stated that he would provide a monthly, itemized billing that would include the date, description and the time rounded to the nearest 10th of an hour.

Commissioner Bauman asked if Mr. Dillon would have a local office. Mr. Dillon stated within the next two weeks.

Commissioner Beaty asked Mr. Dillon about his procurement experience. Mr. Dillon stated that during his employment with Exxon he was responsible for all legal work concerning drilling in open seas. He had left Exxon in 1987 but when the Valdez spill occurred in 1989, Valdez asked him to help with the legalities of the clean up. HE also managed the litigation for the resulting difficulties. Mr. Dillon stated that during his employment with MACtel he was responsible for all procurement and union personnel issues and that during his five years with the State of Alaska he reviewed all bid protests and handled the review of all contracts for the DOT Central Region, he also litigated bid protest, administrative hearings, and negotiated contract disputes over changed conditions.

Chairman Tobin stated that Mr. Dillon had an impressive resume and an excellent background in contracts and procurement and that as a new board the KLWTD wrestles with how to conduct business and some policy issues like getting information to all members is becoming a major problem. Chairman Tobin believes Mr. Dillon would be in the position of giving advice on how the Board is to act. Mr. Dillon stated that the Board as an elected body of five acts as one and tasks should come to staff that way as the act of one Board and that individual request must be looked at by interpretation of the Sunshine Law.

Chairman Tobin posed a hypothetical situation to Mr. Dillon concerning one commissioner writing a letter to Governor Bush on official stationary and signed in an official capacity. Mr. Dillon stated that unless a policy is in place covering the situation he would like to discuss the issue in front of the entire Board because he doesn't want to become an instrument of conflict and these type issues should be addressed prior to action and a policy in place that states that any individual using the name of the Board in an official capacity only if it represents the consensus of the Board.

Chairman Tobin asked Mr. Dillon how working for the KLWTD would fit into his professional practice. Mr. Dillon stated that he had no interest in padding hours to attain a set income and that when he relocated to the Keys he wanted to use his experience to teach and to consult with other lawyers concerning construction, procurement law and he would like not to work 40 hours a week.

Mr. Sheets asked if the \$100 charge per meeting would include agenda review and review of the minutes. Mr. Dillon stated that it would. Mr. Sheets asked if Mr. Dillon would consider negotiating a retainer with a fixed fee. Mr. Dillon stated that he would consider it.

Commissioner Brooks asked if a detailed invoice could be provided with billing by specific task. Mr. Dillon stated that he has a billing program called Time Slips and it has flexibility.

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Commissioner Wilkinson stated he doesn't like being told things can't be done he likes to be given information on how things can be done. Mr. Dillon noted the objective on his resume "To help find and implement creative solution to complex problems." Commissioner Wilkinson stated that he doesn't want to have his first amendment rights infringed on. Mr. Dillon stated that he believes the citizens have elected the individuals to office, but to work as a Board it is appropriate for some individual actions and requests from individual members (unless the policy of Board suggests it) and it is a rare occurrence and to control cost and stewardship of public funds to have a majority of the Board assign tasks.

Discussion ensued on the use of an attorney and how the Board should access the attorney. Mr. Dillon stated that he would be uncomfortable being placed in a position for individual consultations with the attorney and there should be parameters set.

Chairman Tobin requested that Mr. Dillon forward samples of his opinions. Mr. Dillon stated that he would forward them as soon as possible. Chairman Tobin concluded the interview at 7:15 p.m.

D. Public Comment

Ms. Doris Kendall addressed the Board. She stated that she was glad she heard Mr. Dillon speak and that she had come to speak on behalf of Mr. Smits. Ms. Kendall believes that last year too much money was spent in legal fees and is glad to see other solutions being looked at and that cost is important. She believes the Board should have meetings with an attorney present for questions and answers.

There was no further public comment.

Chairman Tobin asked for discussion on the legal counsel selection. Commissioner Brooks stated that if the process of elimination were used he would be comfortable with a country type lawyer and that he came in favoring Mr. Smits and his experience. Commissioner Brooks doesn't believe working would lower legal costs with Mr. Lupino. Commissioner Brooks was very well impressed with Mr. Dillon and his ability to communicate with the Board. Commissioner Brooks ranked the candidates as Mr. Smits first, Mr. Dillon second and Mr. Lupino third.

Commissioner Wilkinson stated that Mr. Smits is experienced in the Keys and Mr. Dillon is great but he has concerns that the public would need to pay his learning curve. Commissioner Brooks ranked the candidates as Mr. Smits first, Mr. Dillon second and Mr. Lupino third.

Commissioner Bauman thanked Ms. Kendall for her input. Commissioner Bauman believes that Mr. Smits has the experience but did not answer questions directly and that Mr. Lupino too busy and more expensive and should not be considered further. Commissioner Bauman believes that although Mr. Dillon does not have Keys experience that Alaska had similarities. Commissioner Bauman ranked the candidates as Mr. Dillon first, Mr. Smits second and Mr. Lupino third.

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Commissioner Beaty agreed with all comments made concerning Mr. Lupino and that the hourly rate was excessive. He also got the feeling that KLWTD wasn't going to be his main client and although very skilled as a litigator he is not the correct fit for the KLWTD at this time. Commissioner Beaty stated that he was impressed with Mr. Dillon and as new a sole practitioner KLWTD would be his main client. Mr. Dillon's rates are attractive and his experience very extensive. Also, Mr. Dillon answered the Board questions point blank. However, his inexperience in the Keys causes concern. Commissioner Beaty ranked the candidates as Mr. Smits first, Mr. Dillon second and Mr. Lupino third.

Chairman Tobin ranked the candidates as Mr. Dillon first; Mr. Smits and Mr. Lupino tied at second. Chairman Tobin is concerned with the potential conflict of interest with Mr. Smits as a County Prosecutor and he is not comfortable with the political issues involved with his working with the school board. Discussion ensued on the potential conflict of interest. Chairman Tobin stated that Mr. Dillon should be able to get up to speed on Florida law with the tape series published by the Florida Bar.

Chairman Tobin asked the Board if they wished to vote or postpone action until the next meeting.

Commissioner Wilkinson made a motion to select Mr. Dirk Smits as the KLWTD attorney. Commissioner Brooks seconded the motion. Chairman Tobin asked for further discussion. Commission Bauman comments that concerning Mr. Dillon's learning curve that if he has passed the bar and knows the law that learning the local agencies by attending various meetings to learn the players and by reviewing the interlocal agreements would provide enough history. Commissioner Beaty is concerned with how the public would perceive hiring someone not established in the area. Chairman Tobin believes that although new to the area, Mr. Dillon is local because he bought a house and has passed the bar. Discussion ensued on what constitutes being a local and how it would be perceived to hire someone who is not considered one. Chairman Tobin stated that the opportunity to hire a mature and experienced attorney should be taken advantage of and he would like to see the Board give Mr. Dillon a chance. Chairman Tobin stated concern with the KLWTD sending Mr. Smits as representative to appear in front of the BOCC. Discussion ensued on Mr. Smits possible conflicts of interest and his ability to represent multiple jurisdictions. Chairman Tobin argued that Mr. Smits was a Monroe County Prosecuting Attorney for the Code Enforcement Office and he believes that it would cause bad press. At the conclusion of the discussion Commissioner Beaty stated that he was inclined to change his ranking to consider Mr. Dillon first, Mr. Smits second and Mr. Lupino third. Chairman Tobin called for a roll call vote.

Commissioner Bauman	No
Commissioner Beaty	No
Commissioner Brooks	Yes
Commissioner Wilkinson	Yes
Chairman Tobin	No

The motion failed.

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Commissioner Bauman made a motion to start negotiations with Thomas Dillon as Board Attorney. Commissioner Beaty seconded the motion. Chairman Tobin asked if there were any further discussion. Commissioner Brooks asked what the conditions of the contract would be. Commissioner Bauman requested that the manager be directed to draft the document. Mr. Sheets stated that no matter who is chosen a contract hammered out by the team, which should consist of a Board member along with the manager and with staff assistance with a scope defined and agreed to by the Board. The terms can be set for the purpose of negotiations and the candidate could be asked for a retainer for certain services and a fixed fee similar to the contract with the manager. Commissioner Brooks suggested negotiating both and bringing back both offers. Chairman Tobin requested that an "Option A" and "Option B" be presented. Commissioner Brooks stated that if the motion passed a member of the Board should be selected to work with the manager. Chairman Tobin asked for any further discussion. There being none he called for a roll call vote.

Commissioner Bauman	YES
Commissioner Beaty	YES
Commissioner Brooks	YES
Commissioner Wilkinson	NO
Chairman Tobin	YES

The motion carried.

Commissioner Brooks made a motion to appoint a member of the Board to the negotiation team. The Chairman stated that he would like to appoint Commissioner Brooks. The motion failed due to lack of a second.

Commissioner Beaty motioned to appoint Commissioner Brooks to the negotiation team. Chairman Tobin seconded the motion. With no further discussion the motion was unanimously approved.

E. Additions, Deletions or Corrections to the Agenda

F. Minutes – Draft August 13, 2003; Draft August 27, 2003; Draft Sept. 3, 2003;
Draft Sept. 17, 2003

SEE BELOW

G. Local Legal Counsel Interviews

SEE ABOVE

1. 4:00 p.m. Mr. Dirk M. Smits
2. 5:00 p.m. Mr. James Lupino
3. 6:00 p.m. Mr. Thomas Dillon

H. Action Items

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1. Approval of Resolution 2003-20 to Provide Copies of KLWTD Documents to the Key Largo Public Library

Commissioner Brooks requested that the resolution be reworded to include that the copy would be sent to the Library at the same time as it is to be provided to the Board. Discussion ensued on the process to be used for delivery.

Commissioner Brooks made a motion to approve the resolution as stated. Commissioner Bauman seconded the motion. All were in favor and the motion was unanimously approved.

2. Approval of the October 8, 2003 Payments Pending List

Commissioner Brooks stated that the Weiler invoices should be itemized and time spent on activities given even when billed at a flat rate. Commissioner Bauman asked if a status on payments and what funds are available in the bank could be provided. Mr. Sheets stated that the year-to-dates would start next fiscal year. Mr. Sheets stated that items aren't on the payment list unless there is cash to cover the payments.

Commissioner Bauman stated that the financial status had been requested previously and quarterly would be sufficient also, the issue on Weiler and GSG fixed fee contract with set monthly fees should include time sheets and that although they are not a requirement or as a condition of payment as a policy issue and for monitoring they should be included. Mr. Sheets stated that the information would be included with future invoices. Chairman Tobin stated that the Board needs to know what the staff is doing. Chairman Tobin asked if it was the consensus of the Board that all vendors including flat fee contracts provide enough detail to know what the staff is doing. Commissioner Wilkinson stated that it needs to be placed into the policy. Commissioner Brooks believes that getting the information would give the Board a better idea on what has transpired between meetings.

Mr. Dirk Smits returned to the meeting at 8:30 p.m.

Chairman Tobin informed Mr. Smits that after lively debate Mr. Thomas Dillon was chosen to begin negotiations with. Mr. Smits thanked the Board for the opportunity to interview.

Chairman Tobin asked for any further comments on the payment pending list.

Commissioner Bauman motioned to approve the payment pending list. Commissioner Wilkinson seconded the motion. All were in favor and the motion was unanimously approved.

I. General Manager's Report

1. Status Report on the FEMA Environmental Assessment
 - a. Low and Very-low Income Assistance Program
 - b. Site Mitigation

Mr. Sheets stated that most of the information was covered in the 4:00 p.m. conference call and that he would bring back the low-income implementation plan for Board

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consideration. Mr. Sheets stated that nothing is required prior to the public hearing for site mitigation but there needs to be an understanding of the cost impact for the replacement of what is removed by construction. Chairman Tobin stated that a decision on the conservation easement may be necessary and that a packet of information from Mark Rush had been received. Chairman Tobin also stated that a letter from Fish and Wildlife requesting a deed restriction should be looked at carefully. Mr. Sheets was directed to discuss it with Tim McGarity and George Garrett.

2. Discussion for possible action Proposed GSG and WEC Scope of Service Change
 - a. KLWTD Work Authorization WEC 03-01 (Amendment 1) with Weiler Engineering Corporation for the KLTV Project
 - b. KLWTD Work Authorization WEC 03-02 (Amendment 2) with Weiler Engineering Corporation for the KLP Project
 - c. KLWTD Work Authorization GSG 03-01 (Amendment 1) with Government Services Group, Inc. for the KLP & KLTV Projects

Mr. Sheets stated that the amended work authorizations were drafted at the direction of the Board as described in the memorandums that were provided. The most significant changes were to include Mr. Charles Fishburn as a full time employee of GSG who would be conducting the KLWTD project inspection service.

Mr. Sheets stated that at the special meeting to be held on the 17th of October would address the proposed change order for Haskell on the initial design phase.

Chairman Tobin asked the manager for an explanation of a fixed fee not-to-exceed option and a time and materials not-to-exceed option. Discussion ensued on the two options. Chairman Tobin asked that if a not-to-exceed option was used if less hours are used would KLWTD be charged a flat fee. Mr. Sheets stated that with a time and materials option when the not-to-exceed amount is reached work on the project would stop and the Board would be asked for additional funds to complete the work. With a fixed fee (Option B) the fee is the same no matter if 3 hours a month are worked or 20 hours it can involve risks but under no circumstance would the Board be requested for additional funds.

Chairman Tobin expressed concern and stated that he was unhappy with the email agreement between himself and Mr. Sheets. Discussion ensued. Mr. Sheets stated that he would submit to the Board as district manager a report that will show that GSG staff has given the Board many hours of service for the flat fee being received.

Chairman Tobin stated that he would be reviewing the tapes of the meetings and the email communications concerning this issue.

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Mr. Sheets stated that the discussion on procedures could be discussed at present or continued.

Mr. Sheets reviewed the presentation outline for the special meeting to be held on October 17, 2003 with estimated time for each topic and the order of the presentation.

Commissioners Bauman and Wilkinson believe the secondary treatment process selection should be made on the 17th of October.

3. Other Items

There were no additional general manager items.

J. Legal Counsel's Report

There were no legal counsel items.

K. Engineer's Report

There were no engineer's items.

L. Commissioner's Items

SEE ABOVE

M. Meeting Adjournment

Commissioner Bauman made a motion to adjourn the meeting and Commissioner Wilkinson seconded the motion.

Chairman Tobin adjourned the meeting at 9:00 p.m.

KLWTD Board Meeting December 3, 2003

Item F – 1

Selection of a Secondary Treatment Process

**(Please note that information
concerning this item will be provided
under tab H-1)**

**KLWTD Board Meeting
December 3, 2003**

Item F – 2

**KLWTD Work Authorization
WEC 04-01 Calusa Campground
Investigation**

WORK AUTHORIZATION NO. WEC 04-01

a

Professional Services Agreement Between the

Key Largo Wastewater Treatment District (KLWTD),
a legal entity and public body created by
Chapter 02-337, Laws of Florida, 2003

and

Weiler Engineering Corporation, Inc.

A. SCOPE OF SERVICE

Calusa Campground Conceptual Report

Pursuant to the request by the Key Largo Wastewater Treatment District Board, The Weiler Engineering Corporation (WEC) offers the following proposal to provide professional services for research of the feasibility of inclusion of Calusa Campground in the design of the Key Largo Park and Key Largo Trailer Village sewage collection system. This proposal is prepared for the Key Largo Wastewater Treatment District (hereinafter referred to as "KLWTD").

Our general understanding is that the project consists of the following components: Gather data regarding the condition and characteristics of the existing wastewater collection, transmission and treatment systems; Assess the level of Inflow and Infiltration into the existing system; Estimate the flows and loadings to be expected from the campground; Provide a conceptual layout of the system needed to connect the Campground to the KLP and KLTV collection systems; Develop an order of magnitude cost for construction

DESCRIPTION OF SERVICES

DATA ACQUISITION

WEC will gather available records on current flows and influent characteristics from the FDEP record and will obtain water use records from the FCAA. FDEP staff will be interviewed as to their assessment of the condition of the wastewater system components. One or more site visits will be conducted. These will entail physical inspection of existing components as well as interviews with the Campground maintenance and management and the wastewater treatment plant operator. A physical count of the units on site will be made. A site plan and survey will be obtained from the owner, if available. WEC will obtain and, with the assistance of the KLWTD Attorney, review available information pertaining to condominium organizational documents and bylaws, common and exclusive use areas, dedicated road and sewer easements, and other data that might reasonably be expected to affect the design of facilities needed to connect to the District's planned system.

DATA EVALUATION

Wastewater flows reported to FDEP will be compared with water consumption records to evaluate the level of I&I. Influent flow and loading characteristics will be determined and may be adjusted to correct for the effects of any dilution due to I&I. The practicality of using the existing infrastructure will be assessed based on the available information. A conceptual layout of the possible means of connection of the campground to the KLP and KLTV collection systems. An order of magnitude cost for construction for each of the possible means of connection will be produced.

REPORT AND RECOMMENDATIONS

A report of the conditions, including a summary of the data collected will be prepared. Scaled aerial photographs with conceptual layouts of the different options available for connection of the campground will be produced. (The conceptual layouts will be sufficient for order of magnitude cost estimates, but are not intended to be design documents) Total order of magnitude costs, costs per RV site and costs per EDU will be produced and tabulated. Recommendations of the best means of connection and of replacement or rehabilitation of the existing campground infrastructure will be made.

B. PROJECT COST

\$7,455.00

C. PROJECT SCHEDULE

Work to begin immediately, completion date 12/3/03

D. NOTICE/PROJECT MANAGER OF CONSULTANT

(WEC, Inc.)

