

A National Analysis of Recovery Potential Indicator Usage

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For several years, the EPA Office of Water has provided technical assistance to states in applying [Recovery Potential Screening](#) (RPS), an indicator-based method for comparing differences in restorability among watersheds. This watershed screening technique measures ecological, stressor, and social indicators in systematic comparisons that help determine driving factors that affect the prospects for restoration success. The RPS website contains [step-by-step methods](#), [tools](#), and a [library of recovery potential indicators](#) that provide a blueprint for RPS projects. In 2013, nine states have been actively engaged in RPS projects that are related to nonpoint source strategies, TMDL implementation priorities, watershed prioritization for nutrients management, healthy watersheds and other applications.

Statewide RPS projects generally begin with the state's direct selection of candidate indicators that may help them craft more effective program strategies and actions. We aggregated a master spreadsheet of 17 project-specific RPS indicators lists, compiled mainly from single-state workshops, and then used our findings to evaluate indicator availability, usage, and apparent needs. After compiling these indicators and organizing them into the RPS categories (ecological, stressor, social) and subcategories, we evaluated the usage patterns of each indicator by considering its frequency of use to date, data availability, actual versus potential application, and obstacles to broader usage. The results appear in Table 1 by usage category and indicator class/subclass. Highlights appear below:

- We identified 262 metrics that were selected and/or used in 17 projects over the past five years. These were all reviewed and assigned to usage categories (see descriptions A - E, Table 1) to guide EPA planning for future RPS state support and plans to generate national, pre-measured indicator datasets. The spreadsheet of all RPS projects and the indicators they used is now a valuable project planning resource for new RPS efforts.
- We found that 52 A1 or A2 indicators were frequently used in RPS and available nationally from consistent data.
- An additional 60 B1 or B2 indicators with nationally consistent data sources appeared underutilized and could be more widely useful if they were more familiar and available; A2 and B2 indicators are the best candidates for pre-measurement on a national basis for ready availability to states.
- Of the 112 A and B indicators, which all have nationally available source data, 101 require an additional measurement step to generate watershed-specific indicator values. EPA assistance has been generating these measurements to increase the number and variety of indicators available to state RPS projects.
- An additional 98 C1 or C2 indicators appeared widely useful and desirable but have been sporadically used due to data availability differences from state to state or unusual complexity/expense of measurement. These included some metrics (e.g., flow dynamics, channelization, biotic integrity indices) that are among the most powerful when available. Some would make excellent national investments to increase the breadth and relevance of the RPS indicators that are commonly available to states.
- Another 52 D and E indicators selected or used in RPS projects appeared to be locally important and available but not consistently relevant in all states.
- Overall, there were good quantities and variety of commonly available indicators in all three of the RPS classes (ecological, stressor, social), but some subclasses were sparse and more affected by data gaps on potentially valuable indicators. Targeted investments in RPS indicator development could consider gap areas.
- The increase in state RPS projects and the substantial numbers of frequently used indicators with national data sources point to a valuable opportunity to pre-measure dozens of RPS indicators on a common watershed scale (HUC12) as well as develop more RPS analytical tools. The Region 4 watershed index project has made substantial progress on calculating RPS metrics for HUC12s in the lower 48 states and developing prototype web-based analysis tools, but more support is needed to make a national HUC12 indicators library widely available and accessible.
- Time and resources could be saved through availability of RPS indicators pre-measured on the HUC12 scale. With less effort needed to develop state-specific datasets, more could be redirected to recovery potential screening applications in direct support of those states' program strategies and critical decisions.

Table 1: CATEGORIZATION OF RPS INDICATORS SELECTED OR USED IN 17 RPS PROJECTS

CELL VALUES ARE THE NUMBER OF RPS INDICATORS BY INDICATOR CLASS/SUBCLASS (ROWS) AND USAGE CATEGORY (COLUMNS) FROM ALL PROJECTS, MARCH 2013.

Usage Categories

A: Highly useful, used frequently; consistently available data -

A1: nationally available, already measured on HUC12 or other unit.

A2: nationally consistent data available, but needs measurement.

B: Highly useful but not frequently used; consistently available data.

B1: nationally available, already measured on HUC12 or other unit.

B2: nationally consistent data available, but needs measurement.

C: Highly useful but not frequently used, or unused; data-limited or labor-intensive.

C1: data available but labor-intensive to measure.

C2: often has data gaps or data are unavailable.

D: In use, consistently available, but applicability varies with place and purpose.

E: Not frequently or never used; generally available.

	A1	A2	B1	B2	C1	C2	D	E	TOTAL
BASE DATA METRICS	5	6	3	1	1	0	0	2	18
ECOLOGICAL METRICS	2	10	0	17	3	22	11	6	71
Watershed natural structure	1	3	0	3	0	1	5	2	15
Corridor and shorelands stability	0	4	0	6	0	4	1	0	15
Flow and channel dynamics	0	0	0	1	3	6	1	1	12
Biotic community integrity	1	0	0	1	0	7	1	1	11

Aquatic connectivity	0	1	0	4	0	4	2	0	11
Ecological history	0	2	0	2	0	0	1	2	7
STRESSOR METRICS	0	20	0	24	7	35	12	12	110
Watershed-level disturbance	0	7	0	4	0	6	3	5	25
Corridor and shorelands disturbance	0	8	0	9	1	5	3	3	29
Hydrologic alteration	0	0	0	1	2	9	0	3	15
Biotic or climatic risks	0	0	0	0	0	2	1	0	3
Severity of pollutant loading	0	4	0	3	3	6	2	0	18
Legacy of past, trajectory of future land use	0	1	0	7	1	7	3	1	20
SOCIAL METRICS	1	8	0	15	4	26	5	4	63
Leadership, organization and engagement	0	0	0	2	0	6	0	0	10
Protective ownership or regulation	0	1	0	1	0	1	0	0	3
Level of information, certainty and planning	0	1	0	7	0	3	0	1	12
Restoration cost, difficulty, or complexity	1	2	0	1	0	3	0	0	7
Socio-economic considerations	0	0	0	1	2	10	1	1	15
Human health, beneficial uses, recognition and incentives	0	4	0	3	2	3	4	2	18

CATEGORIZATION AND EVALUATION OF RPS INDICATORS SELECTED OR USED IN RPS PROJECTS

USAGE COUNT

The following is a master list of candidate indicators that may be usable in Recovery Potential Screening when suitable quality data are available and the indicator is relevant to the user's area and purpose for the screening assessment. All have been identified as candidate metrics in Recovery Potential Screening projects and nearly all have been successfully measured. These indicators are broadly defined, and each one may have several options for measurement. Because of the diversity of possible geographic settings, data sources and assessment goals, how best to measure a given indicator is a project-specific decision. See <http://www.epa.gov/recoverypotential/> for more information. This spreadsheet crosswalks the online RPS candidate metrics master list (column B) with the lists of indicators in columns F through V selected and/or used by several states and others in various RPS projects. Where a usage is equivalent to the metric as listed, an X appears. Where a usage is not identical to the metric as listed, the actual metric is very briefly described in the specific project's column. Where a user has identified or used a metric unlike anything on the online master list of 9/2011, the usage is pale yellow HIGHLIGHTED and added to column B. The purposes of this update are to study and better document metric usage and variety to date, document new metrics in use, identify high usage metrics that would be good candidates for national datasets, and identify likely priority metrics for nutrients-related screenings. Further, for future RPS support planning purposes, this spreadsheet has evaluated the potential usage value of all the existing and new indicators according to the categories listed in column D.

