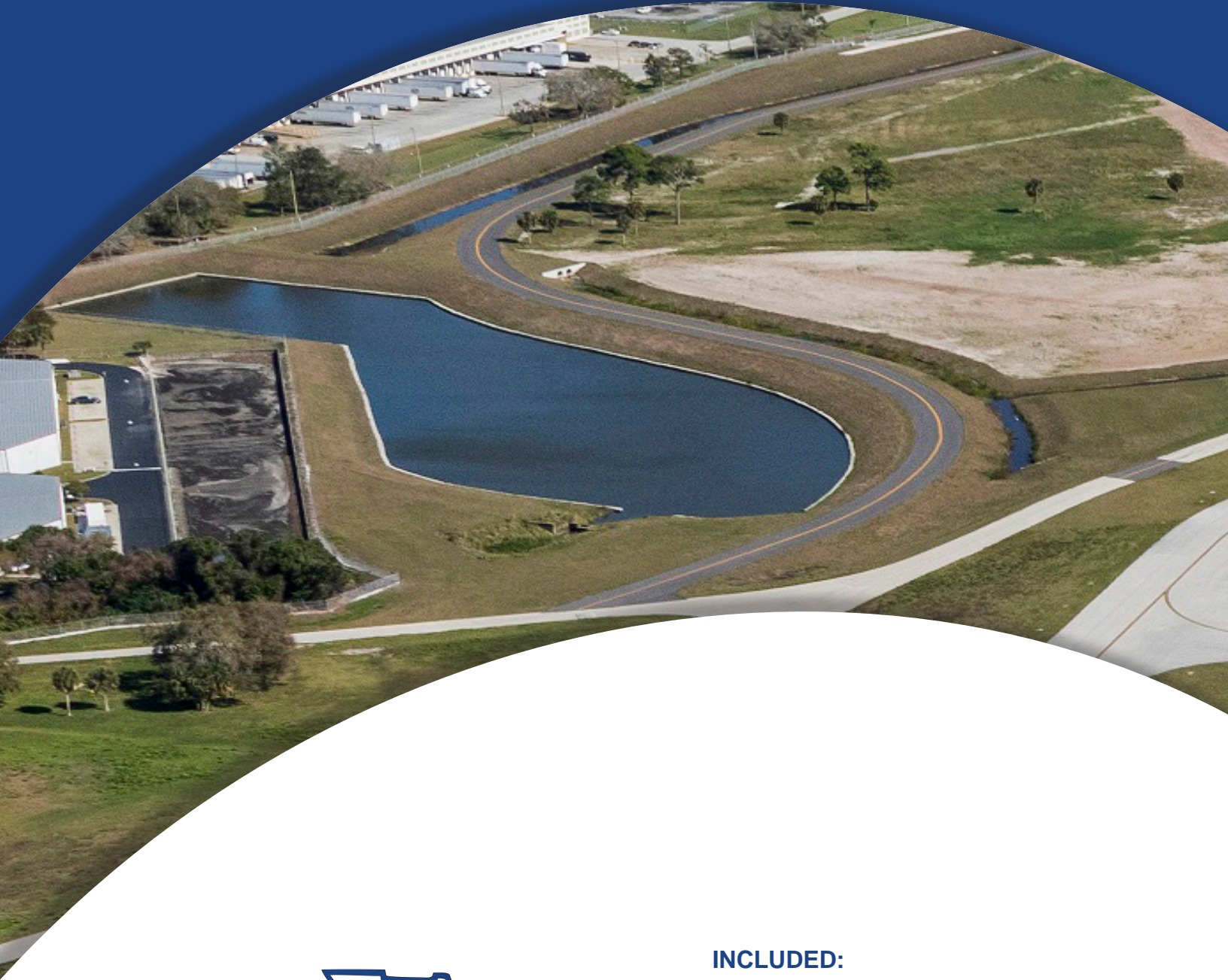


Using the Florida Statewide Airport Stormwater Study



INCLUDED:

- What is the Florida Statewide Airport Stormwater Study?
- Why does it matter to MY airport?
- What are the benefits of using it?
- How do I get started?

What is the Florida Statewide Airport Stormwater Study?

Basically, the Florida Statewide Airport Stormwater Study provides a design and permitting option for drainage and water management on Florida airports. Florida regulates water quantity (flooding) and water quality (pollution, including some of the blue-green algae blooms that have occupied the news). As part of that regulatory effort, the state has published general design guidance for both water quantity and quality. Follow that guidance, and you get a permit.