Approved as to form:

Thomas Dillon, Board Attorney

Charles L. Sweat, Director of Operations

Gary Bauman, Chairman
KLWTD
Post Office Box 491
Key Largo, FL 33037

Robert E. Sheets, General Manager

Certification that Sufficient Funds are Available:

David R. Miles
Chief Financial Officer

Cris Beaty
KLWTD Secretary

Dated this ____ day of _____, 2003.

KLWTD Board Meeting December 3, 2003

Item F – 3

Action on the Line of Credit

**(Please note that due to the response
time provided to the submitting
financial institutions this information
will not be available until
December 3, 2003)**

**KLWTD Board Meeting
December 3, 2003**

Item F – 4

Approval of Resolution 2003-22

A RESOLUTION OF THE KEY LARGO WASTEWATER TREATMENT DISTRICT TO FACILITATE AND ENCOURAGE EFFICIENT AND EFFECTIVE COMMUNICATIONS BETWEEN THE BOARD AND THE GENERAL MANAGER

WHEREAS, The Key Largo Wastewater Treatment District Board of Commissioners desires to facilitate and encourage efficient and effective communication between the Board of Commissioners and the General Manager;

WHEREAS, The Board of Commissioners desires a resolution the outlines the basic protocol of the exchange of information between the General Manager and the Board of Commissioners;

NOW, THEREFORE BE IT RESOLVED BY THE BOARD OF COMMISSIONERS OF THE KEY LARGO WASTEWATER TRTREATMENT DISTRICT:

1. When responding to individual Board member's request for information the General Manager will copy all Board members by letter or email.
2. In addition, the General Manager will keep the Board apprised as to the status of events concerning major projects or issues.
3. The General Manger will exercise professional judgment to insure that all Board Members receive the same information in a timely manner on all relevant Board issues.

PASSED AND ADOPTED this _____ day of _____, 2003.

KEY LARGO WASTEWATER TREATMENT DISTRICT GOVERNING BOARD

Chair, Gary Bauman

Secretary, Cris Beaty

Approved as to legal form:

Thomas M. Dillon, Board Attorney

KLWTD Board Meeting December 3, 2003

Item F – 5

**Monroe County Land Transfer
Restrictions to MM 100.5 WWTP Site**
(Please note that information concerning
this action item is included under tab H 2)

**KLWTD Board Meeting
December 3, 2003**

Item G – 2

**KLWTD Board Meeting Schedule
December 2003 – April 2003**

KLWTD Calendar

December

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
	1	2	3 Regular Meeting 3pm Public Library (FEMA at 6:30pm)	4	5	6
7	8	9	10	11	12	13
14	15	16	17 Regular Meeting 5pm Civic Center	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

2003

KLWTD Calendar

January

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
				1	2	3
4	5	6	7 Regular Meeting 5pm Civic Center	8	9	10
11	12	13	14	15	16	17
18	19	20	21 Regular Meeting 5pm Civic Center	22 **BOCC meets the 21 st and 22 nd Harvey Government Center	23	24
25	26	27	28	29	30	31

2004

KLWTD Calendar

February

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
1	2	3	4 Regular Meeting 5pm Civic Center	5	6	7
8	9	10	11	12	13	14
15	16	17	18 Regular Meeting 5pm Civic Center	19 **BOCC meets 18 th and 19 th Key Largo	20	21
22	23	24	25	26	27	28
29						

2004

KLWTD Calendar

March

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
	1	2	3 Regular Meeting 5pm Civic Center	4	5	6
7	8	9	10	11	12	13
14	15	16	17 Regular Meeting 5pm Civic Center	18 **BOCC meeting 17 th and 18 th Marathon	19	20
21	22	23	24	25	26	27
28	29	30	31			

2004

KLWTD Calendar

April

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
				1	2	3
4	5	6	7 Regular Meeting 5 pm Civic Center	8	9	10
11	12	13	14	15	16	17
18	19	20	21 Regular Meeting 5 pm Civic Center	22 **BOCC meeting 21 st and 22 nd in Harvey Government Center	23	24
25	26	27	28	29	30	

2004

MEMORANDUM

TO: Mayor Nelson and Commissioners
County Attorney
Clerk of Court
Sheriff Department
Tax Collector

Division Directors
Department Heads
Land Authority
Housing Authority
TDC

FROM: Debbie Frederick
Aide to the County Administrator

SUBJECT: 2004 BOCC Meeting Dates

DATE: November 24, 2003

<u>MEETING DATES</u>	<u>AGENDA DEADLINE</u>	<u>LOCATION</u>
1/21/04 - 1/22/04	1/6/04	Harvey Government Center
2/18/04 - 2/19/04	2/3/04	Key Largo Library
3/17/04 - 3/18/04	3/2/04	Marathon Government Center
4/21/04 - 4/22/04	4/6/04	Harvey Government Center
5/19/04 - 5/20/04	5/4/04	Key Largo Library
6/16/04 - 6/17/04	6/1/04	Marathon Government Center
7/14/04 - 7/15/04	6/29/04	Harvey Government Center
8/18/04 - 8/19/04	8/3/04	Key Largo Library
9/15/04 - 9/16/04	8/31/04	Marathon Government Center
10/20/04 - 10/21/04	10/5/04	Harvey Government Center
11/17/04 - 11/18/04	11/2/04	Key Largo Library
12/15/04 - 12/16/04	11/30/04	Marathon Government Center

All meetings in all areas begin at 9:00 a.m.
(July meeting is the second week of the month.)

Key Largo Library	Marathon Gov't Center	Harvey Gov't Center
Tradewinds Shopping Center	2798 Overseas Highway	1200 Truman Ave.
101485 Overseas Highway	Mile Marker 50	Key West
Mile Marker 101		

Approved at the November 19, 2003 BOCC meeting.

KLWTD Board Meeting December 3, 2003

Item H - 1

**Report on Fluidyne warranty and
PES/Randazza warranty**

Memo

To: Key Largo Wastewater Treatment District
From: Thomas M. Dillon
CC: None
Date: 11/26/2003
Re: Warranties

Note: This memorandum constitutes attorney work product and attorney communications.

This is the status of warranty discussions.

Documents

I have submitted to Nos Espot and Peter Kinsley, warranty forms for Fluidyne (Attachment 1) and Purestream/Randazza (Attachment 2).

I do not have written confirmation that Fluidyne will accept the warranty form. However, I understand from Mr. Kinsley that Fluidyne will do so.

I have a written response from Mr. Espot, confirming that Purestream and Randazza will accept the warranty form, for the most part. (Attachment 3).

Comparison

The two warranties are essentially similar. However, Purestream/Randazza has promised to provide more training than Fluidyne will provide under the contract. I understand that Fluidyne will provide about 30 days of operator training, and presumably such additional training as will be required to operate the plant in order to meet the requirements for final acceptance. I understand that Purestream/Randazza will provide training for five years.

Bonding

The bonding or other security to be provided for these warranties has not been determined. Mr. Kinsley advises that Haskell will certainly provide bonding for performance and payment under its design-build contract for a period of one year. He asked whether the District would be willing to purchase bonding at additional cost for a longer period. I have requested that he obtain a quote for extended bonding, and he advised that he will do so.

Note that suppliers of equipment do not normally provide bonding as security for their performance. They usually provide the equipment and are paid after it is received. It is not clear whether a market exists in which bonding can be obtained to satisfy the District's desire for security for the extended warranty obligations, because it is unlikely that the suppliers have a bonding history. In any case, I understand Haskell's position to be that any bonding over and above its obligations under the design-build agreement will be for the District's

account. Once Haskell provides the bonding cost, the District will be able to make a reasonable decision about security.

If bonding is not available, a solution might be for the District to require the supplier to supply an irrevocable letter of credit or a cash deposit in an interest-bearing account. The amount should be adequate to secure compliance with the second year of the manufacturer's warranty, perhaps equal to 50% of the cost of the equipment actually supplied. For the extended period of technical support and training, the amount of security should be substantially less, and should be based on the estimated cost to obtain substitute performance. I would think that \$15,000 should be sufficient.

In any case, if the form and amount of security is not capable of being determined by December 3, I recommend that the District select a process at that meeting and defer the security decision until such time as the cost of security can be determined.

Item H - 1

Attachment 1

WHEREAS, effective June 25, 2003, The Haskell Company ("Haskell") and the Key Largo Wastewater Treatment District ("District") entered into a written Design-Build Agreement for construction of certain wastewater treatment facilities ("Project") located at Key Largo, Florida, and

WHEREAS, the District entered into that agreement in reliance upon, among other things, the representation by Haskell that it was offering an additional 12 months of warranty on the Fluidyne Corporation ("Fluidyne") SBR secondary treatment process equipment at no additional cost to the District, and

WHEREAS, the parties intend by this writing to memorialize that additional warranty on the part of Fluidyne,

NOW, THEREFORE, in consideration of the premises and in further consideration of the promises below, Fluidyne hereby warrants to the District as follows:

1. Fluidyne warrants that all materials and equipment provided by Fluidyne ("Fluidyne materials and equipment") to Haskell and the District in connection with the Design-Build Agreement will be new unless otherwise specified, of good quality, in conformance with the Design-Build Agreement, and free from defective workmanship and materials.
2. Fluidyne warrants that it will, at its option, commence and diligently prosecute activities to repair or replace, within a reasonable time period, but not to exceed ten calendar days after written notice from the District, and at Fluidyne's expense, any and all Fluidyne materials or equipment that fail due to faulty materials or manufacture.
3. Fluidyne warrants further that if Fluidyne equipment fails to perform in accordance with the requirements of the performance criteria defined in Exhibit D of the Design-Build Agreement as a result of defective Fluidyne materials or equipment or because of the design of the Fluidyne SBR secondary treatment process equipment, Fluidyne will, within a reasonable time period, but not to exceed ten calendar days after written notice from the District, and at Fluidyne's expense, commence and diligently prosecute all actions necessary, including redesign and reconstruction of the secondary treatment process equipment, and modification of operating procedures, to cause the Fluidyne equipment to perform in accordance with the requirements of the performance criteria defined in Exhibit D of the Design-Build Agreement, a copy of which is attached hereto and incorporated herein by this reference.
4. If Fluidyne fails to respond in accordance with Item 2 or Item 3 above after ten calendar days prior written notice from the District and If the District is reasonably required to undertake repair or replacement of the warranted materials or equipment due to exigent conditions, or to prevent harm to the Project or the public, Fluidyne will reimburse the District for the reasonable costs of such efforts within 30 days of the District providing notice to Fluidyne.
5. This warranty shall extend from and after the "Acceptance Date" as that term is defined in the Design-Build Agreement for a period of two years, but will not extend beyond September 1, 2007.

6. For purposes of this warranty, "failure" of the materials or equipment means that, due to a defect in the Fluidyne materials or equipment or due to a defect in their design or specified operating procedures, the Fluidyne equipment is, or becomes, incapable of meeting the Performance Standards set forth in Exhibit D to the Design-Build Agreement, which is incorporated herein by this reference.
7. The following are express conditions of this warranty:
 - a. That the sewage influent is substantially as characterized for the purpose of design of the SBR facility under the Design-Build Agreement and free of significant concentrations of material that can inhibit or adversely impact biological treatment processes; and
 - b. That the District has substantially complied with all of the operating instructions and maintenance requirements required for normal and proper operation and instructions communicated to the District by Haskell or Fluidyne under the Design-Build Agreement.
8. If the materials or equipment fail as a result of noncompliance with any of the express conditions of this warranty, as set out in the preceding paragraph, Fluidyne will, if the District so requests, promptly cause the failed materials or equipment to be repaired or replaced, but Fluidyne shall be entitled to compensation for the reasonable cost of repair or replacement.
9. Except for damage to the equipment caused by a condition described in Paragraphs 1 through 4, above, Fluidyne expressly disclaims responsibility for any damages caused by failure of the Fluidyne secondary treatment process equipment, including lost income to the District.
10. If the District or Fluidyne is required to retain an attorney to enforce any terms, conditions, or covenants of this warranty, or to remedy any breach, the prevailing party shall be entitled to recover the verifiable costs and fees of any enforcement proceedings, including, but not limited to, reasonable attorneys' fees (including charges for paralegals and others working under the direction or supervision of the party's attorney.)
11. The failure of the District or Fluidyne to enforce, at any time, any of the provisions of this warranty shall not be construed to be a waiver of any such provisions or of the right of either party thereafter to enforce them. No waiver shall be valid unless in writing and signed by the party against whom enforcement of a waiver is sought.
12. It is the intention of the parties that any and all actions or proceedings at law or in equity related to this warranty or to the Project or to any rights or any relationship between the parties arising therefrom shall be solely and exclusively initiated and maintained in State or Federal courts located in Monroe County, Florida. All other dispute resolution activities shall be held in Monroe County Florida. Dispute resolution under this warranty shall be conducted in accordance with Article 14 of the Design Build Agreement and in accordance with the following procedures: negotiations, mediation, and judicial resolution.
13. In addition to the foregoing warranty obligations, Fluidyne represents and warrants that it will provide advice, counsel, and technical support by telephone for a period of

not less than five years after the expiration of this warranty at no expense to the District.

14. In addition to the foregoing warranty obligations, Fluidyne represents and warrants that the Fluidyne materials and equipment shall meet all of the applicable requirements of all federal, state, and local agencies having jurisdiction over the Project, including without limitation, the Florida Department of Environmental Protection redundancy requirements for 183,000 gallons per day.
15. Fluidyne will provide, through Haskell, bonding to secure performance of its obligations under this warranty and payment for labor and materials to be supplied under this warranty.

[ADD SIGNATURE BLOCK FOR FLUIDYNE.]

Item H - 1

Attachment 2

WHEREAS, effective June 25, 2003, The Haskell Company ("Haskell") and the Key Largo Wastewater Treatment District ("District") entered into a written Design-Build Agreement for construction of certain wastewater treatment facilities ("Project") located at Key Largo, Florida, and

WHEREAS, PURESTREAM ES, L.L.C. ("PES") is a potential supplier of secondary treatment equipment, referred to herein as the USBF plant, and

WHEREAS Randazza Enterprises, Inc ("Randazza") is an authorized representative of PES, and

WHEREAS, PES and Randazza, for the purpose of inducing the District to select the USBF plant for the Project, desire to make additional warranty and service commitments for the benefit of the District, and

WHEREAS, the parties intend by this writing to memorialize the additional warranty and service commitments,

NOW, THEREFORE, in consideration of the premises and in further consideration of the promises below, PES and Randazza agree as follows:

1. PES and Randazza warrant that all materials and equipment provided by PES as part of the USBF plant to Haskell and the District in connection with the Design-Build Agreement will be new unless otherwise specified, of good quality, in conformance with the Design-Build Agreement, and free from defective workmanship and materials.
2. PES and Randazza warrant that they will repair or replace, without delay and at their expense, any and all USBF plant components that fail due to faulty materials or manufacture.
3. PES and Randazza warrant further that if the Project fails to perform in accordance with the requirements of the Design-Build Agreement as a result of defective PES materials or equipment or because of the design of the USBF plant, PES and Randazza will, without delay and at their expense, undertake all actions necessary, including redesign and reconstruction of the USBF plant, and modification of operating procedures, to cause the Project to perform in accordance with the requirements of the Design-Build Agreement as outlined in Schedule D of the Design-Build Agreement, a copy of which is attached hereto and incorporated herein by this reference.
4. If the District is reasonably required to undertake repair or replacement of the warranted materials or equipment due to exigent conditions, or to prevent harm to the Project or the public, PES and Randazza will reimburse the District for the reasonable costs of such efforts within 30 days of the District providing notice to PES or Randazza.
5. This warranty shall extend from and after the "Acceptance Date" as that term is defined in the Design-Build Agreement for a period of two years.
6. For purposes of this warranty, "failure" of the materials or equipment means that, due to a defect in the PES materials or equipment or due to a defect in their design or

specified operating procedures, the Project is, or becomes, incapable of meeting the Performance Standards set forth in Exhibit D to the Design-Build Agreement, which is incorporated herein by this reference.

7. The following are express conditions of this warranty:
 - a. That the sewage influent is substantially as characterized for the purpose of design of the USBF plant under the Design-Build Agreement; and
 - b. That the District has substantially complied with all of the operating instructions and maintenance requirements communicated to the District by PES or Randazza or Haskell under the Design-Build Agreement.
8. If the materials or equipment fail as a result of noncompliance with any of the express conditions of this warranty, as set out in the preceding paragraph, PES and Randazza will, if the District so requests, promptly cause the failed materials or equipment to be repaired or replaced, but shall be entitled to compensation for the reasonable cost of repair or replacement.
9. Except for damage to the Project caused by a condition described in Paragraphs 1 through 4, above, PES and Randazza expressly disclaim responsibility for any damages caused by failure of the USBF plant, including lost income to the District.
10. Randazza will provide Haskell with all the assistance needed during the construction phase of the USBF plant at no cost to Haskell.
11. Randazza will assume the full responsibility, at no cost to Haskell or the District, for the startup and training of District operators once the USBF plants #1, #2 and #3 have been completely installed and electrical power has been provided to the equipment.
12. Randazza will continue to provide on the job supervision and technical training/assistance to the District operators at no cost to the District for a period of five years after the startup of USBF plants #1, #2 and #3 during which period, the USBF Plants will have been demonstrated to perform in accordance with the requirements of the Design-Build Agreement. It is understood that plants #1, #2 and #3 can be tested to meet the Design Build Agreement by simply alternating the Influent flows to either of the plants at any time after startup of all three plants.
13. If the District or PES or Randazza is required to retain an attorney to enforce any terms, conditions, or covenants of this warranty, or to remedy any breach, the prevailing party shall be entitled to recover the verifiable costs and fees of any enforcement proceedings, including, but not limited to, reasonable attorneys' fees (including charges for paralegals and others working under the direction or supervision of the party's attorney.)
14. The failure of the District or PES or Randazza to enforce, at any time, any of the provisions of this warranty shall not be construed to be a waiver of any such provisions or of the right of either party thereafter to enforce them. No waiver shall be valid unless in writing and signed by the party against whom enforcement of a waiver is sought.
15. It is the intention of the parties that any and all actions or proceedings at law or in equity related to this warranty or to the Project or to any rights or any relationship

between the parties arising therefrom shall be solely and exclusively initiated and maintained in State or Federal courts located in Monroe County, Florida. All other dispute resolution activities shall be held in Monroe County Florida.

