



UNRBA
Nutrient Credit
Development
Project
PFC Meeting
August 2016



August 24, 2016

Task 1 – Credit Development



Update to the Nutrient Credit Approval Process: Design Variants for Level Spreader Filter Strips, Bioretention Cells, and Infiltration Devices

- Final practice standard documents for level spreader filter strips and bioretention cells were submitted to DEQ on June 24th to initiate public comment
- Met with DWR and DEMLR on August 4th to discuss a revised approach for Stormwater Control Measures
 - These 3 practice standards will not be released for public comment as individual documents by DWR
 - They will be integrated into the revised Stormwater BMP and Crediting documents that will be noticed by DEMLR in September 2016
 - Final draft practice standard for infiltration devices was sent to the PFC for final approval on August 17th



Update to the Nutrient Credit Approval Process, continued

- Methods developed by the UNRBA for these practices will be
 - Applicable to existing development and new development
 - Incorporated into an over and under sizing approach for all Stormwater Control Measures
- Additional practices identified by the UNRBA as high priority will also be included in the revised manual including
 - Permeable pavement design variants
 - Grassed swales with check dams
- DEQ is not requesting any additional revisions by the UNRBA to these three documents
- Today we are seeking approval to submit infiltration devices as final to



Soil Improvement

- SMEs provided additional comments on compost recommendations that have been incorporated into final draft documents
- We had been waiting on revised annual volume reductions from DWR to finalize the credits, but new over/under sizing methodology does not apply to this practice
- We had also been waiting on proposed language from DWR on reporting, credit life, and renewal for review with the PFC (previously discussed with PFC in June)
- When we met on August 4th, DWR suggested that we submit the document as is
- Forrest sent final drafts to the PFC on August 17th for final review



Soil Improvement

- On August 18th DWR restated via email the need to address credit life, renewal, and assurance that the practice will be properly maintained
 - Provided an example form from the Community Conservation Assistance Program (CCAP) for Critical Area Planting (maintenance requirements, signature of land owner)
 - Suggested that credits be awarded upon completion of the project and signature of the maintenance agreement with a duration of 5 years
 - After 5 years, credit would expire until a new agreement was signed



Soil Improvement

- An alternative approach would be to
 - Award perpetual credits upon completion of project and signed maintenance agreement
 - Perform audits on a subsample of installations (e.g., 5% over 5 years) to scale credits
 - Use a programmatic approach rather than revisiting each site due to burden on local governments

Soil improvement practices must be maintained according to the following operation and maintenance items as described in the **Design Specifications and Nutrient Accounting for Soil Improvements** practice standard:

Maintenance Activities	Guidance and Frequency
Maintain at least 75% vegetative cover	<p>As needed, aerate and reseed turfgrass to maintain cover</p> <p>Replant dead trees and plants.</p> <p>Planting of trees should occur during dormant season beginning in late fall through winter.</p> <p>Fertilize as specified below.</p>
Mulch	Apply post treatment and annually to landscape bedding or around trees
Mowing	<p>As needed.</p> <p>To reduce/prevent the need for future fertilization, practitioners may mulch grass clippings in place and may mulch leaf litter from deciduous plants in landscaped areas rather than removing it.</p>
Prevent Re-compaction of Soil	<p>Do not allow driving or parking of vehicles and use methods to exclude treatment areas from use as trails.</p> <p>Periodic vehicle based mowing and maintenance is allowed.</p>

Landowner Signature		Date
Printed Name and Property Address:		



Soil Improvement

- Today we would like to receive feedback from the PFC on these two options for compliance monitoring
 - Credit duration of 5 years for each site with updated signatures required for credit renewal
 - Programmatic approach where 5% of practices are audited over a 5 year period to scale back the perpetual credits awarded for this practice
- Discuss how to best move forward with finalizing these documents for submittal to DWR



Livestock Exclusion

- Drafted initial practice standard (February version) based on input from Subject Matter Experts and Agency Staff
 - NCSU: Deanna Osmond, Dan Line
 - Farm Bureau: Anne Coan and Keith Larrick
 - DWR: Rich Gannon, Amin Davis, Trish D'Arconte, John Huisman
- Submittal of draft practice standard to DWR Planning resulted in additional revisions (as with other practices) following DWR discussions with additional SMEs
 - NCSU: Matt Poore
 - Division of Soil and Water Conservation: Julie Henshaw
- Draft practice standard was released for review to the PFC, NSAB, and WOC on August 16th



Livestock Exclusion

- Description
 - Fencing along a stream as a physical barrier to animals to prevent
 - Trampling of stream banks and cattle-induced erosion
 - Direct deposition of animal waste into streams
 - Allow for the reestablishment of buffer zone
- Eligibility
 - Not for collective agriculture nutrient load reduction targets (determined by the Watershed Oversight Committee)
 - Not for sites with post-treatment stocking densities \geq to 1.2 animal units per acre (\geq 3 animal units per hectare)
 - An animal unit is defined as an animal equivalent of 1000 pounds live weight (e.g., one beef cow, 2.5 adult swine)



Livestock Exclusion

- Minimum Design Criteria (NRCS Practice Standard)
 - Access Control (472): The temporary or permanent exclusion of animals, people, vehicles, and/or equipment from an area.
 - Fencing (382): A constructed barrier to animals or people.
 - Nutrient Management (590): Managing the amount (rate), source, placement (method of application), and timing of plant nutrients and soil amendments.



