Lower Boise River Watershed Advisory Group

Water Quality Trading Framework Update
Trading Framework: Where We Are

• Technical Advisory Committee (TAC) has met three times to date

• Presented and reviewed all major elements of a trading program
  – Water Quality Trading Memos (available on WAG webpage)

• Compiled information and feedback into concept draft framework.
  – 2 rounds of review

• Identified major trading component details needing further discussion.
## Framework Process Timeline

<table>
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<th>Event</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
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</table>
Concepts to Update

**Baseline** - How to define

**Credit life** – Annual vs seasonal

**Trading ratios** – Addressing uncertainty without complexity

**Avoiding localized impacts** – no local concentrations of pollution as a result of trading.

**Market operation and administration** – How does it all work and who is responsible for the different functions?
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Moving Forward

• Continue discussions with EPA on baseline and credit life.

• Provide comments/feedback on current Framework draft.

• Finalize draft Framework and provide recommendation to WAG

• WAG to provide recommendation to IDEQ to issue draft for public comment.
Boise River Water Quality Trading Framework
Mock Transaction
What is the market?

I need to buy 100 credits

I have 100 credits to sell

TRADE!
The Actors

Participants

- Landowners
- Project Developers
- Buyers

Facilitators

- Program Administrator
- Registry Provider
- Verifier

Regulatory Agency

Public
Credit Generating and Tracking Process

1. Select & Validate Site
2. Implement & Calculate Credits
3. Verify & Certify Credits
4. Register & Issue Credits
5. Ongoing Verification, Tracking & Transfer
Trading Eligibility
Potential Credit Buyers in the Lower Boise Trading Framework

- National Pollutant Discharge Elimination System (NPDES)
- Municipal Separate Storm Sewer System (MS4)
- Multi-Sector General Permit (MSGP)
- Rapid Infiltration Basin (RIB)
- Hydroelectric Facilities (401 Cert.)
- Voluntary

Buyer Eligibility
I would like to include trading as an option to meet the requirements of my regulatory permit.

Great! Have you met your TBELs?

Buyer Eligibility

- Select & Validate Site
- Implement & Calculate Credits
- Verify & Certify Credits
- Register & Issue Credits
- Ongoing Verification, Tracking & Transfer
Select & Validate Site
Implement & Calculate Credits
Verify & Certify Credits
Register & Issue Credits
Ongoing Verification, Tracking & Transfer

Project Eligibility
Project Eligibility

- Select & Validate Site
- Implement & Calculate Credits
- Verify & Certify Credits
- Register & Issue Credits
- Ongoing Verification, Tracking & Transfer
<table>
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<th>BMP Type</th>
<th>BMP Efficiency Rate</th>
<th>Design Criteria</th>
<th>Lifespan</th>
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<td>Sediment basin (field scale)</td>
<td>75%</td>
<td>NRCS 350</td>
<td>20 years</td>
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<tr>
<td>Sediment basins (watershed scale)</td>
<td>65%</td>
<td>NRCS 350</td>
<td>20 years</td>
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<tr>
<td>Filter strips</td>
<td>50%</td>
<td>NRCS 393</td>
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<td>Underground outlet (years 1-2)</td>
<td>85%</td>
<td>NRCS 620</td>
<td>2 years</td>
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<td>Underground outlet (after year 2)</td>
<td>65%</td>
<td>NRCS 620</td>
<td>18 years</td>
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<td>Straw in furrows</td>
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<td>NRCS 484</td>
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<td>Sprinkler irrigation</td>
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<td>NRCS 442</td>
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<td>Tailwater recovery</td>
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<td>Surge irrigation</td>
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<td>Constructed Wetland (Farm Scale)</td>
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<td>Cover Cropping</td>
<td>TBD</td>
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<td>Residue Mgmt (No Till)</td>
<td>90%</td>
<td>NRCS 329</td>
<td>1 year</td>
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*Base-year 2013

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**Project Eligibility**

- Select & Validate Site
- Implement & Calculate Credits
- Verify & Certify Credits
- Register & Issue Credits
- Ongoing Verification, Tracking & Transfer
Site Screening & Eligibility
Option A:
Retire 20% of credits for all non-point credit project types

Option B:
(Phased) implementation of BMPs

Baseline
EPA Feedback:

Non-point source baseline needs to be at farm/project scale and derived from TMDL load allocation.

