

**Rules of the  
South Florida Water Management District**

**EVERGLADES  
PROGRAM  
Chapter 40E-63, F.A.C.**



**Amended January 24, 2002**

**EVERGLADES PROGRAM**  
**Chapter 40E-63**

**PART I      EVERGLADES REGULATORY PROGRAM:  
EVERGLADES AGRICULTURAL AREA (EAA) BASIN**

- 40E-63.011 Policy and Purpose.
- 40E-63.091 Publications Incorporated by Reference.
- 40E-63.101 Scope.
- 40E-63.102 Definitions.
- 40E-63.104 EAA Basin Boundaries.
- 40E-63.106 Works of the District within the Everglades.
- 40E-63.108 Implementation.
- 40E-63.110 EAA Basin - Permits Required.

**Subpart A    EAA Basin - General Permits**

- 40E-63.120 General Permits for Use of Works of the District Within the Everglades.

**Subpart B    EAA Basin - Individual Permits**

- 40E-63.130 Individual Permit Application Requirements in the EAA Basin.
- 40E-63.132 Content of Application for Individual Permits in the EAA Basin.
- 40E-63.134 Permit Application Processing Fee for Individual Permits in the EAA Basin.
- 40E-63.136 Conditions for Issuance of Individual Permits in the EAA Basin.
- 40E-63.138 Duration of Individual Permits in the EAA Basin.
- 40E-63.140 Modification of Individual Permits in the EAA Basin.
- 40E-63.141 Delegation of Authority Pertaining to Letter Modifications and Administrative Information Updates of Existing Individual Permits.
- 40E-63.142 Transfer of Individual Permits in the EAA Basin.
- 40E-63.143 Limiting Conditions for Individual Permits in the EAA Basin.
- 40E-63.145 Compliance and Enforcement of Individual Permits in the EAA Basin.

**Subpart C    EAA Basin - Master Permits**

- 40E-63.150 Master Permit Application Requirements in the EAA Basin.
- 40E-63.152 Content of Application for Master Permits in the EAA Basin.
- 40E-63.154 Permit Application Processing Fee for Master Permits in the EAA Basin.
- 40E-63.156 Conditions for Issuance for Master Permits in the EAA Basin.
- 40E-63.158 Duration of Master Permits in the EAA Basin.
- 40E-63.160 Modification of Master Permits in the EAA Basin.
- 40E-63.161 Delegation of Authority Pertaining to Letter Modifications and Administrative Information Updates of Existing Master Permits.
- 40E-63.162 Transfer of Master Permits in the EAA Basin.
- 40E-63.163 Limiting Conditions for Master Permits in the EAA Basin.
- 40E-63.165 Compliance and Enforcement of Master Permits in the EAA Basin.

**PART II      EVERGLADES WATER SUPPLY AND HYDROPERIOD  
IMPROVEMENT AND RESTORATION**

- 40E-63.201 Scope.

**Subpart A BMP Replacement Water**

- 40E-63.211 Purpose.
- 40E-63.212 Definitions.
- 40E-63.223 Model to Quantify Annual Allocation of Replacement Water.
- 40E-63.225 Delivery of Average Annual Allocation of Replacement Water.

**PART III BMP RESEARCH, TESTING AND IMPLEMENTATION TO ADDRESS WATER QUALITY STANDARDS**

- 40E-63.301 Scope.
- 40E-63.302 Permits Required.
- 40E-63.305 Master Permit.
- 40E-63.310 Conditions for Issuance of a Master Permit.
- 40E-63.312 Transfer of Master Permit.
- 40E-63.313 Master Permit Duration.
- 40E-63.314 Master Permit General Conditions.
- 40E-63.320 Individual Permits for BMP Research.
- 40E-63.321 Conditions for Issuance of Individual Permits.
- 40E-63.323 Individual Permit Conditions.

**PART IV EVERGLADES REGULATORY PROGRAM: C-139 BASIN**

- 40E-63.400 Purpose and Policy
- 40E-63.401 Scope of Program
- 40E-63.402 Definitions
- 40E-63.404 Incorporation of Forms, Instructions and References
- 40E-63.406 Delegation
- 40E-63.410 Waivers
- 40E-63.415 No Notice General Permits
- 40E-63.420 BMP Plan Pre-approvals
- 40E-63.430 Permit Applications
- 40E-63.432 Permit Modifications, Transfers and Renewals
- 40E-63.434 Permit Duration
- 40E-63.436 Permit Application Processing Fees
- 40E-63.440 General Permit Application Requirements in the C-139 Basin
- 40E-63.442 Basis of Issuance of General Permits in the C-139 Basin
- 40E-63.444 Limiting Conditions for General Permits in the C-139 Basin
- 40E-63.450 Individual Permit Application Requirements in the C-139 Basin
- 40E-63.452 Basis for Issuance of Individual Permits in the C-139 Basin
- 40E-63.454 Limiting Conditions for Individual Permits in the C-139 Basin
- 40E-63.456 Optional Discharge Monitoring Program
- 40E-63.458 Limiting Conditions for the Optional Discharge Monitoring Program
- 40E-63.460 C-139 Basin Compliance
- 40E-63.470 C-139 Basin Works of the District Permit Compliance

**PART I**  
**EVERGLADES REGULATORY PROGRAM:**  
**EVERGLADES AGRICULTURAL AREA (EAA) BASIN**

**40E-63.011 Policy and Purpose.**

- (1) The Everglades is a unique national resource. It has a high diversity of species, and provides habitat for large populations of wading birds and several threatened and endangered species, including wood storks, snail kites, bald eagles, Florida panthers, and American crocodiles. Large portions of the northern and eastern Everglades have been drained and converted to agricultural or urban land uses. Only 50% of the original Everglades ecosystem remains today. The remainder is the largest and most important freshwater sub-tropical peatland in North America. The remaining components of the historic Everglades are located in the Water Conservation Areas (WCAs) and Everglades National Park (ENP). ENP and Loxahatchee National Wildlife Refuge (WCA 1) are Outstanding Florida Waters, a designation which requires special protection for the resource.
- (2) Large portions of the Everglades ecosystem have evolved in response to low ambient concentrations of nutrients and seasonal fluctuations of water levels. Prior to creation of the Everglades Agricultural Area (EAA), nitrogen and phosphorus were mainly supplied to large areas only in rainfall. Phosphorus is the primary limiting nutrient throughout the remaining Everglades. Sawgrass has lower phosphorus requirements than other species of Everglades vegetation.
- (3) A substantial portion of EAA nutrients is transported to the remaining Everglades either in dissolved or in particulate form in surface waters. The introduction of phosphorus from EAA drainage water has resulted in ecological changes in substantial areas of Everglades marsh. These changes are cultural eutrophication, which is an increase in the supply of nutrients available in the marsh. The increased supply of phosphorus in Everglades marshes has resulted in documented impacts in several trophic levels, including microbial, periphyton, and macrophyte. The areal extent of these impacts is increasing.
- (4) The State of Florida enacted The Marjory Stoneman Douglas Everglades Protection Act in 1991. The Act required the District to publish notice of rulemaking by October 1, 1991, allowing for a master permit or permits authorizing discharges, subject to conditions or requirements, from landowners within the area served by the drainage structures listed in Appendix A3, TABLE A1. That law was substantially revised in 1994 and is codified today as the Everglades Forever Act, Sec. 373.4592, F.S.
- (5) The regulatory program to address the reduction of total phosphorus loads from the Everglades Agricultural Area (EAA) in general was adopted initially by this Chapter in December 1991 and was amended in 1992 to add a specific phosphorus load allocation.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-7-92, 7-3-01.

**40E-63.091 Publications Incorporated by Reference.**

- (1) "Appendix A1 – Description: Regulated Portion of Everglades Agricultural Area S-5A, S-6, S-7 and S-8 Basins Palm Beach, Broward and Hendry Counties", dated January 2001.
- (2) "Appendix A2 – Typical Best Management Practices for the EAA Basin", dated January 2001, and including nutrient control practices, water management practices, particulate matter and sediment control, pasture management, and other BMPs.
- (3) "Appendix A3 – EAA Basin Compliance", dated January 2001, and setting forth the procedures the District will follow to determine whether the entire EAA Basin has met the applicable total Phosphorus reduction goals based upon mathematical data analysis.
- (4) "Appendix A3.1 – FORTRAN Program for Calculating EAA Basin Flows and Phosphorus Loads", dated January 2001,.
- (5) "Appendix A3.2 – Flow Computation Methods Used to Calculate EAA Basin Flows", dated January 2001, providing applicable mathematical formulas for calculating flow rates through water management structures.
- (6) "Appendix A4 – EAA Basin Farm Scale Allocation", dated January 2001, setting forth the procedure the District will follow to regulate total Phosphorus loads from individual farms when the EAA Basin has been determined to be not in compliance with applicable requirements.
- (7) "Appendix A5 – Outline of Compliance and Enforcement Procedures in the EAA Basin", dated January 2001.
- (8) "Appendix A6 – EAA Basin Examples of Permit Modifications", dated January 2001, distinguishing permit modifications, letter modifications, and administrative updates.
- (9) South Florida Water Management District Form 0779, dated January 01, entitled "Application for a 'Works of the District' Permit".
- (10) "South Florida Water Management District Guidance for Preparing an application for "A Works of the District" Permit in the Everglades Pursuant to Ch. 40E-63, F.A.C.", dated May, 1992.
- (11) The documents listed in subsections (1) through (10) are hereby incorporated by reference, are published by the District and are available on the District's website (sfwmd.gov) or from the District at 3301 Gun Club Road, West Palm Beach, FL 33406, 561-686-8800, upon request.

Specific Authority 373.044, 373.113, F.S.

Law Implemented 373.016, 373.451, 373.453, 373.4592, F.S.

History – New 7-3-01.

**40E-63.101 Scope.**

- (1) The goal of the regulatory program contained in Part I of this Chapter is to reduce by 25% the total phosphorus loads discharged from the EAA.
  - (a) The EAA is generally depicted in Appendix A1 Figure 2 and includes the drainage Basins of S-2, S-3, S-5A, S-6, S-7, S-8 and S-150.
  - (b) The Everglades Protection Area is generally depicted in Appendix A1 Figure 1 and includes Water Conservation Areas 1, 2A, 2B, 3A, and 3B,

- the Arthur R. Marshall Loxahatchee National Wildlife Refuge and the Everglades National Park.
- (c) Both areas are more specifically identified and described in Rule 40E-63.104, F.A.C. (Boundaries).
- (2) In Part I of this Chapter, the "Works of the District within the Everglades" are specifically named. These include water control structures, rights-of-way, canals, and other water resources which the South Florida Water Management District owns, has accepted responsibility for, or has specifically named. All lands within the EAA are deemed to be users of the Works of the District within the Everglades, and as such, must comply with the applicable provisions of this Chapter. Any owner of a parcel of land in the EAA must obtain the applicable general, individual, or master permit, and comply with applicable rule criteria.
- (3) This rule is based on the assumption that implementation of the regulatory program for the EAA will not reduce the quantity of water discharged from the S-2, S-3, S-5A, S-6, S-7, S-8, and S-150 Basins by more than 20% of the quantity discharged historically. The District will evaluate water quantity data collected from the structures, beginning on the effective date of this rule, to determine whether the quantity discharged from the structures after implementation of this regulatory program is less than 80% of the historical amount. If the quantity of water discharged is less than assumed or the water supply for the Everglades is inadequate, the District intends to take appropriate actions in the future to insure water supply for the Everglades. Appropriate actions may include, but are not limited to operational changes, or the initiation of proceedings pursuant to Chapter 120, Florida Statutes, to modify or revoke District permits or rules relating to water quantity used or discharged (surface water management, consumptive water use and works of the district). This section is not intended to modify or limit in any way the District's authority and responsibilities to plan for and regulate consumptive water use, water shortages and water supply.
- (4) The District shall consider alternatives to the requirements specified in this Chapter, if the District obtains or is presented with evidence that the alternatives are more appropriate for the particular facts and circumstances presented and are consistent with the policy and purpose of this Chapter. This section is intended to allow additional methods for achieving equivalent performance and compliance and not to establish more or less strict requirements. Any proposals for alternative requirements shall be reviewed by District staff, and presented to the Governing Board for action.
- (5) The District intends to continue research and evaluation of the data collection procedures and methodology specified in Parts I, II and III of this Chapter, the effectiveness of the regulatory program in accomplishing the goal, and the water quality of the Everglades. The regulatory program and requirements set forth in this Chapter, including all compliance and enforcement procedures for permittees, are subject to revision if future evaluations indicate that the goal of reducing total phosphorus loads discharged from the EAA by 25% is not met. The District will initiate Chapter 120, Florida Statutes, rulemaking procedures to incorporate any significant changes to the data collection procedures, methodology, program requirements, or program compliance and enforcement

procedures specified in this Chapter. In addition, other water quality parameters, water quantity withdrawal conditions, or requirements may be added, and funding requirements for fulfilling other District objectives could be affected.

- (6) The District is also responsible for implementing SWIM Plans for other priority water bodies. However, these areas are not included in the scope of this rule, except to the extent that they are identified and described as part of the area in Rule 40E-63.104, F.A.C. (Boundaries).
- (7) Permits issued under this Chapter do not eliminate or alter permit requirements for discharges which may also impact other water bodies, such as Lake Okeechobee, or permits which may be required by other District regulatory programs.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-7-92, 7-3-01.

#### **40E-63.102 Definitions.**

When used in this Chapter:

- (1) "Best Management Practice (BMP) Plan" means the plan required by Rule 40E-63.136(1), F.A.C.
- (2) "EAA Basin" means the entire EAA, which is described in Rule 40E-63.104(2), F.A.C. (Boundaries).
- (3) "Everglades Agricultural Area Environmental Protection District" (EAA-EPD) was established by the State Legislature as a special district representing landowners within the EAA Basin for the purposes of ensuring environmental protection by means of conducting scientific research on environmental matters related to air and water and land management practices and implementing the financing, construction, and operation of works and facilities designed to prevent, control, abate or correct environmental problems and improve the environmental quality of air and water resources.
- (4) "FDEP Comprehensive Quality Assurance Plan" means an approved Florida Department of Environmental Protection (FDEP) plan pursuant to Rule Chapter 62-160, F.A.C., which specifies the proper field sampling procedures and protocols for particular projects which include sampling equipment, equipment cleaning and preparation procedures, sample collection procedures, sample preservation protocols, sample storage and transport protocols, and sample chain-of-custody protocols and documentation.
- (5) "Individual Permit" means a single permit issued to any entity, and the owners of all parcels which discharge water tributary to the structures identified in the permit, that is responsible for implementing Best Management Practices and conducting water quality monitoring for all lands specified within the permit.
- (6) "Land Practice" means agricultural or other activities conducted on a parcel pursuant to an approved BMP Plan.
- (7) "Land Practice Change" means any change in the use of a parcel which is likely to result in significant changes to the scope or type of Best Management Practice specified in the permitted BMP Plan for the parcel or in the effectiveness of the Best Management Practice specified in the permitted BMP Plan.

- (8) "Master Permit" means a single permit issued for the entire Everglades Agricultural Area to a legally responsible entity that provides an opportunity to achieve collective compliance with the provisions of this Chapter.
- (9) "Parcel" means a contiguous land area under single ownership within the Everglades Agricultural Area Basin.
- (10) "Structure" means a structural device or hydrologic feature through which water is discharged from a parcel or parcels to a receiving water.
- (11) "Total Phosphorus" means the amount of phosphorus in an unfiltered sample which has been converted to ortho phosphate by an acid persulfate digestion.
- (12) "Water Management System" means the collection of devices, improvements or natural systems whereby surface waters are conveyed, controlled, impounded or obstructed.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-7-92, 6-30-97, 6-7-99, 7-3-01.

#### **40E-63.104 EAA Basin Boundaries.**

- (1) The Everglades Protection Area is generally described as: Water Conservation Areas 1, 2A, 2B, 3A, and 3B, the Arthur R. Marshall Loxahatchee National Wildlife Refuge, and the Everglades National Park. It is depicted on maps and legally described in "Appendix A1" of Chapter 40E-63, F.A.C., which is published by reference and incorporated into this Chapter.
- (2) The EAA is generally described as: the area including, but not limited to, the drainage basins of S-2, S-3, S-5A, S-6, S-7, S-8, and S-150. The EAA is depicted on maps and legally described in "Appendix A1" of Chapter 40E-63, F.A.C.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-3-01.

#### **40E-63.106 Works of the District within the Everglades.**

The following Works Of The District within the Everglades Agricultural Area Basin are or have been used for calculating compliance with the phosphorus load reduction objectives of the Everglades Program: S-2, S-3, S-5A, S-6, S-7, S-8, S-150, G-88, G-136, G-200, G-344A, G-344B, G-344C, G-344D, G-349B, G-350B, G-357, G-404, G-410, G-402-A, G-402-B, G-402-C, G-402-D, G-605, G-606, Miami Canal, North New River Canal, Hillsboro Canal, C-51 (at both current and ultimate discharge locations into the Everglades Protection Area), and their open channel connections.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-3-01.

#### **40E-63.108 Implementation.**

The effective date of Parts I, II, and III of this Chapter is 1-22-92. The rules shall apply to existing and new releases of water to Works of the District within the Everglades.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-3-01.

**40E-63.110 EAA Basin - Permits Required.**

- (1) The lands in the EAA, as described in Rule 40E-63.104(2), F.A.C., (Boundaries) release water that ultimately makes use of, connects to, is released to, or is discharged to the Works of the District within the Everglades, as defined in Rule 40E-63.106, F.A.C., (Works of the District within the Everglades) and a general permit, individual permit, or master permit must be obtained pursuant to Subpart A, B, or C of Part I of this Chapter.
- (2) Any landowner in the EAA, as described in Rule 40E-63.104(2), F.A.C., (Boundaries) may submit evidence to the District demonstrating that the water discharged from their property does not use the Works of the District within the Everglades, and request District staff to make a written determination that the requirements of this Chapter do not apply to their property. The request and supporting evidence must be submitted no later than 90 days prior to the application date specified below for Subparts B and C for Individual and Master Permits. District staff will review the evidence submitted and other available information and issue a written statement within 60 days specifying whether the property is subject to the requirements of Part I of this Chapter.
- (3) If the BMP Plan submitted pursuant to Part I of this Chapter proposes activities which require new or modified consumptive water use, surface water management, environmental resource, right-of-way, or well construction permits from the District, applications for the other permits shall be submitted at the same time the Works of the District permit application is submitted. The permit applications for the new or modified activities must be complete by the time the Works Of The District permit application is complete. If the applications are not complete, the proposed activities will be excluded from the Works of The District application.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-7-92, 7-3-01.

**Subpart A EAA Basin - General Permits****40E-63.120 General Permits for Use of Works of the District within the Everglades.**

- (1) Parcels of land that connect to or make use of the Works of The District Within The Everglades, and that meet the conditions specified below in Subsection (2), are granted a General Permit to connect to and make use of the Works Of The District Within The Everglades, subject to the requirements of Part I of this Chapter.
- (2) The parcels of land described below qualify for a General Permit, subject to the conditions specified below:
  - (a) The property is less than 40 acres in size, is residential, and is not served by a central drainage system; or
  - (b) The property is less than 5 acres in size, is commercial or industrial, and is not served by a central drainage system.
- (3) The District shall require the submission of applications for individual permits from general permittees if the District determines that the additional participation

- in this permit program is needed to meet the program goals. Notice of the requirement shall be provided to parcel owners in writing by certified mail.
- (4) General permits granted upon adoption of Part I of this Chapter do not relieve the permittee of the responsibility to comply with all other laws or regulations applicable to the use of or discharges from the parcel.
  - (5) General permits granted upon adoption of Part I of this Chapter remain effective unless the District notifies a permittee in writing by certified mail pursuant to Subsection (3), above, that the permit is revoked.
  - (6) Parcel owners granted a general permit, who choose to participate in a Master Permit shall notify the District of their participation within 30 days of signing an agreement or other legal document with the master permit application.
  - (7) No Notice of Intent, permit application, or application fee is required.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 1-1-97, 7-3-01.

### **Subpart B EAA Basin - Individual Permits**

#### **40E-63.130 Individual Permit Application Requirements in the EAA Basin.**

- (1) Individual Permits are required for all structures which discharge or release water to one of the Works of the District within the Everglades as defined in Rule 40E-63.106, F.A.C., (Works of the District within the Everglades) unless granted a general permit or included in a Master Permit pursuant to Part I of this Chapter.
  - (a) Individual permit applications must be submitted by the owner of land on which a structure is located and any entity responsible for operating the structure. The permit application must include the owners of all parcels which discharge water tributary to the structure.
  - (b) Individual permit applications must be submitted by the owners of all parcels not included in either (a) above, a general permit, or a master permit.
  - (c) Applications may be submitted by a lessee of a parcel provided the lease is in writing, and reasonable assurance is provided that the lessee has the legal and financial capability of implementing the BMP Plan, monitoring plan and other permit conditions. Reasonable assurance shall be provided by a lease with a duration as long as the duration of an individual permit issued pursuant to Part I of this Chapter together with an application co-signed by the parcel owner; however, other alternatives submitted by an applicant will be considered.
- (2) An applicant may submit evidence to the District regarding questions about which lands are tributary to a structure, and request District staff to make a written determination. The request and supporting evidence must be submitted no later than June 1, 1992. District staff will review the evidence submitted and other available information and issue a written statement within 60 days of receipt of the request and evidence.
- (3) Applications for Individual Permits are due by September 1, 1992.
- (4) The District expects to take final agency action on all initial permits issued pursuant to Part I of this Chapter no later than July 1993. Accordingly, the District

shall process the applications submitted pursuant to Part I of this Chapter in strict accordance with the 90-day time provisions set forth in Section 120.60, F.S. Applicants are expected to make good faith efforts to complete applications within a reasonable time. Applications which are not complete within a reasonable time are subject to denial and administrative or judicial enforcement action.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.119, 373.129, 373.136, 373.451, 373.453, 373.4592, 373.603 F.S.

History — New 1-22-92, Amended 7-3-01.

#### **40E-63.132 Content of Application for Individual Permits in the EAA Basin.**

Applications for Individual Permits shall contain all the following:

- (1) Date and signature of the owner or entity responsible for operating all control structures that discharge to District primary canals and of owners of all parcels included in the permit application.
- (2) A clear delineation of the area and acreage contained in the permit application, including a map which is correlated with the list of parcel owners in (1) above.
- (3) Copies of any existing contracts, agreements, or equivalent regarding use or operation of the control structure between the entity responsible for operating the control structure and the parcel owners included in the application.
- (4) A list of all District permits required for the application area and their status.
- (5) A completed copy of Form 0779, entitled "Application For A Works Of The District Permit", which is published by reference and incorporated into this Chapter.
- (6) All the information specified in Application Guidebook 0779, entitled "Guidance For Preparing An Application For A Works Of The District Permit In The Everglades Pursuant To Ch. 40E-63, F.A.C.", dated May 14, 1992, which is published by reference and incorporated into this Chapter.
- (7) All the information necessary to satisfy the conditions for issuance of Individual Permits in Rule 40E-63.136, F.A.C.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-7-92.

#### **40E-63.134 Permit Application Processing Fee for Individual Permits in the EAA Basin.**

The following permit application processing fees shall be paid to the District at the time the following actions on Individual Permits are filed:

- (1) For new applications for Individual Permits: a minimum fee of \$1,880, plus \$1.50 per acre for each acre above 320 acres in size, with a total maximum fee of \$30,000;
- (2) For renewals (with or without modifications) to existing Individual Permits: a fee of \$1,560, plus \$0.25 per acre for each acre over 320 acres, with a maximum fee of \$5,000.
- (3) For a Modification of an existing Individual Permit: a fee of \$1,880.
- (4) For a Letter Modification of an existing Individual Permit: a fee of \$500.
- (5) For Administrative Information Updates to an existing Individual Permit: No Fee.
- (6) For Transfers of existing Individual Permits: a fee of \$200.

- (7) An application shall not be considered complete until the appropriate application fee is submitted. These fees are assessed in order to defray the cost of evaluating, processing, monitoring, and inspecting for compliance required in connection with consideration of such applications. Failure of any applicant to pay the applicable fees established herein will result in denial of an application.

Specific Authority 373.044, 373.109, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.109, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-7-92, 7-3-01.

#### **40E-63.136 Conditions for Issuance of Individual Permits in the EAA Basin.**

In order to obtain a permit under Part I of this Chapter, an applicant must satisfy all the following conditions:

- (1) Submit and implement a BMP Plan which includes:
- (a) A description of Best Management Practice implementation and operation;
  - (b) A description of Best Management Practice rationale (Best Management Practice research can be used to supplement data where appropriate);
  - (c) A consideration of the Best Management Practices listed in Appendix A2, incorporated by reference into this Chapter, and an explanation of why Best Management Practices not included in the BMP Plan are not suitable for implementation;
  - (d) A fertilization and water management plan for each crop, combination of crops or farming units;
  - (e) A water management system design plan, including a water budget, probable volume and timing of discharge, nutrient recovery rationale, field water management strategies, infrastructure descriptions, and inter-and intra-operation water routing;
  - (f) A monitoring plan to verify Best Management Practice implementation, operation and effectiveness (Best Management Practice research can be used to supplement data where appropriate);
  - (g) An education and training program for management and operation staff responsible for implementing and monitoring the approved BMP Plan;
  - (h) A schedule for implementing the BMP Plan. The schedule must require Best Management Practices to be in place by February 1, 1995.
- (2) Submit an acceptable water quality monitoring plan which provides reasonable assurance that annual water discharge and total phosphorus load are accurately documented. A plan which contains the following items generally provides reasonable assurance, but other alternatives may be proposed by the applicant and authorized by the District:
- (a) A description of the proposed monitoring program, including an explanation of how it will measure flow and total phosphorus concentration;
  - (b) A map, description, and latitude and longitude of all proposed monitoring locations, which shall include, at a minimum, all structures that discharge into District primary canals;
  - (c) A description of proposed sample collection methods and schedules, which specifies:

1. Periods of discharge (e.g., biweekly) over which samples will be collected (If there has been no discharge during a period, no samples need to be collected);
  2. Water depth location of sample collection;
  3. Consistent site location of sample collection (e.g., on the upstream side of the culvert discharging to the District canal, in the tailwater of the pump, if present, etc.);
  4. Collection technique (e.g., automatic sampler or grab sampling; automatic samplers may be configured to collect flow-proportional or time-proportional composite samples);
  5. Written specification of items 1, 2, 3, and 4 above for each sample location;
  6. How samples will be treated (e.g. compositing versus individual analysis);
  7. Sample preservation method (acidification shall be required during collection periods prior to pick-up, but refrigeration shall not be required);
  8. For sites with a single variable speed pump or more than one pump, a flow proportional sampling method shall be required; for sites with single or multiple pumps run at constant speed, the time-proportional method may be used for each pump (constant volumes of water are collected at set intervals as long as the pump is operating);
  9. How water discharges are measured or estimated from pump operating logs (if estimated by operation logs, the pump calibration methodology and results of calibration methodology must be certified by a Professional Engineer);
  10. Identification and qualification of individuals who will collect samples.
- (d) A description of the proposed sample handling and laboratory analyses, including identification of the laboratory (which must have an approved QA/QC Plan from a laboratory certified in accordance with section 403.0625, F.S.) to be used to perform the chemical analyses on the samples, a specified schedule for processing samples, and chain of custody documentation. The plan shall include "split sampling," to furnish the District with samples to ensure field and laboratory accuracy;
- (e) A description of data management techniques, including a schedule for the delivery of data from the analytical laboratory which provides for data to be transmitted to the District in electronic format monthly and annually, unless another time period is authorized by the District. The electronic format shall be a DOS formatted 3.5 inch disk that contains, in ASCII, horizontal records with evenly spaced columns of owner, site location (latitude-longitude), sample location (u for upstream or d for downstream), water quantity discharges (mgd for million gallons per day), total phosphorus concentrations (mg/l as P) (including QA/QC results), date (mmddyy) and time (military) of sample collection, period of discharge

- (mmddyy-mmddyy), whether samples were taken by grab (g) or automatic techniques (t for time proportional or f for flow proportional), whether samples were composited (c for composited or nc for not composited), daily loads (kg/d), and identification of methods used to compute water quantity discharges and phosphorus load;
- (f) A description of data review procedures, including the identification of the reports required pursuant to Subsections 40E-63.143(2)(c) and (d), F.A.C., (Limiting Conditions for Individual Permits) and a schedule for submission of reports monthly and annually, unless another time period is authorized by the District; methodology for calculating daily total phosphorus loads shall be identified by monitoring location when reporting loads;
  - (g) A backup plan that will be implemented for guaranteeing resumption of sampling if planned sampling devices or techniques become inoperable for whatever reason;
  - (h) A schedule for implementing the monitoring plan, which shall require water quality monitoring to begin no later than 90 days after permit issuance and water quantity monitoring to begin no later than 180 days after permit issuance.
- (3) Submit applications for new permits or modifications to existing permits required pursuant to other District rules (e.g., Surface Water Management, Environmental Resource, Consumptive Water Use, Well Construction, Right-of-Way, or Lake Okeechobee SWIM), as a result of activities proposed by the BMP Plan.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S., Ch. 62-40, F.A.C.

History — New 1-22-92, Amended 7-3-01.

#### **40E-63.138 Duration of Individual Permits in the EAA Basin.**

- (1) Individual Permits issued pursuant to Part I of this Chapter remain effective until January 1, 1997. The duration of renewals of or modifications to Individual Permits issued pursuant to Part I of this Chapter will be specified by the District as a permit condition in the renewal or modification.
- (2) An application for renewal must be submitted prior to expiration of the permit. Applications for renewals must contain all information required for new applications. Applications for renewals will be evaluated based on the criteria in effect at the time the application is filed.
- (3) When timely application is made, the existing permit shall not expire until final agency action. If the permit is denied or the pending approved permit conditions are modified from the previous issuance, the existing permit shall not expire until the last day for seeking review of the District order.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-7-92, 1-1-97, 7-3-01.

#### **40E-63.140 Modification of Individual Permits in the EAA Basin.**

A permittee may apply for a modification to an Individual Permit issued under Part I of this Chapter by submitting the same information required for new applications, unless the permit has expired or has been otherwise revoked or suspended and provided the

permit is in compliance with all applicable permit conditions. Modifications will be evaluated based on the criteria in effect at the time the application to modify is submitted.

- (1) Applications to modify an existing Works of the District Individual Permit shall contain the information required by Rule 40E-63.132, and shall identify the portion of the existing authorization for which the modification is requested.
- (2) Applications to modify existing Works of the District Individual Permits shall be made by the following methods:
  - (a) Modification requiring District Governing Board action for final determination; or
  - (b) Letter Modifications and Administrative Information Updates for which the District Governing Board has delegated authority for final action pursuant to Rule 40E-63.141, F.A.C. below.

Letter Modifications and Administrative Information Updates to existing Individual Permits pursuant to subsections (4) and (5) below are acknowledged and approved by letter with an accompanying Permit Review Summary (Staff Report) from the District or designee through correspondence to the permittee.

- (3) Modifications requiring Board action are those that:
  - (a) Result in a change in the permit conditions;
  - (b) Result in a change in the landuse;
  - (c) Require public notice because it is determined to be of heightened public concern in accordance with Rule 40E-1.5095, F.A.C.; or
  - (d) Result in the addition of acreage not previously included in an existing Everglades Works of the District Permit.
- (4) Letter Modifications are those that result in:
  - (a) A change in an existing permitted boundary basin;
  - (b) Moving an existing basin from one Everglades Works of the District Permit to another;
  - (c) The addition of a water control structure to the previously permitted Water Quality Monitoring Plan; or
  - (d) A change to the previously approved BMP Plan.
- (5) Administrative Information Updates are updates to the information in the Permit Review Summary (Staff Report) necessary for administration of the permit. Examples of Modifications, Letter Modifications and Administrative Information Updates are provided in Appendix A6.
- (6) The same review time and informational requirements which apply to new permit applications shall apply to all applications to modify an existing valid permit.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-3-01.

#### **40E-63.141 Delegation of Authority Pertaining to Letter Modifications and Administrative Information Updates of Existing Individual Permits.**

The Governing Board delegates to and appoints the Executive Director, Deputy Executive Director, Environmental Resource Regulation Division Director, Environmental Resource Regulation Division Deputy Director, Everglades Regulation Department Director, and Service Center Directors, as its agents to review and take

final action on all Letter Modifications and Administrative Information Updates issued under Chapter 40E-63, F.A.C. However, staff recommendations for denial of such applications shall be considered by the Governing Board.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 7-3-01.

#### **40E-63.142 Transfer of Individual Permits in the EAA Basin.**

A permittee and prospective owner must notify the District within 30 days of any transfer of interest or control, sale or conveyance of real property or works permitted under Part I of this Chapter. The permittee/seller shall notify the District of the transfer using Form 0779, Section 1, providing the name and address of the new owner or person in control and a copy of the instrument effectuating the transfer. The transferee shall submit the appropriate transfer application and fee using a completed Form 0779, Section 2. The District will transfer the permit provided the land practice remains the same and the permittee is in compliance with all conditions of the permit. All conditions of the permit remain applicable to the new permittee. If the District is not so notified by the transferee within 90 days of the sale or conveyance of the property, the permit is void and the transferee will be required to apply for a new permit.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-3-01.

#### **40E-63.143 Limiting Conditions for Individual Permits in the EAA Basin.**

- (1) The Board shall impose on any Individual Permit granted under Part I of this Chapter such reasonable conditions as are necessary to assure that the permitted discharge will be consistent with the overall objectives of the District and will not be harmful to the water resources of the District.
- (2) In addition to special conditions, all the following standard limiting conditions (a) through (l) shall be attached to all Individual permits:
  - (a) The permittee shall successfully implement all elements and requirements of the approved BMP Plan according to schedule, including monitoring of implementation, operation and rationale.
  - (b) The permittee shall implement all elements and requirements of the approved monitoring program adequately and according to the approved schedule to ensure that flow, total phosphorus concentration, and phosphorus load are documented.
  - (c) The permittee shall submit to the District the reports of monitoring results as required by the approved monitoring plan. Quantitative data must be submitted in electronic format. The first report is due 180 days after issuance of the permit. The first annual report is due one year and 180 days after issuance of the permit.
  - (d) The permittee shall submit to the District reports summarizing implementation of the approved BMP Plan. The report must contain a summary of all required activities including Best Management Practice installation, Best Management Practice operation activities (pertinent to water management and nutrient management), water quality assurance audits, and monitoring. The first report is due November 1, 1993;

subsequent reports are due July 1, 1994, January 1, 1995, and February 1 annually thereafter.

- (e) The permittee shall allow District staff or designated agents reasonable access to the permitted property at any time for the purpose of evaluating the water quality monitoring system on site, collecting water quality samples, or monitoring Best Management Practice implementation. District staff shall attempt to notify by telephone a person designated by the permittee prior to a site visit. Since it is not possible to predict precisely when discharges will occur or problems will arise resulting in the need for a site visit, the District may not be able to provide a lengthy period of notice to the designated person in advance of a visit. However, at a minimum, the District will provide notice at least one hour prior to a site visit for the purpose of water quality monitoring and at least 24 hours prior to a site visit for Best Management Practice installation or operation inspections.
- (f) The permittee shall notify the District in writing within 30 days after any significant change in land practice, as described in Rule 40E-63.102(7), F.A.C. is made on the permitted parcel.
- (g) This permit does not relieve the permittee of the responsibility to comply with all other laws or regulations applicable to the use of or discharges from the parcel.
- (h) This permit does not convey to the permittee any property right nor any rights or privileges other than those specified in the permit.
- (i) This permit does not relieve the permittee from liability from harm or injury to: human health or welfare; animal, plant or aquatic life; or property.
- (j) The surface water management and monitoring systems must be effectively operated and maintained, and any changes in drainage, land use or operations that could affect validity or interpretation of monitoring data must be reported in writing to the District.
- (k) The permitted discharge shall not otherwise be harmful, or adversely affect property use and operation of the works of the District.
- (l) The permittee shall achieve the phosphorus load limitations specified in Appendices A3 (EAA Basin Compliance) and A4 (EAA Farm Scale Allocation), in accordance with the procedures described in Rule 40E-63.145, F.A.C. (Compliance and Enforcement of Individual Permits).

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S., Ch. 62-40, F.A.C.

History — New 1-22-92, Amended 7-7-92, 7-3-01.

#### **40E-63.145 Compliance and Enforcement of Individual Permits in the EAA Basin.**

- (1) The District shall begin reviewing compliance with permit application requirements by parcel owners in the EAA Basin no later than September 1, 1992. Parcel owners who are not in compliance with permit application due dates are subject to immediate enforcement action by the District, as described in subsection (6) below.
- (2) The District shall begin reviewing compliance with monitoring plan requirements by parcel owners in the EAA Basin no later than October 1, 1993, and

compliance with Best Management Practice implementation, operation and rationale by parcel owners in the EAA Basin no later than January 1, 1995. All permittees who are not in compliance with their approved monitoring plan or BMP Plan requirements are subject to notification by the District. All permittees who receive notice from the District must submit to the District within 10 working days a plan and schedule for achieving compliance within 60 days after transmittal of the notice. Permittees who do not comply with this requirement are subject to enforcement action as outlined in subsection (6) below.

- (3) (a) The District shall begin collecting monitoring data from the EAA Basin on January 1, 1995, for the purpose of determining compliance with the phosphorus load reduction requirement calculated in accordance with Appendix A3 (EAA Basin Compliance).
- (b) When the District periodically evaluates the monitoring data collected to assess the general trend in phosphorus load reduction, the evaluation shall be included in an annual report.
- (c) The District shall determine whether the EAA Basin is in compliance with the phosphorus load reduction requirement calculated in accordance with Appendix A3, as of April 30, 1996, and annually thereafter. The District shall attempt to make the determination and publish the results by July 1, 1996, and annually thereafter.
- (d) If the EAA Basin is determined to be in compliance with the phosphorus load reduction requirement, permittees in the EAA Basin shall not be subject to compliance and enforcement action by the District in regard to achievement of the phosphorus load reduction requirement, so long as the EAA Basin remains in compliance. However, permittees are still subject to monitoring and enforcement action for failure to comply with an approved monitoring plan or BMP Plan requirements, pursuant to subsections (1) and (2) above.
- (e) If the EAA Basin is determined to be not in compliance on April 30, 1996, or any subsequent year, with the phosphorus load reduction requirement calculated in accordance with Appendix A3, permittees in the EAA Basin shall be subject to the following compliance and enforcement actions:
1. The District shall determine, according to Appendix A4 (EAA Basin Farm Scale Allocation), which structures shall be required to meet a Maximum Unit Area Load (MUAL) in order to bring the EAA Basin in compliance with the phosphorus load reduction requirement calculated in accordance with Appendix A3 (EAA Basin Compliance).
  2. The District shall provide written notice to permittees of structures required to meet a Maximum Unit Area Load. The notice shall specify the Maximum Unit Area Load assigned to the permittee. The District shall attempt to transmit the written notices by July 1, 1996, and by July 1 of any subsequent year the EAA Basin is determined to be not in compliance with the phosphorus load reduction requirement calculated in accordance with Appendix A3 (EAA Basin Compliance).

