

## PART 2, CHAPTER 11

# WATER QUALITY AND STORMWATER

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## PART 2, CHAPTER 11

# WATER QUALITY AND STORMWATER

### 11.1 OVERVIEW

Pursuant to **23 United States Code (U.S.C.) § 327** and the implementing Memorandum of Understanding (MOU) executed on December 14, 2016, the Florida Department of Transportation (FDOT) has assumed and Federal Highway Administration (FHWA) has assigned its responsibilities under the **National Environmental Policy Act (NEPA)** for highway projects on the State Highway System (SHS) and Local Agency Program (LAP) projects off the SHS (**NEPA** Assignment). In general, FDOT's assumption includes all highway projects in Florida which source of federal funding comes from FHWA or which constitute a federal action through FHWA. **NEPA** Assignment includes responsibility for environmental review, interagency consultation and other activities pertaining to the review or approval of **NEPA** actions. Consistent with law and the MOU, FDOT will be the Lead Federal Agency for highway projects with approval authority resting in the Office of Environmental Management (OEM).

**Section 403.021(2), Florida Statutes (F.S.)**, declares that it is public policy of the state to conserve the waters of the state and to protect, maintain, and improve their quality. Even though state surface water quality standards applicable to waters of the state do not apply within a stormwater management system as provided by **Section 373.4142, F.S.**, as long as the stormwater management system is designed, constructed, operated, and maintained for stormwater treatment in accordance with a valid permit, this statute does require FDOT to provide reasonable assurance that the water quality within its stormwater management system will not adversely impact public health, fish and wildlife, or adjacent waters. Therefore, FDOT projects are evaluated for potential impacts on water quality from stormwater runoff, and are designed to address and mitigate impacts from stormwater runoff through compliance with stormwater management plans and applicable regulatory requirements. **Section 373.4596, F.S.**, requires FDOT projects to fully comply with state, water management district (WMD), and when delegated by the state, local government stormwater management programs.

This chapter provides procedures for assessing and documenting potential water quality and stormwater runoff impacts from transportation projects to comply with **NEPA**, the **Clean Water Act (CWA)**, and other related federal and state environmental laws and regulations. Additionally, this chapter provides guidance on documenting water resource information and coordinating with water resources agencies and other stakeholders through completion of a **Water Quality Impact Evaluation Checklist, Form No. 650-050-37**. The level of water quality impact analysis depends upon the extent of potential impacts of a proposed project on surface and/or groundwater resources. Specifically, the impacts covered in this chapter are related to direct and indirect stormwater discharges from transportation projects into surface water (other than wetlands) and/or groundwater.

The term “water resources” is used throughout this chapter and includes both surface and ground water. The chapter does not cover impacts to wetlands and other surface waters not related to stormwater. See [Part 2, Chapter 9, Wetlands and Other Surface Waters](#) for wetland evaluation procedures.

### 11.1.1 Definitions

**Aquatic Preserve** – established under the *Aquatic Preserve Act*, an officially designated exceptional area of submerged lands and its associated waters set aside for being maintained essentially in its natural or existing condition.

**Basin Management Action Plan (BMAP)** – a comprehensive plan, coordinated by the Florida Department of Environmental Protection (FDEP), of regulatory and non-regulatory actions to meet the Total Maximum Daily Load (TMDL) for a given watershed. BMAPs are designed to implement restoration strategies that reduce pollutant concentrations to meet a TMDL.

**Designated Uses** – the present and future most beneficial use of a body of water as designated by the Environmental Regulation Commission by means of the Waterbody Classification.

**Environmental Look Arouds (ELA)** – a process of proactively looking for opportunities for joint stormwater management projects with agencies or stakeholders.

**FDEP Group Number** – the number and name assigned to waterbodies and water segments by FDEP, based on watersheds/basins that have been developed for the state and that form the basis for Basin Rotation.

**Impaired Waters** – surface waters that do not meet the standards set for them are determined to be “impaired” and in need of restoration. Using data from assessments, FDEP maintains a verified list of impaired Florida waterbodies. The impairments are separated into the following assessment categories:

- 1 Attains all designated uses
- 2 Attains some designated uses and insufficient or no information or data are present to determine if remaining uses are attained
- 3a No data and information are present to determine if any designated use is attained
- 3b Some data and information are present but not enough to determine if any designated use is attained
- 3c Enough data and information are present to determine that one or more designated uses may not be attained according to the Planning List methodology

- 4a Impaired for one or more designated uses but does not require TMDL development because a TMDL has already been completed
- 4b Impaired for one or more designated uses but does not require TMDL development because the water will attain water quality standards due to existing or proposed measures
- 4c Impaired for one or more criteria or designated uses but does not require TMDL development because impairment is not caused by a pollutant
- 4d Waterbody indicates non-attainment of water quality standards, but FDEP does not have enough information to determine a causative pollutant; or current data show a potentially adverse trend in nutrients or nutrient response variables; or there are exceedances of stream nutrient thresholds, but FDEP does not have enough information to fully assess non-attainment of the stream nutrient standard.
- 4e Waterbody indicates non-attainment of water quality standards and pollution control mechanisms or restoration activities are in progress or planned to address non-attainment of water quality standards, but FDEP does not have enough information to fully evaluate whether proposed pollution mechanisms will result in attainment of water quality standards.
- 5 Water quality standards are not attained and a TMDL is required.

**Municipal Separate Storm Sewer System (MS4)** – a publicly-owned conveyance or system of conveyances, such as roads with stormwater systems, municipal streets, or catch basins, that are designed or used for collecting or conveying stormwater that discharges into surface waters of the state.

**Nonpoint Source** – any pollutant source that cannot be considered a “point source” according to the **CWA** and Environmental Protection Agency (EPA) regulations. Nonpoint source pollution generally results from runoff, precipitation, atmospheric deposition, drainage, or seepage.

