Federal Clean Water Act Section 319 Grant Federal Fiscal Year 2021: Implementation

Solicitation for Applications (SFA)

Attachment C:
Recovery Potential Integrated Score

Introduction

Recovery Potential Screening (RPS) is a systematic, comparative method for identifying differences among watersheds that may influence their relative likelihood to be successfully restored, protected or managed in other ways. It was developed by the EPA Office of Water as a flexible, user-driven approach to help states and others generally compare impaired waters and their watersheds more quickly and efficiently while setting priorities for investing limited restoration resources. The RPS screening approach involves identifying a group of watersheds to be compared and a specific purpose for comparison, selecting appropriate indicators in three categories (Ecological, Social, and Stressor), calculating index values for the watersheds, varying the analysis iteratively, and applying the results as part of strategic planning and prioritization.

RPS was used for this Solicitation for Applications (SFA) to develop a Recovery Potential Integrated Score (RPI Score) for all twelve-digit hydrologic unit code watersheds in New Mexico, to generally quantify the likelihood that water quality and wetlands improvement projects may succeed based on innate characteristics of their watersheds. RPI Scores were normalized to a 0-25 point scale. These points will be applied in the evaluation of project applications based on the twelve-digit watersheds where the proposed projects are located. More information on RPS, including a New Mexico-specific screening tool, is available at https://www.epa.gov/rps. More information on how the RPI Scores for this SFA were calculated is in the sections below. The RPI Scores and the data used to calculate them are available at https://gis.web.env.nm.gov/oem/?map=swqb (in the "Nonpoint Source Program" group).

Calculation of RPI Scores

As noted above, the RPS screening approach involves selecting appropriate indicators in three categories (Ecological, Social, and Stressor). An index is calculated for each category of indicator. An overall RPI Score is then calculated from the Ecological, Social, and Stressor RPS indices.

Ecological, Stressor, and Social RPS Index values have a maximum value of 100. They were each calculated by summing the indicator values normalized to a scale of 0 to 1, dividing by the number of indicators used, and multiplying by 100. Watersheds with no data for a given indicator (i.e., missing values) have RPS indices calculated using only non-missing indicators.

RPI Scores were calculated as:

RPI Score = [Ecological Index + Social Index + (100 - Stressor Index)] / 3.

A higher Ecological Index, Social Index, or RPI Score implies higher recovery potential. A higher Stressor Index implies lower recovery potential. As noted above, RPI Scores were normalized to a 0-25 point scale for application in this SFA.

Selected Indicators

Ecological

PHWA Watershed Health Index, State (2016): The statewide Watershed Health Index score for the 12-digit watershed from the 2016 EPA Preliminary Healthy Watersheds Assessment (PHWA). The Watershed Health Index is an integrated measure of watershed condition that combines Landscape Condition, Hydrologic, Geomorphology, Habitat, Water Quality, and Biological Condition Sub-Index scores. Higher scores correspond to greater potential for a watershed to have the structure and function in place to support healthy aquatic ecosystems. Source data were statewide Watershed Health Index scores for 12-digit watersheds developed as part of the 2016 EPA Preliminary Healthy Watersheds Assessment (February 8, 2017 version). More information is available at https://www.epa.gov/hwp/download-2017-preliminary-healthy-watersheds-assessments.

Residual of Modeled Stream Temperature (INSTATE): Difference between modeled air temperature (from the PRISM project of Oregon State University) and observed stream temperature (from NMED data). These data were developed by NMED to support temperature standards development. A high number indicates warm stream temperatures relative to predicted air temperature, and a low number indicates low stream temperatures relative to predicted air temperature. Low numbers tend to be associated with spring-fed streams and streams downstream of reservoirs. High numbers are often associated with streams lacking shade and may indicate opportunities to reduce stream temperature with management.

Social

Watershed % Publicly Managed Land (INSTATE): Percent of the watershed that is managed by a public agency. Data are from The National Map (https://www.usgs.gov/core-science-systems/ngp/tnm-delivery). "(INSTATE)" denotes that the indicator was only calculated for the HUC areas within New Mexico state boundaries. Public land is generally managed to protect and improve water quality and tends to have the added benefits of access to and interest by the public.

% Any IUCN Status: Percent of the watershed designated as protected by the International Union for Conservation of Nature (IUCN). Lands considered protected by the IUCN have long-term protections in place to conserve ecosystem services and cultural values; they include lands held by national, state, or local governments, non-profit organizations, and voluntarily protected private land. Source data was the Protected Areas Database of the United States Version 1.2 from the USGS Gap Analysis Program (http://gapanalysis.usgs.gov/).

Stressor

PHWA Watershed Vulnerability Index, State (2016): The statewide Watershed Vulnerability Index score for the 12-digit watershed from the 2016 EPA Preliminary Healthy Watersheds

Assessment (PHWA). The Watershed Vulnerability Index characterizes the vulnerability of aquatic ecosystems in a watershed to future alteration based on Land Use Change, Water Use Change, and Wildfire Vulnerability Sub-Index scores. Higher scores correspond to greater potential vulnerability of aquatic ecosystems to future degradation. Source data were statewide Watershed Vulnerability Index scores for 12-digit watersheds developed as part of the 2016 EPA Preliminary Healthy Watersheds Assessment (February 8, 2017 version). More information is available at https://www.epa.gov/hwp/download-2017-preliminary-healthy-watersheds-assessments.

Missing Data

163 12-digit watersheds (of 3,223 in New Mexico) had insufficient data to calculate the RPI Score. Most of these are located partly in an adjacent state or country. These watersheds were assigned a normalized RPI Score of 13 (approximately the midpoint of the range of scores).