PART IV EVERGLADES REGULATORY PROGRAM: Pollutant Source Controls C-139 BASIN

40E-63.400 Purpose and Policy.

(1) This Part 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 section 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 historical annual phosphorus loading levels, 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 Part are as follows:

(a) to implement and continuously improve through adaptive management a BMP program, including modifications to existing water management systems, for reducing and controlling phosphorus discharges from the C-139 Basin;

(b) to provide a water quality monitoring program, performance measures and a compliance methodology to evaluate the effectiveness of the BMP program in reducing phosphorus discharges;

(c) to establish a BMP compliance verification 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 Performance Measure Methodology", dated XXXXXX ####, and

(d) to develop and conduct research and demonstration projects to improve and confirm the effectiveness of BMPs for reducing phosphorus and other constituents that are not being significantly improved by either Stormwater Treatment Areas (STAs) or BMPs.

(4) This Part requires landowners to reduce phosphorus discharges from the C-139 Basin, and in conjunction with the STAs provides a sound basis for the State of Florida's long-term improvement and restoration objectives for the Everglades. It is recognized that achieving phosphorus and other water quality standards will involve an adaptive management approach, whereby best available information and technology are used to identify and implement incremental BMP improvement activities for further phosphorus reduction and water quality improvements.

(5) Unless otherwise provided by this Part 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.

(6) Section 403.067(7)(c)(2), Florida Statutes, authorizes the Florida Department of Agriculture and Consumer Services (FDACS) to develop and adopt by rule BMPs and assist with their implementation.

Statutory Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592, 403.067(7)(c)(2), 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 Part, the Works of the District for the C-139 Basin include water control structures, right-of-way, 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 (north of G-406), 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 Permit pursuant to the provisions of Rule 40E-63.430. The rules shall apply to existing and new discharges within the C-139 Basin.

(3) Landowners in the C-139 Basin share responsibility for achieving phosphorus load limitations in the Basin. 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) "Best Management Practice (BMP)" means a practice or combination of practices determined by the District, in cooperation with the Department of Environmental Protection (Department) and FDACS, based on research, field testing, and expert review, to be the most effective and practicable on-location means, including economic and technological considerations, of improving water quality in agricultural and urban discharges to a level that balances water quality improvements and agricultural productivity.

(2) "BMP Plan" means a combination of BMPs that meets, but is not limited to, the requirements of Rule 40E-63.434 and Rule 40E-63.435, F.A.C., as approved by the District. A BMP Plan shall take into account site-specific conditions, potential phosphorus sources, primary phosphorus species, and transport mechanisms; and demonstrate that a thorough approach to implementation and maintenance will be implemented.

(3) "BMP Equivalent Point" means the numerical value assigned to a BMP as provided in Appendix B1. The points are used for regulatory permit review to ensure a comparable level of effort in BMP implementation among permittees. The points are an indication of relative BMP effectiveness. The points are based

on technical publications, best professional judgment, and cooperative workshops with stakeholders.

(4) “C-139 Basin” means those lands described in the EFA, Section 373.4592(16), F.S. or lands outside those boundaries which discharge to the C-139 Basin or to the canals or structures described in Rule 40E-63.401(1).

(5) "Discharge" means any surface water runoff generated by rainfall, irrigation, or seepage flowing off-site from a land area. Runoff may occur through a structure (pump or gravity) or may flow as uncontrolled discharge from a land area.

(6) “Improved Pasture” means grazing lands that are not in crop rotation and are planted primarily with introduced or domesticated forage species that receive periodic renovation and/or cultural treatments such as tillage, fertilization, mowing, weed control, and irrigation.

(7) “Inactive” means land parcels that are not used for agriculture, urban, commercial, industrial or other development, as determined by the District. It also includes lands in their undeveloped native state (excluding improved and native range pastures). Lands may be determined by the District as temporarily inactive if they are not operated or are vacant due to changes in ownership or land use.

(8) “Change in Land Practice" means any change in the use of a parcel that will affect the permitted BMP Plan or its effectiveness to reduce phosphorus loads in discharges including but not limited to changes in water management, crops or grazing.

(9) “Native Range Pasture” means raw, unimproved, native pasture suitable for grazing and browsing of domestic livestock at least part of the year. Native Ranges include 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 land that has been improved such as by seeding or application of fertilizer and lime, or by drainage improvements such as those described in 40E-63.402(14) and 40E-63.402(17).

(10) “Nutrient Control Practices” means a category of BMPs that minimizes nutrient input and the movement of nutrients off-site by efficient and controlled application of nutrients (e.g., organic and chemical fertilizers, soil amendments, and residuals.) Nutrient Control Practices include implementation of a waste management plan when applicable.

(11) "Parcel" means a contiguous land area identified in the county tax rolls under common ownership.

(12) “Particulate Matter and Sediment Control Practices” means a category of BMPs that minimizes the movement off-site of nutrients in particulate matter and sediments by controlling the amount of eroded soil and plant matter in discharges.

(13) “Permit Basin” means a hydrologically distinct parcel or group of parcels served by one or more discharge structures that collectively represent all of the discharge from that piece of land. A permit may have one or more Permit Basins. The boundaries of a Permit Basin are determined by the District based on available hydrologic data to ensure that all structures from the Permit Basin discharge to only one Sub-basin.

(14) "Structure" means a structural device or hydrologic feature (e.g. pump, culvert, open connection, land surface grading, ditch) that water flows through or across and is ultimately discharged/directed from a hydrologic drainage area to a receiving water body.

(15) “Sub-basin” is a hydrologically distinct piece of land determined by the District based upon District monitoring locations, hydrologic mapping, and permittee submitted information, as represented in Appendix B3 “Permittee Annual Phosphorus Load Determination Based on Sub-basin Monitoring and the Optional Discharge Monitoring Plan”, dated XXXXXX ####.

(16) “Water Management Practices” means a category of BMPs that minimizes the quantity and improves the quality of off-site discharges which carry nutrients downstream. BMPs for water management include discharge and irrigation management practices to reduce runoff.

(17) "Water Management System" means the collection of devices, improvements or natural systems whereby surface waters are conveyed, controlled, impounded, or obstructed.

(18) “Water Quality Improvement Activities” means a combination of modifications to a BMP Plan proposed by a permittee to meet the required total phosphorus reduction requirements of Appendix B3.2. Improvement activities may include revising implementation methods to increase the effectiveness of existing BMPs or implementing additional BMPs. The proposed effectiveness of the improvement activities shall be based on the most current applicable technical references or on a proposed monitoring program to verify the expected effectiveness (Verification Plan.)

(19) “Water Year (WY)” means the 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

The documents listed in subsections (1) through (8) are hereby incorporated by reference, are published by the District, and are available on the District's website (www.sfwmd.gov) or from the District at 3301 Gun Club Road, West Palm Beach, FL, 33406, 561-686-8800, upon request.

(1) South Florida Water Management District Form 1045, XXXXXX ####, entitled, “Application for a C-139 Basin Pollutant Source Control Permit”, and “Guidebook for Preparing an Application for a C-139 Pollutant Source Control Permit”, dated XXXXXX #### (“Guidebook”).

(2) “Appendix B1 – BMP Description and Equivalent Points Reference Table”, dated XXXXXX ####, 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 Performance Measure Methodology", dated XXXXXX ####, 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 XXXXXX ####.
(5) "Appendix B2.2 – Flow Computation Methods Used to Calculate C-139 Basin Flows", dated XXXXXX ####, providing applicable mathematical methods for calculating flow rates through water management structures.
(6) "Appendix B3.1 – Permittee Annual Phosphorus Load Determination Based on Sub-basin Monitoring and the Optional Discharge Monitoring Plan", dated XXXXXX ####, 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 water quality improvement activities when the C-139 Basin is out of compliance.
(7) "Appendix B3.2 – Criteria for Required Phosphorus Reductions", dated XXXXXX ####, providing criteria and setting forth the procedures for modifying BMP Plans if the Basin is out of compliance.
(8) "Flow Calibration Guidelines Developed in Support of Chapter 40E-63, F.A.C. Everglades BMP Permit Program." Amended July 24, 1997.

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 all applications for permits issued under Chapter 40E-63, Florida Administrative Code, including the addition of special conditions as necessary to implement the requirements of Chapter 40E-63, Florida Administrative Code. and the Everglades Forever Act, Section 373.4592, Florida Statutes, and other applicable provisions of 373 and 403 Florida Statutes, except when the staff recommendation is for denial of such applications.
(2) All recommendations for denial of applications 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 the 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 within the C-139 Basin are hereby granted to the landowners of 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-63.442(1)(f), (g), (h), (i), (j), (k), (l), (p), (q), (r), and (s), F.A.C., and the conditions specified below:

(a) The parcel is not part of a Chapter 298 Florida Statutes water control district or drainage district, or any other entity operating a central drainage system already permitted under this Chapter;

(b) The property is inactive, or urban commercial or urban industrial and less than 5 acres in size, or residential and less than 40 acres in size, and

(c) The following BMPs are implemented by the landowner and the property must be made available for inspection by District staff or other delegated agents within 14 days after written notice:

1. For turf and landscape areas, phosphorus is only applied to meet initial establishment and growth needs (fertilizer composition less than 2% for an application rate not to exceed 0.25 lbs P_2O_5/1000 ft^2 per application nor exceed 0.50 lbs P_2O_5/1,000 ft^2 per year, or to correct phosphorus deficiencies based on soil or tissue testing).
2. Fertilizer or other soil amendments containing phosphorus are not applied within 10 feet of any pond, stream, lake, water course, or any designated wetland.
3. Spill prevention practices for nutrients are implemented, and
4. Runoff is managed in accordance with surface water or environmental resource permits, if applicable.

(2) No Notice General Permits 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) No Notice General Permits granted upon adoption of Chapter 40E-63, Part IV, F.A.C., 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.

(4) Landowners meeting the foregoing shall not be obligated to submit a permit application or application fee.

(5) Notwithstanding the foregoing, District shall require the submission of applications for General Permits from No Notice General Permit holders if the District determines that the property exceeds its proportional share of phosphorus loading based on representative water quality data for the property, as determined in Appendix B3.1. Notice of the requirement shall be provided to parcel owners in writing.

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. For entities required to obtain a General Permit, a BMP Plan, as described in rules 40E-63.434 and 40E-63.435, as applicable, shall be submitted to the

District within 30 days after the effective date of this revision of Part IV of this Chapter. Failure to provide a complete BMP Plan within 30 days from the effective date of this Part IV of Chapter 40E-63, F.A.C., shall not justify a corresponding delay for full implementation of the approved BMP Plan as described in Rule 40E-63.420(2) and will result in enforcement action pursuant to rule 40E-63.460 F.A.C.

2. The approved BMP Plan shall be fully implemented within 90 days of the effective date of this revision of Part IV of this Chapter unless the District authorizes a different implementation schedule.
3. In order to ensure that the schedule mandated by Rule 40E-63.420(2) is met, the District may pre-approve a BMP Plan by letter, as long as the proposed BMP Plan is complete and meets the criteria required under rules 40E-63.434 or 40E-63.435, as applicable. The District will attempt to make a final determination on the BMP Plan within 10 days of receipt of a complete plan and the applicant shall begin implementation in accordance with the approved implementation schedule.

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 General Permit Applications.

(1) A General Permit is required for parcels of land that connect to or make use of the Works of the District within the C-139 Basin that have not been issued a waiver pursuant to rule 40E-63.410 or do not qualify for a No Notice General Permit pursuant to rule 40E-63.415.

(2) Within 45 days after this revised Part IV of Chapter 40E-63, F.A.C. becomes effective, applications for new General Permits or General Permit Renewals shall be submitted to the District. Applicants shall use Form 1045, entitled "Application for a C-139 Basin Pollutant Source Control Permit Permit", or the equivalent electronic permitting application (e-permitting) tool, with all required supporting documentation.

(2) Landowners shall submit applications for General Permits. A lessee or operator shall submit an application with the landowner as a co-applicant provided the lease (or equivalent contract) is for no less than five years, it is in writing and reasonable assurance is provided that the lessee/operator has the legal and financial capability of implementing and complying with the BMP Plan and other permit conditions.

