

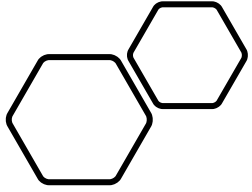
Expert Panel Establishment Group: Non-Urban Stream Restoration

Progress Update

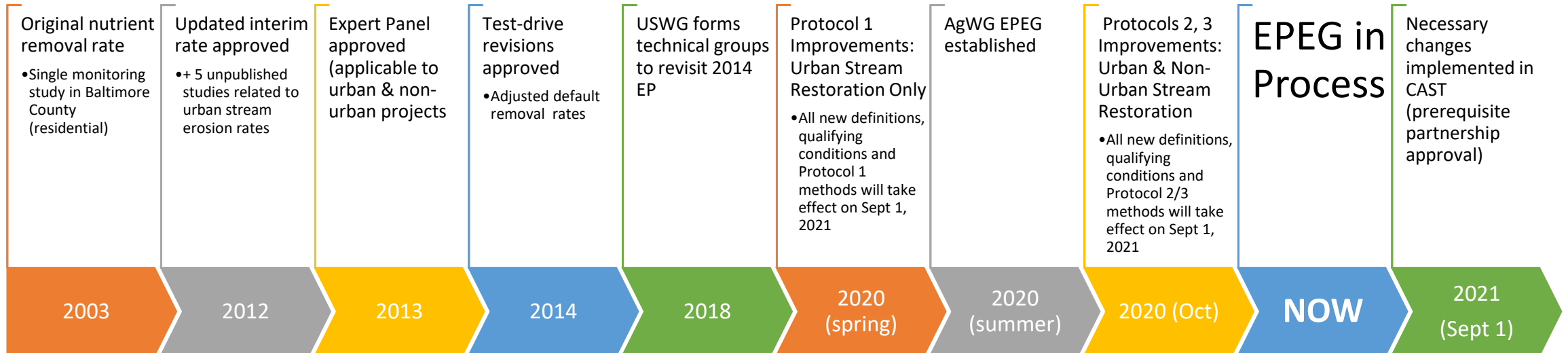
April 15, 2021

EPEG Members

Name	Affiliation
Bill Tharpe	MD Dept of Ag (Chair)
Scott Cox	PA Dept of Environmental Protection, Bureau of Waterways Engineering and Wetlands
Jon Fripp	USDA-NRCS
Rich Starr	Ecosystem Planning & Restoration
Ari Engelberg	MD Dept of Natural Resources



CBP Stream Restoration BMP History



BMP	Metric	Established	Revised	Reporting Units	Reporting Option	History of NEIEN reporting	CAST-21 Change?
NON-URBAN Stream Restoration	Protocol 1- Prevented Sediment	2013	2014, AgWG EPEG in process	ft, TN, TP, TSS	additive (w/ 2&3)	NO	NO- Reporting the same
	Protocol 2- Denitrification	2013	2020	ft, TN	additive (w/ 1&3)	NO	NO- Reporting the same (based on updated denitrification rate)
	Protocol 3- Legacy Sediment	2013	2020	ft, TN, TP, TSS	additive (w/ 1&2)	NO	NO- Reporting the same but calculator supplied to calculate TN, TP, TSS based on unique inputs
	Default Removal Rate (Linear ft)	2013	2014, AgWG EPEG in process	ft	mutually exclusive from protocols; overall value for project	YES	Pending: Remains unchanged until update approved
URBAN Stream Restoration	Protocol 1- Prevented Sediment	2013	2014, 2020	ft, TN, TP, TSS	additive (w/ 2&3)	YES	NO- Reporting the same
	Protocol 2- Denitrification	2013	2020	ft, TN	additive (w/ 1&3)	YES	NO- Reporting the same (based on updated denitrification rate)
	Protocol 3- Legacy Sediment	2013	2020	ft, TN, TP, TSS	additive (w/ 1&2)	YES	NO- Reporting the same but calculator supplied to calculate TN, TP, TSS based on unique inputs
	Default Removal Rate (Linear ft)	2013	2014, 2020	ft	mutually exclusive from protocols; overall value for project	YES	Yes- All new projects post-2020 must report using protocols (ft & lbs TN, TP, and/or TSS reduced) for TMDL credit Default removal rate applicable to historic projects and for planning only.



