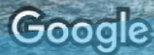


July 24, 2020

# Luther Burbank Park Waterfront Plaza & Docks Coastal Processes 101



CITY OF MERCER ISLAND  
PARKS & RECREATION



# Coastal Processes: Floating Breakwaters (1/1)

Floating Breakwaters let some wave energy through; work best for smaller, choppy waves



Larger waves

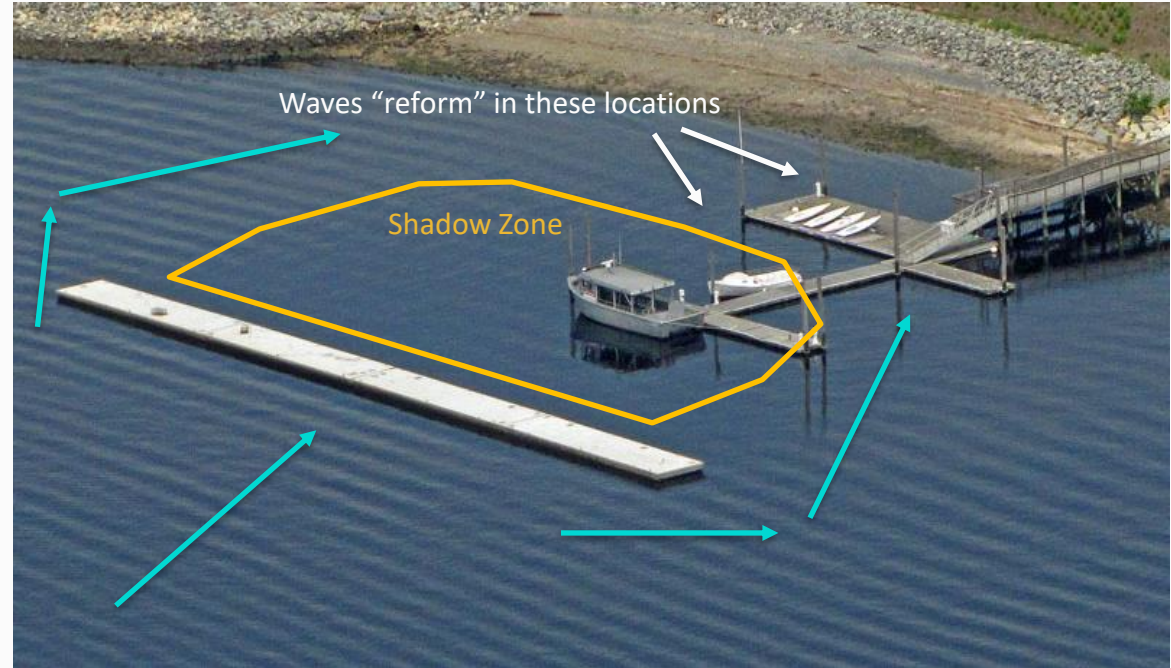


Smaller, choppy waves

# Coastal Processes: Floating Breakwaters (2/2)

Breakwaters, including floating breakwaters, work best when they are close to facility

- “Shadow zone” of calmer water occurs on the leeward side on the landward side of the breakwater
- Waves will diffract around the ends of the breakwater and “re-form” some distance landward of the structure
- When you move the breakwater you move the “shadow zone”



# Opportunities & Constraints: Coastal Processes

## Opportunities:

- Floating dock/breakwater configuration optimized to address most wave conditions
- Floating docks/breakwaters could provide some erosion protection from boat wakes

## Constraints:

- Floating breakwaters will let some wave energy into the marina. Docks will move when waves are present
- Docks impacted by a combination of wind-waves and boat wakes from all directions