(3) General Permit applications shall include the following:

(a) Date, signature, title and authority of the person, persons or entity submitting the application;

(b) For each applicant, information that demonstrates that the applicant possesses the legal and financial authority and ability to carry out all acts necessary to implement the terms and conditions of the permit, including, at a minimum:

1. For individual applicants, recorded deeds, contracts, leases, property tax record of ownership, or other evidence of ownership or authority are required.

2. For co-applicants, a description of the legally responsible entity or cooperating group of entities together with copies of documents demonstrating its legal authority, such as enabling legislation and articles of incorporation; completed and signed Certificates of Participation indicating the individual applicant's consent and intent to participate in the General Permit; and written contracts or agreements with co-applicants indicating their consent and agreement to comply with the permit and specifying the terms of participation, where applicable.

(c) A clear delineation of the boundaries and acreage contained in the permit application, including a map correlated with a list of all parcel owners and corresponding county tax identification numbers, and operators or lessees associated with the acreage contained in the application. The delineation should also include drainage features depicting the hydrologic drainage area, general direction of flow, inflow points, and discharge points off site for delineation of Permit Basins, as defined in Rule 40E-63.402(13).

(d) A list of all existing and pending District permits for the application area and their status.

(e) A proposed BMP Plan in accordance with Rule 40E-63.434 or 40E-63.435, F.A.C., as applicable.

(f) For General Permit applications encompassing Water Management Systems that are owned, are operated, or serve multiple entities, whether they are co-applicants or not under a single permit application, an executed legally binding written agreement or contract regarding construction, use, maintenance and operational criteria, and BMP implementation requirements for the system shall be provided. Specifically, the written agreement or contract shall identify the entity responsible for operation of the system (e.g., a shared canal or off-site discharge structure) and the responsibilities of the other participating entities.

(4) If activities proposed in the permit application submitted pursuant to Part IV of this Chapter 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-63.434 BMP Plans.

In order to obtain a General Permit, applicants shall submit a proposed BMP Plan for each crop or land use within each Permit Basin. If a Water Management System is share by multiple operating entities, each entity shall submit a separate BMP Plan for their land but the water management operational plan shall be consistent.
The BMP Plan shall include the following:

(1) A description of a BMP Plan, including specific methods for implementation and maintenance, based on the BMPs described in Appendix B1 of Chapter 40E-63, F.A.C. To ensure that BMP plans have a comparable level of effort among permittees, the BMP Plan shall propose a minimum of 35 BMP equivalent points.

(2) Of the 35 BMP equivalent points, a minimum of 20 BMP equivalent points shall meet the following criteria:
   (a) A minimum of 10 BMP equivalent points in Nutrient Control Practices.
   (b) A minimum of 5 BMP equivalent points in Water Management Practices, unless the lands are native or do not have drainage improvements. If lands are native or do not have drainage improvements, BMPs other than Water Management Practices can provide equivalent points towards meeting this criterion.
   (c) A minimum of 5 BMP equivalent points in Particulate Matter and Sediment Control Practices. Pasture management BMPs can provide equivalent points towards this category, if applicable.

(3) An education and training program for the management and operation staff responsible for implementing and monitoring the approved BMP Plan. The training may be provided in-house or arranged by the permittee or other educational resources;

(4) A description of records and documentation to be maintained on-site to verify BMP implementation, maintenance, and training, 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”.

(5) A proposed implementation schedule. Except for BMP Plans required immediately upon revision of Part IV of this Chapter as described under 40E-63.420, F.A.C., implementation of new BMPs shall be completed within 90 days after the date of District approval. Alternate implementation schedules may be considered by the District if the applicant demonstrates through reasonable assurance that an equivalent level of phosphorus source control is provided.

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-63.435 Alternative BMP Plans.

Applicants who propose to satisfy the water quality requirements of this Part by employing a BMP Plan or water quality improvement activities other than those described in 40E-63.434(1) and (2), F.A.C., may seek approval for an equivalent alternative through the District permit process. The applicant shall provide reasonable assurance, through the information required below and the requirements indicated in 40E-63.434(3) and (4), F.A.C., that the alternative contains the equivalent or greater phosphorus reduction effectiveness of a 35-point BMP plan. In order to seek approval of an alternative BMP Plan, applicants must submit the information specified for the applicable alternative as part of the permit application process.

(1) Alternative Type BMP. If an application proposes BMPs not listed in Appendix B1 of Chapter 40E-63, F.A.C., as required in 40E-63.434(1), the application shall also include the following information for District approval:
   (a) A description of the Best Management Practice rationale for the BMP selected;
   (b) a detailed explanation of the proposed BMP;
   (c) a schedule for implementation of the BMP;
   (d) sample documentation of the BMP implementation, how the BMP will be verified;
   (e) technical basis for the reduction effectiveness of the proposed BMP. The applicant may be required to demonstrate effectiveness through a proposed monitoring program or through appropriate scientific data. If approved, the District will determine the appropriate BMP equivalent point credit consistent with Appendix B1.

(2) Alternative BMP Points per Category. If the proposed BMP Plan does not meet the minimum number of equivalent points per BMP category as required in 40E-63.434(2), the application shall include a site assessment demonstrating that an alternative BMP Plan will provide an equivalent or greater reduction effectiveness using the standard approach.

   The site assessment shall evaluate phosphorus imports and transport in discharges; current BMPs and implementation methods; other practices not covered under BMPs (e.g., grazing, irrigation, nutrient and water management); and representative water quality and soil data. Water quality data that can be used for the assessment include those available from the District Sub-basin or synoptic (grab) monitoring programs, or properly collected grab samples or using field kits of adequate precision by the applicant.

(3) Alternative BMP Demonstration Project. If a demonstration project is proposed to meet the BMP implementation requirements of 40E-63.434(2), a proposed project scope of work shall be submitted for District review and approval based on the following criteria:
   (a) The scope of eligible projects shall include, at a minimum, the demonstration or research hypothesis, a description of implementation, the technical basis and scientific methods that will be employed, the performance indicators that will be measured such as water quality, water quantity, soil testing, or as applicable, the progress and final reports that will be produced to verify progress and results, and a schedule that details the beginning date, critical milestones and ending date of the project.
   (b) The 35 BMP equivalent point requirement shall be met in the Permit Basin where the project is proposed. The proposed demonstration shall account for no more than 20 BMP equivalent points as approved by the District. The remaining 15 BMP equivalent points shall include 10 BMP equivalent points in the Nutrient Control Practices category and 5 BMP Equivalent Points in the Water Management Practices category.

(c) The proposed BMP equivalent points for the demonstration project will only be considered for the period of project implementation, the Permit Basin where the project is located, and for the crops or land uses to which the project applies.

(d) BMP equivalent points shall be initially determined by the District prior to issuance of a permit based on the BMP equivalent points established in Appendix B1 of this Chapter. Additional BMP equivalent points may be approved by the District, at the District's discretion, if the applicant provides reasonable assurance through plans, test results, water quality data or other information, that the BMP project will demonstrate increases in phosphorus removal efficiency in comparison to standard BMP implementation methods.

(e) Once the demonstration project is complete and a final report is submitted in accordance with the approved scope, the permittee shall submit a Letter Modification application requesting that the BMP Plan be modified to incorporate the BMP that was successfully developed under the project. The application shall include the information described under rules 40E-63.430, 40E-63.434, and 40E-63.435, F.A.C., as applicable, and shall describe how the report recommendations for BMP implementation will apply to the applicable crops or land uses for District review. The District shall review the BMP equivalent points initially assigned and may adjust them based on the reported phosphorus reduction levels and approved methods for implementation of the proposed BMP. If the permittee decides that the BMP resulting from the demonstration project is not to be proposed for adoption, the permittee is required to submit a permit modification proposing a BMP Plan, as described in rules 40E-63.434 or 40E-63.435, F.A.C., as applicable. The application for modification of the BMP Plan shall be submitted no later than 30 days after the project completion date pursuant to the District-approved scope.

40E-63.436 Early Implementation of Water Quality Improvement Activities.

Applicants may qualify for deferral from Water Quality Improvement Activities if the C-139 Basin is determined out of compliance in the future. An applicant may request approval for Early Implementation by opting to submit a proposal for voluntary implementation of additional BMPs (Early BMPs), or a voluntary BMP Demonstration Project that includes a BMP performance verification plan, for District review as follows:

(1) Either proposal shall be submitted together with an application for a new permit, permit renewal, or as a Letter Modification.

(a) For Optional Early BMPs the application shall provide information for meeting the criteria below:

1. A description of the BMP or group of BMPs (Early BMPs) that are proposed in addition to those required by Rule at the time of application (Section 40E-63.434 or 40-63E.460(3), F.A.C., as applicable.) The proposal shall include

the specific methods for implementation and maintenance of the Early BMPs.

2. The proposal shall provide reasonable assurance through technical documentation, and the requirements indicated in 40E-63.434(3) and (4), F.A.C. that the combined effect of the optional Early BMPs and Rule-required BMPs will ensure a phosphorus loading reduction for the identified Permit Basin or Parcels sufficient for the C-139 Basin to consistently achieve compliance with the Target, as described in Appendix B2. The District will review whether the proposed loading reduction levels would be conducive to meeting the Target UAL based on the most recent five years of water quality data.
3. The proposal shall include an implementation schedule. To qualify for deferral, District-approved Early BMPs shall be fully implemented during the Water Year for which the deferral can be applied.

(b) For voluntary Demonstration Projects the application shall propose a BMP demonstration project that meets the following:
   1. Complies with the criteria described under 40E-63.435(3),
   2. Proposes estimated phosphorus reductions based on available technical references, and
   3. Proposes a Verification Plan through a discharge monitoring program to confirm and quantify the estimated phosphorus reductions. The Verification Plan shall meet the criteria described in 40E-63.460(4).

(2) Upon District approval under this Rule of the voluntary Early BMP implementation project or Demonstration Project with a Verification Plan, the permittee will be subject to the BMP reporting and verification requirements of this Chapter for those voluntary initiatives, as described in permit conditions. Permittees cannot be deemed out of compliance for failure to implement the early initiatives, however, the District will deem the permittee unable to claim a deferral if:
   1. Reporting and verification requirements for the voluntary Early Implementation projects are not met, as determined by the District.
   2. The permittee is not in compliance with the BMP Plan required by the permit.

(3) Early Implementation plans that are approved to provide deferral from additional Water Quality Improvement Activities for a Water Year, shall become permit obligations and lose their optional status.

40E-63.437 Permit Modifications, Transfers and Renewals.

(1) Applicants for permit modifications, transfers and renewals must use the appropriate Sections of Form 1045, or equivalent electronic permitting application (e-permitting) tool.

(2) Modifications and Letter Modifications: Letter modifications are applicable for

requesting approval for demonstration or confirmatory verification projects for phosphorus reduction under rule 40E-63.435, for early implementation of water quality improvement activities under rule 40E-63.436, for implementing or modifying a voluntary Discharge Monitoring Plan under rule 40E-63.462, and for water quality improvement activities in accordance with rules 40E-63.460(3) or (4). Applications for modifications are applicable to any other changes except for clerical changes as indicated in subsection 40E-63.440(3).

A permittee may apply for a modification or a letter modification to an existing General 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 or letter modification will not be processed as a complete application if the permit is not in compliance with applicable permit conditions, unless the permit modification is required to bring the permit into compliance. Modifications and letter modifications will be evaluated based on the criteria in effect at the time that the application to modify is submitted. Applications for permit modifications and letter modifications shall be subject to the following requirements and limitations:

(a) Applications to modify an existing 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.

(3) Transfers: A permittee shall notify the District within 90 days after 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 an application for permit transfer is not received within 90 days after 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) The District will transfer the permit only if the land practice, total acreage, and BMP Plan remain the same and the permittee is in compliance with all conditions of the permit.

(b) All conditions of the existing permit will remain applicable to the new permittee.

(c) Any other changes or additions will require a permit modification in accordance with subsection 40E-63.437(2), F.A.C.

(4) Renewal: 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) If the permittee allows the permit to expire prior to applying for a permit renewal, an application for a new permit shall be required.

(5) Permit duration will not be affected by permit transfers or modifications of existing permits issued pursuant to this Part.

Specific Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592 FS. Law Implemented 373.085, 373.4592 FS. History–New 1-24-02, Amended 6-20-07.

40E-63.438 Permit Duration.

