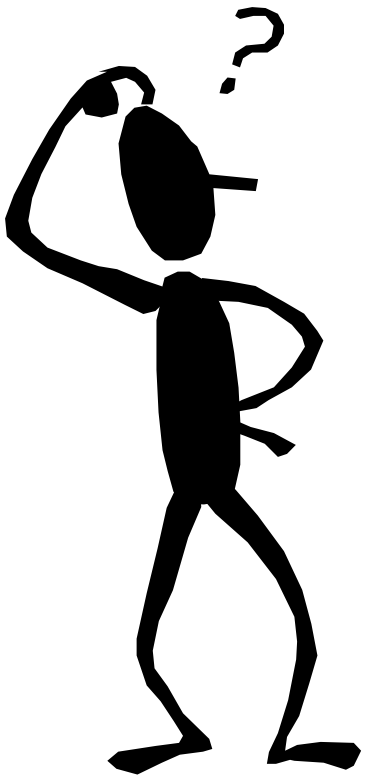

Water Quality Restoration Planning
and Total Maximum Daily Loads

What's a TMDL?



A Number?

A Plan?

YES

Regulatory Framework

- 1972 FEDERAL CLEAN WATER ACT
- Montana Water Quality Standards
- Sufficient & Credible Data/Beneficial Use Determinations
- Impaired Streams – 303(d) list
- State TMDL Law (MCA 75-5-703)
- EPA Settlement Agreement/Lawsuit

Again…What's a TMDL?

A Problem-Solving Exercise

Sample/monitor streams (is there a problem?)

