UNRBA Nutrient Credit Development Project

PFC Meeting
December 2016

December 14, 2016

Agenda

- Provide status updates
  - Land conservation
  - Soil improvement
  - Cattle exclusion
- Summarize two final practices under development
  - Removal of illicit discharges
  - Buffer restoration in developed areas
- Discuss schedule for finalizing practices and UNRBA Credit Tool

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Land Conservation

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Update on Land Conservation

- DEQ rejected the preliminary technical document for land conservation in a letter dated July 8th
- During the October 28th meeting, the PFC approved submittal of the formal land conservation practice standard to DEQ
- Formally submitted on October 31st
- DEQ has not responded to the submittal

Soil Improvement

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Update on Soil Improvement

- Released for public comment in September
- No public comments were received
- DWR noted issues with credit renewal and verification
- Two conference calls to discuss
- In December, submitted redline and clean revisions to PFC and DWR for final review to require
  - Signed maintenance agreement
  - Verification and renewal for each site at least every 5 years
- Discuss PFC approval of revisions for final submittal

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Cattle Exclusion

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Update on Cattle Exclusion

- Livestock Exclusion Workgroup (LEW) of the Watershed Oversight Committee (WOC) provided additional comments on the practice standard on November 22nd
- Most were comments to convey agreement with the latest revisions to the document
- Some were edits to clarify the Tar Pam pasture point system and the summary of studies that were not included in the calculation method
- Proposed LEW edits are appropriate; forwarded to DWR for review
- Attended DWR and partial WOC/LEW meeting on 12/9/2016 to discuss implementation issues and revisions to the practice standard

Update on Cattle Exclusion

- Working draft under review:

  This practice standard establishes the **technical basis** for nutrient credits associated with cattle exclusion. In submission of this document, it is the UNRBA's understanding that if the Division of Water Resources (DWR) proceeds with approval of this credit, that the Agency's approval will be **contingent on development of an acceptable trading framework** for the exchange of credits between parties affected by the Agricultural Rule and parties not affected by the Agricultural Rule. We anticipate that this development process will be initiated by DWR, with full participation of the Watershed Oversight Committee and other regulated stakeholders in the Falls Lake watershed. Further, the UNRBA understands that **credits will not be issued for this practice until the process governing these exchanges has been established**.

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Next Steps for Cattle Exclusion

- Practice standard will be revised and distributed to the WOC
- WOC will review and decide on approval before January PFC meeting
- Final drafts will be distributed to the PFC with final approval at the January PFC meeting

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Buffer Restoration in Developed Areas

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Timeline for Practice Development

Preliminary analyses and discussions

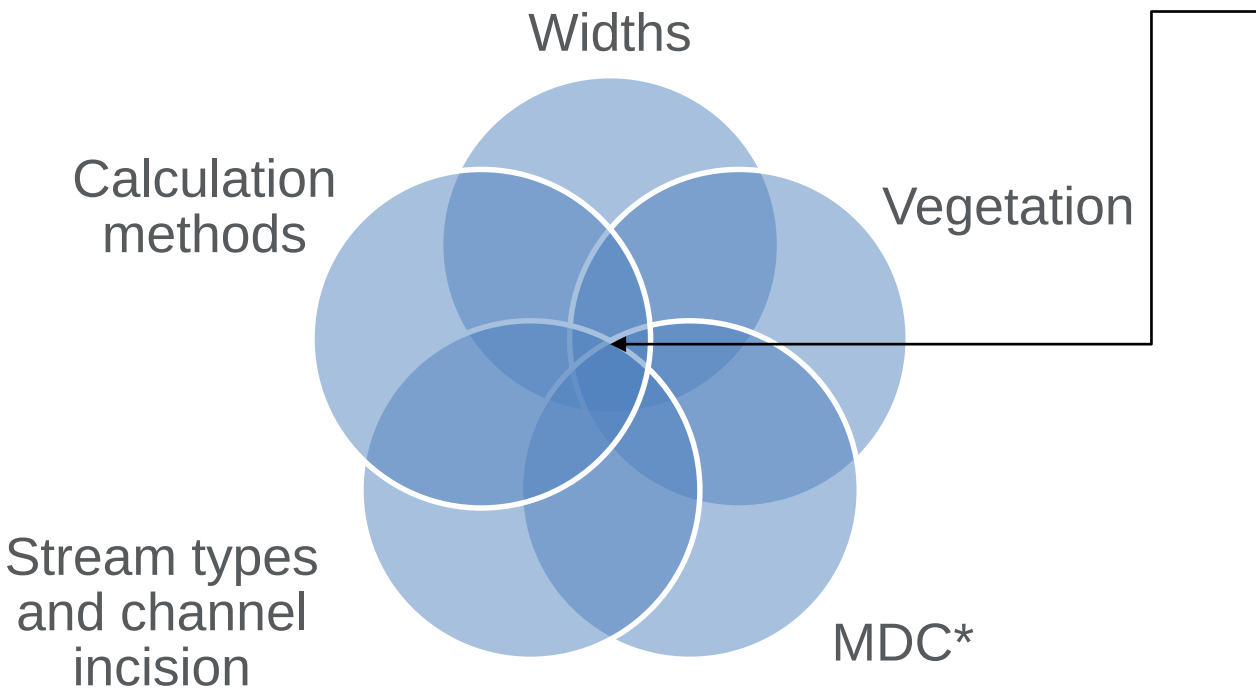
- Literature review
- Meetings with DMS: overlaps, impediments of buffer rules
- Consideration of LSFS approach
- Preliminary MDC consistent with buffer rules (e.g., forest only)