This column sums the X's in the row as a simple indication of a metric's frequency of selection and/or use. However the amount of selection/use does not always address a metric's desirability or relevance, nor does it reflect usefulness of metrics with newer availability. Hard to get, potentially very useful metrics are sometimes data-limited and have not been used very many times. Less-known metrics may be little used but widely available.

record #

1001	RPS INDICATOR CLASS, SUBGROUP & NAME	
1002	BASE DATA METR1CS	
1003	Watershed ID	16
1004	Watershed Name	16
1005	Watershed Total Area	15
1006	Watershed Land Area	9
1007	Watershed Waterbody Area	8
1008	Watershed Streamlength	8
1009	Watershed Shore Length	7
1010	Waterbody Segment Name	1

CATEGORIZATION AND EVALUATION OF RPS INDICATORS SELECTED OR USED IN RPS PROJECTS

USAGE COUNT

1011	Waterbody Segment ID	1
1012	Primary Ecoregion	4
1013	State Border Flag	4
1014	Watershed % Instate Area	4
1015	Watershed #HUC12s upstream	3
1016	Status (e.g., healthy reference, listed as impaired)	3
1017	PARENT HUC (E.G. WHAT HUC12 THE SMALLER UNIT IS IN)	3
1018	SMALLER WATERSHED OR SEGMENT UNIT	5
1019	Waterbody type	1
1020	reporting cycle	2
1021	ECOLOGICAL METRICS	
1022	Watershed natural structure	
1023	watershed % natural cover (N-index)	12
1024	watershed % forest	12
1025	watershed wetlands condition (%)	12
1026	watershed woody veg condition	2
1027	watershed topographic complexity	2
1028	watershed forest patch mean area	3
1029	watershed soil resilience	7
1030	watershed % streamlength unimpaired	2
1031	watershed shape	2
1032	watershed size	11
1033	watershed suitability for infiltration BMPs	1
1034	watershed % forested and range	1
1035	watershed % slope	3
1036	mean watershed elevation	3
1037	watershed % canopy cover	1
1038	Corridor and shorelands stability	
1039	bank stability/soils	5
1040	bank stability/woody vegetation	4
1041	corridor % forest	12
1042	corridor % woody veg	6

CATEGORIZATION AND EVALUATION OF RPS INDICATORS SELECTED OR USED IN RPS PROJECTS

USAGE COUNT

1043	corridor % wetlands	6
1044	corridor slope	4
1045	corridor soil erosion potential	5
1046	corridor soil type	2
1047	shoreline % forested	2
1048	shoreline % woody veg	2
1049	corridor % natural cover	8
1050	lake shoreline % natural cover	2
1051	wetland shoreline % natural cover	1
1052	% ag corridor with riparian buffer	1
1053	natural cover % in riparian	1
1054	Flow and channel dynamics	
1055	natural channel form	5
1056	corridor groundwater level	1
1057	channel slope	3
1058	sinuosity	4
1059	confinement ratio	1
1060	channel evolution status	1
1061	natural flow regime	1
1062	median and low-flow maintenance	1
1063	Strahler stream order	8
1064	% of channels through natural cover	2
1065	climate/precip	1
1066	minimum flow	1
1067	Biotic community integrity	
1068	watershed biodiversity	1
1069	aquatic refugia	1
1070	biotic community type	1
1071	biotic community integrity	7
1072	Index of biotic integrity (benthic)	4
1073	Index of biotic integrity (fish)	3
1074	mussel species richness	0

CATEGORIZATION AND EVALUATION OF RPS INDICATORS SELECTED OR USED IN RPS PROJECTS

USAGE COUNT

1075	rare taxa presence	7
1076	trophic state	4
1077	NFHAP fish habitat condition index	8
1078	EBTJV (Eastern Brook Trout Joint Venture) population intact	2
1079	Aquatic connectivity	
1080	confluence density	4
1081	unimpaired confluences density	7
1082	watershed stream density	9
1083	contiguity with green infrastructure corridor	3
1084	proximity to green infrastructure hub	0
1085	recolonization access	0
1086	recolonization proximity	0
1087	Reg 4 WSI National Ecological Framework score	3
1088	CAPS Mean Aquatic Connectivity score	1
1089	% of watershed in wetness zone and contiguous with water	1
1090	% by NLCD class in wetness zone and contiguous with water	1
1091	Ecological history	
1092	maintenance of % N index (natural cover)	8
1093	ratio current/historic % forest	4
1094	ratio current/historic % wetlands	4
1095	historical species occurrence	2
1096	species range	2
1097	ecological memory	1
1098	change in forested corridor	1
1099	STRESSOR METRICS	
1100	Watershed-level disturbance	
1101	watershed % agriculture	10
1102	watershed % cropland	10
1103	watershed % pasture or grazing	9
1104	watershed % steep slope agriculture	5
1105	watershed # of CAFOs	6
1106	watershed # of septic systems	4

CATEGORIZATION AND EVALUATION OF RPS INDICATORS SELECTED OR USED IN RPS PROJECTS

USAGE COUNT

1107	watershed % impervious cover	13
1108	watershed % tile-drained cropland	4
1109	watershed % U index (non-natural cover)	5
1110	watershed % urban	15
1111	watershed residential	3
1112	watershed road density	5
1113	% other watershed stressor	1
1114	total road length	1
1115	WSHED % sewerer/unsewered	3
1116	watershed vehicle miles traveled per day	1
1117	beach ORV traffic	1
1118	coastal structures	1
1119	# POTW discharges	2
1120	LANDFILL AREA	1
1121	WATERSHED LIVESTOCK DENSITY	1
1122	FERTILIZER USAGE	1
1123	DEEP-PLOWED % CROPLAND	1
1124	% SOIL DISTURBANCE	1
1125	watershed mean empower density	1
1126	Corridor and shorelands disturbance	
1127	corridor % impervious cover	9
1128	corridor % tile-drained cropland	1
1129	corridor % U-index (non-natural cover)	6
1130	corridor % urban	7
1131	corridor % agriculture	8
1132	corridor % cropland	7
1133	corridor % pasture or grazing	6
1134	linear % of channel through agriculture	5
1135	corridor residential	6
1136	corridor road crossings	10
1137	corridor road density	10
1138	shoreline % linear U index (non-natural cover)	2
1139	% flowpaths through agriculture	4
1140	% impervious in Wetland buffer (30.5)	1
1141	corridor vehicular miles traveled per day (61M)	1

CATEGORIZATION AND EVALUATION OF RPS INDICATORS SELECTED OR USED IN RPS PROJECTS

USAGE COUNT

1142	road sediment production	1
1143	% CORRIDOR UNSEWERED RESIDENTIAL, AND FAILURE RATE	1
1144	corridor highly erodible lands	1
1145	AREA OF INACTIVE/DISCONNECTED FLOODPLAIN	1
1146	shoreline linear % urban	1
1147	shoreline linear % agriculture	1
1148	% streamlength < 25 ft buffer	1
1149	abandoned mineland drainage proximity	1
1150	# CAFOs in corridors	1
1151	% agriculture contiguous with waterbodies, per watershed	1
1152	% U index contiguous with waterbodies, per watershed	1
1153	% urban contiguous with waterbodies, per watershed	1
1154	riparian empower density	1
1155	wetness zone empower density	1
1156	Hydrologic alteration	
1157	aquatic barriers	8
1158	channelization	7
1159	distance downstream from channelization	1
1160	distance downstream from dam	1
1161	distance to nearest dam	2
1162	hydrologic alteration	2
1163	watershed % other channelization	1
1164	relative net water demand	4
1165	water use intensity	3
1166	% bermed roads	2
1167	Tidal Restrictions	1
1168	Annual net demand (%)	1
1169	CWDI (combined water demand and Intensity Index)	1
1170	# DIVERSIONS	2
1171	Flow modification	1
1172	Biotic or climatic risks	
1173	elevation	3

CATEGORIZATION AND EVALUATION OF RPS INDICATORS SELECTED OR USED IN RPS PROJECTS

USAGE COUNT

1174	invasive species presence	3
1175	invasive species risk	1
1176	Severity of pollutant loading	
1177	number of 303d listed causes	10
1178	number of 303d cause/waterbody combinations	4
1179	number of permits	6
1180	CSO or MS4 areas	7
1181	age of sewer infrastructure	3
1182	severity of loading	4
1183	stressor persistence	1
1184	SPARROW nitrogen loading estimate	4
1185	SPARROW phosphorus loading estimate	4
1186	watershed stream miles impaired	10
1187	watershed waterbody acres impaired	7
1188	modeled watershed aerial deposition of N	4
1189	modeled watershed aerial deposition of Hg	1
1190	other stressor-specific severity factors	6
1191	number of 303(d) grouped cause/waterbody combinations	1
1192	fire intensity	1
1193	# of designated uses unsupported	1
1194	# of listed waterbodies	1
1195	Legacy of past, trajectory of future land use	
1196	expected future loadings	3
1197	past land use change trajectory	6
1198	legacy land uses	2
1199	watershed % legacy agriculture	6
1200	watershed % legacy urban	2
1201	watershed % change in U-index (non-natural cover)	2
1202	corridor % legacy agriculture	4
1203	corridor % legacy urban	1
1204	corridor % residential change	2
1205	legacy contaminants	3