**Numeric Nutrient Criteria (NNC)** – statewide numeric nutrient standards for Florida’s waters established under **Chapter 62-302.531, Florida Administrative Code (F.A.C.)** and **Chapter 62-302.532, F.A.C.**

**Outstanding Florida Water (OFW)** – a waterbody designated by the Environmental Regulation Commission as worthy of special protection because of its natural attributes. OFWs generally include surface waters listed in **Chapter 62-302.700, F.A.C.**

**Outstanding National Resource Water (ONRW)** – a waterbody designated by the Environmental Regulation Commission that is of such exceptional recreational or ecological significance that water quality should be maintained and protected under all circumstances, other than temporary lowering and the lowering allowed under **Section 316 of the CWA**. ONRWs are listed in **Chapter 62-302.700(10), F.A.C.**

**Point Source** – any discernable, confined, and discrete conveyance from which pollutants may be discharged, such as a pipe, vessel, channel, or ditch.

**Potable Water Well** – any water well which supplies water for human consumption to a community water system or to a non-transient non-community water system. (**Chapter 62-521, F.A.C.**)

**Reasonable Assurance Plan (RAP) or 4b Plan** – waterbody restoration plan for waterbodies that are impaired but with control programs already in place to restore water quality standards.

**Site Specific Alternative Criteria (SSAC)** – an alternative surface water quality standard that can replace the criteria applicable statewide in cases where site specific information supports different numeric criteria. The SSAC must fully support and protect the designated uses of the waterbody.

**Sole Source Aquifer (SSA)** – the EPA defines a sole or principal source aquifer as an aquifer that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer (**40 CFR § 149**). These areas may have no alternative drinking water source(s) that could physically, legally, and economically supply all those who depend on the aquifer for drinking water. EPA has identified two SSAs in Florida, the Volusia-Floridian and Biscayne Aquifers.

**Special Water** – a waterbody demonstrated to be of exceptional recreational or ecological significance as listed in **Chapter 62-302.700(9)(i), F.A.C.**

**Surface Water Improvement and Management (SWIM) Program** – established in 1987 as one mechanism to identify nonpoint pollutant sources, and to consider a waterbody's needs as a system of connected resources rather than isolated wetlands or waterbodies. The WMDs are directly responsible for the SWIM program.

**Total Maximum Daily Load (TMDL)** – a scientific determination of the maximum amount of a given pollutant that a waterbody can absorb and still meet the water quality standards that protect human health and aquatic life. The FDEP is responsible for the TMDL program.

**Water Quality Criteria** – elements of the state water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports the present and future most beneficial use.

**Waterbody Classification** – a classification of surface waters of the state according to designated use as established by **Chapter 62-302.400, F.A.C.**, as follows:

Class I	Potable Water Supplies
Class II	Shellfish Propagation or Harvesting

Class III	Fish Consumption; Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife
Class III-Limited	Fish Consumption; Recreation or Limited Recreation; and/or Propagation and Maintenance of a Limited Population of Fish and Wildlife
Class IV	Agricultural Water Supplies
Class V	Navigation, Utility, and Industrial Use

**Waterbody Identification Number (WBID)** – unique identifiers assigned to polygons that roughly delineate the drainage basins surrounding the waterbody assessment units (drainage basins, lakes, lake drainage areas, springs, rivers and streams, segments of rivers and streams, coastal, bay, and estuarine waters in Florida). WBIDs are assigned a FDEP district as part of their attribution. Projects can be in more than one WBID.

**Wellhead Protection Area** – an area consisting of a 500-foot radial setback distance around a potable water well where ground water is provided the most stringent protection measures to protect the ground water source for a potable water well and includes the surface and subsurface area surrounding the well (**Chapter 62-521, F.A.C.**).

**Wild and Scenic River** – a designation under the National Wild and Scenic Rivers System created by Congress in 1968 to preserve rivers with outstanding natural, cultural, and recreational values in a free-flowing condition.

### 11.1.2 Water Quality

The **CWA** is the primary law regulating pollution of the nation’s waterways. Originally enacted in 1948 as the **Federal Water Pollution Control Act**, it was amended in 1972 under the **CWA** to add programs for water quality improvements with the goal of restoring and maintaining the chemical, physical, and biological integrity of the country’s water (**33 U.S.C. § 1251 et seq.**). The “**Clean Water Act**” became the Act’s common name with the amendments in 1972. The **CWA** made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. Additionally, the EPA has set water quality standards for all contaminants in surface waters. In Florida, the FDEP implements the **CWA** programs under **Chapters 403 and 373, F.S.**

## 11.2 PROCEDURE

Project impacts to water resources must be evaluated regardless of whether the project is required to meet federal and/or state environmental review requirements. The water quality evaluation should provide the information necessary to estimate potential impacts to water resources as part of the project development process in compliance with the goals and requirements of the **CWA, Chapter 373, F.S.**, and **Chapter 403, F.S.** The **Water Quality Impact Evaluation Checklist, Form No. 650-050-37**, documents the

technical information for the water quality impact evaluation that supports the **NEPA** decision making process.

### 11.2.1 Regulatory Agencies and Stakeholder Coordination

The management of water quality impacts associated with transportation projects involves engaging various state and federal agencies and other local and regional stakeholders as early as the Planning phase and Efficient Transportation Decision Making (ETDM) process. The goal of early coordination is to proactively identify potential water quality and stormwater requirements, and to explore opportunities for joint stormwater projects that can address those issues with stakeholders.

If the project is located near waterbodies with a Basin Management Action Plan (BMAP) or Reasonable Assurance Plan (RAP), the Project Manager should coordinate with BMAP or RAP stakeholders to understand FDEP and local concerns. Such coordination may also identify the level of water quality evaluation, additional agencies and stakeholders with whom FDOT should collaborate, and whether any potential regional water resource improvement opportunities exist in the project area.

Coordination with regulatory agencies and other stakeholders during a PD&E Study should include the ELA process as described in Chapter 5 of the [FDOT Drainage Manual, Topic No. 625-040-002](#). The ELA process provides an opportunity for assessing and utilizing options for FDOT to partner in innovative, cooperative regional stormwater management projects. The ELA process leads to improved environmental benefit and/or reduced stormwater management costs. The Project Manager should convene ELA meeting(s) soon after the stormwater management requirements are estimated and before stormwater management design decisions are established. The ELA meetings should also explore watershed wide stormwater needs and innovative approaches to meeting permit requirements for the project. The Project Manager should document areas of potential cooperation in the project file for future follow up as the project progresses into the Design phase.