So why not just do that?

Simply put, airports are different.

Airports have different issues in relation to safety, reliability, and resilience, and they have very different runoff water characteristics. They are subject to federal and state regulations that make some of the designs for generic projects, at best, less than optimal and, at worst, highly undesirable on an airport. With respect to water management, a simple example are the ponds that have a combination of shallow slopes or shallow shelves with vegetation and deeper, open pools of water. On an airport, a feature like that can easily become a hazardous wildlife attractant. The Florida Statewide Airport Stormwater Study provides the tools to maintain, and even improve, environmental conditions with fewer impacts to airport safety.

Used properly, it can and usually does provide **economic benefits that are both initial and long-term.**

Who reviewed the results of the study?



Why does it matter to MY Airport?

- **Permitting**
Florida has regulated stormwater quality for four decades and requires a permit based on reasonable assurance that a project will not degrade water quality.
NO PERMIT — NO PROJECT!
- **Public Perception**
Water quality is always in the news in FL. If your water quality is better, your public image is better.
- **Safety**
Comply with FAA Grant Assurances by taking all available and reasonable actions to reduce water features that attract hazardous wildlife.
- **Flooding**
Airports are impacted differently by flooding than standard codes presume. Don't overdesign and overspend and don't under design for critical facilities.
- **Pollution**
Airports are much cleaner than most land uses. Don't treat as a problem things that are not a problem.
- **Revenue**
No ponds or smaller ponds and more land development area can provide **more revenue-generating leases and activities.**

What are the benefits to using it?

Faster Permitting – The phrase “time is money” probably sums this up best. Individual projects that are aprons, runways, and taxiways can normally use the General Permit incorporated into the Florida Administrative Code. Provided the application is complete, the authorization is often in hand within 30 days and sometimes within two weeks. Projects that have a master drainage plan completed using the information from the Florida Statewide Airport Stormwater Study can get construction authorizations within the same timeframe.

More Usable Land – The Florida Statewide Airport Stormwater Study focuses the designs for the features that exist or that are planned to exist on the airport. This includes not only the airside features of the General Permit but, when completed within a master plan/master drainage plan, all the other land uses and development on the property. The design features developed in the study can also dramatically reduce the size of any ponds and, in some cases, eliminate them entirely. More usable land equates to more revenue supporting the airport.

Reduced Wildlife Attractant – Fewer and smaller continuously wet ponds and ponds with design features that follow the FAA and USDA guidelines have been less attractive to wildlife, another benefit of using the study. In one of the pilot projects conducted as part of the overall study just changing the design features of an existing pond reduced wading and water bird use by 60%.



Before - Wet

After - Dry

Better Water Quality – The design features developed as part of the Florida Statewide Airport Stormwater Study removed nearly twice the pollutant load as generic designs do in ponds that were less than 1/5, or in some cases 1/10, the size of the generic designs. This is not merely a benefit on a technical or regulatory document in some file. It is also an example of airports striving to be good environmental neighbors. Some of the fastest-growing airports in the state which are also some of the fastest growing in the nation have publicized these efforts and benefits. Even when it doesn't get the airport greater community support, it does quiet some of the opposition that airport growth often encounters.

If the benefits are so great, why isn't everyone using it?

There seem to be **three main reasons** that the study and its products are not widely used by Florida airports to date.

1. Many of the decision-makers at the airports are not fully aware of its use and its benefits. That is the purpose of this brochure. Airport managers, directors, facilities, and engineering staff need to know there is a better way and the Florida Statewide Airport Stormwater Study provides it.
2. Inertia. We've always just done things the generic way, and our developments have gone forward and been approved. Change is hard to institute even when there are much better options available. Moreover, airport drainage and water management are not high on the list of priorities for airport managers with the many other elements involved in running an airport. Likewise, Florida's water management regulators have many more projects than just airports and cannot be expected to educate an airport or its consultants about the study. Consequently, FDOT is taking the steps to encourage airports to strongly consider using the Florida Statewide Airport Stormwater Study. It provides better environmental quality and more long-term economic benefits than continuing down the generic path so often used.
3. Knowledge of how to use the Florida Statewide Airport Stormwater Study. FAA, FDOT, FDEP, and the water management districts all agree that properly using study documents and results requires higher technical capability and more effort on the front-end of the project. Unless the airport insists on doing this, the default position will always be the easiest – not the best, or most beneficial, path.