3. Permittees shall submit to the District within 45 days of transmittal of the written notice, a revised BMP Plan which proposes changes in BMPs needed to ensure that the Maximum Unit Area Load will be met. The revised plan shall include all the elements specified in Rule 40E-63.132(6), F.A.C. (Content of Application for Individual Permits in the EAA Basin), or explain why an omitted element is not relevant to evaluation of the revised Plan. The implementation schedule shall require complete installation within 6 months of District approval of the revised BMP Plan. Permittees shall make good faith efforts to provide complete revised BMP Plans. Failure to provide a complete revised BMP Plan within 45 days shall not justify a corresponding delay of the date on which a permittee is required to meet a Maximum Unit Area Load pursuant to Subsection 40E-63.145(3)(e)6., F.A.C.
  4. The District shall review and take final agency action on the revised BMP Plan within 60 days of receipt of a complete plan.
  5. Permittees who fail to complete the revised BMPs according to the approved implementation schedule shall be subject to enforcement action pursuant to Subsection (6) below.
  6. Permittees shall be required to meet the Maximum Unit Area Load on the first April 30 occurring 24 months after the April 30 on which the EAA Basin was determined to be not in compliance with the load allocation calculated in accordance with Appendix A3 (EAA Basin Compliance).
  7. If the EAA Basin does not achieve the phosphorus load reduction sufficient to bring the Basin in compliance with the phosphorus load reduction requirement calculated in accordance with Appendix A3 on the April 30 occurring 24 months after the April 30 on which the EAA Basin was determined to be not in compliance, the District shall repeat the procedures specified in Subsections 1. - 6. above, and seek whatever enforcement or corrective action is appropriate, including those set forth in subsection (6) below against permittees who failed to achieve their Maximum Unit Area Load.
- (4) Applicants may elect to participate in an "Early Baseline Option," which is described below in Subsections (a) - (i). Participation is optional. Applicants should make the decision on whether to participate after careful evaluation of all relevant factors, including site specific data, farming practices, and personal circumstances. The compliance and enforcement actions specified in Subsections (3)(e)1. - 7. above will not be applied to permittees who elect to participate in the Early Baseline Option, except as specifically provided below.
- (a) Applicants who elect to participate in the Early Baseline Option must declare their intention to do so in the initial permit application due in 1992. In addition to the information required by Rule 40E-63.132, F.A.C. (Content of Application for Individual Permits in the EAA Basin), the application must identify soil type, include soil phosphorus test results and methods, describe crops for the last five years, indicate expected future

- crops, describe the automatic recording rainfall collectors to be installed at each structure discharging to a District primary canal, and identify the acreage served by each collector.
- (b) Applicants who elect to participate in the Early Baseline Option must implement the required monitoring plan for water quality and quantity by January 1, 1993. The plan shall require monitoring reports to be submitted monthly and annually, beginning on February 1, 1993. The plan must be approved by the District before implementation.
  - (c) Applicants who elect to participate in the Early Baseline Option are encouraged to complete their permit applications promptly, so that the District can take final agency action on the entire application before January 1, 1993. However, if requested by the applicant, the District will take final agency action on the monitoring plan only in December 1992, subject to the condition that subsequent final agency action on the entire permit application may include revisions to the monitoring plan.
  - (d) Applicants who elect to participate in the Early Baseline Option must have the approved BMPs in place by January 1, 1994.
  - (e) Permits issued to applicants who elect to participate in the Early Baseline Option shall have special limiting conditions reflecting the monitoring and BMP deadlines and any other requirements necessary to implement the Early Baseline Option.
  - (f) The District will calculate the Early Baseline for each permittee who has elected to participate. The Early Baseline is the total phosphorus load for each participating permittee against which future reductions will be compared. The District shall attempt to transmit the Early Baseline results to the permittee in writing by July 1, 1994. The results shall identify any permitted structures excluded from further participation in the Early Baseline Option pursuant to Subsection 2. below.
    - 1. The Early Baseline calculation shall be based on data collected from May 1, 1993 to April 30, 1994.
    - 2. The District shall evaluate the data reported by each permittee who participates in the Early Baseline Option to determine whether the reported load for each permitted structure is reasonable. The determination shall be based on an analysis of outliers, an analysis of consistency with existing total phosphorus load data, evaluation of data from rainfall automatic collectors, and other relevant information. Any permitted structure for which the Early Baseline load is determined to be unreasonable shall be excluded from further participation in the Early Baseline Option, unless the permittee can demonstrate to the District, by a preponderance of evidence, that the reported loads are accurate and unbiased.
    - 3. The District shall consider requests presented by permittees under Rule 40E-63.101(4), F.A.C., to calculate the baseline to reflect implementation of BMPs prior to implementation of the plan for monitoring water quantity and quality. Such requests should be accompanied by adequate supporting evidence, for example data

from the area subject to the request and from a similar area on which BMPs have not been implemented regarding soil type, depth of muck, crop type, historical usage, drainage system, water quality and water quantity.

- (g) If the EAA Basin is determined to be in compliance with the phosphorus load reduction requirement calculated in accordance with Appendix A3, as of April 30, 1996, or annually thereafter, permittees who elected to participate in the Early Baseline Option shall not be subject to compliance and enforcement action by the District in regard to achievement of the phosphorus load limitation, so long as the EAA Basin remains in compliance. However, permittees are still subject to monitoring and enforcement action for failure to comply with the requirements of an approved monitoring plan or BMP Plan, pursuant to Subsection (2) above.
- (h) If the EAA Basin is determined to be not in compliance as of April 30, 1996, or any subsequent year, with the allocation calculated in accordance with Appendix A3, permittees who elected to participate in the Early Baseline Option shall be subject to the following compliance and enforcement actions:
1. The District shall determine whether the permittee has reduced the Early Baseline load from permitted structures by 25%, adjusted for hydrological variability. The District shall provide written notice of the determination to permittees. The District shall attempt to transmit the written notices by July 1, 1996, and by July 1 of any subsequent year the EAA Basin is found to be not in compliance with the phosphorus load reduction requirement calculated in accordance with Appendix A3 (EAA Basin Compliance).
  2. Permittees who have reduced the Early Baseline load by 25% are in compliance with the goal of this Chapter and shall not be subject to further compliance and enforcement action by the District in regard to reduction of phosphorus load, so long as the 25% reduction is maintained, unless this Chapter is amended to provide otherwise.
  3. Permittees who have not reduced the Early Baseline load by 25% shall submit to the District, within 45 days of transmittal of the written notice, a revised BMP Plan which proposes changes in BMPs needed to ensure that the 25% reduction will be achieved. The revised Plan shall include all the elements specified in Rule 40E-63.132(6), F.A.C. (Content of Application for Individual Permits in the EAA Basin), except for elements not relevant to evaluation of the revised Plan. The revised Plan shall contain an explanation of why any omitted elements are not relevant. The implementation schedule shall require complete installation of revised BMPs within 6 months of District approval of the revised BMP Plan. Permittees shall make good faith efforts to provide complete revised BMP Plans. Permittees shall be required to meet the 25% reduction the next time the EAA Basin is determined to be not in compliance with

- the load allocation calculated in accordance with Appendix A3 (EAA Basin Compliance). Failure to provide a complete revised BMP Plan within 45 days shall not justify a corresponding delay of the date on which a permittee is required to meet the 25% reduction.
- (i) If the EAA Basin is determined to be not in compliance for a subsequent year, permittees who elected to participate in the Early Baseline Option shall be required to reduce the Early Baseline load by 25%. Any permittee who has not reduced the Early Baseline load by 25% is subject to the Compliance and Enforcement actions set forth in Subsections (3)(e)2. - 7. above, including compliance with the MUAL and legal enforcement proceedings.
- (5) In applying the requirements of this Chapter after the EAA has been determined to be not in compliance with the allocation calculated in accordance with Appendix A3, the District shall determine whether to accept an alternative method or level of phosphorus reduction for a particular permittee based on the demonstrated site-specific impracticability of achieving the required reduction of phosphorus in accordance with an approved Best Management Plan, if requested by a permittee.
- (a) The Permittee shall have the burden of demonstrating that compliance with the BMP or phosphorus reduction requirements is impracticable at the permittee's site or sites of operation. Any such request for a determination of impracticability shall:
    - 1. specify the facts showing that the required reduction of phosphorus cannot be reasonably accomplished at the site or sites in question, and
    - 2. set forth the alternative methods of reducing the loading of phosphorus that are proposed or have been considered, the reasons for choosing any such alternatives, and
    - 3. the amount of reduction of phosphorus that reasonably could be expected to result at the site.
  - (b) Such requests shall apply only to the portion of a site to which the showing of impracticability applies.
  - (c) The District shall send a copy of each such request and correspondence concerning it to the Department.
  - (d) By order of the Governing Board, the District shall grant the request and any related permit modifications if the permittee makes the required showing and the request (including the proposed alternative requirements and other special permit conditions imposed by the District as necessary) would not conflict with the intent of Chapter 373, Part IV, Florida Statutes, or with the intent of this Chapter.
- (6) The District is authorized to seek any enforcement or corrective action available under Florida law for permittees out of compliance with the provisions of this Chapter, including:
- (a) enforcement orders issued pursuant to Ch. 373, F.S., and rules adopted thereunder;

- (b) court actions for injunctive or other appropriate relief pursuant to Sections 373.044 and 373.136, Florida Statutes;
- (c) court actions to recover civil penalties, including fines, pursuant to Section 373.129, Florida Statutes;
- (d) warrants for arrest pursuant to Section 373.603, F.S.;
- (e) administrative enforcement orders pursuant to Section 373.119, F.S.

An outline of the compliance and enforcement procedures for the EAA Basin is provided in Appendix A5 which is incorporated by reference.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.119, 373.129, 373.136, 373.451, 373.453, 373.4592, 373.603 F.S.

History — New 1-22-92, Amended 7-7-92, 8-25-96, 11-11-98, 6-7-99, 10-31-99, 7-3-01.

### **Subpart C EAA Basin - Master Permits**

#### **40E-63.150 Master Permit Application Requirements in the EAA Basin.**

- (1) A Master Permit application may be submitted for lands which:
  - (a) Meet the responsibility requirements specified in Section 40E-63.156(1)(b), F.A.C., below; and
  - (b) Are either contiguous, have interconnected drainage systems or propose coordinated BMP Plans.
- (2) Applications for Master Permits are due by October 1, 1992.
- (3) The District expects to take final agency action on all initial permits issued pursuant to this Chapter no later than July, 1993. Accordingly the District shall process the applications submitted pursuant to Part I of this Chapter in strict accordance with the 90-day time provisions set forth in Section 120.60, F.S. Applicants are expected to make good faith efforts to complete applications within a reasonable time. Applications which are not complete within a reasonable time are subject to denial and administrative or judicial enforcement action.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-3-01.

#### **40E-63.152 Content of Application for Master Permits in the EAA Basin.**

Applications for Master Permits shall contain the following:

- (1) Date and signature of the applicant entity or group of owners submitting the application;
- (2) All information required by Subsections 40E-63.132(2), (3), (4), (5), (6), and (7), F.A.C. (Content of Application for Individual Permits in the EAA Basin);
- (3) Information which demonstrates that the applicant entity or cooperating group of landowners possesses the legal, financial, and institutional authority and ability to carry out all acts necessary to implement the terms and conditions of the permit, including, at a minimum:
  - (a) A description of the legally responsible entity or cooperating group of landowners, and copies of enabling legislation, articles of incorporation, interlocal agreements, deeds, contracts, or other evidence of authority;

- (b) A description of financial, institutional and other resources available to implement BMP programs, monitoring plans, and enforcement and compliance efforts;
- (c) Interlocal agreements with any participating municipalities and other entities of local government, indicating their consent and intent to participate in the Master Permit and specifying the terms of the participation;
- (d) Written contracts with participating landowners indicating their consent and intent to participate and specifying the terms of participation;
- (e) Identification of the area covered by the Master Permit application, including identification of all areas and owners within the general area who have elected to participate in the Master Permit application.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-3-01.

#### **40E-63.154 Permit Application Processing Fee for Master Permits in the EAA Basin.**

The following permit application processing fees shall be paid to the District at the time the following actions on Master Permits are filed:

- (1) For new applications for a Master Permit: a minimum fee of \$1,880, plus \$1.50 per acre for each acre above 320 acres in size, with a total maximum fee of \$750,000.
- (2) For renewals (with or without modifications) to existing Master Permits: a fee of \$1,680, plus \$0.25 per acre for each acre above 320, with a total maximum fee of \$150,000.
- (3) For a Modification of an existing Master Permit: a fee of \$1,880.
- (4) For a Letter Modification of an existing Master Permit: a fee of \$500.
- (5) For Administrative Information Updates to an existing Master Permit: No Fee.
- (6) For Transfers of existing Master Permits: a fee of \$500.
- (7) An application shall not be considered complete until the appropriate application fee is submitted. These fees are assessed in order to defray the cost of evaluating, processing, monitoring, and inspecting for compliance required in connection with consideration of such applications. Failure of any applicant to pay the applicable fees established herein will result in denial of an application.

Specific Authority 373.044, 373.109, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.109, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-7-92, 7-3-01.

#### **40E-63.156 Conditions for Issuance for Master Permits in the EAA Basin.**

- (1) In order to obtain a permit under Part I of this Chapter, an applicant must satisfy all the following conditions:
  - (a) The permittee shall comply with all conditions required by Subsections 40E-63.136(1), (2), (3), F.A.C. (Conditions for Issuance of Individual Permits in the EAA Basin); and
  - (b) The permittee shall demonstrate sufficient legal and financial capability to carry out all acts necessary to implement the terms and conditions of the Master Permit, including the ability to take necessary enforcement action.

- (2) The number of monitoring sites required for a Master Permit may be reduced by the District provided the proposed monitoring plan can reasonably be expected to accomplish the plan rationale, including the documentation of flow and total phosphorus concentration discharged from all lands included in the Master Permit.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-3-01.

#### **40E-63.158 Duration of Master Permits in the EAA Basin.**

- (1) Master Permits issued pursuant to Part I of this Chapter remain effective until January 1, 1997. The duration of or modifications to Master Permits issued pursuant to Part I of this Chapter will be specified by the District as a permit condition in the renewal or modification.
- (2) An application for renewal must be submitted prior to expiration of a permit. Applications for renewals must contain information required for new applications. Applications for renewals will be evaluated based on the criteria in effect at the time the application is filed.
- (3) When timely application is made, the existing permit shall not expire until final agency action. If the permit is denied or the pending approved permit conditions are modified from the previous issuance, the existing permit shall not expire until the last day for seeking review of the District order.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-7-92, 1-1-97, 7-3-01.

#### **40E-63.160 Modification of Master Permits in the EAA Basin.**

A permittee may apply for a modification to a Master Permit issued under Part I of this Chapter by submitting the same information required for new applications, unless the permit has expired or has been otherwise revoked or suspended and provided the permit is in compliance with all applicable permit conditions. Modifications will be evaluated based on criteria in effect at the time the application to modify is submitted.

- (1) Applications to modify an existing Works of the District Master Permit shall contain the information required by Rule 40E-63.152, F.A.C., and shall identify the portion of the existing authorization for which the modification is requested.
- (2) Applications to modify existing Works of the District Master Permits shall be made by the following methods:
  - (a) Modification requiring District Governing Board action for final determination; or
  - (b) Letter Modifications and Administrative Information Updates for which the District Governing Board has delegated authority for final action pursuant to Rule 40E-63.161, F.A.C. below.

Letter Modifications and Administrative Information Updates to existing Master Permits pursuant to subsections (4) and (5) below are acknowledged and approved by letter with an accompanying Permit Review Summary (Staff Report) from the District or designee through correspondence to the permittee.

- (3) Modifications requiring Board action are those that:

- (a) result in a change in the permit conditions;
  - (b) result in a change in the landuse;
  - (c) require public notice because it is determined to be of heightened public concern in accordance with Rule 40E-1.5095, F.A.C.; or
  - (d) result in the addition of acreage not previously included in an existing Everglades Works of the District Permit.
- (4) Letter Modifications are those that result in:
- (a) a change in an existing permitted boundary basin;
  - (b) moving an existing basin from one Everglades Works of the District Permit to another;
  - (c) the addition of a water control structure to the previously permitted Water Quality Monitoring Plan; or
  - (d) a change to the previously approved BMP Plan.
- (5) Administrative Information Updates are updates to the information in the Permit Review Summary (Staff Report) necessary for administration of the permit. Examples of Modifications, Letter Modifications and Administrative Information Updates are provided in Appendix A6 which is incorporated by reference.
- (6) The same review time and informational requirements which apply to new permit applications shall apply to all applications to modify an existing valid permit.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-3-01.

#### **40E-63.161 Delegation of Authority Pertaining to Letter Modifications and Administrative Information Updates of Existing Master Permits.**

The Governing Board delegates to and appoints the Executive Director, Deputy Executive Director, Environmental Resource Regulation Division Director, Environmental Resource Regulation Division Deputy Director, Everglades Regulation Department Director, and Service Center Directors, as its agents to review and take final action on all Letter Modifications and Administrative Information Updates issued under Chapter 40E-63, F.A.C. However, staff recommendations for denial of such applications shall be considered by the Governing Board.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 7-3-01.

#### **40E-63.162 Transfer of Master Permits in the EAA Basin.**

A permittee and prospective owner must notify the District within 30 days of any transfer of interest or control, sale or conveyance of real property or works permitted under Part I of this Chapter. The permittee/seller shall notify the District of the transfer using Form 0779, Section 1, providing the name and address of the new owner or person in control and a copy of the instrument effectuating the transfer. The transferee shall submit the appropriate transfer application and fee using a completed Form 0779, Section 3. The District will transfer the permit provided the land practice remains the same and the permittee is in compliance with all conditions of the permit. All conditions of the permit remain applicable to the new permittee, including the legal, financial and institutional capability to carry out all acts necessary to the terms and conditions of the Master Permit. If the District is not so notified by the transferee within 90 days of the sale or

conveyance of the property, the permit is void and the transferee will be required to apply for a new permit.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-3-01.

#### **40E-63.163 Limiting Conditions for Master Permits in the EAA Basin.**

- (1) The Board shall impose on any Master Permit granted under Part I of this Chapter such reasonable conditions as are necessary to assure that the permitted discharge will be consistent with the overall objectives of the District and will not be harmful to the water resources of the District.
- (2) In addition to special conditions, all the following standard limiting conditions (a) - (c) shall be attached to all master permits:
  - (a) All conditions required by Subsections 40E-63.143(2)(a) - (l), F.A.C. (Limiting Conditions for Individual Permits in the EAA Basin).
  - (b) Legal entities or groups of cooperating landowners responsible for implementing a Master Permit shall remain capable of performing their responsibilities required by permits issued pursuant to Part I of this Chapter.
  - (c) In the event that the District determines that any participant in a Master Permit is not complying with the specific terms and conditions of the Master Permit, the District will institute enforcement proceedings against either the Master Permit holder, the participant, or both, and if necessary, require the individual participant to apply for an Individual Permit.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-3-01.

#### **40E-63.165 Compliance and Enforcement of Master Permits in the EAA Basin.**

The provisions of Rule 40E-63.145, F.A.C., (Compliance and Enforcement of Individual Permits in the EAA Basin) apply to the compliance and enforcement of Master Permits issued pursuant to Part I of this Chapter.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.016, 373.085, 373.086, 373.451, 373.453, 373.4592 F.S.

History — New 1-22-92, Amended 7-3-01.

## **PART II EVERGLADES WATER SUPPLY AND HYDROPERIOD IMPROVEMENT AND RESTORATION**

#### **40E-63.201 Scope.**

- (1) The Everglades Forever Act, in s. 373.4592(4)(b), F.S., (Everglades water supply and hydroperiod improvement and restoration) directs the district generally to correct hydroperiod problems in the Everglades ecosystem by improving water quantity reaching the Everglades, increasing the total quantity of water flowing through the system, reducing wasteful discharges of fresh water to tide, and directing the timing and distribution of water to maximize the natural balance. The

- Act recognizes that water supply management of the Everglades watershed is complex and subject to legal mandates of both state and federal law.
- (2) To achieve this directive, several interrelated programs and projects are likely to be involved: providing water supply to the Everglades National Park, urban areas, agricultural areas, and Florida Bay; review by the federal government of the Lake Okeechobee regulatory releases; adoption and implementation of minimum flows and levels for the Everglades Protection Area; and implementation of the Lower East Coast Water Supply Plan. Even though interrelated, each program and project is subject to individual technical, legal and administrative requirements. Complete implementation of the hydroperiod improvements could ultimately require data collection, research, analysis, report drafting, plan preparation, rule adoption, operational changes and structural improvements.
  - (3) The District has already begun work on several programs and projects related to hydroperiod restoration. Completion dates can be expected to vary according to the complexity of the applicable technical, legal and administrative requirements. Complete implementation may take several years and, even then, be subject to refinement for many years as additional data and analysis become available. The District intends to coordinate the various hydroperiod restoration programs and projects as they evolve over time. Accordingly, the initial implementation activities may be amended or superceded by subsequent implementation activities. In the event the Governing Board initiates operational changes in releases from Lake Okeechobee designed specifically and exclusively to address environmental water needs in the Everglades Protection Area, the replacement water delivery schedule prepared under Subpart A of this Part shall be considered pursuant to Section 40E-63.225(5), F.A.C., or pursuant to Section 120.54(1)(c) and (d), F.S. rule development proceedings to determine whether amendments to Subpart A of this Part are necessary to meet the requirements of Section 373.4592(4)(b), F.S. All changes will be conducted in accordance with the appropriate requirements of the Administrative Procedures Act, Ch. 120, F.S.
  - (4) This Part contains rules adopted by the District to implement the water supply and hydroperiod improvement and restoration component of the Everglades Program, either by including them in a Subpart or referencing their location elsewhere in District rules.

Specific Authority 373.044, 373.113, 373.4592 FS.

Law Implemented 373.4592(4)(b) FS.

History — New 11-26-95.

### **Subpart A BMP Replacement Water**

#### **40E-63.211 Purpose.**

This Subpart implements the Everglades Forever Act requirements that the District develop a model to quantify the amount of water to be replaced as a result of reductions of flow to the Everglades Protection Area from BMP implementation and publish a notice of rulemaking on the model no later than July 1, 1995. The timing and distribution of the replaced water is to be directed to maximize the natural balance of the Everglades Protection Area. This Subpart is based on the best information available at

the present time. Amendments to incorporate new methodology or to coordinate better with other programs, plans or rules can be expected and shall be made in accordance with Ch. 120, F.S.

Specific Authority 373.044, 373.113, 373.4592 FS.

Law Implemented 373.4592(4)(b) FS.

History — New 11-26-95.

**40E-63.212 Definitions.**

- (1) "Averaging period" means the current water year and the four preceding water years, i.e., the five water years prior to the beginning of a release period on October 1.
- (2) "Base period" means the 10 year period from October 1978 - September 1988.
- (3) "Current water year" means the year beginning October 1 and ending September 30 for which a replacement water allocation is quantified.
- (4) "Release period" means the five months immediately following a current water year during which the replacement water allocation calculated for that year is released. The release period begins on October 1.

Specific Authority 373.044, 373.113, 373.4592 FS.

Law Implemented 373.4592(4)(b) FS.

History — New 11-26-95.

**40E-63.223 Model to Quantify Annual Allocation of Replacement Water.**

- (1) This section outlines the model to be used to calculate the volume of water needed to compensate for reductions in runoff from the EAA resulting from implementation of BMPs pursuant to Chapter 40E-63, F.A.C. Replacement water volumes refer to flows reaching the Water Conservation Areas or Stormwater Treatment Areas. Replacement water volumes do not include any flows released for urban water supply or agricultural water supply.
- (2) The model is based upon hydrologic data collected during the base period. Procedures for calculating EAA runoff and rainfall are as follows:
  - (a) Total EAA Runoff is calculated from daily flow measurements obtained from the District's data base. The data base identifiers are listed in the following table:

BMP REPLACEMENT WATER TABLE 1 - RUNOFF			
STRUCTURE	DBKEY	STRUCTURE	DBKEY
HGS5	15068	S150	15041
S2	15021	S8	15040
S3	15018	G88	15196
S5A5AW	15031	G136	15195
S6	15034	G200	15736
S7	15037	G250	16222

1. The EAA Runoff equation is:

$$\text{Runoff} = \begin{aligned} & - \text{Minimum}(0, S3 + G88 + G136 - S8 - G200) \\ & - \text{Minimum}(0, S2 - S6 - S7 - S150) \\ & - \text{Minimum}(0, HGS5 - S5A5AW - G250) \end{aligned}$$

2. The volume of EAA Runoff discharged to the South (Water Conservation Areas) is calculated from daily flow measurements using the following equation:

$$\text{Runoff to South} = \text{Runoff} + \text{Minimum}(0, S3) + \text{Minimum}(0, S2) + \text{Minimum}(0, HGS5)$$

3. The data used in the above equations will be adjusted by the District to account for any new inflows or outflows from the EAA developed in the future in order to ensure that replacement water volume is not affected by future reductions in the EAA contributing watershed area, including those changes caused by the construction of Stormwater Treatment Areas.

(b) EAA Rainfall is calculated from measurements obtained from the District's data base. It is calculated as the weighted sum of daily rainfall measurements at 9 rainfall monitoring stations. The data base identifiers for rainfall stations and station weights are listed on the following table:

BMP REPLACEMENT WATER TABLE 2 – RAINFALL STATIONS			
DBKEY	THEISSEN WEIGHT	DBKEY	THEISSEN WEIGHT
15197	0.0974	15202	0.0989
15198	0.1076	15203	0.0763
15199	0.0844	15204	0.0592
15200	0.1617	15205	0.1743
15201	0.1438		

(3) The model calculates the annual replacement water volume based upon:

- (a) volume of runoff from the EAA under base-period conditions, adjusted for variations in annual rainfall;
- (b) observed runoff reduction for the averaging period;
- (c) percentage of EAA runoff which was discharged to the Water Conservation Areas during the averaging period;
- (d) future reductions in EAA contributing watershed area, including those due to construction of Stormwater Treatment Areas.

- (4) The equations for calculating the annual replacement water volume (1000 acre-ft) are:

$$\begin{aligned} \text{Replacement Volume} &= \text{Predicted Runoff} \times \text{Runoff Reduction} \times \text{Area Factor} \times \text{Fraction South} \\ \text{Predicted Runoff} &= \text{Total Runoff for Current Water Year Predicted from Base Period Rainfall} / \text{Runoff Regression (1000 acre-ft)} \\ &= -1585.6 + 53.87 \times \text{Rainfall} \\ \text{Rainfall} &= \text{Total EAA Rainfall Current Water Year (inches)} \\ \text{Area Factor} &= \text{Factor to Account for Change in Watershed Contributing Area} \\ &= \text{Average Area in Current Water Year} / \text{Average Area in Base Period} \\ \text{Average Area for Base Period} &= 523,791 \text{ acres (Everglades Protection Project, Conceptual Design, February 15, 1994)} \\ \text{Runoff Reduction} &= \text{Measured Runoff Reduction for Averaging Period} \\ &= 1 - \frac{\sum (\text{Observed EAA Runoff})}{\sum (\text{Predicted Runoff} \times \text{Area Factor})} \\ \Sigma &= \text{Sum over Averaging Period} \\ \text{Fraction South} &= \text{Fraction of Total Runoff Discharged to South During Averaging Period} \\ &= \frac{\sum (\text{EAA Runoff to South})}{\sum (\text{EAA Total Runoff})} \\ \Sigma &= \text{Sum over Averaging Period} \end{aligned}$$

- (5) If measurements required to calculate the annual replacement water volume are not available due to delays in data processing, recorder malfunction, etc., values will be estimated based upon best available methods. Measurements of rainfall and runoff volume required for the above computations shall be available within 75 days of data collection.

Specific Authority 373.044, 373.113, 373.4592 F.S.

Law Implemented 373.4592(4)(b) F.S.

History — New 11-26-95.

#### **40E-63.225 Delivery of Average Annual Allocation of Replacement Water.**

- (1) The average annual allocation will be delivered each year in accordance with Section 373.4592(4)(b), F.S.
- (2) Under typical hydrological conditions, the average annual allocation will be delivered during the replacement period according to the following fixed percentages, which are designed to produce future flows (runoff + makeup) characteristic of the seasonal distribution of flows from the EAA under more natural conditions: October 28.7%; November 22.8%; December 26.5%; January 14.9%; February 7.1%.
- (3) Replacement water deliveries will be made to the Water Conservation Areas before the Stormwater Treatment Areas (STAs) are operational. Replacement water deliveries will be made to the STAs after they are operational, except when the delivery is likely to cause hydraulic bypass around an STA or otherwise hinder its performance.

- (4) Replacement water deliveries will not be made when delivery is infeasible due to conveyance constraints south of Lake Okeechobee, when individual Water Conservation Areas (or their upstream Stormwater Treatment Areas) exceed regulation schedule, or during a Level 1 Alert.
- (5) Under extreme hydrological conditions, the replacement water delivery schedule shall be submitted to the Governing Board for consideration under Section 373.4592(4)(b), F.S. Extreme conditions include those under which:
  - (a) the replacement water allocation is likely to be discharged as a regulatory release from the Water Conservation Areas to tidewater or to cause detrimental flows to Everglades National Park; or
  - (b) the water level in Lake Okeechobee is at a warning stage or lower as defined in the Lake Okeechobee Water Supply Management Plan.
- (6) Differences between the allocated and delivered volumes will not be carried forward from one month to the next.
- (7) Replacement water will be delivered on a monthly basis before any other flows are released to the Water Conservation Areas or Stormwater Treatment Areas for environmental purposes.

Specific Authority 373.044, 373.113, 373.4592 F.S.

Law Implemented 373.4592(4)(b) F.S.

History — New 11-26-95

### **PART III BMP RESEARCH, TESTING AND IMPLEMENTATION TO ADDRESS WATER QUALITY STANDARDS**

#### **40E-63.301 Scope.**

- (1) The 1994 Everglades Forever Act (373.4592, F.S.) requires the District to amend Chapter 40E-63, F.A.C., to establish requirements of Everglades Agricultural Area (EAA) landowners to sponsor through the EAA Environmental Protection District (EAA-EPD) or otherwise and implement a comprehensive program of research, testing and implementation of BMPs that will address all water quality standards within the EAA and the Everglades Protection Area.
- (2) The goal of the regulatory program contained in this Chapter is to establish a schedule of BMP research, testing, and implementation to identify water quality parameters that are not being significantly improved by the stormwater treatment areas (STAs) and the current level of BMPs being widely implemented throughout the EAA, and to identify strategies needed to address such parameters.
- (3) The research program prescribed by this Chapter shall include field testing of BMPs in a sufficient number of representative sites in the EAA which reflect soil and crop types within the EAA, as well as other factors that effect BMP effectiveness and design.
- (4) Continued basin monitoring and the operation of the STAs will yield additional data concerning water quality in the Everglades Protection Area (EPA). As additional data is collected, and in light of future rulemaking to recognize existing actual beneficial uses of the conveyance canals in the EAA, this rule shall be reviewed at a minimum of once every five years, and amended if necessary.

These reviews and potential amendments may include, but are not limited to, an increase or reduction in parameters monitored and an increase or reductions of BMPs being tested.

- (5) As per the Everglades Forever Act, by December 31, 2006, all permittees which discharge to the EPA shall implement additional water quality measures, taking into account the water quality treatment provided by the STAs and the effectiveness of BMPs.
- (6) It is the intent of the District that the program of BMP research, testing, and implementation conducted pursuant to this Chapter be complementary with research on BMP related issues undertaken by other entities. Every effort shall be made to avoid requiring unnecessary or duplicative studies.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.4592(4)(f) F.S.

History — New 1-1-97, Amended 6-30-97.

#### **40E-63.302 Permits Required.**

- (1) A master permit (on behalf of EAA landowners) to sponsor and conduct a program of BMP research, testing and implementation must be obtained by the EAA-EPD or its successor interests.
- (2) If a notice of intent to issue a master permit has not been issued to the EAA-EPD or its successor interests as required by Rule 40E-63.302(1), F.A.C., by August 1, 1997, all landowners who are required to obtain a Works of the District permit pursuant to Rules 40E-61.041(4), 40E-63.130, and 40E-63.150, F.A.C., must modify such permits individually to comply with this Part pursuant to Rules 40E-63.320 through 40E-63.323, F.A.C.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.4592(4)(f) F.S.

History — New 1-1-97, Amended 6-30-97, 7-3-01.

#### **40E-63.305 Master Permit.**

A master permit constituting compliance with the rules adopted pursuant to Section 373.4592(4)(f)2., F.S., is hereby granted by the District to landowners identified in Rules 40E-61.041(4), 40E-63.130, and 40E-63.150, F.A.C., provided that a scope of work addressing a program of BMP research, testing and implementation pursuant to the criteria specified in Rules 40E-63.310(1) - 40E-63.310(6), F.A.C., sponsored by the EAA landowners through the EAA-EPD or its successor interests, is submitted to the District, and approved by the District.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.4592(4)(f) F.S.

History — New 1-1-97, Amended 6-30-97.

#### **40E-63.310 Conditions for Issuance of a Master Permit.**

In order to qualify for the no-notice master permit provided for in Rule 40E-63.305, F.A.C., the EAA-EPD must satisfy all the following conditions:

- (1) (a) Submit and implement a scope of work which addresses the following elements:
  1. The current EAA-EPD sponsored farm-scale research to be conducted at ten farms (or other locations throughout the EAA

- representative in sufficient number to reflect soil and crop types and other factors that influence BMP design and effectiveness) for verification of BMP effectiveness to reduce total phosphorus discharged shall continue.
2. In recognition that substantial particulate matter such as sediments are being discharged from farms, given that published University of Florida Institute of Food and Agricultural Services data has demonstrated that particulate phosphorus constitutes a significant portion of total phosphorus, the farm-scale research pursuant to subparagraph 1. shall be expanded to include the development, testing, and implementation of BMPs for reducing discharge of particulate phosphorus (i.e., sedimentation basins).
  3. The farm-scale research pursuant to subparagraph 1. shall be expanded to include monitoring for specific conductance at all points where total phosphorus is currently being monitored. The expanded research program shall include the development, testing and implementation of BMPs to address reduction of specific conductance.
  4. The organic pesticides Atrazine and Ametryn shall continue to be monitored as per conditions of the FDEP Operating Permit for the Everglades Nutrient Removal (ENR) Project. The monitoring is conducted quarterly at the ENR inflow and outflow pump stations. The outflow station quarterly sample will be taken on a 28 day lag from the inflow sampling time to account for hydraulic detention within the ENR. A control monitoring point within the L-7 perimeter canal will be sampled on the same schedule as the outflow station. The District and the EAA-EPD shall cost share equally the laboratory analysis for the organic pesticides Atrazine and Ametryn. Any modification to the FDEP Operating Permit for the ENR concerning sampling and analysis of these parameters shall require a modification to the program scope-of-work pursuant to Rule 40E-63.310(6), F.A.C.
  5. A proactive BMP program focused on the prevention of the misapplication of pesticides throughout the EAA shall be developed and implemented. The program shall include an annual continuing education program for all pesticide applicators which will focus on the prevention of misapplication of pesticides in field ditches, laterals, farm canals, drainage district main canals, and District canals and waterways.
  6. A schedule for implementing the scope-of-work shall require the program elements to be implemented no later than 6 months following District approval of the program scope-of-work.
- (b) The scope of work shall be approved by the District if it provides reasonable assurance that the program of BMP research, testing, and implementation meets the requirements of subparagraphs 1. - 6. above.

- (2) The applicant is advised that standard research protocol requires an approved Florida Department of Environmental Protection (FDEP) Comprehensive Quality Assurance (Comp QA) Plan for collection of field samples. As such, an approved FDEP Comp QA Plan for all parameters specified in Subsection 40E-63.310(1)(a)1. - 3., F.A.C., must be obtained by the entity collecting samples prior to initiation of field sample collection. Submit a copy of the approved FDEP Comp QA Plan obtained by the entity who will be conducting field sample collection.
- (3) Submit verification of laboratory certification as required by §403.0625, F.S., of the laboratory to be used to perform the chemical analyses on the samples. The certification must cover analysis of water quality parameters specified in Subsection 40E-63.310(1)(a)1. - 3., F.A.C.
- (4) All data being collected as part of the farm-scale research pursuant to subparagraph 1. shall be maintained by the EAA-EPD in a database format for all parties to access and review upon request.
- (5) Reports on the status of the EAA-EPD or its successor interests sponsored program of BMP research, testing, and implementation pursuant to Subsections 40E-63.310(1)(a)1. - 6., F.A.C., shall be submitted according to a schedule provided in the District approved scope of work summarizing program data results, conclusions, milestones, and accomplishments.
- (6) The program scope of work shall be submitted for District review by January 1, 1997. The District shall take final agency action to approve or deny the program scope of work pursuant to this Chapter not later than July 31, 1997. The District will conduct an annual public workshop for presentation and discussion of an update of the scope of work, including any application for modification. An annual formal scope of work review shall be conducted as a public workshop. Written request for modification to the scope-of-work may be presented and submitted at that time. The District will receive comments from all persons at the public workshop and provide a written determination on the scope of work modification within 60 days of the workshop held pursuant to this subsection. The District will approve the modification if the request provides reasonable assurance that the provisions of 373.4592(4)(f)2., F.S. will be met.
- (7) All information required in subparagraphs (1) through (6) shall be submitted to the South Florida Water Management District, Surface Water Management Division, 3301 Gun Club Road, West Palm Beach, Florida 33406, Attention: Everglades Regulation Department.
  - (a) District staff shall notify the EAA-EPD or its successor interests in writing via regular mail of its decision to approve or deny the master permit based upon the EAA-EPD's compliance with subparagraphs (1) through (6).
  - (b) District staff's decision to approve or deny the master permit shall constitute final agency action. If the District's decision is to deny the master permit, the EAA-EPD may, at any time thereafter, request a hearing to address the Governing Board regarding the District staff's decision. This request shall be submitted to the South Florida Water Management District, 3301 Gun Club Road, West Palm Beach, Florida 33406, Attention: Everglades Regulation Department.