Pursuant to the EFA, Section 373.4592(4)(f)2, F.S., permit renewals issued pursuant to this Part are valid for a 5-year term, beginning 90 days after the effective date of this revised Rule with subsequent permit renewals effective for 5-year periods from the previous expiration date, unless:

(1) The permit is automatically terminated at the expiration of a co-permittees's lease or contract that authorized the permittee to control operations (and permit compliance) on the permitted land, unless the lease or contract is extended for a minimum of 5 years or the permit is modified to remove the lessee from the permit; or

(2) The permit is otherwise modified by enforcement actions pursuant to subsection 40E-63.460(1), F.A.C.; or

(3) The permit is otherwise renewed pursuant to subsection 40E-63.437(4), F.A.C.; or

(4) An application for a permit renewal has been filed by a permittee on a timely basis prior to the expiration date of a previously-issued permit concerning those lands, 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.

All previously issued permits shall expire 90 days after the effective date of this revision of Part IV of this Chapter unless a permit application for renewal or for a new permit has been received by the District within that period.

Specific Authority 373.044, 373.083, 373.085, 373.086, 373.113, 373.4592 FS. Law Implemented 373.085, 373.4592 FS. History–New 1-24-02, Amended 6-20-07.

40E-63.440 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	Letter Modification	Transfer
General Permit	$250	$250	$100	$ 0	$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 BMP 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-63.442 Limiting Conditions for General Permits in the C-139 Basin.

(1) All of the following standard limiting conditions (a) through (m) shall be attached to all General Permits:
   (a) The permittee shall implement all elements and requirements of the approved BMP Plan according to the approved schedule, including documentation of implementation, operation, and rationale where applicable. At no time shall BMP implementation be less than the required 35 BMP equivalent points using the criteria in Rules 40E-63.434 or 40E-63.435, as applicable.
   (b) Each applicant to which a General Permit is issued is a co-permittee and is jointly and severally liable for implementing the requirements of the General Permit.
   (c) The permittee shall submit to the District an annual report certifying BMP implementation in accordance with the permit. The report is due February 1 of each year. Failure to submit the report by February 1, will result in onsite verification of BMP implementation by District staff and the requirement for the permittee to submit a detailed written report with documentation of implementation of each BMP in the approved BMP Plan for the previous calendar year. Failure to submit the required annual report by April 30 of each year may result in notification of revocation of the General Permit. The notification will be sent by certified mail and indicate that the permit will be revoked within 30 days after the date of the certified mailing unless the annual report is received within those 30 days. If the permit is revoked, the permittee shall be required to apply for a new General Permit and shall be subject to enforcement under Rule 40E-63.460(1), F.A.C. The new permit will include special conditions requiring that documentation certifying BMP implementation is submitted quarterly, at a minimum.
   (d) 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.

(e) The permittee shall notify the District in writing within 30 days after any changes in Permit Basin acreage.

(f) The permittee shall notify the District in writing within 90 days of any transfer, sale or conveyance of land or works described in the permit.

(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 or 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 system must be effectively operated and maintained in accordance with the Environmental Resource/Surface Water Management Permit.

(k) The permittee shall request District approval in advance of conducting any Changes in Land Practice, as described in Rule 40E-63.402(8), or changes in water management, in particular, changes in the direction of runoff discharges and patterns that may affect off-site discharge locations or phosphorus loading, flow, and flow-weighted phosphorus concentration.

(l) The permitted discharge shall not otherwise be harmful, or adversely affect proper use and operation of the Works of the District.

(m) The C-139 Basin is required to achieve compliance with the phosphorus load limitation requirement and performance measures as specified in Appendix B2 (C-139 Basin Performance Measure Methodology) of Chapter 40E-63, Florida Administrative Code.

(n) Legal entities or groups of cooperating owners or operators (co-permittees) responsible for implementing a General Permit shall remain legally and financially capable of performing their responsibilities required by the permits issued pursuant to this Section.

(o) If the District determines that any permittee in a General Permit is not complying with the specific terms and conditions of the General Permit or the water quality performance measures (including proportional share, in accordance with Chapter 40E-63, Florida Administrative Code) the District will institute enforcement proceedings against the permittee, any co-permittees, or both as applicable pursuant to Rules 40E-63.450 and 40E-63.460, F.A.C.

(p) Authorizations from other agencies for disposal or application of wastewater residuals, animal manure, solid waste, fill material, or other materials containing phosphorus within the C-139 Basin, disposal and application shall not relieve permittees from complying with the provisions of this Rule. Water quality monitoring data may be required by the District to demonstrate no potential impacts on phosphorus loading.

(q) The permitted discharge shall not cause adverse water quality impacts of receiving water and adjacent lands regulated by Section 373, FS.

(r) The permitted discharge shall not cause adverse environmental impacts.

(s) The permitted discharge shall be consistent with State Water Policy, Chapter 62-40, F.A.C.

(2) General permits shall be subject to other reasonable conditions as necessary to assure that proposed BMP and Discharge Monitoring Plans meet the conditions for issuance in Rules 40E-63.430 and 40E-63.434, F.A.C.

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 C-139 Basin Compliance.

(1) If the C-139 Basin is determined to not meet the performance measures developed in accordance with Appendix B2, "C-139 Basin Performance Measure Methodology", of Chapter 40E-63, F.A.C., the basin as a whole will be deemed out of compliance with the water quality requirements of this Part.

(2) If the C-139 Basin is out of compliance, water quality improvement activities will be required for individual Permit Basins to achieve their proportional share of the basin-wide loading phosphorus load, as indicated in Appendices B3.1, "Permittee Annual Phosphorus Load Determination based on Sub-basin Monitoring and the Optional Discharge Monitoring program" and B3.2 "Criteria for Required Phosphorus Reductions." Exceptions are provided below in sub-section (3).

(3) The need for Water Quality Improvement Activities in a Permit Basin will be deferred for one Water Year if the District determines that one or more of following conditions exist.

(a) The Permit Basin is located in a Sub-basin that is determined to not exceed its proportional share of the basin-wide loading based on District-collected data for the Sub-basin or, if applicable, individual farm monitoring results are determined not to exceed its proportional share in accordance with Appendix B3.1,

(b) District approved Early BMPs, as described in 40E-63.436(1), were fully implemented in the Permit Basin during the Water Year that the C-139 Basin was deemed out of compliance, providing deferral only to the parcels where the Early BMPs apply,

(c) District approved BMP Demonstration Projects including a Verification Plan, as described in 40E-63.436(2) and Appendix B3.2, were conducted within the Permit Basin during the Water Year that the Basin was deemed out of compliance, providing deferral only to the land uses or crops to which the project applies,

(d) The Permit Basin, or portion thereof, has been issued a determination of impracticability as described in 40E-63.460(6), providing deferral to the lands where the determination applies,

(e) The compliance determination is for a Water Year prior to the second Water Year of required full implementation of approved BMP Plans in that Sub-basin and, if applicable, Permit Basin, or

(f) The permittee was required to implement Water Quality Improvement Activities within the previous four-year period from the date of the notice that the C-139 Basin is deemed out of compliance with the water quality requirements of this Part.

(4) If the C-139 Basin is deemed out of compliance, the District will evaluate BMP program performance at the Sub-basin level in accordance with Appendix B3.1 (Permittee Annual Phosphorus Load Determination Based on Sub-basin Monitoring and the Optional Discharge Monitoring Plan) of Chapter 40E-63, F.A.C.

(5) For each Sub-basin that is either determined to exceed its proportional share of basin-wide loading or for which no determination can be made, the District will determine annual phosphorus discharge performance for farms that have an individual discharge monitoring plan in accordance with Appendix B3.1.

(6) The District will provide written notice to the C-139 Basin permittees on the C-139 Basin compliance results (Appendix B2), and the Sub-basin and permittee-level performance results (Appendix B3.1) and whether Water Quality Improvement Activities are required. The District shall attempt to transmit the written notices by August of any year the determination is made. The notices shall describe permittees' required actions for proposing Water Quality Improvement Activities based on these assessments. These actions are described under 40E-63.460(2).

(7) In accordance with Appendix B2 the District shall continue collecting monitoring data from the C-139 Basin for the purpose of determining compliance.

(8) Based on the date of this Rule amendment, the first complete Water Year (WY) of compliance determination that may result in deferral from BMP improvement shall not be earlier than for WY 2013, that is, for data collected from May 1, 2012 to April 30, 2013.

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 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 BMP implementation, documentation, and operation by permittees in the C-139 Basin immediately upon the effective date of this Part IV of Chapter 40E-63, F.A.C.

(b) All permittees 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.

(d) Compliance with the permit includes timely submittal and implementation of any additional water quality improvement activities if required by Rule. Delay by permittees in fulfilling the BMP implementation requirements will not extend the timeline for determining the need for additional Water Quality Improvement Activities at the Sub-basin or Permit Basin level.

(2) If the C-139 Basin is determined to be out of compliance pursuant to 40E-63.450, the permittee shall propose Water Quality Improvement Activities in accordance with the following:

(a) The permittee shall submit a letter modification application for the District's consideration, within 120 days of the District's transmittal of the notice that the C-139 Basin is not in compliance. The submittal shall include the section entitled "Water Quality Improvement Activities" of Form 1045 dated XXXXXX ####.

(b) The submittal shall include a proposal for Water Quality Improvement Activities along with the estimated phosphorus reductions to be achieved in accordance with 40E-63.460(3), F.A.C., or a Verification Plan in accordance with 40E-63.460(4), F.A.C. The phosphorus reductions shall be the minimum levels necessary to meet the Permit Basin's proportional share of required TP reductions as determined by the District (Appendix B3.1 and B3.2). The proposal shall include an implementation schedule to ensure that any proposed Water Quality Improvement Activities are in effect as soon as feasible and no later than 18 months after the District's transmittal of the notice that the C-139 Basin is not in compliance. An implementation schedule will be approved by the District based on the scope of the proposed activities.

(3) All Water Quality Improvement Activities proposals shall meet the following criteria for District review and approval:

(a) Include a detailed description of the proposed improvements to the BMP Plan in comparison to the current implementation practices. The basis for the proposed BMP improvements shall consider pre-improvement conditions (e.g., current levels of BMP implementation, pre-BMP improvement water quality data) and the parameters affecting BMP performance and TP load (site-specific conditions, phosphorus speciation, flow). If the proposal includes implementation of additional BMPs not listed in Appendix B1 of Chapter 40E-63, F.A.C., the proposal shall also include the information indicated in 40E-63.435(1). Note that in contrast with BMP Plans, additional improvements to the BMP Plan do not need to be proposed for each land use or crop within a hydrologic drainage area if it is demonstrated that focus on selected land uses, crops, or acreage will be sufficient to achieve the Required TP Reduction of the basin wide load.

(b) Indicate the expected range of percent TP removal efficiency resulting from the proposal as follows:

a. The expected or assumed range of percent TP removal efficiency shall equal or exceed the percent Required TP Reduction applicable to the Farm Basin.

b. The expected or assumed TP removal efficiency shall be based on data from representative BMP research and demonstration projects, with consideration of Permit Basin specific conditions such as indentified when a site-assessment is completed pursuant to 40E-63.435(2).

c. Each proposal shall include a detailed description of the technical basis and copies of documents as applicable. All proposed TP reductions shall be based on scientific studies, calibrated models, or data collection representative of the C-139 Basin for District approval.

(c) If the permittee is unable to demonstrate that the Required TP Reductions can be achieved in accordance with 2 above, a Verification Plan shall be required.

(d) If the proposal includes a Verification Plan, it shall meet the criteria for approval described below. The proposal and monitoring plan shall aim to demonstrate the ability to achieve the TP Reduction levels that would be necessary to meet the overall Required TP Reduction levels.

(4) If a permittee opts to or is required to conduct a monitoring program to confirm that Required TP Reductions will be achieved, permittees shall propose a Verification Plan in addition to the proposal for improvements to the BMP Plan or water quality improvement activities. All Verification Plan proposals shall meet the following criteria for District review and approval:

(a) The description of who will be responsible for project implementation.

(b) The proposed reporting procedures during and at completion of the project.

(c) A Final report at completion that describes how the recommendations for BMP implementation will be applicable to the crops or land uses to meet the Required TP Reduction, or

(d) The tools that will be used to verify TP reduction levels such as water quality and quantity monitoring to determine TP loading pre- and post-BMP improvement and to estimate TP reduction efficiency. TP and phosphorus speciation data collected at the District Sub-basin monitoring locations may serve as representative monitoring.