EPEG General Charge

#1: Clarify the definitions of “urban” vs. “non-urban” in relation to stream restoration projects (in consultation with the CBP Urban Stormwater Workgroup).

Application of Stream Restoration Protocol 1: Prevented Sediment

#2: Assess available scientific literature and field data to address default nutrient & sediment removal rates and provide recommendations for appropriate next steps following that assessment.

#3: Identify and characterize the stream-related NRCS projects implemented in the Chesapeake Bay watershed and determine if/how they relate to the approved CBP stream restoration qualifying conditions. Recommend appropriate next steps based on determination.

#4: Credit Duration: document rationale for 10-year credit duration for non-urban projects.

Should the EPEG identify other non-urban stream-related practices that do not fit within any of the current CBP BMP definitions, are employed in the CBW, and are likely to reduce nutrient and sediment load deliveries, they are encouraged to communicate these findings to the AgWG for further consideration.

#1: Clarify the definitions of “urban” vs. “non-urban” in relation to stream restoration projects (in consultation with the CBP Urban Stormwater Workgroup).

CBP Stream Restoration (2013):

any NCD, RSC, LSR* or other restoration project

that **meets the qualifying conditions** for credits,

including **environmental limitations** and **stream functional improvements**.

The Panel did not have a basis to suggest that any single design approach was superior,

as any project can fail if it is inappropriately located, assessed, designed, constructed, or maintained.

*NCD = Natural Channel Design; RSC = Regenerative Stormwater Conveyance; LSR = Legacy Sediment Removal

Urban

subwatershed >5% impervious cover
(state definitions may vary)

Non-Urban

subwatershed <5% impervious cover
primarily composed of forest, ag, or
pastureland uses
(state definitions may vary)

Note:

Greater than 80% of the total feet of stream restoration reported in NEIEN** for 2019 was in the “non-urban” category.

#1: Clarify the definitions of “urban” vs. “non-urban” in relation to stream restoration projects (in consultation with the CBP Urban Stormwater Workgroup).

Application of Stream Restoration Protocol 1: Prevented Sediment

Summary of Recommendations

- No change to CBP approved definition of “urban” & “non-urban.”
- Apply updated 2020 CBP Stream Restoration BMP qualifying conditions to non-urban projects.
- Apply updated 2020 CBP Stream Restoration Protocol 1 (Prevented Sediment) to non-urban projects that will be engaging in on-site measurements and monitoring. *
 - *If utilizing Protocol 1, on-site sampling should occur for soil bulk density.*
- An Expert Panel is not recommended to address stream practices that align with the qualifying conditions indicated in the 2020 Prevented Sediment Memo.**

*This EPEG is in the process of evaluating the use of default removal rates for TN, TP, and TSS for *non-urban* SR projects (Item #2 above). As of 2020, default removal rates for future *urban* SR projects may only be used for planning purposes and may not be reported for load reduction credit in CAST.

**This EPEG is in the process of evaluating the alignment of NRCS stream-related practices with the CBP [Non-Urban] Stream Restoration BMP (Item #3 above).

General Charge

#1: Clarify the definitions of “urban” vs. “non-urban” in relation to stream restoration projects (in consultation with the CBP Urban Stormwater Workgroup).

Application of Stream Restoration Protocol 1: Prevented Sediment

#2: Assess available scientific literature and field data to address default nutrient & sediment removal rates and provide recommendations for appropriate next steps following that assessment.

#3: Identify and characterize the stream-related NRCS projects implemented in the Chesapeake Bay watershed and determine if/how they relate to the approved CBP stream restoration qualifying conditions. Recommend appropriate next steps based on determination.