CATEGORIZATION AND EVALUATION OF RPS INDICATORS SELECTED OR USED IN RPS PROJECTS

USAGE COUNT

1206	legacy sediments	2
1207	Mining: area	2
1208	Mining: outfalls	1
1209	Mining: SMCRA permits	1
1210	Salt March Ditching	1
1211	Pasture/Hay % Change	1
1212	Anthropogenic Cover % change	1
1213	X population chg	2
1214	watershed % residential change	1
1215	watershed size	1
1216	SOCIAL METRICS	
1217	Leadership, organization and engagement	
1218	watershed organizational leadership	9
1219	watershed collaboration	2
1220	corridor owner-occupied residential	3
1221	government agency involvement	5
1222	landowner engagement	1
1223	participation rate in land conservation programs	6
1224	large watershed management potential	2
1225	organizational persistence	1
1226	university proximity	3
1227	political support	2
1228	Protective ownership or regulation	
1229	watershed development risk	4
1230	watershed % protected land	15
1231	applicable regulation	6
1232	Level of information, certainty and planning	
1233	community information flow	1
1234	certainty of causal linkages	7
1235	% identified stressor sources	3
1236	certainty of restoration practices	2
1237	TMDL or other plan existence	14
1238	watershed education level	4

CATEGORIZATION AND EVALUATION OF RPS INDICATORS SELECTED OR USED IN RPS PROJECTS

USAGE COUNT

1239	ratio #TMDLs/#impairments	5
1240	% of stream miles assessed	7
1241	% of lake acres assessed	6
1242	STREAM MILES PER I R CATEGORY	2
1243	LAKE ACRES PER I R CATEGORY	2
1244	# restoration projects	1
1245	Restoration cost, difficulty, or complexity	
1246	estimated restoration cost	3
1247	watershed size	4
1248	# of upstream HUC12s	3
1249	impaired waterbody magnitude	1
1250	jurisdictional complexity	13
1251	landownership complexity	6
1252	recovery time frame	1
1253	Socio-economic considerations	
1254	watershed population below fed poverty level	1
1255	Environmental Justice area of concern	1
1256	sewer expenditures	2
1257	watershed total annual personal income	3
1258	debt/revenue ratio	1
1259	utility revenue	1
1260	water utility expenditures	2
1261	tax revenue	1
1262	total local indebtedness	1
1263	local govt general revenue	1
1264	local socio-economic conditions	6
1265	own local revenue	1
1266	park expenditures	1
1267	real estate value	1
1268	sustainability	0
1269	Human health, beneficial uses, recognition and incentives	
1270	watershed population	8
1271	recreational resource	8
1272	watershed # of drinking water intakes	6
1273	watershed % sourcewater protection area	8
1274	drinking water population served	2
1275	designated uses	1

CATEGORIZATION AND EVALUATION OF RPS INDICATORS SELECTED OR USED IN RPS PROJECTS

USAGE COUNT

1276	valued ecological attribute	5
1277	economic incentive	2
1278	funding eligibility	7
1279	human health and safety	2
1280	community identity (iconic value)	0
1281	303d schedule priority	6
1282	other priority recognition	8
1283	wild, scenic, recreational river designation	3
1284	area of critical environmental concern	5
1285	other use values	0
1286	PWS wells (#/sqmi)	2
1287	beach pedestrians	1
1288		
1289	262 general metrics listed as of 3/11/13 (many have multiple forms)	
1290		
1291		
1292		
1293		
1294		

	POTENTIAL USAGE VALUE	FL
	<p>This column categorizes the RPS metrics based on their actual and potential usage. Categories are as follows:</p> <p>A: Highly useful, used frequently; consistently available data - A1: nationally available, already measured on HUC12 or other unit. A2: nationally consistent data available, but needs measurement.</p> <p>B: Highly useful but not frequently used; consistently available data - B1: nationally available, already measured on HUC12 or other unit. B2: nationally consistent data available, but needs measurement.</p> <p>C: Highly useful but not frequently used, or unused; mainly data-limited or labor-intensive - C1: data available but labor-intensive to measure. C2: often has data gaps or data are unavailable.</p> <p>D: In use, consistently available, but applicability varies with place and purpose. E: Not frequently or never used; generally available, but usefulness unknown.</p>	<p>Notes: state-originated project based on website access alone, no EPA funded contractor assistance. Very minimal assistance provided by EPA on phone over a few month period. State examining methodology in comparing subwatersheds per HUC8 for prioritization in a post consent agreement setting.</p>
record #		
1001		
1002		
1003	A1	X
1004	A1	X
1005	A1	
1006	A2	
1007	A2	
1008	A2	
1009	A2	
1010	B1	

	POTENTIAL USAGE VALUE	FL
1011	B1	
1012	A2	
1013	A1	
1014	A2	
1015	C1	
1016	B2	
1017	A1	X
1018	B1	X; group # and name
1019	E	
1020	E	X
1021		
1022		
1023	A2	X
1024	A2	
1025	A2	
1026	B2	
1027	D	
1028	D	
1029	C2	
1030	B2	
1031	E	
1032	A1	
1033	E	
1034	D	
1035	B2	
1036	D	
1037	D	
1038		
1039	C2	
1040	B2	
1041	A2	
1042	A2	

	POTENTIAL USAGE VALUE	FL
1043	A2	
1044	D	
1045	C2	
1046	C2	
1047	B2	
1048	B2	
1049	A2	
1050	B2	
1051	C2	
1052	B2	
1053	B2	
1054		
1055	C1	
1056	C2	
1057	C1	
1058	C1	
1059	E	
1060	C2	
1061	C2	
1062	C2	
1063	D	
1064	B2	
1065	C2	
1066	C2	
1067		
1068	C2	
1069	C2	
1070	C2	
1071	C2	X
1072	C2	
1073	C2	
1074	E	

	POTENTIAL USAGE VALUE	FL
1075	B2	
1076	C2	
1077	A1	
1078	D	
1079		
1080	D	
1081	B2	
1082	A2	
1083	C2	
1084	C2	
1085	C2	
1086	C2	
1087	B2	
1088	D	
1089	B2	
1090	B2	
1091		
1092	A2	
1093	A2	
1094	B2	
1095	D	
1096	E	
1097	E	
1098	B2	
1099		
1100		
1101	A2	X
1102	A2	
1103	A2	
1104	B2	
1105	C2	
1106	B2	

	POTENTIAL USAGE VALUE	FL
1107	A2	
1108	C2	
1109	A2	
1110	A2	X
1111	B2	
1112	A2	
1113	D	
1114	E	
1115	B2	
1116	D	
1117	E	
1118	E	
1119	E	
1120	E	
1121	C2	
1122	C2	
1123	C2	
1124	C2	
1125	D	
1126		
1127	A2	
1128	C2	
1129	A2	
1130	A2	
1131	A2	
1132	A2	
1133	A2	
1134	B2	
1135	B2	
1136	A2	
1137	A2	
1138	B2	
1139	B2	
1140	E	
1141	E	

	POTENTIAL USAGE VALUE	FL
1142	E	
1143	D	
1144	C1	
1145	C2	
1146	B2	
1147	B2	
1148	C2	
1149	C2	
1150	C2	
1151	B2	
1152	B2	
1153	B2	
1154	D	
1155	D	
1156		
1157	B2	
1158	C1	
1159	E	
1160	E	
1161	E	
1162	C1	
1163	C2	
1164	C2	
1165	C2	
1166	C2	
1167	C2	
1168	C2	
1169	C2	
1170	C2	
1171	C2	
1172		
1173	D	

	POTENTIAL USAGE VALUE	FL
1174	C2	
1175	C2	
1176		
1177	A2	
1178	A2	
1179	B2	
1180	B2	
1181	C2	
1182	C1	
1183	C1	
1184	C2	
1185	C2	
1186	A2	
1187	A2	
1188	C2	
1189	C2	
1190	C1	X; median TN, TP, BOD
1191	D	
1192	D	
1193	C2	X
1194	B2	X
1195		
1196	C2	
1197	B2	
1198	C1	
1199	A2	
1200	D	
1201	B2	
1202	B2	
1203	D	
1204	B2	
1205	C2	

