PTMApp

Prioritize, Target, and Measure Application

International Water Institute
Flood research and watershed education for the Red River Basin

MN Legislative Water Commission
February 18, 2016

PTMApp Presentation Outline

- International Water Institute Background
- PTMApp Evolution
- What is PTMApp?
- Example Products and Uses
- PTMApp Status
- Next Steps
- More Information

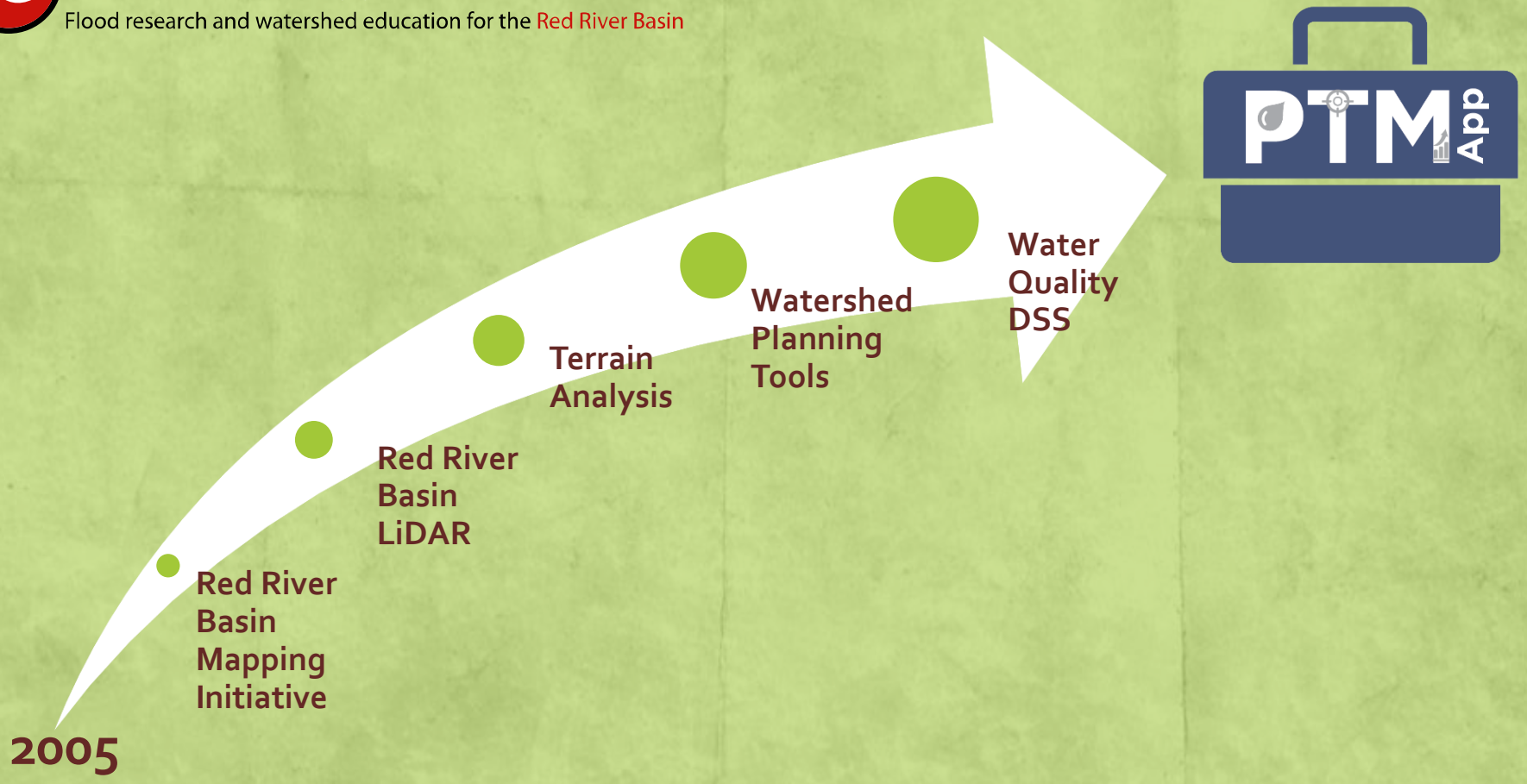
INTERNATIONAL WATER INSTITUTE BACKGROUND