16. In addition to the foregoing warranty obligations, PES and Randazza represent and warrant that the PES materials and equipment shall meet all of the applicable requirements of all federal, state, and local agencies having jurisdiction over the Project, including without limitation, the Florida Department of Environmental Protection redundancy requirements for 183,000 gallons per day.
17. PES and Randazza will provide, through Haskell, bonding to secure performance of its obligations under this warranty and payment for labor and materials to be supplied under this warranty.

[ADD SIGNATURE BLOCKS FOR PES AND RANDAZZA.]

Item H - 1

Attachment 3

Faith Doyle

From: Thomas M. Dillon [thomasdillon@terranova.net]
Sent: Wednesday, November 26, 2003 2:50 PM
To: Faith Doyle
Subject: Fw: PES/Randazza Warranty

This is Attachment 3 to the warranty memo. Please include the message and the attached document. Tom

----- Original Message -----

From: BOOCZAR@aol.com
To: thomasdillon@terranova.net
Sent: Tuesday, November 25, 2003 2:20 PM
Subject: PES/Randazza Warranty

Hello Tom:

Attached please find the PES/Randazza Warranty you requested. Please find my responses/answers in Blue Ink.

Please confirm receipt of this attachement.

Best Regards

*Nos Espot, President, E-mail: booczar@aol.com
Randazza Enterprises, Inc.
8824 VanFleet Road
Riverview, Florida 33569
Tels: 813 677 0041, 813 677 3359 Cell: 813 310 7030
Fax: 813 677 0413*

WHEREAS, effective June 25, 2003, The Haskell Company ("Haskell") and the Key Largo Wastewater Treatment District ("District") entered into a written Design-Build Agreement for construction of certain wastewater treatment facilities ("Project") located at Key Largo, Florida, and

WHEREAS, PURESTREAM ES, L.L.C. ("PES") is a potential supplier of secondary treatment equipment, referred to herein as the USBF plant, and

WHEREAS Randazza Enterprises, Inc ("Randazza") is an authorized representative of PES, and

WHEREAS, PES and Randazza, for the purpose of inducing the District to select the USBF plant for the Project, desire to make additional warranty and service commitments for the benefit of the District, and

WHEREAS, the parties intend by this writing to memorialize the additional warranty and service commitments,

NOW, THEREFORE, in consideration of the premises and in further consideration of the promises below, PES and Randazza agree as follows:

1. PES and Randazza warrant that all materials and equipment provided by PES as part of the USBF plant to Haskell and the District in connection with the Design-Build Agreement will be new unless otherwise specified, of good quality, in conformance with the Design-Build Agreement, and free from defective workmanship and materials.
2. PES and Randazza warrant that they will repair or replace, without delay and at their expense, any and all USBF plant components that fail due to faulty materials or manufacture.
3. PES and Randazza warrant further that if the Project fails to perform in accordance with the requirements of the Design-Build Agreement as a result of defective PES materials or equipment or because of the design of the USBF plant, PES and Randazza will, without delay and at their expense, undertake all actions necessary, including redesign and reconstruction of the USBF plant, and modification of operating procedures, to cause the Project to perform in accordance with the requirements of the Design-Build Agreement as outlined in Schedule D of the Design-Build Agreement, a copy of which is attached hereto and incorporated herein by this reference. Accepted.
4. If the District is reasonably required to undertake repair or replacement of the warranted materials or equipment due to exigent conditions, or to prevent harm to the Project or the public, PES and Randazza will reimburse the District for the reasonable costs of such efforts within 30 days of the District providing notice to PES or Randazza.
5. This warranty shall extend from and after the "Acceptance Date" as that term is defined in the Design-Build Agreement for a period of two years.
6. For purposes of this warranty, "failure" of the materials or equipment means that, due to a defect in the PES materials or equipment or due to a defect in their design or

specified operating procedures, the Project is, or becomes, incapable of meeting the Performance Standards set forth in Exhibit D to the Design-Build Agreement, which is incorporated herein by this reference.

7. The following are express conditions of this warranty:
 - a. That the actual sewage influent is substantially as characterized for the purpose of design of the USBF plant under the Design-Build Agreement; and
 - b. That the District has substantially complied with all of the operating instructions and maintenance requirements communicated to the District by PES or Randazza or Haskell under the Design-Build Agreement.
8. If the materials or equipment fail as a result of noncompliance with any of the express conditions of this warranty, as set out in the preceding paragraph, PES and Randazza will, if the District so requests, promptly cause the failed materials or equipment to be repaired or replaced, but shall be entitled to compensation for the reasonable cost of repair or replacement.
9. Except for damage to the Project caused by a condition described in Paragraphs 1 through 4, above, PES and Randazza expressly disclaim responsibility for any damages caused by failure of the USBF plant, including lost income to the District.
10. Randazza will provide Haskell with all the assistance needed during the construction phase of the USBF plant at no cost to Haskell.
11. Randazza will assume the full responsibility, at no cost to Haskell or the District, for the startup and training of District operators once the USBF plants #1, #2 and #3 have been completely installed and electrical power has been provided to the equipment.
12. Randazza will continue to provide on the job supervision and technical training/assistance to the District operators at no cost to the District for a period of five years after the startup of USBF plants #1, #2 and #3 during which period, the USBF Plants will have been demonstrated to perform in accordance with the requirements of the Design-Build Agreement. It is understood that plants #1, #2 and #3 will be tested to meet the Design Build Agreement by simply alternating the Influent flows to either of the plants at any time after startup of all three plants in order to demonstrate their performance.
13. If the District or PES or Randazza is required to retain an attorney to enforce any terms, conditions, or covenants of this warranty, or to remedy any breach, the prevailing party shall be entitled to recover the verifiable costs and fees of any enforcement proceedings, including, but not limited to, reasonable attorneys' fees (including charges for paralegals and others working under the direction or supervision of the party's attorney.)
14. The failure of the District or PES or Randazza to enforce, at any time, any of the provisions of this warranty shall not be construed to be a waiver of any such provisions or of the right of either party thereafter to enforce them. No waiver shall be valid unless in writing and signed by the party against whom enforcement of a waiver is sought.

15. It is the intention of the parties that any and all actions or proceedings at law or in equity related to this warranty or to the Project or to any rights or any relationship between the parties arising therefrom shall be solely and exclusively initiated and maintained in State or Federal courts located in Monroe County, Florida. All other dispute resolution activities shall be held in Monroe County Florida.
16. In addition to the foregoing warranty obligations, PES and Randazza represent and warrant that the PES materials and equipment shall meet all of the applicable requirements of all federal, state, and local agencies having jurisdiction over the Project, including without limitation, the Florida Department of Environmental Protection redundancy requirements for 183,000 gallons per day. Accepted.
17. PES and Randazza will provide, through Haskell, bonding to secure performance of its obligations under this warranty and payment for labor and materials to be supplied under this warranty. To the best of my knowledge, Haskell, as the General Contractor has already included 1.5% in their "Agreement/Contract". If "Secure performance of its obligation under this warranty" refers to or implies "Bonding for the Process Performance," I don't believe I've ever heard of such a "Bonding". If there is such a "Bonding" I would certainly consider it.

[ADD SIGNATURE BLOCKS FOR PES AND RANDAZZA.]

**KLWTD Board Meeting
December 3, 2003**

Item H - 2

**Report on
Monroe County Land Transfer
(Restrictions to MM 100.5 WWTP Site)**

Memo

To: Key Largo Wastewater Treatment District
From: Thomas M. Dillon
CC: None
Date: 11/26/2003
Re: Monroe County land grant status report

Note: This memorandum constitutes attorney work product and attorney communications.

On November 19, I received from Mark Rosch of the Monroe County Land Authority a draft conveyance and grant of conservation easement covering the Mile Marker 100.5 land. (Attachment 1.)

The conservation easement had some words missing from Paragraph 9, and Mr. Rosch revised that paragraph and sent me a revised conservation easement on November 26. (Attachment 2.)

Meanwhile, on November 24, I had the documents distributed to KLWTD staff for review as to whether the constraints in the conservation easement would cause construction or operational problems. Brown & Caldwell expressed some concerns about the location and configuration of the buildable area, i.e., whether adequate access was provided from Atlantic Avenue, and whether some changes might be possible to reduce the complexity of access to the buildable area for pipelines. On that basis, I suggested a possible modification of the conservation easement to allow the buildable area to be reconfigured as design is developed. (Attachment 3.)

Mr. Rosch has incorporated my suggested provision into the conservation easement, which is attached as Attachment 4.

I recommend approval of the grant and conservation easement.

Item H - 2

Attachment 1

MONROE COUNTY LAND AUTHORITY

FACSIMILE TRANSMISSION

1200 Truman Avenue
Suite 207
Key West, FL 33040
Phone: (305) 295-5180
Fax: (305) 295-5181

TO:

Tom Dillon
852-1996

FROM:

Mark Rosch

DATE:

11/18/03

NUMBER OF PAGES:

MESSAGE:

- ① Excerpt from interlocal agreement (2 pages)
- ② 10/6/03 Letter to Andy Tobin - FYI - (1 page)
- ③ Monroe County resolution for December meeting (8 pages)
- ④ Give me a call once you've reviewed these documents.

Post-It® Fax Note	7671	Date	11/24	# of pages	12
To	Faith Doyle	From	Dillon		
Co./Dept.		Co.			
Phone #		Phone #	305-3046735		
Fax #	407-629-6863	Fax #	305-8532693		

305-833-2033
Kw
1 RECEIVED APR 29 2003

**INTERLOCAL AGREEMENT
RELATING TO THE TRANSITION OF WASTEWATER JURISDICTION AND
SERVICES FROM THE FLORIDA KEYS AQUEDUCT AUTHORITY TO THE KEY
LARGO WASTEWATER TREATMENT DISTRICT**

**BY AND BETWEEN
MONROE COUNTY,
THE FLORIDA KEYS AQUEDUCT AUTHORITY AND
THE KEY LARGO WASTEWATER TREATMENT DISTRICT**

ADOPTED February 26th, 2003

the land to the District, the County may utilize that portion of the land which is not being utilized by the District, if necessary, for non-structural purposes.

7. **\$250,425 Commitment for Operational Expenses.** The County agrees to provide \$250,425 as a grant, in addition to the \$100,000 loan already provided to the District, as set forth in the Interlocal Agreement attached hereto and marked as Exhibit G and described above. Specifically, the grant shall be utilized for design, engineering, legal and all related administrative tasks required for implementation of the Key Largo Trailer Village and Key Largo Park projects. The County will forward to the District twenty percent (20%) of the \$250,425, which is the amount of \$50,085, upon execution of this Agreement. Upon District submission to County of written request for additional sums from this \$250,425 commitment, based upon previous expenditure documentation submitted to the County, the County shall disburse additional reimbursements not to exceed the stated 20% (\$50,085).

8. The County agrees to consider adopting a **Municipal Services Taxing Unit ("MSTU")** for the District, pursuant to the District's Amended Resolution 2003-4, attached hereto and marked as composite Exhibit I. Pursuant to this Resolution, the District requested that the County establish an MSTU for the District, pursuant to section 125.01(1)(q), Florida Statutes, and requested a millage rate not-to-exceed .35. This item will be placed on the County Commission meeting agenda as a request for advertisement on February 19, 2003, and will be considered for adoption at the May 21, 2003 County Commission meeting, pursuant to the attached draft County Ordinance (attached hereto as composite Exhibit I).

B. The District is required to, and has in fact established a federally-insured account for the funds at a financial institution authorized by State law to receive deposits of public funds. The District must deposit the funds in said account, and account for all expenditures as required by Florida law and accepted government accounting standards.

C. **Transfer of Real Property.**

1. The County agrees to transfer the land known as the "Mile Marker 100.5" Parcel to the District within 90 days of execution of this Agreement for purposes of establishing a wastewater treatment plant. The parties agree that the District is obligated to meet all of the conditions contained within the U.S. Fish & Wildlife Service ("FWS") and FEMA documents, attached hereto and marked as Exhibits J and K, respectively.

2. The County will retain a conservation easement in accordance with Monroe County regulations on the portion of the property not intended for development.

D. **Affordability and Financing Obligations.**

1. FEMA requires that the County meet Environmental Justice standards relating to project affordability in order to receive FEMA funds for Key Largo Trailer Village.

2. The County believes that the Environmental Justice criteria will be necessary at a minimum throughout the County to provide grant funds to Low and Very Low Income homesteaded property owners and has adopted a policy in this regard, pursuant to



MONROE COUNTY LAND AUTHORITY

1200 TRUMAN AVENUE, SUITE 207 • KEY WEST, FLORIDA 33040
PHONE (305) 295-5180 • FAX (305) 295-5181

October 6, 2003

Mr. Andrew M. Tobin, Esquire
P.O. Box 620
Tavernier, FL 33070

Re: Documents Regarding MM 100.5 WWTP Site

Dear Andy:

Per your request, I am enclosing copies of the following documents regarding the BOCC's purchase of the wastewater treatment plant site at MM 100.5: deed, closing statements, title policy, survey, environmental site assessment, and BOCC Resolution 93-2002.

For information regarding clearing and use of the property, contact the Monroe County Growth Management Division.

Please call me if you have any questions regarding the enclosed documents.

Sincerely,

Mark J. Rosch
Executive Director

RESOLUTION NO. _____ -2003

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF MONROE COUNTY, FLORIDA AUTHORIZING CONVEYANCE OF REAL PROPERTY KNOWN AS THE "MILE MARKER 100.5" PARCEL TO THE KEY LARGO WASTEWATER TREATMENT DISTRICT AND ACCEPTING A CONSERVATION EASEMENT.

WHEREAS, Monroe County (hereinafter "County"), the Florida Keys Aqueduct Authority, and the Key Largo Wastewater Treatment District (hereinafter "District") entered into an Interlocal Agreement dated February 26, 2003; and

WHEREAS, Section 2.03 (C) of said Interlocal Agreement calls for the County to convey to the District the real property known as the "Mile Marker 100.5" parcel and to retain a conservation easement as required by the Monroe County Land Development Regulations on the open space associated with the proposed wastewater treatment facilities; now, therefore

BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MONROE COUNTY, FLORIDA:

Section 1. The County Mayor is hereby authorized to execute a deed conveying title to the "Mile Marker 100.5" parcel, more particularly described in Exhibit A, to the Key Largo Wastewater Treatment District.

Section 2. The County Mayor is also authorized to execute the conservation easement

shown as Exhibit B acknowledging the County's acceptance of said easement.

PASSED AND ADOPTED by the Board of County Commissioners of Monroe County,

Florida, at a regular meeting of said Board held on the _____ day of December, 2003.

Mayor Spehar

Mayor Pro Tem Nelson

Commissioner McCoy

Commissioner Neugent

Commissioner Rice

(SEAL)

Attest: DANNY L.KOLHAGE, Clerk

BOARD OF COUNTY COMMISSIONERS
OF MONROE COUNTY, FLORIDA

By _____
Deputy Clerk

By _____
Mayor/Chairperson

jdres

Exhibit A

Parcel A: All of Lot 31 and that portion of Lots 22 and 23 lying Southeast of old State Road 4A, MODEL LAND COMPANY, Section 28, Township 61 South, Range 39 East, according to the plat thereof, recorded in Plat Book 1, Page 68 of the Public Records of Monroe County, Florida.

AND

Parcel B: All that portion of Lot 30 of P.F. JENKINS PLAT made for MODEL LAND COMPANY as recorded in Plat Book 1, Page 68, of the Public Records of Monroe County, Florida, all lying in Section 28, Township 61 South, Range 39 East and Easterly of U.S. Highway 1.

THOMAS DISTRICT

Grant of **Exhibit B**

Conservation

Easement

THIS AGREEMENT is made this _____ day of _____, 20____ by and between the Key Largo Wastewater Treatment District, a special district created pursuant to House Bill 471, Chapter 2002-37, Laws of Florida, whose address is P.O. Box 491, Key Largo, Florida 33037, County of Monroe, State of Florida, (Grantor) and Monroe County, a political subdivision of the State of Florida, whose address is 1100 Simonton Street, Key West, Fl 33041 (Grantee).

The parties recite and declare:

The Grantor is the owner of certain real property commonly known as

the MM 100.5 Wastewater Treatment Plant Site (the servient estate),

more particularly described as follows: Parcel A: All of Lot 31 and that portion of Lots 22 and 23 lying Southeast of Old State Road 4A, MODEL LAND COMPANY, Section 28, Township 61 South, Range 39 East, according to the plat thereof, recorded in Plat Book 1, Page 68 of the Public Records of Monroe County, Florida and Parcel B: all that portion of Lot 30 of P.F. JENKINS PLAT made for MODEL LAND COMPANY as recorded in Plat Book 1, Page 68, of the Public Records of Monroe County, Florida, all lying in Section 28, Township 61 South, Range 39 East and Easterly of U.S. Highway 1.

The Grantor desires to develop the servient estate as (describe project):

a Wastewater Treatment Facility.

The servient estate contains (describe relevant natural features):

High Quality, High Elevation Tropical Hardwood Hammock.

The Grantee is a general purpose political subdivision of the State authorized and required to regulate and control the use of real property through land development regulations in order to protect the public health, safety and welfare. Sec. 9.5-336 of the Grantee's land development regulations requires that certain areas of the servient estate be retained as open space and preserved in their natural condition if the servient estate is to be developed as a Wastewater Treatment Facility.