	POTENTIAL USAGE VALUE	FL
1206	C2	
1207	C2	
1208	C2	
1209	C2	
1210	D	
1211	C2	
1212	B2	
1213	B2	
1214	B2	
1215	E	X
1216		
1217		
1218	C2	
1219	C2	
1220	C2	
1221	C2	
1222	C2	
1223	C2	
1224	B2	
1225	C2	
1226	B2	
1227	C2	
1228		
1229	C2	
1230	A2	
1231	B2	
1232		
1233	E	
1234	B2	
1235	C2	
1236	C2	
1237	A2	X; # TMDLs, other plans
1238	B2	

	POTENTIAL USAGE VALUE	FL
1239	B2	
1240	B2	
1241	B2	
1242	B2	
1243	B2	
1244	C2	
1245		
1246	C2	
1247	A1	
1248	C2	
1249	B2	
1250	A2	
1251	A2	
1252	C2	
1253		
1254	B2	
1255	C1	
1256	C2	
1257	C1	
1258	C2	
1259	C2	
1260	C2	
1261	C2	
1262	C2	
1263	C2	
1264	D	
1265	C2	
1266	C2	
1267	C2	
1268	E	
1269		
1270	B2	
1271	A2	
1272	A2	
1273	A2	
1274	C1	
1275	C2	

	POTENTIAL USAGE VALUE	FL
1276	B2	
1277	C2	
1278	B2	
1279	C2	
1280	D	
1281	D	
1282	A2	X; listing year
1283	D	
1284	D	
1285	E	
1286	C1	
1287	E	
1288		
1289		
1290		
1291		
1292		
1293		
1294		

	IL	KY
	Notes: Early pilot state project, minimal state involvement while OW and ORD developed datasets and tested tools. Focused on custom-delineated watersheds and waterbody segments from state 2002 303(d) list. Did not use HUCs.	Notes: State-initiated project assisted by contractor and EPA. Indicators compiled on HUC12 and HUC14.
record #		
1001		
1002		
1003		X
1004		X
1005	X	X
1006	X	X
1007		X
1008		X
1009		X
1010	X	

	IL	KY
1011	X	
1012		
1013		X
1014		X
1015		
1016		
1017		
1018		
1019	X	
1020	X	
1021		
1022		
1023		X
1024	X	X
1025		watershed % wetlands
1026		X
1027		X
1028	X; largest, number, density, largest/watershed area	
1029		
1030		
1031		
1032	X	X
1033		
1034		
1035	X; mean, range, std dev of slope	
1036		
1037		
1038		
1039		?
1040	X	
1041	X: 30, 90	X
1042		

	IL	KY
1043		
1044		X
1045		?
1046		
1047		
1048		
1049		
1050		
1051		
1052		
1053		
1054		
1055		
1056		
1057		
1058	X; streamlength/straight distance between endpoints of segment	
1059		
1060		
1061		
1062		
1063		X
1064		
1065		
1066		
1067		
1068		
1069		
1070		
1071		?
1072		
1073		
1074		

	IL	KY
1075	X; max, mean, std dev of taxa with G species	?
1076		X
1077		X
1078		
1079		
1080		
1081	X; also accounting for dams	
1082		X
1083		
1084		
1085		
1086		
1087		Reg 4 WSI National Ecological Framework score
1088		
1089		
1090		
1091		
1092	% legacy forest (% of total forest)	X
1093		
1094	X	
1095		
1096		
1097		
1098		
1099		
1100		
1101	X	
1102		X
1103		X
1104	X	
1105		
1106		WSHED % Septic Served

	IL	KY
1107	X	X
1108		
1109	X	
1110	X	X
1111		
1112		
1113		
1114		
1115		WSHED % sewered
1116		
1117		
1118		
1119		
1120		
1121		
1122		
1123		
1124		
1125		
1126		
1127		X
1128		
1129	X; 30, 90	
1130	X; 30, 90	X
1131	X; 30, 90	
1132		
1133		
1134		% channel length through cropland, pasture
1135		
1136		?
1137		?
1138	X	
1139		
1140		
1141		

	IL	KY
1142		
1143		
1144		
1145		
1146	X	
1147	X	
1148		
1149		
1150		
1151		
1152		
1153		
1154		
1155		
1156		
1157		X
1158		
1159		
1160		
1161	X	
1162		
1163		
1164		
1165		
1166		
1167		
1168		
1169		
1170		
1171		
1172		
1173		

	IL	KY
1174		
1175		
1176		
1177	X	X
1178		
1179		
1180		X
1181		
1182		
1183		
1184		
1185		
1186	X	X
1187		X
1188		
1189		
1190		
1191		
1192		
1193		
1194		
1195		
1196		
1197		?
1198		
1199	X	X
1200	X	
1201		
1202		X
1203		
1204		
1205		

	IL	KY
1206		
1207		Mining: area
1208		Mining: outfalls
1209		Mining: SMCRA permits
1210		
1211		
1212		
1213		
1214		
1215		
1216		
1217		
1218	X	
1219		
1220	X	
1221		
1222		
1223		USDA Cons program participation
1224		
1225		
1226		X
1227		
1228		
1229	X; several categories based on # construction permits over decades	
1230	X; 5 categories of protection from GAP	X
1231		X
1232		
1233		
1234		X
1235		
1236		
1237	X	X
1238	X	

	IL	KY
1239		X
1240		X
1241		X
1242		
1243		
1244		
1245		
1246		
1247		
1248		
1249		
1250	X	X
1251		?
1252		
1253		
1254	X; # and %	
1255		
1256	X	
1257	X	
1258	X	
1259	X	
1260	X	
1261	X	
1262	X	
1263	X	
1264	X; several variables from Sonoral inst study	
1265	X	
1266	X	
1267	X	
1268		
1269		
1270	X	X
1271	X	% water-based recreation
1272		
1273		X
1274		
1275		

	IL	KY
1276		
1277		
1278	X	
1279		
1280		
1281	X	
1282		
1283		
1284		
1285		
1286		
1287		
1288		
1289		
1290		
1291		
1292		
1293		
1294		

	LA	MA
	Notes: EPA contractor-assisted state project requested by state and EPA Region 6. Using HUC8 and HUC12 scales. Current metrics list based on facilitation session, previous to database development. New metrics may appear and existing metrics may be dropped before project concludes.	Notes: State-initiated project assisted by contractor and EPA. Indicators compiled on HUC12 and SWMI (a USGS special delineation for flow studies).
record #		
1001		
1002		
1003	X	X
1004	X	X
1005	X	X
1006	X	
1007	X	
1008	X	
1009	X	
1010		

	LA	MA
1011		
1012	X	
1013	X	
1014		
1015	X?	
1016	X	
1017		
1018	LDEQ subsegments	
1019		
1020		
1021		
1022		
1023	X	
1024	X	X
1025	X	watershed % wetlands
1026		
1027	X	
1028	X	
1029	X; watershed depth to clay	
1030		
1031	X	
1032	X	
1033		Infiltration BMP Suitability
1034		
1035		
1036		
1037		
1038		
1039	X	
1040	X	
1041	X	X
1042	X	X

	LA	MA
1043	X	
1044	X	
1045	X	
1046	X	
1047	X	
1048	X	
1049		
1050		
1051		
1052		
1053		
1054		
1055	X	
1056	X	
1057	X	
1058	X	
1059		
1060	X	
1061		CNFI (Combined natural flow index)
1062		
1063	X	
1064	X	
1065		
1066		
1067		
1068	X	
1069	X	
1070	X	
1071	X	Mean Index of Ecological Integrity
1072		
1073		
1074		

	LA	MA
1075		% of SGCN (Species of Greatest Conservation Need) Habitat
1076		
1077	X	X
1078		EBTJV (Eastern Brook Trout Joint Venture) population
1079		
1080	X	X
1081	X	X
1082	X	X
1083	X	
1084		
1085		
1086		
1087		
1088		Mean Aquatic Connectivity
1089		
1090		
1091		
1092	X	
1093	X	X
1094	X	
1095	X	
1096	X	
1097	X	
1098		
1099		
1100		
1101	X	
1102	X	X
1103	X	X
1104	X	
1105	X	
1106	X	

	LA	MA
1107	X	X
1108		
1109	X	
1110	X	X
1111	X	
1112	X	X
1113	POULTRY OPERATIONS	
1114		
1115		
1116		watershed VMT per day
1117		Beach ORV traffic
1118		Coastal Structures
1119		
1120		
1121		
1122		
1123		
1124		
1125		
1126		
1127	X	X
1128		
1129	X	
1130	X	X
1131	X	`
1132	X	X
1133	X	X
1134	X	
1135	X	
1136	X	X
1137	X	X
1138	X	
1139	X	
1140		% impervious in Wetland buffer (30.5)
1141		corridor VMT per day (61M)

