Stormwater Excellence Awards (Category: Stormwater Project)

Population of the Host Jurisdiction
The City of North Miami is a coastal municipality of approximately 60,000 residents facing increasing flood risk due to sea level rise, intense rainfall, and aging stormwater infrastructure. The project specifically addresses a neighborhood containing multiple FEMA-designated Repetitive Loss Properties (RLP), where residents experience repeated flood insurance claims and heightened financial vulnerability.

Personnel Included
The project, The Good Neighbor Stormwater Park, was led by the City of North Miami planning and stormwater engineering staff in coordination with professional design consultants. City staff provided oversight, coordination with the Florida Department of Environmental Protection Resilient Florida grant, interdepartmental and interagency regulations and standards, and integration with long-term stormwater and resilience planning efforts. Dept. (formerly Department Design Office) were the park's designers and landscape architects, selected for their winning design of stormwater park component of Van Alen Institute's "Keeping Current" competition. The project's community outreach team included local stakeholders (e.g., residents, and a local native landscaping business owner). Community engagement informed design priorities, ensuring project outcomes aligned with resident needs.

Budget and Funding Sources
Acquisition funding of the project site was primarily provided by Van Alen Institute, who awarded $80,000 to Dept. to develop and implement their designs at Good Neighbor Stormwater Park and to create a master plan for other repetitive loss properties in North Miami. Additional funding was received from FDEP's Resilient Florida grant, and private donations. Strategic use of state funding allowed the City to convert a repetitive loss liability into a permanent stormwater infrastructure asset, reducing long-term public and private flood-related costs while maximizing return on investment.

Project Objectives
The primary objective of the project was to reduce repetitive flooding impacts on residents while transforming acquired RLP sites into functional, community-serving stormwater infrastructure. In response to increasing flood frequency, the City commissioned a concept design, pilot project, and master plan titled *North Miami Stormwater Parks: Transforming Flooded Property into Resilient Infrastructure*. The plan establishes a scalable framework for converting multiple RLP sites into a connected network of stormwater retention parks.

Stormwater parks would function as distributed retention basins that work collectively to reduce localized flooding, alleviate pressure on existing drainage systems, and improve neighborhood livability. By replacing vacant or abandoned flood-prone lots with visible, accessible stormwater infrastructure, the project aims to mitigate blight while prioritizing residents who may be unable to relocate or rebuild.

The pilot project advances multiple FEMA Community Rating System (CRS) activity areas, supporting citywide reductions in flood insurance premiums. Ecologically, the park reintroduces native South Florida habitats, restores urban hydrologic function, and protects groundwater resources. Public-facing design elements and educational signage increase environmental awareness and community engagement by clearly communicating stormwater function and climate adaptation strategies.

This Good Neighbor Stormwater Park demonstrates an innovative, equity-centered approach to flood mitigation that converts risk into opportunity. The master plan provides a replicable model for other municipalities facing repetitive loss challenges and positions North Miami as a leader in community-oriented stormwater and climate resilience planning.

Supporting Information Narrative
Project Title
"North Miami Stormwater Parks: Transforming Flooded Property into Resilient Infrastructure"

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1. Project Context and Need

The City of North Miami faces chronic and worsening flooding driven by a convergence of factors: low-lying topography, historic alteration of natural drainage systems, extensive impervious surface coverage, and accelerating sea level rise. Large portions of the city lie within the historic Arch Creek Basin, a former transverse glade that once conveyed freshwater from the Everglades to Biscayne Bay. Although this natural system has been filled, rerouted, and heavily engineered over the last century, it continues to function as a subsurface drainage corridor. As groundwater levels rise and storm events intensify, floodwaters increasingly surface in residential neighborhoods.

These conditions have produced a growing number of Federal Emergency Management Agency (FEMA)–designated Repetitive Loss Properties (RLPs): homes that have generated two or more flood insurance claims exceeding $1,000 within a ten-year period. RLPs represent both a financial burden to homeowners and a recurring cost to the National Flood Insurance Program. They are typically located at the lowest elevations in residential neighborhoods, close to the groundwater table, and adjacent to other occupied homes that also face elevated flood risk.