Projects with federal funding located within the boundaries of designated SSAs must be planned and designed to assure they will not contaminate the aquifer. Use [Figure 11-2](#) to determine if the project has the potential to impact a SSA. When the project has the potential to impact a SSA, the Project Manager must coordinate with EPA's Region 4, Ground Water and Underground Injection Control (UIC) Section, to obtain EPA concurrence on the project in compliance with **Section 1424(e) of the Safe Drinking Water Act (SDWA)** and **40 C.F.R. § 149**. Coordination with EPA's Region 4, Ground Water and UIC Section should start during ETDM screening when the Advance Notification (AN) is distributed, and should continue throughout the PD&E Study. The Preliminary Environmental Discussion (PED) should indicate if the project is within the SSA boundary and would impact the SSA. The District Environmental Manager or Project Manager should respond to inquiries, comments, or concerns expressed by the EPA's Region 4 Ground Water and UIC Section to obtain EPA's concurrence with the FDOT's



measures to protect the aquifer. The EPA concurrence letter must be referenced and attached to the final Environmental Document.

## 11.2.2 Determine Level of Assessment

The level of evaluation for water resources during the PD&E phase depends on the project involvement with water resources, quality of the water resources, potential impacts, the potential for implementing non-traditional water quality improvements, or impacts to SSAs. The Water Quality Impact Evaluation (WQIE) is a method to identify and evaluate potential water quality impacts for a PD&E Study. The WQIE documentation should have sufficient detail to reflect consideration of water quality issues, including the ELA (see [Section 11.2.3.2](#)). If coordination with regulatory agencies or other stakeholders is required, additional documentation in form of a technical memo may be needed. WQIE results should be documented in the **Water Quality Impact Evaluation Checklist, Form No. 650-050-37** ([Figure 11-1](#)), saved in the project file, and briefly summarized in the Environmental Document. The **Water Quality Impact Evaluation Checklist, Form No. 650-050-37** should be updated during a re-evaluation if changes have occurred to water quality status, such as delisting from the verified impaired water body list or adoption of new TMDLs, or if the project impacts to water quality have changed.

Detailed evaluations are generally not warranted for transportation projects not qualifying for ETDM screening—typically Type 1 Categorical Exclusions (CEs) and Non-Major State Actions (NMSA). These projects have no significant environmental effects, and therefore typically require minimal water quality evaluation.

A higher potential for water resources impacts typically exists with transportation projects qualifying for screening. Most PD&E projects receive prior consideration of water resources issues during the ETDM process. The WQIE in the PD&E Study focuses on issues identified during the Programming Screen, the results of which are documented in a **Programming Screen Summary Report**.

### 11.2.2.1 Projects Not Qualifying for EDTM Screening

Water quality issues may be identified for projects that do not require ETDM screening and advance straight to the Design phase. Documentation should be provided as follows:

1. **Type 1 Categorical Exclusions** – Verify that the project does not involve significant impacts on water quality. See [Part 1, Chapter 2, Class of Action Determination for Highway Projects](#) for more guidance.
2. **Non-Major State Actions** – Verify that there are no water resources affected by the project. See [Part 1, Chapter 10, State, Local, or Privately Funded Project Delivery](#) for more guidance.

3. **Type 2 Categorical Exclusions** – Some Type 2 CEs may not require ETDM screening. For these projects, water quality impacts are documented on the **Type 2 Categorical Exclusion Determination Form, Form No. 650-050-11**, and in the project file. See [Section 11.2.4.3](#) for guidance on documenting Type 2 CEs.

### 11.2.2.2 Projects Qualifying for ETDM Screening

In accordance with [Part 1, Chapter 2, Class of Action Determination for Highway Projects](#), qualifying projects must complete the ETDM Programming Screen and may also have completed the Planning Screen. The following items should be addressed as the projects advance through the project development process:

1. **Planning Screen Evaluation** – In the PED, the District will provide a discussion about known potential project involvement with surface water bodies and ground water and their designations in accordance with [Part 1, Chapter 3, Preliminary Environmental Discussion and Advance Notification](#). Identify all water resources located within the project area using online resources maintained by the FDEP and WMDs, as well as other data sources.

Specific information identified during the screening may include:

#### a. Surface Water

1. Identification of surface waterbody to which the stormwater ultimately discharges;
2. Any special designations of receiving water bodies (OFW, Aquatic Preserve);
3. Whether the project is within a permitted MS4;
4. WBIDs in which the project is located, and associated FDEP Group Number and Name;
5. WMD in which the project is located;
6. Water Control Districts or Regional Water Authorities;
7. Waterbody Classification;
8. Listing status—whether the WBID is identified as impaired, has a TMDL and/or BMAP or RAP;
9. The appropriate numeric nutrient standard for the waterbody if applicable; and
10. If project directly discharges to a waterbody identified as impaired, identify the pollutant(s) of concern, numeric criteria or TMDL (whichever applies).

#### b. Groundwater

1. Groundwater recharge mechanism;
  2. Identification of the aquifer where the project is located;
  3. Identification of SSA;
  4. Potentially affected springsheds and spring protection zones;
  5. Whether the potentially affected spring has a BMAP or RAP plan; and
  6. Water Control Districts or Regional Water Authorities with potable water well fields.
2. **Programming Screen Evaluation** – Include discussion about potential project involvement with surface and groundwater resources (based on the District familiarity with the project area and information from the Planning Screen) in the PED and the AN, as appropriate. The District ETDM Coordinator and the Project Manager should include other District staff such as District Drainage Engineer, Permit Coordinator, and others who will be involved with the project in subsequent phases. Discuss with the District Drainage Engineer to explore opportunities and options for stormwater management for the project. Coordinate as needed with the Environmental Technical Advisory Team (ETAT) and other stakeholders throughout the ETDM screening process.
3. **PD&E Evaluation** – After ETDM screening, review the **Programming Screen Summary Report** for ETAT comments regarding water quality issues and other related issues such as coastal and marine, wetlands and other surface waters, floodplains, SSAs, and other special designations. Determine the project's involvement with project specific or regional water resource issues from resource agencies' comments. Use information from the ETDM screening to scope the water quality evaluation effort during the PD&E Study. The Project Manager should discuss scope activities with other offices such as Drainage, Permit, and Maintenance. Use information from **Programming Screen Summary Report** to document existing conditions.