- (c) Immediately upon receipt of a request pursuant to subparagraph (b), District staff shall schedule consideration of this matter by the Governing Board at its next available, regularly scheduled meeting.
- (d) The applicant shall be notified of the date and time of this meeting — or any subsequent meeting if final agency action is not taken — via regular mail to be received by the applicant at least 7 days in advance of the Governing Board meeting.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.4592(4)(f) F.S.

History — New 1-1-97, Amended 6-30-97, 7-3-01.

#### **40E-63.312 Transfer of Master Permit.**

- (1) The master permit granted by this rule may be transferred to another entity.
- (2) To transfer the master permit, the proposed transferee must submit a written request to transfer the master permit. This request shall be submitted to the South Florida Water Management District, Surface Water Management Division, 3301 Gun Club Road, West Palm Beach, Florida 33406, Attention: Everglades Regulation Department.
- (3) The District will approve the request to transfer provided the transferee provided reasonable assurances that the permit conditions listed in Rule 40E-63.310, F.A.C., will continue to be met.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.4592(4)(f) F.S.

History — New 1-1-97, Amended 6-30-97, 7-3-01.

#### **40E-63.313 Master Permit Duration.**

The master permit issued pursuant to this Part shall expire five years from issuance. The duration of renewals or modifications to the master permit issued pursuant to this Part will be for five-year terms.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.4592(4)(f) F.S.

History — New 1-1-97, Amended 6-30-97.

#### **40E-63.314 Master Permit General Conditions.**

The master permit shall be subject to the following conditions (1) - (9):

- (1) All field sampling required as part of this research shall be collected according to an approved FDEP Comprehensive Quality Assurance Plan as specified in Rule 40E-63.310(2), F.A.C.
- (2) All laboratory analysis of parameters required as part of this research shall be analyzed by a laboratory certified in accordance with §403.0625, F.S., to analyze the specific parameters identified in the permitted program scope of work.
- (3) All data collected as part of this research shall be available in a database format, clearly described and made available to all parties.
- (4) The research elements shall be implemented no later than 6 months following District approval of the scope of work.
- (5) The permittee shall submit to the District the quarterly and annual reports as specified in the approved scope of work. The first annual report is due one year and 180 days after issuance of the permit.

- (6) The permittee shall allow District staff or designated agents access to the permitted property for the purpose of evaluating the water quality monitoring system on site, collecting water quality samples, or monitoring Best Management Practice testing and implementation. District staff shall attempt to notify the permittee by telephone prior to a site visit. Since it is not possible to predict precisely when discharges will occur or problems will arise resulting in the need for a site visit, the District may not be able to provide a lengthy period of notice to the designated person in advance of a visit.
- (7) This permit does not relieve the permittee of the responsibility to comply with all other laws or regulations applicable to the use of or discharges from the parcel.
- (8) This permit does not convey to the permittee any property right nor any rights or privileges other than those specified in the permit.
- (9) This permit does not relieve the permittee from liability for harm or injury to: human health or welfare; animal, plant or aquatic life; or property.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.4592(4)(f) F.S.

History — New 1-1-97, Amended 6-30-97, 7-3-01.

#### **40E-63.320 Individual Permits for BMP Research.**

If a master permit for BMP research is not obtained by August 1, 1997, or if conditions of the master permit are not met, all landowners identified in Rules 40E-61.041(4), 40E-63.130, and 40E-63.150, F.A.C., shall be required to modify their Works of the District (WOD) permits, issued pursuant to Part I of Chapters 40E-61 and 40E-63, F.A.C., individually in order to comply with the requirements of §373.4592(4)(f), F.S.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.4592(4)(f) F.S.

History — New 1-1-97, Amended 6-30-97.

#### **40E-63.321 Conditions for Issuance of Individual Permits.**

The applications for modification of WOD permits, referenced under Rule 40E-63.320, F.A.C., shall contain all applicable requirements listed under Rule 40E-63.310, F.A.C. Application for the modifications to WOD permits, issued pursuant to Part I of Chapters 40E-61 and 40E-63, F.A.C., must be submitted within 60 days of notification by the District that the master permit will not be issued or is no longer valid. All pertinent administration of these modified permits (e.g., duration, transfers) shall continue to be conducted per the provisions set forth in Part I of Chapters 40E-61 and 40E-63, F.A.C.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.4592(4)(f) F.S.

History — New 1-1-97, Amended 6-30-97.

#### **40E-63.323 Individual Permit Conditions.**

All conditions listed under Rule Section 40E-63.314, F.A.C., shall be included in each modified permit referenced under Rule 40E-63.320, F.A.C.

Specific Authority 373.044, 373.113 F.S.

Law Implemented 373.4592(4)(f) F.S.

History — New 1-1-97, Amended 6-30-97.

**PART IV      EVERGLADES REGULATORY PROGRAM:  
C-139 BASIN**

**40E-63.400 Purpose and Policy.**

- (1) This Program implements requirements of the Everglades Forever Act (EFA), sec. 373.4592(4)(f)5 and 6, F.S., for the C-139 Basin, and also provides a regulatory process for landowners whose water management systems connect with and make use of the canals, structures and other Works of the District within the C-139 Basin, in accordance with sec. 373.085, F.S.
- (2) Since water quality monitoring data from the C-139 Basin demonstrate that the landowners within the C-139 Basin have collectively exceeded the annual loading of phosphorus of 28.7 metric tons, landowners are required to implement a best management practices (BMP) program for reduction of phosphorus in discharges that is consistent with the land uses within the Basin.
- (3) The objectives of this BMP program are as follows:
  - (a) to immediately require initial implementation of a BMP program for reducing and controlling phosphorus discharges from the C-139 Basin (later in this Chapter referred to as Level I);
  - (b) to provide a compliance methodology for determining whether additional measures will be required of landowners (later in this Chapter referred to as Levels II through IV); and
  - (c) to establish an inspection and enforcement program to ensure that phosphorus discharges from the basin do not exceed historic levels, based upon water quality monitoring data from the period October 1, 1978 to September 30, 1988, in accordance with Chapter 40E-63, F.A.C., Appendix B-2, "C-139 Basin Compliance Methodology", dated October 2001.
- (4) This Program requires landowners to reduce phosphorus discharges from the C-139 Basin, and in conjunction with the Stormwater Treatment Areas (STAs), especially STA-5, provides a sound basis for the State of Florida's long-term cleanup and restoration objectives for the Everglades.
- (5) Except as otherwise provided in this chapter, the permittees within the C-139 Basin shall not be required to implement any additional water quality improvement measures before December 31, 2006, in accordance with the EFA, sec. 373.4592(4)(f)3, F.S.
- (6) Unless otherwise provided by this Part IV of Chapter 40E-63, F.A.C., nothing herein shall be construed to modify any existing state water quality standards, nor to otherwise restrict the authority granted to the District pursuant to Chapter 373.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

**40E-63.401 Scope of Program.**

- (1) For the purposes of this rule, the Works of the District for the C-139 Basin include water control structures, right-of-ways, canals, and other water resources that the South Florida Water Management District owns, operates and controls, and that have been specifically named as Works of the District pursuant to Sections 373.085

- and 373.086, F.S. Works of the District for the C-139 Basin include G-136, G-150, G-151, G-152, G-406, G-342A, G-342B, G-342C, G-342D, L-1 Canal, L-2 Canal, L-3 Canal, and their open channel connections.
- (2) Unless expressly exempted, all lands within the C-139 Basin are users of the Works of the District within the C-139 Basin, and as such must be granted a No Notice General Permit pursuant to the provisions of Rule 40E-63.415, F.A.C., or must obtain a General or Individual Permit pursuant to the provisions of Rules 40E-63.440 or 40E-63.450, F.A.C., respectively. The rules shall apply to existing and new releases of water to Works of the District within the C-139 Basin.
  - (3) Landowners in the C-139 Basin share responsibility for achieving phosphorus load limitations. The compliance program, as established in this Part, ensures that landowners are responsible for their proportional share of phosphorus load discharged from the C-139 Basin based upon their proportional share of acreage to the total C-139 Basin acreage.
  - (4) Permits issued under this Part do not eliminate or alter other applicable permit requirements for discharges that impact other water bodies, basins, or Works of the District, nor do they affect the permit requirements of other District regulatory programs.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

#### **40E-63.402 Definitions.**

- (1) "C-139 Basin" means those lands described in the EFA, Section 373.4592(16), F.S.
- (2) "Nutrient Management Plan (NMP)" means a plan, applicable to cattle operations, to manage the amount, source, placement, form, and timing of nutrient application to optimize yields and minimize the movement of nutrients to surface and ground waters that ultimately discharge off-site. A site management plan and budget for tracking phosphorus shall be developed. The plan shall consider all nutrient sources (including but not limited to soil residual, crop residual, animal residual, organic and chemical fertilizer, soil amendments and supplements, irrigation water quantity and timing, animal nutrient supplements) versus the required amounts of nutrients. The plan shall utilize testing, analysis, and agricultural industry standards to determine nutrient needs. At a minimum, the plan shall address the timing, placement and method of nutrient application; optimization of nutrient uptake; prevention of nutrient movement off-site; site descriptions such as aerial photographs, crop maps, and soil maps; implementation plans and schedules; sediment control BMPs; pasture management BMPs; and water quality monitoring for input into the mass balance prepared for the phosphorus budget.
- (3) "Discharge" means any surface water runoff from a land area generated by rainfall, irrigation, or seepage. Runoff may occur through a structure or may flow as uncontrolled discharge from a land area.
- (4) "Improved Pasture" means grazing lands that are not in crop rotation and are planted primarily to introduce domesticated native forage species that receive

- periodic renovation and/or cultural treatments such as tillage, fertilization, mowing, and weed control.
- (5) "Land Practice Change" means any change in the use of a parcel that is likely to result in significant changes to the scope or type of Best Management Practice specified in the permitted BMP Plan for the parcel, or in the effectiveness of the Best Management Practice specified in the permitted BMP Plan.
  - (6) "Parcel" means a contiguous land area under single ownership within the C-139 Basin usually represented by a single county property tax identification number.
  - (7) "Range/Native Range Pasture" means raw, unimproved, native pasture suitable for grazing and browsing of domestic livestock at least part of the year. Rangeland includes any natural grasslands, savannas, shrublands, woodlands and wetlands that support a vegetative cover of native grasses, grasslike plants, forbs, shrubs, or other natural species. It does not include improvements such as seeding or application of fertilizer and lime.
  - (8) "Semi-improved Pasture" means range pasture having some improvements such as webbing, chopping, or mowing which increase the grazing capacity of the land but does not include improvements such as seeding or application of fertilizer and lime.
  - (9) "Structure" means a structural device or hydrologic feature (e.g. culvert, pump, open connection, surface grading, ditch) through which water is ultimately discharged/directed from one or more parcels in a hydrologic drainage area to a receiving water.
  - (10) "Water Management System" means the collection of devices, improvements or natural systems whereby surface waters are conveyed, controlled, impounded, or obstructed.
  - (11) "Water Year" means any 12-month period beginning on May 1 and ending on the following April 30.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

#### **40E-63.404 Incorporation of Forms, Instructions and References.**

- (1) South Florida Water Management District Form 1045, January 2002, entitled, "Application For A C-139 Basin Works Of The District Permit", and "Guidebook for Preparing an Application for a C-139 Works of the District Permit", dated January 2002 ("Guidebook").
- (2) "Appendix B1 – BMP Equivalent Points Table", dated January 2002, and including Best Management Practices for controlling the movement of phosphorus off-site in discharges through nutrient control practices, water management practices, particulate matter and sediment control practices, and pasture management practices.
- (3) "Appendix B2 – C-139 Basin Compliance Methodology", dated January 2002, and setting forth the compliance methodology the District will follow for the C-139 Basin with regard to the applicable phosphorus load limitation.
- (4) "Appendix B2.1 – FORTRAN Program for Calculating C-139 Basin Flows and Phosphorus Loads", dated January 2002.

- (5) "Appendix B2.2 – Flow Computation Methods Used to Calculate C-139 Basin Flows", dated January 2002, providing applicable mathematical methods for calculating flow rates through water management structures.
- (6) "Appendix B3 – Permittee Phosphorus Load Determination Based on the Optional Discharge Monitoring Plan", dated January 2002, setting forth the procedures the District will follow to calculate a permittee's proportional share of phosphorus load in order to determine eligibility for release from implementation of additional BMPs when the permittee has elected to implement the optional discharge monitoring plan and the C-139 Basin is out of compliance.
- (7) The documents listed in subsections (1) through (6) are hereby incorporated by reference, are published by the District, and are available on the District's website ([www.sfwmd.gov](http://www.sfwmd.gov)) or from the District at 3301 Gun Club Road, West Palm Beach, FL, 33406, 561-686-8800, upon request.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

#### **40E-63.406 Delegation**

- (1) The Governing Board delegates to and appoints the Executive Director and his or her designated agents to review and take final action on BMP Plan pre-approvals, applications to modify or transfer existing Individual Permits and all applications for General Permits issued under Chapter 40E-63, F.A.C., except when the staff recommendation is for denial of such applications.
- (2) All recommendations for denial and all other applications regarding Individual Permits (new or renewals) shall be considered by the Governing Board.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

#### **40E-63.410 Waivers.**

Any landowner in the C-139 Basin, as described in EFA, Section 373.4592(16), F.S., may submit evidence to the District demonstrating that the water discharged from such property does not use the Works of the District within the C-139 Basin and request a written waiver from the requirements of this Chapter pursuant to Chapter 28-104.002, F.A.C., and Chapter 120.542, F.S.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

#### **40E-63.415 No Notice General Permits.**

- (1) No Notice General Permits for Use of Works of the District within the C-139 Basin are hereby granted to the permittees for the surface water system operating permit for parcels of land that connect to or make use of the Works of the District within the C-139 Basin, subject to the requirements of Part IV of this Chapter, including Rule 40E-63.444(1)(e), (f), (g), and (i), F.A.C., and the conditions specified below:

- (a) The land is not subject to the agricultural privilege tax, pursuant to the EFA, Section 373.4592(7)(a), F.S.; and

- (b) The land is served by a properly permitted and operated surface water management system (Environmental Resource Program, ERP, or Surface Water Management Permit, SWM).
- (2) No Notice General Permits for Use of Works of the District within the C-139 Basin granted upon adoption of Part IV remain effective for 5 year periods and shall be automatically renewed unless the District notifies a permittee in writing that the permit is revoked.
- (3) In the event the C-139 Basin is determined to be out of compliance a fourth time, in accordance with Appendix B2 of Chapter 40E-63, F.A.C, the District shall revoke the No Notice General Permit and initiate rulemaking pursuant to Chapter 120, F.S., to revise this Chapter to ensure that the objectives of the EFA, Section 373.4592(4)(f)5., F.S., are met. Notification shall be by certified mail.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

#### **40E-63.420 BMP Plan Pre-approvals.**

- (1) In order to begin BMP implementation immediately, the proposed plan for the initial BMPs shall be submitted by the permittee for written pre-approval from the District. This will allow the permittee to initiate implementation of the approved BMP plan prior to the completion of the administrative review and processing of the permit application.
- (2) A Level I BMP Plan, as described in Appendices B1 and B2, shall be submitted to the District for approval within 30 days of the effective date of Part IV of this Chapter. Failure to provide a complete Level I plan within the 30 days shall not justify a corresponding delay for full implementation of the plan and will result in enforcement action pursuant to rule 40E-63.470, F.A.C.
- (3) The District shall make a final determination on the Level I BMP Plan within 10 days of receipt of a complete plan.
- (4) Implementation of Level I BMPs shall be initiated within 45 days and fully implemented within 90 days of the effective date of Part IV of this Chapter.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

#### **40E-63.430 Permit Applications.**

- (1) Applications for Works of the District Permits, including General Permits pursuant to Section 40E-63.440, F.A.C., and Individual Permits pursuant to Section 40E-63.450, F.A.C., shall be submitted to the District within 45 days of the effective date of this Part IV of Chapter 40E-63, F.A.C., and shall be made using Form 1045.
- (2) Landowners, lessees or operators of a parcel or parcels may submit applications for Works of the District Permits. A lessee or operator may submit an application provided the lease (or equivalent contract) is in writing and reasonable assurance is provided that the lessee/operator has the capability of implementing and complying with the BMP Plan and other permit conditions.
- (3) All General or Individual Permit applications shall include the following:

- (a) A clear delineation of the area and acreage contained in the permit application, including a map which is correlated with a list of all parcel owners, operators, and lessees with tributary discharge water and county tax identification numbers.
  - (b) Copies of existing contracts, agreements, or equivalent regarding use or operation of the property or control structure between the entity responsible for operation and the parcel owners included in the application, where applicable.
  - (c) A list of all existing and pending District permits for the application area and their status.
  - (d) A completed copy of Form 1045, entitled "Application for a C-139 Basin Works of the District Permit".
  - (e) All of the information necessary to satisfy the Basis for Issuance, including information as specified in the application Form 1045 and the Guidebook.
- (4) If activities proposed in the permit application submitted pursuant to Part IV of this rule will affect water management systems or activities regulated pursuant to other rules (e.g. Surface Water Management, Environmental Resource Permit, Consumptive Water Use, Well Construction, Right-of-Way, or Lake Okeechobee SWIM), then the Applicant shall also submit applications for new permits or modifications to existing permits, as appropriate.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

#### **40E-63.432 Permit Modifications, Transfers and Renewals.**

- (1) A permittee may apply for a modification to an existing Works of the District Permit issued under this Part IV of Chapter 40E-63, F.A.C., unless the permit has expired or has been otherwise revoked or suspended. An application for modification will not be processed as a complete application as long as the permit is not in compliance with applicable permit conditions, unless the permit modification is required to bring the permit into compliance. Modifications will be evaluated based on the criteria in effect at the time the application to modify is submitted. Permit modifications shall be subject to the following requirements and limitations:
- (a) Applications to modify an existing Works of the District Permit shall contain the same information required in a new application, as applicable, and shall identify the portion of the existing authorization for which the modification is requested.
  - (b) Modifications to existing permits are acknowledged and approved by letter with an accompanying Permit Review Summary (Staff Report) from the District through correspondence to the permittee.
- (2) A permittee shall notify the District within 30 days of any transfer, sale or conveyance of land or works permitted under Part IV of Chapter 40E-63, F.A.C., to allow time for processing the application for permit transfer. The permittee remains responsible for the requirements of the permit until the permit is transferred. A permittee or transferee may apply for a permit transfer, conveying responsibility for permit compliance. If the permit is not transferred within 90

days of the sale or conveyance of the property, the permit will become nontransferable and the transferee will be required to apply for a new permit. Permit transfers shall be subject to the following requirements and limitations:

- (a) Applicants for permit transfers must use the appropriate Sections of Form 1045 and include the appropriate transfer fees.
  - (b) The District will transfer the permit only if the land practice remains the same and the permittee is in compliance with all conditions of the permit.
  - (c) All conditions of the existing permit will remain applicable to the new permittee.
  - (d) Any other changes or additions will require a permit modification in accordance with Rule 40E-63.432(1), F.A.C.
- (3) A permittee shall apply for a permit renewal prior to the expiration of an existing permit, subject to the following requirements and limitations:
- (a) Applications for renewals must contain all information required for new applications and will be evaluated based on the criteria in effect at the time the application is filed.
  - (b) Permit renewals will be effective for 5 years from the date of issuance.
  - (c) When timely application is made for a modification or renewal, the existing permit shall not expire until final agency action is taken by the District on the application. If the permit is denied or the pending approved permit conditions are modified from the previous issuance, the existing permit shall not expire until the last day for seeking review of the District order, or until any resulting legal proceedings are completed.
  - (d) If the permittee allows the permit to expire prior to applying for a permit renewal, an application for a new permit shall be required.
- (4) Permit duration will not be affected by permit transfers or modifications of existing permits issued pursuant to this Part.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

#### **40E-63.434 Permit Duration**

Pursuant to the EFA, Section 373.4592(4)(f)2., F.S., new permits or permit renewals issued pursuant to this Part are valid for a 5-year term, unless:

- (1) The permit is automatically terminated at the expiration of the permittee's lease or contract (where the permittee is the lessee or equivalent) that authorized the permittee to control operations (and permit compliance) on the permitted land; or
- (2) The permit is otherwise modified by enforcement actions pursuant to Rule 40E-63.470(1), F.A.C.; or
- (3) The permit is otherwise renewed pursuant to Rule 40E-63.432(3), F.A.C.; or
- (4) A permit application for a new permit or a permit renewal has been filed by a permittee on a timely basis prior to the expiration date of a previously-issued permit, and the District has not completed review of the application, in which case the previously-issued permit will remain effective until final agency action is taken by the District on the application.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

**40E-63.436 Permit Application Processing Fees.**

- (1) The following permit application processing fees shall be paid to the District at the time the permit applications are filed.

Permit Type	New	Renewal	Modification	Transfer
General Permit	\$250	\$250	\$100	\$100
Individual Permit	\$1880	\$1880	\$500	\$100

- (2) Without the proper fee, the application shall be considered incomplete and will result in denial of the application if the fee is not paid upon notice.
- (3) Notwithstanding the table above, no fees shall be charged for clerical modifications that do not alter the Best Management Practices Plan or monitoring requirements of the underlying permit.
- (4) In cases where more than one permit application type applies, the application shall be submitted as the permit type with the higher application fee.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

**40E-63.440 General Permit Application Requirements in the C-139 Basin.**

- (1) General Permit applications shall be submitted by a single operating entity (a single owner, operator, or lessee of all parcels identified in the permit) that is responsible for implementing the BMP Plan for all contiguous or noncontiguous lands specified within the permit.
- (2) Applications for General Permits shall contain all of the following:
  - (a) Date, signature and title of an individual landowner, lessee or other single operating entity submitting the application;
  - (b) Information that demonstrates that the applicant possesses the authority and ability to carry out all acts necessary to implement the terms and conditions of the permit, including, at a minimum:
    - 1. A description of the legally responsible entity, and copies of recorded deeds, contracts, leases, property tax record of ownership, or other evidence of ownership or authority; and
    - 2. Written contracts or agreements with landowners, lessees or other entities indicating their consent and intent to comply with the permit and specifying the terms of participation, where applicable.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

**40E-63.442 Basis for Issuance of General Permits in the C-139 Basin.**

In order to obtain a General Permit, applicants must submit and implement a BMP Plan that includes a multi-level approach to implementation and operation including the following:

- (1) A Best Management Practice Plan based on selection of BMPs specifically listed in Appendix B1 of Chapter 40E-63, F.A.C., for each crop or land use within each hydrologic drainage area described within the permit. The BMP Plan shall propose:

- (a) A "Level I" Plan with a total of 15 BMP points for immediate initial implementation;
  - (b) A "Level II" Plan with the continued implementation of the Level I BMP Plan (a total of 15 BMP points);
  - (c) A "Level III" Plan that includes a BMP Plan with 10 additional BMP points for a total of 25 BMP points, and
  - (d) A "Level IV" plan that includes a BMP Plan with 10 additional BMP points for a total of 35 BMP points.
- (2) A description of Best Management Practice rationale for those selected, including:
    - (a) whether the BMP was included in Appendix B-2; and
    - (b) whether the BMP is appropriate to the land use.
  - (3) An education and training program for the management and operation staff responsible for implementing and monitoring the approved BMP Plan, arranged by the permittee or other educational resources;
  - (4) A description of records and documentation to be maintained on-site to verify BMP implementation, as described in the post-permit compliance section, Appendix C of the Guidebook on the form entitled "C-139 Basin Annual Report – Certification of BMP Implementation"; and
  - (5) A BMP Plan implementation schedule that includes, at a minimum, the initial BMPs being fully implemented within 90 days of the effective date of this Part IV of Chapter 40E-63, F.A.C. The 90-day implementation period may be exceeded if the following conditions are met:
    - (a) The BMP Implementation delay is because a new permit or a modification of an existing permit is required pursuant to Chapters 40E-4, 40E-40, and/or 40E-400, F.A.C., to construct the BMP; and
    - (b) The SWM/ERP permit applications have been submitted to the District pursuant to Chapters 40E-4, 40E-40, and/or 40E-400, F.A.C.; and
    - (c) Other approved BMPs, as defined in Appendix B-1, that are not subject to further regulatory review pursuant to sections 5(a) and (b) above, will be implemented until the BMP proposed under the application described in (a) and (b) above is operational.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

#### **40E-63.444 Limiting Conditions for General Permits in the C-139 Basin.**

- (1) All of the following standard limiting conditions (a) through (j) shall be attached to all General Permits:
  - (a) The permittee shall implement all elements and requirements of the approved BMP Plan according to schedule, including documentation of implementation, operation, and rationale where applicable. At no time shall BMP implementation be less than the required 15 points in the Level I Plan requirements.
  - (b) The permittee shall submit to the District an annual report certifying BMP implementation in accordance with the permit. The first report is due February 1, 2003, and annually thereafter. Failure to submit the report by February 1, will result in onsite verification of BMP implementation by

- District staff or the requirement for the permittee to submit a detailed report documenting implementation of the approved BMP Plan for the previous calendar year. Failure to submit the required annual report or provide documentation of BMP implementation by April 30 of each year will result in revocation of the General Permit. If the permit is revoked, the permittee shall be required to apply for a new Individual Permit and shall be subject to enforcement under Rule 40E-63.470(1), F.A.C.
- (c) The permittee shall allow District staff and designated agents reasonable access to the permitted property at any time to verify compliance with the rule and the permit. Since it is not possible to predict precisely when discharges will occur or problems will arise resulting in the need for a site visit, the District may not be able to provide a lengthy period of notice to the designated person in advance of a visit. However, at a minimum, the District will provide notice at least 24 hours prior to a site visit for verifying Best Management Practice installation or operation.
  - (d) The permittee shall notify the District in writing within 30 days of any:
    - 1. significant change in land practice, as described in Rule 40E-63.402 (6), F.A.C.; or
    - 2. change in the approved BMP Plan for the permitted parcel; or
    - 3. transfer, sale or conveyance of land or works described in the permit.
  - (e) This permit does not relieve the permittee of the responsibility to comply with all other laws or regulations applicable to the use of or discharges from the parcel.
  - (f) This permit does not convey to the permittee any property right or any rights or privileges other than those specified in the permit.
  - (g) This permit does not relieve the permittee from liability from harm or injury to human health or welfare; animal, plant or aquatic life; or property.
  - (h) The surface water management and monitoring system must be effectively operated and maintained in accordance with the Environmental Resource/Surface Water Management Permit. Any changes in drainage, land use or operations that could affect the BMP Plan or water quality of the discharge must be reported in writing to the District.
  - (i) The permitted discharge shall not otherwise be harmful, or adversely affect proper use and operation of the Works of the District.
  - (j) The C-139 Basin is required to achieve compliance with the phosphorus load limitation requirement as specified in Appendix B2 (C-139 Basin Compliance Methodology) of Chapter 40E-63, F.A.C.
- (2) In the event that the District determines that any participant in a General Permit is not complying with the specific terms and conditions of the General Permit, the District will institute enforcement proceedings against the Permit holder, the landowner, or both, as applicable pursuant to Rules 40E-63.460 and 40E-63.470, F.A.C. If additional specific conditions become necessary, the District shall also require the Permit holder to apply for an Individual Permit.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

**40E-63.450 Individual Permit Application Requirements in the C-139 Basin.**

- (1) An applicant shall apply for an Individual Permit if the applicant is proposing:
  - (a) A discharge monitoring program, pursuant to Rule 40E-63.456, F.A.C.;
  - (b) A BMP not described in Appendix B1 of Chapter 40E-63, F.A.C.; or
  - (c) A BMP implementation schedule that exceeds 90 days, unless the situation qualifies for an exception as described in Rule 40E-63.442(5), F.A.C.
- (2) An Individual Permit may be issued to any operating entity or entities, owners, or lessees of all parcels identified in the permit that are singly or collectively responsible for implementing the BMP Plan for all lands specified within the permit, as applicable.
- (3) Applications for Individual Permits shall contain all of the following:
  - (a) Date, signature, title and authority of the entity submitting the application;
  - (b) For each participant, information that demonstrates that the participant possesses the legal, financial, and institutional (as applicable) authority and ability to carry out all acts necessary to implement the terms and conditions of the permit, including, at a minimum:
    1. A description of the legally responsible entity or cooperating group of landowners, and copies of enabling legislation, articles of incorporation, interlocal agreements, landowner agreements, recorded deeds, contracts, leases, property tax record of ownership or other evidence of ownership or authority;
    2. Completed and signed Certificates of Participation indicating the participant's consent and intent to participate in the Permit; and
    3. Written contracts or agreements with participants indicating their consent and intent to participate and specifying the terms of participation, as applicable.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

**40E-63.452 Basis for Issuance of Individual Permits in the C-139 Basin.**

- (1) In order to obtain an Individual Permit, applicants must submit and implement a BMP Plan which includes a multi-level approach to implementation and operation including the following:
  - (a) A description of a Best Management Practice Plan, including implementation and operation, with consideration of BMPs described in Appendix B1 of Chapter 40E-63, F.A.C. The BMP Plan shall propose a total of 35 points at Levels as described in Rule 40E-63.442(1)(a) through (d), F.A.C.;
  - (b) A description of Best Management Practice rationale for those selected, where appropriate. If BMPs not listed in Appendix B1 of Chapter 40E-63, F.A.C., are proposed, provide an explanation for why the BMPs in the Appendix are not suitable for implementation. If an application includes proposed BMPs not listed in Appendix B1 of Chapter 40E-63, F.A.C., the application shall also include the following:
    1. An explanation of the proposed BMP;
    2. A schedule for implementation of the BMP;

3. Sample documentation of the BMP implementation; and
  4. Other information providing a basis for the effectiveness of the proposed BMP (This may be verified through a proposed monitoring program or by reference to applicable research data).
- (2) Applicants for an Individual Permit must also submit all of the information required by Subsections 40E-63.442(3) through (5), F.A.C. If the proposed implementation schedule is anticipated to take longer than 90 days, justification must be provided and accepted by the District.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

#### **40E-63.454 Limiting Conditions for Individual Permits in the C-139 Basin.**

- (1) The Board shall impose on any Individual Permit granted under this Part IV of Chapter 40E-63, F.A.C., such reasonable conditions as are necessary to assure that the permitted discharge will be consistent with the overall objectives of the District and will not be harmful to the water resources of the District.
- (2) In addition to special conditions, all of the following standard limiting conditions (a) through (c) shall be attached to all Individual Permits:
- (a) All conditions required by Subsections 40E-63.444(1)(a) through (j), F.A.C. (Limiting Conditions for General Permits in the C-139 Basin).
  - (b) Legal entities or groups of cooperating owners or operators responsible for implementing an Individual Permit shall remain legally and financially capable of performing their responsibilities required by the permits issued pursuant to this Section.
  - (c) If the District determines that any participant in an Individual Permit is not complying with the specific terms and conditions of the Individual Permit, the District will institute enforcement proceedings against either the Individual Permit holder, the participant, or both.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

#### **40E-63.456 Optional Discharge Monitoring Program.**

- (1) Permittees may elect to participate in an optional discharge monitoring program, and if they elect to participate in the monitoring program, shall be subject to individual compliance evaluations, including:
- (a) compliance with permit conditions, in accordance with Rule 40E-63.470(1), F.A.C.;
  - (b) compliance with Level I requirements to implement 15 BMP points;
  - (c) compliance with Level II requirements to continue implementation of Level I BMPs and undergo BMP inspections; and
  - (d) alternative, site-specific evaluations of compliance with phosphorus load targets and limits when the C-139 Basin is collectively required to implement Level III or Level IV BMP requirements.
- (2) Permittees desiring to implement an optional discharge monitoring program must provide a permit application to the District with the following information:

- (a) An acceptable discharge (quantity and quality) monitoring plan that provides reasonable assurance that annual water discharge and total phosphorus load are accurately documented. A plan that includes the items specified in the application Form 1045 generally provides reasonable assurance, but other alternatives may be proposed by the applicant and authorized by the District;
- (b) A schedule to install equipment and implement the monitoring plan no later than 30 days after issuance of the permit; and
- (c) Other site specific information required by Chapter 40E-63, F.A.C., Appendix B3.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

#### **40E-63.458 Limiting Conditions for the Optional Discharge Monitoring Program**

For those applicants proposing to implement the optional discharge monitoring program, the program will be incorporated by reference into the Individual Permit if the following conditions, (1) through (11), are met. The conditions shall be attached to the Individual Permit:

- (1) Those conditions listed under Rule 40E-63.454, F.A.C.;
- (2) The approved discharge monitoring plan shall be incorporated by reference and made part of this permit;
- (3) Within 30 days of the permit issuance date, the permittee shall contact the District to verify that installation of the monitoring equipment is complete and to schedule an inspection;
- (4) The permittee shall implement the discharge monitoring plan in accordance with the permit and shall submit to the District any proposed modification of the plan by submitting an application to modify the permit for review and approval prior to implementation.
- (5) The location of sample collection shall be such that water sampled is representative of all water that discharges off site through the structure being monitored.
- (6) All water quality sample collection, preservation, handling, transport, and chain-of-custody documentation shall be conducted in accordance with an approved Comprehensive Quality Assurance Plan as specified in the approved discharge monitoring plan. All laboratory analyses shall be conducted by a laboratory with proper certification for the specified parameter (e.g. phosphorus);
- (7) In the event that water quality automatic sampling equipment becomes inoperable for any reason, grab samples shall be temporarily taken on a daily basis during flow events and composited for a maximum of 14 days for total phosphorus analysis. Reasonable effort must be made to render the automatic sampling equipment operable within 14 days;
- (8) Monitoring conditions may be reduced or adjusted upon submission of data and/or studies that provide the basis for such, reasonably

- demonstrating that equivalent data will be obtained with the reduction or adjustment in monitoring;
- (9) The District will provide at least one week notice to the permittee of the intent to conduct a quality assurance field audit of the sampling collection procedures;
  - (10) The water quantity and quality data shall be submitted to the District in a timely manner and in a consistent electronic format. Water quantity data shall be submitted to the District in proper electronic format on a monthly basis. Water quality data shall be submitted to the District in accordance with timeframes as specified in Special Limiting Conditions of the permit; and
  - (11) All flow quantity discharged from the property shall be calculated using a method proposed by a Florida-registered Professional Engineer in a Calibration Report approved by the District. A Calibration Report shall be required for each pump, culvert or other discharge structure. Each Calibration Report shall contain, at a minimum: data collection methodology, instrumentation and procedures; the actual field data collected; the basis for the full operating range represented by the data; the methodology for development of the calibration equation; operational information needed to calculate flow with a temporary backup methodology to be used if the primary equipment becomes inoperable; and the final calibration equation and primary method for calculating the flow. Any modification to the approved calibration shall require an application to modify the existing permit application.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

#### **40E-63.460 C-139 Basin Compliance.**

- (1) Landowners within the C-139 Basin shall immediately participate in an initial level of BMP implementation (Level I). At no time shall BMP implementation be less than the required 15 points in the Level I Plan requirements. The level of future BMP implementation in the C-139 Basin will be determined by the District as specified in Appendix B2 (C-139 Basin Compliance Methodology) of Chapter 40E-63, F.A.C. The District will make the compliance determination and publish the results annually.
- (2) In accordance with Appendix B2 the District shall continue collecting monitoring data from the C-139 Basin for the purpose of determining compliance.
- (3) If the C-139 Basin is determined to require implementation of Levels II, III, or IV, in accordance with Appendix B2 of Chapter 40E-63, F.A.C., the District shall provide written notice to the C-139 Basin landowners. The District shall attempt to transmit the written notices by July 1 of any year the determination is made. The notices shall describe the permittee's required actions over and above the Level I requirements as follows:
  - (a) First Time Out of Compliance – Continued implementation of the initial 15 points in the permitted BMP Plan and preparation for the District's on-site verification of BMP implementation;

- (b) Second Time Out of Compliance – Implementation of a total of 25 points in the permitted BMP Plan (the initial 15 points and 10 additional points) and continued on-site verification of implementation by District staff;
- (c) Third Time Out of Compliance – Implementation of a total of 35 points in the permitted BMP Plan (the initial 15 points, the second 10 points, and 10 additional points) and continued on-site verification of implementation by District staff.
- (d) Fourth Time Out of Compliance – Initiation of rulemaking by the District, pursuant to Chapter 120, F.S., to revise this Chapter to ensure that the objectives of the EFA, Section 373.4592(4)(f)5., F.S., are met.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

#### **40E-63.470 C-139 Basin Works of the District Permit Compliance.**

- (1) The District is authorized to seek any enforcement or corrective action available under Florida law for permittees out of compliance with the provisions of this Chapter, pursuant to Chapter 373, F.S., and rules adopted thereunder, as follows:
  - (a) The District shall begin reviewing “permit compliance” with Best Management Practice implementation, documentation, and operation by permittees in the C-139 Basin no later than February 1, 2003 (the deadline for submitting the first "C-139 Basin Annual Report – Certification of BMP Implementation”).
  - (b) All landowners who are not in compliance with their permit are subject to notification and enforcement actions by the District.
  - (c) All permittees who receive notice of non-compliance with their permit from the District must submit to the District, within 10 business days of receipt of the notice, a plan and schedule for achieving permit compliance within 60 days after transmittal of the District notice.
- (2) If, despite the implementation of a Level I BMP program, the C-139 Basin is determined to be out of compliance, permittees shall implement additional BMPs as follows:
  - (a) Permittees that do not propose to change their permitted BMP Plan shall submit to the District, within 15 days of transmittal of the written notification of out-of-compliance, confirmation that the next level of the approved BMP plan will be initiated within 45 days of receipt of the notification of out-of-compliance. Complete implementation of the BMPs shall be within 90 days of the District's transmittal of the notice that the C-139 Basin is not in compliance.
  - (b) Permittees that propose to revise the permitted BMP Plan shall:
    - 1. Submit to the District within 15 days of transmittal of the written notification of out-of-compliance, the page entitled "C-139 Basin BMP Plan" of Form 1045 with proposed changes in BMPs and/or implementation schedules. The District shall provide pre-approval of the BMP Plan within 10 days of receipt of a complete plan, as applicable. Failure to provide a complete revised BMP Plan within

- 15 days shall not justify a corresponding delay of the date on which a permittee is required to implement the revised BMP Plan.
2. The implementation of the BMP Plan shall be initiated by the permittee within 45 days of the transmittal of the notification of out-of-compliance by the District.
  3. The permittee's notice to the District to change the previously permitted BMP Plan shall be followed by submittal of the application for a modification to the existing Permit within 45 days of transmittal of the notice that the C-139 Basin is out of compliance. The application shall include all elements specified in Rule 40E-63.440 or 40E-63.450, F.A.C., as applicable; or explain why an omitted element is not relevant to evaluation of the revised plan. The modification shall propose a BMP implementation schedule that calls for complete implementation of the specified Level within 90 days of the District's transmittal of the notice that the C-139 Basin is out of compliance. Implementation schedules shall be extended only after the applicant shows that the conditions listed in Rule 40E-63.442(5), F.A.C., have been met. Permittees shall make good faith efforts to provide complete revised BMP Plans.
  4. Permittees who fail to complete the implementation of BMPs according to the approved implementation schedule, as verified by site visits and records review, shall be subject to enforcement action pursuant to Rule 40E-63.470(1), F.A.C.
- (c) Permittees implementing an approved Optional Monitoring Program and meeting their compliance requirements will not be required to implement additional BMPs.
- (3) If the C-139 Basin does not achieve the phosphorus load limitation requirement at the end of the water year in which there is additional implementation of BMPs, the District shall repeat the procedures specified in Rule sections 40E-63.460(4), F.A.C. above, and seek corrective action as appropriate, including those set forth in Appendix B2 of Chapter 40E-63, F.A.C., against all landowners and permittees within the C-139 Basin.
  - (4) If a permittee has a permitted optional discharge monitoring plan, pursuant to Rules 40E-63.456 and 40E-63.458, F.A.C., the permittee may make a written request to the District for a release of Level III and/or IV BMPs. Upon receipt of the written request, the District shall individually evaluate the permittee's compliance. This evaluation shall compare the data collected pursuant to the optional discharge monitoring plan with the permittee's proportional share of the C-139 Basin's phosphorus load targets and limits, as calculated in accordance with Appendix B.3. Permittees with an approved optional discharge monitoring plan, that have made the written request, shall not be required to implement additional BMPs solely because the C-139 Basin is collectively out of compliance with Rule 40E-63.460, F.A.C. and Appendix B2.