	LA	MA
1142		road sediment production
1143		
1144		
1145		
1146		
1147		
1148		
1149		
1150		
1151		
1152		
1153		
1154		
1155		
1156		
1157	X	# of dams
1158	X	
1159	X	
1160	X	
1161	X	
1162	X	
1163	X	
1164	X	Normalized relative net demand (%)
1165	X	X
1166	X	
1167		Tidal Restrictions
1168		Annual net demand (%)
1169		CWDI (combined water demand and Indensity Index)
1170		
1171		
1172		
1173		

	LA	MA
1174	X	X
1175	X	
1176		
1177	X	
1178	X	X
1179	X	X
1180	X	
1181	X	
1182	X	
1183		
1184	X	X
1185	X	X
1186	X	X
1187	X	X
1188		
1189		
1190	X	
1191		number of 303(d) grouped
1192		
1193		
1194		
1195		
1196	X	
1197	X	% Change developed (high, medium, low intensity)
1198	X	
1199	X	Cultivated Crop % change
1200	X	
1201	X	
1202	X	
1203	X	
1204	X	
1205	X	

	LA	MA
1206	X	
1207		
1208		
1209		
1210		Salt March Ditching
1211		Pasture/Hay % Change
1212		Anthropogenic Cover % change
1213		
1214		
1215		
1216		
1217		
1218	X	
1219	X	
1220	X	
1221	X	
1222	X	
1223	X	NRCS obligated projects (#/sqmi); NRCS planned projects (#/sqmi)
1224	X	
1225	X	
1226	X	
1227	X	
1228		
1229	X	
1230	X	Protected land index
1231	X	
1232		
1233	X	
1234	X	X
1235		
1236		
1237	X	% TMDLs completed
1238	X	

	LA	MA
1239	X	
1240	X	X
1241	X	X
1242		
1243		
1244		
1245		
1246	X	
1247	X	
1248	X	
1249	X	
1250	X	
1251	X	land use complexity
1252	X	
1253		
1254		
1255		
1256		
1257		
1258		
1259		
1260		
1261		
1262		
1263		
1264		CC (commonwealth capital) score
1265		
1266		
1267		
1268		
1269		
1270	X	
1271	X	
1272	X	PWS intakes (#/sqmi)
1273	X	
1274	X	
1275	X	

	LA	MA
1276	X	
1277	X	
1278	X	Area not in MS4 (319 funding eligibility)
1279	X	
1280		
1281	X	
1282	X	
1283	X	
1284	X	ACEC (areas of critical environmental concern)
1285		
1286		PWS wells (#/sqmi)
1287		beach pedestrians
1288		
1289		
1290		
1291		
1292		
1293		
1294		

	MD	MI
	Notes: State assisted heavily by EPA/OW and EPA/ORD, developmental stage early in RPS history. Indicators compiled on MDE8 watersheds (not a HUC standard) and MBSS watersheds (very small). P = percent of watershed; R means this is a riparian corridor metric; numbers define the corridor width on ONE side of stream (radius); CHG = change over 2 dates. Other metric names, see MD RPS datasets.	Notes: state-originated project based on website access alone, no EPA funded contractor assistance. Some assistance provided by EPA on phone over a few month period. Was entirely HUC10 based.
record #		
1001		
1002		
1003	X	HUC10 ID
1004	X	HUC10 Name
1005	X	X
1006	X	
1007	X	
1008	X	
1009	X	
1010		

	MD	MI
1011		
1012	X	
1013	X	
1014		
1015		
1016	wshed pass/fail 303d assessmt	
1017		
1018		
1019		
1020		
1021		
1022		
1023	X	
1024	X	
1025	watershed % wetlands	watershed % wetlands
1026		
1027		
1028		
1029	PSOILSERO	
1030		
1031		
1032	X	X
1033		
1034		watershed % forested and range
1035		
1036		
1037		
1038		
1039		
1040		
1041	RFOR120	
1042		

	MD	MI
1043		
1044		
1045		
1046		
1047		
1048	RWOODY1	
1049	corridor % natural cover 120, 30	corridor % natural cover 150
1050		lake shoreline % natural cover 150
1051		wetland shoreline % natural cover 100
1052		
1053		
1054		
1055	X	
1056		
1057		
1058		
1059		
1060		
1061		
1062		
1063		
1064		
1065		
1066		
1067		
1068		
1069		
1070		
1071		
1072	X	EPT sensitive species richness
1073	X	
1074		

	MD	MI
1075		rare species richness;
1076		
1077	X	
1078		
1079		
1080	X	
1081		
1082	X	
1083	ECOXBAR	
1084		
1085		
1086		
1087	Reg 4 WSI National Ecological Framework score	
1088		
1089		
1090		
1091		
1092	X	
1093	X	
1094		watershed historic wetland extent index
1095		
1096		
1097		
1098	RFOR120_CHG	
1099		
1100		
1101	X	X
1102	X	
1103	X	
1104	PAGTSTEEP	
1105	X	
1106		X

	MD	MI
1107	X	
1108		X
1109		
1110	X	X
1111		
1112		X
1113		
1114	total road length	
1115		
1116		
1117		
1118		
1119		
1120		
1121		
1122		
1123		
1124		
1125		
1126		
1127	IMPERVIOUS %120	
1128		
1129	X 30, 120	anthropogenic land cover 150
1130		
1131	X 120	
1132	X 120	
1133	X 120	
1134		
1135	#HOUSES IN 120 BUFFER PER LENGTH UNIT	
1136	X (DENSITY)	
1137	X 120	
1138		
1139	RAGT1	
1140		
1141		

	MD	MI
1142		
1143		
1144		% highly erodible lands 150
1145		
1146		
1147		
1148		
1149		
1150		
1151		
1152		
1153		
1154		
1155		
1156		
1157	# dams in NID per watershed	
1158	INVERSE OF NATCHANNEL	
1159		
1160		
1161		
1162		
1163		
1164		
1165		
1166		
1167		
1168		
1169		
1170		
1171		
1172		
1173		

	MD	MI
1174		
1175		
1176		
1177	X	
1178		
1179		
1180	% OF WATERSHED SEWERED	
1181		
1182		
1183		
1184	X	
1185	X	
1186		% stream miles 303d listed; % stream miles with TMDLs
1187		
1188	X	
1189		
1190		
1191		
1192		
1193		
1194		
1195		
1196		
1197	WATERSHED % AG CHG; R120 AG CHG; R120 URB CHG	
1198		
1199		
1200		
1201		
1202		
1203		
1204		
1205		

	MD	MI
1206		
1207		
1208		
1209		
1210		
1211		
1212		
1213		
1214		watershed % housing unit change 1990 - 2000
1215		
1216		
1217		
1218	#WATERSHED GROUPS	
1219		
1220		
1221		
1222		
1223	X	
1224		
1225		
1226		
1227		
1228		
1229	X	
1230	X	X
1231		septic system point of sale ordinance
1232		
1233		
1234	%STRESSOR ATTRIB RISK	
1235	%SOURCE ATTRIB RISK	
1236		
1237	# TMDLS	X; # of TMDLS
1238	CENSUS EDUC LEVEL	

	MD	MI
1239		
1240		
1241		
1242		
1243		
1244		
1245		
1246		
1247	X	
1248		
1249		
1250	X	X
1251		
1252		
1253		
1254		
1255		
1256		
1257		
1258		
1259		
1260		
1261		
1262		
1263		
1264	SONORAN INDEX SCORE	
1265		
1266		
1267		
1268		
1269		
1270	X DENSITY	
1271		
1272		
1273	X	% wellhead protection areas
1274		
1275		

	MD	MI
1276		
1277		
1278		
1279		
1280		
1281		
1282	% DNR TARGETED FOR PROTECTION	
1283		natural and scenic rivers designation
1284	% TIER 2; TIER2 LENGTH	
1285		
1286		
1287		
1288		
1289		
1290		
1291		
1292		
1293		
1294		

	MN	NH
	Notes: state-originated project based on website access alone, no EPA funded contractor assistance. Some assistance provided by EPA on phone over a few month period. Used HUC12s within a large river basin as units for comparison.	Notes: State-initiated and carried out, with minor EPA assistance. Focus on HUC12 and NH Assessment Unit (AUID) as 2 watershed scales of interest, due to small size of state.
record #		
1001		
1002		
1003	X	X
1004	X	X
1005	X	X
1006		X
1007		WATER AREA IN NH
1008		
1009		
1010		

