



Lake Killarney Board Work Session

Agenda

May 2, 2023 @ 12:30 pm

welcome

Agendas and all backup material supporting each agenda item are accessible via the city's website at cityofwinterpark.org/bpm and include virtual meeting instructions.

assistance & appeals

Persons with disabilities needing assistance to participate in any of these proceedings should contact the City Clerk's Office ([407-599-3277](tel:407-599-3277)) at least 48 hours in advance of the meeting.

"If a person decides to appeal any decision made by the Board with respect to any matter considered at this hearing, a record of the proceedings is needed to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based." (F.S. 286.0105).

please note

Times are projected and subject to change.

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1. Call to Order
 2. Discussion Item(s)
 - a. Stormwater Management Flood Control Draft Discussion 1 Hour
 3. Adjournment



item type Discussion Item(s)	meeting date May 2, 2023
prepared by Victoria Tabor	approved by
board approval	
strategic objective	

subject

Stormwater Management Flood Control Draft Discussion

motion / recommendation

background

alternatives / other considerations

fiscal impact

ATTACHMENTS:

[Lake_Killarney_Board_Work_Session doc.pdf](#)

ATTACHMENTS:

[Lakes and Stormwater Management for Flood Control](#)

ATTACHMENTS:

[KILLARNEY WEIR COMPARISON](#)

Lake Killarney Board Work Session

Work session to discuss the Lakes and Stormwater Management for Flood Control Policy. Discussion will be specific to the flooded areas of Lake Killarney, Lake Bell and Lake Mendsen basins which are sub-basins of Howell Creek.

- Discuss Hurricane Season control elevation (June 1st-Nov 30th) ○ Possible redesign of the drain wells (81 ft from 82 ft) ○ Lake Killarney elevation was 82.0 ft on 9/26/22
- Discuss possible Lake Killarney Basin Flood Study ○ Inflows, outflows, infrastructure, basin hydrologic modeling and management
- Establish a daily active management plan for when storm approaches ○ Establish when the daily active management plan becomes in effect ○ National Hurricane Center issued TS Storm IAN advisory on 9/25 5pm
 - ✦ On September 26, 2022, the National Hurricane Center significantly altered the forecasted track of the storm much further south on the Florida peninsula, anticipating a more significant impact to Central Florida, including Orange County and Winter Park
 - ✦ Based on the new path, the City's Emergency Operations Center (EOC) became fully activated
- Discuss smart technology for automated lake level elevation data
- The Florida Department of Environmental Protection Resilient Florida Grant Program awarded the city \$100,000 to conduct a Climate Vulnerability Study ○ The study will explore climate effects, including the possibilities of decreasing the levels of rising water, and will be incorporated to identify the needs of lower lying areas that are more susceptible to flooding

City of Winter Park

Lakes and Stormwater Management for Flood Control

Lake Level Alterations

- Current protocol
 - a. remove the risers from the drain wells on Lake Killarney
 - i. without risers on the drain wells Lake Killarney lowers 0.1-0.2 ft per day
 - ii. top of risers average 81.66 ft* top of drain wells 80.0 ft* without risers, weir into Lake Gem 82.7 ft*
 - b. remove top weir board on Lake Bell
 - c. open valve to the MLK pond drainwell
 - d. open gate on the WPRC pond outfall
 - e. inspect all drain well intakes maintaining free and clear of debris
- Future protocol
 - a. Adopt a policy to lower lake levels based on issued storm forecasts
 - i. Cone of projected storm path issued by National Hurricane Center (NHC)
 1. touching Florida as trigger to lower lake levels
 - b. For hurricane Ian, NHC issued 5 days in advance of impact date 9/29/22
 - c. Florida State of Emergency was declared for hurricane Ian on 9/23/22
 - d. Issue lake closure protocol for chain of lakes at elevation 66.1 ft*