(e) The parameters under which TP reduction levels will be measured and verified so that findings are repeatable and applicable within the C-139 Basin conditions (climatic conditions, soils, geology, etc.)

(f) A schedule not to exceed three calendar years from the date of District approval of the proposal. Once the confirmatory verification is completed and a final report is submitted in accordance with the approved scope, the permittee shall either submit a Letter Modification application in accordance with section 40E-63.430, .434, and .435, to either:

a. modify the existing BMP Plan to incorporate changes based on the final report recommendations for the District's consideration, or

b. propose other Water Quality Improvement Activities consistent with the requirements of this rule.

(5) The District shall repeat the procedures specified in Rule 40E-63.450, F.A.C., above as many times as required to achieve C-139 Basin compliance, and seek corrective action as appropriate against entities within the C-139 Basin, as applicable.

(6) Permittees may elect to demonstrate that Water Quality Improvement Activities are impracticable. Any such request for determination of impracticability must be submitted to the District under a permit modification application. For the District to consider the application for approval, the submittal shall:

a) Specify all of the activities that were implemented previously and provide evidence to show that no additional activities or refinements for the reduction of phosphorus can be reasonably accomplished at the site or sites of operation.

b) Propose the expected amount of phosphorus discharge in comparison to the C-139 Basin's phosphorus load targets and limits, calculated in accordance with Appendices B3.1 and B3.2 for the range of historic rainfall conditions in accordance with Appendix B2. No increasing trend in phosphorus from the property, as determined by the District, will be allowed under any scenario. The District will review the proposed performance level in reference to available representative historic data.

c) Propose a discharge monitoring plan in accordance with rule 40E-63.462 to verify that the proposed performance level is met. In the event that the farm configuration is not conducive to a discharge monitoring program, the District may consider requests for the use of alternate representative locations or monitoring for concentration only. Upon District approval of the monitoring plan, special limiting conditions (such as applicable conditions from rule 40E-63.464) will be incorporated to the permit.

d) Such requests shall apply only to the Permit Basin or portion thereof (e.g., land use, crop or acreage) which demonstrated further activities are impracticable.

e) The District shall send a copy of each such request to the Department of Environmental Protection.

f) Determinations of impracticability will be valid until the next permit renewal cycle. Permittees shall re-apply for a permit in accordance with section 40E-63.437. A previously permitted impracticability status shall not be automatically renewed. The District will review each request as a new request. All requests shall be reviewed to verify that there have been no increasing trends in phosphorus discharges in the previous 5 years and that the proposed levels of BMP implementation are in accordance with improved BMP implementation techniques based on the latest technical information, as described in Appendix B3.2.

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

40E-63.462 Optional Discharge Monitoring Program.

(1) Permittees may elect to participate in an optional discharge monitoring program in addition to implementing an approved BMP Plan, and be subject to:

(a) alternative, site-specific evaluations of compliance with phosphorus load targets and limits for the areas represented by the monitoring plan when the C-139 Basin is collectively determined to be out of compliance in

accordance with Chapter 40E-63, F.A.C., Appendix B-2, "C-139 Basin Compliance Methodology"; and

(b) Compliance with permit conditions in accordance with Rule 40E-63.464, F.A.C.

(2) Permittees desiring to implement an optional discharge monitoring program must provide a letter modification application 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 "Flow Calibration Guidelines Developed in Support of Chapter 40E-63, F.A.C. Everglades BMP Permit Program" generally provides reasonable assurance that methods to measure water quantity will be reasonably accurate, however, 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-63.464 Limiting Conditions for the Optional Discharge Monitoring Program

For those applicants proposing to implement the optional discharge monitoring program, the District-approved monitoring plan will be incorporated into an amended General Permit and the following limiting conditions shall be met in addition to the conditions indicated in 40E-63.442, F.A.C. These limiting conditions will be attached to the General Permit.

(1) The discharge (quantity and quality) monitoring plan shall provide reasonable assurance that the annual water discharge and total phosphorus load are accurately documented.

(2) The approved discharge monitoring plan shall be incorporated by reference and made part of this permit;

(3) The equipment shall be installed and the monitoring shall start no later than 30 days after the permit issuance date. Within 60 days after 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 from the monitored area 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 no later than 60 days from the last day of the sampling period being reported. Water quantity and quality data shall be submitted to the District in an approved electronic format on a monthly basis.

(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.

(12) During periods of off-site discharge, water quality composite samples shall be collected by automatic sampler, preserved, and the composite sample shall be: a) removed from the sample collection site and delivered to the laboratory no later than 21 days from the time the first individual sample was taken and, b) analyzed for total phosphorus no later than 28 days from the time the first individual sample was taken.

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

BMP Description and Equivalent Points Reference Table

A BMP Plan meeting the requirements of Rule 40E-63.434 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 during the Water Year across each land use (crop) area. The Table below provides an array of BMPs available for selection by permittees within the C-139 Basin. However, permittees may propose alternative BMP Plans as described in 40E-63.435, F.A.C.

BMP	PTS	DESCRIPTION
NUTRIENT CONTROL PRACTICES		
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) Pasture – Also includes restricted placement of stored feed and housekeeping to prevent spillage near storage and transfer areas (feed and molasses).
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 2 ½ 5	Avoid excess application of P by determining plant nutrient requirements for adjustments during next growing season (crop specific). Pastures with Bahia grass – Plant tissue analysis along with soil test is required to make nutrient application recommendation. Citrus – Results are applied to the 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), or recommendations based on the analysis of optimum economic crop response to added P specific to the soil and crop. The disposal or application of waste water residuals, animal manure, or other materials containing phosphorus shall not exceed the P requirements of the crop.
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.

BMP	PTS	DESCRIPTION
NUTRIENT CONTROL PRACTICES		
Reduce P Fertilization	5	Reduce the P application rate by at least 30% below standard recommendations based on soil tests and development of site – specific (reduced) recommendations or application methods. Provide basis for reduction credit.
No Nutrients Imported Via Direct Land Application	20	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 if done at maintenance or less than optimum production levels no more frequently than once every 6 years.)
No Nutrients Imported Indirectly Through Cattle Feed	15	No P import to the basin through cattle feed (Native Range can claim this BMP if the only feed additives are mineral supplements or molasses.)
Nutrient Management Plan	5 - 25	A plan to manage the amount, source, placement, form, and timing of nutrient application to optimize yields and minimize the movement of phosphorus 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. These actions shall be developed in accordance with Section IV, Code 590 of the United States Department of Agriculture Natural Resources Conservation Service FOTG, FL, September 2007, hereby incorporated by reference. The Plan must be approved by NRCS or a qualified technical service provider. A Nutrient Management Plan can be a component of a Conservation Plan which includes the objective of reducing phosphorus discharges on lands with cattle operations. The District will assign BMP points to each Nutrient Management Plan based on the relative level of treatment proposed, as evidenced by the applicant through plans, test results or other information submitted with the application.

BMP Description and Equivalent Points Reference Table

BMP	PTS	DESCRIPTION
WATER MANAGEMENT PRACTICES		
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 by Delayed or Minimized Discharge	5	Recirculation of water inside farm boundaries to improve water quality prior to off-site discharge, includes: fallow field flood water with no direct discharge (instead dispose of via evapotranspiration, seepage, use as irrigation water); or Increasing water detention using properly constructed canal berms.
Low Volume Irrigation	5	Use of low volume irrigation methods, e.g. drip irrigation, microjet irrigation.
Approved and Operational Surface Water Reservoir (Certified)[1]	10 10 15	Properly permitted, constructed and maintained storage system meeting specified Environmental Resource Permit (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). System meets Section 5.2.1 Water Quality Criteria-Volumetric Requirements System meets Section 6.2 Water Quantity Criteria-Discharge Rate 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.
Overland Sheet Flow over Entire Property	15	No drainage improvements made to a land area so that it drains through overland sheet flow, or drainage improvements such as ditches have been removed to restore overland sheet flow drainage to the land area.
No Point Discharge of Surface Water	15	Voluntarily disabling of offsite discharge structures or other permanent means to prevent point discharge from a land area.
Tailwater Recovery System	10	A planned irrigation system in which facilities have been installed and the system is operated to collect, store, and transport irrigation tailwater and/or rainfall runoff that would have been discharged offsite without the system.
Precision Irrigation Scheduling	10	Combination of soil-moisture measuring equipment, specialized irrigation decision tools (e.g. computer software), and/or remote sensing tools to ascertain real-time crop needs to maximize irrigation system performance and to develop precise irrigation scheduling (time, location and amount).
Water Resources Management for Pastures	5	Use water sparingly based on the requirements of the primary forage grasses and supplemental cattle watering, and strategically manage surface water resources to hold water onsite, as much as possible. It may include installation of control structures to rehydrate historically drained wetlands to hold water onsite, such as fixed weir levels to maintain normal pool water levels within a wetland, or to maximize retention in canals, ditches and soils. Infrastructure modifications may require technical

		assistance or regulatory approval.

[1]Surface water reservoir certification refers to a construction completion certification by a Florida licensed Professional Engineer as required in Chapter 40E-4, F.A.C., using Form 0881A for projects permitted after October 3, 1995, and Form 0881B for projects permitted prior to October 3, 1995, or the current certification requirements of Chapter 40E-4, F.A.C.

BMP Description and Equivalent Points Reference Table

BMP	PTS	DESCRIPTION
PARTICULATE MATTER AND SEDIMENT CONTROLS		
Any 2 Any 4 Any 6 Any 8	2 ½ 5 10 15	• erosion control by leveling fields • reduce soil erosion using grassed swales and field ditch connections to laterals • minimize sediment transport with slow velocity in main canal near discharge structure • minimize sediment transport into canals by constructing ditch bank berms • minimize sediment build-up through a canal cleaning program • reduce sediments transported offsite by using field ditch drainage sumps • minimize sediment transport with slow field ditch drainage near pumps/structure • reduce sediments transported offsite by maintaining a sediment sump/trap upstream of drainage structure • reduce sediment transport through the use of grassed waterways • reduce sediment transport through the use of filter strips or riparian conservation buffers adjacent to waterways. No P is applied to these areas. • reduce sediments transported offsite by raising culvert bottoms above all ditch bottoms to minimize sediment transport • reduce sediments transported offsite by stabilizing soil through infrastructure improvements at canal/ditch intersections (e.g. flexible plastic pipe, polymer treatment) • maintain sustainable forage growth on pasture to reduce soil erosion/range seedings • reduce soil erosion with constructed ditch bank stabilization • reduce soil erosion with cover crops (not fertilized) • maintain vegetative cover in upland areas to reduce soil erosion • reduce soil erosion with vegetation on ditch banks • minimize P from plants by aquatic weed control (P source) at main discharge locations • reduce debris and aquatic plants (P source) leaving the site by using barriers at discharge locations

BMP Description and Equivalent Points Reference Table

BMP	PTS	DESCRIPTION
PASTURE MANAGEMENT([2])		
	2 ½	High intensity area management: ▪ Includes restricted placement of stored feed, feeders, mineral, and molasses stations to reduce concentrated areas near drainage ditches, when applicable.
	2 ½	• Provide restricted placement of cowpens to reduce concentrated areas near drainage ditches
	2 ½	• Provide shade structures to prevent cattle in waterways
	2 ½	• Alternative cattle water sources: restricted placement of water to reduce concentrated areas near drainage ditches
	5	• Low cattle density (1 head/2 acres, nonirrigated pasture) by providing comprehensive prescribed grazing.
	10	• Restrict cattle from waterways through fencing of canals in a manner that protects water quality
OTHER	TBD	Please refer to 40E-63.435(1) for submittal of alternative type BMPs.

([2]) These Pasture Management BMPs can provide equivalent points towards the Particulate Matter and Sediment Control Practices category.

C-139 Basin Performance Measure Methodology

INTRODUCTION

This Appendix sets forth the performance measure methodology for determining whether the C-139 Basin is meeting the annual phosphorus load requirements described within the Everglades Forever Act (EFA), Section 373.4592(4)(f)5, FS. It includes procedures the District will follow to determine whether the entire C-139 Basin has maintained discharges at or below the collective average annual phosphorus loading based proportionally on the historical rainfall during the baseline period of October 1, 1978 through September 30, 1988. The determination requires annual calculation of the phosphorus load leaving the outfall structures from the C-139 Basin (locations shown in Figure B1 and listed in Table B1). The list of outfall structures used in the annual phosphorus load calculation will be adjusted by the District to account for any changes in outflow structures from the C-139 Basin, including those changes caused by construction of regional projects.

