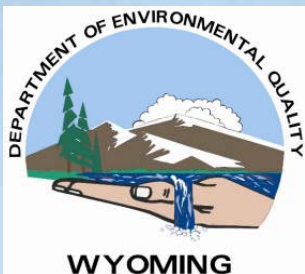


Big Horn River Bacteria Total Maximum Daily Load(TMDL)



Wind-Big Horn Basin Advisory Group
April 27th, 2011



Introductions

❖ **Wyoming Department of Environmental Quality**

→ *Mike Wachtendonk, TMDL Program, Cheyenne*

❖ **RESPEC**

→ *Jared Oswald, Project Manager*

❖ **WWC Engineering**

→ *Beth Kelly*

❖ **MATRIX Consulting Group, Inc.**

→ *Cheryl Chapman; Jenny Sorensen*





What We'll Talk About Tonight

- ❖ **TMDL definition**
- ❖ **Why there is a TMDL study on the Big Horn and Greybull Rivers**
- ❖ **Phases of the project and schedule for work completion**
- ❖ **Opportunities for public engagement**



What is a TMDL?

❖ Total Maximum Daily Load (TMDL)

TMDL: The amount of pollutant a stream can accept and still meet its designated uses.

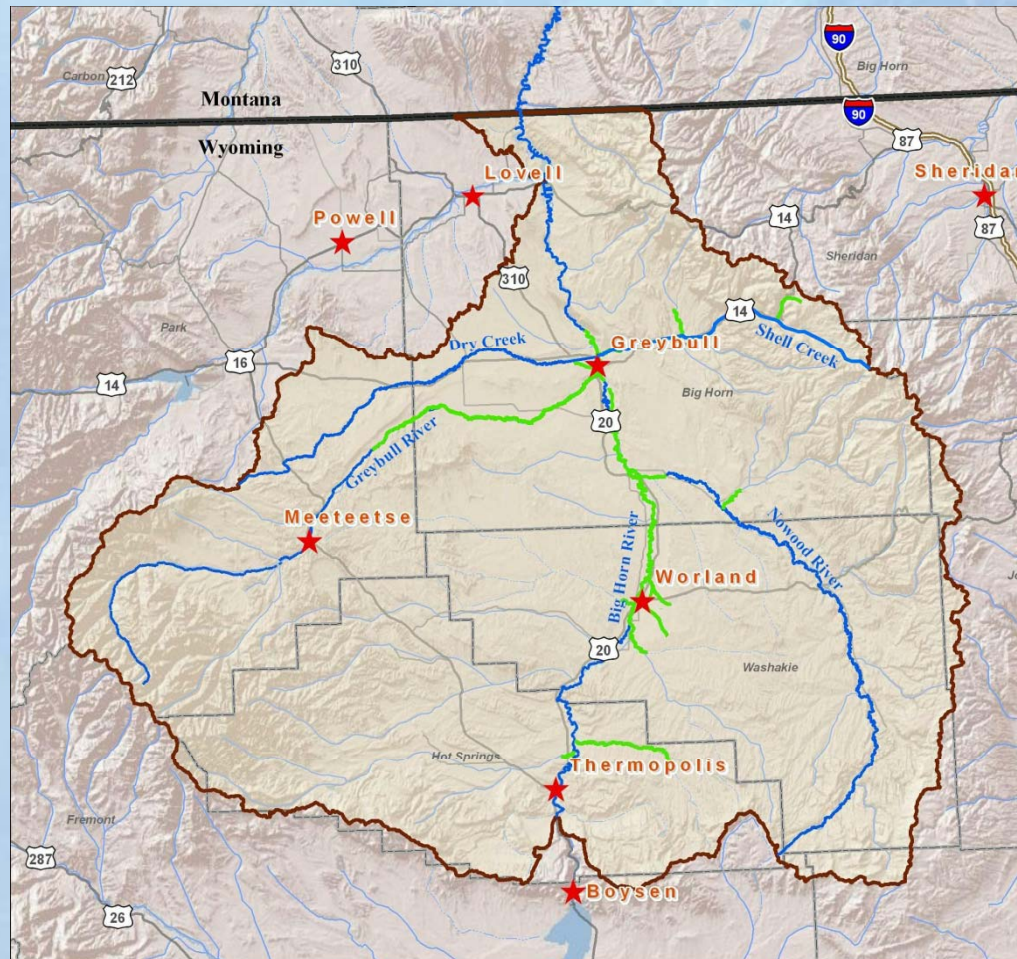
❖ Water-Quality Standards

- *Required by Clean Water Act*
- *Based on beneficial uses*
- *Numeric or narrative criteria*

❖ All Impaired Waterbodies Must Be Evaluated Using a TMDL Study

Impaired Water Bodies Within Watershed

- ❖ 16 impaired reaches
- ❖ Bacteria impairments



Why Is Bacteria an Issue?

