



## **Orlo Vista/Westside Manor Flooding**

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*Revised November 15, 2022*

### **FREQUENTLY ASKED QUESTIONS**

#### **Where is Orlo Vista/Westside Manor?**

The Orlo Vista neighborhood is located within western Orange County bound by West Colonial Drive (State Road 50), Pine Hills Road, Old Winter Garden Road (County Road 526), Carter Street, and Hiawassee Road. The neighborhood encompasses roughly 1.9 square miles and includes a population of 6,047 people and 2,314 households.

#### **What is the Orlo Vista/Westside Manor flooding history?**

Central Florida had two (2) of the wettest years on record in 1959 (63.77 inches) & 1960 (68.74 inches). In 1960, there was a wet spring/summer leading up to Hurricane Donna in September 1960. The ground was saturated and lakes were filled up before approximately 5 inches of rain fell during Hurricane Donna. The subdivision and surrounding basin were landlocked and had limited storage. As a result, there was widespread flooding in the area.

In 1960, the Orange County Commission conducted a drainage study of the Westside Manor area. From this study, O.C. Commission approved the construction of:

- 14,000-foot-long canal to Shingle Creek (July 1960)
- Two 17,000 gpm pumps (1st one in Nov 1960, second one in 1961)
- 48” force main outfall to Shingle Creek
- 20-acre storage area (Constructed over a period of years.)

The study predicted that these facilities would render the Westside Manor development safe from serious flood damage for storms up to the 25-year recurrence interval.

Upgrades to the drainage system that were completed prior to Hurricane Irma include:

- Installation of (2) 20,000 gpm electric pumps to replace the original diesel pumps
- Installation of a back-up generator
- Installation of a telemetry monitoring
- Repaired the leaks in the 48” force main by slip lining the pipe

During Hurricane Irma in September 2017 (9.1 inches in 28 hours), excessive rainfall in the Orlo Vista/Westside Manor area temporarily exceeded the capacity of the existing pump station to effectively maintain pond stages. The excess rainwater surface flows overwhelmed drainage pumps and caused three ponds to overflow and flood into the neighborhood. The rainfall totals exceeded the original design level of protection of a 25-year recurrence interval. Homes were flooded and some people were rescued due to the flooding event. Flood water levels were reduced to normal levels by the Westside Manor pump station over a three-day period.

As a result, the County initiated a drainage study that evaluated several alternatives to mitigate the risk of the flooding in the project area under future extreme storm events. The drainage improvement design specifies the excavation of three existing ponds to increase the depth and storage capacity and the construction a new pump station and force main. These ponds will not be expanded horizontally so that no residents are displaced. The project will provide flood mitigation measures to reduce future flooding risk for the area and protect the residential buildings surrounding the project area. The drainage improvements will provide protection against a 100-year storm event (14 inches in 72 hours). At this time, the design of these drainage improvements is completed, and the project was bid for construction. The construction is estimated be completed during 2024

When Hurricane Ian (13.2 inches in 24 hours) hit Florida September 28-29, 2022, there was a repeat of flooding that occurred during Irma but at a greater magnitude. This was due to the (4.1”) increase in total rainfall. Excessive rainfall in the project area temporarily exceeded the capacity of the pump station to effectively maintain pond stages. As a result, water levels rose above the pond top of banks and caused major flooding in adjacent residential areas. An evacuation notice was sent to the community before the storm. Residents were evacuated until flood stages were recovered over the next several days.

**What has Orange County done to mitigate flooding since 2017?**

- Removed sediment from the channel flowing to the pump station to enhance flow to the pump station.
- Constructed a skimmer in the channel to minimize large floating debris from getting stuck in the intake grate of the pump station.
- Trimmed trees along the channel to prevent leaf and branch debris from flowing to the pump station and clogging the intake.
- Set up mobile pumps on-site every spring through the end of hurricane season for the years 2018-present.
- Perform on-going routine maintenance at the pump station and emergency generator to ensure proper operation.
- Perform on-going monitoring of pond water levels and pump operations.

- Established an updated floodplain elevation through the FEMA Letter of Map Revision Process to better define the level of flood risk in the area (LOMC 19-04-2940P).
- Developed a real time drainage model of the Orlo Vista basin that is linked to rainfall projections from gridded data (1-km) from the National Water Model several days in advance of the storm to predict stages in the basin and determine if evacuations are recommended. This was used during Hurricane Ian.

### **What steps did Orange County Public Works take to mitigate the effects of Hurricane Ian?**

- Pre-Hurricane Ian
  - Maintenance at the pump station and emergency generator was conducted to ensure proper operation.
  - The ponds were pumped down to their lowest feasible elevation to maximize storage.
  - Two mobile pumps were operated to pump down the ponds further to gain additional storage volume.
- During Hurricane Ian
  - County staff manned the pump station until  $\approx 12:30$  AM to ensure that the pumps were functioning, and that there was no flooding.
  - County staff was alerted by our telemetry system that the pumps were off. County staff went back to the pump station at  $\approx 4$  AM to try to get the pumps operational, but the water was too deep to get access.
  - The pumps cooled and automatically turned back on at  $\approx 6$  AM and continued pumping until its' normal level was reached on Sunday, Oct 2<sup>nd</sup>.