The annual observed loading of phosphorus attributed to C-139 Basin may be adjusted by the District to reduce Basin discharges not related to the District's operation of the regional water management system for flood control.

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 the District. 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, when new methods are introduced, existing methods of data collection are continued concurrently with the new methods for a sufficient period of time to evaluate the impact of the method change on phosphorus load calculations. When the District reports the results of the C-139 Basin collective annual phosphorus loading for the period of May 1 through April 30, annually, the sources and methods of data collection used in the calculation are 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, FS, 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 (District) computes 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'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 District uses its data to perform water budget analyses and estimation techniques to obtain a "preferred" flow data set at each structure. Table B1 shows the “preferred” C-139 Basin discharge flow data sets available in the District’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 structures utilized in the C-139 Basin phosphorus load calculation are listed in Table B2. All raw water collection sites in the C-139 Basin phosphorus load calculation shall be collected by automatic samplers, however grab samples will be taken when automatic samplers are not functioning, or when necessary for other purposes. 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 improved sampling method is proposed to replace existing sampling methods, existing methods will be continued concurrently until the relationship between results from existing and proposed 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.

Only a portion of a well-mixed raw water sample is used as the water sample in the 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 Acoustic Velocity Meter systems for future use as an additional source of flow data.

A prioritized list of sources of stage and control operations data are 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 has been utilized to provide discharge measurements at all major C-139 Basin structures. Statistical analyses verify or calibrate the discharge rating equations. 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.

ANNUAL PERFORMANCE DETERMINATION

With regard to BMP implementation initiated in 2001, the “Initial Compliance Determination Period” was the water year beginning May 1, 2002 and ending April 30, 2003 (WY2003). Following four years in which the C-139 Basin was determined to be “out of compliance”, rulemaking was initiated in WY2007 to amend the existing Chapter 40E-63, F.A.C., to ensure that the objectives of the EFA, Section 373.4592(4)(f)5., F.S. are met. As a result, the “Initial Performance Measure Determination” period for the C-139 Basin is reset to account for additional water quality improvement activities and will be the water year beginning May 1, 2011 and ending April 30, 2012 (WY2012). The frequency of compliance determinations will be as set forth in Rule 40E-63.450, F.A.C. However, basin performance will be computed and reported on an annual water year basis, that is, annual phosphorus loads will be compared to the collective annual average phosphorus load from the baseline period (October 1, 1978 through September 30, 1988). This will occur 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, is a dominant factor when computing phosphorus loads. Because rainfall and discharge are subject to large temporal and spatial variation in south Florida, the evaluation for performance adjusts the phosphorus

load to account for hydrologic variability. In addition to annual rainfall, significant influence of intra-annual rainfall on phosphorus loads has been observed and use of a relationship based on the monthly variability of rainfall is physically justified, in addition to having the greater statistical power.

Integrating recent data reflecting changes to the operation of the water management system as well as the influence of monthly rainfall patterns to the performance measure is anticipated to improve the methodology's future representation of C-139 Basin landowners' collective annual loading of phosphorus based proportionally on rainfall. For the calibration period of WY2000-2009 utilized for regression of phosphorus load from rainfall, the mean annual phosphorus load was calculated to be 51.5 metric tons. To establish a load target that preserves the objectives of the EFA, the WY2000-2009 annual phosphorus loads were proportionally adjusted by a factor of 74.05%, such that the adjusted mean annual phosphorus load was equivalent to the baseline period mean of 38.2 mtons. The adjusted annual data from the calibration period was utilized to determine a relationship between rainfall and target load.

The adjustment for hydrologic variability includes two components:

1. A model to estimate future phosphorus loads. The model estimates a future phosphorus load from the C-139 Basin rainfall characteristics by substituting future hydrologic conditions for the conditions that occurred during the calibration period (WY2000-2009), adjusting the observed annual loads by 74.05% so the average annual phosphorus load equals the average annual phosphorus load of the baseline period (WY1980-1988). The estimation is based on hydrologic data collected for any time period of May 1 through April 30 subsequent to the calibration period. The annual rainfall range for which the model shall be applied is from 37.05 inches to 59.98 inches based upon rainfall observed during the period of record.

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

Evaluation of the C-139 Basin for phosphorus load performance will be based upon the following:

1. If the actual measured phosphorus loading from the C-139 Basin in a post-baseline May 1 through April 30 period is less than the model phosphorus load estimate (Target), then the C-139 Basin will be determined to meet its performance measure, that is, it will have not exceeded the collective average annual phosphorus loading that would have occurred during the baseline period adjusted for hydrologic variability.

2. The performance determination will be suspended if the rainfall for the May 1 through April 30 Water Year is outside the range of 37.05 inches to 59.98 inches and the actual measured phosphorus loading exceeds the Target in any May 1 through April 30 period. Any period(s) for which the performance determination is suspended will be

excluded from the calculation of the three-year average annual phosphorus load, and will be excluded from the determination of whether the Target has been exceeded in three or more consecutive May 1 through April 30 periods.

3. If the three-year average annual phosphorus loading from the C-139 Basin in a post-baseline May 1 through April 30 period is less than or equal to the average base period phosphorus load of 38.2 mtons, then the C-139 Basin will be determined to meet its performance measure, that is, it will have not exceeded the collective average annual phosphorus loading that occurred during the baseline period. Any period(s) for which the performance determination is suspended due to rainfall as defined herein, will be excluded from the calculation of the three-year average annual phosphorus load.

4. If the actual measured phosphorus loading from the C-139 Basin exceeds the model phosphorus load estimate (Target) in three or more consecutive May 1 through April 30 periods and if not suspended due to rainfall, and if the three-year average annual phosphorus loading from the C-139 Basin is greater than the baseline average of 38.2 mtons, then the C-139 Basin will be determined to exceed its performance measure, that is, it will have exceeded the collective average annual phosphorus loading that would have occurred during the baseline period adjusted for hydrologic variability.

5. If the actual measured phosphorus 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 and if not suspended due to rainfall, and the average phosphorus loading of the three consecutive post-baseline May 1 through April 30 periods is greater than 38.2 mtons, the C-139 Basin will be determined to exceed its performance measure, that is, it will have exceeded the collective average annual phosphorus loading that would have occurred during the baseline period adjusted for hydrologic variability.

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

$$\text{Target} = \exp(-17.0124 + 4.5995\,X + 3.9110\,C - 1.0055\,S)$$

Explained Variance = 74.2%, Standard Error of Estimate = 0.5440

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 to 12, inches) for the current year:

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

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

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

$$X = \ln(12\, m_1)$$

$$C = [\, (12/11)\, m_2 \,]^{0.5} / m_1$$

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

Limit = Target exp (1.440 SE)

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

$$SE = 0.5440\ [\ 1 + 1/10 + 4.8500\ (X-X_m)^2 + 8.1932\ (C-C_m)^2 + 0.9247\ (S-S_m)^2 + 4.5950\ (X-X_m)\ (C-C_m) - 0.3624\ (X-X_m)\ (S-S_m) - 4.0048\ (C-C_m)\ (S-S_m)\ ]^{0.5}$$

Where:

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

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

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

C = coefficient of variation calculated from 12 monthly rainfall totals,

S = skewness coefficient calculated from 12 monthly rainfall totals,

X_m = average value of the predictor in calibration period = 3.8434,

C_m = average value of the predictor in calibration period = 0.9087,

S_m = average value of the predictor in calibration period = 0.8200,

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.