The Project Manager should prepare a **Water Quality Impact Evaluation Checklist, Form No. 650-050-37** for each alternative, as appropriate. Convene ELA meetings with regulatory agencies and appropriate stakeholders. Complete the appropriate level of documentation based on the project and associated impacts and outcomes of ELA meetings. Complete the appropriate conceptual drainage analysis based on the level of design detail in the PD&E Study ([Part 1, Chapter 4, Project Development Process](#)).

### 11.2.3 Water Quality Impact Evaluation

The purpose of the WQIE in the PD&E Study is to identify and characterize existing water resources in a project area, assess a project's potential impacts to water resources,

identify and evaluate mitigation measures, if necessary, and document coordination that occurred. Since water quality requirements and basin parameters affect stormwater pond size requirements and drainage criteria, the ***Water Quality Impact Evaluation Checklist, Form No. 650-050-37*** should be completed prior to finalizing the pond siting analysis.

The following sections outline the approach to complete a WQIE during the PD&E Study.

### **11.2.3.1 Existing Conditions**

At the beginning of the PD&E Study, the Project Manager should coordinate with the ETAT members to discuss their comments provided in the ***Programming Screen Summary Report***. This helps to verify if potential water resources issues and environmental concerns have changed or not changed since the screening was completed. Using the results of the Programming Screen, the District can begin to document the existing water resources that may be affected by the proposed project. This documentation can start before the PD&E Study is initiated.

#### **11.2.3.1.1 Identify Water Resources**

Delineate water resource basins or watershed boundaries where the project may have a direct impact on water quality. Identify water resource characteristics within the basin boundaries. Review the project area for the existence of joint stormwater management projects by using the ELA process. Joint projects may require expansion of the stormwater analysis beyond the project's immediate hydrologic basin boundaries. The Project Manager should coordinate with the District Drainage Design Office to determine any additional areas associated with pond siting, water storage, hydrologic restoration, recharge or treatment. Coordination should also include the District Permit Coordinator and National Pollutant Discharge Elimination System (NPDES)/MS4 Coordinator to identify areas where pollutant load reduction efforts are needed.

#### **11.2.3.1.2 Collect Data and Evaluate Water Quality Impacts**

Data to evaluate potential water resources issues within the project area can be obtained from various sources such as FDEP and WMD websites, geographic information system (GIS) water resources data, county and city water atlases, regional stormwater master plans, and flood studies. The FDEP TMDL website is frequently updated with new information and should be checked periodically during the PD&E Study.

### **11.2.3.2 Water Quality Impact Evaluation Documentation**

The detailed results of data collection efforts and continued coordination with water resources agencies and stakeholders are documented in the ***Water Quality Impact Evaluation Checklist, Form No. 650-050-37*** ([Figure 11-1](#)) and summarized in the Environmental Document. If more than one project alternative is analyzed in detail, a ***Water Quality Impact Evaluation Checklist, Form No. 650-050-37*** is completed for

each alternative. In cases where the project alternatives are in the same drainage basin(s), one ***Water Quality Impact Evaluation Checklist, Form No. 650-050-37*** is prepared. The results of each alternative are then compared and documented in the ***Preliminary Engineering Report (PER)*** and summarized in the Environmental Document.

The ***Water Quality Impact Evaluation Checklist, Form No. 650-050-37*** has five parts which include the following information:

### **Part 1 - Project Information**

This section includes general project identification:

1. Project Name
2. County
3. Financial Management (FM) Number
4. Federal-Aid Project Number
5. Brief project description including the location and identification of water resources within the project area that are potentially affected. The description of the project should include all activities related to construction, and should summarize both long-term and short-term anticipated impacts on identified water resources.

### **Part 2 - Determination of WQIE Scope**

Determine if the project:

1. discharges to surface or groundwater;
2. alters the drainage system; and,
3. is located within a permitted MS4. If yes, name the Phase I or Phase II MS4. Lists of permitted Phase I and Phase II MS4 facilities can be found on the FDEP website (See [Section 11.3](#) for a web link).

### **Part 3 - Project Basin and Receiving Water Characteristics**

Provide the following information:

1. Names of receiving water bodies (or closed basin);
2. WMD(s) in which the basin is located;

3. ELA meeting date (attach meeting minutes/notes);
4. Water Control Districts or Regional Water Authorities with jurisdiction in the area in which the basin is located;
5. Identification of any SSA in proximity to the project;
6. Identification of any other aquifers;
7. Identification of any spring vents;
8. Identification of any well head protection area;
9. Identification of groundwater recharge; and
10. Date of notification to the District Drainage Engineer if karst conditions are expected or if a higher level of treatment may be needed due to a project's location within a WBID verified as impaired, in accordance with **Chapter 62-303, F.A.C.**

#### **Part 4 - Water Quality Criteria**

List all WBIDs and all parameters for which a WBID has been verified impaired, or has a TMDL in Table 1 of the Checklist. This information should be updated during each re-evaluation as required.

Indicate whether the coordination shown in Table 2 of the Checklist has been completed and attach meeting notes or minutes from all coordination meetings identified.

1. Provide this information in Table 1 of the Checklist as described below:
  - a. Receiving waterbody name (or closed basin name);
  - b. DEP Group Number;
  - c. DEP Basin (Group Name);
  - d. WBIDs;
  - e. Waterbody classification(s);
  - f. Special Basin Designations ([Part 2, Chapter 10, Aquatic Preserves and Outstanding Florida Waters](#) and [Part 2, Chapter 12, Wild and Scenic Rivers](#));
  - g. Appropriate NNC—i.e., Lakes, Spring vents, Streams, Estuaries;
  - h. Impairment status - whether the WBID(s) identified is impaired;
  - i. TMDL status;
  - j. Pollutant(s) of concern and numeric criteria or TMDL criteria; and,

- k. Whether project is in a basin that has a BMAP, RAP plan, or SSAC.
2. Mark boxes accordingly and include information on Table 2. Table 2 summarizes coordination efforts with federal, state, and local agencies, local stakeholders, and BMAP or RAP stakeholders—indicate if FDOT is a stakeholder. Documentation should indicate if additional coordination is recommended after the PD&E phase and provide the contact person and contact information.
3. Attach documentation of regional stormwater or other project opportunities identified in ELA meeting(s). Attach notes or meeting minutes from all coordination meetings.
4. Describe any direct effects associated with project construction and operation. Direct effects are those that occur in direct association with the construction or operation of the project, such as:
  - a. turbidity;
  - b. sedimentation;
  - c. increase in stormwater runoff;
  - d. decrease in water quality (violation of water quality standards/objectives) of downstream or receiving water bodies; and/or
  - e. enhancement of water quality through treatment.