The parties agree as follows:

1. Grant of easement.

Pursuant to that certain Interlocal Agreement dated February 26, 2003 between Grantor, Grantee, and the Florida Key Aqueduct Authority, the Grantor hereby grants to Grantee the easement described below.

2. Character of the easement and governing law.

This easement is a conservation easement under Sec. 704.06, Fla. Stat. and is to be governed by, construed and enforced in accordance with that statute and with the applicable laws of the State of Florida.

3. Location of the easement.

a. The conservation easement is located as follows:

All of that servient estate described above, less and except the 4.2 acre buildable area having the dimensions of 208 feet by 877 feet along the property's southern boundary.

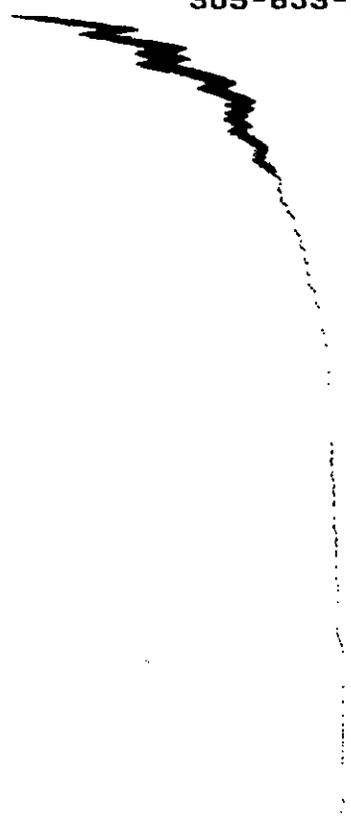
b. The location of the easement is also described in the diagram attached to this instrument as Exhibit "A" and, by reference, made a part of as fully and to the same effect as if set forth in this instrument in its entirety.

4. Restraints imposed by the Conservation Easement.

The conservation easement granted by this instrument imposes the following restrictions on the future use of the servient estate within the easement area:

a. No removal, trimming or pruning of trees, shrubs, or other vegetation (except non-native vegetation whose removal is authorized by the Grantee's biologist).

b. No acts that are detrimental to wildlife or wildlife habitat preservation.



.....
|
|
|

.....
|
|
|

c. No excavation, dredging, or removal of loam, peat gravel, soil, rock, or other material substances in such manner as to affect the surface.

d. No activities detrimental to drainage, flood control, water conservation, erosion control and soil conservation.

e. No dumping or placing of soil or other substance or material as landfill or dumping or placing of trash, waste, or unsightly or offensive materials.

5. Terms and persons bound.

This conservation easement is perpetual, runs with the land and is binding on all present and subsequent owners and mortgagees of the servient estate. Grantor represents that the mortgagee(s), if any, whose consent is attached hereto, is (are) the only mortgagee(s) having a security interest in the servient estate.

6. Entire Agreement.

This Agreement constitutes the entire agreement between the parties and any prior understanding or representation of any kind preceding the date of this agreement is not binding upon either party except to the extent incorporated in this Agreement.

7. Modification of Agreement.

Any modification of this Agreement or additional obligation assumed by either party in connection with this Agreement is binding only if evidenced in writing and signed by an authorized representative of each party and by any mortgagee.

8. Attorney's fees.

In the event of any controversy, claim or dispute arising under this instrument, the prevailing party is entitled to recover reasonable attorney's fees and costs.

9. Entry of Grantee's representative on the servient estate.

The Grantee's representative on the servient estate, after first furnishing the Grantor no less than 24 hours notice for the purposes of inspection to determine the Grantor's compliance with this Agreement.

10. Notice.

Any notice provided for or concerning this Agreement must be in writing and is sufficiently given when sent by certified or registered mail, or via an equivalent service furnished by a private carrier, to the respective address of each party as set forth at the beginning of this Agreement.

IN WITNESS WHEREOF, the parties hereto have set their hands and seals the day and year first above written.

(SEAL)
ATTEST: DANNY L. KOLHAGE, CLERK

BOARD OF COUNTY COMMISSIONERS
OF MONROE COUNTY, FLORIDA (Grantee)

By _____
Deputy Clerk

By _____
Mayor/Chairman

Date _____

KEY LARGO WASTEWATER
TREATMENT DISTRICT (Grantor)

By _____

Signature of Witness

Printed Name and Title

Printed Name of Witness

Date _____

Signature of Witness

Printed Name of Witness

STATE OF FLORIDA
COUNTY OF MONROE

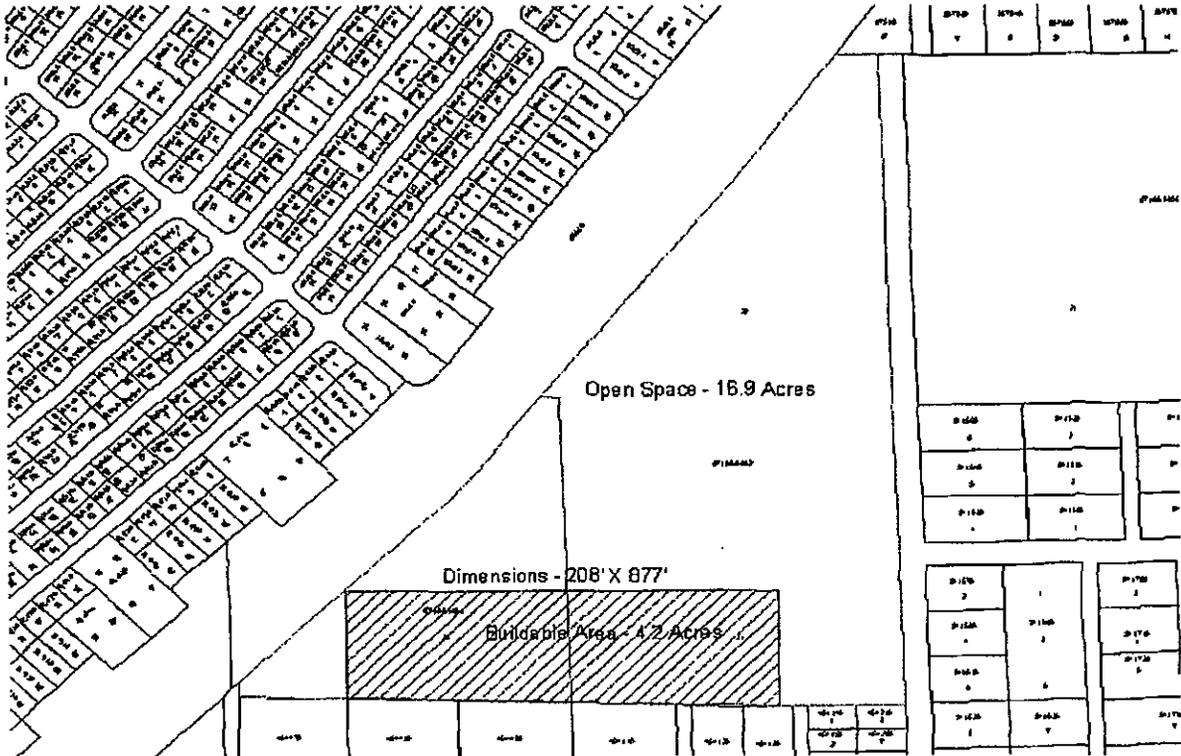
BEFORE ME, the undersigned authority, personally appeared _____
and _____, who are personally known to me, or have produced
_____ and _____, respectively
as identification.

Sworn to and subscribed before me this _____ day of _____, 20_____.

Typed Notary Name and Number

Notary Signature and Seal

Exhibit A



RE Nos. 00087100.0001 & 00087100.0002

Item H - 2

Attachment 2

Grant of Conservation Easement

THIS AGREEMENT is made this ____ day of _____, 20____ by and between the Key Largo Wastewater Treatment District, a special district created pursuant to House Bill 471, Chapter 2002-37, Laws of Florida, whose address is P.O. Box 491, Key Largo, Florida 33037, County of Monroe, State of Florida, (Grantor) and Monroe County, a political subdivision of the State of Florida, whose address is 1100 Simonton Street, Key West, FL 33041 (Grantee).

The parties recite and declare:

The Grantor is the owner of certain real property commonly known as

the MM 100.5 Wastewater Treatment Plant Site (the servient estate),

more particularly described as follows: Parcel A: All of Lot 31 and that portion of Lots 22 and 23 lying Southeast of Old State Road 4A, MODEL LAND COMPANY, Section 28, Township 61 South, Range 39 East, according to the plat thereof, recorded in Plat Book 1, Page 68 of the Public Records of Monroe County, Florida and Parcel B: all that portion of Lot 30 of P.F. JENKINS PLAT made for MODEL LAND COMPANY as recorded in Plat Book 1, Page 68, of the Public Records of Monroe County, Florida, all lying in Section 28, Township 61 South, Range 39 East and Easterly of U.S. Highway 1.

The Grantor desires to develop the servient estate as (describe project):

a Wastewater Treatment Facility.

The servient estate contains (describe relevant natural features):

High Quality, High Elevation Tropical Hardwood Hammock.

The Grantee is a general purpose political subdivision of the State authorized and required to regulate and control the use of real property through land development regulations in order to protect the public health, safety and welfare. Sec. 9.5-336 of the Grantee's land development regulations requires that certain areas of the servient estate be retained as open space and preserved in their natural condition if the servient estate is to be developed as a Wastewater Treatment Facility.

The parties agree as follows:

1. Grant of easement.

Pursuant to that certain Interlocal Agreement dated February 26, 2003 between Grantor, Grantee, and the Florida Key Aqueduct Authority, the Grantor hereby grants to Grantee the easement described below.

2. Character of the easement and governing law.

This easement is a conservation easement under Sec. 704.06, Fla. Stat. and is to be governed by, construed and enforced in accordance with that statute and with the applicable laws of the State of Florida.

3. Location of the easement.

a. The conservation easement is located as follows:

All of that servient estate described above, less and except the 4.2 acre buildable area having the dimensions of 208 feet by 877 feet along the property's southern boundary.

b. The location of the easement is also described in the diagram attached to this instrument as Exhibit "A" and, by reference, made a part of as fully and to the same effect as if set forth in this instrument in its entirety.

4. Restraints imposed by the Conservation Easement.

The conservation easement granted by this instrument imposes the following restrictions on the future use of the servient estate within the easement area:

a. No removal, trimming or pruning of trees, shrubs, or other vegetation (except non-native vegetation whose removal is authorized by the Grantee's biologist).

b. No acts that are detrimental to wildlife or wildlife habitat preservation.

c. No excavation, dredging, or removal of loam, peat gravel, soil, rock, or other material substances in such manner as to affect the surface.

d. No activities detrimental to drainage, flood control, water conservation, erosion control and soil conservation.

e. No dumping or placing of soil or other substance or material as landfill or dumping or placing of trash, waste, or unsightly or offensive materials.

5. Terms and persons bound.

This conservation easement is perpetual, runs with the land and is binding on all present and subsequent owners and mortgagees of the servient estate. Grantor represents that the mortgagee(s), if any, whose consent is attached hereto, is (are) the only mortgagee(s) having a security interest in the servient estate.

6. Entire Agreement.

This Agreement constitutes the entire agreement between the parties and any prior understanding or representation of any kind preceding the date of this agreement is not binding upon either party except to the extent incorporated in this Agreement.

7. Modification of Agreement.

Any modification of this Agreement or additional obligation assumed by either party in connection with this Agreement is binding only if evidenced in writing and signed by an authorized representative of each party and by any mortgagee.

8. Attorney's fees.

In the event of any controversy, claim or dispute arising under this instrument, the prevailing party is entitled to recover reasonable attorney's fees and costs.

9. Entry of Grantee's representative on the servient estate.

The Grantee's representative on the servient estate, after first furnishing the Grantor no less than 24 hours notice, shall have the right of entry for the purposes of inspection to determine the Grantor's compliance with this Agreement.

10. Notice.

Any notice provided for or concerning this Agreement must be in writing and is sufficiently given when sent by certified or registered mail, or via an equivalent service furnished by a private carrier, to the respective address of each party as set forth at the beginning of this Agreement.

IN WITNESS WHEREOF, the parties hereto have set their hands and seals the day and year first above written.

(SEAL)
ATTEST: DANNY L. KOLHAGE, CLERK

BOARD OF COUNTY COMMISSIONERS
OF MONROE COUNTY, FLORIDA (Grantee)

By _____
Deputy Clerk

By _____
Mayor/Chairman

Date _____

KEY LARGO WASTEWATER
TREATMENT DISTRICT (Grantor)

By _____

Signature of Witness

Printed Name of Witness

Printed Name and Title

Signature of Witness

Date

Printed Name of Witness

STATE OF FLORIDA
COUNTY OF MONROE

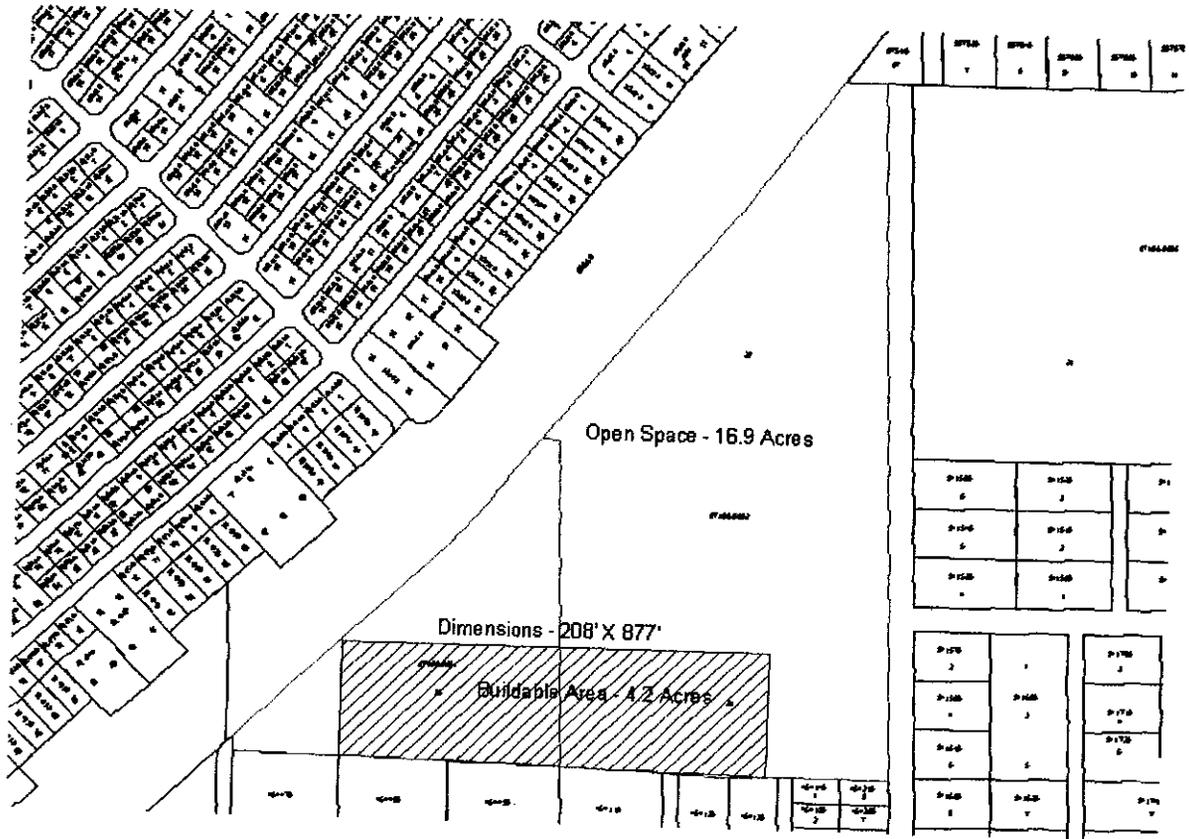
BEFORE ME, the undersigned authority, personally appeared _____
and _____, who are personally known to me, or have produced
_____ and _____, respectively
as identification.

Sworn to and subscribed before me this _____ day of _____, 20_____.

Typed Notary Name and Number

Notary Signature and Seal

Exhibit A



RE Nos. 00087100.0001 & 00087100.0002

Item H - 2

Attachment 3

Faith Doyle

From: Thomas M. Dillon [thomasdillon@terranova.net]
Sent: Wednesday, November 26, 2003 11:55 AM
o: Faith Doyle
Subject: Fw: Conservation Easement

This is Attachment 3 re Monroe County land transfer memorandum.
Tom

----- Original Message -----

From: "Thomas M. Dillon" <thomasdillon@terranova.net>
To: <Rosch-Mark@MonroeCounty-FL.Gov>
Cc: "Faith Doyle" <FDoyle@govmserv.com>; "Ed Castle" <EdRCastle@aol.com>;
"Charles Sweat" <csweat@govmserv.com>; "David Miles" <DMiles@govserv.com>;
"Jeff Weiler" <jeff@weilerengineering.org>; "Robert Sheets"
<rsheets@govserv.com>
Sent: Wednesday, November 26, 2003 11:31 AM
Subject: Re: Conservation Easement

> Mark,
>
> Sorry I didn't bring this up sooner, but our design engineers advised me
> yesterday afternoon that they have the following concerns, which appear to
> be related to the shape of the parcel excluded from the conservation
> easement:

> 1. They want to check on legal ingress and egress to the treatment site
> from Atlantic Avenue; and

> 2. They would like to have the use of a strip of land from Overseas
> highway

> to the plant site to route the 3 10-inch vacuum lines directly into the
> site, as opposed to "necking" them around Atlantic Avenue and the existing
> easements.