Founded after 1997 Red River of the North Flood

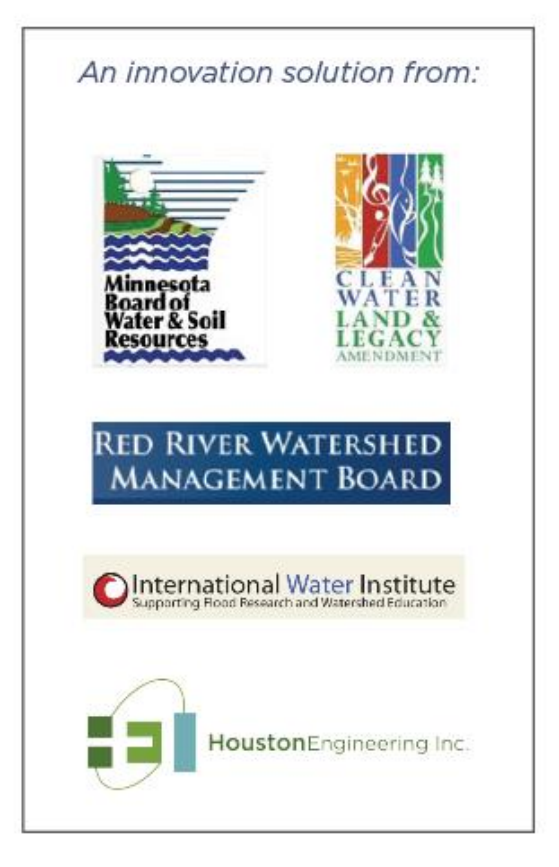
Mission:
Watershed Research
Watershed Education

PTMApp TIMELINE

International Water Institute
Flood research and watershed education for the Red River Basin



PROJECT TEAM



Funding

- Clean Water Fund

Project Team

- Minnesota Board of Water & Soil Resources
- Red River Watershed Management Board
- International Water Institute

Production

- International Water Institute
- Houston Engineering, Inc.

What is PTMApp?

PTMApp COMPONENTS

Create Products Using
PTMApp–DESKTOP

- Free for download and use
- ArcGIS Toolbar
- Based planning data included
- Creates products
- Includes example uses

