maximum, minimum, and average rates of flow

Weir, Fourth Street South, Outlet, Minneapolis
Average discharge, 1,570,000 gallons per 24 hours
Today’s Agenda

9:30 – 9:45  Intros & Project Update

9:45 – 10:00  Project Impairments and Subwatersheds

10:00 – 11:00  TMDL Development

11:15 – 11:30  Potential Bacteria Sources

11:30 – 11:45  Implementation Planning

11:45 – 12:20  Implementation Strategies Breakout

12:20 – 12:30  Next Steps
Upper Mississippi River
Bacteria TMDL Project

Overall Goal
β Restore and protect the water quality of the Upper Mississippi River and its tributaries

Joint Effort
β MPCA & MDH, Stakeholders, EOR (Consultant)

Timeline
β 2008: Project Start
β 2010-2012: Additional monitoring & assessment
β 2013-2015: Draft TMDL & Protection Plan (March 29th)
  (Process – Stakeholder> EPA Prelim> Public Notice > MPCA/EPA)
β 2013-2015: Draft Implementation Plan
## Water Quality Standards

### Aquatic Recreation

**(1° and 2° body contact)**

<table>
<thead>
<tr>
<th>Bacteria Standard</th>
<th>Units</th>
<th>Notes</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>E. coli</em></td>
<td>126 org per 100 ml</td>
<td><strong>Indicator of pathogenic diseases</strong></td>
<td>Geometric mean of &gt; 5 samples/month (April – October)</td>
</tr>
</tbody>
</table>
22 TMDL Subwatersheds
(22 stream reaches impaired for aquatic recreation due to *E. coli*)

28 Protection Subwatersheds
(>28 river and stream reaches not impaired for aquatic recreation due to *E. coli*)
MPCA Large River Monitoring

MPCA’s IWM (Intensive Watershed Monitoring) does not address “large rivers”

“Large Rivers” are rivers that encompass multiple major (8-digit) watersheds.
Pour Point of HUC8 watersheds - sample for fish contaminants, intensive water chemistry, and biology

Pour Point of HUC10 watersheds - sample for intensive water chemistry and biology

Pour Point of HUC12 watersheds - sample for biology

Legend
- = biology
- = water chemistry + biology
- = fish contaminants + water chemistry + biology

Upper Mississippi River Basin
Literature Reviews, MST Report, & Draft UMRB TMDL & Protection Plan are found on our project website at http://www.pca.state.mn.us/ktqha48

Reminder to submit comments on the Draft Plan by March 29th
MS4 General Permittees

• Compliance is with Permit
• Consistency between discharge limits and WLAs
• Discharge limits = BMPs
• Address TMDLs approved prior to effective date of General Permit
Upper Mississippi River Bacteria TMDL Study and Protection Plan

Stakeholder Meeting
March 22, 2013

Draft TMDL Report Overview
Outline

Impairments Addressed in This TMDL
Approach to Defining Subwatersheds
  TMDL Subwatersheds
  Protection Subwatersheds
TMDL and Allocations
Percent Reductions
Potential Bacteria Sources
Implementation
Impairments Addressed in This TMDL

TMDL Reaches (22 reaches)

Impaired tributary reaches that directly discharge to the Mississippi River

- PLUS impaired reaches within the watersheds of those tributaries

Excluded from the TMDL are:

Impaired reaches that are being (have been or are planned to be) addressed in another project

Reaches that are not impaired
Impairments Addressed in This TMDL

Approach to Defining Subwatersheds
- TMDL Subwatersheds
- Protection Subwatersheds

TMDL and Allocations

Percent Reductions

Potential Bacteria Sources

Implementation
TMDL and Protection Subwatersheds

**TMDL Subwatersheds**
- Exactly one TMDL Reach per TMDL Subwatershed
- Delineation: December 2011 feedback from MS4s and DNR catchment boundaries
- TMDL allocations apply to these areas only

