Marineland Acres Flooding: One Resident's Perspective

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Marineland Acres is an oceanfront 391-lot subdivision located in northeastern Flagler County, just south of Washington Oaks State Park and north of Sea Colony. It was platted in the early 1970s with covenants requiring single-family homes on mostly 75-foot wide lots and prohibiting mobile homes. To the north Oceanshore Dr. borders on the southern boundary of Washington Oaks State Park and is a former campground that was developed as a private subdivision with unpaved roads and no drainage system. To the south, Seascape Dr., and Rollins Dunes Dr. are also private subdivisions with paved roads and drainage systems. It is important to note that the last two subdivisions now interrupt north-south drainage potential, and Oceanside Dr. impedes potential stormwater movement to the north to the state park. County standards required continuous paved access to Rollins Dunes and Seascape, which resulted in the developer paving Rollins and Moody out to A1A. Finally, there are two vacant parcels between Rollins Dunes Dr. and Sea Colony, the northernmost being a privately owned tract and the southernmost being the future Bay Drive County Beach Park.

The length of the streets in Marineland Acres presents a unique stormwater management Challenge. The segments between Central Ave. and A1A are around 1,000 feet long, and the segments between Central and the ocean dunes are around 1,500 feet. The generally level terrain of the neighborhood is not conducive to the transport of stormwater without periodic holding areas. It appears that Rollins Dunes uses two ponds that receive stormwater from the eastern end of the street while the western end has swales leading to several underground holding areas. Seascape has a wide swale on the north side of the street which the homes and street drain to. Both subdivisions have effective drainage systems, although as you might expect in a flat area during heavy rains there is standing water in the swales.

The picture below illustrates a natural drainage system that existed prior to development – it is my understanding that the "Coast Guard Canal," as shown in the picture below just west of the dune line, flowed from north to south between this beachfront part of Washington Oaks State Park and the Malacompra Canal. The pond at the south end of the park canal appears to be an artificial feature that was creating by interrupting the canal's movement to the south at the oceanfront home at Oceanside Dr.

In the left side of the picture below, just north of Moody, you can see what appears to be a remnant of the canal. This narrow pond is typically open water. In minutes from 1/3/84 Board of County Commissioners meeting, former County Engineer Chinnery told the Board that he had discovered continuous canal easements that could be opened for drainage and added that his advice was to put the property owners on notice to dig the canals or the County could do it. At that time the BCC took no action but instructed staff to put shell down to build the roads up, a temporary solution at best. There are no easements shown on the original plat for Marineland Acres, and I am not sure how the County Engineer found these easements. I have heard anecdotally that the BCC granted permission for the filling in of the canal in the intervening years.

In the center of the picture below you can see a new home under construction, now built. This home is a large three-story home that covers most of the lot with rooftop, driveway, and pool. The home was built on several feet of fill, as is required by FEMA and the County when you have a habitable first floor in order to keep living space out of flood zones. In this case and other cases the County did not require any on-site swales which resulted in stormwater flowing directly to the street and adjoining properties. The owner built a wall along the sides of the property, which has partially reduced stormwater flow to neighbors, and a swale behind the house, which keeps most stormwater away from the Seascape swale to the south, but the effect of these two actions has been to intensify the stormwater runoff to the street and subsequently to adjoining lower-lying properties. Given the likelihood that more big homes are coming, due to high lot values ($300,000+) yielding expensive and large homes, we can expect a definite increase in street and property flooding if the status quo continues.

More history - in 1994 the BCC had another public workshop on Marineland Acres flooding and numerous residents petitioned the County to install a drainage system. Public Works Director Benji Cauley noted that the neighborhood "previously had a drainage system which was filled in." The County failed in their attempt to convince FDOT to allow a drainage outfall pipe under A1A that would drain to the Intracoastal Waterway. At the meeting Commissioner DesParte stated that "a more thorough approach is needed" and suggested looking for grant funding. Residents noted that the County's elevation of the streets had sent to water to flood yards and homes, and the County had not maintained existing swales on public right-of-way. The BCC allotted $25,000 toward short term road improvements.

The County hired Reynolds Smith and Hills to conduct a drainage improvement study, which was presented to the BCC in April of 1997. RS&H identified each of the four quadrants as being a separate drainage basin, with the east-west dividing line being Central Ave. and the north-south dividing line being Atlantic Dr. The study found that each basins would require around 3 acres of pond area. The plan consisted of alternatives with various combinations of the following actions:

- Installing stormwater collection system along streets (swales).
- Purchase of low-lying lots throughout the neighborhood for detention areas.
- Drainage of two west basins to A1A through improved swales.
- Connection of storage areas in two southern basins and northeast basin.
- Pond area ranging from three to eight acres in each basin.
- Grading of streets and swales to drain roads and provide for gravity flow for swales.
- Increase size of cross-drain under A1A to provide for increased outfall.