Fecal Coliform/E. coli Facts:

- ✗ Intestines of warm-blooded animals
- ✗ Used as indicator for other pathogens
- ✗ Standard written to protect immersion recreators



How is a TMDL Calculated?

TMDL =

**Waste Load
Allocation**

*Point Sources
Permitted*



**Load
Allocation**

*Nonpoint Sources
Overland Flow*

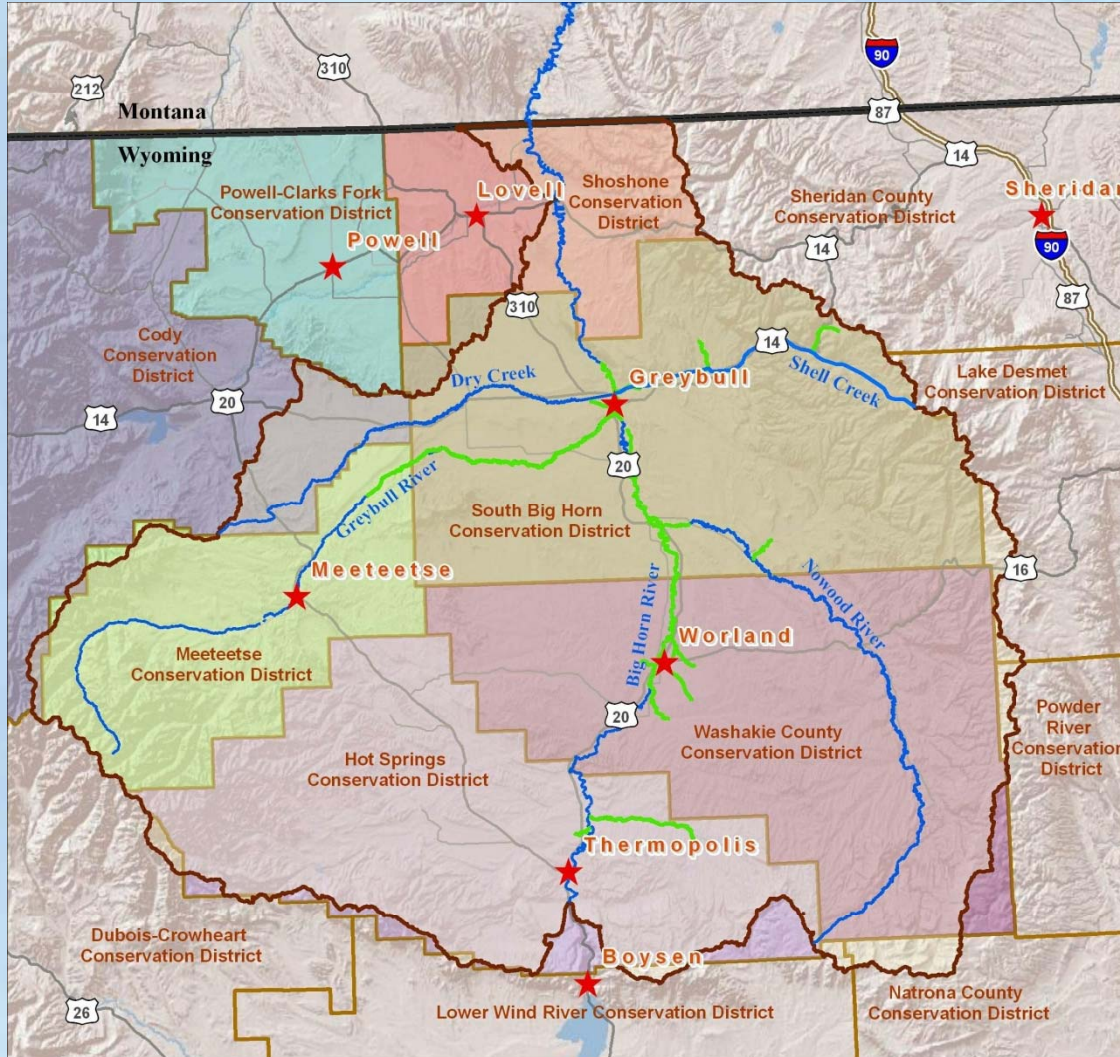


**Margin of
Safety**

Safety Factor

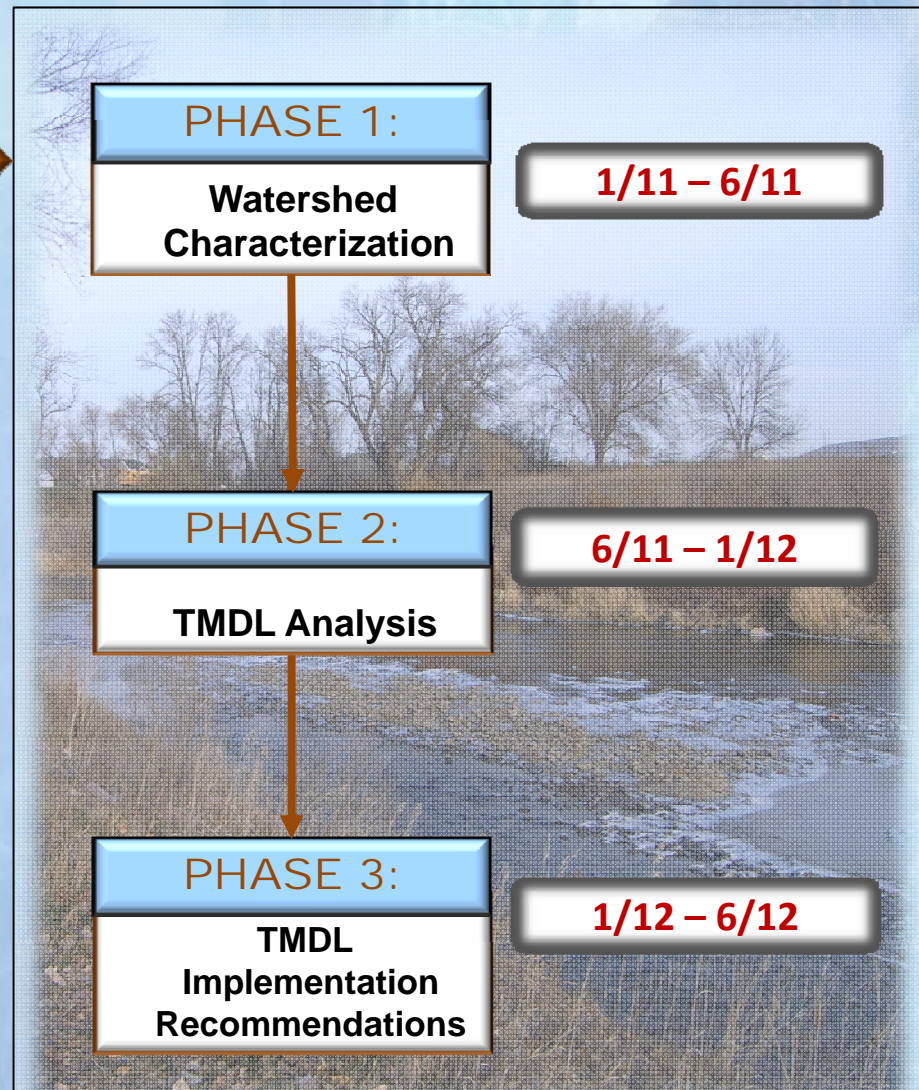


Project Area



Project Phases

Current Phase



Phase 1 - Watershed Characterization

❖ Summarize Data

- *Meteorological*
- *Bacteria Sources*
- *Hydrography*
- *Monitoring Results*
- *Irrigation*
- *Soil Characterization*