Past and future studies and CIP considerations

- The flood elevation in the Winter Park chain of lakes is control by a weir located on the north side of Lake Maitland at Howell Branch Road. The control elevation for the chain of lakes was studied for a LOMR in 2009. The SJRWMD confirmed that the current control elevation of 66.18 ft* was best for all communities upstream and downstream and it was not to be adjusted.
- Consider increasing the volume of the MLK pond and lowering the surrounding neighborhood flood stage
 - a. A flood study was performed in the CRA watershed basin by Geosyntec. This study provided four alternatives for increasing volume in the MLK pond
 - i. Alt 1 – Exfiltration Basin
 1. Decrease in peak stage: 0.26 ft
 2. Estimated cost: \$6,516,021
 - ii. Alt 2 – New interconnect to Lake Rose
 1. Decrease in peak stage: 0.05 ft
 2. Estimated cost: \$172,378
 - iii. Alt 3 – Exfiltration basin and interconnect to Lake Rose
 1. Decrease in peak stage: 0.2 ft
 2. Estimated cost: \$2,065,776
 - iv. Alt 4 – **(COMPLETED)** Relocating Killarney interconnect from Beachview Ave to intersection of Morse Blvd and Harper St
 1. Decrease in peak stage: 0.02 ft
 2. Estimated cost: \$35,830
 - b. Perform study to expand the overall footprint of the pond for more stormwater storage by strategically selecting park areas of lower usage
 - c. Consider partnering with private property owners near MLK to expand

- Develop 5-10 year CIPs for lake interconnections- perform hydraulic studies to determine pipes and associated cost
 - a. Lake Sylvan to Lake Mizell
 - b. Lake Grace to Lake Forest
 - c. Lake Chelton to Lake Sue
 - d. Lake Tuscany to Lake Temple to Howell Branch Pond
 - e. Lake Compton to Lake Spier
- Consider drainage study for Lake Killarney to Lake Gem- weir controlled at 82.0 ft* vs 82.7 ft*, same as the drain well risers
- Follow FS 252.363 provision allowing to adjust/pump lake down during declared state of emergency
 - a. Consider purchase of bypass pump(s) including floating intake attachment and suction and discharge hoses
 - b. Provide correspondence to SJRWMD advising of all necessary drawdowns
 - c. SJRWMD provides authorization upon flood waters reaching 1 foot below lowest FFE
- Section 252.363 of the Florida Statutes provides that upon the declaration of a state of emergency, permits and other authorizations are tolled for the duration of the declaration, and that they may be extended automatically upon the exercise of the notice requirements of Section 252.363(1)(a) for an additional six months. The tolling and extension provisions apply to the expiration of:
 - a. development orders issued by a local government
 - b. building permits
 - c. Florida Department of Environmental Protection or water management district permits issued pursuant to Part IV of Chapter 373, Florida Statutes
- Perform a survey to record lowest FFE for City lakes
- Consider installing auto-read lake level gauges with telemetry services for City lakes
- Consider installing additional weather stations with telemetry services within City limits.

(* All survey elevations provided in this report are based on NAVD 88 Datum)

Inspection and Maintenance Activities

Current

- Inspect each control and outflow structure located on the chain of lakes and all land locked lakes
 - a. Inspect all weirs and grass carp barriers including the ones located downstream of lakes Bell, Killarney, Berry and Maitland
 - b. Inspect each canal within the chain of lakes and Howell Creek upstream of Lake Virginia and downstream of the Howell Branch weir
 - c. Inspect drain well intake structures on Lake Killarney and all land locked lakes (Knowles, Spier, Forest, Midget, as well as the Seminole County drain wells on N. Lakemont Avenue)
 - d. Inspect major conveyance systems and high-risk areas (i.e Special Flood Hazzard Area- SFHA)
- Continually update regularly scheduled storm sewer outfall inspection and maintenance activities to ensure optimal performance
- Ensure that regularly scheduled storm sewer maintenance operations are followed in accordance with the NPDES permit requirements

Future

- Develop a revised comprehensive plan for scheduled video inspections of all storm and sanitary sewers
- Ensure contingency plans for alternate street sweeping arrangements if contracted street sweeping does not occur or is inadequate
- Provide advance alert notifications for potential impacts to high-risk areas (prior floods or SFHA)

Replace permanent grass carp barriers with a retractable grass carp barrier