Figure B-1
C-139 Basin Boundary and Discharge Monitoring Locations

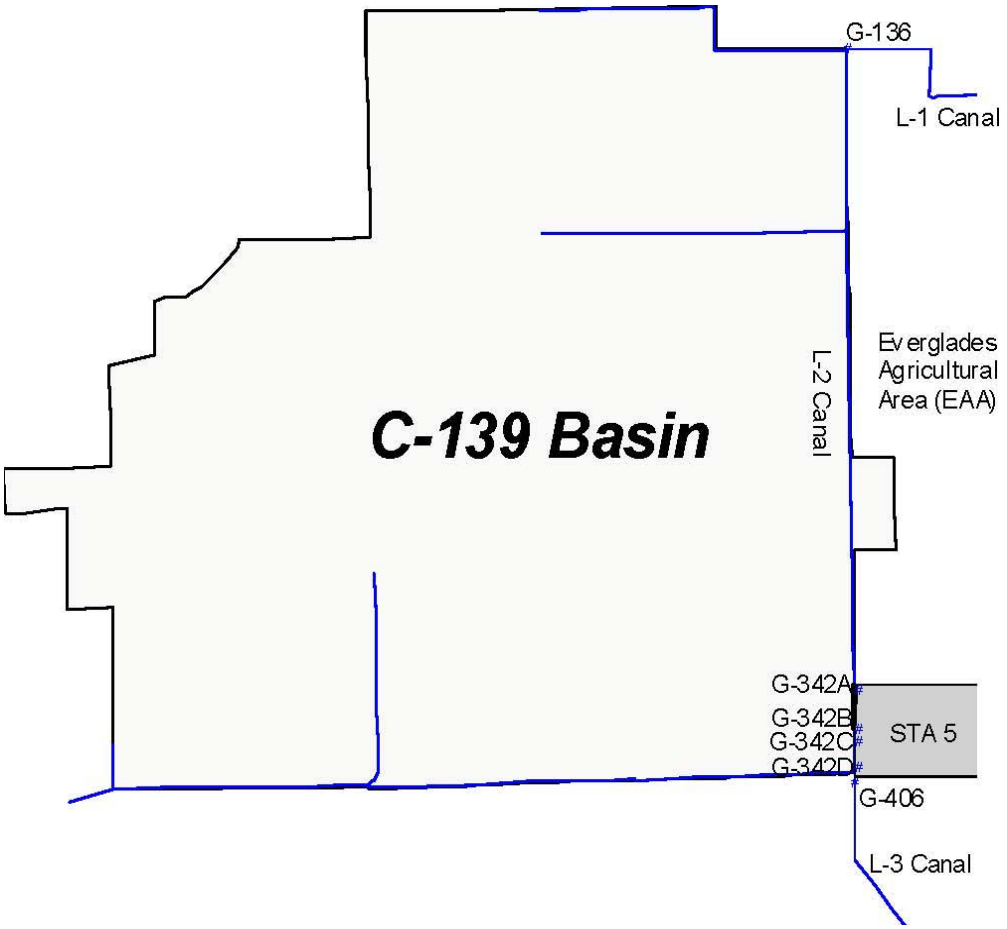


Figure B-2
Flowchart - Calculation of C-139 Basin Phosphorus Loads

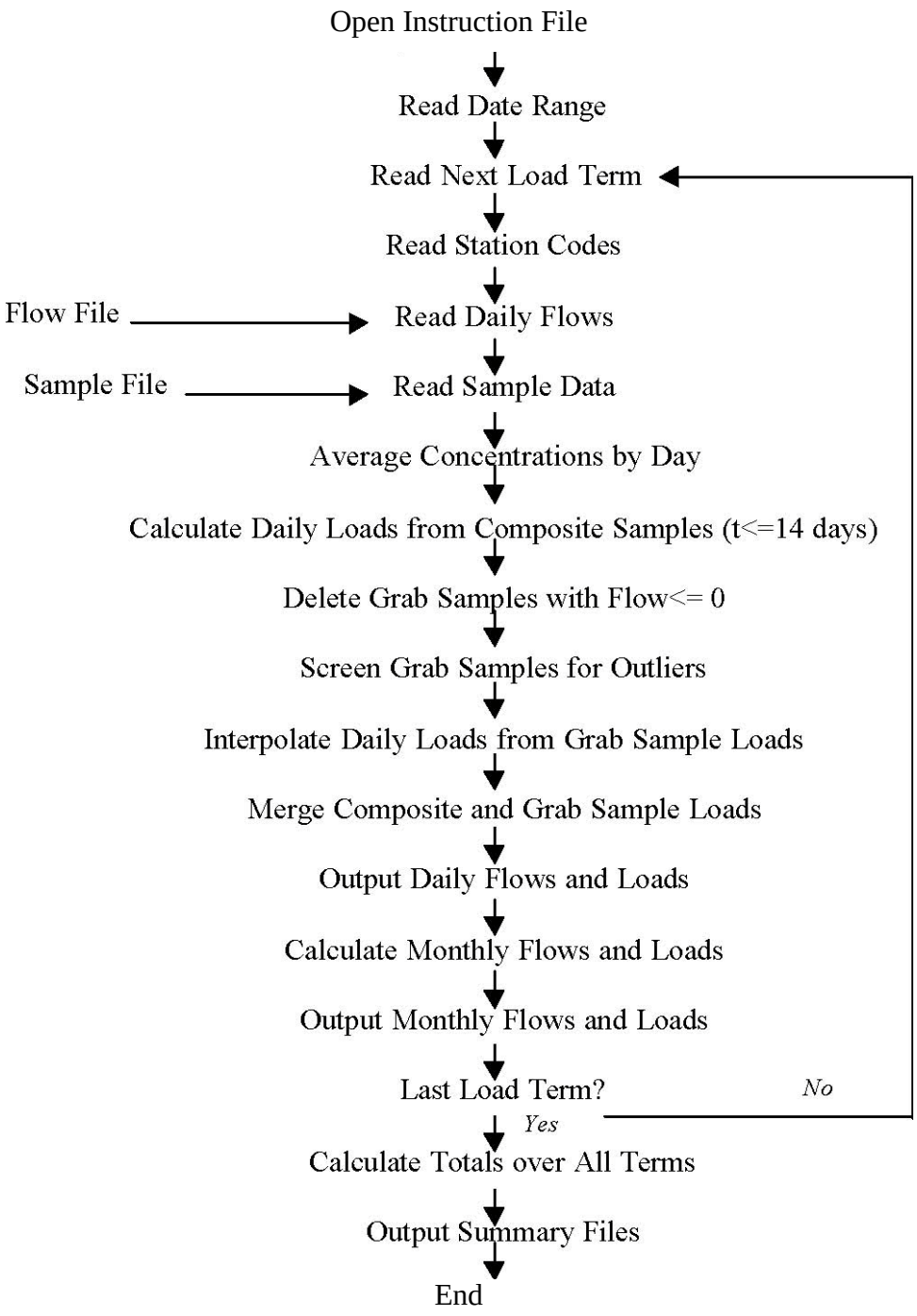


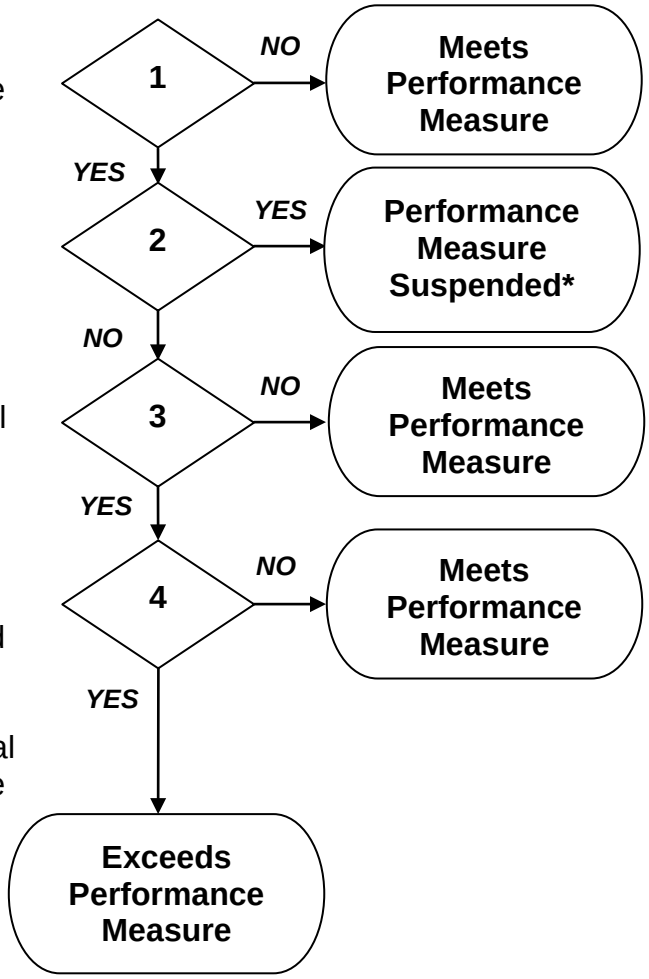
Figure B-3
Flowchart – C-139 Basin Annual Performance Determination

1. Does the calculated annual phosphorus load exceed the predicted Target load?

2. Is the water year rainfall outside the range of 37.05 inches to 59.98 inches?

3. Does the average of the three-year calculated annual phosphorus load exceed 38.2 mt?

4. Does the calculated annual phosphorus load cause exceedance of the predicted Target load for three consecutive years, or…
…does the calculated annual phosphorus load exceed the predicted Limit load?



* 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 range of 37.05 inches to 59.98 inches, the Target and Limit will be suspended and the C-139 Basin will not be determined to exceed its performance measure for that period only. Any period(s) for which the Target and Limit 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 and from the calculation of the three-year average annual phosphorus load. That is, the C-139 Basin will exceed its performance measure 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 meet its performance measure, even though the three periods may be interrupted by periods of suspension.

Table B-1
C-139 Basin Discharge Structures Database Keys To Flow Data Time Series

Structure	Preferred DBKEY
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".

The list of outfall structures used in the annual phosphorus load calculation will be adjusted by the District to account for any changes in outflow structures from the C-139 Basin, including those changes caused by construction of Stormwater Treatment Areas.

Table B-2
C-139 Basin Discharge Structures Current Water Quality Sampling Methods

Structure	Collection Site	Instrument*
G-136	Gravity	A
G-342A	Gravity	A
G-342B	Gravity	A
G-342C	Gravity	A
G-342D	Gravity	A
G-406	Gravity	A

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

Flow Computation Methods Used to Calculate C-139 Basin Flows

PUMPS

Flow computation for such structures shall be based upon the following reference:

Imru, M. and Wang, Y. (December 2003). *Flow Rating Analysis Procedures for Pumps (Publication EMA#413).* West Palm Beach: South Florida Water Management District, West Palm Beach.

GATED SPILLWAYS

Flow computation for such structures shall be based on the following reference:

Ansar, M., and Alexis, A. (2003). *Atlas of Flow Computations at District Hydraulic Structures*. Hydrology and Hydraulics Division, South Florida Water Management District, West Palm Beach, Florida.

CULVERTS

Flow computation for such structures shall be based on the following reference:

Fan, A. (October 1985). *A General Program to Compute Flow through Gated Culverts (Publication DRE#216)*. West Palm Beach: South Florida Water Management District, West Palm Beach.

Permittee Annual Phosphorus Load Determination Based On Sub-basin Monitoring and the Optional Discharge Monitoring Program

INTRODUCTION

In accordance with the Everglades Forever Act (373.4592(4)(f)5 F.S.), determinations for permittees within the C-139 Basin for remedial action, if the basin is out of compliance for that year, shall be based on the proportional share of phosphorus loading, as set forth in Appendix B2 of Rule 40E-63. The Proportional Share value will be derived as described herein from the Target UAL or Limit UAL depending upon the cause of non-compliance and distributed equally over the C-139 Basin area.

This Appendix establishes the procedures for calculating actual phosphorus unit area load (Actual UAL) for Sub-basins and monitored Permit Basins, and for calculating their corresponding proportional share of phosphorus load (Proportional Share UAL) based on the performance measures established in Appendix B2. The Actual UAL and Proportional Share UAL will be calculated each water year the C-139 Basin is determined out of compliance per 40E-63.450. This Appendix will be used in conjunction with the conditions established in Rule 40E-63.450(3) to determine eligibility for permitees' deferral of remedial action.

A monitoring network has been established by the District for flow and phosphorus concentration at several locations within the C-139 Basin to determine the loading from hydrologically distinct Sub-basins. For all permittees within the C-139 Basin, a deferral of remedial action per subsection 40E-63.450(3) may be granted based upon the results of the Sub-basin discharge monitoring data. Deferral will be granted to all Permit Basins located in a Sub-basin if it is determined to have not exceeded the Proportional Share UAL. This Sub-basin monitoring may be supplemented or optimized in the future at the discretion of the District to improve representation of hydrologic drainage areas.

For those permittees electing to implement the Optional Discharge Monitoring Program in accordance with the requirements of Rules 40E-63.462 and 40E-63.464, a deferral of remedial action may also be granted based on permittee-collected discharge monitoring data for Permit Basins. If the C-139 Basin is out of compliance and a monitored Permit Basin is located in a Sub-basin that is not determined to have met the Proportional Share UAL, the District will calculate the Actual UAL for the monitored Permit Basin. Deferral will be granted to a monitored Permit Basin if it is determined to have not exceeded the Proportional Share UAL.

If the flow or concentration monitoring data from a Sub-basin or individually monitored Permit Basin during the water year is not adequate as defined herein to calculate its phosphorus load, no load determination will be made for that Sub-basin. In that case, the District will not be able to demonstrate that the Sub-basin or Permit Basin did not contribute to the C-139 Basin being out of compliance.

DEFINITIONS

(1) "Actual UAL" is the observed phosphorus load per unit area (lbs/acre) calculated for a Sub-basin or Permit Basin during the water year and is determined from the data collected by the District under Sub-basin monitoring or submitted by the permittee under the Optional Discharge Monitoring Program.

(2) "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. adjusted for any identified changes to the basin's hydrologic drainage area.

(3) "Limit Unit Area Load (Limit UAL)" in pounds per acre is the upper 90% confidence limit of the C-139 Basin Compliance model phosphorus load estimate (also known as the Limit) calculated in accordance with Appendix B2 and divided by the C-139 Basin Acres.

(4) "Proportional Share UAL" in pounds per acre is the calculated maximum allowable annual phosphorus load in proportion to land area. The Proportional Share UAL shall be based on the Target UAL if C-139 Basin non-compliance is based on exceedance of the Target, or on the Limit UAL if the C-139 Basin non-compliance is based on exceedance of the Limit.

(5) "Deferral of remedial action" relieves eligible permittees from remedial action based on the conditions established in subsection 40E-63.450(3) which include the results from that water year's Optional Discharge Monitoring Program and Sub-basin monitoring.

(6) "Target Unit Area Load (Target UAL)" in pounds per acre is the C-139 Basin Compliance model phosphorus load estimate (Target) calculated in accordance with Appendix B2 and divided by the C-139 Basin Acres.

TARGET AND LIMIT UNIT AREA LOAD DETERMINATION

The Target UAL and Limit UAL are determined using the results of the C-139 Basin Compliance model calculations outlined in Appendix B2. That model estimates C-139 Basin Target and Limit Loads in metric tons (one metric ton equals 2,204.6 pounds). These loads are then divided by the C-139 Basin Acres to determine a Target UAL and Limit UAL in pounds per acre.

Example:

C-139 Basin Target Load	=	40.98 mtons	=	90,334 lbs
C-139 Basin Limit Load	=	101.16 mtons	=	223,017 lbs
C-139 Basin Acres	=			167,760 acres
Target UAL	=	(90,334 / 167,760)	=	0.54 lbs/acre
Limit UAL	=	(223,017 / 167,760)	=	1.33 lbs/acre

PERMIT BASIN AND SUB-BASIN ACTUAL UNIT AREA LOAD DETERMINATION

In a water year that the C-139 Basin is out of compliance, individual daily records of flow and phosphorus load computed by the District at Sub-basin monitoring sites or submitted under the Optional Discharge Monitoring Program will be summarized by the District to determine the Actual UAL for each Sub-basin and Permit Basin.

When the Water Year dataset contains missing daily records (flow and/or total phosphorus concentration), the District will evaluate if the missing records can be estimated and if sufficient data are available to populate those missing records in order to create a complete data set. The steps to follow by the District for each data type are as follows:

Step 1: ESTIMATE THE 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 less than 75%, proper implementation of the Sub-basin monitoring or Optional Discharge Monitoring Program was not achieved. The results of that monitoring are not eligible for a determination of not exceeding its proportional share of basin wide loading and deferral of remedial action for that Water Year only.
4. If the Percent Load Sampled is greater than or equal to 75% then the Permit Basin Actual Load determination can be made. If the Percent Load Sampled is less than 100% samples, steps 2-4 may need to be followed.

