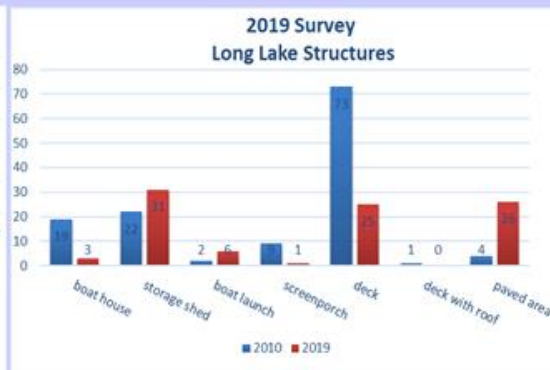
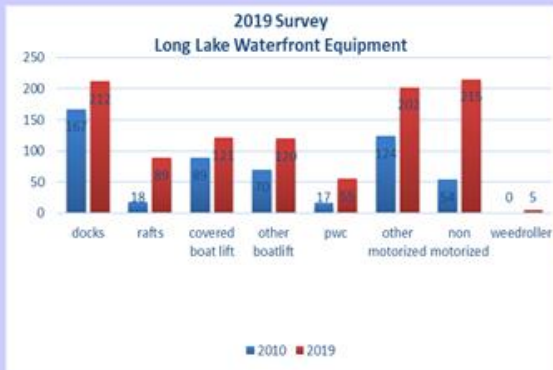


2019 Long Shoreline Survey- 180 Parcels

The survey compared modifications to the shoreline, nearshore, structures, and waterfront equipment present to the 2010 survey. Over the past decade, some notable changes on Long include a resort conversion to single family homes on the south end and the addition of City water and sewer services on the north, east and south areas.

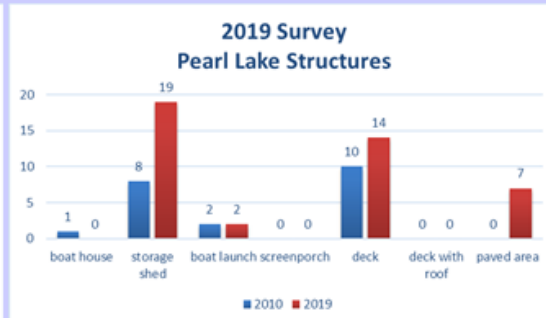
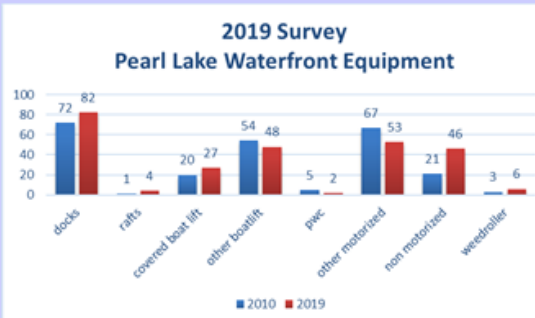
Long's shoreline is 6% natural, 7% minimally altered, 19% moderately altered, and 68% greatly altered. Greatly altered shoreline increased by 230% from the 2010 survey mostly due to removal of natural trees, shrubs, and vegetation and replacing with lawns, sand blankets, and rip-rap. Waterfront equipment changes over that past decade include increases in docks, rafts, lifts, but the most notable were the increases in personal watercraft, kayaks, and boats. Waterfront structures saw a marked decrease in the number of boat houses, decks, however there was an increase in storage sheds, stairways and paved landing areas.



Long Lake Shoreline Alteration	2019	2010
Natural Shoreline. Natural vegetation all along shoreline and within the shore impact zone; no modifications have been made to the shoreline except a small walkway (<4ft) and/or dock.	13 parcels	12 parcels
Minimal Shoreline Alteration. (Naturally vegetated area—trees and/or shrubs /unmowed grasses present along at least 3/4 of shoreline, may contain cattail or bulrush fringe. Only natural rip-rap or sand present.	12 parcels	64 parcels
Moderate Shoreline Alteration. (1/4 to 1/2 of shoreline not altered from natural state (trees, shrubs, grasses); no retaining walls; some modification within Shore Impact Zone, but limited to < 50%; some trees and shrubs in upland area.	34 parcels	59 parcels
Greatly altered (More than 50% of shoreline altered; retaining walls, patios, boat ramps may be present in Shore Impact Zone. Entire shoreline is mowed to rip-rap/sand blanket; upland may be cleared to primary structure.	121 parcels	37 parcels

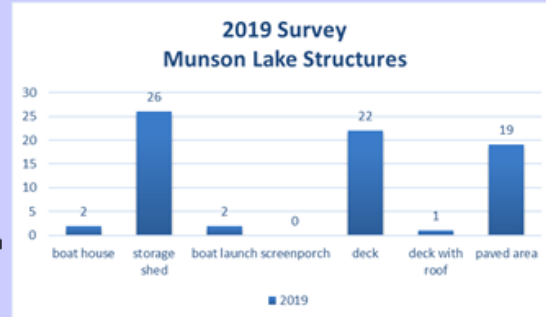
Pearl Lake Survey—92 Parcels

Pearl Lake is a relatively small lake on the Western peripheral of the District. Since the last survey in 2010, development has increased. The number of greatly modified lots has increased by 54% while the number of natural lots has decreased by 5%. That being said, Pearl lake still retains 35% of its lots as minimally modified. The Lake also experienced an increase in non-motorized watercraft and a decrease in motorized watercraft, signifying more low-impact recreation such as paddleboards and kayaks. A total of 11 lots have added storage shed since 2010, and 3 new docks have been added.



Munson Lake Survey— 93 Parcels

Munson has been highly developed, with 53% of sites being "greatly modified". Like other District lakes, development on Munson has increased greatly. Development has focused on the Northern part of the lake, with some on the isthmus between Munson and Sallie. A large natural area has been left undeveloped on the West side of the lake due to a large wetland located there.



Pearl Lake and Munson Lake Alterations	2019 Pearl Munson	2010 Pearl
Natural Shoreline. Natural vegetation all along shoreline and within the shore impact zone; no modifications have been made to the shoreline except a small walkway (<4ft) and/or dock.	20 parcels 13 Parcels	21 Parcels N/A
Minimal Shoreline Alteration. (Naturally vegetated area—trees and/or shrubs /unmowed grasses present along at least 3/4 of shoreline, may contain cattail or bulrush fringe. Only natural rip-rap or sand present.	32 parcels 13 Parcels	32 Parcels -N/A
Moderate Shoreline Alteration. (1/4 to 1/2 of shoreline not altered from natural state (trees, shrubs, grasses); no retaining walls; some modification within Shore Impact Zone, but limited to < 50%; some trees and shrubs in upland area.	20 parcels 20 Parcels	19 parcels -N/A
Greatly altered (More than 50% of shoreline altered; retaining walls, patios, boat ramps may be present in Shore Impact Zone. Entire shoreline is mowed to rip-rap/sand blanket; upland may be cleared to primary structure.	20 parcels 48 Parcels	13 parcels -N/A