List all regulatory agency requirements and indicate the most stringent criteria that apply. Additionally, more stringent water quality criteria, such as for OFWs or aquatic preserves, should be documented for the purposes of sediment and erosion control planning for construction.

5. Discuss any other relevant water quality information.

## Part 5: WQIE Documentation

Mark boxes as appropriate, and attach supporting documentation.

It is important to update the ***Water Quality Impact Evaluation Checklist, Form No. 650-050-37*** throughout the life of the project because the status of water resources impairments is updated frequently. The FDEP TMDL website is updated with new information and should be checked periodically. See [Section 11.3](#) for a link to FDEP's website.

### 11.2.4 Stormwater Impacts

Stormwater impacts associated with transportation projects are usually addressed through permitting of stormwater management systems.

In accordance with **Chapter 62-330.301, F.A.C.**, to obtain an approval permit FDOT must provide reasonable assurance that the construction, alteration, operation, maintenance, removal, or abandonment of the projects:

- a. will not cause adverse water quantity impacts to receiving waters and adjacent lands;
- b. will not cause adverse flooding to on-site or off-site property;
- c. will not cause adverse impacts to existing surface water storage and conveyance capabilities;
- d. will not adversely impact the value of functions provided to fish and wildlife and listed species by wetlands and other surface waters;
- e. will not adversely affect the quality of receiving waters such that the state water quality standards will be violated;
- f. will not cause adverse secondary impacts to the water resources;
- g. will not adversely impact the maintenance of surface or groundwater levels or surface water flows established pursuant to **Section 373.042, F.S.**
- h. will not cause adverse impacts to a Work of the District established pursuant to **Section 373.086, F.S.**;
- i. will be capable, based on generally accepted engineering and scientific principles, of performing and functioning as proposed;
- j. will be conducted by a person with the financial, legal, and administrative capability of ensuring that the activity will be undertaken in accordance with the terms and conditions of the permit, if issued; and,
- k. will comply with any applicable special basin or geographic area criteria established in **Chapter 62-330.301(1)(k), F.A.C.**

#### 11.2.4.2 Federal and State Stormwater Regulations and Permits

All FDOT projects must adhere to federal and state regulations. It is the Project Manager's responsibility to become familiar with the laws, rules, and regulations that may affect the project. This section summarizes some of those rules, as well as programs designed to aid in improving water quality and address stormwater aspects associated with transportation projects. Refer to [Part 1, Chapter 12, Environmental Permits](#) for more information regarding FDOT procedures for obtaining environmental permits.

##### 11.2.4.2.1 NPDES Permit

**Section 402 of the CWA (33 U.S.C. § 1342)** established the NPDES stormwater permit program to regulate water pollution caused by municipal separate storm sewer systems (MS4s), and a generic NPDES permit for small construction activity disturbing between 1 and 5 acres of land. In Florida, the NPDES stormwater permit program is administered by FDEP in accordance with **Section 403.0885, F.S.**, which is different from the



Environmental Resource Permitting (ERP) program authorized by **Chapter 373, F.S.** FDOT is a regulated MS4 operator under **Chapter 62-624, F.A.C.** Regulated MS4 operators must obtain an NPDES stormwater permit and implement a Statewide Stormwater Management Plan (SSWMP) that describes the activities to be conducted, methods to be used, and procedures to be followed to reduce the discharge of pollutants from its MS4s to the maximum extent practicable.

#### **11.2.4.2.2 Total Maximum Daily Load**

**Section 303(d) of the CWA** requires states to identify waters where current pollution control technologies alone cannot meet the water quality standards set for that waterbody. Every two years, states are required to submit a list of impaired waters, plus any that may soon become impaired, to the EPA for approval. The impaired waters are prioritized based on the severity of the pollution and the designated use of the waterbody (e.g., fish propagation or human recreation). States must establish the TMDLs of the pollutant(s) in the waterbody for impaired waters on their lists.

The **Florida Watershed Restoration Act (FWRA)** which is codified at **Section 403.067 F.S.**, was enacted to protect waters of the state through the TMDL program, as required by **Section 303(d) of the CWA** and **33 USC § 1251**. The TMDL program promotes improvements in the quality of waters of the state by coordinating control of pollution from both point and nonpoint sources. TMDLs are adopted for waters identified as impaired by FDEP in accordance with **Chapter 62-303, F.A.C.**, also known as the **Impaired Waters Rule (IWR)**. TMDLs are adopted by law in **Chapter 62-304, F.A.C.** TMDLs may be implemented through BMAPs, NPDES permits, or through other pollution reduction strategies.

BMAPs are formal plans for restoring impaired waters by reducing pollutant loadings. BMAPs are developed under **Section 403.067, F.S.**, with local stakeholders, including FDOT. BMAP obligations upon cities and counties can be costly, and can serve as an incentive for local governments to seek joint stormwater projects with FDOT. Example of BMAPs are permit limits on wastewater facilities, urban and agricultural best management practices, stormwater best management practices, conservation programs, financial assistance, and revenue generating activities.

The list of TMDLs and their BMAPs can be found on the FDEP website, which is updated regularly. Projects that are located within an impaired waterbody with established TMDLs may be subjected to meeting stricter regulatory requirements for water quality.

FDEP implements RAPs to restore water bodies to meet their designated uses. Implementation of RAPs alleviates the need to establish TMDLs. **Chapter 62-303.600, F.A.C.** allows FDEP to omit impaired waters if pollution control programs, such as RAPs, are being implemented to restore water quality standards and are deemed sufficient to result in attainment of applicable water quality standards. The FDEP's decision shall be based on a plan that any proposed pollution control mechanisms from stakeholders such as FDOT demonstrate reasonable assurance that the proposed pollution control

mechanism and expected improvements in water quality in the water segment will attain applicable water quality standards. The list of adopted RAPs can be found on the FDEP website which is updated regularly.