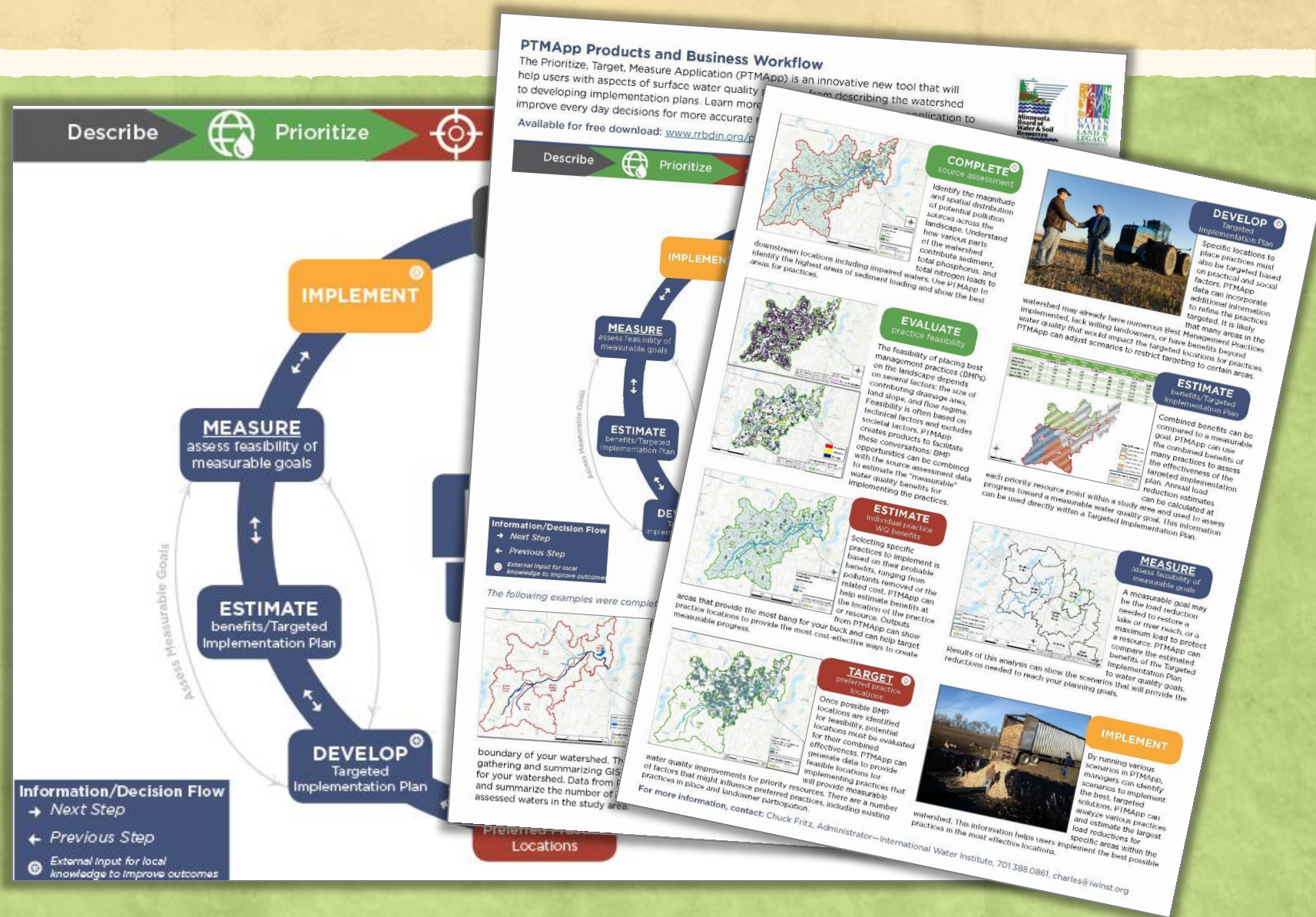
In Use

Final Testing

Internet Access of Product Using
PTMApp–WEB

- Targeted Implementation Strategy
- Grant Applications
- One Watershed One Plan
- Refine WRAPs