#4: Credit Duration: document rationale for 10-year credit duration for non-urban projects.

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Summary of Recommendations

- 10-year credit duration
- States may use regulatory agencies to determine appropriate reporting, tracking, and verification procedures for stream restoration BMPs.
- Analysis of available compliance data across the CBW jurisdictions would improve confidence in assigned credit durations for stream restoration projects.

Rationale

- USDA-NRCS practice lifespans for stream-related practices span 10 – 20 years.
 - Non-urban projects often rely on NRCS design standards for design
- Most stream restoration projects are monitored to ensure long-term success in the first 5 years.
 - necessary repairs identified & implemented
- Stream restoration projects are designed to be self-maintaining over time.
- Non-urban settings should be less susceptible to catastrophic precipitation and flooding events.

Next Steps

Prior to CAST-21

- Formalized Recommendation
 - Applicability of Protocol 1
 - Credit Duration

In Progress (aim for CAST-21)

- Fate of default removal rate for TN, TP, TSS
 - Keep, change, or discard
- Alignment of NRCS practices with CBP Stream Restoration BMP
 - What fits? What doesn't?

CAST Source Data 8/26/20

Sector	BMPFullName	BMPUnitFullName	Nitrogen	Phosphorus	Sediment
Natural	Urban Stream Restoration Protocol	Protocol 1: Prevented Sediment Lbs	0.000	0.000	1.000
Natural	Urban Stream Restoration Protocol	Protocol 1: Prevented Sediment Nitrogen Reduction Lbs	1.000	0.000	0.000
Natural	Urban Stream Restoration Protocol	Protocol 1: Prevented Sediment Phosphorus Reduction Lbs	0.000	1.000	0.000
Natural	Urban Stream Restoration Protocol	Protocol 2: Instream Denitrification Lbs	1.000	0.000	0.000
Natural	Urban Stream Restoration Protocol	Protocol 3: Floodplain Reconnection Nitrogen Reduction Lbs	1.000	0.000	0.000
Natural	Urban Stream Restoration Protocol	Protocol 3: Floodplain Reconnection Phosphorus Reduction Lbs	0.000	1.000	0.000
Natural	Urban Stream Restoration Protocol	Protocol 3: Floodplain Reconnection Sediment Reduction Lbs	0.000	0.000	1.000
Natural	Urban Stream Restoration	Feet	0.075	0.068	248.000
Natural	Non Urban Stream Restoration Protocol	Protocol 1: Prevented Sediment Lbs	0.000	0.000	1.000
Natural	Non Urban Stream Restoration Protocol	Protocol 1: Prevented Sediment Nitrogen Reduction Lbs	1.000	0.000	0.000
Natural	Non Urban Stream Restoration Protocol	Protocol 1: Prevented Sediment Phosphorus Reduction Lbs	0.000	1.000	0.000
Natural	Non Urban Stream Restoration Protocol	Protocol 2: Instream Denitrification Lbs	1.000	0.000	0.000
Natural	Non Urban Stream Restoration Protocol	Protocol 3: Floodplain Reconnection Nitrogen Reduction Lbs	1.000	0.000	0.000
Natural	Non Urban Stream Restoration Protocol	Protocol 3: Floodplain Reconnection Phosphorus Reduction Lbs	0.000	1.000	0.000
Natural	Non Urban Stream Restoration Protocol	Protocol 3: Floodplain Reconnection Sediment Reduction Lbs	0.000	0.000	1.000
Natural	Non Urban Stream Restoration	Feet	0.075	0.068	248.000

2019 State-Reported BMPs

Mapped to “Non-Urban Stream Restoration”