Step 2: ESTIMATE MISSING TOTAL PHOSPHORUS CONCENTRATION

1. Use the Total Phosphorus Concentration from an adjacent site if flow conditions and land use were similar during the sampling period (not applicable to Sub-basin monitoring).
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 sampled Annual Flow-Weighted Mean Concentration when the missing time period is greater than 21 days.

Step 3: ESTIMATE MISSING DAILY FLOW

1. Use adjacent or representative site data, if applicable.
2. Use a Stage vs. Flow relationship, if applicable.
3. Use Rainfall vs. Runoff relationship, if applicable.
4. Use a maximum calibrated capacity, if applicable.
5. Other technically justified estimation.

When all missing data for the Water Year has been estimated, the Actual UAL will be calculated as the sum of the daily loads (estimated and actual) divided by the hydrologic drainage area associated with the Sub-basin or Permit Basin.

Sub-basin data

The boundary of each Sub-basin is determined based upon the hydrologic drainage areas contributing to the District monitoring locations. A permittee can have Permit Basins in different Sub-basins. A permittee with Permit Basins in different Sub-basins may be granted deferral of remedial action on some of their Permit Basins and not on others depending on the performance of each Sub-basin to which the lands belong.

Where applicable, phosphorus load flowing into a Sub-basin will be accounted for based on surface water monitoring upstream and downstream of the Sub-basin. The following general calculation method will be applied to annual loads for each Sub-basin:

Runoff Load = Total Annual Outflow Load – Total Annual Inflow Load

DETERMINATION OF PROPORTIONAL SHARE UNIT AREA LOAD AND EVALUATION OF EXCEEDANCES TO THE PROPORTIONAL SHARE UAL

Once the Target UAL and Limit UAL are calculated for a given Water Year, the Proportional Share UAL is determined by evaluating whether the C-139 Basin out of compliance condition was caused by exceedance of the Target, Limit or both.

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, “Evaluation of the C-139 Basin for compliance…”, paragraph 4):

1. the Proportional Share UAL is the arithmetic average of the three Target UAL values calculated for the three Water Years (excluding any suspension due to rainfall above 59.96 inches), and

2. a Sub-basin or Permit Basin will be deemed to have not exceeded its proportional share of the basin wide loading if the average of the three annual Actual UAL values corresponding to the three Water Years causing the out of compliance condition is less than or equal to the Proportional Share UAL.

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, "Evaluation of the C-139 Basin for compliance…", paragraph 5):

1. the Proportional Share UAL is the same as the Limit UAL calculated for that Water Year, and

2. a Sub-basin or Permit Basin will be deemed to have not exceeded its proportional share of the basin loading if the Actual UAL for the Water Year in question is less than or equal to the Proportional Share UAL.

If the C-139 Basin is out of compliance exceeding both the Target for three years and Limit the current year (e.g. Target, Target, Limit):

1. both the current water year Limit UAL and the average of the three Target UAL values are utilized for assessment of a Proportional Share UAL, and

2. a Sub-basin or Permit Basin will be deemed to have not exceeded its proportional share of the basin loading if both the average of the three annual Actual UAL is less than or equal to the average of the three Target UAL values and the current Water Year Actual UAL is less than or equal to the Limit UAL.

Permit Basins will be evaluated from the largest to smallest Sub-basin that they belong to, and then based on their individually monitored Permit Basin data, if applicable. There will be no evaluation at smaller levels once it is determined that a Sub-basin or monitored Permit Basin met the Proportional Share UAL. Three tiers of Sub-basins have been defined for the C-139 Basin as indicated in Table B-3, which relates each initial Primary, Secondary and Tertiary Sub-basin to its larger or smaller units.

The location of monitoring sites and the Sub-basin boundaries as of the issuance of this Rule are depicted in figures B4 through B6. Data for the Sub-basin monitoring will be stored in the District's database, Dbhydro. Reference information for the monitoring sites upon adoption of this rule, such as flow site name, flow DBkey, water quality station name are listed in Table B-4, as well as example equations for computation of annual load for each Sub-basin.

Table B-3: Primary, Secondary and Tertiary Sub-basin Levels

Primary Sub-basins	Secondary Sub-basins	Tertiary Sub-basins
L1		
L3	L2	L2W
		L2E
		L2S
	DF	DFW
		DFE
	SM	SMW
		SME

The steps for evaluating the Permit Basins are as follows:

1. Primary Sub-basins represent the largest division of hydrologic drainage areas within the C-139 Basin and will be evaluated first for not exceeding the Proportional Share UAL. The primary Sub-basins are the L-1 and the L-3.

2. If the L-1 Sub-basin exceeds the Proportional Share UAL, the District will evaluate the individually monitored Permit Basins within the Sub-basin. Permit Basins within the L-1 Sub-basin will be assigned the Sub-basin Actual UAL or their individual Permit Basin Actual UAL, if available.

3. If the L-3 Sub-basin exceeds the proportional Share UAL, the District will evaluate the secondary Sub-basins within the L-3 (L2, DF, and SM)

4. If any of the L3 secondary Sub-basins exceed the Proportional Share UAL, the tertiary Sub-basins within those secondary Sub-basins will be evaluated.

5. If any of the tertiary L-3 Sub-basins exceed the Proportional Share UAL, any individually-monitored Permit Basins within those tertiary Sub-basins will be evaluated.

6. Permit Basins in the L-3 not granted deferral of remedial action because of exceeding the Proportional Share UAL at the primary, secondary, tertiary, and, if available, individual Permit Basin level, will be assigned the Actual UAL of the Tertiary Sub-basin where they are located, or the Actual UAL for the individual Permit Basin, if monitored individually.

PARTICIPATION IN THE OPTIONAL 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 or an on-site verification of BMP Implementation by District Staff 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 deferral of remedial action for the water year during which the Quality Assurance Audit or on-site verification of BMP Implementation was performed.

A permittee may elect at any time to discontinue participation in the Optional Discharge Monitoring Program by submitting an application to modify their permit as outlined in Rule 40E-63.437. If the permittee elects to discontinue participation in the Optional 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 deferral of remedial action. The first opportunity for requesting deferral of remedial action will be after submittal of all data for the first complete water year following resumption of participation in the Optional Permittee Discharge Monitoring Program.

Figure B-4 Primary Sub-basins and Monitoring Locations

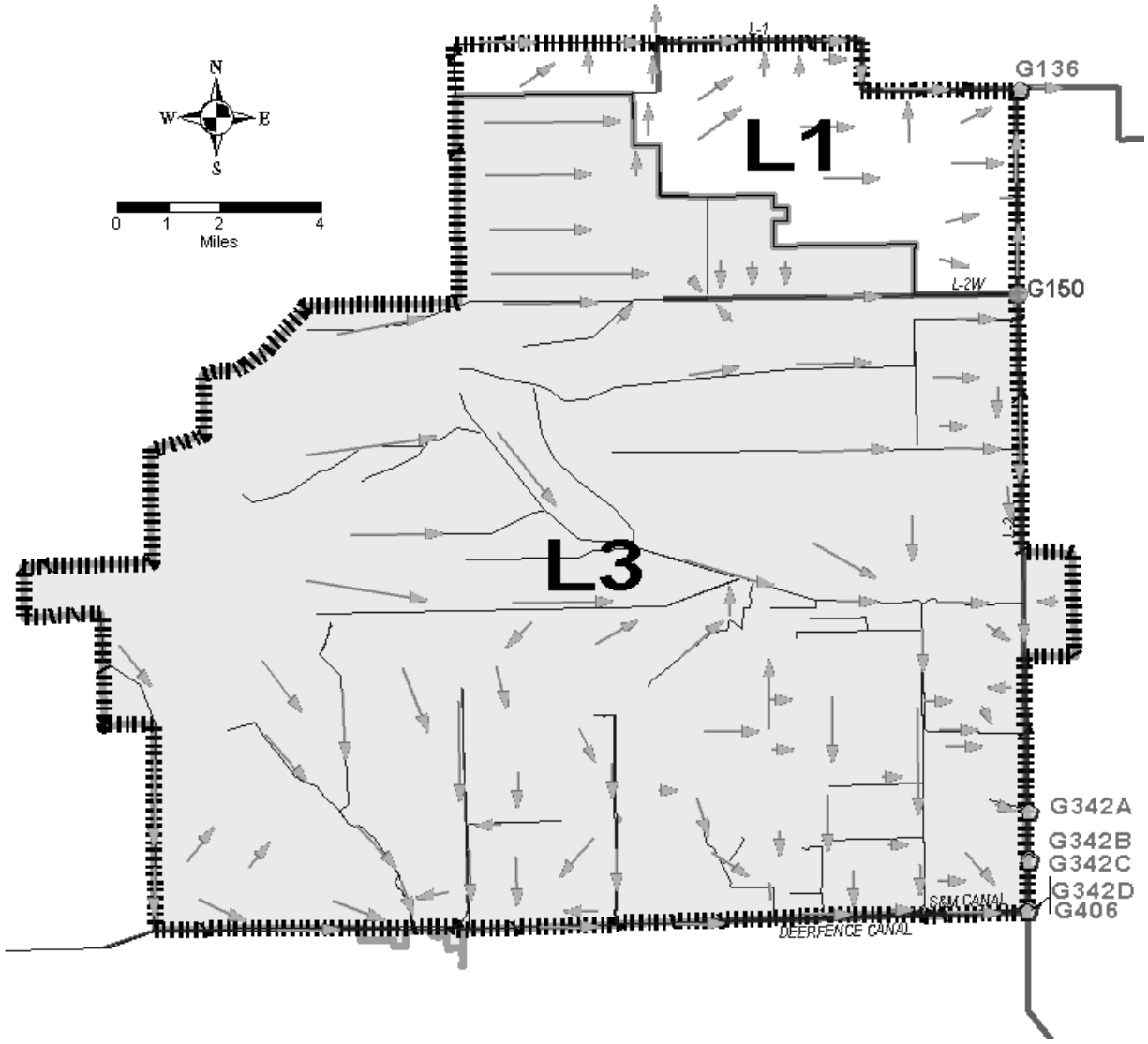


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Figure B-5 Secondary Sub-basins and Monitoring Locations

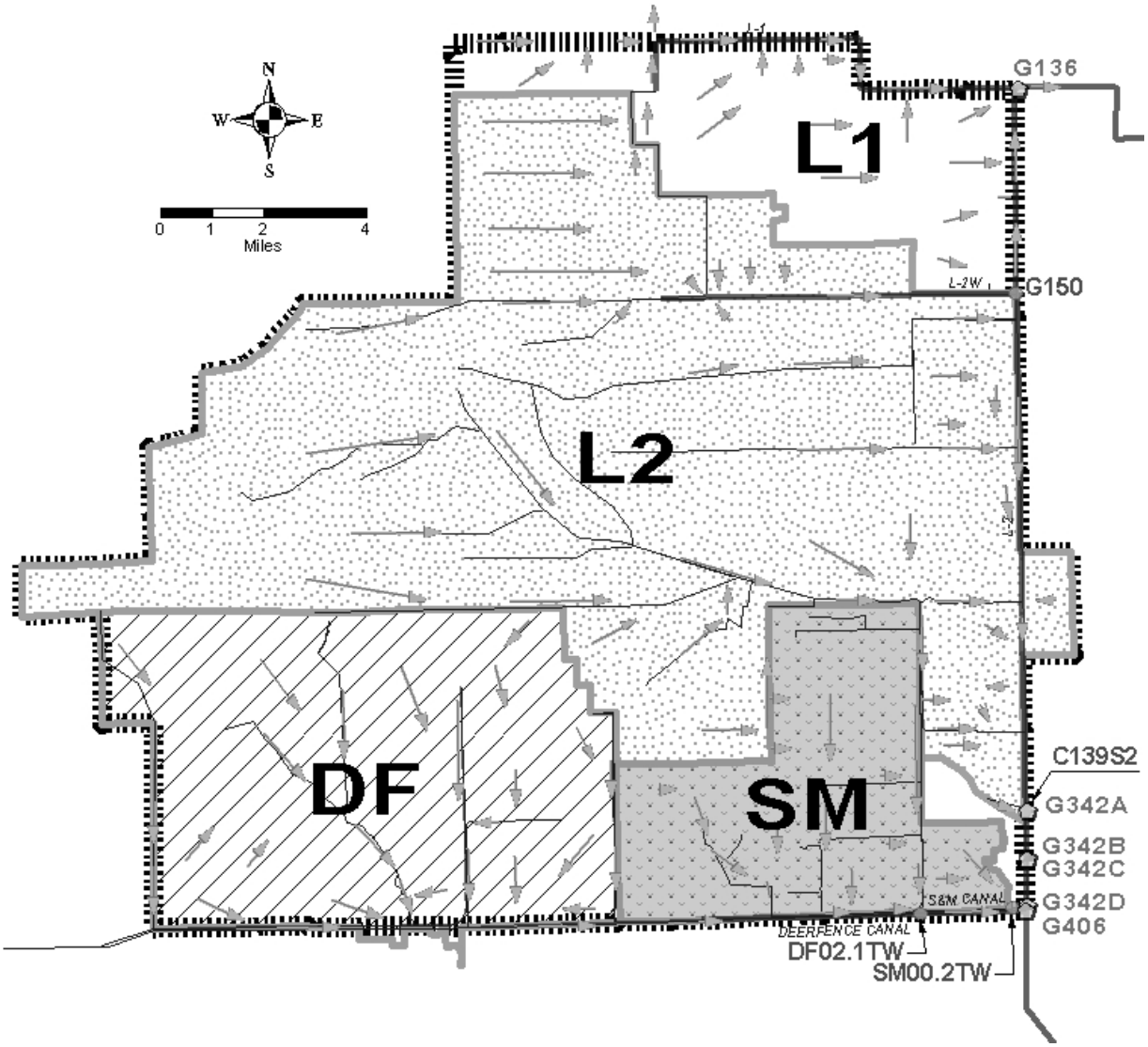

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Figure B-6 Tertiary Sub-basins and Monitoring Locations