❖ Identify Data Gaps

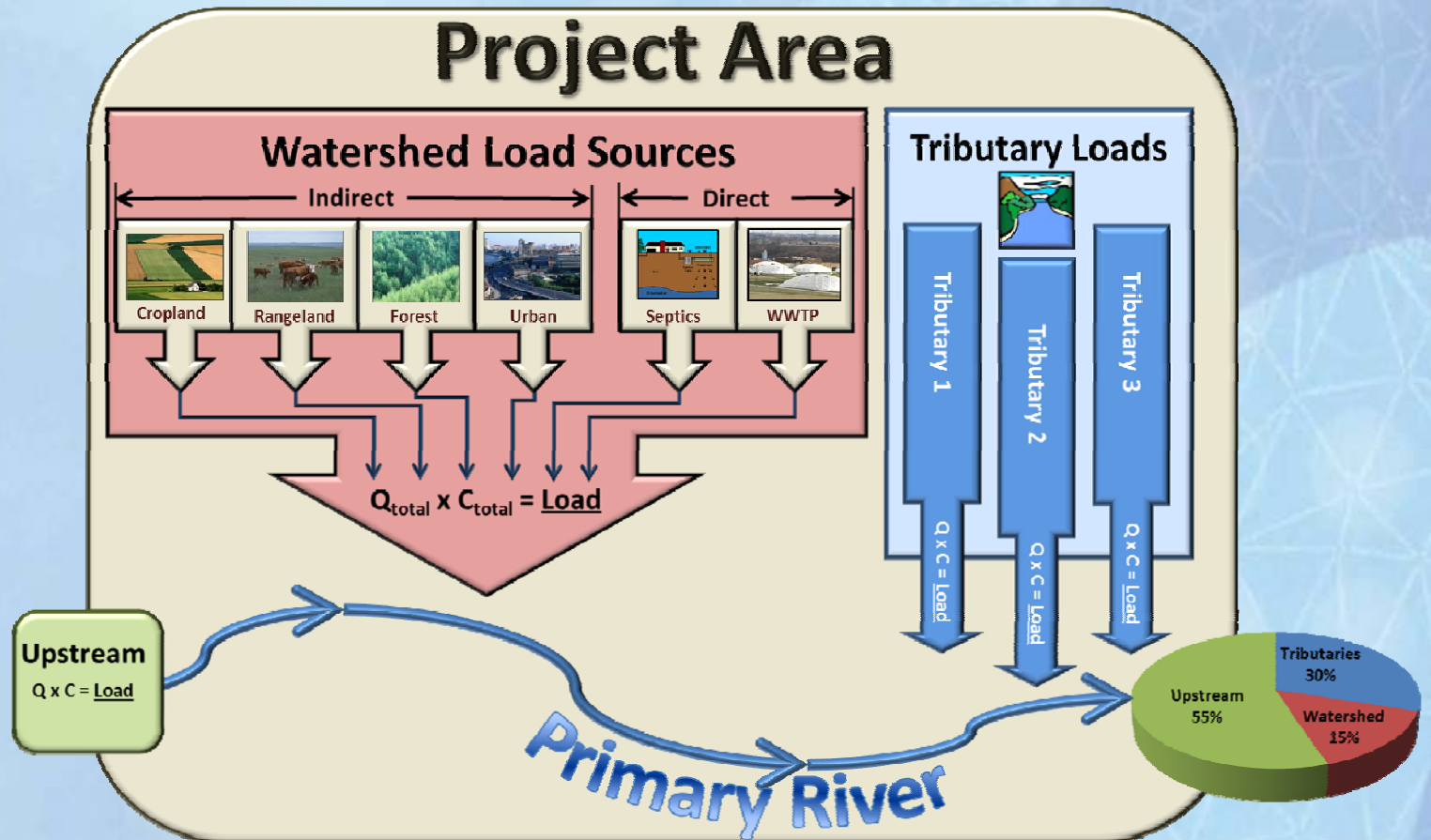




Phase 1 - Watershed Characterization Data Sources

- ❖ **Wyoming Water Development Commission (WWDC)**
- ❖ **Wyoming Department of Environmental Quality (WDEQ)**
- ❖ **State Engineers Office (SEO)**
- ❖ **United States Geological Survey (USGS)**
- ❖ **Conservation Districts**
- ❖ **Irrigation Districts**
- ❖ **County Offices**