> It looks to me as if the siting and configuration of the buildable area
> may

> have been established to minimize frontage on Atlantic Avenue. Would
> there

> be a problem if the buildable area were reconfigured to address these
> concerns, so long as the total buildable area (4.2 Acres) did not change
> and

> aesthetic considerations were taken into account?

> I would propose a new paragraph 3.c, as follows:

> "Grantor and Grantee understand and agree that the Grantor may propose for
> consideration by Grantee a reconfiguration of the buildable area so as to
> simplify access to the buildable area by road and by subsurface pipelines.
> Any such proposal will minimize the amount of land disturbed and maintain,
> to the extent practicable, natural vegetative screening of the "Buildable
> Area" from adjacent roads. Grantee will consider any such proposal, and
> will not unreasonably withhold its consent to the same."

> Tom

> ----- Original Message -----

> **From:** <Rosch-Mark@MonroeCounty-FL.Gov>
> **To:** <thomasdillon@terranova.net>
> **Sent:** Wednesday, November 26, 2003 8:47 AM
> **Subject:** Conservation Easement

> > <<SchonLEF31CE.doc>>
> > Tom,
> >
> > Per our discussion I am attaching the conservation easement we
discussed,
> > with the correction to Paragraph 9 to insert the missing phrase
regarding
> > the right of entry.
> >
> > Kindly confirm that you have received this e-mail...I don't want to
leave
> > the office today until this is wrapped up.
> >
> > Mark
> >
> > Mark J. Rosch
> > Executive Director
> > Monroe County Land Authority
> > 1200 Truman Avenue, Suite 207
> > Key West, FL 33040
> > Phone: (305) 295-5180
> > Fax: (305) 295-5181
> > Email: rosch-mark@monroecounty-fl.gov
> >
>

Item H - 2

Attachment 4

Grant of Conservation Easement

THIS AGREEMENT is made this _____ day of _____, 20____ by and between the Key Largo Wastewater Treatment District, a special district created pursuant to House Bill 471, Chapter 2002-37, Laws of Florida, whose address is P.O. Box 491, Key Largo, Florida 33037, County of Monroe, State of Florida, (Grantor) and Monroe County, a political subdivision of the State of Florida, whose address is 1100 Simonton Street, Key West, Fl 33041 (Grantee).

The parties recite and declare:

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a Wastewater Treatment Facility.

The servient estate contains (describe relevant natural features):

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The parties agree as follows:

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2. Character of the easement and governing law.

This easement is a conservation easement under Sec. 704.06, Fla. Stat. and is to be governed by, construed and enforced in accordance with that statute and with the applicable laws of the State of Florida.

3. Location of the easement.

a. The conservation easement is located as follows:

All of that servient estate described above, less and except the 4.2 acre buildable area having the dimensions of 208 feet by 877 feet along the property's southern boundary.

b. The location of the easement is also described in the diagram attached to this instrument as Exhibit "A" and, by reference, made a part of as fully and to the same effect as if set forth in this instrument in its entirety.

c. Grantor and Grantee understand and agree that the Grantor may propose for consideration by Grantee a reconfiguration of the buildable area so as to simplify access to the buildable area by road and by subsurface pipelines. Any such proposal will minimize the amount of land disturbed and maintain, to the extent practicable, natural vegetative screening of the "Buildable Area" from adjacent roads. Grantee will consider any such proposal, and will not unreasonably withhold its consent to the same.

4. Restraints imposed by the Conservation Easement.

The conservation easement granted by this instrument imposes the following restrictions on the future use of the servient estate within the easement area:



10. Notice.

Any notice provided for or concerning this Agreement must be in writing and is sufficiently given when sent by certified or registered mail, or via an equivalent service furnished by a private carrier, to the respective address of each party as set forth at the beginning of this Agreement.

IN WITNESS WHEREOF, the parties hereto have set their hands and seals the day and year first above written.

(SEAL)
ATTEST: DANNY L. KOLHAGE, CLERK

BOARD OF COUNTY COMMISSIONERS
OF MONROE COUNTY, FLORIDA (Grantee)

By _____
Deputy Clerk

By _____
Mayor/Chairman

Date _____

KEY LARGO WASTEWATER
TREATMENT DISTRICT (Grantor)

By _____

Signature of Witness

Printed Name and Title

Printed Name of Witness

Date _____

Signature of Witness

Printed Name of Witness

STATE OF FLORIDA
COUNTY OF MONROE

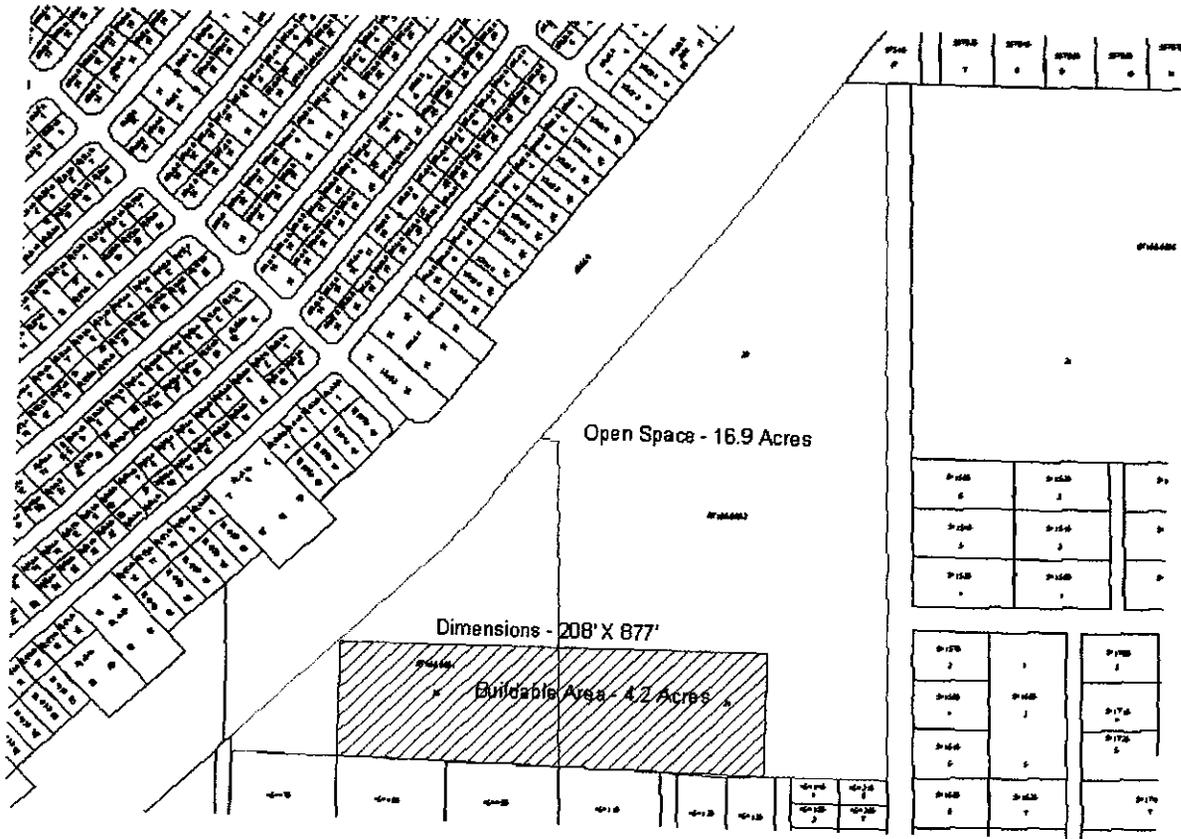
BEFORE ME, the undersigned authority, personally appeared _____
and _____, who are personally known to me, or have produced
_____ and _____, respectively
as identification.

Sworn to and subscribed before me this _____ day of _____, 20_____.

Typed Notary Name and Number

Notary Signature and Seal

Exhibit A



KLWTD Board Meeting December 3, 2003

Item H - 3

**Report on question concerning
mandatory hook-ups for commercial
property.**

Memo

To: Key Largo Wastewater Treatment District
From: Thomas M. Dillon
CC: None
Date: 11/26/2003
Re: Mandatory sewer connections

Note: This memorandum constitutes attorney work product and attorney communications.

At the Board's November 19 meeting, Mr. Wilkinson asked me to research the question of mandatory sewer hookups.

As detailed below, State law provides that the owners of certain onsite sewage treatment and disposal systems ("OSTDS") are required to connect to public sewerage systems. The parallel Monroe County ordinance is similar, but more stringent than State law.

Based on my review of State and Monroe County law, I believe that it is advisable for the District to evaluate the Colusa Campground connection issues in order to allow the District to take timely steps to either notify the Colusa Campground of the availability of the District system or to seek Department of Environmental Protection ("DEP") concurrence in a determination that connection should be waived in the public interest due to public health considerations.

Florida law requires hookups under certain circumstances.

Section 381.00655, Fla. Stat. provides, in relevant part:

(1) (a) The owner of a properly functioning [OSTDS] ... must connect the system or the building's plumbing to an available ... sewerage system within 365 days after written notification by the owner of the ... sewerage system that the system is available for connection. The ... sewerage system must notify the owner of the [OSTDS] of the availability of the central sewerage system. No less than 1 year prior to the date the sewerage system will become available, the ... sewerage system shall notify the affected owner of the [OSTDS] of the anticipated availability of the sewerage system and shall also notify the owner that the owner will be required to connect to the sewerage system within 1 year of the actual availability. Nothing in this paragraph limits the power of a municipality or county to enforce other laws for the protection of the public health and safety.

(b) The owner of an [OSTDS] that needs repair or modification to function in a sanitary manner or to comply with the requirements of §§ 381.0065-381.0067 or rules adopted under those sections must connect to an available ... sewerage system within 90 days after written notification from the department. In hardship cases, upon request of the owner, the department may approve an extension of not more than 90 days for sewerage connection.

(2) The provisions of subsection (1) or any other provision of law to the contrary notwithstanding:

....

(b) A ... sewerage system may, with the approval of the department, waive the requirement of mandatory onsite sewage disposal connection if it determines that such connection is not required in the public interest due to public health considerations.

This provision requires the owner of an OSTDS to connect to the public sewerage system under the following conditions:

1. The public sewerage system must be "available." The term "available" has a complex definition.
 - a. The public sewerage system must be capable of being connected to the plumbing of the establishment or residence and must have adequate permitted capacity to accept the sewage. § 381.0065(2)(a).
 - b. If the property is a residential subdivision lot, a single-family residence, or an establishment with an estimated sewage flow of 1,000 gallons/day or less, the connection must exist in a public easement or right-of-way that abuts the property line. § 381.0065(2)(a)(1).
 - c. If the property is an establishment with an estimated sewage flow in excess of 1,000 gallons/day, the connection must be within 50 feet of the property line. § 381.0065(2)(a)(2).
 - d. Other conditions apply to proposed subdivisions and areas zoned for industrial or manufacturing purposes. § 381.0065(2)(a)(3).
2. The public sewerage system must notify the owner of a properly functioning OSTDS no less than one year prior to the date the sewerage system will become available. § 381.00655(1)(a). If the OSTDS is not functioning properly, the DEP can require hookup on 90 days' notice. § 381.00655(1)(b).
3. The public sewerage system may, with DEP approval, waive the connection requirement if the system determines that connection is not required in the public interest due to public health considerations. § 381.00655(2)(b).

Note that counties are permitted to make additional, and presumably more stringent, laws. § 381.00655(1)(a).

Based on the foregoing, I believe that Colusa Campground may be required under State law to connect to the District sewer system, assuming that:

1. The Colusa Campground sewage is:
 - a. estimated at 1,000 gallons/day or less and the connection will be available in a public easement abutting the property, or
 - b. estimated at more than 1,000 gallons/day and the connection will be available in a public easement within 50 feet of the property;
2. The District notifies Colusa Campground of the need to connect not less than one year prior to the date the District system will be available; and
3. The District does not, with DEP approval, waive connection based on a determination that connection is not required in the public interest due to public health considerations.

Monroe County law is similar to, but more stringent than, State law.

Monroe County has adopted ordinances parallel to State law.

Monroe County requires connection of an OSTDS to a public sewerage system within 30 days after notice that the public sewerage system is available. § 15.5-21, Monroe County Code. This is more stringent than State law.

Further, Monroe County has not provided for waiver by the public sewerage system of mandatory connection based on a public health determination.

Therefore, I recommend that the District evaluate connection of the Colusa Campground to the District system. This would allow the District to understand whether such connection is required by law, and to take appropriate steps to notify Colusa Campground of the availability of the District system on a timely basis. Also, if the District concludes on the basis of the evaluation that connection of Colusa is not required in the public interest due to public health considerations, the District could begin to take the steps necessary to obtain DEP concurrence.

KLWTD Board Meeting December 3, 2003

Item I

**Engineer's Report for period ending
11-19-03**

Key Largo Wastewater Treatment District
Engineering Status Report
Period Ending 11/19/03

Client Issues

Amendments No.1 and No.2 to the WEC scope of work for the Key Largo Park and Key Largo Trailer Village were not acted upon at the November 5th meeting of the Board. At the November 19th meeting, the Board voted to approve Amendment No.1 to WEC 03-01 KLTV Project. Discussion regarding Amendment No.2 resulted in a vote to table the issue until details of the GSG transition plan were developed. Following this discussion the Board agreed to rescind the approval of Amendment No.1 and table that issue as well.

The Haskell Change Order No.1 was approved for redesign of the Key Largo Park collection system at the November 19th meeting. Brown & Caldwell will now begin work on this project.

At the November 5th meeting, the Board gave verbal go-ahead for WEC to begin work on a conceptual layout and cost estimates for connection of Calusa Camp Resort. Since this was a discussion item, no action was taken by the Board, but GSG was instructed to include this item with a proposal from WEC on the agenda for the November 19th meeting. At that meeting, the item failed to pass. The issue will be addressed again at the December 3rd meeting.

The selection of a treatment process was postponed pending additional clarification of the warranties from Fluidyne and Purestream. The action item will appear again on the December 3rd agenda.

Regulatory Compliance Issues

None for this period.

Project Team Meetings and Actions

The regularly scheduled Monday morning conference calls with the District staff were held, with Tom Dillon now participating. The issues discussed are available in the Working Group Discussion Items lists.

On November 5th, WEC met with GSG prior to the Board meeting to discuss various issues. At 3:00 the group was joined by Tom Dillon, Chuck Fishburn and Peter Kinsley. The topic of discussion for the remainder of the meeting was the warranties offered by Fluidyne and Purestream. The group then attended the KLWTD Board meeting. The same group also attended the November 19th Board meeting.

Robert Sheets received a request from Science Kilner for clarification of some of WEC's comments regarding the Draft Supplemental Environmental Assessment. This request was transmitted to WEC. Written responses from WEC were submitted to Ms. Kilner through Robert Sheets.

As directed by the Board, WEC drafted a proposal with a scope of services for a conceptual layout of a sanitary sewer system for Calusa Camp Resort. The intent was to investigate the feasibility of connecting the campground in lieu of some or all of Key Largo Park. WEC staff proceeded with the work, per the Board's verbal instructions. Three years of wastewater flow and characteristics data were gathered, input and graphed. Two years of potable water consumption records were obtained from the FCAA for comparison with wastewater flows as part of an investigation into the level Inflow and Infiltration (I&I) into the existing collection system. The salinity of the wastewater was also checked as part of this investigation. A site visit was conducted, including inspection of the existing collection system and pump stations and an interview with the campground's maintenance man. WEC's drafting department produced aerials in 1"=200' and 1"=100' scales, including property and lot lines for use in the conceptual layout of various proposed sewer systems. The goal was to lay out the various viable options for connection, identify quantities of material and work for each option, and estimate construction costs. Work on this project was suspended after the WEC proposal failed to be approved at the November 19th Board meeting.

According to Peter Kinsley of The Haskell Company and Stu Oppenheim of Brown and Caldwell, the design of the Key Largo Trailer Village has commenced. WEC has not yet seen the design but looks forward to the 30% design submittal.

KLWTD Board Meeting December 3, 2003

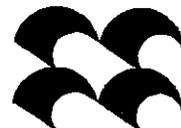
Item J - 1

Discussion to establish the domestic service lateral connection to be in front of and on the same side of the street/road as the property owner's dwelling.

Per Jerry Wilkinson:

Monroe County ordinances require the service lateral can be within 50 feet of the customer's right-of-way. Using this parameter, the connection to the service lateral could be across the street which would pass the costs to obtain a permit, excavate the street and its resurfacing to the property owner. In my opinion, this is the purpose of the grant funds to defray these costs. Our responsibility is to have the utility's connection as near and as accessible as engineering can provide. The time to establish this goal is before design. I believe it is verbally understood with Brown & Caldwell, but in fairness to Brown and Caldwell, it should be clearly stated.

"I was reminded of this potential misunderstanding at the last meeting when our engineer, Jeff Weiler, mentioned the county requirement of within 50 feet. We have yet to discuss this unwise ordinance the county passed without our input. I do not recall the ordinance, but it was the one that Chairman Tobin proclaimed "an outrage" and indeed it is."

MARINE BANK
OF THE FLORIDA KEYS

CORPORATE OFFICES
11290 Overseas Highway
Marathon, FL 33050
Phone: (305) 743-3030
Fax: (305) 288-0000

December 2, 2003

David Miles, CFO
Key Largo Wastewater Treatment District
1500 Mahan Drive, Suite 250
Tallahassee, Florida 32308

Via fax (407) 629-6963

Dear Mr. Miles:

Marine Bank is please to offer the following proposal based on your request of November 24, 2003 to provide a revolving line-of-credit to cover shortfalls in the District's cash flow until grants and tax revenues are received:

Borrower: Key Largo Wastewater Treatment District

Amount: Five hundred thousand dollars (\$500,000).

Collateral: Specific Assignment of Income Stream from Tax Revenues, but subordinate to any permanent construction financing.