	MN	NH
1011		
1012		
1013		
1014		X
1015		
1016		
1017		PARENT HUC (E.G. WHAT HUC12 THE AU IS IN)
1018		
1019		
1020		
1021		
1022		
1023		X, TOTAL AND IN NH
1024	X	
1025	X % wetlands	watershed % wetlands, TOTAL AND IN NH
1026		
1027		
1028		
1029	X	
1030		
1031	X; area/perimeter ratio	
1032	X	X
1033		
1034		
1035		
1036	X	
1037		
1038		
1039	X	
1040	X	
1041	X	X
1042	X	

	MN	NH
1043		X
1044	mean corridor slope	
1045		
1046		
1047		
1048		
1049		
1050		
1051		
1052		
1053		
1054		
1055	X	
1056		
1057		
1058		
1059		
1060		
1061		
1062		
1063	X	% LENGTH <3; LENGTH BY ORDER; LENGTH <3 PER WS LAND AREA
1064		
1065		
1066		
1067		
1068		
1069		
1070		
1071		
1072	X	
1073	X	
1074		

	MN	NH
1075	X; # rare taxa, presence/absence	
1076		
1077		
1078		
1079		
1080		
1081	X	
1082	X	
1083		
1084		
1085		
1086		
1087		
1088		
1089		
1090		
1091		
1092		
1093		
1094		
1095		
1096		
1097		
1098		
1099		
1100		
1101	X	X
1102		
1103		
1104		
1105		
1106		

	MN	NH
1107	X	X, TOTAL AND NH; DIRECTLY CONNECTED IC TOTAL AND NH
1108	X	
1109		
1110	X	X
1111		
1112		
1113		
1114		
1115		
1116		
1117		
1118		
1119		
1120		
1121		
1122		
1123		
1124		
1125		
1126		
1127	X	X
1128		
1129	X	
1130	X	
1131	X	X
1132		
1133		
1134		
1135	X	
1136	X	X
1137	X	
1138		
1139		
1140		
1141		

	MN	NH
1142		
1143		
1144		
1145		
1146		
1147		
1148		
1149		
1150		
1151		
1152		
1153		
1154		
1155		
1156		
1157		X
1158	X	
1159		
1160		
1161		
1162	X	
1163		
1164		
1165		
1166		
1167		
1168		
1169		
1170		
1171	X	
1172		
1173	X mean elevation of impaired reach	

	MN	NH
1174		
1175		
1176		
1177		X; #305B IMP PARAMETERS; #305B DU'S
1178		
1179	X	
1180		
1181		
1182	X; load reductions needed	
1183		
1184		
1185		
1186		X
1187		X
1188		
1189		
1190		#305B STORMWATER-RELATED PARAMETERS
1191		
1192		
1193		
1194		
1195		
1196		
1197	X	
1198	X	
1199	X	
1200		
1201		
1202		
1203		
1204		
1205		

	MN	NH
1206		
1207		
1208		
1209		
1210		
1211		
1212		
1213		
1214		
1215		
1216		
1217		
1218	X	
1219	X; presence/absence	
1220		
1221	X; presence/absence	
1222		
1223		
1224	X	
1225		
1226		
1227		
1228		
1229		
1230	X	X; PERMANENT CONS%; OTHER CONS%
1231	X	
1232		
1233		
1234	X	
1235		
1236	X	
1237	X	X; #TMDLS; #WATERSHED PLANS; TMDL & 319 PLANS TOTAL
1238		

	MN	NH
1239		
1240		X
1241		X
1242		STREAM MILES PER I R CATEGORY
1243		LAKE ACRES PER I R CATEGORY
1244		
1245		
1246	X	
1247		
1248		
1249		
1250	X	X; # STATES & PROVINCES; # TOWNS INCL INTERSTATE; #NH TOWNS
1251	X	
1252		
1253		
1254		
1255		
1256		
1257		
1258		
1259		
1260		
1261		
1262		
1263		
1264	X	
1265		
1266		
1267		
1268		
1269		
1270		X
1271	X; none, part, all within rec lands	
1272		X
1273		
1274		X
1275		

	MN	NH
1276		
1277		
1278	X	
1279		
1280		
1281	X	
1282		AUID CLASS A OR B
1283		
1284		
1285		
1286		
1287		
1288		
1289		
1290		
1291		
1292		
1293		
1294		

	NM	PA
	Notes: EPA contractor-assisted state project requested by state. Using HUC8 and HUC12 scales. Current metrics list based on facilitation session, previous to database development. New metrics may appear and existing metrics may be dropped before project concludes.	Notes: EPA assisted state project involving federal and state mining, fisheries, and water quality agencies. Narrowly focused on fish restoration of watersheds impaired by acid mine drainage. Focused on comparison at small subwatershed scales.
record #		
1001		
1002		
1003	X	X
1004	X	X
1005	X	
1006		
1007		
1008		
1009		
1010		

	NM	PA
1011		
1012		
1013		
1014		
1015		
1016		
1017		
1018		X
1019		
1020		
1021		
1022		
1023	X	X
1024	X; including subgroups	TNC hi qual forests
1025		
1026		
1027		
1028		
1029	X	
1030		
1031		
1032	X	
1033		
1034		
1035	X	
1036	X	
1037		
1038		
1039	X	
1040		
1041	X	
1042		

	NM	PA
1043		
1044		
1045		
1046		
1047		
1048		
1049	X	
1050		
1051		
1052	X	
1053		
1054		
1055		
1056		
1057		
1058		
1059		
1060		
1061		
1062		
1063	X	X
1064		
1065		
1066		
1067		
1068		
1069		
1070		
1071		
1072		
1073		
1074		

	NM	PA
1075		X
1076	X	
1077	X	X
1078		X
1079		
1080		
1081		X
1082	X; perennials	
1083		X
1084		
1085		
1086		
1087		
1088		
1089		
1090		
1091		
1092	X potential natural vegetation	
1093		
1094		
1095		X; Brook Trout categories of presence
1096	X Historic fish spp presence	
1097		
1098		
1099		
1100		
1101	X	
1102	X	
1103	X	
1104		
1105	X	
1106		

	NM	PA
1107	X	
1108		
1109	X	
1110	X	
1111		
1112	X; including unpaved, USFS	
1113		
1114		
1115	X; popul outside incorporated areas (proxy for septic)	
1116		
1117		
1118		
1119		
1120		
1121		
1122		
1123		
1124		
1125		
1126		
1127		
1128		
1129		
1130		
1131	X	
1132	X	
1133	X	
1134	X	
1135		
1136	X	
1137	X	
1138		
1139		
1140		
1141		

	NM	PA
1142		
1143		
1144		
1145		
1146		
1147		
1148		
1149		X
1150		
1151		
1152		
1153		
1154		
1155		
1156		
1157	X; # of dams	
1158	X; observed vs expected sinuosity based on Rosgen type	
1159		
1160		
1161		
1162		
1163		
1164	Groundwater wells and volume; % corridor cropland acreage as proxy for surface withdrawal	
1165		
1166		
1167		
1168		
1169		
1170	X	
1171		
1172		
1173	X	

	NM	PA
1174	X	
1175		
1176		
1177	X	X; AMD-related causes
1178	X	
1179	X; major and minor	
1180	X	
1181		
1182		
1183		X
1184		
1185		
1186	X	
1187	X	
1188	X	
1189	X	
1190		
1191		
1192	burned emergency rehab areas	
1193		
1194		
1195		
1196	X; projected popul growth; projected imperviousness	
1197		
1198		
1199		
1200		
1201		
1202		
1203		
1204		
1205		X; AMD-related

	NM	PA
1206		
1207		X
1208		
1209		
1210		
1211		
1212		
1213	X	
1214		
1215		
1216		
1217		
1218	X	
1219		
1220		
1221	X; % USFS or other public lands	X; convergence of 303(d), fisheries, mining restoration involvement
1222		
1223		
1224		
1225		
1226		
1227		
1228		
1229		
1230	X	X
1231		
1232		
1233		
1234		
1235		X; mining-related
1236		
1237	X; TMDL, watershed plan	X
1238		