**Protection Subwatersheds**
- ‘Protection Plan’ includes 28 subwatersheds
- Focus on the Mississippi River corridor
- Delineation: December 2011 feedback from MS4s and DNR catchment boundaries
- Excludes reaches of existing or planned/future projects
Outline

Impairments Addressed in This TMDL
Approach to Defining Subwatersheds
  TMDL Subwatersheds
  Protection Subwatersheds
TMDL and Allocations
Percent Reductions
Potential Bacteria Sources
Implementation
Hypothetical Watershed for Demonstration Purposes Only

existing load - loading capacity = reduction needed to meet the TMDL
Hypothetical Existing Load for Demonstration Purposes Only

Existing Load = flow x monitored concentration

6,563 cfs x 155 org/100ml
= 25 trillion org/day
TMDL and Allocations:

1. Define subwatersheds

1. Define subwatersheds for each impaired reach (the TMDL Subwatersheds)

2. Calculate TMDL

3. Calculate 10% MOS

4. Calculate WLAs from WWTF

5. Split remaining allocation between regulated MS4 and unregulated runoff
TMDL and Allocations:

2. Calculate TMDL

1. Define subwatersheds for each impaired reach (the TMDL Subwatersheds)

2. Calculate TMDL
   Flow at downstream end of reach x 126 org / 100 ml

3. Calculate 10% MOS

4. Calculate WLAs from WWTF

5. Split remaining allocation between regulated MS4 and unregulated runoff
Hypothetical TMDL Calculation for Demonstration Purposes Only

\[ TMDL = \text{flow} \times \text{standard (concentration)} \]

\[ 6,563 \text{ cfs} \times 126 \text{ org}/100\text{ml} = 20 \text{ trillion org/day}, \]
TMDL and Allocations:
3. Calculate 10% MOS

1. Define subwatersheds for each impaired reach (the TMDL Subwatersheds)
2. Calculate TMDL
3. Calculate 10% MOS
4. Calculate WLAs from WWTF
5. Split remaining allocation between regulated MS4 and unregulated runoff
TMDL and Allocations:

3. Calculate 10% MOS

1. Define subwatersheds for each impaired reach (the TMDL Subwatersheds)

2. Calculate TMDL

3. Calculate 10% MOS

   \[ \text{TMDL} \times 10\% = \text{MOS} \]

   Remainder is the allowable watershed load: \[ \text{TMDL} - \text{MOS} = \text{WLA + LA} \]

4. Calculate WLAs from WWTF

5. Split remaining allocation between regulated MS4 and unregulated runoff
TMDL and Allocations:

4. Calculate WLAs from WWTFs

1. Define subwatersheds for each impaired reach (the TMDL Subwatersheds)
2. Calculate TMDL
3. Calculate 10% MOS
4. Calculate WLAs from WWTF

   WLA = wasteload allocation
   WWTF = wastewater treatment facility
   Individual WLAs based on permit limits as *E. coli* and average wet weather design flow: 126 org / 100 ml x design flow

5. Split remaining allocation between regulated MS4 and unregulated runoff
TMDL and Allocations:
5. Remaining allocations

1. Define subwatersheds for each impaired reach (the TMDL Subwatersheds)
2. Calculate TMDL
3. Calculate 10% MOS
4. Calculate WLAs from WWTF

5. Split remaining allocation between regulated MS4 and unregulated runoff

\[
\text{TMDL} - \text{MOS} - \text{WWTF WLA} = \text{MS4 WLA} + \text{LA}
\]

Categorical MS4 WLA for regulated stormwater
- Municipalities
- County roads
- Watershed districts
- Colleges
- MnDOT

LA for all non-regulated watershed runoff
Regulated MS4 stormwater runoff

Approximation of areas regulated by MS4 permit for inclusion in WLA

- **Municipalities**: Land cover (NLCD)
- **Counties**: ROW of county hwys, within US Census Urban Area
- **MnDOT**: ROW of state hwys, within US Census Urban Area
- **Colleges**: Property boundary
- **Watershed districts**: Owned and/or operated stormwater conveyance infrastructure