Baseline
Example Credit Calculation

**WP Farms**

- 100 acres alfalfa hay
- 2.4% field slope
- Siphon tube irrigation
- No conservation practices installed currently
- Proposing filter strips
Surface Irrigation Soil Loss (SISL) Calculation

\[ SISL = BSL \times KA \times PC \times CP \times IP \]

**Base Soil Loss (BSL):** Function of field slope, length, crop type, and end of field slope shape (convex end).

**Soil erodibility adjustment factor (KA):** Based on NRCS soil erosion “K” factor from USDA soil survey.

**Prior crop adjustment factor (PC):** Account for crop residue from previous year’s crop.

**Conservation practice adjustment factor (CP):** Current conservation practices.

**Irrigation management adjustment factor (IP):** Management associated with irrigation type.
## SISL Calculation

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<th>AC</th>
<th>BSL</th>
<th>KA</th>
<th>PC</th>
<th>CP</th>
<th>IP</th>
<th>Results</th>
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<tr>
<td>WP Farms</td>
<td>2.3</td>
<td>0.53</td>
<td>0.7</td>
<td>1</td>
<td>1</td>
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<td>0.8500 (t/acre)</td>
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<tr>
<td>Total Sediment loss</td>
<td>100</td>
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<td></td>
<td></td>
<td>85 (tons)</td>
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</table>

### Net reduction in soil loss
Pre-BMP soil loss x BMP Efficiency Rate

\[ 85 \times 0.50 = 42.5 \]

### Total phosphorus reduction
Net sediment reduction x 2lbs/ton

\[ 42.5 \times 2 = 85 \]
Total Phosphorus reduction

85 lbs/yr

Baseline

Trade ratios

Credit to sell

= ?

Select & Validate Site

Implement & Calculate Credits

Verify & Certify Credits

Register & Issue Credits

Ongoing Verification, Tracking & Transfer
Option A: Percentage reduction

Total Phosphorus Reduction: 85 lbs/yr
Baseline: 68 lbs/yr (20% of 85 lbs/yr)
Credit to sell: 68 lbs/yr
Option B: BMP Implementation

Select & Validate Site
Implement & Calculate Credits
Verify & Certify Credits
Register & Issue Credits
Ongoing Verification, Tracking & Transfer

85 lbs/yr
Pollution reduction

Baseline
51 lbs/yr

Credit to sell
34

Option B: BMP Implementation

Pollution reduction
85 lbs/yr

Baseline
51 lbs/yr

Credit to sell
34

Select & Validate Site
Implement & Calculate Credits
Verify & Certify Credits
Register & Issue Credits
Ongoing Verification, Tracking & Transfer
Trading Ratios: Uncertainty

- Pollution reduction
- Credit to sell: 2:1

= $

= Credits to buy

- Discharge exceedance
- Credits to buy: 2:1

Select & Validate Site
Implement & Calculate Credits
Verify & Certify Credits
Register & Issue Credits
Ongoing Verification, Tracking & Transfer
Select and Validate Site

Implement & Calculate Credits

Verify & Certify Credits

Register & Issue Credits

Ongoing Verification, Tracking & Transfer

Trading Ratios: Uncertainty

Pollution reduction: 85 lbs/yr

Baseline: 68 lbs/yr

Trading ratios: 34 lbs/yr

Credit to sell: 34 lbs/yr

85 lbs/yr - 20% = 68 lbs/yr

34 lbs/yr - 50% = 34 lbs/yr
Pollution reduction: 85 lbs/yr

Baseline: 34 lbs/yr

Trading ratios: 51 lbs/yr (50%)

Credit to sell: 17 lbs/yr

Trading Ratios: Uncertainty

Select & Validate Site
Implement & Calculate Credits
Verify & Certify Credits
Register & Issue Credits
Ongoing Verification, Tracking & Transfer
Does the project pencil?