### 11.2.4.2.3 Environmental Resource Permits

Implemented by **Chapter 62-330, F.A.C.**, and administered by WMDs or FDEP, ERPs regulate activities involving the alteration of surface water flows and provides protection for the vital functions of wetlands and other surface waters. Any FDOT transportation project involving the construction, alteration, operation, maintenance, repair, abandonment, and removal of stormwater management systems, dams, impoundments, reservoirs, appurtenant works, and works including structures, dredging and filling located in, on or over wetlands or other surface waters as defined in **Chapter 62-340, F.A.C.**, are governed by the ERP Program under **Chapter 62-330, F.A.C.** ERP permit requirements prescribe stormwater pond sizes and vary among WMDs. Stormwater pond design criteria for slopes, berms, and clearances, in the [Drainage Manual, Topic Number 625-040-002](#), are set so as to satisfy similar WMD pond design criteria. Generally, ERP requirements regulate stormwater discharge restrictions leaving FDOT right of way (ROW). Typically, maximum post-development discharge is limited to no greater than pre-development discharge for the specified design storm events required by the WMD. In certain basins with historical flooding and/or limited stormwater conveyance infrastructure, WMDs require upon site development, reductions from pre-development discharge; this often results in larger stormwater ponds to achieve the required lower discharge flow rate and/or volume. On FDOT transportation projects, ERPs are obtained prior to construction, typically when the drainage design is substantially complete (i.e., after Phase II design plans).

### 11.2.4.3 Conceptual Drainage and Pond Siting Analysis

The drainage analysis conducted during the PD&E Study is dependent on the level of engineering and design analyses required for the PD&E project. At a minimum, the PD&E Study should identify the project's drainage issues and other possible issues that may affect drainage and other design elements, present the overall stormwater management approach, briefly discuss and present possible stormwater design concepts that mitigate stormwater runoff, and estimate the general size and potential locations of stormwater management facilities (ponds) that meet regulatory requirements. Stormwater ponds are sized to meet both attenuation (quantity control) and treatment (quality control) requirements. Evaluation of size and location for stormwater ponds, and alternative stormwater management options (e.g., detention, retention, infiltration) during PD&E ensures additional ROW beyond roadway improvements are analyzed for potential impacts to other environmental resources. Drainage concepts and stormwater pond locations are established during PD&E to evaluate potential impacts to environmental resources.

Drainage analysis is documented in the **PER, Pond Siting Report (PSR)**, and summarized in the Water Quality and Stormwater Section of the Environmental

Document. More information on the **PSR** can be found in the [Drainage Manual, Topic Number 625-040-002](#). The stormwater management facility type, size, location and costs are documented in the **PSR**. Projects in urban core area where adjacent land is fully built out would not necessarily warrant preparation of a **PSR** if ROW is not required for treatment; in such cases, a **Concept Drainage Design Report** is prepared to document preliminary drainage analysis and data that will support drainage design in the Design phase. The contents for the **Concept Drainage Design Report** are typically expanded during the Design phase when the stormwater management systems are designed in detail.

The information presented in the **PSR** and **Concept Drainage Design Report** is specific to each project and possible drainage approach. The reports must include a cover page prepared using the **Technical Report Cover Page, Form No. 650-050-38** and be signed and sealed by a professional engineer in accordance with **Chapter 471, F.S.** A sample cover page is shown in [Figure 11-3](#).

#### 11.2.4.3.1 Existing Drainage Conditions

For each project alternative being evaluated in the PD&E Study, the existing drainage conditions should be identified, as follows:

1. General drainage patterns near the project;
2. Description of the existing drainage basins with their respective outfalls (include information about name and size of basin and whether it is an open or closed basin);
3. The receiving waterbodies, their classifications, their special designations if appropriate, and if they are verified impaired through the FDEP's TMDL Program;
4. Previous permit information—WMD's permits and drainage connection permits;
5. Base flood elevation, tidal information, water control district's seasonal high water table or control elevations;
6. The land use within the project area;
7. Deficiencies in existing conditions—history of flooding, substandard clearances, scour/erosion problems;
8. The soil types within the project area;
9. Description of existing stormwater systems and stormwater management facilities including conveyance system; location and size of cross drains; location and description of bridges; location, type and size of ponds; other stormwater facilities;
10. Known above or below ground contamination materials that have a potential to be

impacted by the project and hence affect water quality; and,

11. Information regarding historical, archeological, and environmental resources that have the potential to be impacted by the drainage of the project.

#### **11.2.4.3.2 Proposed Drainage Conditions**

Drainage analysis for proposed conditions should provide a conceptual drainage system, which appropriately includes the following items:

1. Description of the onsite drainage basins with their respective outfalls;
2. Discussion on how stormwater from offsite area will be handled;
3. WMD and FDOT water quality treatment and the rate (or volume) discharge requirements;
4. Floodplain compensation requirements and estimated compensation volume;
5. General discussion of the preliminary proposed drainage (ditched, piped, ponds);
6. Approximate size and potential locations of Stormwater Management Facilities;
7. Approximate location and size of cross drains (new or existing)—evaluate potential for ROW, drainage or construction easements;
8. Treatment of existing cross drains (e.g., lengthened, type of end treatment, replaced, plugged);
9. Proposed new bridge structures;
10. Modifications to existing bridge structures;
11. Drainage related design variations;
12. Utility conflicts.

#### **11.2.4.3.3 Pond Siting Analysis**

For all stormwater ponds requiring ROW acquisition, a pond siting evaluation is required during PD&E Study. Location of ponds for the preferred alternative must be evaluated for potential impacts to the human, natural, cultural and/or physical environment. The Project Manager should first explore innovative opportunities such as regional facilities, joint-use facilities, and stormwater re-use systems, through the ELA process. [Chapter 9 of the FDOT Drainage Design Guides](#) provides a process that can be followed during pond siting evaluation.

Stormwater pond design considerations during the PD&E Study include seasonal high groundwater table, soil permeability, tail water, maintenance, constructability, aviation safety issues, and environmental issues. When identifying the size and location of pond sites, it is important to consider the aesthetic qualities of stormwater management ponds on all FDOT projects. The [FDOT Drainage Manual, Topic No. 625-040-002](#) requires the design of stormwater management facilities be consistent with the [Highway Beautification, Policy No. 000-650-011](#) and integrated with existing and proposed landscaping and adjoining land uses.