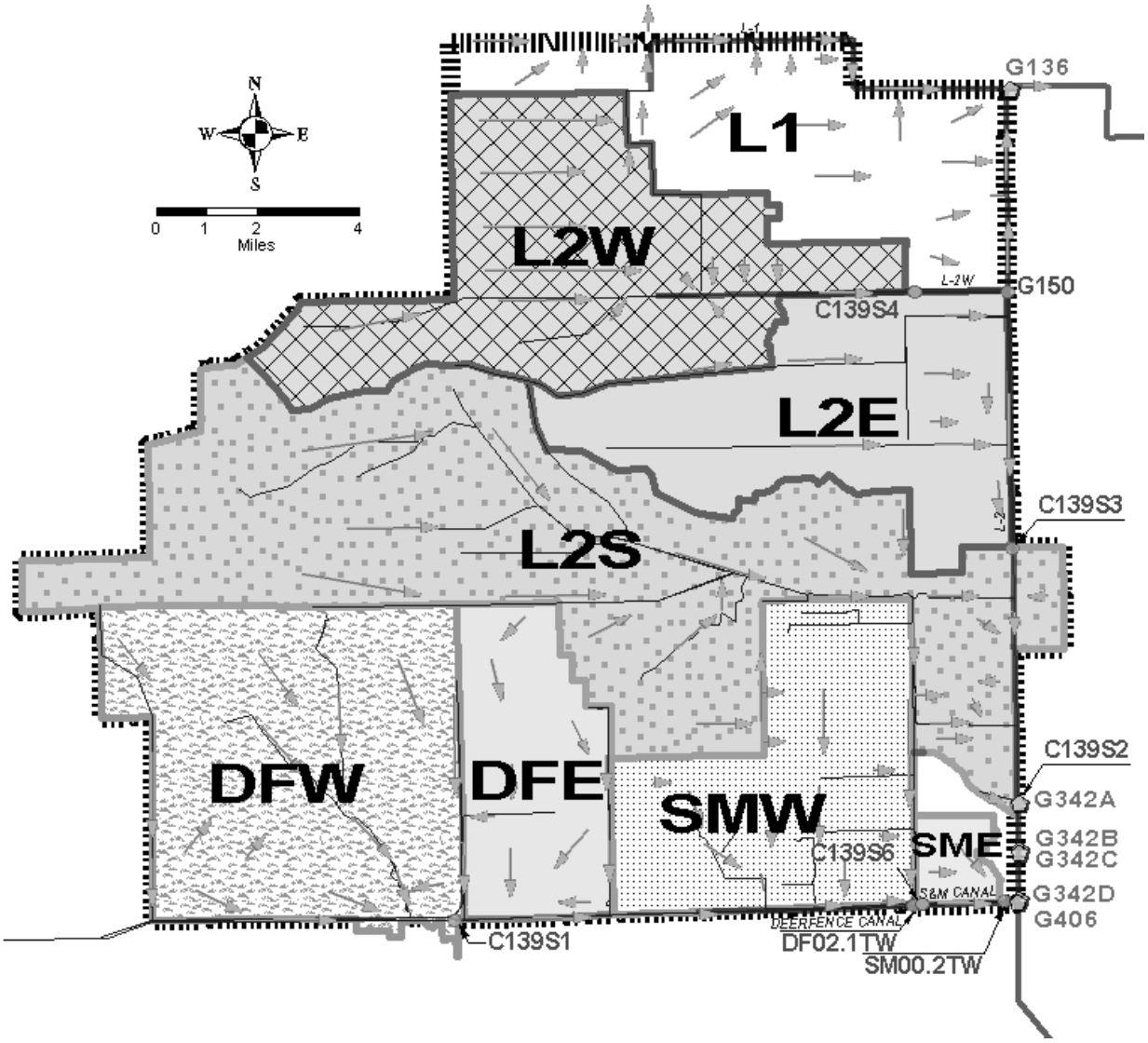

Table B-4: Sub-basin Areas, Data Sources, and Arithmetic Calculation

Name	Flow Structure		WQ Station Name	Load Calculation (Flow Structure Name)
	Name	DBKEY		
Primary Sub-basins				
L1	G150	15520	G150	G136 - G150
	G136	15195	G136	
L3	G150	15520	G150	G406 + G150 + G342A + G342B + G342C + G342D
	G342A	J6406	G342A	
	G342B	J6398	G342B	
	G342C	J6407	G342C	
	G342D	J6405	G342D	
	G406	JU789	G406	
Secondary Sub-basins				
L2	G150	15520	G150	C139S2 + G150
	C139S2	US185	C139S2	
DF	DFNBV	TP376	DF02.1TW	DFNBV
SM	SMSBV	TP378	SM00.2TW	SMSBV
Tertiary Sub-basins				
L2W	C139S4	VC276	C139S4	C139S4
L2E	C139S3	US186	C139S3	C139S3 - C139S4 + G150
	C139S4	VC276	C139S4	
	G150	15520	G150	
L2S	C139S3	US186	C139S3	C139S2 - C139S3
	C139S2	US185	C139S2	
DFW	C139S1	US184	C139S1	C139S1
DFE	C139S1	US184	C139S1	DFNBV - C139S1
	DFNBV	TP376	DF02.1TW	
SMW	C139S6	VN389	C139S6	C139S6
SME	C139S6	VN389	C139S6	SMSBV - C139S6

* Note: The values and equations within this table may be adjusted in the future to account for supplemental or optimized monitoring for the Sub-basins.

Criteria for Required Phosphorus Reductions

Intent

Since 2002, landowners in the C-139 Basin have implemented a mandatory program of BMPs for reduction of total phosphorus (TP) in discharges. BMPs for the C-139 Basin were developed using best professional judgment based on consultation with qualified stakeholder participants and academic resources on in-field studies, available pertinent literature in support of non-point source pollutant reduction potential, existing BMP manuals, and relevant models. This process is considered to be the initial verification that BMPs were reasonably expected to be effective and was the basis for adoption of these BMPs in Part IV of Chapter 40E-63, Florida Administrative Code.

When water quality problems are demonstrated, despite the appropriate implementation, operation, and maintenance of BMPs and other measures according to the adopted rules, the District shall reevaluate the BMPs and other measures and revise the rules to require implementation of modified practices or water quality improvement measures within a reasonable time period.

Requirement for the Improvement to BMP Plans

The water quality improvement strategy under this Part is to require that any additional required improvements to the BMP Plan or water quality improvement activities shall be based in their ability to achieve the percentage TP reduction levels specified by the District (Required TP Reductions), as necessary to affect C-139 Basin discharges to meet performance measures.

Permittees will propose additional improvements to the BMP Plan and expected reductions. These reductions may be estimated based on the most current applicable technical references or based on a monitoring program that confirms estimated TP reductions (Verification Plan).

Availability of Technical Information for Estimating TP Reductions

The Everglades Forever Act under Section 373.4592(4)(f)2 of the Florida Statutes mandates “a comprehensive program of research, testing, and implementation of BMPs that will address all water quality standards”. Under this provision, “BMPs shall be field-tested in a sufficient number of representative sites in the EAA to reflect soil and crop types and other factors that influence BMP design and effectiveness.” Section 373.4592(4)(f)6 of the Everglades Forever Act states that provision 373.4592(4)(f)2 concerning BMP research shall apply to the landowners within the C-139 Basin.

There is an ongoing and coordinated effort with the Florida Department of Environmental Protection (FDEP) and the Florida Department of Agriculture and Consumer Services (FDACS), to expand the body of knowledge regarding BMP

effectiveness and to determine the TP removal efficiency of BMPs, as indicated in Rule 40E-63.400(7), F.A.C. Further, under Rule 40E-63.435(3), F.A.C., criteria are established by which BMP demonstration projects can serve to meet BMP equivalent point credits or BMP demonstration projects including a Verification Plan to determine BMP effectiveness can serve to obtain deferral from conducting additional BMP improvements if the basin is out of compliance.

For the purpose of estimating TP reduction levels for proposed BMP improvements to meet the requirements of 40E-63.460(3) the District will provide permittees, on an annual basis, with an update on applicable research, testing, modeling, and technical source information on the implementation of BMPs by the District or others to improve TP removal efficiency. This Part provides for a regulatory framework, schedule, and collaborative approach towards the development of this technical information to meet TP reductions requirements.

Calculation of the Required TP Reduction

The District will determine C-139 Basin compliance with TP load performance measures annually in accordance with Appendix B2. If the C-139 Basin is deemed out of compliance with the water quality requirements of this Part, the District will calculate the required TP reduction level corresponding to each Permit Basin, as defined under subsection 40E-63.402(13), that is not deferred on that year from improvements to the BMP Plan or water quality improvement activities based on 40E-63.450(3). The method to estimate the percent Required TP Reduction level is indicated below:

1. The TP reduction levels will be based on the Limit Unit Area Load (UAL), the Target UAL, the Proportional Share UAL and the Actual UAL derived for each Farm Basin pursuant to Appendices B2 and B3.1.

2. 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, “Annual Performance Determination”, paragraph number 4), the Required TP Reduction for each Permit Basin will be calculated as the percent difference between the arithmetic average of the Actual UAL values calculated on the year that non-compliance occurs and the two previous years and the Proportional Share UAL (excluding any suspension due to rainfall as described in Appendix B2).

   Required TP reduction level (%) = (Average (Actual UAL $_{\text{Year } 1,\ 2,\ 3}$) – Proportional Share UAL) / Proportional Share UAL

3. If the C-139 Basin is out of compliance as a result of exceeding the Limit in the current year (as described in Appendix B2, “Annual Performance Determination”, paragraph 5), the required percentage TP reduction will be calculated for each hydrologic drainage area as the percent difference between its Actual UAL and its Proportional Share UAL on the year that non-compliance occurs.

Required TP reduction level (%) = ((Actual UAL $_{Year\ 1,\ 2,\ 3}$) – Proportional Share UAL) / Proportional Share UAL

4. If the C-139 Basin is out of compliance exceeding both the Target for three years in a row and the Limit the current year (e.g. Target, Target, Limit), the Required TP Reduction shall be the greater of those calculated from (2) and (3) above.

Criteria for Approval of Improvements to BMP Plans or Water Quality Improvement Activities

Under a basin-wide out of compliance scenario, the level of effort required for improvements to the BMP Plan may vary across Permit Basins based on the Required TP Reduction Level for each one. As defined under "Water Quality Improvement Activities" in subsection 40E-63.402(18). The TP Removal Efficiency of the activities described within the proposal shall aim to meet the Required TP Reduction for each Permit Basin.