Statutory Authority 373.044, 373.083, 373.085, 373.113, 373.4592, F.S.

Laws Implemented 373.085, 373.4592, F.S.

History – New 1-24-02

**DESCRIPTION****REGULATED PORTION OF EVERGLADES AGRICULTURAL AREA  
S-5A, S-6, S-7 AND S-8 BASINS  
PALM BEACH, BROWARD AND HENDRY COUNTIES****S-5A Basin (Palm Beach County)**

Beginning at the intersection of the center line of the South Florida Water Management District's Levee 8 Right of Way with the north line of Section 22, Township 41 South, Range 38 East, thence, bear westerly along said north line of said Section 22 and the north lines of Sections 21, 20 and 19, Township 41 South, Range 38 East, and the north line of Section 24, Township 41 South, Range 37 East, to the Northwest (NW) corner of said Section 24;

Thence, southerly along the west line of said Section 24 to the Southwest (SW) corner of said Section 24;

Thence, westerly along the south lines of Sections 23 and 22, Township 41 South, Range 37 East, to the intersection thereof with the center line of the South Florida Water Management District's Levee Dike 9 Right of Way;

Thence, southwesterly along said center line of said Levee Dike 9 Right of Way to the intersection thereof with the west line of Section 4, Township 42 South, Range 37 East;

Thence, southerly along said west line of said Section 4 and the west lines of Sections 9, 16, 21, 28 and 33, Township 42 South, Range 37 East, to the intersection thereof with the line between Townships 42 South and 43 South, said point being also the Southwest (SW) corner of said Section 33;

Thence, easterly along said line between said Townships 42 South and 43 South, being also the south line of said Section 33 and the south lines of Sections 34, 35 and 36, Township 42 South, Range 37 East, and the south lines of Sections 31, 32 and 32, Township 42 South, Range 38 East, to the Northeast (NE) corner of Section 4, Township 43 South, Range 38 East;

Thence, southerly along the east line of said Section 4 to the Southeast (SE) corner of said Section 4;

Thence, easterly along the south line of Section 3, Township 43 South, Range 38 East, to the Southeast (SE) corner of said Section 3;

Thence, southerly along the east lines of Sections 10, 15, 22 and 27, Township 43 South, Range 38 East, to the Southeast (SE) corner of said Section 27;

Thence, westerly along the south line of said Section 27 to the Northwest (NW) corner of Section 34, Township 43 South, Range 38 East;

Thence, southerly along the west line of said Section 34 to the intersection thereof with the line between Township 43 South and Government Lots 3 and 4, said point being also the Southwest (SW) corner of said Section 34;

Thence, southerly along the southerly extension of said Section 34 to the intersection thereof with the center line of State Road 80 (U.S. 441) Right of Way;

Thence, easterly along said center line of said State Road 80 (U.S. 441) Right of Way to the intersection thereof with the west line of the East one-half (E1/2) of Section 3, Township 44 South, Range 38 East;

Thence, southerly along the west line of said East one-half (E1/2) of said Section 3, and the west line of the East one-half (E1/2) of Section 10, Township 44 South, Range 38 East, to the Southwest (SW) corner of said East one-half (E1/2) of said Section 10;

Thence, easterly along the south line of said Section 10 to the Northwest (NW) corner of Section 14, Township 44 South, Range 38 East;

Thence, southerly along the west line of said Section 14 and the west line of Section 23, Township 44 South, Range 38 East, to the Southwest (SW) corner of said Section 23;

Thence, easterly along the south line of said Section 23 and the south line of Section 24, Township 44 South, Range 38 East, to the intersection thereof with the line between Ranges 38 East and 39 East, said point being also the Southeast (SE) corner of said Section 24;

Thence, southerly along said line between said Ranges 38 East and 39 East, being also the east lines of Sections 25 and 36, Township 44 South, Range 38 East, to the intersection thereof with the line between Townships 44 South and 45 South, said point being also the Southeast (SE) corner of said Section 36;

Thence, easterly along said line between said Townships 44 South and 45 South, being also the south lines of Sections 31, 32 and 33, Township 44 South, Range 39 East, to the Southeast (SE) corner of said Section 33;

Thence, northerly along the east line of said Section 33 and the east lines of Sections 28, 21 and 16, Township 44 South, Range 39 East, to the Northeast (NE) corner of said Section 16;

Thence, easterly along the south lines of Sections 10 and 11, Township 44 South, Range 39 East, to the Southeast (SE) corner of said Section 11;

Thence, northerly along the east line of said Section 11 to the Northwest (NW) corner of the South one-half (S1/2) of Section 12, Township 44 South, Range 39 East;

Thence, easterly along the north line of said South one-half (S1/2) of said Section 12 to the intersection thereof with the center line of the South Florida Water Management District's Levee 7 Right of Way;

Thence, northeasterly and easterly along said center line of said Levee 7 Right of Way to the intersection thereof with the center line of said Levee 8 Right of Way;

Thence, northerly and northwesterly along said center line of said Levee 8 Right of Way to the intersection thereof with the north line of Section 22, Township 42 South, Range 39 East;

Thence, westerly along said north line of said Section 22 and the north line of Section 21, Township 42 South, Range 39 East, to the Northwest (NW) corner of said Section 21;

Thence, northerly along the east line of Section 17 and the east line of Section 8, Township 42 South, Range 39 East, to the intersection thereof with the center line of said Levee 8 Right of Way;

Thence, northwesterly along said center line of said Levee 8 Right of Way to the POINT OF BEGINNING.

### **S-6 Basin (Palm Beach County)**

Beginning at the Southwest (SW) corner of Section 16, Township 43 South, Range 37 East, thence, bear easterly along the south line of said Section 16 and the south lines of Sections 15, 14 and 13, Township 43 South, Range 37 East, to the Southeast (SE) corner of said Section 13;

Thence, northerly along the east line of said Section 13 and the east lines of Sections 12 and 1, Township 43 South, Range 37 East, to the intersection thereof with the line between Townships 42 South and 43 South, said point being also the Northeast (NE) corner of said Section 1;

Thence, easterly along said line between said Townships 42 South and 43 South, being also the north lines of Sections 6, 5 and 4, Township 43 South, Range 38 East, to the Northeast (NE) corner of said Section 4;

Thence, southerly along the east line of said Section 4 to the Southeast (SE) corner of said Section 4;

Thence, easterly along the north line of Section 10, Township 43 South, Range 38 East, to the Northeast (NE) corner of said Section 10;

Thence, southerly along the east line of said Section 10 and the east lines of Sections 15, 22 and 27, Township 43 South, Range 38 East, to the Southeast (SE) corner of said Section 27;

Thence, westerly along the south line of said Section 27 to the Southwest (SW) corner of said Section 27;

Thence, southerly along the west line of Section 34, Township 43 South, Range 38 East, to the intersection thereof with the line between Township 43 South and Government Lots 3 and 4, said point being also the Southwest (SW) corner of said Section 34;

Thence, southerly along the southerly extension of said Section 34 to the intersection thereof with the center line of State Road 80 (U.S. 441) Right of Way;

Thence, easterly along said center line of said State Road 80 (U.S. 441) Right of Way to the intersection thereof with the west line of the East one-half (E1/2) of Section 3, Township 44 South, Range 38 East;

Thence, southerly along the west line of said East one-half (E1/2) of said Section 3 and the west line of the East one-half (E1/2) of Section 10, Township 44 South, Range 38 East, to the Southwest (SW) corner of said East one-half (E1/2) of said Section 10;

Thence, easterly along the south line of said Section 10 to the Northwest (NW) corner of Section 14, Township 44 South, Range 38 East;

Thence, southerly along the west line of said Section 14 and the west line of Section 23, Township 44 South, Range 38 East, to the Southwest (SW) corner of said Section 23;

Thence, easterly along the south line of said Section 23 and the south line of Section 24, Township 44 South, Range 38 East, to the intersection thereof with the line between Ranges 38 East and 39 East, said point being also the Southeast (SE) corner of said Section 24;

Thence, southerly along said line between said Ranges 38 East and 39 East, being also the east lines of Sections 25 and 36, Township 44 South, Range 38 East, to the intersection thereof with the line between Townships 44 South and 45 South, said point being also the Southeast (SE) corner of said Section 36;

Thence, easterly along said line between said Townships 44 South and 45 South, being also the south line of said section 36 and the south lines of Sections 31, 32, 33 and 34, Township 44 South, Range 39 East, to the intersection thereof with the center line of the South Florida Water Management District's Levee 7 Right of Way;

Thence, southerly along said center line of said Levee 7 Right of Way to the intersection thereof with the center line of the South Florida Water Management District's Levee 6 Right of Way;

Thence, southwesterly along said center line of said Levee 6 Right of Way to the intersection thereof with the north line of Section 30, Township 46 South, Range 39 East;

Thence, westerly along the north line of said Section 30 and the north lines of Sections 25 and 26, Township 46 South, Range 38 East, to the Northwest (NW) corner of the East one-half (E1/2) of said Section 26;

Thence, southerly along the west line of said East one-half (E1/2) of said Section 26 to the Southwest (SW) corner of said East one-half of said Section 26;

Thence, westerly along the south line of said Section 26 and the south line of Section 27, Township 46 South, Range 38 East, to the Southwest (SW) corner of said Section 27;

Thence, northerly along the west line of said Section 27 and the west lines of Sections 22, 15 and 10, Township 46 South, Range 38 East, to the Northwest (NW) corner of the South one-half (S1/2) of said Section 10;

Thence, westerly along the north line of the South one-half (S1/2) of Section 9, Township 46 South, Range 38 East, to the Northwest (NW) corner of said South one-half (S1/2) of said Section 9;

Thence, northerly along the west line of said Section 9, the west line of Section 4, Township 46 South, Range 38 East, and Government Lot 4, to the intersection thereof with the line between Township 45 South and the Government Lots, said point being also the Northwest (NW) corner of said Government Lot 4;

Thence, westerly along said line between said Townships 45 South and 46 South, being also the south lines of Sections 32 and 31, Township 45 South, Range 38 East, to the intersection thereof with the line between Ranges 37 East and 38 East, being also the Southwest (SW) corner of said Section 31;

Thence, northerly along said line between said Ranges 37 East and 38 East, being also the west line of said Section 31 and the west lines of Sections 30 and 19, Township 45 South, Range 38 East, to the Southeast (SE) corner of Section 13, Township 45 South, Range 37 East;

Thence, westerly along the south line of said Section 13 to the Southwest (SW) corner of said Section 13;

Thence, northerly along the west line of said Section 13 to the Southeast (SE) corner of Section 11, Township 45 South, Range 37 East;

Thence, westerly along the south line of said Section 11 and the south line of Section 10, Township 45 South, Range 37 East, to the Southwest (SW) corner of said Section 10;

Thence, northerly along the west line of said Section 10, the west line of Section 3, Township 45 South, Range 37 East, and the west lines of Sections 34, 27 and 22, Township 44 South, Range 37 East, to the Northwest (NW) corner of said Section 22;

Thence, easterly along the north line of said Section 22 to the Northeast (NE) corner of said Section 22;

Thence, northerly along the east line of Section 15, Township 44 South, Range 37 East, to the Northeast (NE) corner of said Section 15;

Thence, westerly along the north line of said Section 15 and the north lines of Sections 16 and 17, Township 44 South, Range 37 East, to the center line of County Road 827A Right of Way;

Thence, northerly along said center line of said County Road 827A Right of Way to the intersection thereof with the center line of State Road 80 Right of Way;

Thence, northerly and northeasterly along said center line of said State Road 80 Right of Way to the intersection thereof with the center line of South Florida Water Management District's Hillsboro Canal Right of Way;

Thence, northwesterly along said center line of said Hillsboro Canal Right of Way to the intersection thereof with the center line of the South Florida Conservancy District's Lateral 1-1N Right of Way;

Thence, southwestwardly along said center line of said Lateral 1-1N Right of Way to the south line of Section 1, Township 44 South, Range 36 East;

Thence, westerly along the south line of said Section 1 and the south line of Section 2, Township 44 South, Range 36 East, to the intersection thereof with the center line of the South Florida Water Management District's North New River Canal Right of Way;

Thence, northerly along said center line of said North New River Canal to the intersection thereof with the center line of said Hillsboro Canal Right of Way;

Thence, westerly along said center line of said Hillsboro Canal Right of Way to the intersection thereof with the center line of South Florida Water Management District's Levee Dike 2 Right of Way;

Thence, northeasterly along said center line of said Levee Dike 2 Right of Way to a point, said point being 100 feet southwestwardly of the center line of the South Florida Water Management District's Structure 12;

Thence, South 52° 00' 00" East (bearing and distance are based on the description of East Shore Drainage District) to the intersection thereof with a line that is 100 feet south of, and parallel to, the south lines of the North one-half (N1/2) of Section 7 and the North one-half (N1/2) of Section 8, Township 43 South, Range 37 East, said intersection point is 4,700 feet west of the east line of said Section 7;

Thence, easterly along said line 100 feet south of said south lines of said North one-half (N1/2) of said Sections 7 and 8, to the east line of said Section 8;

Thence, southerly along said east line of said Section 8 and the west line of Section 16, Township 43 South, Range 37 East, to the Southwest (SW) corner of said Section 16, and the POINT OF BEGINNING.

### **S-7 Basin (Palm Beach and Broward Counties)**

Beginning at the Northeast (NE) corner of Section 15, Township 44 South, Range 37 East, thence, bear southerly along the east line of said Section 15 to the Southeast (SE) corner of said Section 15;

Thence, westerly along the south line of said Section 15 to the Northwest (NW) corner of Section 22, Township 44 South, Range 37 East;

Thence, southerly along the west line of said Section 22, the west lines of Sections 27 and 34, Township 44 South, Range 37 East, and the west lines of Sections 3 and 10, Township 45 South, Range 37 East, to the Southwest (SW) corner of said Section 10;

Thence, easterly along the south line of said Section 10 and the south line of Section 11, Township 45 South, Range 37 East, to the Southeast (SE) corner of said Section 11;

Thence, southerly along the west line of Section 13, Township 45 South, Range 37 East, to the Southwest (SW) corner of said Section 13;

Thence, easterly along the south line of said Section 13 to the intersection thereof with the line between Ranges 37 East and 38 East, said point being also the Southeast (SE) corner of said Section 13;

Thence, southerly along said line between said Ranges 37 East and 38 East, being also the west lines of Sections 19, 30 and 31, Township 45 South, Range 38 East, to the intersection thereof with the line between Township 45 South and the Government Lots, said point being also the Southwest (SW) corner of said Section 31;

Thence, easterly along said line between said Township 45 South and the Government Lots, said line being also the south line of said Section 31 and the south line of Section 32, Township 45 South, Range 38 East, to the Southeast (SE) corner of said Section 32;

Thence, southerly along the east line of Government Lot 5, Sections 5 and 8, Township 46 South, Range 38 East, to the Southeast (SE) corner of the North one-half (N1/2) of said Section 8;

Thence, easterly along the south line of the North one-half (N1/2) of Section 9, Township 46 South, Range 38 East, to the Southeast (SE) corner of said North one-half (N1/2) of said Section 9;

Thence, southerly along the west lines of Sections 10, 15, 22, 27 and 34, Township 48 South, Range 38 East, to the intersection thereof with the line between Townships 46 South and 47 South, said point being also the Southwest (SW) corner of said Section 34;

Thence, easterly along said line between said Townships 46 South and 47 South, being also the south line of said Section 34, to the Northeast (NE) corner of Section 4, Township 47 South, Range 38 East;

Thence, southerly along the east line of said Section 4 to the Southeast (SE) corner of said Section 4;

Thence, easterly along the north lines of Sections 10 and 11, Township 47 South, Range 38 East, to the intersection thereof with the center line of the South Florida Water Management District's Levee 6 Right of Way;

Thence, southwesterly along said center line of said Levee 6 Right of Way to the intersection thereof with the center line of the South Florida Water Management District's Levee 5 Right of Way, said intersection point being in Broward County;

Thence, westerly along said center line of said Levee 5 Right of Way, said course being in Broward County, to the intersection thereof with the east line of Section 28, Township 47 South, Range 37 South;

Thence, northerly along said east line of said Section 28 and the east lines of Sections 21 and 16, Township 47 South, Range 37 East, to the Northeast (NE) corner of the South one-half (S1/2) of said Section 16, said point being in Palm Beach County;

Thence, westerly along the north line of said South one-half (S1/2) of said Section 16 to the Northwest (NW) corner of said South one-half (S1/2) of said Section 16;

Thence, northerly along the west line of said Section 16 to the Northwest (NW) corner of said Section 16;

Thence, westerly along the south lines of Sections 8 and 7, Township 47 South, Range 37 East, to the intersection thereof with the line between Ranges 36 East and 37 East, said point being also the Southwest (SW) corner of said Section 7;

Thence, northerly along said line between said Ranges 36 East and 37 East, being also the west line of said Section 7 and the west line of Section 6, Township 47 South, Range 37 East, to the intersection thereof with the line between Townships 46 South and 47 South, said point being also the Northwest (NW) corner of said Section 6;

Thence, westerly along said line between said Townships 46 South and 47 South, said line being also the south line of Section 31, Township 46 South, Range 37 East, to the intersection thereof with the line between Ranges 36 East and 37 East, said point being also the Southwest (SW) corner of said Section 31;

Thence, northerly along said line between said Ranges 36 East and 37 East, being also the west line of said Section 31 and the west lines of Sections 30 and 19, Township 46 South, Range 37 East, to the intersection thereof with the line between Townships 46 South and 47 South, said point being also the Southeast (SE) corner of Section 36, Township 46 South, Range 36 East;

Thence, westerly along said line between said Townships 46 South and 47 South, being also the south line of said Section 36 and the south lines of Sections 35 and 34, Township 46 South, Range 36 East, to the Southwest (SW) corner of said Section 34;

Thence, northerly along the west line of said Section 34 and the west lines of Sections 27 and 22, Township 46 South, Range 36 East, to the Northwest (NW) corner of said Section 22;

Thence, easterly along the north line of said Section 22 to the Southeast (SE) corner of Section 15, Township 46 South, Range 36 East;

Thence, northerly along the east line of said Section 15 and the east line of Section 10, Township 46 South, Range 36 East, to the Northeast (NE) corner of said Section 10;

Thence, westerly along the north line of said Section 10 to the Southwest (SW) corner of Section 3, Township 46 South, Range 36 East;

Thence, northerly along the west line of said Section 3 to the intersection thereof with the line between Townships 45 South and 46 South, said point being the Northwest (NW) corner of said Section 3;

Thence, westerly along said line between said Townships 45 South and 46 South, being also the south lines of Sections 33, 32 and 31, Township 45 South, Range 36 East, to the intersection thereof with the line between Ranges 35 East and 36 East, said point being also the Southwest (SW) corner of said Section 31;

Thence, northerly along said line between said Ranges 35 East and 36 East, being also the west line of said Section 31 and the west lines of Sections 30 and 19, Township 45 South, Range 36 East, to the Northwest (NW) corner of said Section 19;

Thence, easterly along the north line of said Section 19 to the Southeast (SE) corner of Section 18, Township 45 South, Range 36 East;

Thence, northerly along the east line of said Section 18, the east lines of Sections 7 and 6, Township 45 South, Range 36 East, and the east lines of Sections 31, 30, 19 and 18, Township 44 South, Range 36 East, to the intersection thereof with the south Right of Way line of the Florida East Coast Railway, said point lies 94.5 feet south of the Northeast (NE) corner of said Section 18;

Thence, North 89° 57' 00" East (the following bearings and distances are based on the description of Southshore Drainage District) along said south Right of Way line of said Florida East Coast Railway, a distance of 15,915.8 feet to a point, said point being 50 feet east of, and 81.6 feet south of, the Northeast (NE) corner of Section 15, Township 44 South, Range 36 East;

Thence, South 00° 07' 00" West along a line 50 feet east of, and parallel to, the east line of said Section 15, a distance of 2561 feet, more or less, to the intersection thereof with the south line of the North one-half (N1/2) of Section 14, Township 44 South, Range 36 East;

Thence, easterly along said south line of said North one-half (N1/2) of said Section 14 to the intersection thereof with the west Right of Way line of the South Florida Water Management District's North New River Canal;

Thence, northerly along said west Right of Way line of said North New River Canal to the intersection thereof with northeasterly edge of the Old Okeechobee State Levee;

Thence, northwesterly along said northeasterly edge of said Old Okeechobee State Levee to the intersection thereof with the center line of the South Florida Water Management District's Levee Dike 2 Right of Way;

Thence, northeasterly along said center line of said Levee Dike 2 Right of Way to the intersection thereof with the center line of the South Florida Water Management District's Hillsboro Canal Right of Way;

Thence, easterly along said center line of said Hillsboro Canal Right of Way to the intersection thereof with the center line of the South Florida Water Management District's North New River Canal Right of Way;

Thence, southerly along said center line of said North New River Canal Right of Way to the intersection thereof with the south line of Section 2, Township 44 South, Range 36 East;

Thence, easterly along said south line of said Section 2 and the south line of Section 1, Township 44 South, Range 36 East, to the intersection thereof with the center line of the South Florida Conservancy District's Lateral 1-1N Right of Way;

Thence, northeasterly along said center line of said Lateral 1-1N Right of Way to the intersection thereof with the center line of said Hillsboro Canal Right of Way;

Thence, southeasterly along said center line of said Hillsboro Canal Right of Way to the intersection thereof with the center line of State Road 80 Right of Way;

Thence, southwesterly and southerly along said center line of said State Road 80 Right of Way to the intersection thereof with the center line of County Road 827A;

Thence, southerly along said center line of said County Road 827A to the intersection thereof with the north line of Section 17, Township 44 South, Range 37 East;

Thence, easterly along the north line of said Section 17 and the north lines of Sections 16 and 15, Township 44 South, Range 37 East, to the Northeast (NE) corner of said Section 15, and the POINT OF BEGINNING.

### **S-8 Basin (Palm Beach and Hendry Counties)**

Beginning at the Northeast (NE) corner of Section 19, Township 45 South, Range 36 East, thence, bear westerly along the north line of said Section 19 to the intersection thereof with the line between Ranges 35 East and 36 East, said point being also the Northwest (NW) corner of said Section 19;

Thence, southerly along said line between said Ranges 35 East and 36 East, said line being also the west line of Section 19 and the west lines of Sections 30 and 31, Township 45 South, Range 36 East, to the intersection thereof with the line between Townships 45 South and 46 South, said point being also the Southwest (SW) corner of said Section 31;

Thence, easterly along said line between said Townships 45 South and 46 South, being also the south line of said Section 31 and the south lines of Sections 32 and 33, Township 45 South, Range 36 East, to the Southeast (SE) corner of said Section 33;

Thence, southerly along the east line of Section 4, Township 46 South, Range 36 East, to the Southeast (SE) corner of said Section 4;

Thence, easterly along the south line of Section 3, Township 46 South, Range 36 East, to the Southeast (SE) corner of said Section 3;

Thence, southerly along the east lines of Sections 10 and 15, Township 46 South, Range 36 East, to the Southeast (SE) corner of said Section 15;

Thence, westerly along the south line of said Section 15 to the Northeast (NE) corner of Section 21, Township 46 South, Range 36 East;

Thence, southerly along the east line of said Section 21 and the east lines of Section 28 and 33, Township 46 South, Range 36 East, to the intersection thereof with the line between Townships 46 South and 47 South, said point being also the Southeast (SE) corner of said Section 33;

Thence, westerly along said line between said Townships 46 South and 47 South, being also the south line of said Section 33, the south lines of Sections 32 and 31, Township 46 South, Range 36 East, and the south lines of Sections 36 and 35, Township 46 South, Range 35 East, to the intersection thereof with the center line of South Florida Water Management District's Miami Canal Right of Way;

Thence, southeasterly along said center line of said Miami Canal Right of Way to the intersection thereof with the south line of Section 11, Township 47 South, Range 35 East;

Thence, westerly along the south line of said Section 11 and the south line of Section 10, Township 47 South, Range 35 East, to the Southwest (SW) corner of said Section 10;

Thence, northerly along the west line of said Section 10 to the Northwest (NW) corner of said Section 10;

Thence, easterly along the north line of said Section 10 to the Northeast (NE) corner of said Section 10;

Thence, northerly along the east line of Section 3, Township 47 South, Range 35 East, and the east line of Section 34, Township 46 South, Range 35 East, to the Northeast (NE) corner of said Section 34;

Thence, westerly along the north line of said Section 34 to the Northwest (NW) corner of said Section 34;

Thence, northerly along the west line of Section 27, Township 46 South, Range 35 East, to the Northwest (NW) corner of said Section 27;

Thence, easterly along the north line of said Section 27 to the intersection thereof with said center line of said Miami Canal Right of Way;

Thence, northwesterly along said center line of said Miami Canal Right of Way to the intersection thereof with the north line of Section 22, Township 46 South, Range 35 East;

Thence, westerly along said north line of said Section 22 and the north line of Section 21, Township 46 South, Range 35 East, to the Northwest (NW) corner of said Section 21;

Thence, southerly along the west line of said Section 21 to the Southwest (SW) corner of said Section 21;

Thence, westerly along the south lines of Sections 20 and 19, Township 46 South, Range 35 East, to the intersection thereof with the line between Ranges 34 East and 35 East, said point being also the line between Palm Beach and Hendry Counties;

Thence, southerly along said line between said Ranges 34 East and 35 East, and said line between said Palm Beach and Hendry Counties, to the intersection thereof with the center line of the South Florida Water Management District's Levee 3 Right of Way;

Thence, westerly, northwesterly and northerly along said center line of said Levee 3 Right of Way, said course and the following courses being in Hendry County, to the intersection thereof with the center line of the South Florida Water Management District's Levee 2 Right of Way;

Thence, northerly along said center line of said Levee 2 Right of Way to the intersection thereof with the center line of the South Florida Water Management District's Levee 1 Right of Way;

Thence, northerly along said center line of said Levee 1 Right of Way to the intersection thereof with the center line of the South Florida Water Management District's Levee 1 East Right of Way;

Thence, easterly along said center line of said Levee 1 East Right of Way to the intersection thereof with the east line of Section 10, Township 44 South, Range 34 East;

Thence, northerly along said east line of said Section 10 and the east line of Section 3, Township 44 South, Range 34 East, to the Northwest (NW) corner of the South one-half (S1/2) of Section 2, Township 44 South, Range 34 East;

Thence, easterly along the north line of said South one-half (S1/2) of said Section 2, the north line of the South one-half (S1/2) of Section 1, Township 44 South, Range 34 East, (the following courses are in Palm Beach County), and the north line of the South one-half (S1/2) of Section 6, Township 44 South, Range 35 East, to the intersection thereof with the east/west center line of the Seaboard Coast Line Railroad Right of Way;

Thence, easterly and southeasterly along said east/west center line of said Seaboard Coast Line Railroad Right of Way to the intersection thereof with said center line of said Miami Canal;

Thence, northeasterly and northerly along said center line of said Miami Canal Right of Way to the intersection thereof with the center line of State Road 80 (U.S. 27) Right of Way;

Thence, northeasterly, easterly and southeasterly along said center line of said State Road 80 (U.S. 27) to the intersection thereof with the east line of Section 6, Township 44 South, Range 36 East;

Thence, southerly along said east line of said Section 6, to a point, said point being 75 feet north of the Southeast (SE) corner of said Section 6;

Thence, westerly along a line 75 north of, and parallel to, the south line of said Section 6 to a point, said point being 75 feet north of, and 30 feet east of, the Southwest (SW) corner of said Section 6 (bearing and distances are based on the description of Southshore Drainage District);

Thence, South 45° 00' 00" East, to the intersection thereof with the east line of Section 7, Township 44 South, Range 36 East, said intersection point is 105.8 north of the Southeast (SE) corner of said Section 7;

Thence, southerly along the east line of said Section 7, the east lines of Sections 18, 19, 30 and 31, Township 44 South, Range 36 East, and the east lines of Sections 6, 7 and 18, Township 45 South, Range 36 East, to the Northeast (NE) corner of Section 19, Township 45 South, Range 36 East, and the POINT OF BEGINNING.

## Typical Best Management Practices For The EAA Basin

### NUTRIENT CONTROL PRACTICES

Examples:

Calibrated soil test.

Banding fertilizer for vegetable production instead of broadcasting it.

Prevention of fertilizer spills and the direct spreading of fertilizer into drainage ditches.

### WATER MANAGEMENT PRACTICES

Examples:

Minimizing water table fluctuation in vegetable and sugar cane fields.

Retention of drainage on-farm could reduce P losses. This requires the ability of farm drainage systems to keep water continuously moving from field to field and to use some limited ditch or canal storage.

Retention of vegetable field drainage water in sugar cane or fallow lands.

### PARTICULATE MATTER AND SEDIMENT CONTROL

Examples:

Aquatic cover crop for off-season vegetable production and fallow rotation of sugar cane.

Coordinated farm cropping patterns are a necessary part of BMP's 4-7. associated with water management practices and control of particulate matter in the discharge. This BMP refers to changing the cropping pattern of vegetables, sugar cane, fallow flooding, etc. on a farm so that the optimum use of the above BMP's can be accomplished.

### PASTURE MANAGEMENT

Examples:

Reduced phosphorus in cattle feed.

Carefully located watering and feeding sites.

Management plans for grazing rotation and temporary holding areas.

### OTHER BMPS

Any other practice proposed by an applicant that the District determines may reduce phosphorus loads discharged from the property may be proposed for consideration. The proposal shall include, at minimum, a description of the BMP and how it will be implemented, the BMP's applicability to the specific crop and soil, a description of how implementation will be documented, and a description of any training that may be necessary.

## EAA Basin Compliance

### INTRODUCTION

This Appendix sets forth the procedures the District will follow in the future to determine whether the entire EAA Basin has met the goal of reducing total phosphorus (TP) discharged by 25 percent, under any set of hydrologic conditions that could arise, after installation of farm-level BMPs. The determination requires calculation of future TP load leaving the structures from the EAA (location shown in Figure A4 and listed in Table A1). The load will also include phosphorus carried into Lake Okeechobee through backpumping when this occurs. It also requires the adjustment for pass-through flows released from Lake Okeechobee to the Holey Land, Water Conservation Areas and the Lower East Coast.

Load is the amount of phosphorus carried past a monitoring point by the movement of water. Data on water quality concentration and water quantity (flow) are required to calculate the phosphorus load discharged from a monitoring point. Data on water quality and quantity at the EAA structures are available from several sources – the District, the U. S. Army Corps of Engineers, and the U.S. Geological Service. Several methods of collecting the data are also used. Accordingly, the best method of data collection and source of data to use in a load calculation must be identified.

The water quality and quantity collection sources and methods currently available are described below. The methods are improved continuously as new equipment becomes available and technology improves. However, existing methods of data collection are continued concurrently with the new methods for a substantial period of time. When the District reports the results of the determination of whether the EAA Basin has reduced total phosphorus load by 25% for the period of May 1 - April 30, annually beginning in 1996, the sources and methods of data collection used in the calculation will be described and available for inspection. Any changes in methods from the prior year will be specified. Substantially affected persons will have an opportunity to request an administrative hearing. The District shall incorporate permanent changes in methods into this Appendix periodically through Chapter 120, Florida Statutes, rulemaking proceedings.

The load calculations involve detailed procedures, which have been automated by a computer program in FORTRAN language. A flow chart of the program is shown in Figure A3. The methods and equations used in the program are outlined in Appendix A3.1, which is published by reference and incorporated into this Chapter. They are also available on diskette.

## DATA COLLECTION SOURCES AND METHODS

### Water Quantity – Flows

The South Florida Water Management District and the U.S. Geological Survey (USGS) compute flow at all the major water control structures in the Everglades Agricultural Area. Water control structures include pumps, gated spillways, and gated culverts. Pump stations S-2, S-3, and S-6 allow water to flow in the opposite direction of pumping by siphoning. All pump stations except S-6 have an adjacent gated spillway.

The SFWMD uses various methods to compute flow at control structures. Flow at pump stations is calculated using discharge rating equations provided by the pump manufacturer and calibrated by discharge measurements. Flow at gated spillways is calculated using formulae derived by the Corps of Engineers from the Bernoulli equation. Discharge through culverts is calculated using standard equations for weir flow, orifice flow, pipe flow, and open channel flow. Flow computation methods are outlined in Appendix A3.2, which is published by reference and incorporated into this Chapter.

The SFWMD obtains field measurements of stage and control operations through various means. Real-time stage and control operations data are collected via the telemetry system. Analog data is obtained from chart recorders. Digital data are provided by punch tapes and solid state data loggers. Pump station operators log readings of stage and control operations hourly during pumping operations. In addition, staff gauge readings, gate opening measurements, and flashboard elevation measurements are conducted by field personnel who routinely visit unmanned structures.

The SFWMD's hydrologic database stores multiple flow data sets at each structure. Each flow data set is created using a unique combination of sources of stage and control operations data. The USGS publishes one set of flow data for each structure. If convenient, the USGS presents combined flow data from different locations. The SFWMD uses the USGS's data as well as its own data to perform water budget analyses and estimation techniques to obtain a "preferred" flow data set at each structure. Table A1 shows all the flow data sets available in the SFWMD's hydrologic database (DBHYDRO).

### Water Quality

A water sample collected in the field is called a "raw water sample", in differentiation with a "water sample" used in the chemistry laboratory. Current raw water sample collecting methods at different structures are listed in Table A2. All raw water samples collected in the EAA in the future for compliance will be collected by automatic sampler. Automatic samplers will be programmed to take flow proportional composite samples. Where on-site real-time flow computation is impossible, time proportional composite samples will be taken. Grab samples will also be continued until the relationships

between results from automatic and manual methods has been sufficiently established. After that time, grab samples will be taken when autosamplers are not functioning, or when necessary for other purposes.

Only a portion of a well-mixed raw water sample is used as a water sample in actual quantitative analysis of a given water quality parameter. The chemical analysis is performed by a certified laboratory using accepted standard methods. In case of change of laboratories or analytical methods, concurrent analyses shall be done until correlation between them can be established. Water quality parameters are identified by structure and collection site, project code, sample date, and serial number of the sample. The data are stored in data base WQDMAIN.

### **Data Upgrades**

There are three ways in which the quality and reliability of District flow data are being improved: (1) establishment of single time series of flow for each station from multiple sources of stage and control operations data, (2) verification and calibration of flow equations through intensified discharge measurements at all major EAA structures, and (3) calibration of AVM systems for future use as an additional source of flow data.

Efforts are currently under way to establish a single time series of flow data calculated at each flow station. A prioritized list of sources of stage and control operations data will be established for each flow station. Flow will be computed from the highest ranking sources. When the highest ranking source of data is missing, the next highest source will be used, and so on. This method will ensure the calculation of the best flow values from all sources and will minimize missing data.

Stream gauging is being intensified to provide discharge measurements at all major EAA structures. Statistical analyses are under way to verify or calibrate the discharge rating equations. The upgrading of stream gauging equipment, including a portable acoustic low velocity meter, as well as improved measuring techniques will ensure valuable field measurements. Statistical analysis and calibration of rating equations will continue to increase the accuracy of the calculated flow values.

AVM systems are in place at most major EAA structures. Calibration of these systems is being performed by the USGS. When these systems are satisfactorily calibrated, the data will be used to verify the District's flow computations. If these systems prove to be highly reliable and accurate, they may provide the highest ranking source of flow data for the prioritization of single time series.

If any upgrades in water quality sampling are undertaken in the future, concurrent samples will be taken by the existing methods to maintain data continuity, at least until the upgraded methods have been tested and documented as reliable.

## **DETERMINATION OF COMPLIANCE WITH 25% REDUCTION OF TOTAL PHOSPHORUS LOAD**

The future TP load will be evaluated for compliance with the 25% TP load reduction requirement yearly as of April 30, a date which corresponds generally with the change from the

dry to the wet rainfall periods. Hydrology, that is discharge and rainfall, are dominant factors when computing TP loads. Because rainfall and stream flow are subject to large temporal and spatial variation in south Florida, the evaluation for compliance adjusts the TP load for hydrologic variability. Otherwise, the hydrologic variability could be large enough to obscure the effectiveness of BMPs to reduce TP loadings.