Rate: Wall Street Journal Prime minus ½%. This rate is subject to a qualified legal opinion that the debt issue qualifies as a *bank-qualified, tax exempt* transaction. The rate will adjust as the index adjusts, but no more than monthly. The rate will not exceed 6% in any case.

Loan Fee: No loan fee, outside of typical closing costs, will be charged in connection with this credit.

Term: Revolving line-of-credit based on an eighteen-month term, with interest billed monthly and principal due at maturity.

Prepayment: The amounts advanced may be pre-paid in whole or in part at any time without penalty or fee.

Purpose: The Line will be used to fund short-term cash flow needs associated with the establishment of the Sewer District. Specifically, the funds may be used to support operations or to fund timing differences associated with construction projects the District may undertake.

Advances: Advances under the line will be made as authorized by the Key Largo Wastewater Treatment District Board, who may delegate this authority to whoever they choose. Each draw request should include an amount and a purpose for the advance.

Repayment: The Line will be repaid from various sources including but not limited to, MSTU Revenue, Wastewater System Fees and grant proceeds.

Review: The Key Largo Wastewater Treatment District Director will keep the Bank informed as to its progress on any construction process. The Bank requires no approval, just information and updates.

Inspection: The Bank shall be entitled to inspect any and all construction projects that the District undertakes.

Bank Accounts: The Borrower agrees to maintain all depository accounts with the Bank. If merchant bankcard services are needed, the Bank will provide this service as well.

Closing Costs: The Borrower will be responsible for all costs associated with this transaction, including the cost of the legal opinion that assures the Bank that this is a bank qualified, tax exempt transaction.

Financial Statement Requirements: The Borrower agrees to provide the following periodic financial information:

- 1) Annual, audited financial statements
- 2) Quarterly financial statements within 30 days of each quarter-end
- 3) Quarterly listing of all grants applied for and/or received

Loan Documentation: This loan shall be evidenced by such loan documents in form and content satisfactory to Bank. Borrower agrees that Bank has no liability to make this Loan unless Borrower executes such Loan documents (e.g., note, security agreement, assignments, etc.) as Bank, in its sole discretion, requires. Borrower agrees to pay all fees regarding the closing of this Loan including Bank's attorney's fees, recording fees, taxes, etc. This Agreement and the rights and obligations of the parties hereunder shall be governed by and interpreted in accordance with the laws of the State of Florida and applicable United States Federal law.

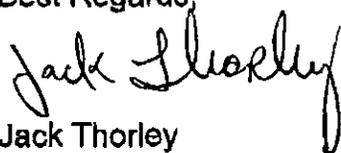
Commitment Expiration: This commitment shall expire unless written acceptance by the Borrower is received by the Bank on or before December 20, 2003.

Please indicate your acceptance of this Agreement and the terms and conditions contained herein by signing below and returning one executed copy of this

Commitment Letter along with the commitment fee to the Bank prior to the above date.

On behalf of Marine Bank of the Florida Keys, I would like to express our appreciation for the opportunity to be of service to you. Should you have any questions or concerns, please call me at (305) 664-4727.

Best Regards,



Jack Thorley
Marine Bank

We do hereby accept the terms and condition of this commitment letter:

Gary Bauman, Chairman
Key Largo Wastewater Treatment District

Date

Chris Beaty, Secretary
Key Largo Wastewater Treatment District

Date



Est. 1974

Key Largo

99451 Overseas Highway
Key Largo, FL 33037
(305) 451-0211

Business Banking Center

100210 Overseas Highway
Key Largo, FL 33037
(305) 451-1519

Key Largo Bayside

103330 Overseas Highway
Key Largo, FL 33037
(305) 451-2000

Tavernier

91980 Overseas Highway
Tavernier, FL 33070
(305) 852-9500

Islamorada

80800 Overseas Highway
Islamorada, FL 33036
(305) 664-4483

Marathon Shores

11401 Overseas Highway
Marathon Shores, FL 33052
(305) 743-7845

Business Banking Center

5800 Overseas Highway
Suite 41
Marathon, FL 33050
(305) 743-7650

Marathon

2348 Overseas Highway
Marathon, FL 33050
(305) 743-0072

Big Pine Key

Mile Marker 30.4
Big Pine Key, FL 33043
(305) 872-0295

North Roosevelt

3618 N. Roosevelt Blvd.
Key West, FL 33040
(305) 292-0230

**Key West Old Town &
Business Banking Center**

330 Whitehead Street
Key West, FL 33040
(305) 294-8330

www.tibbank.com
Nasdaq: TIBB



November 13, 2003

David Miles, CFO
Key Largo Wastewater Treatment District
1500 Mahan Drive, Suite 250
Tallahassee, Florida 32308

Dear Mr. Miles:

We are pleased to inform you that TIB Bank of the Keys has approved your request of an Open End Line of Credit, subject to the following provisions:

Borrower: Key Largo Wastewater Treatment District

Amount: \$500,000.00 (Five Hundred Thousand and 00/100)

Collateral: Unsecured

Rate: Wall Street Journal Prime plus .50% (currently 4.50%). This rate is subject to certification of the tax exempt status of the borrower.

Interest Rate Cap: 6.0%

Rate Adjustment: Monthly

Loan Fee: .25% (\$1,250.00)

Term: Open End Line of Credit for a term of 18 months, with interest only payments billed monthly based on the outstanding principal balance and interest rate in effect.

Advances: The sums contemplated to be advanced may be prepaid in whole or in part at any time without prepayment premium, penalty, or fee whatsoever.

Loan Purpose: This loan shall be used to bridge funding for normal operational expenses pending receipt of MSTU tax revenues, and to bridge funding for construction draws pending receipt of grant proceeds, and for no other purpose.

Authorized Agents for Loan Draws: Robert Sheets, Manager or David Miles, Chief Financial Officer, are authorized to request draws from the Line of Credit.

Additional Loan Covenants:

- Conditions:
- 1.) Submission and approval of construction contracts and related draw schedules.
 - 2.) Submission of proof of awarded grants
 - 3.) Each request for a line advance to be in written format stating purpose of advance.
 - 4.) Aggregate advances for normal operating working capital to be limited to \$150,000.00. Working Capital advances are to be repaid by March 1st, 2004.
 - 5.) Construction advances to correspond with approved construction draw requests.
 - 6.) Grant disbursement to be applied to corresponding line advances.

Inspections: During the course of construction of the wastewater treatment projects, the Bank, through its employees or agents, shall be entitled and are authorized to inspect, review, and approve the construction of the Improvements, and to insure that construction is being carried out in accordance with the plans and specifications.

Building and Zoning Laws: Land, and all existing buildings and improvements, must meet all requirements of Federal, State and Local Governments.

Closing Costs and Fees: All closing costs associated with perfecting our note, including any attorney fees, shall be paid by the borrower.

Depository Accounts: Borrowers' depository accounts, as may be satisfactory to the Bank, will be maintained at the Bank.

Financial Statements: Borrower agrees to provide the following financial information as requested:

Quarterly financial statements shall be submitted to the bank for review within 30 days of the respective quarter end.

Year end audited financial statements of the Borrower shall be submitted to the Bank within 120 days of the Fiscal year end of the borrower.

Commitment Term: This Loan Commitment shall remain for a period of 30 (Thirty) days only.

Commitment Letter Survives Closing: The terms and provisions in this Commitment Letter shall survive the closing of the loan transaction and shall remain in full force and effect until the loan is repaid in full.

The Bank reserves the right to withdraw this commitment if there is any material misrepresentation by the Borrower or should subsequent information reveal facts or information contrary to the Bank's knowledge of collateral, purpose, intent or title.

This Commitment Letter may not be assigned or transferred by the Borrower.

Please sign the enclosed copy of this Commitment Letter to acknowledge your acceptance of its terms and conditions, and return it to me within 30 days.

It has been a pleasure to be of service to you in this matter. If you have any questions or comments, please call me at (305) 664-4483.

Sincerely,



Kym Collins
Vice President and Business Banking Officer

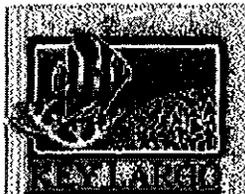
We, the undersigned, do hereby accept the terms and conditions of this Commitment Letter

Key Largo Wastewater Treatment District
Gary Bauman, Chairman

Date

Key Largo Wastewater Treatment District
Cris Beaty, Secretary

Date



**KEY LARGO WASTEWATER TREATMENT DISTRICT
POST OFFICE BOX 491; KEY LARGO, FLORIDA 33037
(305) 451-5105**

TO: Key Largo Wastewater Treatment District Commissioners

CC: Robert E. Sheets, General Manager
Faith Doyle, Clerk to the Board
Charles Sweat, Director of Operations
Thomas Dillon, Board Attorney

FROM: David R. Miles, Chief Financial Officer

DATE: December 2, 2003

RE: Line of Credit for KLWTD

Dear Commissioners:

In July 2003, the KLWTD staff approached the TIB Bank of the Keys about the need to obtain a line of credit for cash flow reasons. This need was addressed at the June 18, 2003 meeting with the Board. Staff's principal concerns were to cover the period between September 2003 when the Monroe County grant funds run out and December 2003/January 2004 when the first MSTU proceeds are received from Monroe County. In addition, for the long term, some of the grants used to fund the two construction projects are on a reimbursable basis. To keep the contractors and other vendors from waiting excessive periods of time for payments while grant reimbursements are processed, this line of credit would cover cash flow gaps.

In late September and early October, the Finance staff made a formal request of the bank for a \$500,000 line of credit and provided our FY 2004 budget and grant backup to satisfy the information needs of the bank. As this loan is a line of credit, it will only be drawn down as needed, and interest expenses will only apply to amounts outstanding. We don't expect to use the full limit at any time. But it provides us a relatively low cost protection against potentially adverse cash flow shortfalls.

On November 13, 2003, staff was informed by the bank that our line of credit was approved. The loan is at an interest rate of 4.50 percent (variable), and the line of credit will be valid until June 1, 2005. There is a loan fee of \$1250.00. At Board request at the November 19, 2003 meeting, the TIB Bank provided a revised commitment letter on December 2, 2003 extending their offer for 30 days, from November 13, 2003 (the date of the original commitment).

Board of Commissioners: Chairman Gary Bauman, Andrew Tobin, Cris Beaty, Charles Brooks, Jerry Wilkinson

Staff further sought commitments from First State Bank and Marine Bank as requested by the Board on November 19. First State Bank originally declined to propose. On December 2nd, a call was received from the First State Bank Loan Officer, saying they would take the issue to their Board on December 4, 2003, to see if they are interested in proposing. Marine Bank provided a commitment letter, which is attached. They have not yet provided copies of other required loan documents for staff and attorney review. The most recent TIB Bank commitment letter is also attached.

The District has reached the point where further disbursements should not be made without the potential of conflicting with grant requirements. The cash on hand was designated specifically for appropriate Key Largo Trailer Village design and construction in the SFWMD grant. Without obtaining cash from the MSTU tax from Monroe County or the line of credit, the Chief Financial Officer proposes to discontinue all further disbursements for the District.

Board direction on the line of credit is requested

12-3-03 Item FS
additional**Faith Doyle**

From: Thomas M. Dillon [thomasdillon@terranova.net]
Sent: Monday, December 01, 2003 7:02 PM
To: Rosch-Mark@MonroeCounty-FL.Gov
Cc: Robert Sheets; Jeff Weiler; David Miles; Charles Sweat; Ed Castle; Andrew M. Tobin; Charles Brooks; Cris Beaty; Gary Bauman; Faith Doyle; Jerry Wilkinson
Subject: Conservation easement

Mark,

Now that I understand the concerns that Andy Tobin expressed earlier today, and have had a chance to review the Monroe County Code, I suggest that we consider another way of going forward. I have not located any Monroe County regulations that would impose a conservation easement upon conveyance of property from the County to the District. Instead, where the regulations impose a conservation easement requirement, they do so at the permitting stage. I suggest that the County and the District follow that process in this case.

Starting from the Interlocal Agreement, Section 2.03.C.2 is the provision that provides that "[t]he County will retain a conservation easement in accordance with Monroe County regulations on the portion of the property not intended for development."

A search of the Monroe County Code reveals only three references to a "conservation easement." Section 9.5-82(g) provides that open spaces shall be preserved as dedicated open space through the use of conservation easement or a similar legal instrument. Section 9.5-348(d)(7)b(iii) provides for a conservation easement to protect a vegetative buffer between development and mangrove or submerged wetlands. Section 9.5-349(b)(2)b provides for a conservation easement to protect a shoreline setback. None of these provisions applies to the present case. All of the code references to a conservation easement appear to be directed to a point in time where a plat is approved or a permit is issued.

Since the Interlocal Agreement already exists, and the District's obligations regarding the easement and other environmental protection are already specified in the Interlocal Agreement, I suggest that the County go forward with the resolution authorizing conveyance of the property, as written. The District understands that development of the property conveyed will be subject to the open space requirements of Section 9.5-347.

The District will, of course, comply with Section 9.5-337(a), which requires that after the development permit is issued and site preparation commenced, the District will execute a deed restriction to run with the land.

Tom

12/2/03

Faith Doyle

From: Thomas M. Dillon [thomasdillon@terranoa.net]
Sent: Tuesday, December 02, 2003 10:10 AM
To: Gary Bauman
Cc: Robert Sheets; Jeff Weiler; David Miles; Charles Sweat; Ed Castle; Andrew M. Tobin; Charles Brooks; Cris Beaty; Gary Bauman; Faith Doyle; Jerry Wilkinson
Subject: letter and proposed resolution re MM 100.5 property

Gary, I'm attaching a letter for your approval and signature. Please call me at 304-6735.

Tom



**KEY LARGO WASTEWATER TREATMENT DISTRICT
POST OFFICE BOX 491; KEY LARGO, FLORIDA 33037
(305) 451-5105**

December 2, 2003

Mark Rosch
Monroe County Land Authority
1200 Truman Avenue, Suite 207
Key West, Florida 33040

By Facsimile: 295-5181

Dear Mark:

This is to request that you place on the agenda of the Board of County Commissioner meeting scheduled for December 17, 2003 a resolution authorizing conveyance of the Mile Marker 100.5 parcel to the Key Largo Wastewater Treatment District.

The District has drafted a form of resolution based on the draft resolution delivered to the District's Counsel, Thomas Dillon, on November 19, 2003. As further detailed below, the District has modified the earlier form of resolution to remove references to the conservation easement, because granting a conservation easement at this time is premature.

The District acknowledges its future obligation under the Interlocal Agreement to convey to the County a conservation easement in accordance with Monroe County regulations on the portion of the parcel not intended for development (See Interlocal Agreement, Section 203.C.2) and Monroe County Code Section 9.5-337(a). Further, the District acknowledges that the parcel is subject to the open space requirement provided in Monroe County Code Sections 9.5-347 and 9.5-82(g), as well as any other applicable Monroe County regulations.

The District believes that granting a conservation easement at this time is premature, and that the conservation easement should be developed and memorialized in the manner contemplated in Monroe County Code Section 9.5-337(a), i.e., after the development permit is issued to the district and site preparation commenced.

The District requests further that this item be placed near the beginning of the BOCC agenda so that a District representative may attend the meeting and make a presentation. As you may know, the District's regular meeting is scheduled to begin at 4:00 p.m. on December 17, in Key Largo, and the District would appreciate this accommodation to its schedule.

Yours,

Gary Bauman
Chairman

RESOLUTION NO. -2003

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF MONROE COUNTY, FLORIDA AUTHORIZING CONVEYANCE OF REAL PROPERTY KNOWN AS THE "MILE MARKER 100.5" PARCEL TO THE KEY LARGO WASTEWATER TREATMENT DISTRICT.

WHEREAS, Monroe County (hereinafter "County"), the Florida Keys Aqueduct Authority, and the Key Largo Wastewater Treatment District (hereinafter "District") entered into an Interlocal Agreement dated February 26, 2003; and

WHEREAS, Section 2.03(C) of said Interlocal Agreement calls for the County to convey to the District the real property and to "retain a conservation easement in accordance with Monroe County regulations on the portion of the property not intended for development;" and

WHEREAS, the District has acknowledged its obligation under the Interlocal Agreement and applicable County regulations to grant to the County a conservation easement after a development permit is issued and site preparation commenced; now, therefore

BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MONROE COUNTY, FLORIDA:

Section 1. The County Mayor is hereby authorized to execute a deed conveying title to the "Mile Marker 100.5" parcel, more particularly described in Exhibit A, to the Key Largo Wastewater Treatment District.

PASSED AND ADOPTED by the Board of County Commissioner of Monroe County, Florida, at a regular meeting of said Board held on the ___ day of December, 2003.

[EXECUTION BLOCK]

COMPARISON – TIB VS. MARINE BANK COMMITMENT DOCUMENTS

Comparison factor	TIB	Marine Bank
Collateral	Unsecured	Assignment of income from tax revenues
Rate	WSJ Prime plus .50%	WSJ Prime minus .50%
Loan Fee	.25% (\$1,250)	Typical Closing Costs (unspecified) to include cost of legal opinion re tax exempt status of District
Term	Open-end loc 18 months Working capital advances to be repaid by 3/1/04	Revolving loc 18 months
Loan Docs	Have been reviewed by District Counsel, and require minor alteration	Not provided
Commitment expiration	12/13/03	12/20/03

Memo

To: Key Largo Wastewater Treatment District
From: Thomas M. Dillon
CC: GSG
Date: 12/01/2003
Re: The "Straight Flush"

Note: This memorandum constitutes attorney work product and attorney communications.

