

Table 1. Summary of vulnerability and potential magnitude of climate change impacts to Seattle City Light

Utility Function	Impacts Caused by Climate Change*	Time	Vulnerability			Potential Magnitude** of Impact to				Ref. Pages
			Exposure	Sensitivity	Capacity to Adapt	Financial Cost	Safety	Reliability	Environmental Responsibility	
Shoreline Infrastructure	Tidal flooding due to higher storm surge and sea level rise	2030	○	●	●	Low	—	—	Low	18-24
		2050	●	●	●	Mod	—	—	Low	
Transmission and distribution	Tidal flooding and salt water corrosion due to higher storm surge and sea level rise	2030	○	○	●	Low	—	Low	—	18-24
		2050	●	○	●	Low	—	Low	—	
	Reduced transmission capacity due to warmer temperatures	2030	●	○	○	Low	—	Low	—	34-39
		2050	●	○	○	Low	—	Low	—	
	More frequent outages and damage to transmission and distribution equipment due to changes in extreme weather	2030	○	●	●	Low	Low	Low	—	40-46
		2050	○	●	●	Low	Low	Low	—	
	More damage and interruptions of transmission and generation due to wildfire risk	2030	●	●	●	High	High	Med	—	47-53
		2050	●	●	●	High	High	Med	—	
	More damage to transmission lines and access roads due to landslide risk	2030	●	●	●	Med	Low	Med	—	54-58
		2050	●	●	●	Med	Low	Med	—	
More damage and reduced access to transmission lines due to more frequent river flooding and erosion	2030	●	●	●	Med	—	Low	—	71-74	
	2050	●	●	●	High	—	Low	—		
Electricity Demand	Reduced electricity demand for heating in winter due to warmer temperatures	2030	●	●	●	Med	—	Low	—	25-33
		2050	●	●	●	High	—	Low	—	
	Increased electricity demand for cooling in summer due to warmer temperatures	2030	○	○	●	Low	—	Low	—	25-33
		2050	●	○	●	Med	—	Med	—	

*The impacts are those caused by climate change in addition to historical conditions; most existing hazards (such as windstorms) will continue.

**Magnitude refers to the average event or normal condition for the timeframe, not the worst possible year or event that could occur.

Table 1 cont. Summary of vulnerability and potential magnitude of climate change impacts to Seattle City Light

Utility Function	Impacts Caused by Climate Change*	Time	Vulnerability			Potential Magnitude** of Impact to				Ref. Pages
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Hydroelectric Project Operations	Seasonal operations of hydroelectric projects not aligned with streamflow due to reduced snowpack (snow-dominated watersheds)	2030	●	●	●	Low	—	—	Low	59-70
		2050	●	●	●	High	—	—	Med	
	Seasonal operations of hydroelectric projects not aligned with streamflow due to reduced snowpack (mixed-rain-snow watersheds)	2030	●	●	●	Low	—	—	Med	59-70
		2050	●	●	●	Med	—	—	Med	
	More frequent spilling at hydroelectric projects due to higher peak streamflows (snow-dominated watersheds)	2030	○	●	○	Low	—	—	Med	75-79
		2050	●	●	○	Low	—	—	Med	
	More frequent spilling at hydroelectric projects due to higher peak streamflows (mixed-rain-and-snow watersheds)	2030	●	●	●	Low	—	—	Med	75-79
		2050	●	●	●	Med	—	—	Med	
	Increased difficulty balancing objectives for reservoir operations in summer due to lower low flows (snow-dominated watersheds)	2030	●	●	●	Med	—	—	Low	83-87
		2050	●	●	●	High	—	—	Mod	
	Increased difficulty balancing objectives for reservoir operations in summer due to lower low flows (mixed-rain-and-snow watersheds)	2030	●	●	●	Med	—	—	Med	83-87
		2050	●	●	●	High	—	—	Med	
Fish Habitat Restoration	Increased difficulty meeting objectives for restoring habitat for fish species due to lower low flows.	2030	●	●	●	Low	—	—	Med	88-90
		2050	●	●	●	Low	—	—	High	
	Increased difficulty meeting objectives for restoring habitat for fish species due to higher peak flows.	2030	●	●	●	Low	—	—	Med	80-82
		2050	●	●	●	Low	—	—	High	

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