How do I get started?

This depends on where you are with your airport planning and construction program. If you have an immediate runway, taxiway, or apron project, the best place to start is probably to use the General Permit of rule 62 – 330.449 Florida Administrative Code.

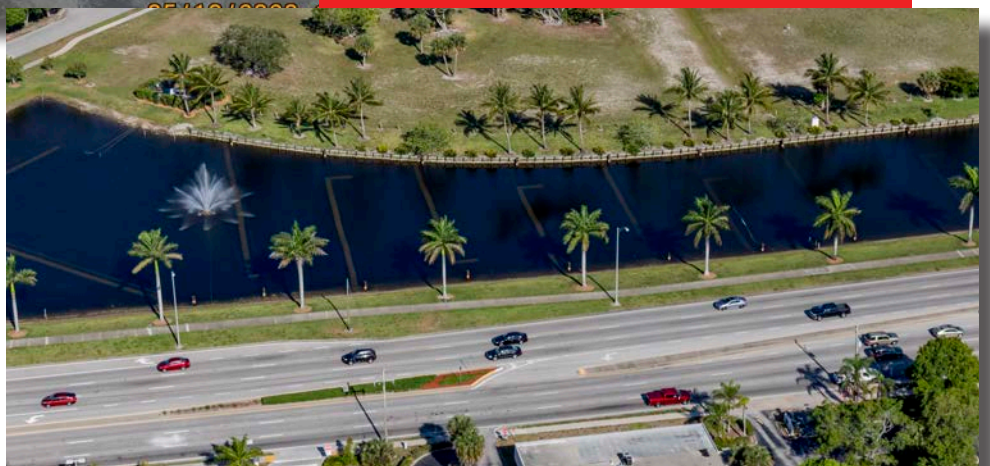
If you are in a position to update your airport master plan and/or to do a master drainage plan, it should make full use of the Florida Statewide Airport Stormwater Study.

The Florida Department of Transportation **Aviation Office** has example scope of service documents to use in your contracts for engineering and planning services. These can help ensure that the water management elements for your projects really do use the best available technical information for design and permitting.

“The FDOT funded a master drainage plan and the FAA funded construction of the system recommended for our airport. The results speak for themselves. Using the Florida Statewide Airport Stormwater Study in the master drainage plan allowed us to increase our development from 55 acres of new buildings and pavements to 111 acres of new buildings and pavements. It completely eliminated three existing stormwater ponds and reduced the size of a fourth from 5 acres to 3. It also eliminated around 20 acres of new ponds that would have been needed for the 55 acres of development conventional design would have limited us to. Water quality was improved, and the project also benefited adjacent neighborhoods by diverting flood flows from sensitive areas. Multiple projects had accelerated and simplified water management permits. Our upcoming terminal and apron expansions are fast-tracked and made possible by the master drainage plan and the construction of the master drainage system. This is critically important supporting our position as the fastest growing commercial service airport in the United States. We were somewhat surprised to find, given all the benefits, that we are among the first to fully use the FDOT Florida Statewide Stormwater Study this way.”

- Fredrick J. (Rick) Piccolo, AAE
President
Sarasota Bradenton International Airport

Gabion baskets and crenellations improve water quality with a smaller footprint.



Resources

FDOT Statewide Airport Stormwater Management Program Webpage

<https://www.fdot.gov/aviation/stormwater.shtm>

Technical Report for the Florida Statewide Airport Stormwater Study

<http://www.florida-aviation-database.com/dotsite/pdfs/Technical.pdf>

FAA Pond Design Criteria Water Treatment Modeling Report

http://www.florida-aviation-database.com/dotsite/pdfs/FAA_Basin_Report_Dec_2010.pdf

Statewide Airport Stormwater Best Management Practices Manual (BMP Manual)

<http://www.florida-aviation-database.com/library/filedownload.aspx?guid=9e1c0973-2038-4ed3-92da-a9e-1a77451cc>

Florida Administrative Code Rule 62-330.449

<https://www.flrules.org/gateway/ruleNo.asp?id=62-330.449>

Florida Airports Council Environmental Committee

<https://www.floridaairports.org/about-us/>

National Pollutant Discharge Elimination System (NPDES) Stormwater Program

<https://floridadep.gov/water/stormwater>



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