Alternative recommendations would create a system that "results in only minor flooding for limited durations for five-year rainfall events of eight or twelve hours." This compared to higher standards such as the 25-year rainfall event, which corresponds to 10 inches of rain in one day.

Residents' recommendations were summarized in the report as follows:

- Drainage can be improved by cleaning ditches and removing sediment from them.
- Stormwater should tie into A1A ditches.
- Central Ave. could serve as detention area.
- Regulations should be in place to prevent future development from worsening the situation.

There was much discussion by the BCC on financing the needed improvements. The report recommended funding improvements through a stormwater ulitity district or a special taxing district. The average cost per property owner was a one-time payment from $1,335 up to $3,943 depending on which alternative was chosen. Commissioners also discussed getting federal and state grants.

Regarding the BCC's concerns of expending public funds to benefit private properties, then-County Attorney Al Hadeed noted that "the Board could not spend public dollars where there was solely a private benefit." However he then stated that "the kind of program described, which would benefit the publicly dedicated roads within Marineland Acres, would be something that the Board could spend public money on." The public benefit in this case was "improvement of the integrity of the roads" and an incidental benefit was the improvement of drainage related to private property.

The study found a number of agency roadblocks. While the St. Johns River Water Management District indicated that there would be few permitting problems for a drainage system, FDOT continued to resist, stating that they would allow stormwater from the neighborhood to enter the A1A ditch, but additional areas would have to be provided for stormwater storage. Washington Oaks State Park staff refused to allow connection to the north-south ditch east of A1A because of "vegetation impacts, control of exotic

species, potential to increase future capacity of the ditch and possible increase chemical application for mosquito control."

The only action taken from this 1997 study and workshop was the instruction for staff to "come back with a report on any actions that could be taken to alleviate, temporarily or permanently, the flooding problems of Marineland Acres as it relates to roads and swales and to instruct staff to prepare a survey to be mailed to all property owners outlining the alternatives and giving as much detail as possible in order to get feedback from all the landowners about the options discussed, including options regarding the form of payment."

It is not clear if these instructions were accomplished until six years later in 2003, when the Engineering Dept. provided a report to the BCC with the results of a neighborhood survey and a recap of the RS&H plan. Three alternative plans were presented, with average per-lot costs ranging from $6,871 for the "Minimal Stormwater Removal" plan to $12,499 for the "Major Stormwater Removal." (Total project costs ranged from $2,081,733 to $3,978,570, which had more than doubled since the 1997 hearing.) Approximatley 2/3 of the costs were to buy vacant lots for retention, based on an average per-lot acquisition cost of $85,000.

In returned surveys residents overwhelmingly voted against the proposed plan, mainly because all costs were borne by residents. Residents proposed what they thought to be a more modest plan that abandoned purchasing expensive lots and tying roadside swales into a central detention pond located along Central Ave, enlarging a current pond along A1A between Surf and Bay Drives, and diverting some stormwater in the northern neighborhood to the state park. County engineering staff evaluated this and criticized the plan as unworkable. The staff report noted among other things that the Central pond did not adequately accommodate basin drainage and doubted that the system could be permitted by agencies. However the report did flesh out the resident plan and estimated its cost at $2.1 million.

No action was taken by the BCC and County staff indicated that it was up to the residents to develop a more realistic plan. The issue was once again shelved and forgotten due to residents' lack of expertise, resources, and time to propose solutions. This year the issue of Marineland Acres flooding has once again been resurrected by the Hammock Community Conservation Corporation (HCCC) and District 2 County Commissioner Milissa Holland, who put the issue as her sixth highest priority. The HCCC has recommended to the BCC that the County take steps toward strategically and proactively addressing drainage, parks, and land use issues in the entirety of the A1A corridor, with the opinion that due to interconnected drainage systems and solutions on the island, a Marineland Acres solution should be studied in a larger context to be effective. The BCC has scheduled a workshop solely devoted to Marineland Acres drainage for September 24th, 9:00 AM at the County Building in Bunnell.

It has long been the position of many property owners that the flooding problems were initiated, or at least aggravated, by the County allowing filling in of the north-south canal; not maintaining existing swales; not aggressively seeking local and agency funding over the past two decades; not instituting development standards that reduce flooding; and now, not requiring swales and culverts under driveways for new homes. Shared funding between the County, residents, water management district, and FDOT is a more equitable and manageable funding strategy. Also the realistic option of purchasing lots for retention may be gone due to the exorbitant costs of real estate that has increased total project costs to well above $10 million and individual property owner costs in excess of $25,000. It may be time to consider a simpler solution of interconnected swales on both sides of all streets that generally drain to a large underground pipe under Central. Such a system would also transfer standing water from the roads and yards to the more organized linear swale system. The system could be designed to "pop-off" stormwater into potential holding areas around the project including A1A swales, Washington Oaks State Park, or even to be pumped to remote locations down A1A.