



Jones Point Pump Station Project Climate Threat Analysis

The following table provides a summary of the results of a climate threat analysis conducted to support Envision verification of the Jones Point Facilities Rehabilitation Project. This analysis draws on the 2022 Resilient Fairfax Climate Vulnerability and Risk Assessment to identify relevant climate hazards. It also assesses the project, associated wastewater infrastructure, and surrounding community impacts and vulnerabilities to these hazards. Vulnerability is determined by evaluating each sector's exposure, sensitivity and adaptive capacity to climate impacts.

Hazard	Description	Duration	Project Impacts	Project Vulnerability	Wastewater Infrastructure Impacts	Wastewater Infrastructure Vulnerability	Community Impacts	Community Vulnerability
Extreme Heat and Increased Temperatures	At least two consecutive days above 90 °F with high humidity	Chronic	<ul style="list-style-type: none">Equipment overheating and failurePower outagesDangerous working conditionsIncreased possibility of heat stroke	Moderate	<ul style="list-style-type: none">Increased algal growth in receiving watersHigher strength wastewater and increased odor issuesIncreased possibility of heat strokeDangerous or difficult working conditions	Moderate	<ul style="list-style-type: none">Service disruptionsIncreased odorHeat stroke and other heat-related illness	Moderately High
Heavy Precipitation and Inland Flooding	Urban flooding from overwhelmed stormwater infrastructure and/or excess impervious surface coverage, and river/stream overflow into floodplains	Acute	<ul style="list-style-type: none">Higher groundwater table leading to cracked pipes within the collection systemIncreased inflow and infiltrationPump station floodingBuilding damageFlooded roads and road closuresIncrease in debris entering pump stationCostly repairs	Moderately High	<ul style="list-style-type: none">Higher groundwater table leading to cracked pipes within the collection systemIncreased inflow and infiltrationIncreased likelihood of combined sewer overflow eventsInfrastructure damageFlooded roads and road closures	Moderately High	<ul style="list-style-type: none">Reduced water quality from sewage contaminationProperty damageIncreased likelihood of illness and injuryBackups into homes and businesses	High
Severe Storm and Wind Events	Tropical storms, decheros, severe thunderstorms, and severe wind events	Acute	<ul style="list-style-type: none">Power outagesRoad closures can impact ability to operate/maintain pump stationIncrease in debris entering PSBuilding and property damageCostly repairs	Low	<ul style="list-style-type: none">Increased likelihood of power outagesRoad closures that may impact ability to operate and maintain wastewater infrastructureInfrastructure damage	Low	<ul style="list-style-type: none">Service disruptionsProperty damage	Moderately High
Extreme Cold	Temperatures below freezing	Chronic	<ul style="list-style-type: none">Frost-bite or other weather-related injuriesRoad closures due to icy conditions or sustained snowfallFrozen water lines, eyewash stations, or hose bibs	Low	<ul style="list-style-type: none">Frost-bite or other weather-related injuriesRoad closures due to icy conditions or sustained snowfall	Low	<ul style="list-style-type: none">Increased mortality, hospitalizations, and morbidity rates (especially in vulnerable populations)	Low
Coastal Flooding	Sea level rise, tidal flooding, and/or coastal storm surge resulting in flooding of the Potomac River and associated water bodies	Chronic	<ul style="list-style-type: none">Pump station floodingHigher groundwater leading to cracked pipes within the collection systemIncreased inflow and infiltrationCostly repairs	Moderately High	<ul style="list-style-type: none">Higher groundwater leading to cracked pipes within the collection systemIncreased inflow and infiltrationCoastal erosion and exposed sanitary sewers	Moderate	<ul style="list-style-type: none">Property damageIncreased likelihood of illness and injuryBackups into homes and businessesService disruptions	Moderate
Drought	Extended period of abnormally low rainfall that leads to water shortage	Chronic	<ul style="list-style-type: none">Decreased availability of potable waterReduced flow through PS	Very Low	<ul style="list-style-type: none">Decreased availability of potable and drinking waterLower overall flow through collection system and WTP	Very Low	<ul style="list-style-type: none">Decreased availability of potable water	Very Low