Intermediary analyses and discussions

- Addressing incised channels
- Applicability on ephemeral channels
- Minimum widths
- Vegetation types
- Issues with LSFS, buffer rules, and credit amounts

Most recent draft

- Reliance on DMS protocols
- Simplified calculation method to percent reduction
- Minimum widths and applicability to ephemeral channels



- Reasonable, conservative approach
- Incorporates flexibility for developed areas
- Consistent with existing rules and crediting (NLEW)
- *Majority of NSAB feedback

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Calculation Method

- Use JFSAT to calculate the land conversion credit and the loading to the buffer
- Apply percent reductions based on the buffer width

Buffer Width (feet)	Non-Incised Perennial and Intermittent Channels	Incised & Ephemeral Channels	
	Percent Nitrogen & Phosphorus Reduction	Percent Nitrogen Reduction	Percent Phosphorus Reduction
20	20	10	20
30	25	12.5	25
50	30	15	30
100 - 200	35	17.5	35

NSAB Feedback from December 2nd Meeting

- Credits are too low relative to the requirements
  - Financial assurances for perpetual maintenance
  - Permanent easements
  - Credit release schedule
- Local governments would do better to buy higher credits from bankers
- Either credits should be the same, or requirements should be different
- Permanent easements should not be required
  - Credits are to renewed every 5 years
  - Credits could be removed from accounting if not maintained

PFC Feedback from Today?

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Removal of Illicit Discharges from Stormwater Systems or Surface Waters

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Definition and Credit Eligibility Requirements

- Illicit discharges are illegal discharges to surface waters or stormwater systems
- Eligibility requires
  - Identification, remediation, and prevention
  - Justification that discharge was present during baseline
  - Program to prevent future loads from similar sources
    - Regulation based (MS4 permit, zoning, building codes, etc.)
    - Identification of similar businesses and outreach
    - Pollution prevention programs

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Eliminated Load versus Reduced Load

- Some types of illicit discharges may be eliminated following remediation:
  - Correct connection
  - Modified behavior
- Some types of illicit discharge may be reduced:
  - Sewer exfiltration where some small amount of leakage continues
  - Reduced frequency of sanitary sewer overflows due to programmatic approach

Crediting Method

- Requires data or estimates of
  - Nutrient concentrations
  - Volume discharged (or flow rates and duration)
  - Frequency of occurrence
  - Conversion factors
  - Factor of safety (default is 20%)
  - Attenuation factor for sewer exfiltration
- Several example equations in the practice standard

Default Nutrient Concentrations and Volumes

- Laundry washwater
  - Improper connection of wastewater to a storm system or directly to a surface water
  - Nitrogen washwater concentrations are based on two studies
  - Nitrogen rinse water concentrations are assumed equal to drinking water concentrations
  - No data for phosphorus washwater concentrations that represent the phosphate detergent ban
  - Phosphorus wash and rinse concentrations are assumed equal to drinking water concentrations
  - Concentrations represent average wash and rinse cycles (7.2 mg-N/L and 0.3 mg-P/L)
  - Annual volumes are based on washer capacity, frequency of use, etc.

Default Nutrient Concentrations and Volumes

- Mobile Car Washing
  - Washing of vehicles that results in the discharge of wash water to surface waters or stormwater systems
  - Concentrations are based on a monitoring study conducted by City of Durham (15.9 mg-N/L and 2.7 mg-P/L)
  - Default volumes (5.3 gallons per wash) times number of vehicles washer per year
- HVAC Coil Cleaning
  - Washing of HVAC coils can generate high loads of nutrients
  - Concentrations are based on a monitoring study conducted by City of Durham (68.2 mg-N/L and 2.6 mg-P/L)
  - Discharge volumes may be estimated from business specific information (number of cleanings per year, volume per cleaning, etc.)