In a recent series of e-mails, Mr. Tobin requested that Mr. Wilkinson place Mr. Tobin on the mailing list for the "Straight Flush," a newsletter routinely sent by Mr. Wilkinson to persons who ask to be placed on his mailing list. Mr. Wilkinson tentatively agreed to do so. However, upon receipt of Mr. Wilkinson's response, I advised Mr. Tobin and Mr. Wilkinson that there are Sunshine Act concerns with distribution of the newsletter to other Board members, and recommended against sending it to them. Mr. Tobin asked me to reconsider that advice, and this memorandum is the result of that reconsideration.

My recommendation is that the "Straight Flush" should not be distributed, directly or indirectly, from Mr. Wilkinson to other Board members because it provides comment on issues that have been discussed by the Board in the past and that are the subject of future Board action. Therefore, it would be appropriate to consider it the type of communication that can be made only in a public meeting. The Board may wish to consider making the newsletter available to the Board and the public in a public meeting.

The "Straight Flush"

I have received only one copy of the newsletter, entitled "The Straight Flush No. 29" and dated 11/19/03. My understanding is that other issues of the newsletter are similar in nature to the issue in my possession.

Issue No. 29 of the newsletter includes a number of groups of statements summarizing past and future Board actions. Each group of statements is followed by one or more paragraphs with the heading, "My Input." The "My Input" portions of the newsletter summarize or explain Mr. Wilkinson's views on the issues raised by the preceding statements of facts. I will describe the issues in my issue of the newsletter below:

- The newsletter provides a description of the upcoming public hearing on the draft environmental assessment for the construction of a sewage treatment facility in the vicinity of MM 100.5. The "My Input" section describes Mr. Wilkinson's views on the subject, including the reasons for his preference for an alternate site. Since the Board has not yet acted on the proposed transfer of the parcel from Monroe County to the District, I believe that this subject will be considered in future Board meetings.
- The newsletter provides a discussion of a proposal to evaluate connection of the Calusa Campground to the District's facilities, and Mr. Wilkinson's opposition to the evaluation. This issue has been discussed by the Board and will likely be considered at an upcoming Board meeting.

- The newsletter provides a discussion of the proposed TIB line of credit and Mr. Wilkinson's opposition to the same. This issue has been discussed by the Board and will likely be considered at an upcoming Board meeting.
- The newsletter provides a discussion of the appointment of a transition team and Mr. Wilkinson's opposition to the appointment of only one Board member to that team. The "My Input" section states Mr. Wilkinson's belief concerning the possibility of achieving AWT standards. This last comment is relevant to the Board's pending decision regarding selection of a secondary treatment methodology.
- The newsletter provides Mr. Wilkinson's views on retaining the services of GSG, a matter that will come before the Board when the transition team has completed its work.
- The newsletter provides a summary of District finances.

To summarize, the newsletter provides a number of comments on issues currently before the Board. These comments, in most cases, can be considered to be a continuation of the debate conducted in the Board's public meetings.

Sunshine Law

The Sunshine Law, § 286.011, Fla. Stat., generally prohibits members of a public board or commission from communicating with one another regarding matters upon which future board or commission action is pending.

A recent informal opinion of the Florida Attorney General, No. 01-21, March 20, 2001, discussed the question whether "the preparation and distribution of individual position statements on the same subject by several city council members to all other council members constitute an interaction or exchange by the council that would be subject to the requirements of the Government in the Sunshine Law."

The informal opinion recognized that circulation of a position paper by a city council member was not a meeting. The informal opinion concluded that:

While this office would strongly discourage such activity, it would appear that council members of the City of Port Orange may prepare and distribute their own position statements to other council members without violating the Government in the Sunshine Law so long as the council members avoid any discussion or debate among themselves on these statements. However, to the extent that any such communication is a response to another commissioner's statement, it may constitute a violation of the Government in the Sunshine Law to circulate the responsive statement. Thus, this is problematical and it would be a better practice to discuss commissioners' individual positions on matters coming before the board during the course of an open meeting.

AGO Informal Opinion No. 01-21, at 1-2 (Emphasis added.)

Applying the informal advice to the present case, I believe that circulation of the "Straight Flush" to other Board members could easily be construed as a continuation of the debate held in previous meetings, and may be a violation of the Sunshine Law. Although newsletter is a unilateral communication, it nevertheless can be read as a response to the statements of other Board members in previous debate. Therefore, it is my advice that the newsletter should not be transmitted to other Board members except in a public meeting.

First Amendment

An additional consideration is whether the communication is a publication protected by the First Amendment to the Constitution of the United States or Article I, Section 4 of the Florida Constitution. The right of an individual to express his or her political beliefs is a fundamental right, which may be infringed only to serve a compelling governmental interest. My research has not disclosed any court decisions construing Florida's Sunshine Law in light of these constitutional provisions, or supporting the argument that a constraint upon distributing the "Straight Flush" would violate the constitutional right of Mr. Wilkinson or any Board member. Litigating a challenge to the Sunshine Law under either or both of these constitutional provisions would prove to be interesting but expensive, and the outcome is far from certain.

Recommendations

Based on the Attorney General's informal opinion cited above and my review of other Attorney General's opinions cited therein, I suggest that Mr. Wilkinson should refrain from circulating the "Straight Flush" to other Board members, either directly or indirectly, in any context other than a public meeting.

Although I am advising against distribution of the "Straight Flush" to Board members outside of a public meeting, I note that the Sunshine Law does not limit the type of communications that may occur in a public meeting. Therefore, the Board could have the newsletter made available to it, and the public, in the course of a public meeting.

The Board may wish to consider at a future meeting whether it would like to do so.

1 of 1 DOCUMENT

OFFICE OF THE ATTORNEY GENERAL OF THE STATE OF FLORIDA

No. 01-21

2001 Fla. AG LEXIS 21

March 20, 2001

TYPE: INFORMAL OPINION

REQUESTBY:

[*1]

Ms. Margaret T. Roberts
Port Orange City Attorney
1000 City Center Circle
Port Orange, Florida 32119

QUESTION:

On behalf of the City Council of the City of Port Orange you have asked for my opinion on substantially the following question:

Would the preparation and distribution of individual position statements on the same subject by several city council members to all other council members constitute an interaction or exchange by the council that would be subject to the requirements of the Government in the Sunshine Law?

OPINIONBY:

Robert A. Butterworth, Attorney General

OPINION:

In sum:

While this office would strongly discourage such activity, it would appear that council members of the City of Port Orange may prepare and distribute their own position statements to other council members without violating the Government in the Sunshine Law so long as the council members avoid any discussion or debate among themselves on these statements. However, to the extent that any such communication is a response to another commissioner's statement, it may constitute a violation of the Government in the Sunshine Law to circulate the responsive statement. Thus, this is problematical and it would be a better [*2] practice to discuss commissioners' individual positions on matters coming before the board during the course of an open meeting.

According to your letter, the city council members of the City of Port Orange make every effort to stay informed of city business through meetings, written information and discussions with the city manager. The city manager provides the city council members with copies of all correspondence and documents coming to his attention and maintains a reading file with printed copies of all correspondence and documents.

Apparently council members of the City of Port Orange occasionally prepare and circulate statements meant to communicate a particular council member's position on issues coming before the board. These position statements are distributed to the other members of the council but do not solicit comments or responses from other council members. The city manager places copies of these position statements in a public records file so that members of the public and press may read them. You are concerned that the circulation of these statements may constitute a violation of the Government in the Sunshine Law.

A number of Attorney General's Opinions [*3] have stated that members of a public board or commission may attend private forums sponsored by private organizations and express their position about issues facing the commission without violating the Sunshine Law, so long as they do not discuss or debate the issues among themselves. n1 This conclusion is based on the reasoning of Attorney General's Opinion 89-23, determining that the use of a written report by one city commissioner to inform other commissioners of a subject which will be discussed at a public meeting does not violate Florida's Government in the Sunshine Law if, prior to the public meeting, no interaction related to the report is allowed among the commissioners. As the opinion noted, the circumstances presented in the opinion did not appear to involve the use of a report as a substitute for action at a public meeting, nor did it appear that the report was provided to enable the city manager to act as an intermediary among the commissioners.

n1 See, Op. Att'y Gen. Fla. 81-42 (1981); and see, Ops. Att'y Gen. Fla. 00-68 (2000), 94-62 (1994) and 92-05 (1992), and Inf. Op. To Mr. John C. Randolph, dated June 4, 1996.

[*4]

Similarly, this office has concluded that the Sunshine Law is not violated by a board member expressing his or her views or voting intent on an upcoming matter to a news reporter who the member knows will publish the account in a local newspaper prior to the meeting, as long as the member is not using the reporter as an intermediary to communicate with other members to circumvent or evade the requirements of the Sunshine Law. n2

n2 Attorney General's Opinion 81-42 (1981).

Attorney General's Opinion 98-79 considered whether a city commissioner or a group of commissioners could attend a community development board meeting and express their views on a proposed ordinance that had been referred by the city commission to the community development board for a recommendation. The city commissioners were interested in attending the meeting of the community development board at which the board considered the ordinance in order to express their support or opposition to the ordinance. Based on a review of case law and previously [*5] issued Attorney General Opinions, the 1998 opinion concluded:

[A] city commissioner may attend a community development board meeting and express his or her views on a proposed ordinance even though other city commissioners may be in attendance. However, the city commissioners attending such meeting should be cautioned not to engage in debate or discussion with each other. The adoption of the ordinance is a responsibility resting with the city commission, and the city commission's discussions and deliberations on the proposed ordinance must occur at a duly noticed city commission meeting.

In the Attorney General's most recent consideration of this issue, the question was whether it would be a violation of section 286.011, *Florida Statutes*, for elected city commissioners to attend other city board meetings and comment on agenda items that might subsequently come before the commission for final action. Attorney General's Opinion 2000-68 relied on the reasoning of the earlier opinions discussed above to conclude that it was not a violation of the Sunshine Law for city commissioners to attend other city board meetings and comment on agenda [*6] items that might subsequently come before the commission for final action. However, the opinion cautions that city commissioners in attendance at such a meeting may not engage in a discussion or debate about the issues among themselves. n3

n3 See also, Op. Att'y Gen. Fla. 94-62 (1994) (Sunshine Law does not apply to political forum sponsored by a private civic club during which county commissioners express their position on matters that may come before commission, so long as commissioners avoid discussions among themselves on these issues) and Op. Att'y Gen.

Fla. 98-79 (1998), a city commissioner may attend a community development board meeting and express views on a proposed ordinance even though other city commissioners may be present.

Based upon these earlier determinations that the physical presence of board or commission members at functions where the ideological positions of other members were presented would not violate the Government in the Sunshine Law, it is my opinion that the virtual equivalent of [*7] such actions through the distribution of position statements would not violate the law. However, to the extent that any such communication is a response to another commissioner's statement, it may constitute a violation of the Government in the Sunshine Law to circulate the responsive statement. Thus, this practice is problematical and discussions of commissioners' individual positions on matters coming before the board for consideration might better be presented during the course of an open meeting.

In sum, while this office would strongly discourage such activity, it is my opinion that it is not a direct violation of the Government in the Sunshine Law for council members of the City of Port Orange to prepare and circulate their own written position statements to other council members so long as the council members avoid any discussion or debate among themselves on these statements. I would caution that the city council's discussions and deliberations on matters coming before the council must occur at a duly noticed city council meeting and the circulation of these position statements must not be used to circumvent the requirements of the statute.

*Role will you be sending
amended G.O.*

KLWTD Board Meeting

November 19, 2003

O Email Role

Item F – 5

Haskell Change Proposal

W/ Gary 11/19/03



THE HASKELL COMPANY

AMERICA'S DESIGN-BUILD LEADER®

Peter M. Kinsley
Division Leader - Water

November 11, 2003

Re: Wastewater Management System For
The Key Largo Trailer Village Area
Key Largo, Florida
Change Proposal No. 1 – Revision 2
Issue No. 02-001 – Key Largo Park
Design and Construction (Design
Only)

Mr. Robert Sheets
Government Services Group, Inc.
1500 Mahan Drive
Suite 250
Tallahassee, Florida 32308

Dear Mr. Sheets:

The Haskell Company is pleased to submit Change Proposal No. 1, Revision 2 for providing engineering services for the Key Largo Park project. Enclosed, please find the cost breakdown, scope description and supporting documentation for your review and consideration.

Our total lump sum add for this work is Seventy-Six Thousand Seven Hundred and Ninety-Four Dollars and Zero Cents (\$76,794.00).

The cost included in Change Proposal No. 1, Revision 2 represent the total lump sum add for the work described only, and similarly, takes into account only the schedule impact resultant of this change, if any. Be advised that the cost and schedule impacts associated with the effects of multiple changes, trade stacking, acceleration as a result of excessive changes, etc. are not considered in the work herein described and priced. The Haskell Company reserves the right to review these potentially unforeseen impacts, should they occur, at a later date.

Should you have any questions or require further information, please do not hesitate to contact me at (904) 357-4868.

Sincerely,

Peter M. Kinsley

Enclosures

cc: Issue No. 02-001

RECEIVED

NOV 12 2003

**DIRECTOR OF OPERATIONS
FLORIDA GOVERNMENTAL
UTILITY AUTHORITY**



THE HASKELL COMPANY

ARCHITECTURE • ENGINEERING • CONSTRUCTION • REAL ESTATE SERVICES

CHANGE
PROPOSAL
SUMMARY

NO. : 1R2

PROJECT NAME: Wastewater Management System for the Key Largo Trailer Village Area	PROJECT NO: THC - 6701643
LOCATION: Key Largo, Florida	DATE: 11/11/2003
OWNER: Key Largo Wastewater Treatment District (KLWTD)	DRAWING NO: Not Applicable
ISSUE NO.: 02-001 - Key Largo Park Design and Construction (DESIGN ONLY)	SPEC. SECTION: Not Applicable

REFERENCE RFI NO.: _____ WORK DIRECTIVE NO.: _____ RFP NO: KLWTD Letter dated 8/28/03

DESCRIPTION: Per the request of the KLWTD, provide engineering services for the Key Largo Park project under the terms and conditions of the Key Largo Trailer Village project. The scope of Change Proposal No. 1, Revision 2 includes design only and specifically excludes permitting and construction. All warranties and guarantees included in the Design-Build Agreement are enforceable only for work designed and constructed and are specifically excluded from design only services. It is understood that it is the intent of the KLWTD to issue subsequent change orders for construction of the Key Largo Park project once design is complete and final construction cost are determined.

PRICING INFORMATION

1. DIRECT LABOR	SKILL/TRADE	MAN-HOURS		RATE		COST
1.A PRODUCT LABOR:	Project Director	20.00	MH	\$	90.00	\$ 1,800.00
	Project Manager	0.00	MH	\$	70.00	\$ -
	Superintendent	0.00	MH	\$	70.00	\$ -
	Foreman	0.00	MH	\$	45.00	\$ -
	Operator	0.00	MH	\$	45.00	\$ -
	Millwright	0.00	MH	\$	35.00	\$ -
	Carpenter	0.00	MH	\$	35.00	\$ -
	Laborer	0.00	MH	\$	30.00	\$ -
SUBTOTAL (1)						\$ 1,800.00

2. MATERIALS AND EQUIPMENT	DESCRIPTION	QUANTITY	UNIT PRICE	COST
2.A INCORPORATED IN WORK:	General Conditions	1	\$ 1,000.00	\$ 1,000.00
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
2.B EQUIPMENT:			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
2.C SALES TAX:	Sales Tax (LS)	1	\$ -	\$ -
SUBTOTAL (2)				\$ 1,000.00

3. SUBCONTRACTORS	NAME	DESCRIPTION OF WORK	COST
3.A DIRECT:			
3.B LOWER TIER:	Not Applicable	Not Applicable	
SUBTOTAL (3)			\$ -

4. CONSULTANTS	NAME	DESCRIPTION OF WORK	COST	
	Brown and Caldwell	Vacuum Sewer System Engineering	\$ 68,207.00	
		SUBTOTAL (4)	\$ 68,207.00	
5. FEE STRUCTURE	NAME	COST	PERCENT	FEE
A. Contractor				
1. Direct Labor:		\$ 1,800.00	5%	\$ 90.00
2. Material and Equipment:		\$ 1,000.00	5%	\$ 50.00
B. Subcontractors:		\$ -	5%	\$ -
C. Consultants		\$ 68,207.00	5%	\$ 3,410.35
			SUBTOTAL (5)	\$ 3,550.35
			SUBTOTAL (1-5)	\$ 74,557.35
D. Bonds and Insurance			3.00%	\$2,236.72
TOTAL COST OF THIS CHANGE PROPOSAL (All deductions shown in parentheses):			TOTAL	\$ 76,794

EXTENSION OF CONTRACT TIME:

As part of this Change Proposal, the Contractor requests an extension of Contract Time of 0 days.

Justification:

If direction to proceed is issued such that design of the Key Largo Park can occur concurrently with design of the Key Largo Trailer Village, no additional time will be added to the construction schedule. If direction to proceed is not issued during the November 19, 2003 Board Meeting, then design of the Key Largo Trailer Village will have advanced such that designing the two projects concurrently will not be possible and additional time may be required to complete this scope of work. In additions, delays in design will impact future construction.

RECORD DOCUMENTS: As part of this Change Proposal, the Contractor shall provide applicable record drawing information affected by this change.

Signed: _____
 Title: Project Director Date: 11/11/2003
 Contractor: The Haskell Company

RECOMMENDATION by ENGINEER: (Forward to Owner for Review)

See attached Brown and Caldwell letter.

