

RESOLUTION

of the
ORANGE COUNTY BOARD OF COUNTY COMMISSIONERS
regarding
AMENDING RESOLUTION APPROVED JULY 27, 2021
for
Parcel 102
Lake Star, Powers Drive Flooding

WHEREAS, on July 27, 2021, the Board of County Commissioners adopted a Resolution regarding parcel number 102 (“Resolution”);

WHEREAS, among other things, Resolution authorized and directed Orange County and all appropriate departments, officers and employees of Orange County to proceed to take the necessary actions to acquire parcel number 102 for drainage purposes by gift, purchase, eminent domain proceedings or otherwise;

WHEREAS, the Board of County Commissioners desires to amend Resolution to set forth this additional use.

BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF ORANGE COUNTY:

Section 1. Amendment to Resolution. Resolution, as approved on July 27, 2021, is amended to include the expanded needs outlined in the updated staff report dated September 30, 2025, also known as Exhibit “A”. In all other respects, Resolution shall remain unchanged.

Section 2. Effective date. This Amendment to Resolution shall take effect on the date of its adoption.

ADOPTED THIS _____ DAY OF _____, 2026.

ORANGE COUNTY, FLORIDA
By: Board of County Commissioners

By: _____
Jerry L. Demings
Orange County Mayor

ATTEST: Phil Diamond, CPA, County Comptroller
As Clerk of the Board of County Commissioners

By: _____
Deputy Clerk

Exhibit "A"

ORANGE COUNTY BOARD OF COUNTY COMMISSIONERS

Jerry L. Demings, County Mayor

Commissioner Betsy VanderLey, District # 1

Commissioner Christine Moore, District # 2

Commissioner Mayra Uribe, District # 3

Commissioner Maribel Gomez Cordero, District # 4

Commissioner Emily Bonilla, District # 5

Commissioner Victoria P. Siplin, District # 6

Byron W. Brooks, AICP, County Administrator, Sr. Executive Assistant

CERTIFICATION OF NECESSITY

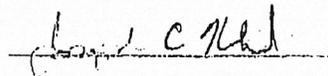
Pursuant to the Orange County Ordinance No. 92 - 29, I, Joe Kunkel, P.E., Director, Public Works Department, certify that the acquisition of Real Estate or interests in Real Estate on the following described project is necessary and in the public interest:

Project Name: Pine Hills Drainage Project

Project Limits: Pine Hills Area, primarily along Powers Drive, at Silver Star Road

Brief Description: Flooding occurred on N. Powers Drive at the intersection of Silver Star Road on July 31, 2018. The overall drainage system consists of parts of Silver Star Road, which is under FDOT jurisdiction, and Powers Drive, which is in unincorporated Orange County. This area drains through a shopping center parking lot located on the North side of Silver Star Road via a system of deep manholes and pipes and discharges to a receiving land-locked lake basin entitled Lake Star. Subsequent to the initial flooding occurrence, the County has been pumping water from the lake throughout the rainy season to keep the lake levels down to help prevent flooding in the area surrounding Lake Star. Lake Star historically has been closed, privately owned lake basin, with no positive outfall. Over the years, the privately owned lake basin has become overgrown and pipes leading to the lake basin have transported sediment to the basin, further impeding water percolation. Consequently, the County must acquire the basin and access to the lake basin to clean and clear the basin and to perform routine maintenance.

Certified this 25th day of February 2020



Joe Kunkel, P.E., Director
Public Works Department

cc: Paul Sladek, Manager, Real Estate Management Division
Jeff Newton, County Attorney, County Attorney's Office
File

PROJECT HISTORY

Flooding on Powers Drive at the intersection of Silver Star Road was first reported on July 31, 2018. The overall drainage system consists of part of Silver Star Road which is under FDOT jurisdiction and Powers Drive which is in the unincorporated Orange County. This area drains through a shopping center parking lot located on the North side of Silver Star Road via deep manholes and pipes system and discharges to a receiving land lock retention area entitled Lake Star.

Lake Star is considered a closed basin that does not have any positive outfall or mapped FEMA flood Zones; its only recovery is provided through infiltration. Lake Star collects runoff from both Florida Department of Transportation (FDOT) and Orange County drainage systems.

Orange County Public Works Division responded immediately to the flooding and had the entire drainage system video and cleaned. Two pumps were set up at the intersection of Silver Star Road and Powers Drive. Crews manned pumps in the area 24/7 in order to mitigate future flooding that could occur from extreme rainfall events.

The County has purchased Parcel ID: 13-22-28-8058-00-050 which encompasses the majority of Lake Star, but we need Parcel ID: 13-22-28-8058-00-091 to have additional access, delineate and grade the slopes of the lake which pose a safety risk and future storage to prevent flooding in the area.

The engineering consulting firm Singhofen and Associates (now known as Halff) was chosen and is currently working on the evaluation and design of a permanent solution with a positive outfall for this lake.