The adjustment for hydrologic variability includes two components:

1. A model to estimate future TP loads. The model estimates a future TP load of the EAA Basin by substituting future hydrologic conditions for the conditions that occurred during a base-period (water years 1978 - 1988). The estimation is based on hydrologic data collected from any future time period of May 1 - April 30. The estimation incorporates a calculation for the required 25% TP load reduction.

2. Accommodation for possible statistical error in the model by specifying a required level of statistical confidence in the prediction of the long-term average TP load. The 90th percentile confidence level was selected as reasonable.

Evaluation of the EAA Basin for compliance with the 25% TP load reduction requirement will be based upon the following:

1. If the actual measured TP loading from the EAA Basin in a future May 1 - April 30 period is less than the model TP load estimate (Target), then the EAA Basin will be determined to be "In Compliance," that is to have met the 25% TP load reduction requirement. After completion of the STAs, the actual percentage of the base period TP load which must be met to be determined "In Compliance" will be reduced to reflect land taken out of agricultural production. However, the average unit area reduction required will be the same, both pre- and post-STA completion.

2. If the actual measured TP loading from the EAA Basin exceeds the model TP load estimate (Target) in 3 or more consecutive May 1 - April 30 periods, then the EAA Basin will be determined to be "Not In Compliance" – that is it will not have met the 25% load reduction requirement. If the Target is exceeded in a May 1 - April 30 period, and the District determines that the adjusted rainfall for the period exceeds 63.76 inches, the Target will be suspended and the EAA Basin will not be determined to be "Not In Compliance" for that period only. Any periods in which the Target is suspended will be excluded from the determination of whether the Target has been exceeded in 3 or more consecutive May 1 - April 30 periods, that is, the EAA Basin will be determined to be "Not In Compliance" when the Target is exceeded for three May 1 - April 30 periods, without an intervening May 1 - April 30 period in which the EAA Basin has been

determined to be "In Compliance," even though the three periods may be interrupted by periods of suspension.

3. If the actual measured TP loading from the EAA Basin exceeds the upper 90% confidence limit of the Target (Limit), in any May 1 - April 30 period, the EAA Basin will be determined to be "Not in Compliance," that is it will not have met the 25% load reduction requirement. If the Limit is exceeded in a May 1 - April 30 period, and the District determines that the adjusted rainfall for the period exceeds 63.76 inches, the Limit will be suspended and the EAA Basin will not be determined to be "Not In Compliance" for that period only.

4. A determination of suspension under paragraphs 2 and 3 above and a Notice of Rights to petition for a hearing under Section 120.57, Florida Statutes, and Section 373.114, Florida Statutes, shall be published in the Florida Administrative Weekly.

5. The Target and Limit will be calculated according to the following equations and explanation:

To reflect the required 25% reduction, POR TP loads are multiplied by 0.75 before performing the following regression:

$$1n(L) = -7.998 + 2.868 X + 3.020 C - 0.3355 S$$

$$[\text{Explained Variance} = 90.8\%, \text{Standard Error of Estimate} = .183]$$

Predictors (X, C, S) are calculated from the first three moments ( $m_1, m_2, m_3$ ) of the 12 monthly rainfall totals ( $r_i, i=1, 12$ , inches) for the current year:

$$m_1 = \text{Sum} [ r_i ] / 12$$

$$m_2 = \text{Sum} [ r_i - m_1 ]^2 / 12$$

$$m_3 = \text{Sum} [ r_i - m_1 ]^3 / 12$$

$$X = 1n (12 m_1)$$

$$C = [ (12/11) m_2 ]^{.5} / m_1$$

$$S = (12/11) m_3 / m_2^{1.5}$$

where,

L = 12-month load attributed to EAA Runoff, reduced by 25% (metric tons)

X = natural logarithm of 12-month total rainfall (inches)

C = coefficient of variation calculated from 12 monthly rainfall totals

S = skewness coefficient calculated from 12 monthly rainfall totals

The first predictor (X) indicates that load increases approximately with the cube of total annual rainfall. The second and third predictors (C & S) indicate that the load resulting from a given annual rainfall is higher when the distribution of monthly rainfall has higher variance or lower skewness. For a given annual rainfall, the lowest load occurs when rainfall is evenly distributed across months and the highest load occurs when all of the rain falls in one month. Real cases fall in between.

Compliance will be tracked by comparing the measured EAA Load with:

$$\text{Target} = \exp [-7.998 + 2.868 X + 3.020 C - 0.3355 S ]$$

$$\text{Limit} = \text{Target} \exp (1.476 SE F)$$

$$\text{SE} = .1833 [1 + 1/9 + 5.125 (X-X_m)^2 + 17.613 (C-C_m)^2 + 0.5309 (S-S_m)^2 + 8.439 (X-X_m) (C-C_m) - 1.284 (X-X_m) (S-S_m) - 3.058 (C-C_m) (S-S_m) ]^5$$

where,

m = subscript denoting average value of predictor in base period ( $X_m = 3.866$ ,  $C_m = 0.7205$ ,  $S_m = 0.7339$ )

Target = predicted load for future rainfall conditions (metric tons/yr)

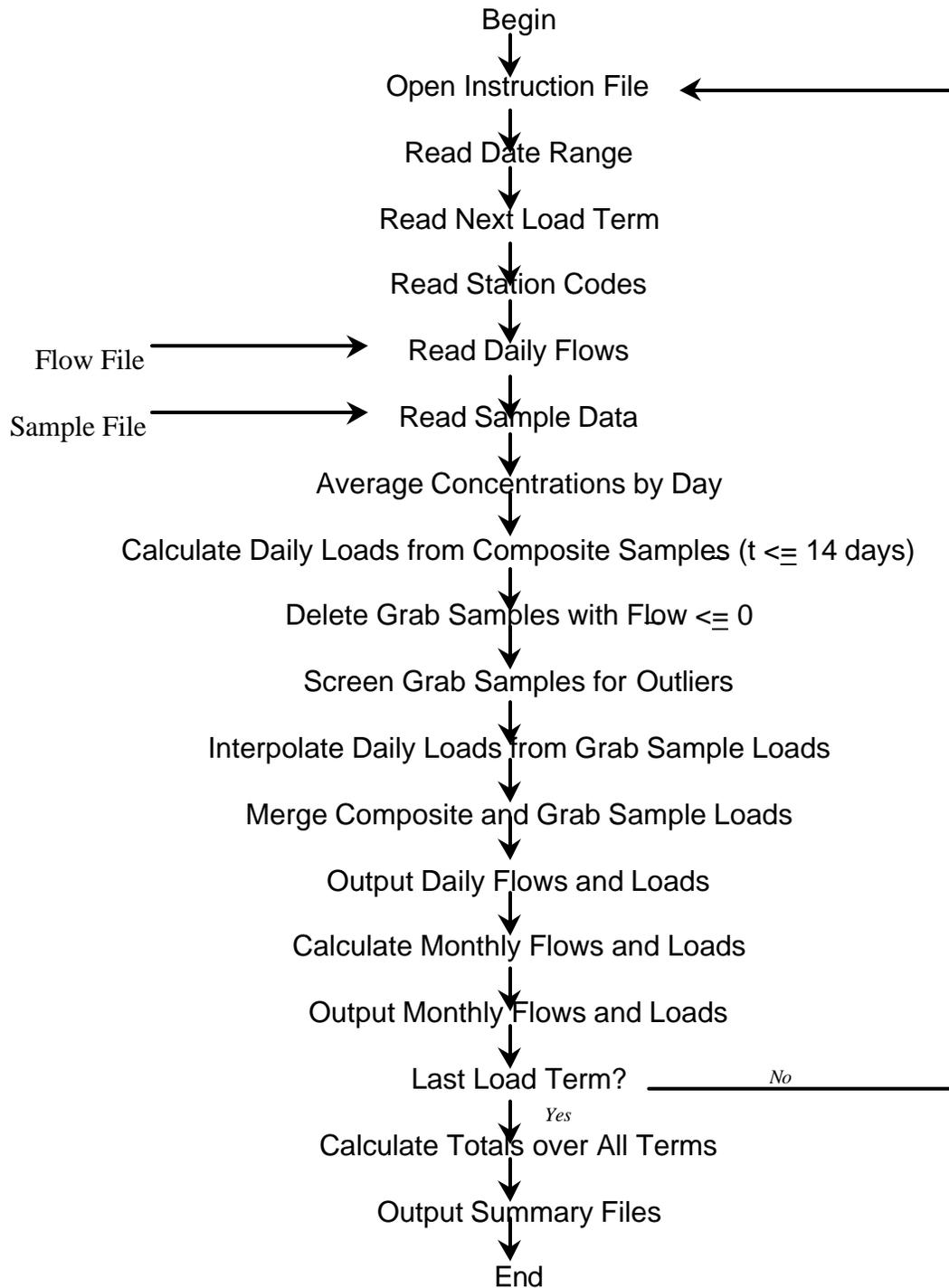
Limit = upper 90% confidence limit for Target (metric tons/yr)

SE = standard error of predicted 1n(L) for May-April interval

F = factor to reflect variations in model standard error as a function of month (last in 12-month interval), calculated from base period:

<b>Month:</b>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>F:</b>	1.975	1.609	1.346	1.000	1.440	1.238	1.321	2.045	2.669	2.474	2.420	2.216

Figure A-1



**Table A-1**  
**EAA Basin Drainage Structures Database Keys To Flow Data Time Series**

<b>Structure</b>	<b>Preferred</b>
S-352 Complex	15068
S-2 Complex	15021
S-3 Complex	15018
S-5A Complex	15031
S-6	15034
S-7	15037
S-150	15041
S-8	15040
G-88	15196
G-136	15195
G-200A <sup>n</sup>	15736
G-250	16222
G-600	GG955
G-605	H3143
G-606	HD889
G-328	J0718
G-344A	J0719
G-344B	J0720
G-344C	J0721
G-344D	J0722
G349B	JA353
G350B	JA352
G-410	LX270
G-402A	LX264
G-402B	LX265
G-402C	LX266
G-402D	LX267
G-404	LX269
EBPS	LX274
ESPS	LX273

<sup>n</sup> New, flow data time series for the Holey Land pump station begins on November 25, 1991. The reference numbers in the table are keys to the data sets, known as "dbkeys".

**TABLE A-2**  
**EAA Basin Current Water Quality Sampling Methods**

Structure	Collection Site	Instrument
S-352	GRAVITY	G
S-2	PUMP	A
	GRAVITY	G
S-3	PUMP	A
	GRAVITY	G
S-5A Complex	PUMP	A
	GRAVITY	G
S-6	PUMP	A
	GRAVITY	G
S-7	PUMP	A
	GRAVITY	G
S-150	GRAVITY	G
S-8	PUMP	A
	GRAVITY	G
G-88	GRAVITY	G
G-136	GRAVITY	A
G-200A	GRAVITY	G
G-250	PUMP	A
G-600	PUMP	A
G-606	GRAVITY	A
G-328	PUMP	A
G-344A	GRAVITY	A
G-344B	GRAVITY	A
G-344C	GRAVITY	A
G-344D	GRAVITY	A
G-349B	PUMP	A
G-350B	PUMP	A
G-410	PUMP	A
G-402A	GRAVITY	A
G-402B	GRAVITY	A
G-402C	GRAVITY	A
G-402D	GRAVITY	A
G-404	PUMP	A
EBPS	PUMP	A
ESPS	PUMP	A

G = grab sample primary method

A = automatic sampler primary method, grab sample back-up

**FORTRAN Program For Calculating EAA Basin Flows and Phosphorus Loads****program eeatpld**

```
c modified August, 2000 for various ECP elements
c modified may 1999 for STA-5 inflows from Miami Canal (G350B, G349B)
c modified october 1998 for STA-5 & STA-2
c modified march 1998 for STA-6
c utilizes all composite samples
c compute eaa tp load 10-96 - additional comments added 10-3-96
c useage:
c     >eeatpld eaa.job
c eaa.job = input ascii file specifying case conditions
c subroutines in subr.for
c maximum dimensions
c number of days = 12000 = 32+ years ~(1978-2010)
c number of grab samples = 2000 per station
c number of composite samples = 2000 per station

c array dimensions increased to handle maximum of 40 terms
  integer*4 dgrab,dcomp,dlast,dbase,dbase0,d0
  character*64 title
  character*32 ofile1,ofile2,ofile3,ofile4,cfile,qfile,ofile0
  character*32 ofile5
  character*32 blank /' '/
  character*8 slab,dum8,qlab,ulab,usave(40),mname(4)
  common /a/ flowu(12000),wcomp(12000),wuse(12000),wusec(12000)
  common /b/ wgrab(12000)
  common /d/ dgrab(2000),dcomp(2000),cgrab(2000),ccomp(2000),
& x(2000),iym(400),qsave(400,40),wsave(400,40),isgn(40),
& wcsave(400,40),sumd(6),sumw(6),y(2000),prb(2000),ratio(2),
& wc(2),wg(2),ncg(2)

c array definitions
c   flowu() = daily flow
c   wgrab() = daily load computed from grab samples
c   wcomp() = daily load computed from composite samples
c   wuse() = daily load used in final result
c   wusec() = daily load computed from composite samples
c   cgrab() = grab-sample concentration
c   dgrab() = grab-sample date
c   ccomp() = composite sample concentration
c   dcomp() = composite sample date
c   qsave,wsave,wcsave(month,station)
c   = storage of monthly flow, load, & composite load

c number of load calc methods
  data nmeth/3/
  data mname/'noflow','compos',' grab',' miss' /

c qfac: convert cfs*days to output units = cfs-days
  data qfac/1./

c scale factor to convert input sample concs (ppm) to (ppb)
  data sf/1000./
```

```
c factor: convert cfs*ppb to kg/day; sig: level of outliers
c   factor=24.*3600.*(0.3048**3)/1.e6
c   factor=24.*3600/3.28**3/1.e6

c grab/composite ratio
c iratio = 0 compute r1 & r2 separately (original algorithm)
c iratio = 1 set r2 = r1
c   data iratio/0/

c read input file [eaa.job] to get station labels and input parameters
c   open(7,file=' ',status="old")

c read control parameters
c   read(7,*) title,qfile,dum8,cfile,dum8,
c   &nmaxc,dum8,dbase0,dum8,dbase,dum8,sig,dum8

c title = problem title
c qfile = input daily flow file
c cfile = input sample concentration file
c nmaxc = maximum duration of composite samples
c dbase0 = first day of base period yyyyymmdd = 19781001
c dbase = last day of base period yyyyymmdd = 19910930
c sig = significance level for outlier screening in base period

cc
cc March 98 Modification - Look for Composite Samples NAFTER days beyond last
cc flow date
cc
cc   nafter = nmaxc
cc
cc
cc end of modification
cc

c read date range
c   read(7,*) iymd1,dum8,iymd2,dum8,idchk,dum8
c   write(*,*) 'sample date range =',iymd1,iymd2
c   read(7,*) ofile0,dum8,ofile5,dum8,ofile1,dum8,ofile2,dum8,
c   &   ofile3,dum8,ofile4,dum8
c output files (* = optional)
c ofile0 - sample inventory
c ofile5 - totals by term & time period (base pd & after)
c *ofile1 - daily results
c *ofile2 - monthly results for each term
c *ofile3 - monthly crosstab (term x month)
c ofile4 - monthly totals (sum of all terms)
c
c   read(7,*)

c jdatei() converts yyyyymmdd to julian dates (days from Jan 1, 1900)
c   jdbase=jdatei(dbase)
c   jymd1=jdatei(iymd1)
c   jymd2=jdatei(iymd2)
c   jdchk=jdatei(idchk)
c   d0=jymd1-1

c open output file for sample statistics
c   open(17,file=ofile0)
```

```

        write(17,171) idchk
171      format( 'QLEFT = FLOW (CFSD) BETWEEN LAST GRAB',
&        ' SAMPLE DATE WITH POSITIVE FLOW &'
&        i9,' NOT COVERED BY COMPOSITE SAMPLE'/'
&        '                COMPOSITE SAMPLES                GRAB SAMPLES'/'
&        'STATION          N   DFIRST    DLAST',
&        ' NTOT NOUT NUSE   DFIRST    DLAST',
&        '  RATIO1  RATIO2    QLEFT')

c open input flow file
      open (8, file=qfile,status='old')

c open daily output file
      if(ofile1.ne.blank) then
          open(10,file=ofile1,status="unknown")
          write(10,"(a64)") title
          write(10, 2)
      endif
2      format('station  date  ip mth    flow',
&        '      load  cgrab  ccomp   cused c/g ratio')

c open monthly output file
      if(ofile2.ne.blank) then
          open(11,file=ofile2,status="unknown")
          write(11,*) title
          write(11,*)
&        'station mnth  days flow(csd)  load(kg) conc(ppb)
&        compos(kg) '
      endif

c nsta = number of stations (terms)
      nsta=0

c ***** for each station (term) in job file *****
10 nsta=nsta+1

      read(7,*,end=500) ulab,slab,qlab,ipos,icomp,isgn(nsta)
c ulab = output label for mass-balance term
c slab = sample station code
c qlab = flow station code
c ipos = flow sign indicator (1 = use positive flows, -1 = use negative
flows)
c icomp = composite sample indicator
c   0 = ignore composite samples
c   1 = use composite samples
c   2 = use comp. samples, force comp./grab ratio = 1.0 (option not used)
c isgn = sign of term in computing total outflow volume and load
c   1 = outflow term from EAA
c   0 = ignore term
c   -1 = inflow or thruflow term

c capitalize labels
      CALL CONCAP(SLAB,8)
      CALL CONCAP(QLAB,8)
      CALL CONCAP(ULAB,8)
      write(*,*)
      write(*,*) 'term = ',ulab

```

```
        write(*,*) 'sample station = ',slab
        write(*,*) 'flow label = ',qlab
        usave(nsta)=ulab

c ***** read daily flows for current station *****

        call flowread(8,jymd1, jymd2,qlab,nq,flowu)
c file start date must be <= jymd1
c jymd2 is adjusted to reflect end of file
c flow data set should contain no missing values

        if(nq.le.0) go to 999
        write(*,*) 'flow dates = ',kdate(jymd1),kdate(jymd2)

c ***** load sample data *****

        ngrab=0
        ncomp=0

c fixed format input
        open(16,file=cfile,status="old")
        do i=1,4
            read(16,*)
        enddo

c read next sample
40 read(16,41,end=60) dum8,dd,tt,conc
41 format(a8,2x,10f10.0)
        itype=jfix(tt)

c convert yymmdd to days from Jan 1, 1900
        idd=dd
        jdd=jdate(dd)

c check stations
        CALL CONCAP(DUM8,8)
        if(dum8 .ne. slab) go to 40

c check date

cc modified march 1998
cc
cc if(jdd.lt.jymd1.or.jdd.gt.jymd2) go to 40
cc
cc if(jdd.lt.jymd1.or.jdd.gt.jymd2+nafter) go to 40
cc
cc end of modification
cc
c check for valid sample value
        if(conc.eq.0.) go to 40

c rescale concentration and set to absolute value (negative values <
detection limit)
        conc=sf*abs(conc)

c check for composite vs. grab sample
c sample dates must be in increasing order
```

```
        if(itype.eq.7.or.itype.eq.24) then
c process composite sample
        ncomp=ncomp+1
        ccomp(ncomp)=conc
        dcomp(ncomp)=jdd
        if(ncomp.gt.1.and.dcomp(ncomp).lt.dcomp(ncomp-1)) then
            write(*,*) 'compos sample out of sequence: ',idd
            stop
        endif
    else
c process grab sample
        ngrab=ngrab+1
        cgrab(ngrab)=conc
        dgrab(ngrab)=jdd
        if(ngrab.gt.1.and.dgrab(ngrab).lt.dgrab(ngrab-1)) then
            write(*,*) 'sample date out of sequence: ',idd
            stop
        endif
    endif
endif

go to 40

c end of sample file
60 continue
    if(ngrab.gt.0) write(*,*) 'grab samples =      ',ngrab,
&      kdate(dgrab(1)),kdate(dgrab(ngrab))
    if(ncomp.gt.0) write(*,*) 'composite samples =',ncomp,
&      kdate(dcomp(1)),kdate(dcomp(ncomp))
    close(16)

c calculate average concentrations by date
    call xred(dgrab,cgrab,ngrab)
    call xred(dcomp,ccomp,ncomp)
    write(*,*) 'daily-avg grab samples =      ',ngrab
    write(*,*) 'daily-avg composite samples =',ncomp

c scratch composite samples if switch indicates so
    if(icompl.le.0) ncomp=0

c assign daily flows in cfs
    do 70 j=1,nq
        if(ipos.eq.1) then
            flowu(j)=amax1(flowu(j),0.)
        else
            flowu(j)=abs(amin1(flowu(j),0.))
        endif
        wgrab(j)=0.
        wcomp(j)=0.
70    wuse(j)=0.

c calculate loads from composite samples
    dlast=0.
    do i=1,ncomp

c date range to apply composite-sample concentration
        j2=dcomp(i)-d0
        j1=max0(1,j2-nmaxc)
```

```

        if(j1.le.dlast) j1=dlast+1
        if(j1.gt.j2) j1=j2
        do j=j1,j2
            wcomp(j)=flowu(j)*ccomp(i)*factor
        enddo
        dlast=j2
    enddo

c eliminate grab-samples collected on days with no flow
    mgrab=0
    do i=1,ngrab
        if(flowu(dgrab(i)-d0).gt.0.) then
            mgrab=mgrab+1
            dgrab(mgrab)=dgrab(i)
            cgrab(mgrab)=cgrab(i)
        endif
    enddo
    ngrabt=ngrab
    ngrab=mgrab
    write(*,*) 'grab samples on days with positive flow =',ngrab
    if(ngrab.gt.0) write(*,*) 'date range =',kdate(dgrab(1)),
&           kdate(dgrab(ngrab))

c screen base-period grab samples for outliers
c based upon log(c) vs. log(q) regression
c (Snedecor & Cochran, Statistical Methods, 1980, pp. 167-168)
    if(sig.gt.0.) then
        ngt=ngrab
110        j=0
        do i=1,ngrab
            prb(i)=1.
            if(dgrab(i).le.jdbase) then
                j=j+1
                x(j)=alog(flowu(dgrab(i)-d0))
                y(j)=alog(cgrab(i))
            endif
        end do
        call outlyr(x,y,j,sig,prb,nrej)
        if(nrej.gt.0) then
            m=0
            do 150 i=1,ngrab
                if(prb(i).gt.sig) then
                    m=m+1
                    dgrab(m)=dgrab(i)
                    cgrab(m)=cgrab(i)
                else
140                    write(*,140) kdate(dgrab(i)),cgrab(i),prb(i)
&                    format(' ***outlier: date =',i9,
&                            ', conc = ',f10.1, ', prob =',f8.3)
                endif
150                continue
                ngrab=m
            enddo
c repeat screen until no outliers are found
            go to 110
        endif
        ngout=ngt-ngrab
    endif

```

```
c calculate daily loads from grab samples by interpolation
  do i=1,ngrab
    x(i)=dgrab(i)-d0
  enddo
  call eint3(ngrab,x,cgrab,nq,wgrab)

cc end of mod
  do i=1,nq
    wgrab(i)=wgrab(i)*flowu(i)*factor
  enddo

c ratio = load computed from composite samples / load computed from grab
samples
c calculate load ratio for days with both composite and grab samples
c calc separate ratios for base period (ratio(1)) and after (ratio(2))
  do i=1,2
    wg(i)=0.
    wc(i)=0.
    ncg(i)=0
  end do
  do 220 i=1,nq
    if(wgrab(i).gt.0.and.wcomp(i).gt.0.) then
      if(i+d0.gt.jdbase) then
        j=2
      else
        j=1
      endif
      wg(j)=wg(j)+wgrab(i)
      wc(j)=wc(j)+wcomp(i)
      ncg(j)=ncg(j)+1
    endif
  220  continue
  do j=1,2
    ratio(j)=ratv(wc(j),wg(j))
c set to 1 if composite samples are ignored
c or if icomp=2
    if(icomp.le.0.or.icomp.eq.2) ratio(j)=1.
  end do
c if missing, set ratio(2)=ratio(1)
  if(ratio(2).le.0.) ratio(2)=ratio(1)

c sample inventory
  if(ncomp.le.0) then
    jc1=0
    jc2=0
  else
    jc1=dcomp(1)
    jc2=dcomp(ncomp)
  endif
  if(ngrab.le.0) then
    jg1=0
    jg2=0
  else
    jg1=dgrab(1)
    jg2=dgrab(ngrab)
  endif
```

```
c qdang = total flow between last grab sample date used and last flow date
   qdang=0.

c final load
c sumd = total days
c sumw = total load
c lq = 1 no flow, 2=composite, 3=grab
   do lq=1,5
       sumd(lq)=0.
       sumw(lq)=0.
   end do

c loop around days
   do i=1,nq
       jdd=i+d0

c wusec tracks loads computed from composite samples
       wusec(i)=0.
       if(i+d0.gt.jdbase) then
           ipd=2
       else
           ipd=1
       endif

c meth=1 no flow
       if(flowu(i).le.0.) then
           wusec(i)=0.
           meth=1

c meth=2 use composite load
       else if(wcomp(i).gt.0.) then
           wusec(i)=wcomp(i)
           wusec(i)=wcomp(i)
           meth=2

c meth=3 use grab load
       else if(wgrab(i).gt.0.) then

c iratio = 0 use separate values
c iratio = 1 use base period values only
           if(iratio.eq.0) then
               rr=ratio(ipd)
           elseif(iratio.eq.1) then
               rr=ratio(1)
           endif
           if(rr.eq.0.) rr=1.
           meth=3
           wusec(i)=wgrab(i)*rr

c diagnostic - flow after last grab sample used in calc loads
       &   if(jdd.gt.jg2.and.jdd.le.jdchk)
           &   qdang=qdang+flowu(i)
       endif

       sumw(meth)=sumw(meth)+wusec(i)
       sumd(meth)=sumd(meth)+1.
```

```

c output daily results on days with positive flow
  if(ofile1.ne.blank.and.meth.gt.1.and
    & .flowu(i).gt.0.) then
      write(10,280) ulab,kdate(jdd),ipos,
    & meth,flowu(i),wuse(i),
    & ratv(wgrab(i),flowu(i))/factor,
    & ratv(wcomp(i),flowu(i))/factor,
    & ratv(wuse(i),flowu(i))/factor,ratio(ipd)
280      format(a8,1x,i8,i3,i3,f9.1,f9.2,3f8.1,f10.3)
      endif
    end do
c end of date loop

c log file
  write(17,172) ulab,ncomp,kdate(jc1),kdate(jc2),ngrabt,
&ngout,ngrab,kdate(jg1),kdate(jg2),
&ratio(1),ratio(2),qdang
172      format(1h",a8,1h",i5,2i9,3i5,2i9,2f8.4,f9.1)

      write(*,235)
235      format(' station      ncomp      ngrab',
& ' days1  ratio1  days2  ratio2')
cc & ' days1  ratio1  days2  ratio2 usedratio') changed 2/27/98
      write(*,245) ulab,ncomp,ngrab,ncg(1),ratio(1),
&ncg(2),ratio(2)
cc &ncg(2),ratio(2),rr  changed 2/27/98
245      format(1x,a8,3i8,f8.5,i8,2f8.5)

c method summary
  write(*,305) (mname(i),i=1,nmeth)
305      format(' breakdown of load estimation methods: '/
& ' method: ',6a10)
  do i=1,nmeth
      sumd(nmeth+1)=sumd(nmeth+1)+sumd(i)
      sumw(nmeth+1)=sumw(nmeth+1)+sumw(i)
  enddo
  write(*, "(' days% :',6f10.1)")
&(100.*ratv(sumd(i),sumd(nmeth+1)),i=1,nmeth)
  write(*, "(' load% :',6f10.1)")
&(100.*ratv(sumw(i),sumw(nmeth+1)),i=1,nmeth)

  m=0
  nk=3

  kd= kdate(jymd1)/100

  do k=1,nk
      x(k)=0.
  enddo
  mm=0
  do i=1,nq
      jd=kdate(i+jymd1-1)/100
      if(jd.ne.kd) then
c output monthly totals for current station
        m=m+1
        cc=ratv(x(2),x(1))*qfac/factor
        if(ofile2.ne.blank)

```

```

&      write(11,350) ulab,kd,mm,(x(k),k=1,2),cc,x(3)
350      format(a8,i8,i4,2f10.1,f10.1,f10.1)
      qsave(m,nsta)=x(1)
      wsave(m,nsta)=x(2)
      wcsave(m,nsta)=x(3)
      iym(m)=kd
      do k=1,nk
          x(k)=0.
      enddo
      mm=0
      kd=jd
    endif
    mm=mm+1
    x(1)=x(1)+flowu(i)*qfac
    x(2)=x(2)+wuse(i)
    x(3)=x(3)+wusec(i)
  end do

  m=m+1
  if(ofile2.ne.blank) then
    cc=ratv(x(2),x(1))*qfac/factor
    write(11,350) ulab,kd,mm,(x(k),k=1,2),cc,x(3)
  endif
  iym(m)=kd
  qsave(m,nsta)=x(1)
  wsave(m,nsta)=x(2)
  wcsave(m,nsta)=x(3)

c end loop around stations
  go to 10

c end of station list
  500 continue

c weighted sum over all stations
  usave(nsta)='Total'
  do i=1,m
    qsave(i,nsta)=0.
    wsave(i,nsta)=0.
    wcsave(i,nsta)=0.
    do j=1,nsta-1
      qsave(i,nsta)=qsave(i,nsta)+qsave(i,j)*isgn(j)
      wsave(i,nsta)=wsave(i,nsta)+wsave(i,j)*isgn(j)
      wcsave(i,nsta)=wcsave(i,nsta)+wcsave(i,j)*isgn(j)
    end do
  end do

c output monthly cross-tab
  if(ofile3.ne.blank) then
    open(12,file=ofile3,status="unknown")
    write(12,"(a64)") title
    write(12,*) 'flows in cfs-days'
    write(12,"(a6,2x,50a10)") 'month',(usave(i),i=1,nsta)
    do 530 i=1,m
530      write(12,"(i6,50f10.1)") iym(i),(qsave(i,k),k=1,nsta)
    write(12,*)
    write(12,*) 'loads in kg'

```

```

        write(12,"(a6,2x,50a10)") 'month',(usave(i),i=1,nsta)
        do 540 i=1,m
540         write(12,"(i6,50f10.1)") iym(i),(wsave(i,k),k=1,nsta)
        close(12)
    endif

c output totals before & after base period
    if(len_trim(ofile5).gt.0) then
c convert cfsd to kac-ft
    qqfac=24.*3600./43560./1000.
    open(12,file=ofile5)
    write(12,39) title,dbase
    do i=1,nsta
        x(1)=0.
        x(2)=0.
        y(1)=0.
        y(2)=0.
        tb=0
        ta=0
        do j=1,m
            if(iym(j).gt.dbase/100) then
                k=2
                ta=ta+1
            else
                k=1
                tb=tb+1
            endif
            x(k)=x(k)+qsave(j,i)
            y(k)=y(k)+wsave(j,i)
        enddo
        ta=ta/12
        tb=tb/12
        write(12,38) usave(i),isgn(i),
&         qqfac*x(1)/tb,y(1)/tb,ratv(y(1),x(1))*qqfac/factor,
&         qqfac*x(2)/ta,y(2)/ta,ratv(y(2),x(2))*qqfac/factor
    enddo

38         format(1h",a8,1h",i4,2(2f12.3,f10.1))
39         format(a64/'Yearly Averages for Each Term & Time Period'/
&         '          In Base Period <=','i8,8x,
&         '          After Base Period'/
&         'Term          Sign Flow(kaf/y)  Load(kg/y)  Conc(ppb) '
&         ' Flow(kaf/y)  Load(kg/y)  Conc(ppb)')
    endif

c output monthly totals across all stations
    if(ofile4.ne.blank) then
        open(13,file=ofile4)
        write(13,"(a64)") title
        write(13,*) 'totals'
        write(13,567)
567         format('month flow(cfsd)  load(kg) conc(ppb)',
&         ' grab(out) comp(out) grab(in) comp(in) comp(%)')

c loop around months
    do k=1,4
        y(k)=0.

```

```

        end do
        do i=1,m
            do k=1,4
                x(k)=0.
            enddo
            do j=1,nsta-1
                if(isgn(j).lt.0) then
c grab & composite inflows
                    x(3)=x(3)+wsave(i,j)-wsave(i,j)
                    x(4)=x(4)+wsave(i,j)
                elseif(isgn(j).gt.0) then
c grab & composite outflows
                    x(1)=x(1)+wsave(i,j)-wsave(i,j)
                    x(2)=x(2)+wsave(i,j)
                endif
            enddo
c composite as % of total absolute value
            x(5)=ratv(x(2)+x(4),x(3)+x(4)+x(1)+x(2))*100.
            write(13,560) iym(i),qsave(i,nsta),wsave(i,nsta),
            & ratv(wsave(i,nsta),qsave(i,nsta))*qfac/factor,
            & (x(k),k=1,5)
            560 format(i6,2f12.1,5f10.1,f8.1)
c sum over all months
            do k=1,4
                y(k)=y(k)+x(k)
            enddo
            qsave(m+1,nsta)=qsave(m+1,nsta)+qsave(i,nsta)
            wsave(m+1,nsta)=wsave(m+1,nsta)+wsave(i,nsta)
            wsave(m+1,nsta)=wsave(m+1,nsta)+wsave(i,nsta)
            wsave(m+1,nsta)=wsave(m+1,nsta)+wsave(i,nsta)
            enddo
            y(5)=ratv(y(2)+y(4),y(3)+y(4)+y(1)+y(2))*100.
            write(13,570) qsave(m+1,nsta),wsave(m+1,nsta),
            & ratv(wsave(m+1,nsta),qsave(m+1,nsta))*qfac/factor,
            & (y(k),k=1,5)
            570 format('total ',2f12.1,5f10.1,f8.1)
            close(13)
        endif
    999 close(10)
    end

    subroutine flowread(ifile,ibdate,iedate,clab,nq,values)
c modified August 2000 for various ECP elements
c reads daily flows - modified for STA-6 march 1998
c modified for STA-2 & STA-5 may 1999
c missing values not allowed in flow file
        character*8 clab
        character*8 labs(37)
        real values(1)

c these labels correspond to flow station labels in control file
        data labs /"s5a+s5aw", "hgs5", "wpbthru", "s6",
        & "s2/s6", "hilthru", "s7", "s150",
        & "s2/s7", "thrulake", "thrus7", "thrus150",
        & "s8", "s3", "g88", "g136",
        & "holey", "miathru", "g250", "g600",
        & "g605", "g606", "g344a", "g344b",
        & "g344c", "g344d", "g328", "g349b",

```

```

&          "g350b",      "ebps",      "esps",      "g410",
&          "g402a",      "g402b",      "g402c",      "g402d",
&          "g404" /

c number of daily flows in input file
  data nqin /37/
  rewind ifile
  do i=1,4
    read(ifile,*)
  enddo
  nq = 0
  do I=1,nqin
    call CONCAP(LABS(I),8)
  enddo
90  read(ifile,222,end=100) dd,qhgs5,qs5as5aw,qs2,
&qs6, qs7, qs150, qs3, qs8, qg88, qg136, qholey,
&qg250,qg600,qg605,qg606,qg344a,qg344b,
&qg344c,qg344d,qg328,qg349b,qg350b,
&qebps,qesps, qg410,qg402a,
&qg402b, qg402c, qg402d,qg404

c Modify East Beach flows to account for portion of basin
c that was previously in the EAA.
  qebps=0.813*qebps
222  format(100f10.0)

c convert yymmdd to julian
  jfdate=jdate(dd)
  if(jfdate.lt.ibdate) then
    goto 90
  elseif(jfdate.gt.iedate) then
    return
  elseif(nq.eq.0.and.jfdate.ne.ibdate) then
    write(*,*) 'flow file starting date too late: ',jfdate
    stop
  elseif(nq.gt.0.and.jfdate-jflast.ne.1) then
    write(*,*) 'flow file dates out of sequence: ',jfdate
    stop
  endif
  nq=nq+1
  jflast=jfdate

c split s2 outflow between s6 (hillsboro qs2h) and S7 (nnriver qs2n) basins
  qs2n =(qs2 / (1.534769))
  qs2h = qs2 - qs2n

c inflow to north new river canal
  qin = amax1(0., qs2n) - amin1(0.,qs7) - amin1(0., qs150)

c total flow thru in north new river canal
  ft = amin1(qin, amax1(0., qs7)+amax1(0., qs150))
  do i = 1, nqin
    if(clab .eq. labs(i)) then
      ind = i
      go to 200
    endif
  end do

