Research Report on Stormwater Management and Hogpen Creek

Date: 2026-05-14

Report Objective: A detailed report on the regulatory relationship between the City of Jacksonville and FDEP regarding stormwater management, and the ecological significance of Hogpen Creek.

Regulatory Oversight Patterns

The management and regulation of stormwater in Jacksonville, Florida, is a complex, multi-layered system involving federal mandates, state-level oversight, and local implementation and enforcement. At the highest level, the Florida Department of Environmental Protection (FDEP) is the primary state agency responsible for administering the National Pollutant Discharge Elimination System (NPDES) Stormwater Program [28, 30]. Authorized by the federal Clean Water Act, this program is designed to protect Florida's water bodies by regulating pollutants in stormwater discharges originating from three main sources: municipal separate storm sewer systems (MS4s), construction activities, and industrial operations [28]. The FDEP's role is foundational, setting the standards and compliance frameworks that local governments like the City of Jacksonville must adhere to. The FDEP manages this through its Water Compliance Enforcement Program, which holds the authority to levy fines, create permitting delays for non-compliance, and, in severe cases, pursue legal action to prevent environmental harm [28].

For development activities within its jurisdiction, the FDEP establishes a series of critical compliance steps. Any project disturbing one or more acres of land is required to obtain a Construction Generic Permit (CGP) if it discharges to surface waters or an MS4. A crucial component of this process is the creation of a Stormwater Pollution Prevention Plan (SWPPP), which details the Best Management Practices (BMPs) that will be used to control erosion and sediment runoff. These BMPs can range from physical barriers like silt fences and sediment traps to more integrated designs like retention ponds, vegetative buffers, and permeable pavements. Developers must submit a Notice of Intent (NOI) to the FDEP before commencing construction and, upon completion and site stabilization, file a Notice of Termination (NOT). Throughout the process, compliance is documented through electronically submitted Discharge Monitoring Reports (DMRs), ensuring a consistent record of adherence [28].

While the FDEP maintains ultimate authority, it has delegated certain responsibilities to regional and local bodies. In a significant structural arrangement, the FDEP delegated the permit program for the construction of new stormwater ponds in Jacksonville to the St. Johns River Water Management District (SJRWMD) as of 1986 [15, 16]. This means that for nearly four decades, the SJRWMD has been the direct permitting authority for a key piece of stormwater infrastructure in the region, operating under the broader standards set by the FDEP. This delegation creates a partnership where the state sets the policy and a regional water district manages its local implementation, streamlining the process for developers while maintaining regulatory consistency.

Within this state and regional framework, the City of Jacksonville has established its own comprehensive structure for managing its vast stormwater infrastructure and ensuring compliance with its NPDES MS4 permit. The city's Public Works Department operates the Jacksonville Stormwater Utility, a critical municipal function responsible for the operation and maintenance of a system that includes over 1,000 miles of ditches, along with numerous stormwater ponds, curbs, inlets, and culverts [13]. This

utility is primarily funded by a stormwater fee levied on properties, which provides the necessary resources to meet federal and state mandates for protecting natural waterways [12]. The legal basis for this utility and its functions are codified in the City of Jacksonville's Chapter 754, the Stormwater Management Utility Code, which grants the Director of Public Works authority over regulation, operation, maintenance, and enforcement [5, 25]. Proactive maintenance is carried out by the city's StormWater Action Team (SWAT), which addresses neighborhood drainage system issues to ensure they function effectively [13].

Complementing the Public Works Department's focus on infrastructure and conveyance, the city's Environmental Quality Division (EQD) concentrates on the qualitative aspects of stormwater. The EQD's responsibilities are diverse and target specific pollution sources. The division permits and inspects industrial wastewater treatment facilities in Duval County that discharge to groundwater, ensuring they comply with state standards. It also plays a key role in identifying and eliminating illicit connections to the storm drainage system, which can introduce pollutants from sources like industrial wastewater. Furthermore, the EQD historically administered an inspection program for erosion and sediment control at construction sites, though its pond maintenance inspection component was defunded in the late 1990s due to budget cuts [15].

Maintenance requirements for privately held stormwater systems are also clearly defined. Jacksonville Environmental Protection Board (JEPB) Rule 3.603 explicitly adopts the maintenance standards of the SJRWMD permit. These standards obligate system owners to perform regular removal of trash and debris, inspect inlets and outlets, remove excess sediment or vegetation that reduces capacity, and stabilize any eroded areas. For wet detention systems, specific rules govern the maintenance of the littoral zone, including replanting to maintain vegetative cover and controlling undesirable plant species. If a stormwater system fails to function as designed, the rule mandates immediate action to restore its operational capacity [15].