**End result**

- GIS layer of regulated land within subwatershed
- Estimate of % distribution of regulated vs. non-regulated
Regulated stormwater runoff

**Municipalities:** Land cover (NLCD)
Hypothetical MOS and Allocations Calculation for Demonstration Purposes Only

TMDL
= flow x standard (concentration)

6,563 cfs x 126 org/100ml
= 20 trillion org/day,

TMDL
Hypothetical MOS and Allocations Calculation for Demonstration Purposes Only

\[ \text{TMDL} = \text{MOS} + \text{WLA} + \text{LA} \]

\[ 20 = 2 + 1.8 + 16.2 \]

Watershed runoff allocations:

10% regulated \( \doteq \) 1.8 trillion org/day (WLA)
80% non-regulated \( \doteq \) 16.2 trillion org/day (LA)

MOS = 10% of TMDL
\[ = 0.1 \times 20 = 2 \]

20 – 2 = 18 trillion org/day available for allocations

6,563 cfs \( \times \) 126 org/100ml = 20 trillion org/day, TMDL
Outline

Impairments Addressed in This TMDL

Approach to Defining Subwatersheds
  TMDL Subwatersheds
  Protection Subwatersheds

TMDL and Allocations

Percent Reductions

Potential Bacteria Sources

Implementation
Hypothetical % Reduction Calculation for Demonstration Purposes Only

Existing Load = flow x monitored concentration

6,563 cfs x 155 org/100ml = 25 trillion org/day


MOS = 10% of TMDL
= 0.1 x 20 = 2

20 – 2 = 18 trillion org/day available for allocations

6,563 cfs x 126 org/100ml = 20 trillion org/day, TMDL
Hypothetical % Reduction Calculation for Demonstration Purposes Only

existing load - loading capacity = reduction needed to meet the TMDL

MOS = 10% of TMDL
= 0.1 x 20 = 2

20 - 2 =

18 trillion org/day available for allocations

20 trillion org/day

TMDL

6,563 cfs x 155 org/100ml
= 25 trillion org/day

7 / 25 = 28% reduction required for the hypothetical TMDL Subwatershed to meet the TMDL
<table>
<thead>
<tr>
<th>TMDL Reach</th>
<th>Flow Regime</th>
<th>WLA WWTF (Total)</th>
<th>WLA MS4 Load Allocation</th>
<th>MOS</th>
<th>TMDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little Two River</td>
<td>High</td>
<td>3.03</td>
<td>0</td>
<td>82.5</td>
<td>9.5</td>
</tr>
<tr>
<td></td>
<td>Moist</td>
<td>3.03</td>
<td>0</td>
<td>36.9</td>
<td>4.44</td>
</tr>
<tr>
<td></td>
<td>Mid-Range</td>
<td>3.03</td>
<td>0</td>
<td>22</td>
<td>2.78</td>
</tr>
<tr>
<td></td>
<td>Dry</td>
<td>3.03</td>
<td>0</td>
<td>13.2</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>3.03</td>
<td>0</td>
<td>5.91</td>
<td>0.993</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Two River</th>
<th>Flow Regime</th>
<th>ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>0</td>
<td>0.133</td>
</tr>
<tr>
<td>Moist</td>
<td>0</td>
<td>0.0832</td>
</tr>
<tr>
<td>Mid-Range</td>
<td>0</td>
<td>0.0549</td>
</tr>
<tr>
<td>Dry</td>
<td>0</td>
<td>0.0291</td>
</tr>
<tr>
<td>Low</td>
<td>0</td>
<td>0.0291</td>
</tr>
</tbody>
</table>
1. Define subwatersheds for each impaired reach (the TMDL Subwatersheds)

2. Calculate TMDL
   a) Flow at downstream end of reach x 126 org / 100 ml
   b) Subtract load from upstream reach load
      • If upstream reach does not meet standard, upstream allowable load is flow x 126 org / 100 ml
      • If upstream reach meets standard, upstream allowable load is existing load