STATE	bmp_name	FEET
DE	Channel Stabilization	1419
DE	Stream Restoration Ag	7842
DE	Streambank Stabilizati	12946
MD	Channel Stabilization	2155
MD	Stream Restoration Ag	106207
MD	Streambank and Shoreli	21607
NY	Stream Channel Stabili	31636
PA	Channel Bed Stabilizat	594
PA	Channel Stabilization	40
PA	Channel Stabilization	3800
PA	Stream Channel Stabili	351336
PA	Streambank and Shoreli	621867
PA	Streambank Stabilizati	4260
VA	Stream Restoration Ag	26133
VA	Streambank and Shoreli	1010579
WV	Stream Restoration Ag	27583
WV	Streambank and Shoreli	2150
WV	Streambank Stabilizati	21298
TOTAL		2253452

Mapped to “Urban Stream Restoration”

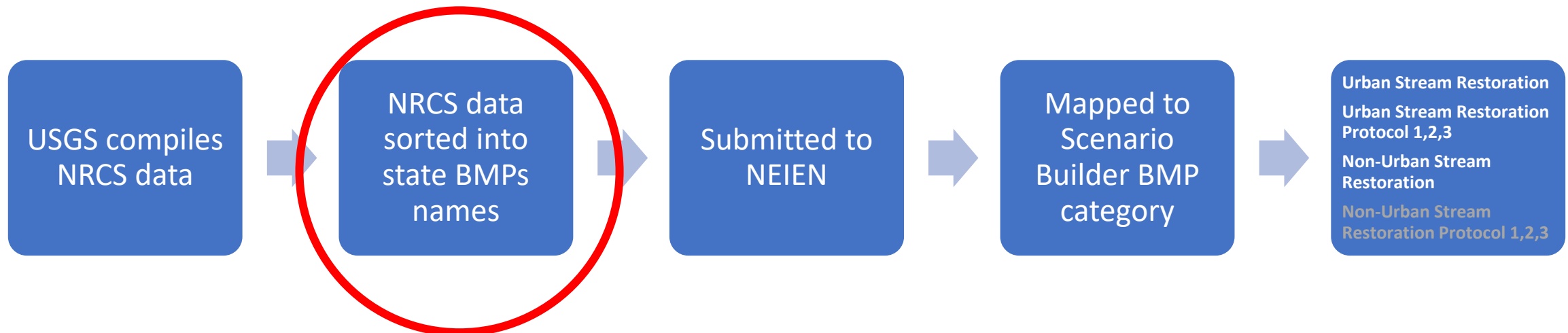
STATE	bmp_name	FEET
DC	Stream Restoration Urb	30852
DE	Stream Restoration Urb	300
DE	Urban stream restorati	275
MD	Stream Restoration Urb	183014
PA	Streambank Restoration	1550
PA	Urban stream restorati	1200
VA	Stream Restoration Urb	9850
VA	Urban stream restorati	73129
TOTAL		300171