	NM	PA
1239	X	
1240		
1241		
1242	X	
1243	X	
1244		
1245		
1246		
1247		
1248		
1249		
1250	X	
1251		
1252		
1253		
1254		
1255		
1256		
1257	median household income	
1258		
1259		
1260		
1261		
1262		
1263		
1264		
1265		
1266		
1267		
1268		
1269		
1270	X; popul density	
1271		
1272	X; surface water intakes	
1273	X	
1274		
1275		

	NM	PA
1276		X; Brook Trout waters
1277		
1278		X; SMCRA, 319, other funds elig
1279		
1280		
1281	X	X
1282	X; ONRWs, Wild and scenic rivers	X; 319 priority watersheds; BAMR mining prioritization
1283	X	
1284		
1285		
1286	X	
1287		
1288		
1289		
1290		
1291		
1292		
1293		
1294		

	TN	UT
	Notes: EPA contractor-assisted state project requested by state. Using HUC8 and HUC12 scales. Current metrics list based on facilitation session, previous to database development. New metrics may appear and existing metrics may be dropped before project concludes.	Notes: State-initiated project assisted by contractor and EPA. Nutrients oriented start but broadened topically. HUC8 and HUC12 focus.
record #		
1001		
1002		
1003	X	X
1004	X	X
1005	X	X
1006		X
1007		X
1008	X	X
1009		X
1010		

	TN	UT
1011		
1012		
1013		
1014		
1015		
1016		
1017		
1018		
1019		
1020		
1021		
1022		
1023	X	X
1024	X; also deciduous, evergreen, mixed	X
1025	X % wetlands	
1026		X
1027		
1028		
1029		range soil surveys
1030	X	
1031		
1032	X	X
1033		
1034		
1035		
1036		
1037		
1038		
1039		
1040		
1041	X; also deciduous, evergreen, mixed	X
1042		X

	TN	UT
1043	X	
1044		
1045		x
1046		
1047		
1048		
1049	X	corridor % natural cover
1050		
1051		
1052		
1053		
1054		
1055		
1056		
1057		
1058		
1059		
1060		
1061		
1062		
1063		
1064		
1065		climate/precip
1066		minimum flow
1067		
1068		
1069		
1070		
1071		TSI: avg, max
1072		mean OE
1073		mean OE
1074		

	TN	UT
1075	X; # rare taxa presence total; 40 individual rare taxa presence	
1076		# and % eutrophic lakes
1077	X; local, network and cumulative NFHAP scores	
1078		
1079		
1080	X	
1081	X	
1082	X	X
1083		
1084		
1085		
1086		
1087		
1088		
1089		
1090		
1091		
1092	X	
1093		
1094		
1095		
1096		
1097		
1098		
1099		
1100		
1101	X	
1102	X	X
1103	X	X
1104	X slope alone also	
1105		X
1106		

	TN	UT
1107	X	X
1108		
1109	X	
1110	X	X
1111		
1112	X	
1113		
1114		
1115		
1116		
1117		
1118		
1119		# POTW discharges
1120		
1121		
1122		
1123		
1124		
1125		
1126		
1127	X	
1128		
1129	X	
1130	X	
1131	X	
1132	X	
1133	X	
1134		
1135		
1136	X	
1137	X	paved; paved and unpaved
1138		
1139		
1140		
1141		

	TN	UT
1142		
1143		
1144		
1145		
1146		
1147		
1148		
1149		
1150		
1151		
1152		
1153		
1154		
1155		
1156		
1157		
1158		
1159		
1160		
1161		
1162		
1163		
1164		
1165		
1166		
1167		
1168		
1169		
1170		# DIVERSIONS
1171		
1172		
1173	X	

	TN	UT
1174		
1175		
1176		
1177	X	# NON-nutrient 303d causes
1178		
1179		# OF UPDES
1180	% MS4	
1181		
1182		
1183		
1184		
1185		
1186	X; also impaired stream count	X
1187	impaired waterbodies count	
1188		
1189		
1190	X; # of nutrient impaired; # of pathogen impaired	mean, min, max TDS, TSS, TN, TP and other metrics about N and P
1191		
1192		
1193		
1194		
1195		
1196		
1197		
1198		
1199		
1200		
1201		
1202		
1203		
1204		
1205		

	TN	UT
1206		
1207		
1208		
1209		
1210		
1211		
1212		
1213		
1214		
1215		
1216		
1217		
1218	# watershed groups	X
1219		
1220		
1221		
1222		
1223	% conservation easements	
1224		
1225		
1226		
1227		
1228		
1229		
1230	X	% FS, BLM wilderness; % FWS refuge
1231		
1232		
1233		
1234		
1235		
1236		
1237	X	
1238		

	TN	UT
1239	X	
1240	X; also length	X
1241	X; also area	
1242		
1243		
1244	# restoration projects	
1245		
1246		
1247		X
1248		
1249		
1250	X	# fed, state, tribal, private; # by agencies;
1251		
1252		
1253		
1254		
1255	X	
1256		
1257		
1258		
1259		
1260		
1261		
1262		
1263		
1264		INCOME METRIC
1265		
1266		
1267		
1268		
1269		
1270		
1271	X	blue ribbon river, # boat ramps, major fishing, public access and proximity, visitation
1272	X; PWS AND NON-PWS	X
1273	X	
1274		
1275		

	TN	UT
1276		COLD, WARMWATER FISHERY
1277		
1278		
1279		
1280		
1281		
1282		% priority lakes
1283		
1284		# T&E species
1285		
1286		
1287		
1288		
1289		
1290		
1291		
1292		
1293		
1294		

	VT	NP CONCEPT (CANDIDATE METRICS PRE-APPLICATION)
	<p>Notes: EPA and minimal contractor-assisted state project requested by state. Using HUC12 and small (<10 sq mi) subwatershed scales.</p>	<p>Notes: This project reviewed the RPS indicators master list and numerous technical papers about nutrient sources and aquatic responses to identify RPS metrics that might be suitable for screening for nutrient management potential. Several metrics in this column were extracted from the literature alone and may not have been used yet in RPS projects.</p>
record #		
1001		
1002		
1003	X	X
1004	X	XHUC 12, HUC8
1005	X	X
1006		X
1007		X
1008		X
1009		X
1010		

	VT	NP CONCEPT (CANDIDATE METRICS PRE-APPLICATION)
1011		
1012		X
1013		X
1014		X
1015		X
1016		X
1017		
1018		
1019		
1020		
1021		
1022		
1023	X; unfragmented	X
1024		X
1025	X; % in high quality wetlands	X % AREA
1026		
1027		
1028		
1029		X ANC, EROSION, OTHER
1030	X; % streamlength, sites in ref condition	
1031		
1032	X	
1033		
1034		
1035		
1036		
1037		
1038		
1039		X
1040		X
1041		X
1042		X

	VT	NP CONCEPT (CANDIDATE METRICS PRE-APPLICATION)
1043		X % AREA
1044	X: valley slope interval, downstream elevation	
1045	X; dominant geologic material erodibility	X
1046		
1047		
1048		
1049	X; % natural cover in active river area	X
1050		
1051		
1052		
1053		
1054		
1055	X; unstraightened %	X
1056		
1057	X	
1058		X
1059	X	
1060		
1061		
1062		X
1063		
1064		X
1065		
1066		
1067		
1068		
1069		
1070		
1071	X; % in BCG Tiers 1 or 2	X
1072		
1073		
1074		

	VT	NP CONCEPT (CANDIDATE METRICS PRE-APPLICATION)
1075		
1076		X
1077		X
1078		
1079		
1080		
1081		X N AND P
1082		X N AND P
1083		
1084		
1085		
1086		
1087		
1088		
1089		
1090		
1091		
1092		X
1093		X
1094		X
1095		
1096		
1097		
1098		
1099		
1100		
1101		X
1102	X	X
1103		X
1104		X
1105		X CAFOS, ANIMAL WASTE LAGOONS
1106		X

	VT	NP CONCEPT (CANDIDATE METRICS PRE-APPLICATION)
1107		X STORMWATER DISCHG
1108		X
1109		
1110	X	X
1111		X
1112		
1113		
1114		
1115		
1116		
1117		
1118		
1119		# POTW discharges
1120		LANDFILL AREA
1121		WATERSHED LIVESTOCK DENSITY
1122		FERTILIZER USAGE
1123		DEEP-PLOWED % CROPLAND
1124		% SOIL DISTURBANCE
1125		
1126		
1127		X
1128		X
1129		
1130	X	
1131		X
1132	X	X
1133		X
1134		X
1135	X	X
1136		
1137		
1138		
1139		X
1140		
1141		