#### 11.2.4.4 Environmental Document

Water resource involvement or impacts must be summarized in the water quality and stormwater section of the appropriate Environmental Document for the project. For the purposes of this chapter, the term “water quality and stormwater section” means the section where water resource involvement or impacts are discussed in the Environmental Document. The Environmental Document should summarize post-construction best management practices (BMPs) which will be implemented to address potential water quality and stormwater impacts from the project’s stormwater impacts. Furthermore, the Environmental Document should state whether the project will meet the criteria and requirements of stormwater quantity and water quality criteria. The **Water Quality Impact Evaluation Checklist, Form No. 650-050-37** is maintained in the project file within the StateWide Environmental Project Tracker (SWEPT).

##### 11.2.4.4.1 Federal Projects

Major elements of the **Water Quality Impact Evaluation Checklist, Form No. 650-050-37** and **PSR** are summarized in the Environmental Document. The results of any meetings should be documented in the applicable Environmental Document, such as the Comments and Coordination Section of an EA or EIS and, when applicable, the Commitments Section.

Draft Environmental Documents for projects that occur within the boundaries of a designated SSA are sent to EPA Groundwater/Drinking Water Branch for evaluation when it is determined through coordination that EPA clearance is required. Issues raised by EPA should be addressed in the Environmental Analysis Section of a Type 2 CE, EA, or EIS. The results of any meetings should be documented in the Comments and Coordination Section of an EA or EIS and, when applicable, the Commitments Section. Documentation from EPA that the project is compliant with **Section 1424(e)** of the **SDWA** and **40 CFR §149** must be included in the final Environmental Document.

##### 11.2.4.4.2 State Funded Projects

The **State Environmental Impact Report Form, Form No. 650-050-43** should indicate the level of water quality impact in the appropriate column. If a project does not involve impacts to water resources, mark the column indicating “NOINV.” If water resources exist but the project will improve water quality, mark the column indicating “ENHANCE.” If water

resources exist but there is little or no impact, mark the column indicating “NO.” If there is a potential for significant impacts to water resources, mark the column “YES.” Provide justification of decision in the Supporting Information column as necessary to support the impact determination. All commitments made through coordination efforts should be documented in the Commitments section of the ***State Environmental Impact Report Form, Form No. 650-050-43***. The ***Water Quality Impact Evaluation Checklist, Form No. 650-050-37*** should be saved in the project file.

#### **11.2.4.4.3 Commitments**

Water resource commitments may be related to BMAP/RAP commitments, ELA commitments, or actions/activities required to advance the project and/or require action for the Contractor to implement. Commitments may include the retrofitting of structures to increase water quality treatment; building of water quality improvement features; hydrologic enhancement; recharge or reuse projects; or continued coordination with water resource agencies or other stakeholders. Commitments must be coordinated with other FDOT offices to ensure they are feasible.

Commitments related to water resource issues made by the FDOT should be included in the Environmental Document consistent with [Part 2, Chapter 22, Commitments](#) and transmitted to the next phase of project development in accordance with [Procedure No. 650-000-003, Project Commitment Tracking](#).

#### **11.2.4.5 Re-evaluation**

Any change to the project which may affect water quality impacts after approval of the Environmental Document must be documented in a ***Re-evaluation Form, Form No. 650-050-29*** consistent with [Part 1, Chapter 13, Re-evaluations](#). Commitments and coordination, and the status of any water quality permits, should be discussed in the Water Quality and Stormwater, Commitment Status, and/or Status of Permits sections of the ***Re-evaluation Form, Form No. 650-050-29***.

### **11.3 REFERENCES**

Chapter 62-302, F.A.C., Surface Water Quality Standards

Chapter 62-303, F.A.C., Identification of Impaired Surface Waters

Chapter 62-304, F.A.C., Total Maximum Daily Loads

Chapter 62-621, F.A.C., Generic Permits

Chapter 62-624, F.A.C., Municipal Separate Storm Sewer Systems

Chapter 373, F.S., Water Resources

Chapter 403, F.S., Environmental Control Clean Water Act of 1972, as amended.  
<http://www.fws.gov/laws/lawsdigest/fwatrpo.html>

EPA, Safe Drinking Water Act, Section 1424(e), 1976.  
<https://www.epw.senate.gov/sdwa.pdf>

FDEP, Guidance on Developing Restoration Plans and Alternatives to TMDLs –  
Assessment Category 4b and 4e Plans, April 2018.  
<https://floridadep.gov/dear/watershed-assessment-section/documents/guidance-developing-restoration-plans-alternatives-tmdls>

FDEP, Permitted Phase I MS4s in Florida, April 2018.  
<https://floridadep.gov/water/stormwater/content/stormwater-facility-information>

FDEP, Permitted Phase II MS4s in Florida, April 2018.  
<https://floridadep.gov/water/stormwater/content/stormwater-facility-information>

FDEP, Wastewater Facility Information,  
<http://dep.state.fl.us/water/wastewater/facinfo.htm>

FDOT, Drainage Manual, Topic No. 625-040-002.  
<http://www.fdot.gov/roadway/Drainage/files/DrainageManual.pdf>

FDOT, Efficient Transportation Decision Making Manual.  
<http://www.fdot.gov/environment/pubs/etdm/etdmmanual.shtm>

FDOT, Statewide Stormwater Management Plan, 2012.  
<https://www.fdot.gov/maintenance/NPDES-StormWater.shtm>

Memorandum of Understanding Between FHWA and FDOT Concerning the State of  
Florida's Participation in the Surface Transportation Project Delivery Program  
Pursuant to 23 U.S.C. 327, December 14, 2016.  
<http://www.fdot.gov/environment/pubs/Executed-FDOT-NEPA-Assignment-MOU-2016-1214.pdf>

## 11.4 FORMS

Re-evaluation Form, Form No. 650-050-29\*

[State Environmental Impact Report Form, Form No. 650-050-43](#)

[Technical Report Cover Page, Form No. 650-050-38](#)

Type 2 Categorical Exclusion Determination Form, Form No. 650-050-11\*

[Water Quality Impact Evaluation Checklist, Form No. 650-050-37](#)

\*To be completed in [SWEPT](#)

## **11.5 HISTORY**

2/25/2004, 7/27/2016, 6/14/2017: NEPA Assignment, re-numbered from Part 2, Chapter 20, and re-named Water Quality and Water Quantity



## WATER QUALITY IMPACT EVALUATION CHECKLIST

### PART 1: PROJECT INFORMATION

Project Name:	
County:	
FM Number:	
Federal Aid Project No:	
Brief Project Description:	

### PART 2: DETERMINATION OF WQIE SCOPE

Does project discharge to surface or groundwater?  Yes  No

Does project alter the drainage system?  Yes  No

Is the project located within a permitted MS4?  
Name:  Yes  No

If the answers to the questions above are no, complete the applicable sections of Part 3 and 4, and then check Box A in Part 5.

