



Job Aid: Sample Indicators and Metrics of Adaptation Success and Progress: Infrastructure Aspects

This list constitutes a sample of possible indicators and metrics that point to climate adaptation success and/or progress. It is derived from work with communities in Maine, New York, New Jersey, California and Alaska. For a larger list of indicators and possible metrics brainstormed by these communities, look for a searchable Excel spreadsheet in the Resources section of www.resiliencemetrics.org, called "SAIM Project_Indicator Brainstorm_all.xlsx" (status January 2020). Indicators can be searched by adaptation strategy, location, sector, or the six dimensions of adaptation success described at www.resiliencemetrics.org. This list is not refined, ranked or vetted by any scientific or governance entity although some indicators are in use. The list is solely offered to support other users' creative thinking and brainstorming of indicators/metrics that suit their unique situations.

Adaptation Strategy	Indicators	Metrics	Process	Capacity	Barriers	Decision-making	Action	Outcome
Ensure safe access to Reserve, trails, and roads (e.g., improve signage; educational programming, distribute and maintain signage)	Access to the Reserve	Vulnerability assessment of trails/roads; maintenance of trails and roads (rating of condition); # of connecting points between roads and trails; documentation that climate change is considered in road design (Yes // no // partial); road/trails education integrated into programming				x	x	x
Secure critical transportation routes	Adjusted/relocated roads	Critical at-risk sections of road elevated or moved inland (stage of planning/ implementation); % of necessary funds secured			x		x	x
Improve storm runoff management	Effectiveness of storm runoff management	Observed status of local flooding hotspots (no longer flooding during design floods, decrease in number of flooding at hotspot/flooding events, % decrease in flooding events/year)						x
Address changing flood risks to property through on-site risk mitigation	Freeboard requirement in flood-hazard zones	Freeboard (Elevated // Not elevated // Elevation in progress) (using climate change projections, periodically updated)			x		x	
Improve storm runoff management	Infrastructure improvement	Capital improvement plan includes replacement of outdated culverts Yes // No // In Progress; Old culverts replaced with new, bigger ones; design flood standard updated to current/ projected risk data (i.e., updated precipitation data in use); culvert replacement needs identified // % culverts replaced				x	x	x



This job aid was created to serve as a reference for individuals interested in indicators and metrics to help communities define and track progress on their climate adaptation goals. Additional background and resources are available on the website: www.ResilienceMetrics.org. This website was developed in partnership with the National Estuarine Research Reserve System with funding from NOAA.



Adaptation Strategy	Indicators	Metrics	Process	Capacity	Barriers	Decision-making	Action	Outcome
Maintain, elevate, restore and/or relocate (as needed) roads and trouble spots	Flood-related closures or disruptions	# of road or trail closures/year or flood event						x
Maintain functional infrastructure	Upgraded critical infrastructure	Wastewater treatment plant upgraded/ replaced/built to projected flood levels (Yes // no // partial // in progress)				x	x	
Update Emergency Management Plan	Up-to-date maps of emergency response routes	Mapping completed // mapping not begun // update in progress (regular updates, e.g. every 5-10 years)			x	x	x	
Ensure reliable water supplies	Water conservation practices	# of water-efficient HH appliances installed; HHs with rain barrels/on-site storage systems, irrigation drip systems; # of leaky pipes replaced; water use reductions (acre feet/year); public workshop/training on drip-water irrigation and other water conservation techniques; update of stormwater plan (completed // in progress // not begun // no intention to update); flow rates (well logs)					x	x
Maintain river access and opportunities	Waterfront access	Number of access points; % of safe/functional access points; % flood-proofed access areas; or: improved // maintained // declined					x	x
Integrate climate change into capital improvement plans/ infrastructure planning	Willingness to pay	Sales tax increase is passed (dedicated to a major infrastructure project)			x		x	