PROJECT CONSIDERATIONS

An important element in determining the need for Parcel ID: 13-22-28-8058-00-091 is the fact that it makes up the south slopes of Lake Silver Star and the parcel is land locked. This parcel will help provide additional access and storage needed to prevent flooding. Public safety considerations are also considered due to the steep slopes of the parcel near an existing shopping center. The area to the north, east and west of the lake is a residential area. The area directly south and southwest comprised of commercial development.

EXISTING CONDITIONS

Lake Star is a closed basin with no positive outfall and stages can only be lowered through infiltration and evapotranspiration. The existing land is vegetated and makes up the

southern slope of the lake which will allow for additional storage of water and access to the lake once regarded. An Access Easement has been purchased from the shopping center that now provides the County with access to the lake for maintenance activities.

LONG RANGE PLANNING

The intersection of Silver Star Road and Powers Drive continues to flood during heavy rain events. Half report dated November 2019 provided the following summary.

To improve the storage capacity of Lake Star, consideration should be given to increasing the lake's storage capacity by removing vegetation and soil. Additionally, to better ensure the lake's ability to prevent flooding, installing a pump station to control lake levels or a method to control groundwater levels should be considered. County cleaned vegetation from the area, but no soil was removed per SJRWMD.

Based on the meeting with SJRWMD, permitting this design will be difficult due to the stipulations associated with discharging to the Little Wekiva River. The two main areas of concern for the District were about the Water Quality and Water Quantity aspects of the design. SJRWMD explained during the meeting that the Little Wekiva River currently has a zero tolerance on discharging pollutants. The amount of pollutants discharged from Lake Star would have to be completely offset by providing additional treatment in the surrounding area of the lake due to the pollutant discharge rules. SJRWMD also expressed concerns about the downstream water quantity aspects associated with pumping into the Little Wekiva River. Flood stages at the Woodsmere pump station would need to be monitored and the Lake Star pump would need to be shut off if stages reach a certain level.

A temporary pump station was placed in the Lake Star property to provide relief in case of emergency if flooding is experienced.

In 2025, additional concerns have been raised regarding continuous flooding in the intersection of Silver Star Road and Powers Drive. County has sought out a consultant to revisit the flooding in the area and provide alternatives on how we can mitigate it. This is in beginning stages, we are currently waiting on scope of work from consultant.

ENVIRONMENTAL CONSIDERATIONS

In February 2019, Yvonne I. Froscher completed an environmental assessment of the project area. The assessment involved determination of seasonal high-water elevations (SHWE) around Lake Star and a depression area to the south between Hiawasse Road and Powers Drive. The average flagged SHWE for Lake Star was 73.5-ft NAVD with a range of 73.3-ft to 73.6-ft.

No other environmental issues were presented in the report provided.

Also, in February 2019 Gator Engineering & Aquifer Restoration, Inc. (GEAR) completed a geotechnical investigation of the study area.

Based on their analysis of the site, GEAR states that Lake Star in its current condition is a poor sink for stormwater discharge as it is an enclosed basin with no outfall and compacted soils. Although the sediments underlying Lake Star generally consist of sands, they are fine-grained with silt and clay content increasing with depth and decreasing permeability.

No other environmental issues were presented in the report provided.

In April 2019, Drummond Carpenter, PLLC (DC) completed a geohydrologic assessment of the project area. The assessment involved using the findings provided by GEAR to develop a groundwater model to determine the possible infiltration rate within Lake Star.

Data collected during the geotechnical investigation were valuable for developing the site-specific groundwater flow model. Model results indicate that the potential clogging of a hypothetical sinkhole after Hurricane Irma likely did not cause excessive elevations in Lake Star and flooding during the 2018 storms. Soil boring data, falling head permeability test results, and model simulations indicate that the muck lining the bottom of Lake Star is apparently not limiting infiltration through the bottom of Lake Star; underlying silty and clayey materials are apparently restricting infiltration.

Model simulations do indicate that groundwater levels near Lake Star have a strong influence on the infiltration of water from Lake Star to the underlying aquifer. Additionally, limited groundwater data indicate that groundwater levels were still elevated after Hurricane Irma, which reduced available soil storage and infiltration capacity. Coupled with the over 40 inches of rainfall that fell during the 2018 storms, it is likely that the elevated groundwater table and excessive rainfall caused Lake Star to rise to an extent that it caused flooding in adjacent areas.

No other environmental issues were presented in the report provided.

ALTERNATIVE ALIGNMENT

A Contractor was acquired back in August 2018; they installed a temporary piping system thru which the pumping of the Lake was ensued. The installed piping system originates from the Lake Silver Star, runs South along Pioneer Road, then East along Silver Star Road, and then finally terminates into an inlet in Silver Star Road (FDOT) system where the floodwaters are being discharged into the Woodsmere Pump Station detention system that is located east of the intersection of Silver Star Road and Powers Drive.