Project cost considerations:

- Project design
- Construction costs
- Site screening
- Project verification
- Ongoing maintenance
- Monitoring
- Assurances
Purchase price considerations

• Opportunity cost
• Acquisition costs
• Length of contract
• Administrative costs
Verify & Certify

Document as-built condition
Final credit estimate
Final project documentation

Administrative review
Technical review
Site visit/confirm project implementation

Select & Validate Site
Implement & Calculate Credits
Verify & Certify Credits
Register & Issue Credits
Ongoing Verification, Tracking & Transfer
<table>
<thead>
<tr>
<th>Potential documents required for administrative review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proof of ownership/rights to credits/land protection</td>
</tr>
<tr>
<td>Permits or other agency approval</td>
</tr>
<tr>
<td>Accounting area map</td>
</tr>
<tr>
<td>Service area map</td>
</tr>
<tr>
<td>Project monitoring plan</td>
</tr>
<tr>
<td>Project stewardship plan</td>
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<tr>
<td>Initial project design and map</td>
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<tr>
<td>As-built project design</td>
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<tr>
<td>Credit calculation</td>
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</table>

**Administrative Review**

- Select & Validate Site
- Implement & Calculate Credits
- Verify & Certify Credits
- Register & Issue Credits
- Ongoing Verification, Tracking & Transfer
Technical Review

Potential technical review procedures and documents

- Initial project design
- As-built project design
- Credit modeling/calculation check
- Baseline/Post implementation data
Project Review

- Select & Validate Site
- Implement & Calculate Credits
- Verify & Certify Credits
- Register & Issue Credits
- Ongoing Verification, Tracking & Transfer
Project Review

- Select & Validate Site
- Implement & Calculate Credits
- Verify & Certify Credits
- Register & Issue Credits
- Ongoing Verification, Tracking & Transfer
I have 100 credits calculated, verified and ready to be issued.

Your credits are registered and posted online and ready for sale!

Register & Issue

Select & Validate Site
Implement & Calculate Credits
Verify & Certify Credits
Register & Issue Credits
Ongoing Verification, Tracking & Transfer
Transfer and Tracking

Select & Validate Site  Quantify Benefits  Verify & Certify Benefits  Register & Issue Benefits  Ongoing Verification, Tracking & Transfer

Please transfer 100 credits
<table>
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<tr>
<th>PROJECT NAME</th>
<th>ACCOUNTING UNIT</th>
<th>CREDIT TYPE</th>
<th>CREDIT QUANTITY</th>
<th>CREDIT UNIT</th>
<th>CREDIT STATUS</th>
<th>OWNER</th>
<th>PROJECT FILE</th>
<th>SERVICE AREA</th>
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<td>WO-Thermal</td>
<td>11786050</td>
<td>kcal</td>
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</table>

Showing 1 to 9 of 9 entries

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**Track & Transfer**

- Select & Validate Site
- Quantify Benefits
- Verify & Certify Benefits
- Register & Issue Benefits
- Ongoing Verification, Tracking & Transfer
Ongoing Verification

Project is maintained and in good working order.
Eligibility has not changed.
Good to go!
How credits meet compliance
How credits meet compliance
Reporting and Transparency
### Reporting and Transparency

#### 2014 Total Phosphorus Credit Transfers

<table>
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<tr>
<th>Facility</th>
<th>Individual YPDES Permit No.</th>
<th>General Permit Registration No.</th>
<th>Discharged TP Wasteload Allocation (lbs/yr)</th>
<th>TP Delivery Factor</th>
<th>Delivered TP Wasteload Allocation (lbs/yr)</th>
<th>2014 Discharged TP (lbs)</th>
<th>2014 Delivered TP (lbs)</th>
<th>2014 Delivered TP Exceedance (lbs)</th>
<th>2014 Delivered TP Credits Obtained (lbs)</th>
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### Nitrogen Facility Summary

#### ACSA-Stuarts Draft

**Potomac Trading Basin**

- **Facility-level Nitrogen Trading**
- **Projected Sales and Purchases of Class A Nitrogen Credits**

#### Loading & Credit Summary

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<td>Class B</td>
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#### Notes:
- **

* In any year when credits are available after all other exchanges within the Potomac Basin are completed, excess of 14,619 lbs/yr and TP discharged in excess of 1,096 lbs/yr. Credits are only generated if discharges delivered lbs of TP credits for 2014.

* \(^{a}\) VAN010006 - Alma Plant

* \(^{b}\) VAN010011 - George's Chicken

* \(^{c}\) VAN040060 - Chesterfield County Aggregate

VNCEA = Virginia Nutrient Credit Exchange Association
Program Improvement and Tracking

• DEQ and WAG will oversee adaptive management of Framework:
  – Quantification methods
  – New project types as eligible credit-generating actions

• Additional BMPs and associated quality standards will be reviewed and approved by ISWCC
Questions?