Historically, when RLPs are acquired through FEMA's Hazard Mitigation Assistance (HMA) program, the resulting vacant lots remain underutilized, fenced, or maintained as turf grass. While acquisition removes individual structures from harm's way, it does little to address neighborhood-scale flooding, community disinvestment, or loss of housing stability. North Miami recognized that these acquired properties could instead be reframed as assets—leveraging their inherent flood-prone characteristics to deliver stormwater infrastructure, ecological restoration, and public benefit simultaneously.

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2. Project Vision and Objectives

In response, through the international efforts of the Van Allen Institute, the City of North Miami commissioned a concept design, pilot project, and master plan titled *North Miami Stormwater Parks: Transforming Flooded Property into Resilient Infrastructure*. The central vision is to convert acquired RLP sites into a distributed network of small stormwater retention parks that function collectively to reduce flooding while serving as accessible community open space.

The project advances four interrelated objectives:

1. **Flood Risk Reduction:** Increase localized stormwater retention capacity in low-elevation neighborhoods, drawing floodwater away from adjacent properties and reducing the frequency and severity of nuisance flooding.
2. **Infrastructure Performance:** Complement and bolster existing municipal stormwater systems through visible, surface-based infrastructure that responds to rising groundwater conditions.
3. **Community and Equity Outcomes:** Transform vacant, flood-prone lots into safe, welcoming public spaces that stabilize neighborhoods and prioritize residents who cannot easily relocate or rebuild.

4. **Ecological and Educational Value:** Restore native South Florida freshwater habitats, improve groundwater recharge, and raise public awareness of flood risk, stormwater function, and climate adaptation.

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3. Pilot Project and Design Framework

The City of North Miami's first stormwater park, Good Neighbor Stormwater Park, was completed in December 2019 at 901 NE 144th Street and serves as a proof of concept for the broader master plan. The site had remained vacant for nearly two decades following repeated flooding and eventual property acquisition by the City.

Design Approach

Good Neighbor Stormwater Park is intentionally simple, replicable, and adaptable to a range of residential lot configurations. Each park is organized around a small set of core design elements:

- **Central Retention Basin:** Excavated to maximize stormwater storage above the groundwater table while maintaining safe side slopes.
- **Bioswale Network:** Graded swales direct sheet flow from surrounding areas toward the basin, improving capture efficiency.
- **Stormwater Conveyance:** Catch basins and pipes convey water to low points without relying solely on underground infrastructure.
- **Native Planting Zones:** Vegetation is organized by elevation and hydrologic tolerance, reflecting historic Arch Creek Basin ecologies.
- **Public Amenities:** Americans with Disabilities Act (ADA) accessible walking paths, seating, shade, and flexible hardscape areas support daily use and community programming.

At the pilot site, stormwater storage capacity increased from approximately 6,000 cubic feet/ 45,000 gallons on a flat vacant lot to over 22,000 cubic feet/ 165,000 gallons following basin excavation, nearly a **fourfold** increase. This capacity directly reduces floodwater volumes impacting adjacent homes during storm events.

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4. Ecological Restoration and Habitat Strategy

The pilot site restores ecological function by reintroducing native freshwater plant communities adapted to fluctuating water levels. Four primary habitat zones (pine flatwoods, hammock, wet prairie, and slough) correspond to subtle elevation changes across the pilot site.

These plant communities:

- Tolerate seasonal and permanent inundation
- Require minimal irrigation and maintenance once established
- Improve water quality through filtration and uptake
- Enhance evapotranspiration and groundwater recharge

The use of native species creates resilient landscapes that self-mulch, reduce mowing needs, and support urban biodiversity. Aquatic plants, mosquito-eating fish, and bat boxes provide environmentally responsible mosquito control while sustaining healthy ecosystems.

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5. Community Use, Education, and Outreach

Unlike traditional buried stormwater infrastructure, the Good Neighbor Stormwater Park is intentionally visible and legible. At the pilot site, interpretive signage, water-level markers, and public art communicate how the site functions and why flooding occurs in the neighborhood.