3. Calculate 10% MOS

4. Calculate WLAs from WWTF

5. Split remaining allocation between regulated MS4 and unregulated runoff
Hypothetical Watershed for Demonstration Purposes Only
Hypothetical TMDL Calculation for Demonstration Purposes Only

5,100 cfs x 126 org/100ml
= 16 trillion org/day,

6,563 cfs x 126 org/100ml
= 20 trillion org/day,

20 – 16
= 4 trillion org/day,
TMDL for the hypothetical TMDL Subwatershed,

LCTR

6,563 cfs x 126 org/100ml
= 20 trillion org/day,
Hypothetical MOS and Allocations Calculation for Demonstration Purposes Only

5,100 cfs x 126 org/100ml
= 16 trillion org/day,

6,563 cfs x 126 org/100ml
= 20 trillion org/day,

20 – 16
= 4 trillion org/day,

TMDL for the hypothetical TMDL Subwatershed,

5,100 cfs x 126 org/100ml
= 16 trillion org/day,

6,563 cfs x 126 org/100ml
= 20 trillion org/day,
Hypothetical MOS and Allocations Calculation for Demonstration Purposes Only

\[ \text{TMDL} = \text{MOS} + \text{WLA} + \text{LA} \]

4 = 0.4 + 3.4 + 0.2

MOS = 10% of TMDL
= 0.1 \times 4 = 0.4

4 – 0.4 = 3.6 \text{ trillion org/day available for allocations}

Watershed runoff allocations:

95% regulated \Leftrightarrow 3.4 \text{ trillion org/day (WLA)}
5% non-regulated \Leftrightarrow 0.2 \text{ trillion org/day (LA)}

4 \text{ trillion org/day, TMDL for the hypothetical TMDL Subwatershed},

TMDL
Hypothetical % Reduction Calculation for Demonstration Purposes Only

Existing Load = flow x monitored concentration

- 5,100 cfs x 152 org/100ml = 19 trillion org/day, ELUR
- 6,563 cfs x 155 org/100ml = 25 trillion org/day, ELTR

4 trillion org/day, TMDL for the hypothetical TMDL Subwatershed, TMDL

MOS = 10% of TMDL = 0.1 x 4 = 0.4

4 trillion org/day - 0.4 trillion org/day = 3.6 trillion org/day available for allocations

25 - 19 = 6 trillion org/day, existing load from the hypothetical TMDL Subwatershed, ELTR - ELUR
Hypothetical % Reduction Calculation for Demonstration Purposes Only

existing load - loading capacity = reduction needed to meet the TMDL

25 – 19 = 6 trillion org/day, existing load from the hypothetical TMDL Subwatershed, ELTR – ELUR

4 – 0.4 = 3.6 trillion org/day

4 trillion org/day, TMDL for the hypothetical TMDL Subwatershed, TMDL

MOS = 10% of TMDL = 0.1 x 4 = 0.4

2.4 / 6 = 40% reduction required for the hypothetical TMDL Subwatershed to meet the TMDL
Questions?

Impairments Addressed in This TMDL Approach to Defining Subwatersheds
  TMDL Subwatersheds
  Protection Subwatersheds
TMDL and Allocations
Percent Reductions
Outline

Impairments Addressed in This TMDL

Approach to Defining Subwatersheds
    TMDL Subwatersheds
    Protection Subwatersheds

TMDL and Allocations

Percent Reductions

Potential Bacteria Sources

Implementation
Potential Bacteria Sources: Purpose

The estimates:
- Identify potential bacteria sources
- Guide implementation practices to reduce bacteria loading

The estimates were NOT used to:
- Calculate the TMDL
- Develop WLAs or LAs
- Estimate the % reductions needed to meet the allocations
Potential Bacteria Sources: Approach

TMDL and Protection Subwatersheds

- Bacteria delivered to streams and rivers. For example:
  - Humans
    - WWTFs (effluent, raw sewage leaking from sanitary sewer to storm sewer, land application of biosolids)
    - Septics (ITPHS, land application of septage)
  - Livestock Requiring Registration
    - Grazing
      - Animal feeding operations (partially housed or open lot without runoff controls, land application without incorporation, land application with incorporation or injection)
  - Livestock NOT Requiring Registration
    - Pets (impervious vs pervious areas)
    - Wildlife (impervious vs pervious vs wetland areas)
Potential Bacteria Sources: Approach