```

```
        write(*,*) 'flow station label not found:', clab
        stop
        go to 29
200    goto (1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,
        &20,21,22,23,24,25,26,27,28,30,31,32,33,34,35,36,37,38), ind

c s5a+s5aw    outflow
1      x = qs5as5aw
        go to 29

c hgs5 outflow
2      x = qhgs5
        go to 29

c s5athru west palm beach canal flowthru
3      if(qhgs5 .le. 0 ) then
        x = 0.
      else
        x = amin1(qhgs5, amax1(qs5as5aw+qg250-qebps, 0.))
      end if
        go to 29

c s6 outflow
4      x = qs6
        go to 29

c s2/s6 s2 outflow to lake from hillsboro basin
5      x = qs2h
        go to 29

c s6thru hillsboro canal flowthru
6      if(qs2h .le. 0) then
        x = 0.
      else
        x = amin1(qs2h, amax1(qs6-qesps,0.))
      end if
        go to 29

c s7 outflow
7      x = qs7
        go to 29

c s150 outflow
8      x = qs150
        go to 29

c s2/s7 outflow to lake from s7 basin
9      x = qs2n
        go to 29

c thrulake - nriver flowthru from lake
10     if(qin .eq. 0) then
        x = 0.
      else
        x = amax1(0., qs2n) * ft / qin
      end if
        go to 29
```

```
c thrus7 - nnriver flowthru from s7
11  if(qin .eq. 0) then
      x = 0.
      else
      x = -amin1(0., qs7) * ft / qin
      end if
      go to 29

c thrus150 - nnriver flowthru from s150
12  if(qin .eq. 0) then
      x = 0.
      else
      x = -amin1(0., qs150) * ft / qin
      end if
      go to 29

c s8 outflow
13  x = qs8
      go to 29

c s3 outflow
14  x = qs3
      go to 29

c g88 inflow
15  x = qg88
      go to 29

c g136 inflow
16  x = qg136
      go to 29

c holeyland
17  x = qholey
      go to 29

c s8 flowthru
18  if(qs3 .le. 0) then
      x = 0.
      else
      x = amin1(qs3, amax1(0.,
& qs8-qg88-qg136+qholey-qg606-qg605+qg349b+qg350b-qg344a-
& qg344b-qgq344c-g344d-qg402a-qg402b-qg402c-qg402d+qg410+
& qg404))
      endif
      goto 29

c enr inflow - eaa outflow
19  x=qg250
      goto 29

c sta6 inflow
20  x=qg600
      goto 29

c sta6 bypass
```

```
21  x=qq605
    goto 29

c sta6 outflow
22  x=qq606
    goto 29

c sta5 outflows
23  x=qq344a
    goto 29
24  x=qq344b
    goto 29
25  x=qq344c
    goto 29
26  x=qq344d
    goto 29

c sta2 supplementary inflow

27  x=qq328
    goto 29

c sta5 inflows from miami canal
28  x=qq349b
    goto 29
30  x=qq350b
    goto 29

c East Beach outflow - EAA inflow
31  x=qebps
    goto 29

c East Shore outflow - EAA inflow
32  x=qesps
    goto 29

c Rotenberger inflow - EAA outflow
33  x=qq410
    goto 29

c Rotenberger outflows - EAA inflow
34  x=qq402a
    goto 29
35  x=qq402b
    goto 29
36  x=qq402c
    goto 29
37  x=qq402d
    goto 29

c G404 outflow
38  x=qq404
    goto 29

29  values(nq) = x

    go to 90
```

```

100  idate=jfdate
      return
      end
c subroutines in subr.for

c subroutines for eaa software
c
c date functions
c
c date sequence number = number of days from Jan 1, 1900 (= Lotus 123 date)
c All reals=real*4, All integers = Integer*4
c function          inputs          returns
c idate(iy,im,id)   iy,im,id        date sequence number
c jdate(d)          yymmdd         date sequence number
c kkdate(d)         yymmdd         yyyyymmdd
c jdatei(k)         yyyyymmdd      date sequence number
c kdate(j)          date sequence  yyyyymmdd
c ddate(j)          date sequence  yymmdd
c sub yymmdd(d,iy,im,id) yymmdd      iy,im,id
c sub iymmdd(k,iy,im,id) yyyyymmdd    iy,im,id
c idbt(k1,k2)       2 x yyyyymmdd  days between 2 dates, inclusive
c imonth(char3)     character month month number
c mday(iy,im)       iy,im          number of days in month

      function idate(iy,im,id)

      integer mdy(12)
      DATA MDY/0,31,59,90,120,151,181,212,243,273,304,334/

c returns days from Jan 1, 1900 for input iy,im,id
c year in yy format

c years
      jy=iy+1900

c if iy<50 assume turn of century
      if(iy.lt.50) jy=jy+100

      idate=0
c check for valid date
      if(im.le.0.or.im.gt.12) return
      if(id.lt.1.or.id.gt.mday(iy,im)) return

      idate=mdy(im)+(jy-1900)*365.+id+(jy-1897)/4

c add 1 day if leap year and after february
      if(mod(jy,4).eq.0.and.im.gt.2) idate=idate+1
      return
      end

      function jdate(d)
c returns date sequence number for input d in yymmdd format
      call yymmdd(d,iy,im,id)
      jdate=idate(iy,im,id)
      return

```

```
        end

        function jdatei(id)
c returns date sequence number for input id in yyyymmdd format
        j=id-19000000
        jdatei=jdate(float(j))
        return
        end

        function kkdate(d)
c returns yyyymmdd for input in yymmdd
        kkdate=d+19000000
        if(d.le.500000.) kkdate=kkdate+1000000
        return
        end

        function kdate(id)
c returns integer date yyyymmdd for julian date id
        kdate=ddate(id)
        if(kdate.eq.0) then
            return
        elseif(kdate.lt.500101) then
            kdate=kdate+20000000
        else
            kdate=kdate+19000000
        endif
        return
        end

        function ddate(id)
c returns date in yymmdd format for input id =
c     number of days from Jan 1, 1900

        ddate=0.
        if(id.le.0) return

c first find year, roughly
        jy=id/367
13     if(idate(jy+1,1,1).le.id) then
            jy=jy+1
            goto 13
        endif

c find month
        do 10 jm=2,12
            if(idate(jy,jm,1).gt.id) goto 12
10     continue
12     jm=jm-1

c find day
        jd=id-idate(jy,jm,1)+1
```

```
ccc adjust year
      if(jy.gt.99) jy=jy-100

c compute ddate
      ddate=10000.*jy+jm*100.+jd
      return
      end

      subroutine yymmdd(date,iy,im,id)

c convert real date yymmdd to integer year yy, month, day

      iy=0
      im=0
      id=0
      iy=jfix(date/10000.)
      im=jfix((date-iy*10000.)/100.)
      id=jfix(date-iy*10000.-im*100.)
      return
      end

      subroutine iyymmdd(idate,iy,im,id)

c convert integer date to integer year, month, day

      iy=0
      im=0
      id=0
      iy=jfix(idate/10000)
      im=jfix((idate-iy*10000)/100)
      id=jfix(idate-iy*10000-im*100)
      return
      end

      function mday(iy,im)

c number of days in current month

      dimension mdy(12)
      data mdy/31,28,31,30,31,30,31,31,30,31,30,31/
      mday=0
      if(im.gt.12.or.im.lt.1) return
      mday=mdy(im)
      if(im.eq.2.and.mod(iy,4).eq.0.) mday=mday+1
      return
      end

      subroutine outlyr(x,y,n,sig,prb,nrej)
c screen for outliers - linear regression y(n) vs. x(n)
c sig = rejection significance level
c returns prb(n) = significance level for rejection
c nrej = number of screened data points
c snedecor and cochrans, p. 157-158
      dimension x(1),y(1),prb(1)
      if(n.le.3) return
      sy=0.
```

```

        sy2=0.
        sx=0.
        sx2=0.
        sxy=0.
        nrej=0
        nn=n
c first compute regression
        do 100 i=1,n
            prb(i)=1.
            sy=sy+y(i)
            sx=sx+x(i)
            sy2=sy2+y(i)*y(i)
            sx2=sx2+x(i)*x(i)
            sxy=sxy+x(i)*y(i)
100        continue
        txy=sxy-sx*sy/n
        tx2=sx2-sx*sx/n
        ty2=sy2-sy*sy/n
        tx=sx/n
        ty=sy/n
        b=txy/tx2
        a=ty-b*tx
c find maximum residual
10        rmax=0.
        j=0
        do 200 i=1,n
            if(prb(i).eq.1.) then
                resid=abs(y(i)-b*x(i)-a)
                if(resid.gt.rmax) then
                    j=i
                    rmax=resid
                endif
            endif
200        continue
        if(j.le.0) return
c compute regression with point j excluded
        nn=nn-1
        if(nn.le.3) return
        sxy=sxy-x(j)*y(j)
        sx2=sx2-x(j)*x(j)
        sy2=sy2-y(j)*y(j)
        sy=sy-y(j)
        sx=sx-x(j)
        txy=sxy-sx*sy/nn
        tx2=sx2-sx*sx/nn
        ty2=sy2-sy*sy/nn
        tx=sx/nn
        ty=sy/nn
        b=txy/tx2
        a=ty-b*tx
        se2=(ty2-b*b*tx2)/(nn-2)
        if(se2.le.0.) return
        se=sqrt(se2)
c test residual
        resid=y(j)-b*x(j)-a
        sr=se*sqrt( 1.+1./nn + (x(j)-tx)**2/tx2 )
        t=resid/sr

```

```

prb(j)=probt(t,nn-2)*(nn+1)
if(prb(j).gt.sig) return
nrej=nrej+1
go to 10
end

subroutine eint3(n,e,x,ni,xi)
c interpolation
c inputs e(i),x(i),i=1,n
c output ei(i),xi(j),j=1,ni
c ei(j)=j

dimension x(1),e(1),xi(1)
c
i=1
do 100 j=1,ni
if(j.gt.e(i)) go to 110
xi(j)=x(i)
go to 100
110 if(j.lt.e(n)) go to 120
xi(j)=x(n)
go to 100
120 if(j.le.e(i+1)) go to 125
i=i+1
go to 120
125 f=(j-e(i))/(e(i+1)-e(i))
xi(j)=(1.-f)*x(i)+f*x(i+1)
100 continue
return
end

subroutine xred(ix,y,n)
c replaces x() and y() with running means
c for common values of ix()
c length n
c destroys input vectors
dimension y(1)
integer ix(1),ixlast
if(n.le.1) return
ixlast=ix(1)
m=1
k=0
sum=y(1)
do 10 j=2,n
if(ix(j).ne.ixlast) then
k=k+1
ix(k)=ixlast
y(k)=sum/m
ixlast=ix(j)
m=0
sum=0.
endif
m=m+1
sum=sum+y(j)
10 continue
k=k+1
ix(k)=ixlast

```

```

        y(k)=sum/m
        n=k
        return
    end

    function ratv(x1,x2)
c divide x1 by x2 or set to 0.
    if(x2.ne.0.) then
        ratv=x1/x2
    else
        ratv=0.
    endif
    return
end

    function ic8(c1,c2)
c compares strings c1 and c2
c returns 1 if they are identical
c case not significant
    character*8 c1,c2,c3,c4
c
    c3=c1
    call concap(c3,8)
    c4=c2
    call concap(c4,8)

    if(c3.eq.c4) then
        ic8=1
    else
        ic8=0
    endif
    return
end

    function match(n,label,char)
c lookup char in label()
    character*8 label(1),char
    match=0
    do 10 i=1,n
    if(ic8(char,label(i)).gt.0) then
        match=i
        return
    endif
10    continue
    return
end

    function probg(s,r,z)
c f statistic
c used with probf and probt
    u=2./9./s
    v=2./9./r
    q=abs((1.-v)*(z**.333333)-1.+ u)/sqrt(v*z**.6666667+u)
    if (r.lt.4) q=q*(1+.08*(q**4)/(r**3))
    probg=.5/(1.+q*(.196854+q*(.115194+q*(3.44e-04+q*.019527))))**4
    return

```

```

        end

        function probt(t,n)
c two-tailed - modified from "some common basic programs"
        probt=1.0
        if(t.eq.0..or.n.le.0) return
        w=t*t
        if (w.lt..5) then
            s=n
            r=1.
            z=1./w
        else
            s=1.
            r=n
            z=w
        endif
20    probt=probg(s,r,z)
        if(w.lt..5) probt=1.-probt
        return
        end

        subroutine concap(string,n)
c convert string to caps
        character*1 string(1)
        do i=1,n
            j=ichar(string(i))
            if(j.gt.96.and.j.lt.123) string(i)=char(j-32)
        enddo
        return
        end

        subroutine pquote(cin,cout)
c returns string cin enclosed in quotes
c      xxxxx ---> "xxxxx"
        character*16 cin,cout,ctemp
        character*1 cc(16)
        equivalence (ctemp,cc(1))
        cout=' '
        ctemp=cin
        n=len_trim(cin)
        cc(n+1)=' '
        write(cout,1) (cc(i),i=1,n+1)
1      format('"',20a1)
        return
        end

        function idbt(id1,id2)
c days between id1 & id2, inclusive
        idbt=jdatei(id2)-jdatei(id1)+1
        return
        end

        function imonth(c)
c convert character month to integer month
        character*3 c
        character*3 mlab(12) /'JAN','FEB','MAR','APR','MAY','JUN',

```

```
&          'JUL', 'AUG', 'SEP', 'OCT', 'NOV', 'DEC' /

imonth=0
if(len_trim(c).le.0) return

call concap(c,3)
do i=1,12
    if(c.eq.mlab(i)) goto 5
enddo
write(*,*) 'Invalid Month =', c
stop
5 imonth=i
return
end
```

## Flow Computation Methods Used To Calculate EAA Basin Flows

### TABLE OF CONTENTS

#### **GATED SPILLWAYS**

- Parameters
- Uncontrolled Free Flow
- Uncontrolled Submerged Flow
- Controlled Free Flow
- Controlled Submerged Flow
- Over-the-top Flow

#### **PUMPS**

- Parameters
- Pump Flow
  - Constant-speed Pump
  - Variable-speed Pump
  - Variable-speed Pump with Very Variable Head
- Siphon Flow

#### **CULVERTS**

- Parameters

**GATED SPILLWAYS**

Parameters

- $C_{cf}$  = discharge coefficient for controlled free flow
- $C_{cs}$  = discharge coefficient for controlled submerged flow
- $C_{ot}$  = discharge coefficient for over-the-top flow
- $C_{uf}$  = discharge coefficient for uncontrolled free flow
- $C_{us}$  = discharge coefficient for uncontrolled submerged flow
- $G_o$  = gate opening, in feet
- $g$  = acceleration due to gravity, 32.2ft/sec<sup>2</sup>
- $H$  = approach head over the spillway sill, which is the difference between the upstream stage and the sill elevation, in feet
- $H_g$  = approach head over the gate, in feet
- $h$  = submergence head over the spillway sill, which is the difference between the downstream stage and the sill elevation, in feet
- $L$  = length of spillway sill perpendicular to flow, in feet
- $n_1$  = exponent of approach head
- $n_2$  = exponent of submergence head
- $n_3$  = exponent of total head
- $n_4$  = exponent of gate opening
- $W$  = width of gate, in feet

Uncontrolled Free Flow

$$Q = C_{uf} L H^{n_1}$$

Spillway
S-5AS
S-7
S-8
S-351
S-352
S-354

## Uncontrolled Submerged Flow

$$Q = C_{us} L h^{n_2} (H - h)^{n_3} \sqrt{2g}$$

Spillway
S-5AS
S-7
S-8
S-351
S-352
S-354

## Controlled Free Flow

$$Q = C_{cf} L G_o \sqrt{2g(H - 0.5G_o)}$$

Spillway
S-5AS
S-7
S-8
S-351
S-352
S-354

## Controlled Submerged Flow

$$Q = C_{cs} L G_o^{n_4} h^{n_2} \sqrt{2g(H-h)}$$

Spillway
S-5AS
S-7
S-8
S-351
S-352
S-354

## Over-the-top Flow

$$Q = C_{ot} W H_g^{1.5} \sqrt{2g}$$

Spillway
S-5AS
S-7
S-8
S-351
S-352
S-354

## PUMPS

### Parameters

C	=	coefficient of discharge for siphon
$C_0$ - $C_9$	=	coefficients of pump rating equation
H	=	head, downstream stage minus upstream stage, in feet
$H_{\text{fact}}$	=	normalizing head factor, in feet
$H_{\text{hi}}$	=	head from affinity laws corresponding to the high rpm rating equation, in feet
$H_{\text{lo}}$	=	head from affinity laws corresponding to the low rpm rating equation, in feet
N	=	engine speed, in rpm
$N_{\text{fact}}$	=	normalizing engine speed factor, in rpm
$N_{\text{hi}}$	=	engine speed of high rating equation, in rpm
$N_{\text{lo}}$	=	engine speed of low rating equation, in rpm
$N_{\text{min}}$	=	minimum engine speed below which no discharge is possible, in rpm
n	=	exponent of head for siphon
X	=	normalized head parameter
Y	=	normalized engine speed parameter

### Pump Flow

#### Constant-speed Pump

A single-variable polynomial is used.

$$Q = C_0 + C_1H + C_2H^2 + C_3H^3$$

Pump
G-200A
G-200B
G-349B
G-350B

## Variable-speed Pump

Interpolation of single-variable polynomials is performed. The pump affinity laws are used to obtain the adjusted head,  $H_{lo}$ :

$$H_{lo} = H \left( \frac{N_{lo}}{N} \right)^2$$

The adjusted head  $H_{lo}$  is used to compute  $Q_{lo}$ .

$$Q_{lo} = C_0 + C_1 H_{lo} + C_2 H_{lo}^2 + C_3 H_{lo}^3$$

Pump
S-5A
S-6
S-7
S-8
G-404
G-410
EBPS
ESPS

The adjusted head,  $H_{hi}$  is:

$$H_{hi} = H \left( \frac{N_{hi}}{N} \right)^2$$

The adjusted head  $H_{hi}$  is used to compute  $Q_{hi}$ .

$$Q_{hi} = C_0 + C_1 H_{hi} + C_2 H_{hi}^2 + C_3 H_{hi}^3$$

The affinity laws are used to obtain the discharge  $Q$  at engine speed  $N$ :

$$Q = Q_{lo} + (Q_{hi} - Q_{lo}) \left( \frac{N - N_{lo}}{N_{hi} - N_{lo}} \right)$$

## Variable-speed Pump with Very Variable Head

A two-variable polynomial used. The normalized head and engine speed are:

$$X = \frac{H}{H_{fact}}$$

$$Y = \frac{N - N_{min}}{N_{fact}}$$

Pump
S-2
S-3

The pump discharge is:

$$Q = C_0 + C_1X + C_2Y + C_3X^2 + C_4XY + C_5Y^2 + C_6X^3 + C_7YX^2 + C_8XY^2 + C_9Y^3$$

## Siphon Flow

The siphon discharge is:

$$Q = CH^n$$

Siphon
S-6

**CULVERTS**

Refer to:

Fan, A. (October 1985). *A General Program to Compute Flow through Gated Culverts* (Technical Memorandum). West Palm Beach: South Florida Water Management District, West Palm Beach.

Parameters

The parameter defined here correspond to the variables defined by A. Fan.

- Barrel = barrel shaped coding, "0" = circular, "1" = box
- C = orifice flow coefficient due to inlet shape
- C<sub>w</sub> = weir flow coefficient (flashboard)
- D = diameter of pipe culvert or height of box culvert, in feet
- G<sub>h</sub> = height of gate, in feet
- G<sub>type</sub> = gate type coding, "0" = circular, "1" = rectangular, "2" = weir
- G<sub>w</sub> = width of gate, in feet
- IN<sub>el</sub> = inlet invert elevation, in feet m.s.l. or NGVD
- K = entrance loss coefficient due to shape of gate edge
- L = length of culvert, in feet
- N = number of barrels
- n = Manning's roughness coefficient
- OUT<sub>el</sub> = outlet invert elevation, in feet m.s.l or NGVD
- r = refernece elevation for flashboard elevation, in feet m.s.l. or NGVD
- S<sub>wb</sub> = total side weir length (riser or wing wall), in feet
- S<sub>we</sub> = side weir crest elevation (riser or wing wall), in feet
- W = width of box culvert
- W<sub>b</sub> = weir length (flashboard)

Culverts	Culverts
G-136	G-402A
G-88	G-402B
S-150	G-402C
S-5AE	G-402D

### EAA Basin Farm Scale Allocation

This Appendix sets forth the procedure the District will follow in the future to regulate total phosphorus (TP) loads from individual farms when the EAA Basin has been determined to be "Not In Compliance" with the Target or Limit according to the procedures set forth in Appendix A3.

1. Individual permittees may participate in an Early Baseline Option to establish a base-year data set by monitoring the farm-level water quality and quantity discharge for a period of one year beginning January 1, 1993. The permittee who elects this option will be required to have approved BMPs in place by January 1, 1994. These permittees will be required to reduce their rainfall-adjusted phosphorus loading by at least 25 percent as compared to the rainfall-adjusted base-year loading. The procedure outlined in Appendix A3 will be used for rainfall adjustment.

2. The base year data will be verified for reasonableness. The determination will be based on an analysis of outliers, an analysis of consistency with existing total phosphorus data, rainfall data, and other relevant information. Permitted structures for which monitoring data are determined to be unreasonable shall be excluded from further participation in the Early Baseline Option.

3. In determining compliance in any future year, the measured EAA total basin load for the specified May 1 - April 30 period will be compared to the Target for the EAA Basin for the specified May 1 - April 30 period, calculated according to Appendix A3. The comparison is represented by the following ratio:

$$Y = \text{Target} / \text{Measured}$$

4. The Unit Area Loading (UAL) for each permitted structure and acreage tributary to it will be calculated. The calculation will be based on concentration and flow data reported by the permittee pursuant to the approved monitoring plan for the specified May 1 - April 30 period. The UAL will be calculated according to the following equation:

$$UAL_i = L_i / A_i$$

where,

$$UAL_i = \text{Unit Area Load for Farm } i \text{ (lbs/acre-year)}$$

$$L_i = \text{Load calculated by SFWMD from flow and concentration data supplied by Farm } i, \text{ plus other data obtained by SFWMD, as necessary (lbs/year)}$$

$$A_i = \text{Area of Farm } i \text{ (acres)}$$

5. The UAL will be adjusted to reflect average rainfall conditions observed in the 1979 - 1988 base period and to reflect spatial variations in rainfall among EAA subbasins

in the current year. The Adjusted Unit Area Load (AUAL<sub>i</sub>) will be based on observed rainfall in the corresponding EAA subbasin (S5A, S6, S7, or S8) in the specified May 1 - April 30 period. It will be calculated according to the following:

$$AUAL_i = UAL_i (R_{am} / R_a)^{2.868}$$

$$R_a = \exp [ X + 1.053 (C-C_m) - 0.1170 (S-S_m) ]$$

where,

m = subscript denoting average value of rainfall statistic in base period for EAA Subbasin containing Farm i (see attached Table)

R<sub>am</sub> = base period log-mean adjusted rainfall for EAA Subbasin containing Farm i (inches, see attached Table)

R<sub>a</sub> = Adjusted subbasin rainfall in current year (inches)

X, C, S = Values as defined in Appendix A3 and computed for each subbasin

Basin	X <sub>m</sub>	C <sub>m</sub>	S <sub>m</sub>	R <sub>am</sub>
EAA Total	3.866	0.7205	0.7339	47.73
S5A	3.918	0.7636	0.9999	50.31
S6	3.907	0.7302	0.7476	49.77
S7	3.835	0.7198	0.6112	46.27
S8	3.822	0.8409	0.8409	45.68

6. The AUAL for the entire EAA Basin (ALOAD, lbs/yr) will be calculated according to the following:

$$ALOAD = \text{SUM} [ AUAL_i * A_i ]$$

7. The Farm-Level Target Load (FTLOAD, lbs/yr) will be calculated based on the assumption that the percentage reduction in total load required at the Farm scale equals the percentage reduction required at the Basin scale. The calculation will be based on the following:

$$FTLOAD = ALOAD * Y$$

8. For those permittees who elected to participate in the Early Baseline Option, compliance will be determined by adjusting both current and base year measured loads to average rainfall conditions using the procedure given in paragraph 5 above. Permittees who have achieved the 25% load reduction will be identified by comparing the adjusted

load for the base year with the adjusted load for the current year.

9. Permittees who did not elect to participate in the Early Baseline Option are subject to a Maximum Unit Area Loading (MUAL, lbs/acre-yr) discharge limit, which is computed by solving the following equation:

$$FTLOAD = \text{SUM} [MUAL * A_j] + \text{SUM} [AUAL_i * A_i]$$

The first summation (j) is over all farms with  $AUAL_j$  greater than MUAL, excluding those who have taken the Early Baseline Option and achieved a minimum 25% load reduction. The second summation is over all remaining farms, which include (a) farms with  $AUAL_i$  below MUAL; and (b) farms which elected the Early Baseline Option and met the minimum 25 percent load reduction requirement.

10. Revised BMP plans will be required for all permitted structures and tributary acreages whose  $AUAL_j$  exceed MUAL. Revised BMP plans will also be required from all permittees who elected the Early Baseline Option, but did not achieve at least a 25 percent load reduction. Compliance and enforcement procedures are set forth in Rule 40E-63.145(3), (4), and (5), F.A.C.

## Outline of Compliance and Enforcement Procedures in the EAA Basin

DATE	ACTIVITY	ASSOCIATED COMPLIANCE & ENFORCEMENT ACTION
Present		SFWMD and Other Agencies Authorized To Enforce Existing Regulations and Permitting Programs Applicable To EAA Basin
9/92 10/92	Due Date For Permit Applications	Begin Enforcement For Failure To Submit Application (All 40E-63.145(4) Options Available)
12/92	Early Baseline Option – Final Agency Action On Monitoring Plans	
1/1/93	Early Baseline Option – Permittees Begin Monitoring Water Quality & Quantity	Begin Enforcement Of Monitoring Plan – Water Quality & Quantity (All 40E-63.145(4) Options Available)
7/93	Final Agency Action On Permit Applications	Begin Enforcement Of Installation Of BMPs According To Plan (All 40E-63.145(4) Options Available)
10/93	Permittees Begin Monitoring Water Quality	Begin Enforcement Of Monitoring Plan – Water Quality (All 40E-63.145(4) Options Available)
1/94	Early Baseline Option – BMP Installation Complete	Begin Enforcement of BMP Operation and Maintenance (All 40E-63.145(4) Options Available)
1/94	Early Baseline Option – Baseline For Determining 25% Reduction Set Based On Data For May 1, 1993 - April 30, 1994	
1/94	Permittees Begin Monitoring Water Quantity	Begin Enforcement Of Monitoring Plan - Water Quantity (All 40E-63.145(4) Options Available)
7/1/94	District Provides Results of Early Baseline Calculations	
1/95	BMP Installation Complete	Begin Enforcement of BMP Operation & Maintenance (All 40E-63.145(4) Options Available)
4/30/96	Water Year Ends and District Begins Determination of Whether EAA Basin Is In Compliance With 25% Phosphorus Load Reduction Requirement (Appendix A3, Ch. 40E-63, F.A.C.)	

A5-1

DATE	ACTIVITY	ASSOCIATED COMPLIANCE & ENFORCEMENT ACTION	
7/1/96	District Provides Results Of Appendix 40E-63-3 Evaluation	EAA Basin In Compliance	EAA Basin Not In Compliance
		A. Continuing Compliance Action In Regard To Monitoring Plans & BMP Operation (All 40E-53.145(4) Options Available) & Other Applicable Regulations	A. Continuing Compliance Action In Regard To Monitoring Plans & BMP Operation (All 40E-63.145(4) Options Available) and Other Applicable Regulations.
			B. Compliance Actions Applicable To Permittees Who Elected The Early Baseline Option:
			1. District Determines Whether Permittee Has Reduced The Baseline Load By 25%,
			2. Permittees Who Have Reduced The Baseline Load By 25% Are Not Subject To Further Compliance And Enforcement Actions, So Long The Reduction Is Maintained, Or Unless This Chapter Is Amended To Provide Otherwise,
			3. Permittees Who Do Not Meet The 25% Reduction Requirement Are Required To Submit And Implement Revised BMP Plans.
			C. Compliance Actions Applicable To All Permittees Except Those Described In Section B. Above; (40E-63.145(4) Options Not Applicable If The Following Are Implemented In Good Faith):
7/1/96			1. Notices Sent To Permittees With AUAL exceeding AUAL and MUAL Assigned,
8/15/96			2. Revised BMP Plans Due, Must Be Designed To Meet MUAL,
10/15/96			3. Final Agency Action On Revised BMP Plans,
4/30/97	Water Year Begins		

DATE	ACTIVITY	ASSOCIATED COMPLIANCE & ENFORCEMENT ACTION	
4/30/98	Water Year Ends and District Begins To Determine Whether EAA Basin In Compliance With 25% Phosphorus Load Reduction Requirement (Appendix A3, Ch. 40E-63, F.A.C.)		
7/1/98	District Provides Results Of Appendix A3, Ch. 40E-63, F.A.C., Evaluation	EAA Basin In Compliance	EAA Basin Not In Compliance
		Continuing Compliance Action In Regard To Monitoring Plans & BMP Operation (All 40E-63.145(4) Options Available) & Other Applicable Regulations	Continuing Compliance Action In Regard To Monitoring Plans, Revised BMP Plans & BMP Operation (All 40E-63.145(4) Options Available) and Other Applicable Regulations
		No Further Compliance Action In Regard to Appendix 40E-63-3 (25% Phosphorus Load Reduction Requirement)	Early Baseline Option – Permittees Who Have Not Reduced Baseline Load By 25% And Have An AUAL exceeding AUAL Are: 1. Assigned MUAL, And 2. Required To Meet It The Next Time The Basin Is Determined To Be Not In Compliance and If Not Met, Permittee Is Subject To 40E-63.145(4) Options
			Compliance Actions Applicable To All Permittees Who Have Not Elected The Early Baseline Option:
7/1/98			1. Notices Sent To Permittees With AUAL exceeding AUAL and MUAL Assigned.
			2. Permittees Not Required To Submit Revised BMP Plans In 1996 – Not Subject To 40E-63.145(4) Options.
			3. Permittees Required To Submit Revised BMP Plans In 1996 – Not Subject To 40E-63.145(4) Options If Meet MUAL Assigned In 1996.
			4. Permittees Required To Submit Revised BMP Plans In 1996 – Subject To 40E-63.145(4) Options (Including Penalties) If MUAL Assigned In 1996.

DATE	ACTIVITY	ASSOCIATED COMPLIANCE & ENFORCEMENT ACTION	
8/15/98			5. Revised BMP Plans Due, Must Be Designed To Meet MUAL.
10/15/98			6. Final Agency Action On Revised BMP Plans.
4/15/99			7. Revised BMP Installation Complete.
5/1/99	Water Year Begins		

### EAA Basin Examples of Permit Modifications

<b>Modification Fee: \$1,880</b>	<b>Letter Modification Fee: \$500</b>	<b>Administrative Update No Fee</b>
<p>Modifications that result in a change in the conditions of the permit.</p> <p>Modifications that change the landuse.</p> <p>Modifications that have a potential for heightened public concern based on comments from the public.</p> <p>Modifications that result in the addition of acreage not previously included in an existing permit.</p>	<p>Modifications that result in a change in an existing basin boundary.</p> <p>Modifications that result in an addition of a basin to the permit (transfer of previously permitted acreage from one existing permit to another).</p> <p>Addition of a water control structure to the Water Quality Monitoring Plan.</p> <p>Modifications to the BMP Plan unless the modification of the BMP Plan is the result of a land use change, in which case it will be a Permit Modification.</p> <p>A change in the technical information in the Water Quality Monitoring Plan (e.g. identifying monitored sites, sampling methods, sample locations)</p>	<p>Deletion of an existing water control structure from the water quality monitoring plan.</p> <p>Deletion of acreage that does not affect the overall drainage plan. (e.g. land removed for district canal widening, or STA construction)</p> <p>A change to a water control structure's approved calibrated capacity.</p> <p>A change in the administrative information in the Water Quality Monitoring Plan (e.g. sampler collector, laboratory).</p> <p>A change in lessee or parcel owner (not the same as Transfer of Permit).</p> <p>A change in Early Baseline Status.</p> <p>A change in the description of associated permits.</p>

AG-1

**BMP Equivalent Points Table**

<b>BMP</b>	<b>PTS</b>	<b>DESCRIPTION</b>
<b>NUTRIENT CONTROL PRACTICES</b>		MINIMIZES THE MOVEMENT OF NUTRIENTS OFF-SITE BY EFFICIENT AND CONTROLLED APPLICATION
Nutrient Application Control*	2 ½	Uniform and controlled boundary application of nutrients with a minimum 4' setback from canals with no overlapping application for each application method (e.g. banding at the root zone or side-dressing, pneumatic controlled-edge application such as AIRMAX); fertilization through low volume irrigation system applied at root zone (fertigation); controlled placement by fertilization under plastic near root.
Nutrient Spill Prevention*	2 ½	Formal spill prevention protocols (storage, handling, transfer, and education/instruction).
Manage Successive Vegetable Planting to Minimize P	2 ½	Avoid successive planting of vegetables or other crops having high P needs to avoid P build up in soils. Includes successive planting with no successive P application.
Recommended Nutrient Application based on Plant Tissue Analysis	2 ½	Avoid excess application of P by determining plant nutrient requirements for adjustments during next growing season (crop specific).
	5	Citrus only – Additional points allowed for citrus because it provides information on current season P requirements.
Recommended Nutrient Application based on Soil Testing*	5	Avoid excess nutrient application by determining P requirements of soil and follow standard recommendations for application rates (crop specific).
Split Nutrient Application	5	More efficient plant uptake of P by applying small portions of total recommended P at various times during the growing season. Not to exceed total recommendation based on soil test.
Slow Release P Fertilizer	5	Avoid flushing excess P from soil by using specially treated fertilizer that releases P to the plant over time.
Reduce P Fertilization	5	Reduce the P application rate by at least 30% below the recommendation based on soil tests. Provide basis for reduction credit.
No Nutrients Imported Via Direct Land Application	15	No Application of P, in any form, to the soil for amendments or plant nutrients. (Native and Semi-improved Range can claim this BMP and still apply fertilizer at maintenance or less than optimum production levels as a grass supplement every 6-8 years.)
No Nutrients Imported Indirectly Through Cattle Feed	15	No P import to the basin through cattle feed (note: native range is not excluded by use of mineral supplements or molasses)
Nutrient Management Plan (Levels I&II/III/IV)	15	Managing the amount, source, placement, form, and timing of the application of nutrients on lands with cattle operations.
	25	
	35	

A BMP Plan is required for each land use or crop. BMP Plans shall be implemented across the entire farm acreage (drainage area) with individual BMPs consistently implemented across each land use (crop) area.

\*See notes at end of Appendix.

### BMP Equivalent Points Table

BMP	PTS	DESCRIPTION
<b>WATER MANAGEMENT PRACTICES</b>		MINIMIZES THE QUANTITY OF OFF-SITE DISCHARGES WHICH CARRY NUTRIENTS DOWNSTREAM
½ Inch Detained 1 Inch Detained	5 10	Delayed discharge (based on measuring daily rain events using a rain gage).
Improvements to Water Management System Infrastructure to Further Increase Water Quality Treatment	5	Recirculation of water inside farm boundaries to improve WQ prior to off-site discharge (Particularly applicable to discharge from rice and vegetables), includes: fallow field flood water with no direct discharge (instead allow to "drain" via evapotranspiration, seepage, use as irrigation water); or Increasing water detention using properly constructed canal berms.
Reduced Flow through Water Table Management	5	Decreasing discharge by optimizing drainage and irrigation schedules and/or by using low volume irrigation methods, e.g. drip irrigation
Approved and Operational Surface Water Reservoir		Properly permitted, constructed and maintained storage system meeting specified ERP Basis of Review criteria (version in effect at the time of permitting or in effect at the time of permit modification for modified systems):
	10	System meets Section 5.2.1 Water Quality Criteria-Volumetric Requirements
	10	System meets Section 6.2 Water Quantity Criteria-Discharge Rate
	15	System meets Section 6.3 Water Quantity Criteria-Design Storm (Must have a valid SFWMD construction and operation permit for the surface water system.)
Temporary Holding Pond	15	Temporary agricultural activities (as described in Chapter 40E-400, FAC.) with a properly constructed and permitted temporary holding pond.
No Direct Discharge	15	Overland Sheet Flow over entire property, no direct discharge.

A BMP Plan is required for each land use or crop. BMP Plans shall be implemented across the entire farm acreage (drainage area) with individual BMPs consistently implemented across each land use (crop) area.

\*See notes at end of Appendix.

**BMP Equivalent Points Table**

BMP	PTS	DESCRIPTION
<b>PARTICULATE MATTER AND SEDIMENT CONTROLS</b>		MINIMIZES THE MOVEMENT OF P, IN PARTICULATE MATTER AND SEDIMENTS, OFF-SITE BY CONTROLLING THE AMOUNT OF ERODED SOIL AND PLANT MATTER IN DISCHARGE
Any 2	2 ½	<ul style="list-style-type: none"> <li>• erosion control by leveling fields</li> <li>• minimize sediment transport with slow velocity in main canal near discharge structure</li> </ul>
Any 4	5	<ul style="list-style-type: none"> <li>• reduce soil erosion using grassed swales and field ditch connections to laterals</li> </ul>
Any 6	10	<ul style="list-style-type: none"> <li>• minimize sediment transport into canals by constructing ditch bank berms</li> </ul>
Any 8	15	<ul style="list-style-type: none"> <li>• minimize sediment build-up through a canal cleaning program</li> <li>• minimize P from plants by aquatic weed control (P source) at main discharge locations</li> <li>• reduce sediments transported offsite by using field ditch drainage sumps</li> <li>• reduce debris (P source) leaving the site by using barriers at discharge locations</li> <li>• reduce soil erosion with constructed ditch bank stabilization</li> <li>• minimize sediment transport with slow field ditch drainage near pumps/structure</li> <li>• reduce sediments transported offsite by maintaining a sediment sump/trap upstream of drainage structure</li> <li>• maintain sustainable forage growth on pasture to reduce soil erosion/range seedings</li> <li>• reduce sediments transported offsite by stabilizing soil through infrastructure improvements at canal/ditch intersections (e.g. flexible plastic pipe, polymer treatment)</li> <li>• reduce soil erosion with cover crops</li> <li>• reduce sediments transported offsite by raising culvert bottoms above all ditch bottoms to minimize sediment transport</li> <li>• reduce soil erosion with vegetation on ditch banks</li> </ul>

A BMP Plan is required for each land use or crop. BMP Plans shall be implemented across the entire farm acreage (drainage area) with individual BMPs consistently implemented across each land use (crop) area.

\*See notes at end of Appendix.

**BMP Equivalent Points Table**

BMP	PTS	DESCRIPTION
<b>PASTURE MANAGEMENT</b>		MINIMIZES NUTRIENTS IN DISCHARGES THROUGH ON SITE OPERATION AND MANAGEMENT PRACTICES
	2 1/2	<ul style="list-style-type: none"> <li>• restricted placement of feeders to reduce "hot spots" near drainage ditches</li> </ul>
	2 1/2	<ul style="list-style-type: none"> <li>• restricted placement of cowpens to reduce "hot spots" near drainage ditches</li> </ul>
	2 1/2	<ul style="list-style-type: none"> <li>• restricted placement of feed and water to reduce "hot spots" near drainage ditches</li> </ul>
	2 1/2	<ul style="list-style-type: none"> <li>• provide shade structures to prevent cattle in waterways</li> </ul>
	5	<ul style="list-style-type: none"> <li>• low cattle density (1 head/2 acres, nonirrigated pasture)</li> </ul>
	5	<ul style="list-style-type: none"> <li>• reduced P in feed (by a minimum of 20%)</li> </ul>
	10	<ul style="list-style-type: none"> <li>• restrict cattle from waterways through fencing of canals in a manner that protects the discharge water quality</li> </ul>

A BMP Plan is required for each land use or crop. BMP Plans shall be implemented across the entire farm acreage (drainage area) with individual BMPs consistently implemented across each land use (crop) area.