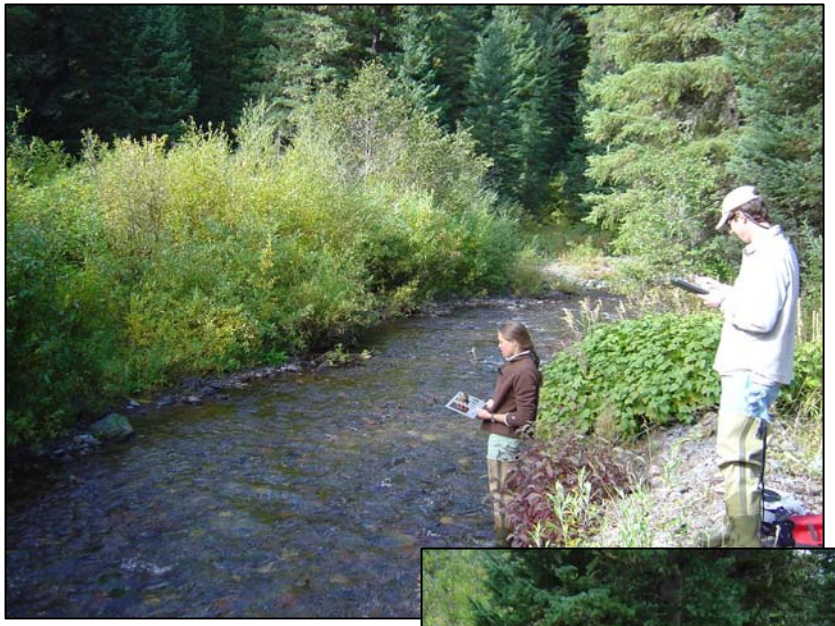
Determine the degree of the problem

Determine the source of the problem

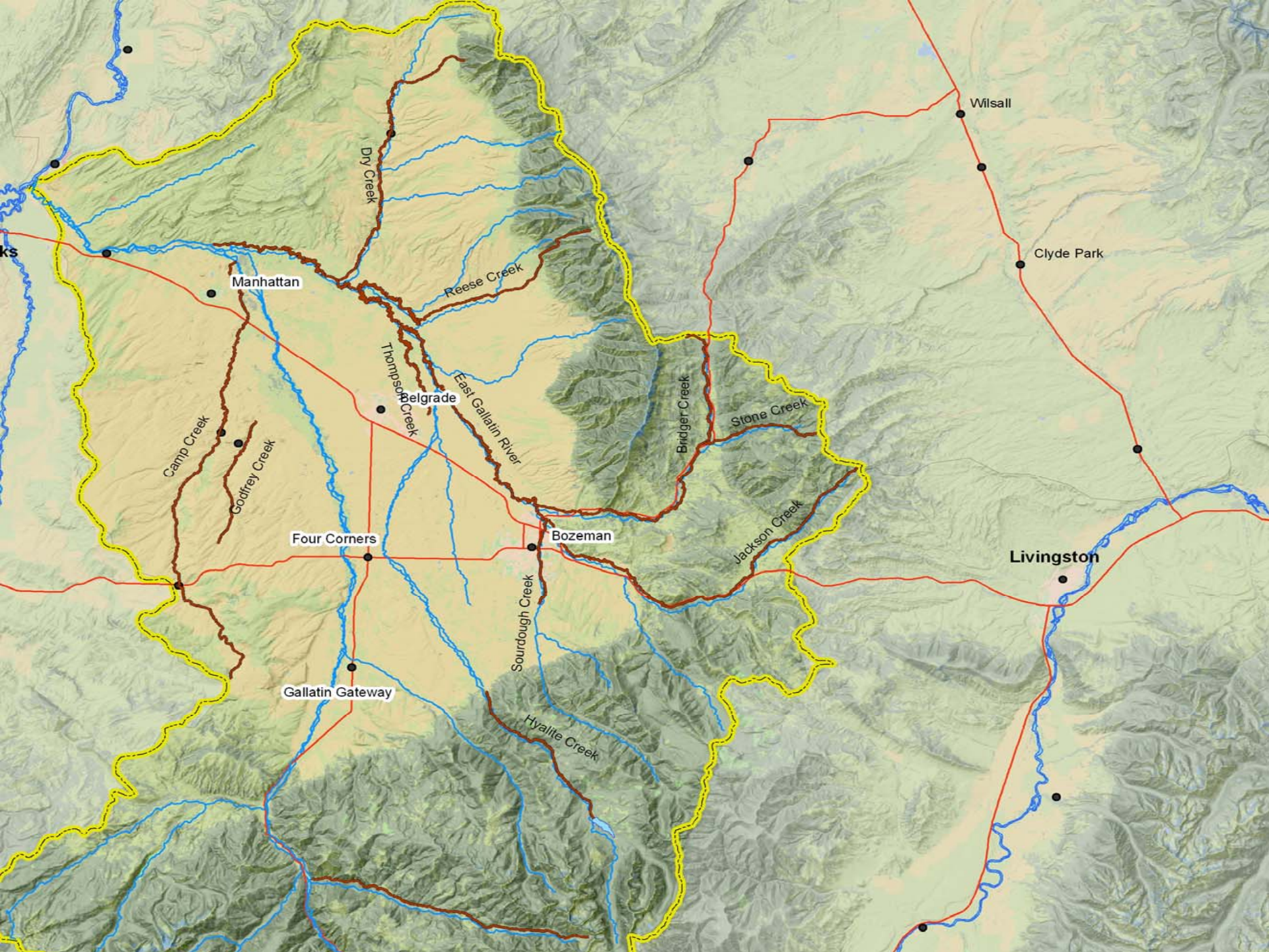
Implement solutions/on-the-ground fixes

Monitor progress and success

Sample/Assess Streams



Sample/Assess Streams


Wilsall
Clyde Park
Livingston
Manhattan
Belgrade
Bozeman
Four Corners
Gallatin Gateway
Dry Creek
Reese Creek
Thompson Creek
East Gallatin River
Bridger Creek
Stone Creek
Jackson Creek
Sourdough Creek
Hyalite Creek
Camp Creek
Godfrey Creek

Prepare TMDLs

TMDLs are pollutant-specific (calculate a ***LOAD***)

Pollutants: copper, phosphorous, sediment, PCBs…
Pollution: habitat, flow alteration, riparian degradation

What a TMDL IS:

Plan to reduce pollutant loading to a level that meets state standards

A tool for use with other tools to provide a comprehensive planning and restoration effort to meet beneficial uses.

What a TMDL IS NOT:

Not a panacea/cure-all for watershed issues

Next Steps

Begin TMDL technical planning components

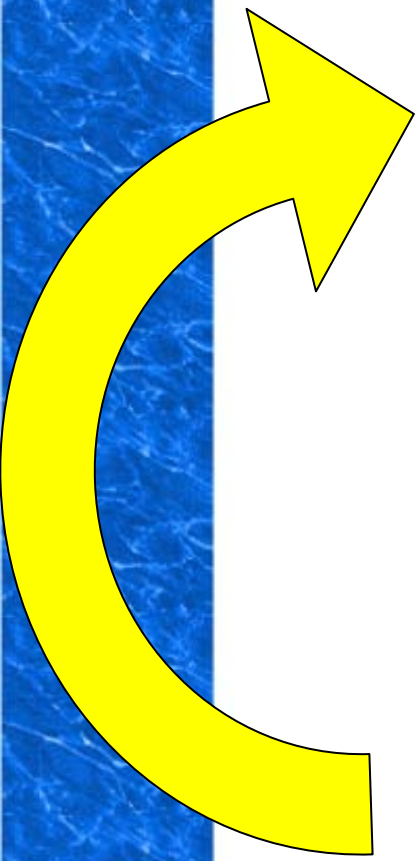
- Watershed Characterization
- Data Compilation and Evaluation
- Aerial Assessment
- Data Gaps/Sampling and Analysis Plans

Develop stakeholder and public participation strategy

- Technical Advisory Committee
- Stakeholder Involvement
- Information Dissemination Process

Final TMDL plans ~2010

TMDL – Required Components



Watershed Characterization

Water Quality Standards & Impairment Status Review

- Define standards and water quality targets
- Evaluate individual streams and define pollutant issues

Pollutant Source Assessment

- Estimate existing pollutant loading from a variety of sources

Establish Total Maximum Daily Loads & Allocations

- Defines maximum amount of pollutant allowed
- Defines pollutant reductions necessary to meet the TMDL and water quality targets
- Allocates loads to different sources