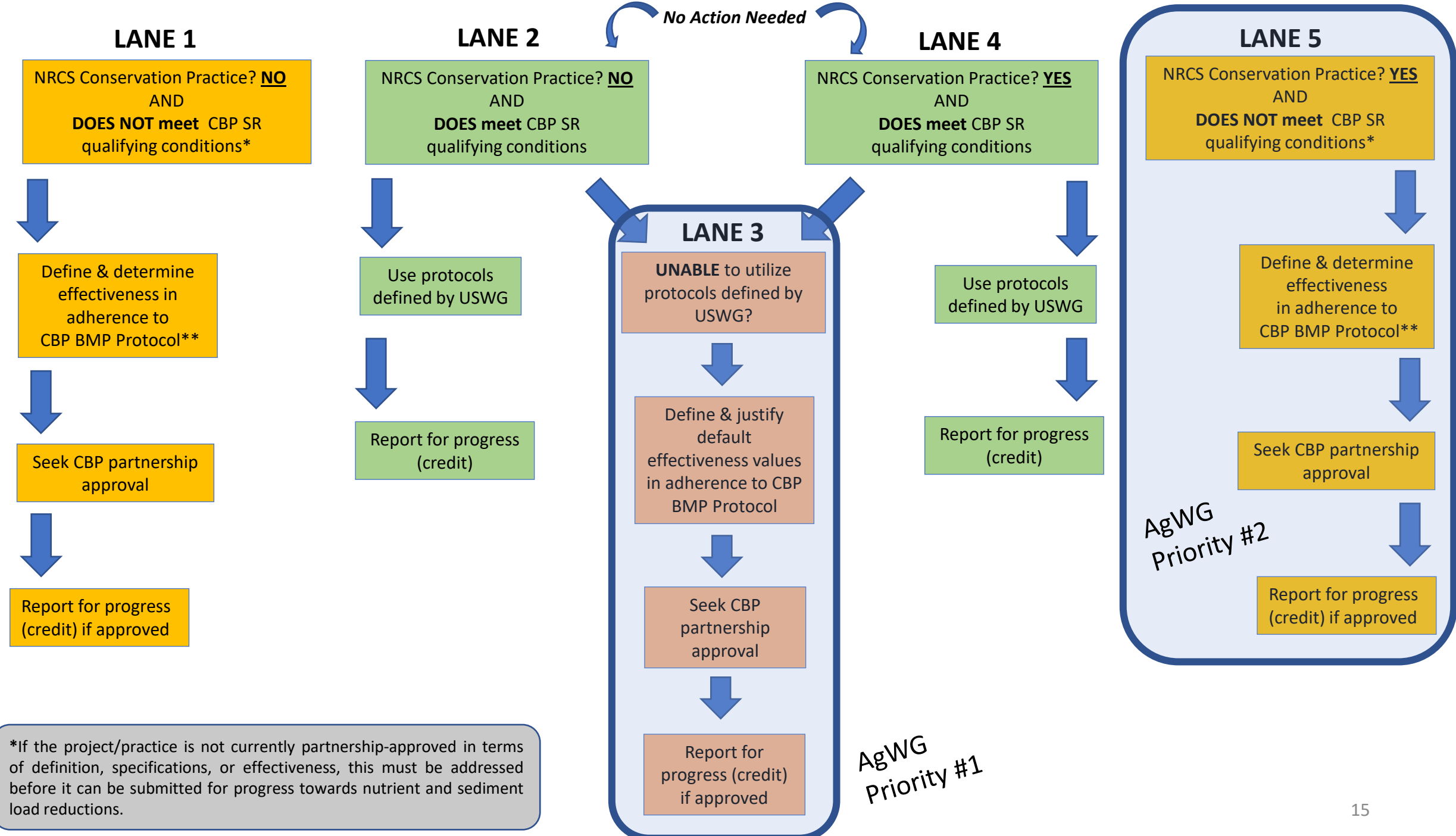
Relevant NRCS Practices

2 NRCS Conservation Practices may be relevant to “Non-Urban Stream Restoration”

NRCS Conservation Practices are not embedded in NEIEN reporting structure

NRCS Code	NRCS Practice	Definition	Shape	Units	NRCS Lifespan	Sector-CAST	Practice Name- NEIEN	Status- NEIEN	Official BMP-CAST?	Credit Duration-NEIEN	Within Stream Restoration Guidelines?
395	Stream Habitat Improvement and Management	Improve, restore, or maintain the ecological fu...	Polygon	Ac	5	Ag	Soil Conservation and Water Quality Plans	Draft	Yes	10	NO
580	Streambank and Shoreline Protection	Treatment(s) used to stabilize and protect bank...	Line	Ft	20	Natural	Non Urban Stream Restoration	Release	Yes	10	?
584	Channel Bed Stabilization	Measure(s) used to stabilize the bed or bottom ...	Line	Ft	10	Natural	Non Urban Stream Restoration	Release	Yes	10	?





*If the project/practice is not currently partnership-approved in terms of definition, specifications, or effectiveness, this must be addressed before it can be submitted for progress towards nutrient and sediment load reductions.