\*See notes at end of Appendix.

## BMP Equivalent Points Table

### NOTES

A BMP Plan is required for each land use or crop. BMP Plans shall be implemented across the entire farm acreage (drainage area) with individual BMPs consistently implemented across each land use (crop) area.

Minimum required points for each BMP Plan:

- Level I: Initial 15 points for each BMP Plan.
- Level II: First out of compliance, no additional BMPs; however, onsite verification of BMPs begin. Frequency of visits based on compliance record.
- Level III: Second out of compliance, 10 additional BMP points for each BMP Plan. Onsite verification of BMPs continue.
- Level IV: Third out of compliance, 10 additional BMP points for each BMP Plan. Onsite verification of BMPs continue.

**An asterisk (\*) Indicates a BMP that is required when there is land application of nutrients and no permitted and properly operated surface water detention system.**

## C-139 Basin Compliance Methodology

### INTRODUCTION

This Appendix sets forth the compliance methodology for determining whether additional measures will be required of landowners in addition to implementation of the Level I plan for BMPs (that is, Levels II, III, and IV). It includes procedures the District will follow to determine whether the entire C-139 Basin has met the goal of not exceeding the collective average annual phosphorus loading based proportionally on the historical rainfall during the baseline period of October 1, 1978 to September 30, 1988. The determination requires annual calculation of the TP load leaving the outfall structures from the C-139 Basin (location shown in Figure B1 and listed in Table B1).

Load is the amount of phosphorus carried past a monitoring point by the movement of water. Data on water quality concentration and water quantity (flow) are required to calculate the phosphorus load discharged from a monitoring point. Data on water quality and quantity at the C-139 Basin outfall structures are available from several sources – the District, the U. S. Army Corps of Engineers, and the U.S. Geological Service. Several methods of collecting the data are also used. Accordingly, the best method of data collection and source of data to use in a load calculation must be identified.

The water quality and quantity collection sources and methods currently available are described below. The methods are improved continuously as new equipment becomes available and technology improves. However, existing methods of data collection are continued concurrently with the new methods for a substantial period of time. When the District reports the results of the C-139 Basin collective annual phosphorus loading for the period of May 1-April 30, annually beginning in the year 2001, the sources and methods of data collection used in the calculation will be described and available for inspection. Any changes in methods from the prior year will be specified. Substantially affected persons will have an opportunity to request an administrative hearing. The District shall incorporate permanent changes in methods into this Appendix periodically through Chapter 120, Florida Statutes, rulemaking proceedings as required.

The load calculations involve detailed procedures, which have been automated by a computer program in FORTRAN language. A flow chart of the program is shown in Figure B2. The methods and equations used in the program are outlined in Appendix B2.1, which is published by reference and incorporated into this Chapter and are also available on various electronic media.

## DATA COLLECTION SOURCES AND METHODS

### Water Quantity – Flows

The South Florida Water Management District and the U.S. Geological Survey compute flow at all of the water control structures serving the C-139 Basin. Water control structures may include pumps, gated spillways, and gated culverts.

The SFWMD uses various methods to compute flow at water control structures. Flow at pump stations is calculated using discharge rating equations provided by the pump manufacturer and calibrated by discharge measurements. Flow at gated spillways is calculated using formulae derived by the Corps of Engineers from the Bernoulli equation. Discharge through culverts is calculated using standard equations for weir flow, orifice flow, pipe flow, and open channel flow. Flow computation methods for the C-139 Basin outfall structures are outlined in Appendix B2.2, which is published by reference and incorporated into this Chapter.

The SFWMD obtains field measurements of stage and control operations through various means. Real-time stage and control operations data are collected via telemetry systems. Analog data are obtained from chart recorders. Digital data are provided by punch tapes and solid state data loggers. Pump station operators log readings of stage and control operations hourly during pumping operations. In addition, staff gauge readings, gate opening measurements, and flashboard elevation measurements are conducted by field personnel who routinely visit unmanned structures.

The SFWMD's hydrologic database stores multiple flow data sets at each structure. Each flow data set is created using a unique combination of sources of stage and control operations data. The USGS publishes one set of flow data for each structure. If convenient, the USGS presents combined flow data from different locations. The SFWMD uses the USGS's data as well as its own data to perform water budget analyses and estimation techniques to obtain a "preferred" flow data set at each structure. Table B1 shows the "preferred" flow data sets available in the SFWMD's hydrologic database (DBHYDRO).

### Water Quality

A water sample collected in the field is called a "raw water sample", in differentiation with a "water sample" used in the chemistry laboratory. Current raw water sample collecting methods at different structures are listed in Table B2. All raw water samples collected in the C-139 Basin in the future for compliance will be collected by automatic samplers. Automatic samplers will be programmed to take flow proportional composite samples. Where on-site real-time flow computation is impossible, time proportional composite samples will be taken. For future sampling, if an automatic sampler is installed to replace existing manual grab sampling, grab samples will be continued concurrently until the relationship between results from automatic and manual methods have been established. The establishment of these relationships shall be based on an

amount and quality of data that is sufficient to be statistically valid. When determining whether the data set is sufficient, at minimum the following shall be considered: the length of the period over which data was collected; the quality assurance of the data; and the number of events in the period. After the relationship between grab and autosampler data has been established, grab samples will be taken when automatic samplers are not functioning, or when necessary for other purposes.

Only a portion of a well-mixed raw water sample is used as the water sample in actual quantitative analysis of a given water quality parameter. The chemical analysis is performed by a certified laboratory using accepted standard methods. In the event the District changes laboratories or analytical methods, concurrent analyses shall be conducted until a correlation can be established. Water quality parameters are identified by structure and collection site, project code, sample date, and serial number of the sample. The data are stored in data base WQDMAIN.

### **Data Upgrades**

There are three ways in which the quality and reliability of District flow data are being improved: (1) establishment of single time series of flow for each station from multiple sources of stage and control operations data, (2) verification and calibration of flow equations through intensified discharge measurements at all major C-139 Basin structures, and (3) calibration of AVM systems for future use as an additional source of flow data.

Efforts are currently under way to establish a single time series of flow data calculated at each flow station. A prioritized list of sources of stage and control operations data will be established for each flow station. Flow will be computed from the highest ranking sources. When the highest ranking source of data is missing, the next highest source will be used, and so on. This method will ensure the calculation of the best flow values from all sources and will minimize missing data.

Stream gauging is being intensified to provide discharge measurements at all major C-139 Basin structures. Statistical analyses are under way to verify or calibrate the discharge rating equations. The upgrading of stream gauging equipment, including a portable acoustic low velocity meter, as well as improved measuring techniques will ensure valuable field measurements. Statistical analysis and calibration of rating equations will continue to increase the accuracy of the calculated flow values.

When new or substantially different methods or techniques are proposed for measuring discharge at any of the sites listed in Table B-1, an analysis will be done to determine the relationships between the existing method and the proposed method prior to implementing the proposed change.

If any upgrades in water quality sampling are undertaken in the future, concurrent samples will be taken by the existing methods to maintain data continuity, at least until

the upgraded methods have been tested and documented as reliable in accordance with the procedures described under "Water Quality" above.

## **DETERMINATION OF COMPLIANCE WITH TOTAL PHOSPHORUS LOAD**

With regard to requiring implementation of Levels II, III, and IV the "Initial Compliance Determination Period" will be the water year beginning May 1, 2002 and ending April 30, 2003 (WY03).

Following the "Initial Compliance Determination" period, subsequent annual TP loads will be evaluated for compliance with the collective annual average TP load from the baseline period (October 1, 1978 to September 30, 1988). This will be done annually as of April 30, a date that corresponds generally with the change from the dry to the wet rainfall periods. Hydrology, that is discharge and rainfall, are dominant factors when computing TP loads. Because rainfall and discharge are subject to large temporal and spatial variation in south Florida, the evaluation for compliance adjusts the TP load for hydrologic variability.

The adjustment for hydrologic variability includes two components:

1. A model to estimate future TP loads. The model estimates a future TP load from the C-139 Basin by substituting future hydrologic conditions for the conditions that occurred during the baseline period (1978-1988). The estimation is based on hydrologic data collected for any time period of May 1-April 30 subsequent to the baseline period.
2. Accommodation for possible statistical error in the model by specifying a required level of statistical confidence in the prediction of the long-term average TP load. The 90th percentile confidence level was selected as reasonable.

Evaluation of the C-139 Basin for compliance will be based upon the following:

1. If the actual measured TP loading from the C-139 Basin in a post-baseline May 1 through April 30 period is less than the model TP load estimate (Target), then the C-139 Basin will be determined to be "In Compliance", that is, having not exceeded the collective average annual phosphorus loading that would have occurred during the baseline period adjusted for hydrologic variability.
2. If the actual measured TP loading from the C-139 Basin exceeds the model TP load estimate (Target) in three or more consecutive May 1 through April 30 periods, then the C-139 Basin will be determined to be "Out of Compliance" -- that is, having exceeded the collective average annual phosphorus loading that would have occurred during the baseline period adjusted for hydrologic variability. If the Target is exceeded in a May 1 through April 30 period, and the District determines that the rainfall for the period is outside the model calibration range of 31.06 inches to 71.98 inches, the Target will be suspended and the C-139 Basin will not be determined to be "Out of

Compliance" for that period only. Any period(s) for which the Target is suspended will be excluded from the determination of whether the Target has been exceeded in three or more consecutive May 1 through April 30 periods. That is, the C-139 Basin will be determined to be "Out of Compliance" when the Target is exceeded for three May 1 through April 30 periods, without an intervening May 1 through April 30 period in which the C-139 Basin has been determined to be "In Compliance", even though the three periods may be interrupted by periods of suspension.

3. If the actual measured TP loading from the C-139 Basin exceeds the upper 90% confidence level of the Target (herein after referred to as the Limit), in any May 1 through April 30 period, the C-139 Basin will be determined to be "Out of Compliance", that is, it will have exceeded the collective average annual phosphorus loading that would have occurred during the baseline period adjusted for hydrologic variability. If the Limit is exceeded in a May 1 through April 30 period, and the District determines that the adjusted rainfall for the period is outside the model calibration range of 31.06 inches to 71.98 inches, the Limit will be suspended and the C-139 Basin will not be determined to be "Out of Compliance" for that period only.

4. A determination of suspension under paragraphs 2 and 3 above and a Notice of Rights to petition for a hearing under Section 120.57, Florida Statutes, and Section 373.114, Florida Statutes, shall be published in the Florida Administrative Weekly.

5. The Target and Limit will be calculated according to the following equations and explanation:

$$\ln(L) = -12.898 + 4.126\ln(\text{Rain})$$

$$[\text{Explained Variance} = 88.6\%, \text{Standard Error of Estimate} = 0.387]$$

where: L = 12-month load attributed to C-139 Basin Runoff (metric tons)

Compliance will be tracked by comparing the measured C-139 Basin Load with:

$$\begin{aligned} \text{Target} &= \text{Load Predicted from current Rainfall using Base Period Model (mtons)} \\ \text{Target} &= 2.50271 \times 10^{-6} R^{4.12603} \end{aligned}$$

$$\text{Limit} = \text{Target} \times \text{Uncertainty Factor (mtons)}$$

$\sigma$  = Standard Error of predicted  $\ln(L)$  for May-April interval

$$\sigma = 0.38700 [1 + 1/9 + 2.08621 (\ln(R) - 3.87905)^2]^{0.5}$$

where:

R = Water Year total rainfall (inches)

$\sigma$  = Standard error of predicted phosphorus load (on a natural logarithmic scale)

## REQUIREMENTS FOLLOWING DETERMINATION OF C-139 BASIN “OUT OF COMPLIANCE”

### NOTIFICATION

The District will make every reasonable effort to complete annual compliance determination calculations and publish the results by July 1<sup>st</sup> of each year for the preceding Water Year (May 1<sup>st</sup> to April 30<sup>th</sup>). If the results indicate the C-139 Basin is “out of compliance” and additional participation in BMP implementation is necessary (Levels II, III, or IV), landowners will be notified via certified mail. This notification will outline the responsibilities of the landowner based on whether it is the first, second, third, or fourth occurrence of “out of compliance”. These responsibilities are identified as “levels” of requirements as described in Rule 40E-63.442(1) that occur as part of the initial permitting process or that can occur if the C-139 Basin is determined to be “out of compliance”.

#### Level I – Initial BMP Plan Implementation

This level includes immediate implementation of the initial BMP Plan (15 points) as a requirement of permit issuance (Rule 40E-63.442(1)(a)).

#### Level II – First “Out of Compliance”

The first occurrence of “out of compliance” triggers Level II (Rule 40E-63.442(1)(b)). This level does not require implementation of additional BMPs but does initiate BMP Implementation Verifications by District Staff. After receiving notification that the C-139 Basin is determined to be “out of compliance”, permittees will be required to respond to the District in writing within 15 days of transmittal of the notification indicating their option to either (1) continue implementation of the original 15 points of BMPs or (2) propose a revision to the original BMP Plan totaling 15 points. In either case, permittees should prepare for a BMP Site Verification Visit. If the permittee selects option (2), the District will provide “pre-approval” or “pre-denial” of the modified BMP Plan within 10 business days of receipt of the permittee’s response. If the District “pre-approves” the proposed change to the BMP Plan, the permittee will be required to begin implementation of the proposed BMPs. An application for modification of the permit under Rule 40E-63.432(1) shall be submitted to the District within 45 days of transmittal of the notification of “out of compliance” by the District. The modified BMP Plan must be fully implemented within 90 days of transmittal of the District’s notification of “out of compliance”. If the permittee selects option (2) and the District “pre-denies” the request, the permittee will be given an additional 30 days to provide supporting information that the proposed BMP Plan meets the intent of Rule 40E-63, Part IV and the EFA or propose an alternative BMP Plan for District review. This process changes the required time to *begin implementation of the modified BMP Plan* but does not change the date to *complete implementation*. It is in the permittee’s best interest to respond to the notification in a timely manner to allow time for implementation of the BMP Plan and for the BMPs to be effective prior to the next compliance determination. Permittees will be

contacted by District Staff to schedule a site visit to verify that their BMP Plan has been consistently implemented across the entire acreage identified in their permit. Verification of implementation is done through review of records and documentation provided by the landowner or permittee and in-field visual verifications where applicable. The permittee will receive a follow-up report from the District indicating the results of the verification visit. If District Staff determines that the BMP Plan has been consistently implemented, no further action is required of the permittee in response to the Level II Out of Compliance other than continuing to submit the Annual BMP Implementation Certification Reports as required under Rule 40E-63.444(1)(b). If District Staff determines that the BMP Plan has not been consistently implemented across the entire acreage identified in the permit, the follow-up report will address areas of concern or deficiency and the permittee will be required to respond in writing within 30 days with an aggressive schedule for resolving the deficiencies. Additional follow-up site visits by District Staff may be required. When the deficiencies have been resolved, District Staff will send a final report closing that specific BMP Site Verification. The permittee is still required to continue submitting Annual BMP Implementation Certification Reports as specified under Rule 40E-63.444(1)(b).

For those permittees electing to implement the Optional On-Farm Discharge Monitoring Program in accordance with the requirements of Rules 40E-63.456 and 40E-63.458, the site visit will include verification of proper implementation of the discharge monitoring plan including verification of flow data submitted to the District by the permittee as a condition of permit issuance. This will require District Staff to have access to "raw data" such as pump logs, rainfall records, electronic datalogger files, etc. The follow-up site verification report sent by District Staff will include a section for the On-Farm Discharge Monitoring Program and flow verification. If there are no areas of concern or deficiencies noted, no further action will be required of the permittee with regard to their discharge monitoring program for that review period. If the report identifies any areas of concern or deficiencies, the permittee will be required to provide a written response within 30 days with an aggressive schedule for resolving the deficiencies.

### **Level III – Second "Out of Compliance"**

The second occurrence of "out of compliance" triggers Level III. This level requires an additional 10 points of BMPs bringing the total to 25 points (Rule 40E-63.442(1)(c)). BMP Implementation Verifications will continue to be conducted by District Staff under the same procedures described in Level II - First "Out of Compliance". After receiving notification that the C-139 Basin is determined to be "out of compliance" the second time, the permittee will be required to respond to the District indicating their option to either (1) implement the additional 10 points of BMPs identified in their permit for Level III BMPs or, (2) propose a revision to the approved BMP Plan totaling 25 points. The permittee must submit this response to the District within 15 days of transmittal of the notification. *Regardless of the option selected by the permittee, implementation of additional and/or modified BMPs must begin within 45 days of transmittal of the notification of "out of compliance" and implementation must be complete within 90 days of transmittal of the notification of "out of compliance".* If the permittee selects option

(2), the District will provide “pre-approval” or “pre-denial” of the BMP Plan within 10 business days of receipt of the permittee’s response. The permittee will be required to submit an application for modification of their Permit under Rule 40E-63.432(1) within 45 days of transmittal of the notification of “out of compliance”. If the permittee selects option (2) and the District “pre-denies” the request, the permittee will be given an additional 30 days to provide supporting information that the proposed BMP Plan meets the intent of Rule 40E-63, Part IV and the EFA or propose an alternative BMP Plan for District review. This process changes the required time to *begin implementation of the modified BMP Plan* but does not change the date to *complete implementation*. Concurrent with the review of the modified BMP Plan for “pre-approval” by the District, the applicant must submit an application for modification of their Permit under Rule 40E-63.432(1) within 45 days of transmittal of the notice of “out of compliance”. It is in the permittee’s best interest to respond to the notification in a timely manner to allow time for implementation of additional BMPs and for the BMPs to be effective prior to the next basin compliance determination.

Those permittees who have elected to implement the Optional On-Farm Discharge Monitoring Program in accordance with the requirements of Rule 40E-63.456 and 40E-63.458 may request a release from the requirement to implement additional BMPs. The release request should include a cover letter requesting the determination as well as any additional data or information necessary to complete the Water Year that has not been submitted previously. If the District determines that the permittee has not exceeded their proportional share established by the procedures in Appendix B3, the permittee will be notified in writing that the additional Level III BMPs are not required and no further action is required of the permittee for that review period other than continuing to submit Annual BMP Implementation Certification Reports as required under Rule 40E-63.444(1)(b). If the District determines that the permittee has exceeded their proportional share established by the procedures in Appendix B3, the permittee will be notified in writing that the additional Level III BMPs will be required and the schedule of implementation remains the same as for those permittees not electing to implement an Optional On-Farm Discharge Monitoring Program. Provided the permittee has submitted a complete water year data set, the District will respond to the permittees’ request for a release within 10 business days of receipt of the request. In order to make this determination in a timely manner, the permittee must maintain their discharge monitoring data submitted under Rule 40E-63.458(1)(b)(9) up to date. No permittee will be released from doing the minimum required Level I BMPs.

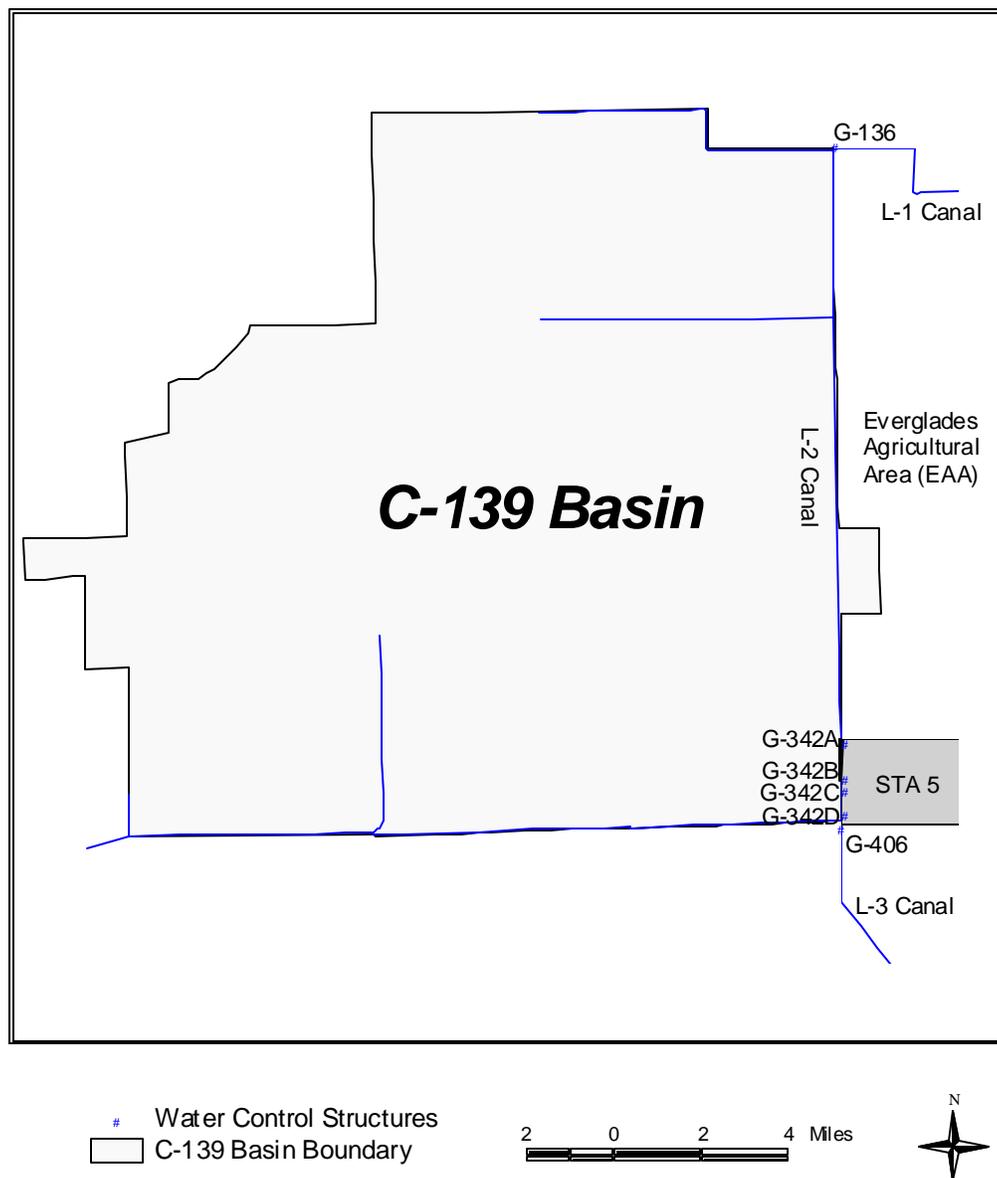
#### **Level IV – Third “Out of Compliance”**

The requirements for the third “Out of Compliance” are the same as Level III – Second “Out of Compliance” with the exception that the total number of BMP points will be 35 (unless releases are granted under the Optional On-Farm Discharge Monitoring Program).

**Level V – Fourth “Out of Compliance”**

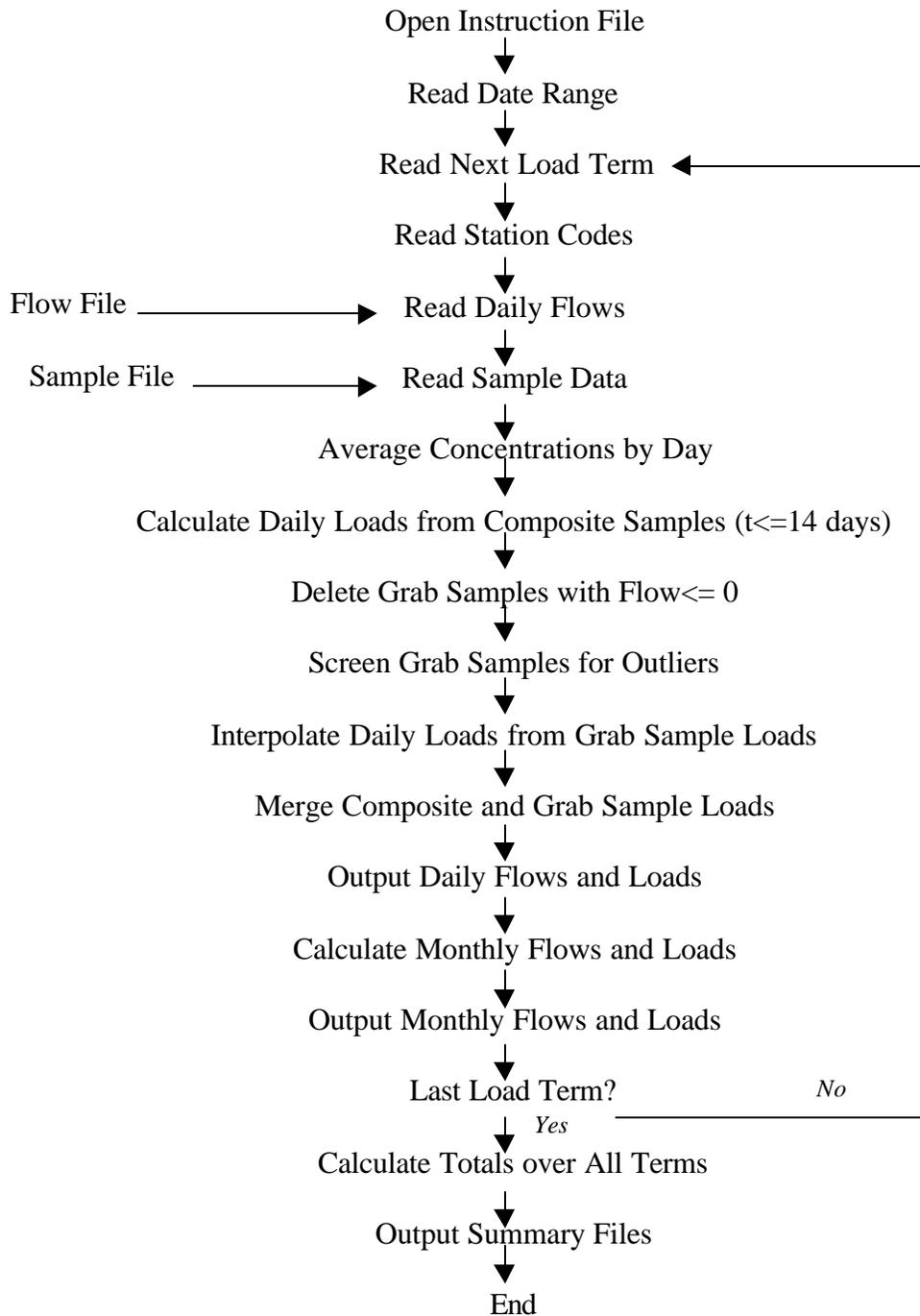
If the C-139 Basin is determined to be “Out of Compliance” a fourth time the District will notify all permittees via certified mail and initiate a rulemaking effort pursuant to Chapter 120, F.S. to establish a program to bring the C-139 Basin back into compliance. All Permit conditions will remain in effect and compliance monitoring will continue until the modified rule is adopted unless an administrative process under Chapter 120, F.S. dictates otherwise.

**Figure B-1  
C-139 Basin Boundary and Discharge Monitoring Locations**



**C-139 Basin Boundary and Discharge Monitoring Locations**

**Figure B-2**  
**Flowchart - Calculation of C-139 Basin Phosphorus Loads**



**Table B-1**  
**C-139 Basin Discharge Structures**  
**Database Keys To Flow Data Time Series**

<b>Structure</b>	<b>Preferred</b>
G-136	15195
G-342A	J6406
G-342B	J6398
G-342C	J6407
G-342D	J6405
G-406	JU789

The reference numbers in the table are keys to the data sets, known as "dbkeys".

**Table B2**  
**C-139 Basin Discharge Structures**  
**Current Water Quality Sampling Methods**

<b>Structure</b>	<b>Collection Site</b>	<b>Instrument*</b>
G-136	Gravity	A
G-342A	Gravity	A
G-342B	Gravity	A
G-342C	Gravity	A
G-342D	Gravity	A
G-406	Gravity	A

- \* G = grab sample primary method
- \* A = automatic sampler primary method, grab sample back-up

**FORTRAN Program for Calculating C-139 Basin Flows and Phosphorus Loads****Program c139tpld**

```
c C139TPLD.job = input ascii file specifying case conditions
c version of EAATPLD modified for C139 Basin Calcs
c w. walker  january 2000
c handles 13000 days, 500 months
c handles yymmdd or yyyymmdd formats

      integer*4 dgrab,dcomp,d0,dlast,dbase,dbase0,qdate
      integer*4 ivalidg(10),ivalidc(10)
      character*64 title
      character*32 ofile1,ofile2,ofile3,ofile4,cfile,qfile,ofile3b
      character*32 sfile
      character*32 blank /' '/
      character*8 slab,dum8,qlab,ulab,usave(30),mname(4),cvar,slab_g
      character*8 clabel(100)
      real*8 xin(100)
      common /a/ qdate(13000)
      common /ab/ flow(13000)
      common /c/ wgrab(13000),wcomp(13000)
      common /cc/ wuse(13000)
      common /b/ dgrab(1000),dcomp(1000),cgrab(1000),ccomp(1000),
& x(2000),iym(500),qsave(500,30),wsave(500,30),isgn(30),
& b(15),sb(15),stats(15),coefs(10),
& sumd(6),sumw(6),y(1000),prb(1000),ratio(3),wc(2),wg(2),ncg(2)

c      number of load calc methods
      data nmeth/4/
      data mname/'noflow','compos',' grab',' mcomp' /
c  qfac: convert cfs*days to output units = cfs-days
      data qfac/1./

c factor: convert cfs*ppb to kg/day
      factor=24.*3600./3.28**3/1.e6

c  read job control file
      open(7,file=' ',status="old")

c  read control parameters
      read(7,*) title,qfile,dum8,cfile,dum8,imisq,dum8,
*      nmaxc,dum8,dbase0,dum8,dbase,dum8,sig,dum8,
*      iratio,dum8

c  read date range & other parameters
      read(7,*) iymd1,dum8,iymd2,dum8,iymfirst,dum8,
&      cvar,dum8,sf,dum8,dmax,dum8,
&      minsam,dum8

c  read valid sample type codes for composite & grab samples
      read(7,*) nvalidc,(ivalidc(i),i=1,nvalidc)
      read(7,*) nvalidg,(ivalidg(i),i=1,nvalidg)

c  read output file names
      read(7,*) sfile,dum8,ofile1,dum8,ofile2,dum8,ofile3,dum8,
```

```
&   ofile3b,dum8,ofile4,dum8
      read(7,*)

c extend sample interval nafter days beyond flow date range
c where nmax = maximum duration of composite sample
      nafter = nmaxc

c date sequence number for end of base period
      jdbase=jdate(dbase)
      jdbase0=jdate(dbase0)

c date sequence number range for load calcs
      jynd1=jdate(iynd1)
      jynd2=jdate(iynd2)

      write(*,*) title

c input flow file
      open (8, file=qfile,status='old')

c daily output file
      if(ofile1.ne.blank) then
        write(*,*) 'Daily Output File: ',ofile1
        open(10,file=ofile1,status="unknown")
        write(10,"(a64)") title
        write(10, 2)
      endif
      2      format('station  date  ip mth      flow',
&              '      load  cgrab  ccomp  cused c/g ratio')

c monthly output file
      if(ofile2.ne.blank) then
        write(*,*) 'Monthly Output File: ',ofile1
        open(11,file=ofile2,status="unknown")
        write(11,345) title
      345      format(a64/'station  date  days  flow(csd)',
&              '      load(kg) conc(ppb)')
      endif

c sample file
      if(sfile.ne.blank) then
        write(*,*) 'Sample Output File: ',sfile
        open(15,file=sfile,status="unknown")
        write(15,348) sfile,title
      348      format('Sample File: 'A32/A64/
&      ' Term  CStation  Qstation  Type StartDate',
&      ' StopDate  MeanFlow      Conc')
      346      format(/
&      ' Term  CStation  Qstation  Type StartDate',
&      ' StopDate  MeanFlow      Conc')
      347      format(3a10,A6,2i10,f10.2,f10.2)
      endif

c ***** for each station in job control file *****
      nsta=0
      10 nsta=nsta+1
c ulab = output label for mass-balance term
```

```

c slab = composite station code
c slab_g = grab station code
c ipos = flow sign indicator (1 = use positive flows, -1 = use negative
flows)
c icomp = composite sample indicator (1=use composite samples, 0= do not use)
c isgn = sign of term in computing total outflow (+1,0,-1)
  read(7,*,end=500) ulab,slab,slab_g,qlab,ipos,
  & icomp,isgn(nsta)
  write(*,*)
  write(*,*) 'term = ',ulab
  write(*,*) 'sample stations (composite, grab) = ',slab,slab_g
  write(*,*) 'flow label = ',qlab
  usave(nsta)=ulab

c read daily flow file
  call flowread(8, jymd1, jymd2,qlab,nq,qdate,flow,imisq)
c file must contain entire data range (iymd1 to iymd2);
c one/day with no missing dates (missing flows set=0)
  if(nq.le.0) go to 999

c check for error in date sequence
  do ni=1,nq
  if(ni.gt.1) then
    if(qdate(ni)-qdate(ni-1).ne.1) then
      write(*,*) 'flows out of sequence: ',kdate(qdate(ni))
      stop
    endif
  endif
  end do

c check flow date range
  write(*,*)'flow dates= ',nq,
  & kdate(qdate(1)),kdate(qdate(nq))
  if(qdate(1).ne.jymd1) go to 999
  if(qdate(nq).le.jymd2) then
    jymd2=qdate(nq)
  else
    go to 999
  endif

c add extra flow dates to allow sample record to extend beyond flow record
  do j=1,200
    qdate(j+nq)=qdate(j+nq-1)+1
  enddo

c read sample data
  d0=jymd1-1
  ngrab=0
  ncomp=0

c fixed format input
  open(16,file=cfile,status="old")
  read(16,*)
  read(16,*) nfields
  read(16,*) cmis
  read(16,'(100(a8,2x))') (clabel(i),i=1,nfields)

```

```
c locate either date format
  id=match(nfields,clabel,'YYYYMMDD')
  if(id.eq.0) then
    id=match(nfields,clabel,'YMMDD  ')
    endif
  if(id.le.0) then
    write(*,*) 'Missing Date (YMMDD or YYYYMMDD) Field'
    stop
  endif

c locate concentration field
  ic=match(nfields,clabel,cvar)
  if(ic.le.0) then
    write(*,*) 'Missing Concentration Field: ',cvar
    stop
  endif
  it=match(nfields,clabel,'TYPE  ')
  if(it.le.0) then
    write(*,*) 'Missing Sample Type Field'
    stop
  endif

40      read(16,41,end=60) dum8,(xin(i),i=2,nfields)
41      format(a8,2x,50f10.0)

c date
  idd=jfix(xin(id))
c date sequence number
  jdd=jdate(idd)

  if(jdd.le.0) then
    write(*,*) 'invalid sample date: ',idd
    stop
  endif

  itype=jfix(xin(it))
  conc=xin(ic)

c check for missing concentration value
  if(conc.eq.cmis.or.conc.eq.0.) goto 40

c check date range, including nafter days beyond calc interval
  if(jdd.lt.jymd1.or.jdd.gt.jymd2+nafter) goto 40

c rescale concentration and set to absolute value
  conc=sf*abs(conc)

c check station match - composite
  if(ic8(dum8,slab).gt.0) then

c check for valid composite type code
  do j=1,nvalidc
    if(itype.eq.ivalidc(j)) goto 550
  enddo
  endif

c check for station match - grab
```

```
        if(ic8(dum8,slab_g).gt.0) then
c   check for composite vs. grab sample
        do j=1,nvalidg
            if(itype.eq.ivalidg(j)) goto 551
        enddo
        endif

c no station match
        goto 40

c composite sample
550      ncomp=ncomp+1
        ccomp(ncomp)=conc
        dcomp(ncomp)=jdd-d0
        if(ncomp.gt.1.and.dcomp(ncomp).lt.dcomp(ncomp-1)) then
            write(*,*) 'compos sample out of sequence: ',idd
            stop
        endif
        goto 40

c grab sample
551      ngrab=ngrab+1
        cgrab(ngrab)=conc
        dgrab(ngrab)=jdd-d0
        if(ngrab.gt.1.and.dgrab(ngrab).lt.dgrab(ngrab-1)) then
            write(*,*) 'sample date out of sequence: ',idd
            stop
        endif
        go to 40

60      continue

        if(ngrab.gt.0) write(*,*) 'grab samples =      ',ngrab,
&          kdate(qdate(dgrab(1))),kdate(qdate(dgrab(ngrab)))

        if(ncomp.gt.0) write(*,*) 'composite samples =',ncomp,
&          kdate(qdate(dcomp(1))),kdate(qdate(dcomp(ncomp)))
        close(16)

c calculate average concentrations by date
        call xred(dgrab,cgrab,ngrab)
        call xred(dcomp,ccomp,ncomp)
        write(*,*) 'daily-avg grab samples =      ',ngrab
        write(*,*) 'daily-avg composite samples =',ncomp

c scratch composite samples if switch indicates so
        if(icompl.le.0) then
            if(ncomp.gt.0)
&          write(*,*) 'warning: composite samples not used'
            ncomp=0
        endif

c assign daily flows in cfs
        do 70 j=1,nq
            if(ipos.eq.1) then
                flow(j)=amax1(flow(j),0.)
```

```

        else
            flow(j)=abs(amin1(flow(j),0.))
        endif

c initialize daily load vectors
        wgrab(j)=0.
        wcomp(j)=0.
70      wuse(j)=0.

c calculate loads from composite samples
        if(ncomp.gt.0) then
            dlast=0.
            write(*,*)
            write(*,*) 'Composite Sample Listing:'
            write(*,346)
            do i=1,ncomp

c date range to apply composite-sample concentration
                j2=dcomp(i)
                j1=amax1(1.,float(dcomp(i)-nmaxc))
                if(j1.le.dlast) j1=dlast+1
                if(j1.gt.j2) j1=j2
                qavg=0.
                do j=j1,j2
                    wcomp(j)=flow(j)*ccomp(i)*factor
                    qavg=qavg+flow(j)
                enddo
                qavg=qavg/(j2-j1+1)

                if(sfile.ne.blank)
&                 write(15,347) ulab,slab,qlab,'Comp',
&                 kdate(qdate(j1)),kdate(qdate(j2)),qavg,ccomp(i)

                write(*,347) ulab,slab,qlab,'Comp',
&                 kdate(qdate(j1)),kdate(qdate(j2)),qavg,ccomp(i)

                dlast=dcomp(i)
            enddo

        endif

c process grab samples
c eliminate grab-samples collected on days with no flow
        mgrab=0
        write(*,*)
        write(*,*) 'Grab Sample Listing:'
        write(*,346)

        do i=1,ngrab

            k=kdate(qdate(dgrab(i)))
            if(sfile.ne.blank)
&             write(15,347) ulab,slab_g,qlab,'Grab',
&             k,k,flow(dgrab(i)),cgrab(i)

            write(*,347) ulab,slab_g,qlab,'Grab',
&             k,k,flow(dgrab(i)),cgrab(i)