Default Nutrient Concentrations and Volumes

- Sanitary Sewer Direct Connections
  - Improper connection of wastewater to a storm system or directly to a surface water
  - Concentrations and per capita flow volumes are based on values reported by EPA
    - 33 mg-N/L and 6 mg-P/L
    - 60 gallons per capita per day
- Dry Weather Sanitary Sewer Overflow
  - A sanitary sewer overflow that occurs during dry weather periods as a function of either a blockage or system failure
  - Wastewater concentrations are based on values reported by EPA
    - 33 mg-N/L and 6 mg-P/L
  - Annual volumes are based on site specific information or programmatic data

Default Nutrient Concentrations and Volumes

- Wet Weather Sanitary Sewer Overflow
  - A sanitary sewer overflow due to the entry of stormwater or groundwater into the sanitary sewer system that overwhelms the system
  - Concentrations are based on values reported by EPA
    - 33 mg-N/L and 6 mg-P/L for wastewater
    - 1.4 mg-N/L and 0.27 mg-P/L for stormwater
  - May assume 1/3 wastewater and 2/3 stormwater if site specific information is not available
  - Volumes are based on site specific information or programmatic data

Default Nutrient Concentrations and Volumes

- Sewer Exfiltration
  - Untreated sewage may leak through pipe joints and cracks and migrate into adjacent storm drain pipes or into shallow groundwater
  - Older or damaged pipes may have exfiltration at rates higher than expected due to age and deterioration
  - Concentrations are based on values reported by EPA
    - 33 mg-N/L and 6 mg-P/L for wastewater
  - Volumes are based on site specific information or programmatic data
  - Credit applicant is required to develop and apply a land attenuation factor (modeling, testing, etc.)

Nutrient Concentrations and Volumes

- Floor Drains and Other Illicit Discharges
  - Floor or foundation drains that are illegally connected to surface waters or stormwater systems
  - Other types of illicit discharges may include mobile pet washing, dumpster leachate, petroleum leaks or dumping, paint, grease, cooking oil, food, concrete washout, outdoor wash areas
  - Nitrogen and phosphorus concentrations based on monitoring data, literature, etc.
  - Discharge volumes may be estimated from site specific information (average volume, frequency, etc.)

NSAB Feedback from December 2nd Meeting

- Clarify eligible components of pollution prevention plans
  - Education and outreach
  - Good housekeeping
  - Compliance with permits
- Request to include default information about sewage exfiltration rates
  - Will vary based on pipe age, type, etc.
- Ability to claim credit for repairs that happened after baseline and before this credit is approved

PFC Feedback from Today?

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Project Schedule

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Proposed Schedule

- December
  - Present buffer restoration and illicit discharge elimination
    - ✓ December 2nd NSAB meeting
    - ✓ December 14th PFC meeting
      - Comments due December 21st
  - Send revised cattle exclusion practice standard to Anne Coan (Livestock Exclusion Workgroup and the Watershed Oversight Committee)
  - Review public comments on three structural practices (none provided thus far on design variants for bioretention cells, level spreader filter strips, or infiltration devices)

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Proposed Schedule

- January
  - WOC to discuss and hopefully provide contingent approval of the cattle exclusion practice standard before January 25th
  - Revise buffer restoration and illicit discharge documents based on PFC and NSAB feedback
  - PFC to approve three practices
    - Buffer restoration in developed areas
    - Removal of illicit discharges
    - Cattle exclusion
  - Submit final practice standards to DEQ for public comment

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Proposed Schedule

- February
  - Draft the User Guidance Document (structural practices)
  - Begin coding non-structural practices into the UNRBA Credit Tool
    - Land conservation?
- March
  - Review public comments on cattle exclusion, buffer restoration, and illicit discharge elimination
  - Continue coding practices into the UNRBA Credit Tool
    - Cattle exclusion
    - Buffer restoration in developed areas
    - Removal of illicit discharges
  - Continue drafting the User Guidance Document

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Proposed Schedule

- April
  - Present the UNRBA Credit Tool and User Guide to the Task Force
  - Revise based on feedback
- May
  - Present the UNRBA Credit Tool and User Guide to the PFC
  - Revise and finalize both
- June
  - Wrap up

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