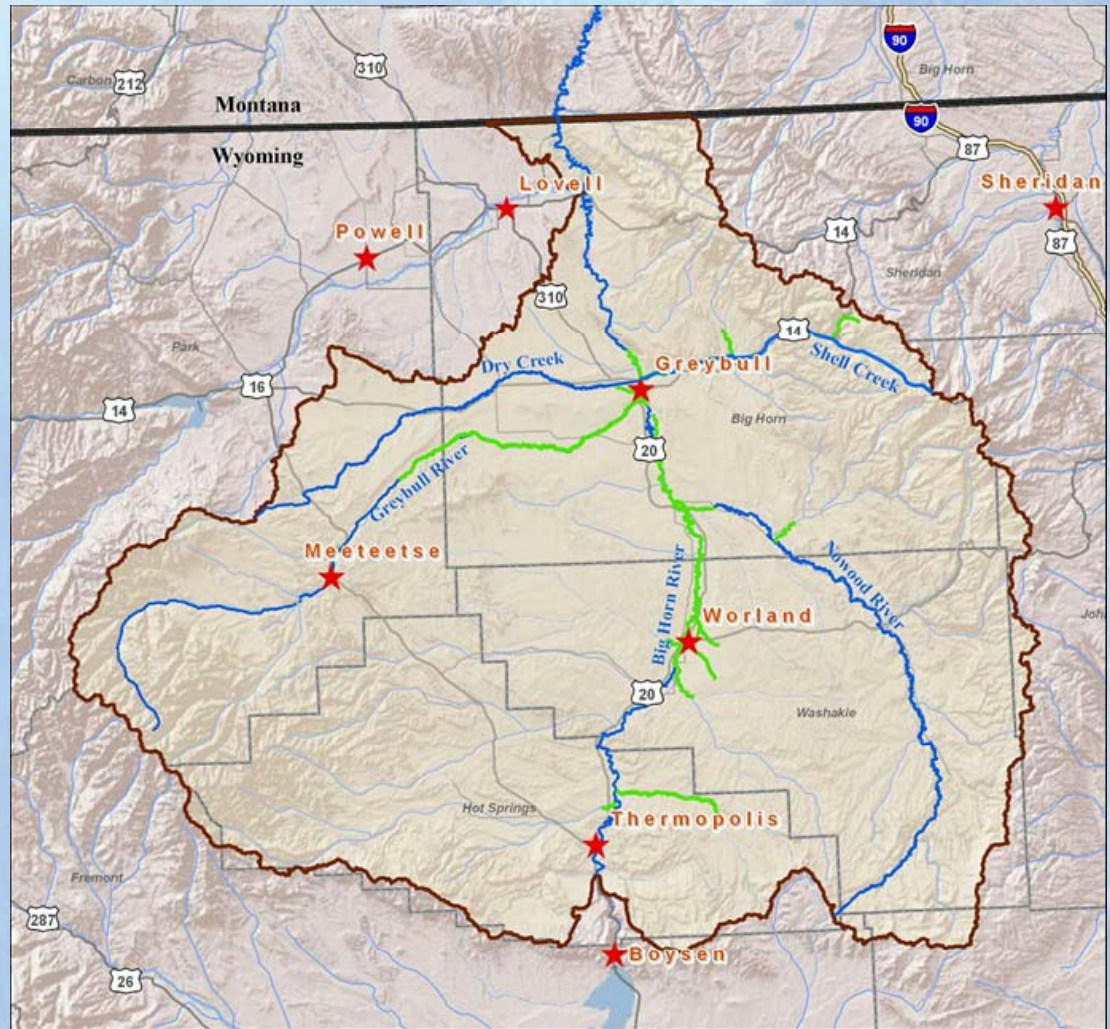
Phase 2 - TMDL Analysis



Phase 3 - TMDL Implementation Recommendations

→ *Based on:*

- Existing Watershed Plans
- Modeling Scenarios





Tools for Public Involvement

❖ Public Involvement Plan

→ *Identifies stakeholders*

→ *Keep public informed through:*

- **Quarterly updates**
 - Conservation Districts
- **Press releases**
- **Project website – to be announced**
- **Fact sheets**
- **Comment cards**



Stakeholder and Public Participation

❖ Project Kick-Off Meetings

→ *Introduced TMDL process – March 1 & 2*

❖ Public Meetings

→ *An additional six meetings*

→ *Local knowledge and feedback*

❖ Technical Steering Committee

→ *Monthly conference calls*

→ *Periodic document review*

→ *Assist in public outreach – spreading the word*

Public Meetings

2 Kick-Off Meetings

2 Public Meetings

2 Public Meetings

2 Public Meetings

PHASE 1:

Watershed
Characterization

TENTATIVE
Public Meetings
Tues July 12, 2011
At Worland
Wed July 13, 2011
At Meeteetse
Also:
Watershed Tour

PHASE 2:

TMDL Analysis

6/11 – 1/12

PHASE 3:

TMDL
Implementation
Recommendations

1/12 – 6/12

Technical Steering Committee

- ❖ Committee will advise the project team
- ❖ Composed of different stakeholder representatives



Contacts

❖ Contact Information:

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 - ***(605) 394-6400; jared.oswald@respec.com***