This pumping operation is still continuing; the operation started at the elevation of 83.50 feet and to this date the flood level receded to 72.62 feet. The total cost for this temporary pumping system was approximately \$150,000.

No alternative alignment is being proposed as this specific parcel (13-22-28-8058-0-091) will be providing additional access to the lake, as well as providing future storage, which will help prevent flooding.

PROPOSED IMPROVEMENTS

The project is currently under design. The consultant has provided three alternatives we are currently under review:

Design Alternative 1: This design solution would provide additional storage in Lake Star by maximizing the lake area to the extents of the property. The lake would be excavated so that grading begins at elevation 64.0, NAVD. Under this design, the normal water level would remain the same. The objective of the alternative is to provide additional storage until lake stages are lowered through infiltration. Although flood stages drop overall, the additional volume in the lake would not address the long-term issue of storage volume recovery when ground water levels are high, as in 2018. As such, this alternative was discarded.

Design Alternative 2: This design solution would provide additional storage within Lake Star and provide a positive outfall with the use of a pump station. The increased storage would be provided by re-grading the southeast corner of the lake to develop a sump for the pump. The proposed pump station would have a 30" RCP inflow pipe into an 8' diameter wet well that is approximately 35 feet deep. Two (2) 800 GPM pumps and 1,100 feet of 10" force main would be utilized within this system. The total cost of construction for this design is estimated to be \$922,700.

Design Alternative 3: This design solution would provide additional storage within Lake Star and provide an outfall with the use of a drain well. The drain well would be an additional discharge point into to the aquifer. Groundwater levels play a major role in the effectiveness of this design as infiltration from high ground water levels surrounding the lake would need to be accounted for in sizing the drain well. However, it is doubtful that this type of system can be permitted through the Florida Department of Environmental Protection. As such, this option was not considered further.

PROJECT CONSIDERATIONS

Among the important elements in determining the need for the drainage project were safety consideration and project cost.

SAFETY CONSIDERATIONS

This parcel will help provide additional access and storage which is needed to prevent flooding along Powers Drive and Silver Star Road. The steep slopes will be reconfigured, and the area will be cleaned, which will increase the volume of water that the lake can hold thereby preventing the flooding of the adjacent roads from recurring.

PROJECT COSTS

This project is in combination with the Lake Silver Star parcel which we will be clearing the trees and cleaning the brush for \$108,900. Currently we are evaluating the area using a term consultant for \$126,621.95, then we will be doing Phase II construction plans, specifications and permits for approximately \$125,000 and Construction cost are approximately \$922,700.

ENGINEERING RECOMMENDATION

The project is currently under design. One of the alternatives we are currently reviewing is placing a pump station that would help pump the water once the lake reaches a specific elevation in order to prevent flooding in the area. The water will then flow through the Silver Star Road FDOT drainage system.

CONCLUSION

The proposed improvements for Lake Star consist of constructing a drainage system to prevent future flooding along Powers Drive and Silver Star Road should be constructed as recommended.

LEGAL DESCRIPTION
Parcel 102, Estate: Fee Simple
Purpose: Retention Area

Commence at the Southeast corner of Lot 19 of SILVER STAR TERRACE as recorded in Plat Book W, Page 133 of the Official Records of Orange County, Florida; thence run North 02 degrees 00 minutes 08 seconds West a distance of 395.95 feet to a point, said point being the POINT OF BEGINNING; thence run North 89 degrees 49 minutes 52 seconds East a distance of 208.11 feet; thence run North 02 degrees 00 minutes 08 seconds West a distance of 71.40 feet; thence run North 59 degrees 00 minutes 58 seconds West a distance of 164.78 feet; thence run South 89 degrees 49 minutes 52 seconds West a distance of 273.70 feet; thence run South 71 degrees 31 minutes 20 seconds West a distance of 322.34 feet; thence run North 89 degrees 49 minutes 52 seconds East a distance of 513.14 feet; thence run South 02 degrees 00 minutes 08 seconds East a distance of 55.38 feet to the POINT OF BEGINNING;

Containing 1.45 acres or 63,000.27 square feet, MORE OR LESS.

Revised on 10/01/2020 to Parcel 102.
 Revised on 09/23/2020 distance in Legal changed.

PREPARED FOR:
 Roads & Drainage

DRAWN BY: Alvarez	DATE: 10/25/19	SECTION: 13	PUBLIC WORKS ENGINEERING DIVISION SURVEY SECTION 4200 SOUTH JOHN YOUNG PARKWAY ORLANDO, FLORIDA 32839-9205 (407) 836-7940		DRAWING SCALE: NTS
CHECKED BY: Daynes	JOB No: 8492	TOWNSHIP: 22			PROJECT NUMBER
APPROVED BY: Daynes	DRAWING FILE: 8492 Lake Star	RANGE: 28			8492
REVISION DATE:		SHEET 1 OF 2			

RH 10/8/20