

DOS SUMMARY OF CLIMATE CHANGE IMPACTS BY SECTOR

Main Climate Variable	Specific Climate Variable	Probability of Specific Climate Variable	Climate Variable Notes	Impact on Resource	Likelihood of Impact	Consequence	Magnitude of Consequence
INFRASTRUCTURE							
Precipitation	Increase in mean precipitation	More likely than not	N/A	New maximum potential stream flow/flooding in large basins	Uncertain	Increase in the number of moderate floods	Medium
				Urbanized watersheds rapidly aggregate water and have a limited capacity to attenuate	Medium	Increase in the number of flash floods	High
				Increased flooding of wastewater treatment plants	Low	Routine interruption of operations for an extended time period	High
Sea Level Rise	Sea level rise	Very likely	N/A	Flooding of coastal water infrastructure, including wastewater treatment plants	Medium	Temporary or permanent disruption of service	High
DRINKING WATER SUPPLY							
Temperature	Increase in mean temperature	Very likely	Increase in mean temperatures may be greater: 1. In the north than south 2. In winter than in summer in the north	Increased demand	Low	Increased strain on system	Low
	Increase in extreme heat events	Likely	N/A				
Temperature / Precipitation	Drought	Uncertain	Towards the end of the century, warm season droughts will more likely than not increase.	Changes in groundwater depths	High	Increased possibility of well depletion	High
				Seasonal variation in reservoir inflow and aquifer recharge	High	Decreased reliability of historical levels for planning	High
				Localized stress and possible depletion of small streams, shallow wells, wells in moderately productive aquifers, and small reservoirs	Medium	These areas will have to tap into larger reservoir systems, increasing overall strain on systems	High
Precipitation	Increase in mean precipitation	More likely than not	N/A	Increased turbidity of water supply reservoirs	Medium	Decreased quality of water supplies (also see water quality section)	High
COMMERCIAL AND AGRICULTURE WATER AVAILABILITY							
Temperature	Increase in mean temperature	Very likely	Increase in mean temperatures may be greater: 1. In the north than south 2. In winter than in summer in the north	Increased demand for crops and livestock and for cooling commercial infrastructure systems	Low	Increased strain on system	Low
	Increase in extreme heat events	Likely	N/A				
Temperature / Precipitation	Drought	Uncertain	Towards the end of the century, warm season droughts will more likely than not increase.	Greater competition for water between potable, commercial uses and ecological needs	Medium	Lessened dependence on hydroelectricity as an energy supply	Medium
				Decrease in availability of water resources for equipment cooling	High	Facilities turn to low-consumption, 'once-through' cooling where water is returned to the same water body at a higher temperature, influencing aquatic organisms	Medium
				Increased consumption due to natural gas drilling in deep shales	Low	Withdrawals will not be spread uniformly across a basin and intensive withdrawals from smaller headwater streams may lead to localized low flows.	Medium
Precipitation	Increase in mean precipitation	More likely than not	N/A	Increased turbidity of water supply reservoirs	Medium	Decreased quality of water supplies (also see water quality section)	High
WATER QUALITY							
Temperature	Increase in mean annual temperature	Very likely	Increase in mean temperatures may be greater: 1. In the north than south 2. In winter than in the north summer	Favorable corn-based ethanol production	Medium	May lead to increased agricultural land use in NYS	Medium
				Greater pathogen survivability in waters	High	Increased potential for disease in aquatic life	High
				Increased algal growth in water bodies as well as increased dissolved organic matter exported from soils and wetlands	High	Impairs recreational use and normal ecosystem function, this increased organic matter may increase the concentration of disinfection by-products (DBP) in drinking water (potentially harmful chemicals that form when chlorine added to kill pathogens reacts with organic matter).	High
	Increase in water temperature of streams and rivers	Likely/very likely	Depends on many factors besides air temperature, such as precipitation, water demand, and land cover	Warmer water holds less dissolved oxygen (DO), so water waters will increase strain on streams that already experience oxygen depletion	Medium	High DO levels are detrimental to aquatic organisms	Medium
Precipitation	Increase in mean annual precipitation	More likely than not	N/A	Expanded agriculture in water-rich areas	Medium	Increased nutrient loading (nitrogen and phosphorus) loading, which leads to degraded water quality and ecosystem health	Medium
	Increase in extreme precipitation events	More likely than not	N/A	Increased runoff and reduced infiltration of rain into natural ground cover and soils	High	Greater potential for CSOs	High