	VT	NP CONCEPT (CANDIDATE METRICS PRE-APPLICATION)
1142		
1143		% UNSEWERED RESIDENTIAL, AND FAILURE RATE
1144		
1145		AREA OF INACTIVE/DISCONNECTED FLOODPLAIN
1146		
1147		
1148	X	
1149		
1150		
1151		
1152		
1153		
1154		
1155		
1156		
1157	X; # and % bridges and culverts, dam density	X
1158	X	X
1159		
1160		
1161		
1162		
1163		
1164		X
1165		X
1166	X	
1167		
1168		
1169		
1170		
1171		
1172		
1173		

	VT	NP CONCEPT (CANDIDATE METRICS PRE-APPLICATION)
1174		
1175		
1176		
1177		X NP RELATED
1178		X NP RELATED
1179		X WWTP, NPDES OUTFALLS
1180		X CSO, SSO
1181		X % UNSEWERED
1182		X TMDL % LOAD REDUCTION NEEDED
1183		
1184		X
1185		X
1186		X BY N, P
1187		X BY N, P
1188		X
1189		
1190		
1191		
1192		
1193		
1194		
1195		
1196		X
1197		X RIPARIAN WETLAND, FOREST LOSS
1198		
1199		X
1200		
1201		
1202		X
1203		
1204		X
1205		X N, P

	VT	NP CONCEPT (CANDIDATE METRICS PRE-APPLICATION)
1206		X
1207		
1208		
1209		
1210		
1211		
1212		
1213		X population chg
1214		
1215		
1216		
1217		
1218		X
1219		
1220		X
1221		X
1222		
1223		X
1224		
1225		
1226	X	
1227		X
1228		
1229		X
1230	X	X
1231		X
1232		
1233		
1234	X	X
1235		X
1236		X
1237		X
1238		X

	VT	NP CONCEPT (CANDIDATE METRICS PRE-APPLICATION)
1239		X
1240		X
1241		X
1242		
1243		
1244		
1245		
1246		X
1247		X
1248		X
1249		
1250	X	X
1251		X
1252		
1253		
1254		
1255		
1256		X
1257		
1258		
1259		
1260		X
1261		
1262		
1263		
1264		
1265		
1266		
1267		
1268		
1269		
1270		X
		X
1271		
1272		
1273		X
1274		
1275		

	VT	NP CONCEPT (CANDIDATE METRICS PRE-APPLICATION)
1276		X
1277		X
1278		X
1279		
1280		
1281		
1282		
1283		
1284		X
1285		
1286		
1287		
1288		
1289		
1290		
1291		
1292		
1293		
1294		

	2008 Reg 4, OW, ORD watershed recovery metrics workshop	Region 4 WSI
	<p>Notes: This project lists metrics identified by a 2008 OW, ORD and Reg 4 workshop on recovery indicators. These were compiled in brainstorming candidate metrics for use in demo RPS assessments for N, P, sediment and ag and non-ag pathogens. This list was not specifically applied in projects but fed into the development of the WSI datasets and project support.</p>	<p>Notes: Regional Watershed Index project (WSI) has collaborated with OW on indicator development, data sharing, tools and state support involving recovery potential since 2008. WSI activities have focused mostly on compiling metrics nationally at HUC12 scale, use of these metrics in assessments, and developing tools to access demo RPS assessments for N, P, sediment and ag and non-ag pathogens. Basic procedure was to develop 30meter grids consistent with NLCD grid and projection, then populate the grid cells with metric values from analysis. Grids were subsequently used to determine values for numerous metrics at HUC12 scale.</p>
record #		
1001		
1002		
1003	X	X
1004	X	X
1005	X	X
1006	X	X
1007	X	X
1008	X	X
1009	X	X
1010		

	2008 Reg 4, OW, ORD watershed recovery metrics workshop	Region 4 WSI
1011		
1012		X; % of HUC12 in each Level 3 ecoregion
1013		
1014	X	
1015	X	
1016		
1017		X
1018		30m grid cell
1019		
1020		
1021		
1022		
1023		X
1024		X
1025	X	X; % wetlands, water mask, and % wetness zone also
1026		
1027		
1028		X; % of watershed in different size classes of natural cover patch
1029	X	
1030		
1031		
1032		
1033		
1034		
1035		X; mean, max, min, range
1036		X; mean, max, min, range
1037		X
1038		
1039		
1040		
1041		X
1042	X	

	2008 Reg 4, OW, ORD watershed recovery metrics workshop	Region 4 WSI
1043	X	X
1044		
1045		
1046	X	
1047		X
1048		
1049		X
1050		X
1051		
1052		
1053		X; also in wetness zones, by NLCD class
1054		
1055		
1056		
1057	X	
1058	X	
1059		
1060		
1061		
1062		
1063	X	% of HUC catchment area and % stream pixels by stream order
1064		
1065		
1066		
1067		
1068		
1069		
1070		
1071		
1072		
1073		
1074		

	2008 Reg 4, OW, ORD watershed recovery metrics workshop	Region 4 WSI
1075		
1076		
1077		
1078		
1079		
1080		
1081		
1082		
1083		
1084		
1085		
1086		
1087		X
1088		
1089		X
1090		X
1091		
1092		X; change in N index per watershed, per riparian, per wetness zone
1093		
1094		
1095		
1096		
1097		
1098		
1099		
1100		
1101		X
1102		X
1103		X
1104		
1105	X	
1106		

	2008 Reg 4, OW, ORD watershed recovery metrics workshop	Region 4 WSI
1107	X	X; mean, min, max, range
1108	X	
1109		X
1110		X
1111		X
1112		
1113		
1114		
1115	X	
1116		
1117		
1118		
1119		
1120		
1121		
1122		
1123		
1124		
1125		X
1126		
1127	X	
1128		
1129		
1130		
1131		
1132		
1133		
1134	X; thru pasture	
1135	X	
1136	X	X; also by stream order
1137	X	X; % cells with road and stream
1138		
1139	X	
1140		
1141		

	2008 Reg 4, OW, ORD watershed recovery metrics workshop	Region 4 WSI
1142		
1143	X	
1144		
1145		
1146		
1147		
1148		
1149		
1150	X	
1151		X; also wetness, riparian %
1152		X; also wetness, riparian %
1153		X; also wetness, riparian %
1154		X
1155		X
1156		
1157		
1158	X	
1159		
1160		
1161		
1162		
1163		
1164		
1165		
1166		
1167		
1168		
1169		
1170		
1171		
1172		
1173		

	2008 Reg 4, OW, ORD watershed recovery metrics workshop	Region 4 WSI
1174		
1175		
1176		
1177		
1178		
1179		
1180	X	
1181	X	
1182	X	
1183		
1184		
1185		
1186		
1187		
1188	X	
1189		
1190	X; fecal/e coli conc.	
1191		
1192		
1193		
1194		
1195		
1196		
1197		
1198		
1199		
1200		
1201		X; change in U index per watershed, per riparian, per wetness zone
1202	X	
1203		
1204		
1205		

	2008 Reg 4, OW, ORD watershed recovery metrics workshop	Region 4 WSI
1206		
1207		
1208		
1209		
1210		
1211		
1212		
1213		
1214		
1215		
1216		
1217		
1218	X	
1219		
1220		
1221		
1222		
1223		
1224		
1225		
1226		
1227		
1228		
1229		
1230	X	
1231	X	
1232		
1233		
1234		
1235		
1236		
1237	X	
1238		

	2008 Reg 4, OW, ORD watershed recovery metrics workshop	Region 4 WSI
1239		
1240		
1241		
1242		
1243		
1244		
1245		
1246		
1247		
1248	X	
1249		
1250	X	
1251	X	
1252		
1253		
1254		
1255		
1256		
1257	X	
1258		
1259		
1260		
1261		
1262		
1263		
1264	X	
1265		
1266		
1267		
1268		
1269		
1270	X	
1271	X	
1272		
1273	X	
1274		
1275		

	2008 Reg 4, OW, ORD watershed recovery metrics workshop	Region 4 WSI
1276	X	
1277		
1278	X	
1279	X	
1280		
1281	X	
1282	X	
1283		
1284		
1285		
1286		
1287		
1288		
1289		
1290		
1291		
1292		
1293		
1294		