### **How much water was in the retention ponds around Orlo Vista before Hurricane Ian?**

- The water level was lowered to the lowest feasible elevation of 72.5' achieved by the combination of the Westside pump station and two mobile pumps to maximize the storage in the ponds.

### **What's the capacity of the existing ponds?**

- The capacity of the existing ponds is 51,000,000 gallons.

### **How much water did Public Works pump from the retention ponds in Orlo Vista ahead of Hurricane Ian? When did this process start and conclude?**

- Pumping started on 9/26 ahead of Hurricane Ian. Additional pumping was done lowering the water level to approximately 72.5'; this is the lowest feasible water elevation. Approximately 14 million gallons of water were pumped ahead of the storm.
- Approximately 250 million gallons were pumped during and after Hurricane Ian to bring the water level back to its normal elevation of approximately 74.3' on Oct 2<sup>nd</sup>.

## **What is Orange County proposing for long term solutions to prevent flooding?**

The County completed a drainage improvement design that specifies the excavation of three existing ponds to increase the depth and storage capacity and the construction a new pump station and force main. These ponds will not be expanded horizontally so that no residents are displaced. The project will provide flood mitigation measures to reduce future flooding risk for the area and protect the residential buildings surrounding the project area. The drainage improvements will provide protection against a 100-year storm event (14 inches in 72 hours).

## **The project planned for the neighborhood will increase the capacity of the retention ponds, but if you can't increase the capacity of what you send to Shingle Creek, how will this help reduce future flood concerns?**

- The existing stormwater ponds are to be excavated deeper to provide additional flood mitigation volume.
- The existing pumps and outfall pipe are to be replaced with new pumps (same discharge), new control equipment, and new outfall pipes.
- The pump station operation will be modified to draw down the pond water level prior to a major rainfall event, thereby utilizing the additional flood mitigation volume created by the excavation. Pumped stormwater flows will pass through the downstream canal system prior to the oncoming storm event flows.
- During the storm, the pond will have more storage volume plus will be discharging 40,000 gallons per minute of water downstream to Shingle Creek.
- The improvements will provide a 100-year level of service for habitable structures in the Orlo Vista/Westside Manor community while not impacting downstream areas.

## **How is this project getting funded?**

To fund this large Capital Improvement Project, the County applied for a FEMA matching federal grant for the Vertical Pond Expansion Alternative. In December 2018, the Florida Division of Emergency Management (FDEM), through FEMA, awarded Orange County grant funding (\$919,766) for the Design Phase (Phase I) of the Orlo Vista Flood Mitigation Project.

The County was later awarded funding (Feb 2022) for Phase II – Construction, based on the Engineer's Cost Estimate of \$10,025,484. FEMA will fund 75% (or \$7,519,113), and the County will be responsible for the Local Share portion of 25% (or \$2,506,371).

To cover the local funding share, the Stormwater Management Division submitted for grant funding under the Community Development Block Grant-Disaster Recovery (CDBG-DR) through the Department of Economic Opportunity (DEO). In January 2021, Stormwater Management received notification from DEO that the County had been selected to receive CDBG-DR funding. The award amount is \$2,506,371.

The Construction Invitation for Bids was issued on July 5, 2022 and Bid Opening was held on August 25, 2022. The low Bidder is Thalle Construction Co., Inc. at \$21,551,322. This exceeded the original Engineer's Cost Estimate of \$10,025,484 submitted to FDEM/FEMA in 2018. The original Engineer's Estimate did not reflect the highly variable and significant material, labor, and fuel cost increases that have been evident the last 6 months. The County's consultant developed an updated cost estimate that is more representative of current costs. The updated Engineer's Cost Estimate is \$19,477,816.

Due to the construction cost increase, Orange County submitted a request for a project budget increase to FEMA-Hazard Mitigation Grant Program (HMGP). This project increase request was prompted by the receipt of the construction bids, Construction Engineering Inspection proposal, and Post-Design Services proposal resulting in a funding deficit of  $\approx$ 13.5 M.

The County was recently notified that FEMA earmarked a budget increase of \$9.148 M for the Phase II Construction. The County will cover the \$4.270 M budget shortfall for the construction of the drainage improvements.

### **What is the timeline for the mitigation project?**

Since HMGP award to the County in 2018, the project has been on a high priority schedule to meet the FEMA deadline of February 2024.

The construction of the improvements was to start in November 2022 and be completed during 2024. However, the schedule was delayed due to the increase in the cost associated with the construction. The construction is estimated to start in early 2023 and to be completed during 2024

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