Signature of Engineer: _____ Date: _____

ACCEPTANCE BY OWNER: (return to engineer for processing)

Signature of Owner's Authorized Representative: _____ Date: _____
 _____ Engineer to prepare necessary change order _____ Engineer to Re-negotiate change proposal as noted above _____ Other as above

OWNER:	CONTRACTOR:	PROJECT:
ENGINEER:	FIELD:	NO.:
	OTHER:	DATE:



GENERAL CONDITIONS ESTIMATE
Design & Permitting - Concurrent

DATE:

PREPARED BY: PMK

DESCRIPTION	COST CODE	QUANTITY	U/M	LABOR		MAT & SUBCONTRACTS			COMMENTS
				UNIT COST	EXTENSION	UNIT COST	EXTENSION		
PROJECT MANAGEMENT									
Project Director	01110	0.0	WK	3,600.00	0	0.00	0	\$0	w/ Change Proposal
Project Manager	01111	0.0	WK	2,800.00	0	0.00	0	\$0	
Assistant Project Manager	01112	0.0	WK	1,800.00	0	0.00	0	\$0	
Superintendent	01121	0.0	WK	2,800.00	0	0.00	0	\$0	
PROJECT OFFICE									
Superintendent's Office	01521	0.0	MTH		0	350.00	0	\$0	
Delivery/set up/knock down/block & level	01521	0.0	LS		0	0.00	0	\$0	
Steps & Decking	01521	0.0	MTH		0	100.00	0	\$0	
Superintendent Office Furniture	01533	0.0	LS		0	0.00	0	\$0	
Copier- Super. Office	01532	0.0	EA		0	0.00	0	\$0	
Computers/Printers/Software	01532	0.0	LS		0	0.00	0	\$0	
Fax Machine	01532	0.0	EA		0	0.00	0	\$0	
OFFICE SUPPLIES									
UPS Service	01531	0.0	MTH		0	250.00	0	\$0	
Postage	01531	0.0	MTH		0	100.00	0	\$0	
Office Supplies - Superint. Office		0.0	MTH		0	100.00	0	\$0	
Blueprinting & Mass Coping Services		1.0	LS		0	1,000.00	1,000	\$1,000	
TRAVEL, LODGING & MEALS									
Construction Travel (PM)	01342	0.0	TRIP		0	500.00	0	\$0	
Construction Travel (Superintendents)	01342	0.0	TRIP		0	300.00	0	\$0	
PCE Travel	01343	0.0	TRIP		0	0.00	0	\$0	
D.O.C./Director Travel	01342	0.0	TRIP		0	500.00	0	\$0	
Meals & Entertainment	01346	0.0	MTH		0	100.00	0	\$0	
SUBSISTENCE									
Personnel Moving Expense	01822	0.0	EACH		0	0.00	0	\$0	
Superintendent Subsistence	01811	0.0	MTH		0	1,687.00	0	\$0	
PCE Subsistence	01813	0.0	MTH		0	0.00	0	\$0	
PM Car Allowance		0.0	MTH		0	500.00	0	\$0	
STORAGE & FABRICATION									
Superintendent Office Build Out		0.0	LS		0	0.00	0	\$0	
Storage Trailers		0.0	EA		0	0.00	0	\$0	
Off-Site Storage		0.0	MTH		0	0.00	0	\$0	
ENGINEERING & LAYOUT									
Field Engineering Crews (2 Each)	01911	0.0	WK		0	0.00	0	\$0	
Survey & Baselines	01921	0.0	LS		0	0.00	0	\$0	
Survey Layout Supplies	01911	0.0	MTH		0	0.00	0	\$0	
MATERIAL TESTING									
Soil Testing	01411	0.0	LS		0	0.00	0	\$0	
Concrete Testing	01413	0.0	LS		0	0.00	0	\$0	
Laboratory Testing	01413	0.0	LS		0	0.00	0	\$0	
SUBMITTALS									
As-Built Drawings	01225	0.0	LS		0	0.00	0	\$0	
COMMUNICATIONS									
Watts Service		0.0	MTH		0	0.00	0	\$0	
Telephone Service		0.0	MTH		0	400.00	0	\$0	
Maint. Offices phone lines		0.0	LS		0	0.00	0	\$0	
Computer Modem/Data Line		0.0	MTH		0	300.00	0	\$0	
Cellular Phone / Radios		0.0	MTH		0	250.00	0	\$0	
Aerial Photos		0.0	MTH		0	75.00	0	\$0	
Progress Photos/Video Taping	01353	0.0	MTH		0	200.00	0	\$0	
Final Photos	01354	0.0	LS		0	0.00	0	\$0	
Project Signs		0.0	EACH		0	0.00	0	\$0	
Project Web Site		0.0	LS		0	0.00	0	\$0	
Project Radios		0.0	LS		0	0.00	0	\$0	
TEMPORARY UTILITIES									
Utility Deposits & Connections	01511	0.0	LS		0	0.00	0	\$0	
Temporary Electric Installation	01511	0.0	LS		0	0.00	0	\$0	
Temporary Electric Service	01511	0.0	MTH		0	500.00	0	\$0	
Power Consumption at Commissioning	01511	0.0	LS		0	0.00	0	\$0	
Temporary Water/Tanker	01518	0.0	MTH		0	0.00	0	\$0	
Temporary Water Installation	01518	0.0	LS		0	0.00	0	\$0	
Temporary Water Service	01518	0.0	MTH		0	100.00	0	\$0	
Initial System Fill - Water (\$0.01/7 USG)	01518	0.0	GAL		0	0.00	0	\$0	
MISC. EXPENSES									
Overtime Expense		0.0	HR		0	0.00	0	\$0	
Misc. Trailer Lighting		0.0	LS		0	0.00	0	\$0	
PMCS Fees		0.0	MTH		0	500.00	0	\$0	
MBE Buyout		0.0	LS		0	0.00	0	\$0	
Project Specific Bonus		0.0	LS		0	0.00	0	\$0	
TEMP. WATER / SANITARY									
Drinking Water/Ice/Coffee	01535	0.0	MTH		0	125.00	0	\$0	
Temporary Toilets- Trailers	01541	0.0	MTH		0	200.00	0	\$0	
Temporary Toilets- Site	01541	0.0	MTH		0	200.00	0	\$0	
PROTECTION									
Temporary Splash Guards - AT/SBR	01551	0.0	SF		0	0.00	0	\$0	
Temp. Barricades	01551	0.0	LS		0	0.00	0	\$0	
Temp. Walls for dust (visqueen)	01552	0.0	SF		0	0.00	0	\$0	
Temp. Heat & Ventilation		0.0	MTH		0	0.00	0	\$0	
Guardrails	01551	0.0	LF		0	0.00	0	\$0	
Stairs & Ladders		0.0	LS		0	0.00	0	\$0	
Flagmen		0.0	HR		0	0.00	0	\$0	
Protect Finish Work	01551	0.0	LS		0	0.00	0	\$0	
Job-Site Fireprotection		0.0	LS		0	0.00	0	\$0	
Temporary Walks	01551	0.0	SF		0	0.00	0	\$0	
MANDATORY SAFETY EQUIP									
Safety Glasses	01556	0.0	EA		0	0.00	0	\$0	
Hard Hats	01556	0.0	EA		0	0.00	0	\$0	



GENERAL CONDITIONS ESTIMATE
Design & Permitting - Concurrent

DATE:

PREPARED BY: PMK

DESCRIPTION	COST CODE	QUANTITY	U/M	LABOR		MAT & SUBCONTRACTS			COMMENTS
				UNIT COST	EXTENSION	UNIT COST	EXTENSION		
Back Supports	01556	0.0	EA		0	0.00	0	\$0	
Drug Testing	01825	0.0	EA		0	0.00	0	\$0	
Safety Equipment & Supplies	01556	0.0	MTH		0	100.00	0	\$0	
Safety Awards Program	01831	0.0	% LBR		0	0.00%	0	\$0	
SITE SECURITY									
Temporary Fence	01553	0.0	LF		0	0.00	0	\$0	
Alarm Service	01554	0.0	MTH		0	0.00	0	\$0	
Guard Service/Fire Watch	01554	0.0	HR		0	0.00	0	\$0	
TEMPORARY FACILITIES									
Road Maintenance	01524	0.0	LS		0	0.00	0	\$0	
Roads (lay down and trailer area)	01524	0.0	LS		0	0.00	0	\$0	
CLEAN-UP									
Daily Cleanup - Job Site	01543	0.0	WK		0	0.00	0	\$0	
Trash Hauling & Dump Charges - Job Site	01542	0.0	WK		0	0.00	0	\$0	
Clean Up - Office Trailers	01543	0.0	MTH		0	0.00	0	\$0	
Road Clean Up	01524	0.0	WK		0	0.00	0	\$0	
CLOSE-OUT									
Punchlist	01440	0.0	LS		0	0.00	0	\$0	
Warranty Trip		0.0	LS		0	0.00	0	\$0	
COMP. OWNED EQUIPMENT									
Company Owned Trucks	01611	0.0	MTH		0	800.00	0	\$0	
Company Owned Other Equipment	01612	0.0	MTH		0	100.00	0	\$0	
Equipment Rental Insurance		0.0	LS		0	100.00	0	\$0	
EQUIPMENT -OUTSIDE VEND.									
Non-Company Owned Trucks/Trailers	01621	0.0	MTH		0	0.00	0	\$0	
Non-Company Owned Other Equipment	01622	0.0	MTH		0	0.00	0	\$0	
EQUIP. FUEL & MAINTENANCE									
Maintenance & Repairs	01660	0.0	MTH		0	125.00	0	\$0	
Equipment & Truck Fuel	01632	0.0	MTH		0	300.00	0	\$0	
Industrial Gases	01631	0.0	MTH		0	0.00	0	\$0	
NON-POWER TOOLS									
Expendable Tools	01641	0.0	LS		0	0.00	0	\$0	
FREIGHT									
Freight & Unloading	01356	0.0	LS		0	0.00	0	\$0	
MAT'L HANDLING EQUIP.									
Crane	01623	0.0	DY		0	0.00	0	\$0	
Material Hoist	01624	0.0	LS		0	0.00	0	\$0	
Lull	01622	0.0	MTH		0	0.00	0	\$0	
Scaffolding	01622	0.0	MTH		0	0.00	0	\$0	
PERMITS, LICENSES & INS.									
DEP Permit	01311	0.0	LS		0	0.00	0	\$0	
County Permit	01312	0.0	LS		0	0.00	0	\$0	
DOT Permit	01312	0.0	LS		0	0.00	0	\$0	
SFWM Perimt	01312	0.0	LS		0	0.00	0	\$0	
Residential Permit	01312	0.0	LS		0	0.00	0	\$0	
Plumbing Permit	01312	0.0	LS		0	0.00	0	\$0	
Permit Expediting	01312	0.0	LS		0	0.00	0	\$0	
Licenses	01315	0.0	LS		0	0.00	0	\$0	
SURETY BONDS									
Sub Guard	01332	0.0	LS		0	0.00	0	\$0	w/ Change Proposal
Performance & Payment Bond	01331	0.0	LS		0	0.00	0	\$0	w/ Change Proposal
General Liability Insurance	01331	0.0	LS		0	0.00	0	\$0	w/ Change Proposal
Builder's Risk Insurance	01331	0.0	LS		0	0.00	0	\$0	w/ Change Proposal
SPECIAL SERVICES									
Legal Expense	01351	0.0	LS		0	0.00	0	\$0	
LABOR BURDEN									
Payroll, Taxes, & Insurance	01841	0.0	% LBR		0	0.00%	0	\$0	w/ Labor Rate
Admin. Premium	01843	0.0	% LBR		0	0.00%	0	\$0	w/ Labor Rate
PCE Burden	01842	0.0	%LBR		0	0.00%	0	\$0	w/ Labor Rate

TOTALS>>>>>>>>>

\$1,000

BROWN AND
CALDWELL

Mr. Pete Kinsley
Division Leader -- Water
The Haskell Company
111Riverside Avenue
Jacksonville, Florida 32231-4100

24533.001/1

Subject: Key Largo Park Collection System Redesign Services

Dear Mr. Kinsley:

In response to your request, Brown and Caldwell is pleased to provide you with scope and compensation details for the Key Largo Park Collection System Redesign. As you know, Brown and Caldwell has already developed three value engineering concepts for the Key Largo Park Collection System. Incorporating the value engineering concepts will require a complete redesign of the existing system. As such, Brown and Caldwell will become the Engineer of Record for the entire project.

In addition to the anticipated Redesign Services, we understand that consulting services are requested to address policy scenarios, as they may impact the District's design and construction costs.

Schedule of Values

The following table presents the schedule of values for the proposed services.

Task No.	Task Name	Cost
4A	Concept Design Submittal	\$12,519.00
9A	60 Percent Design Submittal	\$27,753.00
10A	90 Percent Design Submittal	\$20,664.00
11A	100 Percent Design Submittal	\$7,271.00
14A	Construction Phase Services	\$12,125.00
	Total	\$80,332.00 / 68,207. ⁰⁰

For each Park scenario that Brown and Caldwell is requested to evaluate, we propose a fee of \$1,800.00

The above costs are based upon the following assumptions:

- Scenario B Park layout was used as presented to the District Board.
- Surveying has already been completed and will be provided to Brown and Caldwell. In addition, field surveying layout of the collection system and, as-

built locations and elevations of the collection system will be provided by others.

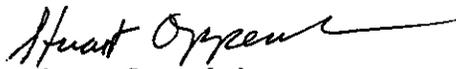
- Geotechnical work has already been completed and the report(s) will be provided to Brown and Caldwell.
- All necessary documentation will be provided to Brown and Caldwell from Boyle Engineering Corporation through the District.

Scope of Work

The Scope of Work for each of the Tasks identified in the Schedule of Values is presented in Exhibit A.

Brown and Caldwell is pleased and excited to provide these additional services to the Haskell Company and the Key Largo Wastewater Treatment District. If you have any questions, please call me.

Yours truly,



10/14/03

Stuart Oppenheim
Project Manager

Cc: Mr. Joe Paterniti, Miami
Mr. Ted Hortenstine, Orlando

Enclosure: Exhibit A

RECEIVED
THE HASKELL COMPANY

OCT 27 2003

JACKSONVILLE, FLORIDA
HOME OFFICE

Key Largo Park Collection System Redesign Services

EXHIBIT A

SCOPE OF WORK

TASK 4A – Concept Review Submittal

Objective: To provide a basis of understanding of what will be incorporated into the completed project.

Activities:

4.1 Concept Review Submittal Report

Principal elements to be included in the Basis of Design Report include:

- Project Description
- Design Data
- Basis of Design Standards
- Project Master Schedule and Design Period Schedule
- Geotechnical Investigation Reports
- Design Drawing List
- Technical Specifications List
- Preliminary Collection System Layout

4.2 Submit Documents

Submit 7 Copies of Draft and Final Concept Review Submittal

Products:

1. Completed draft and final concept review submittal

TASK 9A – PARK COLLECTION SYSTEM 60% DESIGN DEVELOPMENT PROGRESS SUBMITTAL

Objective: To prepare the Park Collection System 60% Design Development Submittal

Activities:

9.1 Prepare Park Collection System Design Development Progress Submittal

- Park Collection System Plan And Profiles
- Park Collection System Details specific to the Park Project
- Park Collection System Specifications specific to the Park Project.

Based on Scenario B (Vacuum mains in front of all lots, no pits for vacant lots) it is estimated that at least 26 new drawings will be required,

9.2 Submit Documents

Submit Seven copies of the documents a set of reproducible, and a CD will be provided.

Products:

1. Product from this task is the Park Collection System 60% Design Development Progress Submittal.

TASK 10A – PARK COLLECTION SYSTEM PRE-FINAL DESIGN SUBMITTAL (90%)

Objective: To prepare Park Collection System pre-final Design Submittal (90%)

Activities:

10.1 Prepare Park Collection System Pre-Final Design Submittal

- Park Collection System Plan And Profiles
- Park Collection System Details
- Park Collection System Specifications

10.2 Submit Documents

Seven copies of the documents a set of reproducible, and a CD will be provided.

Products:

1. Product from this task is the Park Collection System Pre-Final Design Submittal.

TASK 11A – PARK COLLECTION SYSTEM FINAL DESIGN

Objective: To prepare Park Collection System Final Design Documents

Activities:

11.1 Preparation of Park Collection System plans and specifications.

- Park Collection System Plan and Profiles
- Park Collection System Details
- Park Collection System Specifications

Products

1. Product from this task is the final Park Collection System design submittal.

~~**TASK 14 – PARK COLLECTION SYSTEM CONSTRUCTION PHASE SERVICES**~~

Objective: To provide construction Phase Services for the Park Collection System in support of The Haskell Company.

Activities:

14.1 Office Engineering Services

Provide office engineering services to include consulting with and advising THC on resolutions of problems due to actual field conditions encountered; and reviewing shop drawings and submittals for compliance with design concepts. It has been assumed that submittal reviews will be conducted as part of the Key Largo Trailer Village project's scope of work.

14.2 Field Engineering Support Services

- Make periodic visits to project site at intervals appropriate to various stages of construction to observe the quality of the executed work. This scope of work is based on 20 site visits.
- Coordinate with State, County, and City Agencies for construction in their jurisdictions.
- Review shop drawings

- Resolve design related construction problems.
- Make necessary interpretations and clarifications of Contract Documents.
- Witness testing
- Provide substantial completion inspection walk-through of the project with THC and KLWWTP.
- Prepare and certify record drawings.

Products:

1. Meeting and site visit notes.
2. Record drawings

ADDITIONAL SERVICES – EVALUATE SCENARIOS

Objective: In response to District policy proposals, provide Engineer's opinion of the associated design and cost impacts upon the collection system.

Activities:

The District recognizes that certain policy issues remain to be resolved. Some of these policy issues or scenarios can have a significant impact upon the project's engineering and construction cost. Brown and Caldwell will respond to questions posed by the District by assessing the policy impacts through the development of engineering and construction cost opinions. This Task will be considered an Additional Service and will be based on the number of scenarios that are requested for evaluation.

Products:

1. Products from this Task will be a schedule of estimated material quantities and marked-up drawings that identify the scenario's collection system.