Primary Resources

- Humans
  - WWTF design flow and permit limits
  - Literature on effects of aging sanitary sewers
- Livestock
- Pets
  - American Veterinary Medical Association
- Wildlife
  - DNR reports and studies

Water Quality Risk Factor – for watershed runoff
## Potential Bacteria Sources: Results

<table>
<thead>
<tr>
<th>Sub-watersheds in Miss River - Sartell</th>
<th>Humans</th>
<th>Livestock Requiring Registration</th>
<th>Livestock Not Requiring Registration</th>
<th>Pets</th>
<th>Wildlife</th>
</tr>
</thead>
<tbody>
<tr>
<td>WWTF Effluent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw Sewage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leakage: Sanitary to Storm Sewer¹</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>ITPHS Septics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land Application of Biosolids</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land Application of Septage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grazing</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Partially Housed or OL w/o Runoff Controls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land Application w/o Incorporation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land Application w/ Incorporation or Injection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partially Housed or OL w/o Runoff Controls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impervious</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pervious</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water and Wetlands</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ - low,  - medium-low,  - medium-high,  - high,  blank - no bacteria
## Potential Bacteria Sources: Results

<table>
<thead>
<tr>
<th>Subwatershed ID</th>
<th>Subwatershed or Protection</th>
<th>TMDL or Protection</th>
<th>Livestock</th>
<th>Pet</th>
<th>Wildlife</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mississippi River</td>
<td>07010201-502</td>
<td>Protection</td>
<td>🟢🟢🟢🟢🟢</td>
<td>🟢</td>
<td>🟢🟢🟢🟢🟢</td>
</tr>
<tr>
<td>Mississippi River</td>
<td>07010201-513</td>
<td>Protection</td>
<td>🟢🟢🟢🟢🟢</td>
<td>🟢</td>
<td>🟢🟢🟢🟢🟢</td>
</tr>
<tr>
<td>Little Two River</td>
<td>07010201-516</td>
<td>TMDL</td>
<td>🟢🟢🟢🟢🟢</td>
<td>🟢</td>
<td>🟢🟢🟢🟢🟢</td>
</tr>
</tbody>
</table>

1️⃣ - low, 2️⃣ - medium-low, 3️⃣ - medium-high, 4️⃣ - high, blank - no bacteria
Questions?

Impairments Addressed in This TMDL Approach to Defining Subwatersheds
  TMDL Subwatersheds
  Protection Subwatersheds
TMDL and Allocations
Percent Reductions
Potential Bacteria Sources
Implementation
Outline

Impairments Addressed in This TMDL
Approach to Defining Subwatersheds
  TMDL Subwatersheds
  Protection Subwatersheds

TMDL and Allocations
Percent Reductions
Potential Bacteria Sources
Implementation
Thank you
Upper Mississippi River Bacteria TMDL Study and Protection Plan

Stakeholder Meeting
March 22, 2013

Draft TMDL Report Overview
Outline

**Impairments**
- Addressed in this TMDL

**Subwatersheds**
- TMDL Subwatersheds
- Protection Subwatersheds

**TMDL**
- Methods
  - TMDL, MOS, allocations

**Percent Reductions**

**Potential Bacteria Sources**

**Implementation**
Implementation

Summary for each TMDL & Protection Subwatershed

• Meet % reductions required
• Target both wasteload and load allocations
• Implementation methods guidance
### TMDL & Protection Subwatershed Implementation