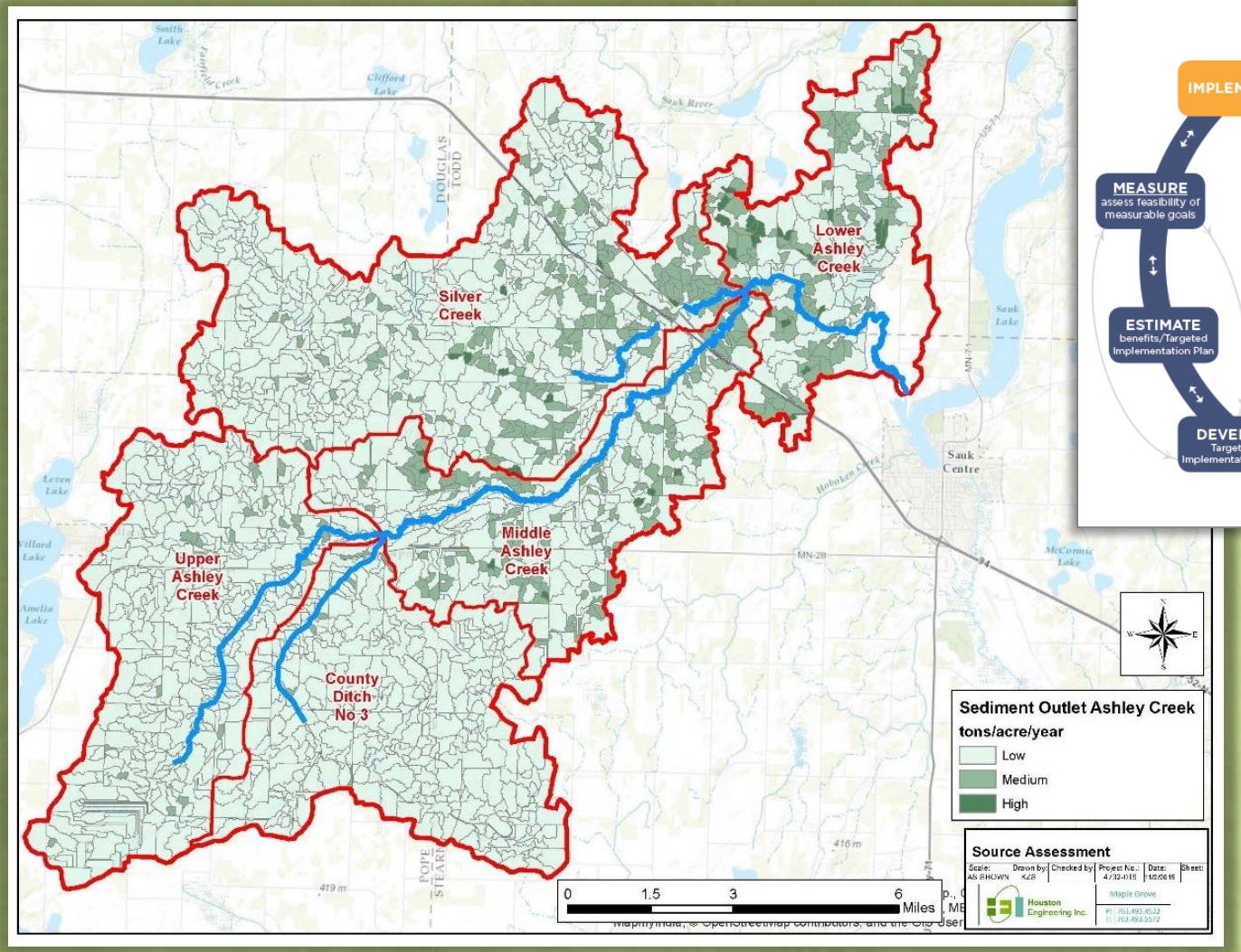
Prioritize, Target, and Measure

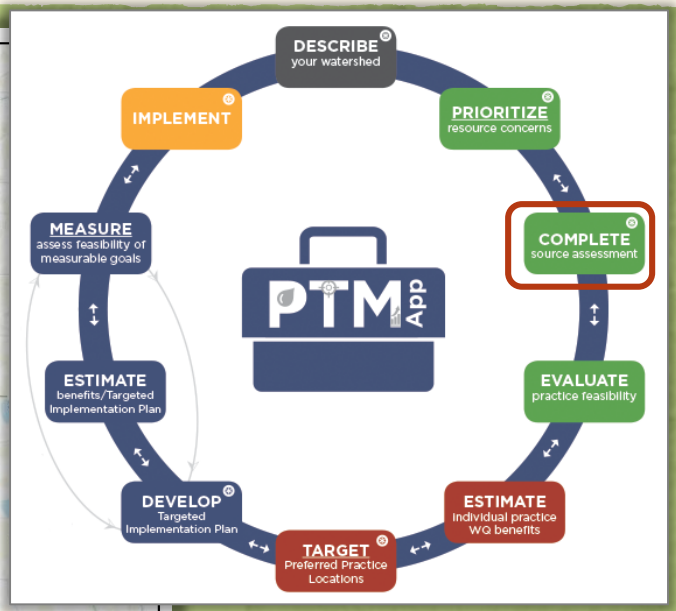


Example Products and Uses