Livestock Exclusion

- Crediting method incentivizes
 - Livestock exclusion
 - Reductions in stocking rate (not required) by varying factors of safety
- Local study (Jordan Lake watershed) measured nutrient load reductions for livestock exclusion with nutrient management
 - 37 percent for total nitrogen load
 - 51 percent for total phosphorus load



Factors of Safety and Assumed Percent Mass Reductions

Post-Exclusion Stocking Density (au/ac)	Reported Percent TN Mass Reduction (%)	Reported Percent TP Mass Reduction (%)	Factor of Safety Applied to Percent Reduction (%)	Assumed TN Percent Mass Reduction (%)	Assumed TP Percent Mass Reduction (%)
≤0.4	37	51	0	37	51
>0.4 to 0.6	37	51	10	33	46
>0.6 to 1.2	37	51	30	26	36



Pre-exclusion Loading Rates

Stocking Density (au/ac)	Pre-Exclusion Nitrogen Loading Rate (lb/ac/yr)	Pre-Exclusion Phosphorus Loading Rate (lb/ac/yr)
≤ 0.6	5.5	2.6
> 0.6 to 1.2	11.0	5.2
> 1.2	16.5	7.8



Nutrient Reductions (Credits) Based on Pre- and Post-Exclusion Stocking Densities

Pre-Exclusion Stocking Density (au/ac)	Post-Exclusion Stocking Density (au/ac)	Pre-Exclusion Loading Rate (lb/ac/yr)		Assumed Mass Reduction (%)		Nutrient Credit (lb/ac/yr) ¹	
		N	P	N	P	N	P
≤ 0.6	≤ 0.4	5.5	2.6	37	51	2.0	1.3
	> 0.4 – 0.6	5.5	2.6	33	46	1.8	1.2
> 0.6 to 1.2	≤ 0.4	11	5.2	37	51	4.1	2.7
	> 0.4 – 0.6	11	5.2	33	46	3.7	2.4
	> 0.6 – 1.2	11	5.2	26	36	2.8	1.9
> 1.2	≤ 0.4	16.5	7.8	37	51	6.1	4.0
	> 0.4 – 0.6	16.5	7.8	33	46	5.5	3.6
	> 0.6 – 1.2	16.5	7.8	26	36	4.3	2.8



Livestock Exclusion

- Draft practice standard is out for review by the PFC, NSAB, and WOC as of August 15th
- John Huisman provided a status update during the WOC meeting on August 16th
- Incorporated preliminary feedback from Deanna Osmond to revise units to au/ac rather than au/ha
- UNRBA to briefly present practice to the NSAB on September 9th
- Comments due September 16th
- Finalize with DWR and send to PFC for final review
- Following PFC approval at the October PFC meeting, send to DWR as final document



Land Conservation

- Agency formally rejected nutrient credits for land conservation in a letter dated July 8th from Jay Zimmerman
- UNRBA group met to discuss next steps this morning



Buffer Restoration in Developed Areas

- We have met with the agency several times to discuss methods and constraints with existing buffer rules
- Revised methodology in June based on feedback from DWR and DMS
- Submitted a preliminary, partial draft practice standard to DWR on July 8th; expecting comments back in early September
- Finalize a draft for review by PFC and NSAB
- Would like to present this practice to the PFC in late September and NSAB in early October
- Aiming for final PFC approval at the November meeting followed by submittal to DWR as final by year end



• Elimination of Illegal Discharges

- Methodology is based primarily on the Chesapeake Bay framework
- Data incorporates local data when available (City of Durham mobile car wash study and HVAC coil cleaning study)
- Submitted a preliminary draft practice standard to DWR on August 16th
- Anticipating comments back in early to mid September
- Would like to present this practice to the PFC in late September and NSAB in early October (depends on the degree of comments from DWR)
- Aiming for final PFC approval at the November meeting followed by submittal to DWR as final by year end



Recap of Priority Measures

- Bioretention design variants (submitted final documents to DEQ)
- Level spreader filter strip design variants (submitted final documents to DEQ)
- Infiltration devices (final review by PFC for submittal to DEQ)
- Soil Improvement (final review by PFC for submittal to DEQ)
- Urban Nutrient Management (practice was combined with soil improvement)
- Livestock Exclusion (out for review by PFC, WOC, and NSAB)
- Land or forest protection (agency issued denial for credit)
- Remove Illegal Wastewater Connection to Stormwater Systems or Surface Waters (preliminary practice standard has been submitted to agency for review)
- Riparian buffer – developed areas (preliminary practice standard has been submitted to agency for review)
- Riparian buffer – agricultural areas (agency is evaluating existing crediting methods)

Task 2 – Tool Development



UNRBA Credit Tool

- DWR has generated a 4th version of JFSAT that needs to be coded into the UNRBA Credit Tool
- We will begin coding in non-structural measures as practices move through the approval process:
 - Livestock exclusion, buffer restoration, and removal of illicit discharges from storm systems or surface waters
- Plan to schedule a call with the Task Force in September to discuss reporting requirements with DWR



Budget Reallocation

- DWR provided \$20,000 as a grant to help with project delays and additional meetings
 - Additional SME involvement
 - Revisions to the approval process
 - Discussions between DEMRL and DWR about SCMs
- To provide funds to complete Task 1 in light of continued meetings and process changes
 - Reallocated ~\$8700 from Task 2 – Code in New Measures to Task 1 – Credit Development
 - Most of the practices are structural and the JFSAT reader will handle credits
 - Less money is needed for this subtask



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