Monitoring, Restoration and *Adaptive Management*

Gallatin River TMDL Projects underway

- **Watershed Characterization**
- **Existing data compilation, review and reporting**

Gallatin River TMDL Projects pending

- **Aerial Photography Assessment**
- **Existing data compilation, review and reporting**
- **Development of Sampling and Analysis Plans for on-the-ground data collection**

Examples…

Watershed Characterization

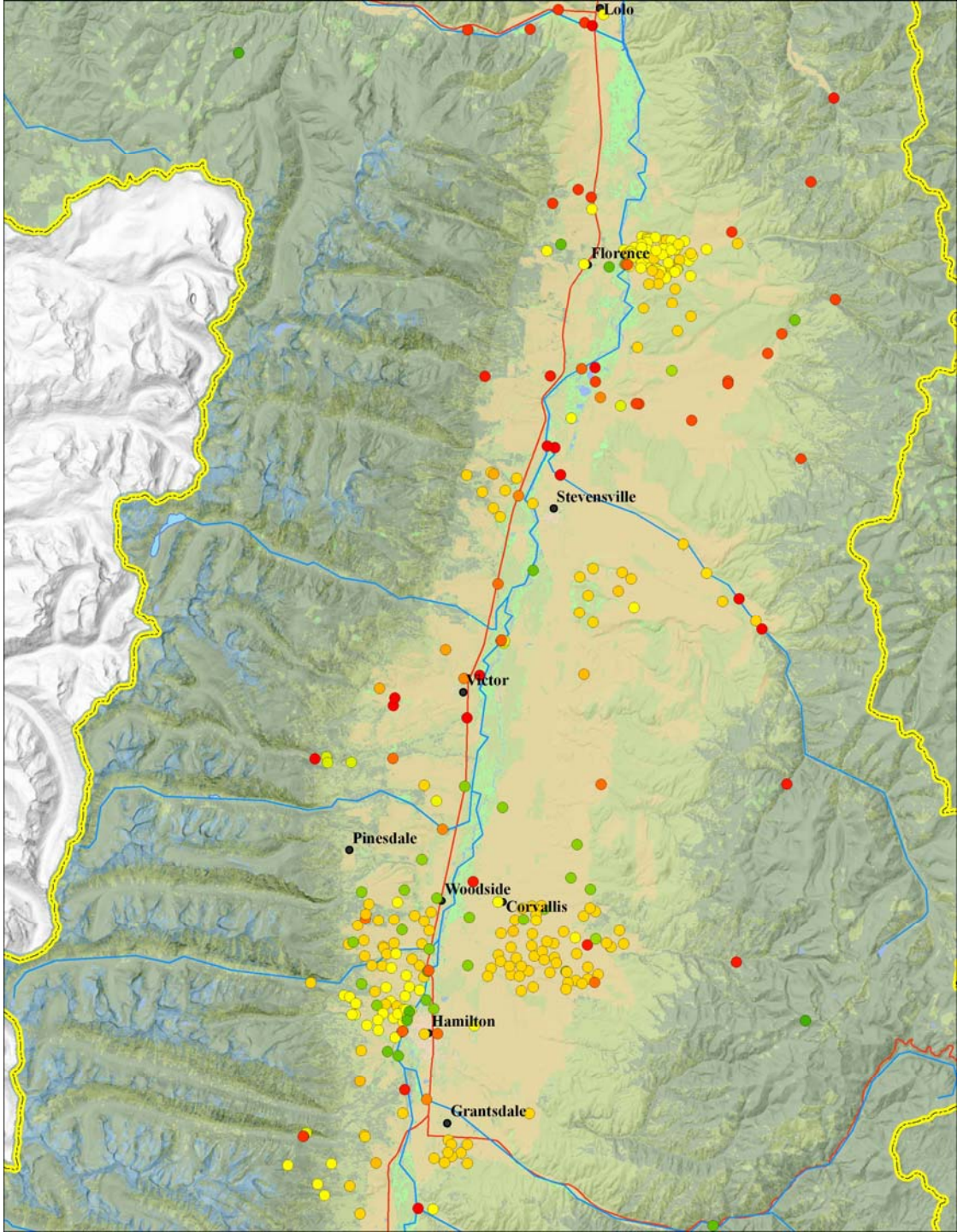
- Yaak Example
- Yaak Map1
- Yaak Map2

Data Compilation & Review

- Bitterroot Example
- Bitterroot Map1
- Bitterroot Map2

Bitterroot Nitrates (NO2/NO3)

- Number of Samples
- Year of Samples



Summary….

- **16 Impaired streams in the Lower/East Gallatin watershed**

- **Federal and State TMDL 'Law' requires development of Total Maximum Daily Loads for 'pollutants of concern'.**

- **Montana DEQ is leading technical effort to assess, analyze, and develop TMDLs**

- **GGWC is leading local technical and stakeholder involvement process.**

- **This is just the beginning…..LOTS to do….**

Contacts & Information

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Clean Water Act Information Center
http://www.deq.mt.gov/CWAIC