Educational signage addresses FEMA Community Rating System (CRS) Activity 332 requirements by providing flood hazard information, insurance guidance, and floodplain management best practices in multiple languages. Additional interpretive panels explain site history, Arch Creek ecology, and stormwater processes.

The parks are intended to serve multiple audiences (immediate neighbors, the surrounding community, and the city at large) and support flexible programming such as walking, informal play, environmental education, and community gatherings. Partnerships with schools, non-profits, and local artists further activate the spaces and strengthen stewardship.

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6. Implementation, Operations, and Maintenance

Permitting and Construction

The pilot project required coordination across multiple regulatory agencies, including county environmental permitting and city building and landscape approvals. Lessons learned informed recommendations to streamline future permitting through revised classifications for localized stormwater parks.

Site preparation protocols address common conditions on RLP sites, including septic tank removal, groundwater testing, and soil analysis. Construction emphasizes balanced cut-and-fill strategies to minimize material export.

Maintenance and Safety

The pilot site is designed as a low-maintenance xeriscape landscape. Routine upkeep focuses on litter removal, inspection of stormwater structures, and seasonal debris clearing. Safety is addressed through gentle grading, planting-based barriers, and minimized fencing to maintain public accessibility.

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7. CRS Benefits and Measurable Outcomes

Good Neighbor Stormwater Park contributes to multiple FEMA CRS activity areas, supporting citywide reductions in flood insurance premiums. Benefits include:

- Reduced repetitive flood losses

- Increased public information and flood awareness
- Enhanced floodplain management practices

By converting RLP acquisitions into permanent stormwater infrastructure, the City reduces long-term insurance claims while delivering tangible neighborhood benefits.

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8. Long-Term Impact and Replicability

The master plan outlines both short-term (5–10 year) and long-term (10–50 year) implementation horizons. As additional RLP sites are acquired, the cumulative effect of multiple stormwater parks will significantly expand North Miami's stormwater retention capacity and climate resilience.

Seven years after the opening of Good Neighbor Stormwater Park, North Miami has learned several key lessons that would benefit the efficacy of newly constructed parks. Firstly, as a multi-department, cross disciplinary project, Good Neighbor Stormwater Park requires transmission of institutional knowledge to ensure proper maintenance of the stormwater infrastructure and native habitats across time and shifting local, regional, and national conditions. The COVID-19 Pandemic, which was in full swing 3 months after the park opened, created unexpected challenges in the transmission of technical knowledge in subsequent years. This pandemic highlighted the need for a maintenance manual and a monitoring plan, which could detail how to maintain the park as originally designed, even when department staff and leadership change.

Consequently, in 2025, North Miami began collaborating with a team of engineers from Florida International University (FIU) to monitor the site's performance using a combination of soil, water, and weather sensors, along with periodic water sampling. Additionally, FIU would provide real-time data with a dashboard that would support planning, operations, and public engagement. The installation of scientific monitors will be used to capture baseline performance data prior to a multi-month cross-department park restoration effort. During this effort, invasive vegetation will be removed, and additional native vegetation will be installed to enhance the original design and function of the park. The effort offers a powerful training opportunity for city maintenance staff who were hired long after the original project, opening the door for the transmission of project information for new stormwater parks.

This distributed, bottom-up approach offers a scalable and transferable model for other municipalities facing repetitive loss challenges. By aligning state and private funding with community-oriented design, North Miami demonstrates how flood risk can be transformed into resilient infrastructure, public space, and environmental restoration.

Conclusion

North Miami's Good Neighbor Stormwater Park represents a shift from reactive flood response to proactive, integrated stormwater management. The project delivers measurable flood risk reduction, ecological restoration, and community benefit while positioning the city as a leader in equitable, climate-adaptive infrastructure planning.

Additional Links

- Dept: https://www.dept.llc/work/good-neighbor-stormwater-park
- Van Alen Institute: https://www.vanalen.org/project/keeping-current/#stormwater-park