```

```

        if(flow(dgrab(i)).gt.0.) then
            mgrab=mgrab+1
            dgrab(mgrab)=dgrab(i)
            cgrab(mgrab)=cgrab(i)
        endif
    enddo
    ngrabt=ngrab
    ngrab=mgrab
    write(*,*)
    write(*,*) 'grab samples on days with positive flow =',ngrab
    if(ngrab.gt.0) write(*,*) 'date range =',
&         kdate(qdate(dgrab(1))),kdate(qdate(dgrab(ngrab)))

c screen base-period grab samples for outliers
c     based upon log(c) vs. log(q) regression
c     (Snedecor & Cochran, Statistical Methods, 1980, pp. 167-168)
    if(sig.gt.0.) then

        ngt=ngrab
110     j=0
        do i=1,ngrab
            if(qdate(dgrab(i)).le.jdbase.and.
&         qdate(dgrab(i)).ge.jdbase0) then
                j=j+1
                prb(j)=1.
                x(j)=alog(flow(dgrab(i)))
                y(j)=alog(cgrab(i))
            endif
        end do
        call outlyr(x,y,j,sig,prb,nrej)
        if(nrej.gt.0) then
            m=0
            j=0
            do i=1,ngrab
                if(qdate(dgrab(i)).le.jdbase.and.
&         qdate(dgrab(i)).ge.jdbase0) then
                    j=j+1
                    if(prb(j).gt.sig) then
                        m=m+1
                        dgrab(m)=dgrab(i)
                        cgrab(m)=cgrab(i)
                    else
140         write(*,140) kdate(qdate(dgrab(i))),cgrab(i),prb(j)
&         format(' ***outlier: date =',i8,
                    ', conc = ',f10.1, ', prob =',f8.3)
                    endif
                else
                    m=m+1
                    dgrab(m)=dgrab(i)
                    cgrab(m)=cgrab(i)
                endif
            enddo
            ngrab=m
c         repeat screen until no outliers are found
            go to 110
        endif
    endif

```

```
c number of outliers
  ngout=ngt-ngrab
endif

c fit multiple regression for filling grab concentrations
c form: C = a0 + a1 Q

  ssumq=0.
  ssumw=0.
  mm=0
  qmin=1.e10
  qmax=0.
c count samples in base period
  do i=1,ngrab
    if(qdate(dgrab(i)).le.jdbase.and.
&      qdate(dgrab(i)).ge.jdbase0) mm=mm+1
  enddo

c set up data matrix for regression
  m=0
  do i=1,ngrab
    if(qdate(dgrab(i)).le.jdbase.and.
&      qdate(dgrab(i)).ge.jdbase0) then
      m=m+1
      qq=flow(dgrab(i))
      ssumq=ssumq+qq
      ssumw=ssumw+qq*cgrab(i)
      qmin=amin1(qmin,qq)
      qmax=amax1(qmax,qq)
      x(m)=qq
cc      x(m+mm)=cgrab(i)
    endif
  enddo

c test for sufficient samples
  if(m.ge.minsam) then
c regression
  write(*,*)
  write(*,*) 'Conc vs. Flow Regression Used to File Data Gaps'
  call regre(m,x,cgrab,coefs(1),coefs(2),r2,se2,sb)
  write(*,*)

  else

c use longterm flow-weighted mean conc if m < nsam
156  coefs(2)=0.
  if(ssumq.le.0) then
    write(*,*) 'warning - no grab samples in base pd'
    c=0.
  else
    c=ssumw/ssumq
  endif
  write(*,*) 'grab sample flow wtd mean conc for base pd =',c
  coefs(1)=c
endif

c calculate daily loads from grab samples by interpolation
```

```

c substitute regression estimate if time gap > dmax days
  do i=1,ngrab
    x(i)=qdate(dgrab(i))
  enddo

  if(ngrab.gt.0)
&   call eint2(ngrab,x,cgrab,nq,qdate,wgrab,flow,dmax,
&   coefs,qmin,qmax,nqe)

c count positive flow dates
  nqp=0
  do i=1,nq
    if(ngrab.eq.0) wgrab(i)=0.
    wgrab(i)=wgrab(i)*flow(i)*factor
    if(flow(i).gt.0.) nqp=nqp+1
  enddo

  if(ngrab.gt.0) write(*,161) nqp-nqe,nqe,nqp
161  format(' number of positive flow days: '/
&        ' estimated by interpolation           ',i5/
&        ' estimated by regression or flow-wtd mean',i5/
&        ' total                               ',i5)

c compute q-wtd-mean composite conc after base pd
  qcom=0.
  ccom=0.
  do i=1,nq
    if(qdate(i).gt.jdbase.and.wcomp(i).gt.0.) then
      qcom=qcom+flow(i)
      ccom=ccom+wcomp(i)
    endif
  enddo
  ccom=ratv(ccom,qcom)/factor
  write(*,*) 'compos conc after base pd (meth=4) =',ccom

c calculate load ratio for days with both composite and grab samples
c calc separate ratios for base period (ratio(1)) and after (ratio(2))
  do i=1,2
    wg(i)=0.
    wc(i)=0.
    ncg(i)=0
  end do

  do i=1,nq
    if(wgrab(i).gt.0.and.wcomp(i).gt.0.) then
      if(qdate(i).gt.jdbase) then
        j=2
      else
        j=1
      endif
      wg(j)=wg(j)+wgrab(i)
      wc(j)=wc(j)+wcomp(i)
      ncg(j)=ncg(j)+1
    endif
  enddo

c set scale factor for grab/composite samples

```

```
c period = 1 base period, 2=after
  do j=1,2
    ratio(j)=ratv(wc(j),wg(j))
c set to 1 if composite samples are ignored
    if(icompl.le.0) ratio(j)=1.
  end do

c combined ratio for both periods
  ratio(3)=ratv(wc(1)+wc(2),wg(1)+wg(2))

c set ratio=1 if no matching days
  if (ratio(1).le.0.) ratio(1)=1.0

c if ratio(2) missing, set ratio(2)=ratio(1)
  if(ratio(2).le.0.) ratio(2)=ratio(1)

c final load
  do lq=1,5
    sumd(lq)=0.
    sumw(lq)=0.
  end do

  do i=1,nq

    if(qdate(i).gt.jdbase) then
      ipd=2
    else
      ipd=1
    endif

c meth=1 no flow
    if(flow(i).le.0.) then
      wuse(i)=0.
      meth=1

c meth=2 use composite load
    else if(wcomp(i).gt.0.) then
      wuse(i)=wcomp(i)
      meth=2

c meth=3 use grab load
    else if(wgrab(i).gt.0.) then

c iratio = 0 use separate values
c iratio = 1 use base period values only
c iratio = 2 use 1.0 always
c iratio = 3 use values for whole record
      if(iratio.eq.0) then
        rr=ratio(ipd)
      elseif(iratio.eq.1) then
        rr=ratio(1)
      elseif(iratio.eq.2) then
        rr=1.
      else
        rr=ratio(3)
      endif
      if(rr.eq.0.) rr=1.
    end do
  end do
```

```

        meth=3
        wuse(i)=wgrab(i)*rr

    else
cc  added january 2000
c  meth=4  positive flow day with missing composite
c          but no grab samples available for interpolation
c          use q-wtd-mean conc for composite samples after base period
        meth=4
        wuse(i)=ccom*flow(i)*factor
    endif

        sumw(meth)=sumw(meth)+wuse(i)
        sumd(meth)=sumd(meth)+1.

c  output daily results on all days
        if(ofile1.ne.blank) then
            write(10,280) ulab,kdate(qdate(i)),ipos,
&          meth,flow(i),wuse(i),
&          ratv(wgrab(i),flow(i))/factor,
&          ratv(wcomp(i),flow(i))/factor,
&          ratv(wuse(i),flow(i))/factor,ratio(ipd)
280      format(a8,1x,i8,i3,i3,f9.1,f9.2,3f8.1,f10.3)
        endif
c          date loop
    end do

c  summarize ratio calculations
        write(*,235) iratio
235    format(/' grab/composite ratio option =',i3/
&      '          base-period after-base-pd  ratio'/
&      ' station ncomp ngrab days  ratio days  ratio  used')
        write(*,245) ulab,ncomp,ngrab,ncg(1),ratio(1),
&      ncg(2),ratio(2),rr
245    format(1x,a8,3i6,f8.5,i6,2f8.5)

c  method summary
        write(*,305) (mname(i),i=1,nmeth)
305    format(/' breakdown of load estimation methods: '/
&      ' method: ',6a10)
        do i=1,nmeth
            sumd(nmeth+1)=sumd(nmeth+1)+sumd(i)
            sumw(nmeth+1)=sumw(nmeth+1)+sumw(i)
        enddo
        write(*,"(' days% :',6f10.1)")
&      (100.*ratv(sumd(i),sumd(nmeth+1)),i=1,nmeth)
        write(*,"(' load% :',6f10.1)")
&      (100.*ratv(sumw(i),sumw(nmeth+1)),i=1,nmeth)

c  calculate monthly totals
        m=0
        nk=2

c  get yyyymm
        kym=iyim(qdate(1))
        do k=1,nk
            x(k)=0.

```

```

        enddo
    mm=0
    do i=1,nq
        jym=iyim(qdate(i))
        if(jym.ne.kym.or.i.eq.nq) then
c output monthly totals for current station
        m=m+1
        cc=ratv(x(2),x(1))*qfac/factor
        if(i.eq.nq) then
            mm=mm+1
            x(1)=x(1)+flow(i)*qfac
            x(2)=x(2)+wuse(i)
        endif
        if(ofile2.ne.blank.and.kym.ge.iymfirst)
&            write(11,350) ulab,kym,mm,(x(k),k=1,2),cc
350            format(a8,i8,i4,2f12.2,f10.2)
            qsave(m,nsta)=x(1)
            wsave(m,nsta)=x(2)
            iym(m)=kym
            do k=1,nk
                x(k)=0.
            enddo
            mm=0
            kym=jym
        endif
        mm=mm+1
        x(1)=x(1)+flow(i)*qfac
        x(2)=x(2)+wuse(i)
    end do

c end loop around stations
    go to 10
c last station completed
500        continue

c final output section....
c weighted sum over all stations
    usave(nsta)='Total'
    do i=1,m
        qsave(i,nsta)=0.
        wsave(i,nsta)=0.
c sum across stations
        do j=1,nsta-1
            qsave(i,nsta)=qsave(i,nsta)+qsave(i,j)*isgn(j)
            wsave(i,nsta)=wsave(i,nsta)+wsave(i,j)*isgn(j)
        end do
    end do

c output monthly cross-tabs

    if(ofile3.ne.blank) then
        open(12,file=ofile3,status="unknown")
        write(12,1224) title
1224        format(a64/'flows in cfs-days')
        write(12,"(a4,5x,50a12)" 'date',(usave(i),i=1,nsta)
            do i=1,m

```

```

        if(iym(i).ge.iymfirst) then
530          write(12,"(i6,50f12.2)") iym(i),(qsave(i,k),k=1,nsta)
        endif
        enddo
        close(12)
        endif

        if(ofile3b.ne.blank) then
          open(12,file=ofile3b,status="unknown")
          write(12,1225) title
1225        format(a64/'loads in kilograms')
          write(12,"(a6,3x,50a12)") 'yyyymm',(usave(i),i=1,nsta)
          do i=1,m
            if(iym(i).ge.iymfirst) then
              write(12,"(i6,50f12.2)") iym(i),(wsave(i,k),k=1,nsta)
            endif
          enddo
          close(12)
        endif

c output monthly totals across all stations

        if(ofile4.ne.blank) then
          open(13,file=ofile4,status="unknown")
          write(13,"(a64)") title
          write(13,*) 'totals'

          write(13,567)

567        format('date      flow(cfsd)      load(kg) conc(ppb)')

c loop around months
        do k=1,4
          y(k)=0.
        end do

        do i=1,m
          if(iym(i).ge.iymfirst) then
            write(13,560) iym(i),qsave(i,nsta),wsave(i,nsta),
            &          ratv(wsave(i,nsta),qsave(i,nsta))*qfac/factor
560            format(i6,2f12.2,f10.1)

c sum over all months
            qsave(m+1,nsta)=qsave(m+1,nsta)+qsave(i,nsta)
            wsave(m+1,nsta)=wsave(m+1,nsta)+wsave(i,nsta)
          endif
        enddo

            write(13,570) qsave(m+1,nsta),wsave(m+1,nsta),
            &          ratv(wsave(m+1,nsta),qsave(m+1,nsta))*qfac/factor
570            format('/total      ',2f12.2,f10.1)

            close(13)
        endif
999        close(10)

        end

```

```

        subroutine flowread(ifile,ibdate,iedate,clab,nq,idades,
&          values,imisq)
c read daily flows - generalized from eaatpld
character*8 labs(50),clab
real*4 values(1)
real*8 q(50),qmis
integer*4 idates(1)

rewind ifile
read(ifile,*)
read(ifile,*) nfields
read(ifile,*) qmis
read(ifile,'(100(a8,2x))') (labs(i),i=1,nfields)

nq = 0
iq=match(nfields,labs,clab)
if(iq.le.0) then
    write(*,*) 'Missing Flow Field: ',clab
    stop
endif

c locate either date format
id=match(nfields,labs,'YYYYMMDD')
if(id.eq.0) then
    id=match(nfields,labs,'YMMDD ')
endif
if(id.le.0) then
    write(*,*) 'Missing Date (YMMDD or YYYYMMDD) Field'
    stop
endif

20    read(ifile,222,end=100) (q(i),i=1,nfields)
222    format(100f10.0)

c translate date to date sequence number format
ifdate=jdate(jfix(q(id)))
if(ifdate.le.0.) then
    write(*,*) 'invalid flow date =',jfix(q(id))
    stop
endif

c check date range
if(ifdate.lt.ibdate) then
    goto 20
else if(ifdate.gt.iedate) then
    return
else

c stop on first missing flow
if(q(iq).eq.qmis) then
    if(imisq.gt.0) return
    q(iq)=0.
endif

c update flow vector

```

```

        nq=nq+1
        idates(nq)=ifdate
            values(nq) = q(iq)

c get next record
    go to 20
endif

c end of flow file
100 continue
    return
end

        subroutine eint2(n,e,x,ni,ei,xi,qq,dmax,coefs,qmin,qmax,nqe)

c interpolates e,x vector at ei,xi
c e's and ei's sorted in increasing order
c substitutes regression estimate if interp interval > dmax days

        integer ei(1)
        dimension x(1),e(1),xi(1),qq(1),coefs(1)
c
        i=1
        nqe=0
        do j=1,ni
c before first sample
            if(ei(j).le.e(1)) then
            if(e(1)-ei(j).gt.dmax) then
                xi(j)=cest(qq(j),coefs,qmin,qmax,nqe)
            else
                xi(j)=x(1)
            endif
c after last sample
            elseif(ei(j).ge.e(n)) then
            if(ei(j)-e(n).gt.dmax) then
                xi(j)=cest(qq(j),coefs,qmin,qmax,nqe)
            else
                xi(j)=x(n)
            endif
c after next sample
            else
14         if(ei(j).gt.e(i+1)) then
                i=i+1
                goto 14
            endif
            d1=ei(j)-e(i)
            d2=e(i+1)-ei(j)
            if(d1.lt.0..or.d2.lt.0.) then
                write(*,*) 'interpolation failed:',d1,d2
                stop
            endif

c use regression if both dates are more than dmax days from current date
            if(d1.gt.dmax.and.d2.gt.dmax) then
                xi(j)=cest(qq(j),coefs,qmin,qmax,nqe)
            else

```

```

c interpolation
      f=(ei(j)-e(i))/(e(i+1)-e(i))
      xi(j)=(1.-f)*x(i)+f*x(i+1)
c   write(133,13) i,e(i),x(i),x(i+1),f,j,ei(j),xi(j)
c 13   format(i4,3f8.1,f8.3,2i8,3f8.1)
      endif

      endif
      enddo

      return
      end

      function cest(q,coefs,qmin,qmax,nqe)
c regression estimate - cubic equation
      dimension coefs(1)

      cest=0.
      if(q.le.0.) return

c restrict flow to range used in calibration
      qq=amin1(amax1(q,qmin),qmax)
c apply regression
      cest = coefs(1)+coefs(2)*qq
      nqe=nqe+1
      return
      end

c date subroutines
c
c date sequence number = number of days from Jan 1, 1900 (= Lotus 123 date)
c All reals=real*4, All integers = Integer*4
c function          inputs          returns
c idate(iy,im,id)   iy,im,id         date sequence number
c jdate(kkkk)       yymmdd or yyyyymmdd  date sequence number
c kdate(j)          date sequence     yyyyymmdd
c sub yymmdd(d,iy,im,id) yymmdd or yyyyymmdd   iy,im,id
c mday(iy,im)       iy,im            number of days in month
c iyim(j)           date sequence     yyyyymm

      function idate(iy,im,id)

      integer mdy(12)
      DATA MDY/0,31,59,90,120,151,181,212,243,273,304,334/

c returns days from Jan 1, 1900 for input iy,im,id
c year in yy or yyyy format

c jy = year in yyyy
      jy=iy
      if(jy.lt.1900) then
        jy=iy+1900

```

```
c if iy<50 assume turn of century
    if(iy.lt.50) jy=jy+100
    endif

    idate=0
c check for valid date
    if(im.le.0.or.im.gt.12) return
    if(id.lt.1.or.id.gt.mday(jy,im)) return

    idate=mdy(im)+(jy-1900)*365.+id+(jy-1897)/4

c add 1 day if leap year and after february
    if(mod(jy,4).eq.0.and.im.gt.2) idate=idate+1
    return
end

function jdate(j)
c returns date sequence number for input d in yymmdd or yyyyymmdd format
    call yymmdd(j,iy,im,id)
    jdate=idate(iy,im,id)
    return
end

function kdate(id)
c returns date in yyyyymmdd format for input id =
c    number of days from Jan 1, 1900

    kdate=0.
    if(id.le.0) return

c first find year, roughly
    jy=id/367
13    if(idate(jy+1,1,1).le.id) then
        jy=jy+1
        goto 13
    endif

c find month
    do 10 jm=2,12
        if(idate(jy,jm,1).gt.id) goto 12
10    continue
12    jm=jm-1

c find day
    jd=id-idate(jy,jm,1)+1

ccc adjust year
cc    if(jy.gt.99) jy=jy-100
c translate yy to yyyy
    jy=jy+1900

c compute ddate
    kdate=10000*jy+jm*100+jd
    return
end
```

```

subroutine yymdd(date,iy,im,id)

integer*4 date
c convert integer data in yyyymmdd or yymdd to integer year yy, month, day

iy=0
im=0
id=0
iy=jfix(date/10000.)
im=jfix((date-iy*10000.)/100.)
id=jfix(date-iy*10000.-im*100.)
return
end

function mday(iy,im)

c number of days in current month

dimension mdy(12)
data mdy/31,28,31,30,31,30,31,31,30,31,30,31/
mday=0
if(im.gt.12.or.im.lt.1) return
mday=mdy(im)
if(im.eq.2.and.mod(iy,4).eq.0.) mday=mday+1
return
end

function iyim(j)
c j=date sequence number, iyim=yyyymm
iyim=kdate(j)
iyim=iyim/100
return
end

subroutine outlyr(x,y,n,sig,prb,nrej)
c screen for outliers - linear regression y(n) vs. x(n)
c sig = rejection significance level
c returns prb(n) = significance level for rejection
c nrej = number of screened data points
c snedecor and cochran, p. 157-158
dimension x(1),y(1),prb(1)
if(n.le.3) return
sy=0.
sy2=0.
sx=0.
sx2=0.
sxy=0.
nrej=0
nn=n
c first compute regression
do 100 i=1,n
prb(i)=1.
sy=sy+y(i)
sx=sx+x(i)
sy2=sy2+y(i)*y(i)
sx2=sx2+x(i)*x(i)

```

```

        sxy=sxy+x(i)*y(i)
100      continue
        txy=sxy-sx*sy/n
        tx2=sx2-sx*sx/n
        ty2=sy2-sy*sy/n
        tx=sx/n
        ty=sy/n
        b=txy/tx2
        a=ty-b*tx
c find maximum residual
10      rmax=0.
        j=0
        do 200 i=1,n
        if(prb(i).eq.1.) then
            resid=abs(y(i)-b*x(i)-a)
            if(resid.gt.rmax) then
                j=i
                rmax=resid
            endif
        endif
200      continue
        if(j.le.0) return
c compute regression with point j excluded
        nn=nn-1
        if(nn.le.3) return
        sxy=sxy-x(j)*y(j)
        sx2=sx2-x(j)*x(j)
        sy2=sy2-y(j)*y(j)
        sy=sy-y(j)
        sx=sx-x(j)
        txy=sxy-sx*sy/nn
        tx2=sx2-sx*sx/nn
        ty2=sy2-sy*sy/nn
        tx=sx/nn
        ty=sy/nn
        b=txy/tx2
        a=ty-b*tx
        se2=(ty2-b*b*tx2)/(nn-2)
        if(se2.le.0.) return
        se=sqrt(se2)
c test residual
        resid=y(j)-b*x(j)-a
        sr=se*sqrt( 1.+1./nn + (x(j)-tx)**2/tx2 )
        t=resid/sr
        prb(j)=probt(t,nn-2)*(nn+1)
        if(prb(j).gt.sig) return
        nrej=nrej+1
        go to 10
    end

        subroutine xred(ix,y,n)
c replaces x() and y() with running means
c for common values of ix()
c length n
c destroys input vectors
        dimension y(1)
        integer ix(1),ixlast

```

```
        if(n.le.1) return
        ixlast=ix(1)
        m=1
        k=0
        sum=y(1)
        do 10 j=2,n
        if(ix(j).ne.ixlast) then
            k=k+1
            ix(k)=ixlast
            y(k)=sum/m
            ixlast=ix(j)
            m=0
            sum=0.
        endif
        m=m+1
        sum=sum+y(j)
10      continue
        k=k+1
        ix(k)=ixlast
        y(k)=sum/m
        n=k
        return
    end
```

```
        function ratv(x1,x2)
c divide x1 by x2 or set to 0.
        if(x2.ne.0.) then
            ratv=x1/x2
        else
            ratv=0.
        endif
        return
    end
```

```
        function ic8(c1,c2)
c compares strings c1 and c2
c returns 1 if they are identical
c case not significant
        character*8 c1,c2,c3,c4
c
        c3=c1
        call concap(c3,8)
        c4=c2
        call concap(c4,8)

        if(c3.eq.c4) then
            ic8=1
        else
            ic8=0
        endif
        return
    end
```

```
        function match(n,label,char)
c lookup char in label()
        character*8 label(1),char
```

```

        match=0
        do 10 i=1,n
        if(ic8(char,label(i)).gt.0) then
            match=i
            return
        endif
10    continue
        return
        end

        function probt(t,n)
c two-tailed - modified from "some common basic programs"
        probt=1.0
        if(t.eq.0..or.n.le.0) return
        w=t*t
        if (w.lt..5) then
            s=n
            r=1.
            z=1./w
        else
            s=1.
            r=n
            z=w
        endif
20    probt=probg(s,r,z)
        if(w.lt..5) probt=1.-probt
        return
        end

        subroutine concap(string,n)
c convert string to caps
        character*1 string(1)
        do i=1,n
        j=ichar(string(i))
        if(j.gt.96.and.j.lt.123) string(i)=char(j-32)
        enddo
        return
        end

        function probg(s,r,z)
c f statistic
c used with probf and probt
        u=2./9./s
        v=2./9./r
        q=abs((1.-v)*(z**.333333)-1.+ u)/sqrt(v*z**.6666667+u)
        if (r.lt.4) q=q*(1.+08*(q**4)/(r**3))
        probg=.5/(1.+q*(.196854+q*(.115194+q*(3.44e-04+q*.019527))))**4
        return
        end

        SUBROUTINE REGRE(N,X,Y,A,B,R2,SE2,SB)

C        LINEAR REGRESSION OF Y(N) ON X(N)

        DIMENSION X(1),Y(1)
        real*8 Sx,Sx2,Sy,Sy2,SXY
C

```

```

A=0.
B=0.
R2=0.
SE2=0.
SB=0.
IF(N.LE.2) RETURN
SX=0.
SX2=0.
SY=0.
SY2=0.
SXY=0.
DO 10 I=1,N
  SX=SX+X(I)
  SX2=SX2+X(I)**2
  SY=SY+Y(I)
  SY2=SY2+Y(I)**2
  SXY=SXY+Y(I)*X(I)
10 CONTINUE
SX2=(SX2-SX*SX/N)/(N-1)
SY2=(SY2-SY*SY/N)/(N-1)
IF(SX2.LE.0..OR.SY2.LE.0.) RETURN
SXY=(SXY-SX*SY/N)/(N-1)
SX=SX/N
SY=SY/N
R2=SXY*SXY/(SX2*SY2)
B=SXY/SX2
A=SY-B*SX
SE2=amax1((N-1)*SY2*(1.-R2)/(N-2),0.)
ND=N-2
SB=amax1(SE2/((N-1.)*SX2),0.)
SB=SQRT(SB)
TB=ratv(B,SB)
PB=PROBT(TB,ND)
SX2=SQRT(SX2)
SY2=SQRT(SY2)

WRITE(*,101) A,B,R2,SE2,SB,ND,tb,PB,SY,SY2,SX,SX2
101 FORMAT(/' REGRESSION ANALYSIS: '/
* ' INTERCEPT          =',F12.4,
* ' SLOPE                 =',F12.4/
* ' R-SQUARED            =',F12.4,
* ' MEAN SQUARED ERROR  =',F12.4/
* ' STD ERROR OF SLOPE  =',F12.4,
* ' DEGREES OF FREEDOM  =',I12/
* ' T STATISTIC          =',F12.4,
* ' PROBABILITY(>|T|)    =',F12.4/
* ' Y MEAN               =',F12.4,
* ' Y STD DEVIATION      =',F12.4/
* ' X MEAN               =',F12.4,
* ' X STD DEVIATION      =',F12.4)

RETURN
END

```

## Flow Computation Methods Used to Calculate C-139 Basin Flows

**PUMPS** (There are no pumps serving as final outfall structures from the C-139 Basin)

**GATED SPILLWAYS** (There are no gated spillways serving as final outfall structures from the C-139 Basin)

### CULVERTS

Refer to: Fan, A. (October 1985). *A General Program to Compute Flow through Gated Culverts* (Technical Memorandum). West Palm Beach: South Florida Water Management District, West Palm Beach.

The parameters defined here correspond to the variables defined by A. Fan.

Barrel	=	barrel shaped coding, "0" = circular, "1" = box
C	=	orifice flow coefficient due to inlet shape
$C_w$	=	weir flow coefficient (flashboard)
D	=	diameter of pipe culvert or height of box culvert, in feet
$G_h$	=	height of gate, in feet
$G_{type}$	=	gate type coding, "0" = circular, "1" = rectangular, "2" = weir
$G_w$	=	width of gate, in feet
$IN_{el}$	=	inlet invert elevation, in feet m.s.l. or NGVD
K	=	entrance loss coefficient due to shape of gate edge
L	=	length of culvert, in feet
N	=	number of barrels
n	=	Manning's roughness coefficient
$OUT_{el}$	=	outlet invert elevation, in feet m.s.l. or NGVD
r	=	reference elevation for flashboard elevation, in feet m.s.l. or NGVD
$S_{wb}$	=	total side weir length (riser or wing wall), in feet
$S_{we}$	=	side weir crest elevation (riser or wing wall), in feet
W	=	width of box culvert
$W_b$	=	weir length (flashboard)

Culvert
G-136
G342A
G342B
G342C
G342D
G406

## **Permittee Phosphorus Load Determination Based On The Optional Discharge Monitoring Plan**

### **INTRODUCTION**

This Appendix establishes the procedures for calculating a permittee's "Proportional Share" in order to determine eligibility for release from implementation of additional BMPs when the C-139 Basin is out of compliance. For those permittees electing to implement the Optional On-Farm Discharge Monitoring Program in accordance with the requirements of Rules 40E-63.456 and 40E-63.458, a release from implementation of additional BMPs over and above Level I, can be requested when the C-139 Basin is out of compliance. These procedures account for differences between the "C-139 Basin acres" based on the boundaries established in the Everglades Forever Act (373.4592(16) F.S.) and the "Regulated acres" based on requirements to obtain a Works of the District Permit under Part IV of Rule 40E-63.

### **DEFINITIONS**

- (1) "Permit Basin" is a hydrologically distinct piece of land served by one or more outflow locations that collectively represent all of the discharge from that piece of land. A permit may have one or more Permit Basins.
- (2) "Permit Basin Proportional Share" means the phosphorus load assigned to a Permit Basin.
- (3) "Permit Basin Acres" is the total acres included in a Permit Basin.
- (4) "C-139 Basin Acres" is the total acreage within the C-139 Basin Boundaries described in the Everglades Forever Act, section 373.4592(16), F.S.
- (5) "Regulated Acres" is the total acreage within the C-139 Basin required to obtain Works of the District Permits under Part IV of Chapter 40E-63.
- (6) "Permit Basin Acreage Ratio" is the ratio of the Permit Basin Acres to the Regulated Acres.
- (7) "Unit Area Load Target (UAL Target)" in pounds per acre is the model TP load estimate or Target calculated in accordance with Appendix B2 and divided by the C-139 Basin Acres.
- (8) "Unit Area Load Limit (UAL Limit)" in pounds per acre is the upper 90% confidence limit of the Target (Limit) calculated in accordance with Appendix B2 and divided by the C-139 Basin Acres.
- (9) "Regulated Target Load" is the UAL Target times the Regulated Acres.
- (10) "Regulated Limit Load" is the UAL Limit times the Regulated Acres.
- (11) "Permit Basin Target Load" is calculated by multiplying the Regulated Target Load by the Permit Basin Acreage Ratio.
- (12) "Permit Basin Limit Load" is calculated by multiplying the Regulated Limit Load by the Permit Basin Acreage Ratio.
- (13) "Permit Basin Actual Load" is the total load contributed by the Permit Basin Acreage for the water year and is determined from the data submitted by the permittee under the Optional On-Farm Discharge Monitoring Program.

## PERMIT BASIN TARGET AND LIMIT LOAD DETERMINATION

The Permit Basin Proportional Share is determined using the results of the C-139 Basin Compliance model calculations outlined in Appendix B-2. That model estimates C-139 Basin Target and Limit Loads in metric tons. These loads are then divided by the C-139 Basin Acres to determine a Unit Area Load Target (UAL Target) and Unit Area Load Limit (UAL Limit) in metric tons per acre. Since the entire C-139 Basin is not required to obtain a C-139 Basin Works of the District Permit, it is necessary to determine the Target and Limit loads attributed to the Regulated portion of the C-139 Basin. This is done by multiplying the Regulated Acres times the UAL Target and UAL Limit to obtain a Regulated Target Load and Regulated Limit Load. The Permit Basin Acreage Ratio is calculated by dividing the Permit Basin Acres by the Regulated Acres and this value is multiplied by the Regulated Target Load and Regulated Limit Load to obtain the Permit Basin Target Load and Permit Basin Limit Load.

Example:	C-139 Basin Target Load	=		=	100 mtons
	C-139 Basin Limit Load	=		=	200 mtons
	C-139 Basin Acres	=		=	100,000 acres
	UAL Target	=	(100/100,000)	=	0.001 mtons per acre
	UAL Limit	=	(200/100,000)	=	0.002 mtons per acre
	Regulated Acres	=		=	50,000 acres
	Regulated Target Load	=	(0.001 x 50,000)	=	50 mtons
	Regulated Limit Load	=	(0.002 x 50,000)	=	100 mtons
	Permit Basin Acres	=		=	100 acres
	Permit Basin Acreage Ratio	=	(100/100,000)	=	0.001
	Permit Basin Target Load	=	(0.001 x 50)	=	0.05 mtons
	Permit Basin Limit Load	=	(0.001 x 100)	=	0.10 mtons

## PERMIT BASIN PROPORTIONAL SHARE DETERMINATION

Once a Permit Basin Target Load and Permit Basin Limit Load are calculated for a given water year, the Permit Basin Proportional Share is determined by evaluating the cause of the C-139 Basin Out of Compliance condition. If the C-139 Basin is out of compliance as a result of exceeding the Target three years in a row (as described in Appendix B2, page B2-4, "Evaluation of the C-139 Basin for compliance...", paragraph 2) the Permit Basin Proportional Share is the sum of the three Permit Basin Target Loads calculated for the three water years (excluding any suspension due to rainfall outside the model calibration range of 31.06 inches to 71.98 inches). If the C-139 Basin is out of compliance as a result of exceeding the Limit in a single year (as described in Appendix B2, page B2-5, "Evaluation of the C-139 Basin for compliance...", paragraph 3) the Permit Basin Proportional Share is the same as the Permit Basin Limit Load calculated for that water year. If the C-139 Basin is out of compliance due to a combination of exceeding the Target and Limit for three years (e.g. Target, Limit, Target), the Permit Basin Proportional Share is the sum of the three corresponding Permit Basin Target and Permit Basin Limit Loads.

## PERMIT BASIN ACTUAL LOAD DETERMINATION

Individual daily records of flow and phosphorus load submitted by the permittee for the May 1 to April 30 year for which the C-139 Basin is determined to be “out of compliance” will be summarized by the District to determine the “Permit Basin Actual Load”. When the data submitted by the permittee contains missing daily records (flow and/or total phosphorus concentration) a series of steps will be taken to populate those missing records in order to create a complete data set. These steps for each data type (in order of priority for each data type) are as follows:

### MISSING DAILY FLOW ESTIMATION METHODS

1. Use a Rainfall vs. Runoff relationship.
2. Use a maximum calibrated capacity.

### MISSING TOTAL PHOSPHORUS CONCENTRATION ESTIMATION METHODS

1. Use the Total Phosphorus Concentration from an adjacent site if flow conditions and land use were similar during the sampling period.
2. Linear Interpolation of Total Phosphorus Concentrations from adjacent sampling periods (before and after) when the missing time period is less than or equal to 21 days.
3. Use the Annual Flow-Weighted Mean Concentration when the missing time period is greater than 21 days.

### PERCENT LOAD SAMPLED

1. Daily records for estimated phosphorus loads due to missing flow and/or missing total phosphorus concentration will be “flagged” as “Estimated Load”.
2. The Percent Load Sampled is determined by taking the ratio of the sum of the “Estimated Loads” during the water year to the total annual loads for the entire water year. The ratio is subtracted from 1 and multiplied by 100 to convert to a percentage.
3. If the Percent Load Sampled is greater than or equal to 75% then the Permit Basin Actual Load determination can be made.
4. If the Percent Load Sampled is less than 75%, proper implementation of the On-Farm Discharge Monitoring Program was not achieved by the permittee. The lands covered by that Permit Basin are not eligible for a release of implementation of additional BMPs for that water year only.

When all missing data for the water year has been estimated and if the Percent Load Sampled is greater than or equal to 75%, the Permit Basin Actual Load will be calculated as the sum of the daily loads (estimated and actual).

## **RELEASE OF ADDITIONAL BMP IMPLEMENTATION REQUIREMENTS**

If the C-139 Basin is out of compliance as a result of exceeding the Target three years (as described in Appendix B2, page B2-4, "Evaluation of the C-139 Basin for compliance...", paragraph 2) a Release of Additional BMP Implementation Requirements for a Permit Basin will be granted if the sum of the three annual Permit Basin Actual Loads corresponding to the three water years causing the Out of Compliance condition is less than or equal to the Permit Basin Proportional Share. If the C-139 Basin is out of compliance as a result of exceeding the Limit in a single year (as described in Appendix B2, page B2-5, "Evaluation of the C-139 Basin for compliance...", paragraph 3) a Release of Additional BMP Implementation Requirements for a Permit Basin will be granted if the Permit Basin Actual Load for the water year in question is less than or equal to the Permit Basin Proportional Share. If the C-139 Basin is out of compliance as a result of a combination of 3 years of exceeding the Target and Limit (e.g. Target, Limit, Target), a Release of Additional BMP Implementation Requirements for a Permit Basin will be granted if the sum of the three annual Permit Basin Actual Loads corresponding to the three water years causing the Out of Compliance condition is less than or equal to the Permit Basin Proportional Share.

A Release of Additional BMP Implementation Requirements is granted at the Permit Basin level and applies only to that specific Permit Basin. A permittee with multiple Permit Basins may be required to implement additional BMPs on some of their Permit Basins and not on others depending on the results of the calculations. No permittee will be released from doing the minimum required Level I BMPs.

## **PARTICIPATION IN THE OPTIONAL DISCHARGE MONITORING PROGRAM**

A permittee may elect at any time to discontinue participation in the Optional On-Farm Discharge Monitoring Program by submitting an application to modify their permit as outlined in Rule 40E-63.432. If the permittee elects to discontinue participation in the Optional On-Farm Discharge Monitoring Program for a period of time and then elects to resume participation, any monitoring data which may have been collected by the permittee in the interim period will not be allowed to be included for potential Release of Additional BMP Implementation Requirements. The first opportunity for requesting a Release will be after submittal of all data for the first complete water year following resumption of participation in the Optional On-Farm Discharge Monitoring Program. Only data submitted by deadlines specified in the permit will be considered when reviewing the request. If the results of a Quality Assurance Audit conducted under Rule 40E-63.458(1)(b)(8) or an on-site verification of BMP Implementation by District Staff conducted under Appendix B2 indicate the submitted water quantity and quality data may not provide "reasonable assurance that annual water discharge and total phosphorus load are accurately documented", the permittee may not be eligible for a Release of Additional BMP Implementation Requirements for the water year during which the Quality Assurance Audit or on-site verification of BMP Implementation was performed.