When compliance fails, both the FDEP and the City of Jacksonville possess enforcement mechanisms. The city, operating under its NPDES authority, can inspect properties and issue a Notice of Violation (NOV) for deficiencies [2]. For more substantive issues, the city utilizes Consent Orders to resolve violations of its environmental regulations [21, 23]. These legally binding agreements have been used to address failures in erosion and sediment control during construction, the unlawful discharge of sediment or turbid water into waterways, and the bypass of wastewater treatment facilities [17, 21, 23]. These orders typically require the violator to undertake specific corrective actions and to ensure future compliance with all applicable federal, state, and local laws [21]. This demonstrates a clear pattern of local enforcement authority that works in concert with the overarching state regulations to address violations directly within the city's jurisdiction. Interestingly, despite the city's extensive role in compliance and enforcement, it officially states that it is not the record-keeper for environmental permits issued by the FDEP, indicating a clear-cut division of administrative responsibilities [9].

Hogpen Creek Ecological Importance

The ecological health of Hogpen Creek in Jacksonville, Florida, has become a subject of significant concern for local residents, who report a state of severe environmental degradation. This waterway is not to be confused with other creeks of the same name in North Carolina that have received formal classifications such as "High-Quality Waters" (HQW) and "Nutrient Sensitive Waters" (NSW) [4]. The Hogpen Creek in Jacksonville currently suffers from conditions that residents describe as a "definite detriment to the wildlife," indicating a stark contrast to any officially protected status [27]. The primary issue cited is a massive and progressive buildup of sediment, which has fundamentally altered the creek's physical characteristics and its ability to support a healthy ecosystem.

Residents living along the creek have documented a dramatic loss of water depth over recent years. They report that at low tide, the water level can be as low as six inches, transforming navigable channels into muddy flats and leaving floating docks sitting in several feet of silt [11, 27]. This process of siltation has not only impeded recreational use but has also had a profound impact on the local ecology. One of the most telling indicators of this decline is the reported disappearance of manatees [27]. The Florida manatee, which is found in Jacksonville waters year-round and is the subject of a City Manatee Protection Plan, was once a common sight in Hogpen Creek [3, 24]. Their absence, noted by long-term homeowners, serves as a powerful anecdotal measure of ecological collapse, suggesting that the creek no longer provides the depth or forage necessary to sustain these large marine herbivores. The degradation is not limited to sedimentation; residents also report issues with bank erosion, shoreline collapse, and an odor-laden discharge that they trace upstream to the Sandalwood Canal [11].

The source of this overwhelming sediment load is a major point of contention. Homeowners widely believe that the Sandalwood Canal, a component of the city's stormwater drainage system that feeds into the creek, is the primary culprit [27]. They suspect that runoff from surrounding development, potentially exacerbated by work on San Pablo Road, is funneled through the canal and deposits its sediment load as it enters the slower-moving waters of the creek [11]. This directly links the challenges of stormwater management discussed previously with the tangible ecological consequences observed in a local waterway. In response to these conditions, residents have advocated for a comprehensive watershed analysis to scientifically identify the sources of the sediment and for the city to fund a dredging project to restore the creek's depth and navigability [11, 27].

The City of Jacksonville's position on this matter highlights a significant policy and jurisdictional conflict. A city spokesperson has stated that municipal dredging projects are conducted exclusively for city-owned or operated boat ramps. As Hogpen Creek primarily serves private residences, it is not considered eligible for a city-funded project under current policy [27]. The city acknowledges it performed a small, preemptive dredging after the Hodges Boulevard/Sandalwood Canal project around 2007 to address potential downstream sediment travel [27]. However, it maintains that it is not responsible for what it characterizes as subsequent changes to a natural water body, attributing ongoing siltation to natural processes and stormwater runoff from adjacent private properties [11, 27]. The city also asserts that weirs installed in the Sandalwood Canal in 2007 were designed to retain sediment and should have mitigated, not caused, the current problem [11].

This impasse has led to political engagement and attempts at community-led solutions. A special taxing district was established in late 2024 to raise funds for dredging, but it was ultimately dissolved because of the substantial financial burden it placed on homeowners, with some facing tax increases of up to $4,500 per year. More recently, City Councilman Rory Diamond has pledged to secure approximately $300,000 in the city budget for a watershed study to determine the root causes of the creek's decline. While Mayor Donna Deegan's administration did not include the study in its annual budget proposal, it has indicated it would execute the study if the City Council funds it as a line item [11].

Despite the extensive and well-documented reports of severe degradation from residents and media, the provided information does not indicate that Hogpen Creek is on the FDEP's official list of "impaired waters" under the Clean Water Act's 303(d) program. This status, which triggers the development of a Total Maximum Daily Load (TMDL) to address pollutants, is a critical regulatory milestone [18]. The absence of this official designation, when contrasted with the overwhelming visual and anecdotal evidence of impairment, points to a potential gap between on-the-ground reality and the formal regulatory assessment process. The situation in Hogpen Creek thus serves as a compelling case study in the complexities of urban ecology, where the functions of a stormwater conveyance system clash with the health of a natural waterway, and the responsibilities for remediation are caught between public policy

and private burdens. While the broader Jacksonville area supports manatees through conservation efforts like the Jacksonville Zoo's Manatee Critical Care Center, the localized decline in Hogpen Creek illustrates how habitat can be lost piece by piece, even within a region committed to conservation [24].

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