### PART 3: PROJECT BASIN AND RECEIVING WATER CHARACTERISTICS

#### Surface Water

Receiving water(s) names:

Water Management District:

Environmental Look Around meeting date: \_\_\_\_/\_\_\_\_/\_\_\_\_

*Attach meeting minutes/notes to the checklist.*

Water Control District Name (list all that apply):

#### Groundwater

Sole Source Aquifer (SSA)?  Yes  No Name \_\_\_\_\_

If yes, complete Part 5, D and complete SSA Checklist from EPA website ([Figure 11-2](#))

Other Aquifer?  Yes  No Name \_\_\_\_\_

Springs vents?  Yes  No Name \_\_\_\_\_

Well head protection area?  Yes  No Name \_\_\_\_\_

**Figure 11-1 Water Quality Impact Evaluation**

Groundwater recharge?  Yes  No Name \_\_\_\_\_

Notify District Drainage Engineer if karst conditions are expected or if a higher level of treatment may be needed due to a project being located within a WBID verified as Impaired in accordance with Chapter 62-303, F.A.C.

Date of notification: \_\_\_\_/\_\_\_\_/\_\_\_\_

#### **PART 4: WATER QUALITY CRITERIA**

List all WBIDs and all parameters for which a WBID has been verified impaired, or has a TMDL in **Table 1**. This information should be updated during each re-evaluation as required.

Note: If BMAP or RAP has been identified in **Table 1**, **Table 2** must also be completed. *Attach notes or minutes from all coordination meetings identified in **Table 2**.*

EST recommendations confirmed with agencies?  Yes  No

BMAP Stakeholders contacted:  Yes  No

TMDL program contacted:  Yes  No

RAP Stakeholders contacted:  Yes  No

Regional water quality projects identified in the ELA  Yes  No

If yes, describe:

Potential direct effects associated with project construction and/or operation identified?  Yes  No

If yes, describe:

Discuss any other relevant information related to water quality including Regulatory Agency Water Quality Requirements.

**Figure 11-1 Water Quality Impact Evaluation (Page 2 of 5)**

## PART 5: WQIE DOCUMENTATION

- A. No involvement with water quality
- B. No water quality regulatory requirements apply.
- C. Water quality regulatory requirements apply to this project (provide Evaluator's information below). Water quality and stormwater issues will be mitigated through compliance with the design requirements of authorized regulatory agencies.
- D. EPA Ground/Drinking Water Branch review required.  Yes  No  
Concurrence received?  Yes  No  
If Yes, Date of EPA Concurrence: \_\_\_/\_\_\_/\_\_\_ (Attach the concurrence letter)

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated December 14, 2016 and executed by FHWA and FDOT.

Evaluator Name (print):	
Title:	
Signature:	Date:

**Figure 11-1 Water Quality Impact Evaluation (Page 3 of 5)**



**Table 2: Regulatory Agencies/Stakeholders Contacted**

Receiving Water Name (list all that apply)	Agency's Contact and Title	Date Contacted	Follow-up Required (Y/N)	Comments

**Figure 11-1 Water Quality Impact Evaluation (Page 5 of 5)**

PROJECT NAME:

NAME OF SOLE SOURCE AQUIFER:

1. Location of project:
2. Project description.
3. Is there any increase of impervious surface? If so, what is the area?
4. Describe how storm water is currently treated on the site?
5. How will storm water be treated on this site during construction and after the project is complete?
6. Are there any underground storage tanks present or to be installed? Include details of such tanks.
7. Will there be any liquid or solid waste generated? If so how will it be disposed of?
8. What is the depth of excavation?
9. Are there any wells in the area that may provide direct routes for contaminants to access the aquifer and how close are they to the project?
10. Are there any hazardous waste sites in the project area, especially if the waste site has an underground plume with monitoring wells that may be disturbed? Include details.
11. Are there any deep pilings that may provide access to the aquifer?
12. Are Best Management Practices planned to address any possible risks or concerns?
13. Is there any other information that could be helpful in determining if this project may have an effect on the aquifer?
14. Does this Project include any improvements that may be beneficial to the aquifer, such as improvements to the wastewater treatment plan?

*The EPA Sole Source Aquifer Program may request additional information if impacts to the aquifer are questionable after this information is submitted for review.*

**Figure 11-2 Sole Source Aquifer Checklist**

## POND SITING REPORT (OR CONCEPT DRAINAGE DESIGN REPORT)

Florida Department of Transportation

District X

Project Title

Limits of Project

County, Florida

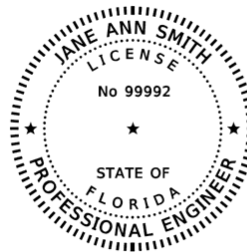
Financial Management Number: XXXXX-X

ETDM Number: XXXXXX

Date

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated December 14, 2016 and executed by FHWA and FDOT.

(Signature Block as Needed)



THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED BY:

**JANE ANN SMITH**  
**Date: 2013.10.09**  
**16:40:48 - 4'00'**

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED. THE SIGNATURE MUST BE VERIFIED ON THE ELECTRONIC DOCUMENTS.

ROADWAY ENGINEERS, INC.  
123 MAIN STREET  
TALLAHASSEE, FL 32301  
CERTIFICATE OF AUTHORIZATION: 12345  
JANE ANN SMITH, P.E. NO. 99992

**Figure 11-3 Sample Pond Siting Report Cover Page**