Meet % reductions required

<table>
<thead>
<tr>
<th>Listed Reach Name</th>
<th>Reach Description</th>
<th>AUID</th>
<th>Flow Regime</th>
<th>WLA WWTFs (Total) (billion org/d)</th>
<th>WLA Straight Pipes (billion org/d)</th>
<th>WLA MS4 (billion org/d)</th>
<th>Load Allocation (billion org/d)</th>
<th>MOS (billion org/d)</th>
<th>TMDL (billion org/d)</th>
<th>Existing Load from Watershed Runoff (rural and urban runoff, regulated and non-regulated) (billion org/d)</th>
<th>LA + MS4 WLA (maximum allowable watershed runoff) (billion org/d)</th>
<th>Required Reduction in Watershed Runoff (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little Two River</td>
<td>Headwaters to Mississippi</td>
<td>07010201-516</td>
<td>High</td>
<td>3.03</td>
<td>0</td>
<td>0</td>
<td>82.5</td>
<td>9.5</td>
<td>95</td>
<td>72.3</td>
<td>82.5</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>Moist</td>
<td>3.03</td>
<td>0</td>
<td>0</td>
<td>36.9</td>
<td>4.44</td>
<td>44.4</td>
<td>136</td>
<td>36.9</td>
<td>73%</td>
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<td>0</td>
<td>0</td>
<td>22</td>
<td>2.78</td>
<td>27.8</td>
<td>55</td>
<td>22</td>
<td>60%</td>
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<td>Dry</td>
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<td>0</td>
<td>0</td>
<td>13.2</td>
<td>1.8</td>
<td>18</td>
<td>93.5</td>
<td>13.2</td>
<td>86%</td>
</tr>
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<td>5.91</td>
<td>0.993</td>
<td>9.93</td>
<td>ID</td>
<td>5.91</td>
<td>ID</td>
</tr>
</tbody>
</table>
Implementation

TMDL & Protection Subwatershed Implementation

Address dominant sources as needed to meet % reductions

- Livestock Source (requiring registration): Land Application - Surface (No Incorporation) - 11%
- Livestock Source (requiring registration): Partially Housed or Open Lot without Runoff Controls - 5%
- Human Source: ITPH SSTS Load - 4%
- Livestock Source (not requiring registration): Grazing - 3%
- Pets and Wildlife Source (ducks & geese): Water and Wetlands with Buffer - 3%
- Pets and Wildlife Source (cats & dogs): Pervious Areas - 5%
- Livestock Source (requiring registration): Grazing - 74%
TMDL & Protection Subwatershed Implementation

Level of effort to meet TMDL & implementation assumptions

Little Two River Subwatershed Example

The following are priority actions to meet the TMDL:

• Implementation of injection or incorporation when land applying manure
• Runoff controls provided to address animal units currently assumed to be raised on open lots without runoff management or partially-housed without runoff management
• Bringing the SSTS’s that are an imminent threat to public health into compliance with standards
• Techniques implemented to address the load from grazing livestock
Implementation

TMDL & Protection Subwatershed Implementation

Reflect the landscape and source areas to target implementation
# Implementation

## TMDL & Protection Subwatershed Implementation

List implementation actions that could address each targeted source & Show role of implementation partners

## Table 1. Techniques to limit bacteria transport from livestock raised on open lots without runoff controls or livestock that are partially-housed on lots without runoff controls

<table>
<thead>
<tr>
<th>Technique</th>
<th>Method Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altering animal diet to reduce pathogens in feces</td>
<td>See: Animal Diet</td>
</tr>
<tr>
<td>Reduce lot runoff</td>
<td>See: Clean Water Runoff Diversion</td>
</tr>
<tr>
<td>Treat lot runoff</td>
<td>See: Feedlot/Wastewater Filter Strip Water and Sediment Control Basins Constructed Treatment Wetlands Woodchip Bioreactor Filter Strip</td>
</tr>
<tr>
<td>Mentoring and education to facilitate implementation</td>
<td>See: Demonstration Sites Producer to Producer Mentoring Program</td>
</tr>
</tbody>
</table>
Implementation Session

1. What content is the most important to include in the Implementation Plan to help facilitate your implementation activities?
   Examples: list of BMPs, priority areas

2. What format/design elements would make the Implementation Plan more user-friendly for you?
   Examples: shapefiles on web, organized by county

Please submit additional ideas by March 29th
Thank you