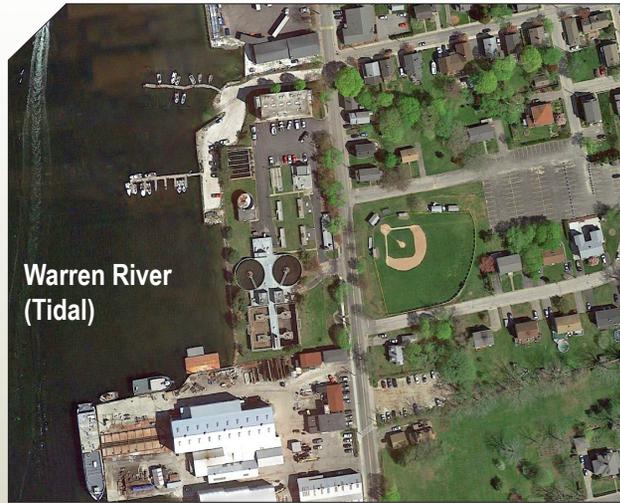


Warren Wastewater Treatment Facility - CLIMATE VULNERABILITY SUMMARY



Warren WWTF is located at 427 Water Street in Warren. It treats an average of 1.8 million gallons of wastewater per day in, serving most of the densely populated portions of Warren. The plant also accepts approximately 400,000 gallons per year of septage from in-town systems only. Additional information is on the back of this summary.



TOP 4 HAZARD MODELING RESULTS

Inundation of the entire WWTF during a 100-year storm with a stillwater depth of 7+ feet and flooding beyond Water Street will prevent vehicular access to the surrounding area.

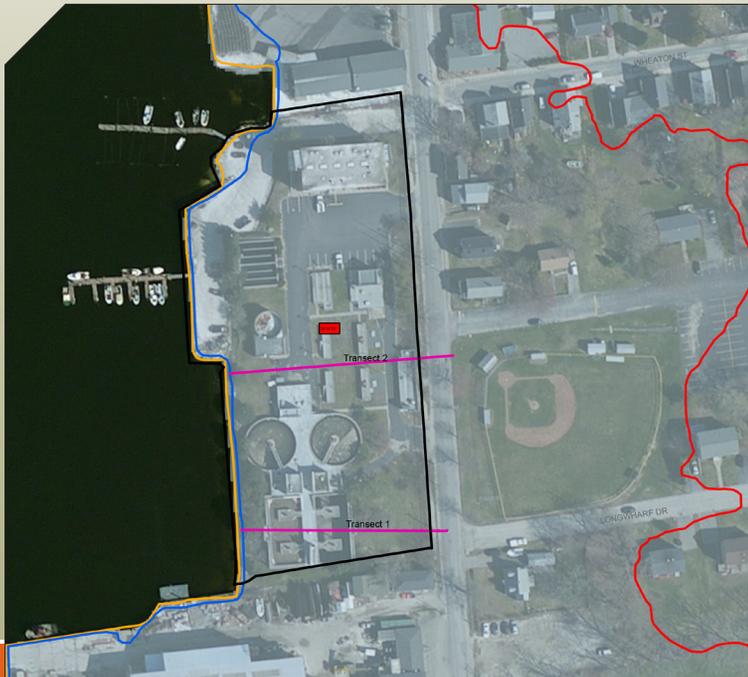


North PS, Wood Street PS, Asylum PS, Patterson Ave PS, and Locust Terrace PS would be inundated during a 100-year storm.



5 feet at the shoreward structures.

100-year shoreline is predicted to be more than 300 feet inland of Water Street unless active protection measures are implemented.



Legend	
	Treatment Plant
	Pump Station
	Approx. Parcel Boundary
	Wave Transect
	2115 Shoreline
	2065 Shoreline
	2040 Shoreline
	100-Year Flood Level
	100-Year Flood Level Plus 1' SLR
	100-Year Flood Level Plus 2' SLR
	100-Year Flood Level Plus 3' SLR
	100-Year Flood Level Plus 5' SLR



PLANNED CLIMATE CHANGE ADAPTATION MEASURES

The WWTF is undergoing design of a major upgrade that is incorporating several climate change resiliency measures as a result of this assessment.

WARREN, RI - CLIMATE VULNERABILITY SUMMARY

FACILITY SUMMARY	
Owner	Town of Warren
Operator	Suez
Facility Address	427 Water Street Warren, RI 02885
Contact Name	David Komiega, Superintendent
Phone	401.245.8326
Design Flow Capacity	2.01 MGD
Average Daily Flow	1.8 MGD
Receiving Water	Warren River
Extreme Weather Related SSO Events 2010 - 2014	2 out of 10 events or 20%

The most flood prone pump stations have dry-pit submersible pumps or entryways that are either flood proof or elevated.

Planned redevelopment of an old manufacturing facility would increase flows to the WWTF on the order of 0.1 MGD, close to capacity.

ADAPTIVE STRATEGIES (SEE REPORT FOR COMPLETE LIST)				
SYSTEM	Hardening	Relocating	Readily Repairable/ Replaceable	Mitigation Strategy
Primary Settling Tanks		B		Allow primary settling tanks to flood. Locate collector drives above flood elevation. ¹ Replace sludge pumps with submersibles. Store replacement drive components on site. Pumps may be temporarily augmented. ²
Electrical Switchgear and Motor Control Centers		C		Relocate above flood elevation. ¹
Disinfection System (Chlorine Contact Tanks)		B		Locate mixer drive above flood elevation or install submersible mixer. ¹
Operations Building		B	B	Allow pumps in station basement to flood. Electrical switchgear, MCCs and SCADA equipment above flood elevation. ¹

¹ Adaptive measures planned for implementation in the near term as part of the proposed WWTF Upgrades project.

² Adaptive measures that the Town of Warren may consider implementing at a future time.

A = < \$50,000 B = \$50,000 to \$250,000 C = \$250,000 - \$1,000,000 D = > \$1,000,000