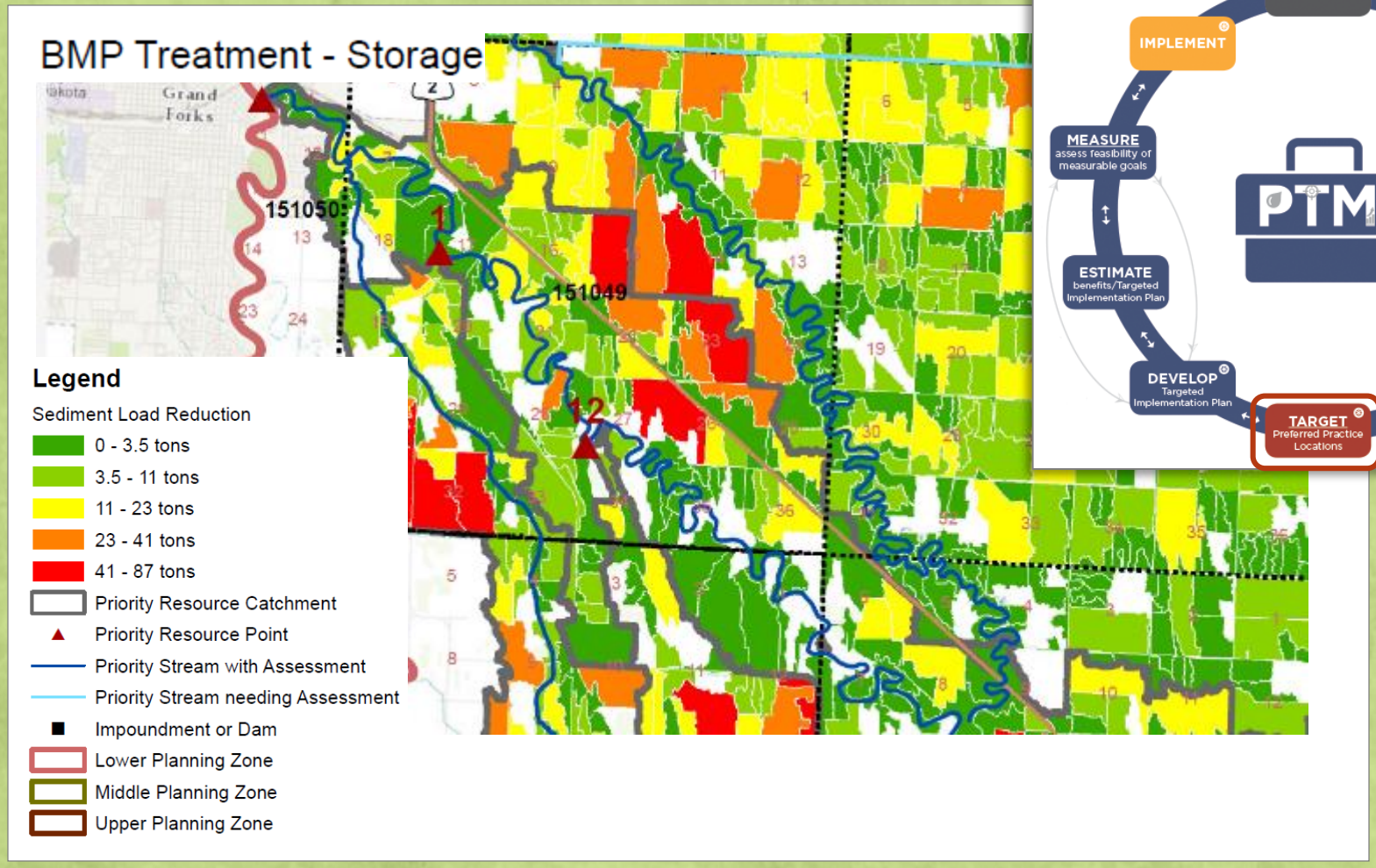
Selected PTMApp data/products

PRIORITIZE: Complete Source Assessment of Loads



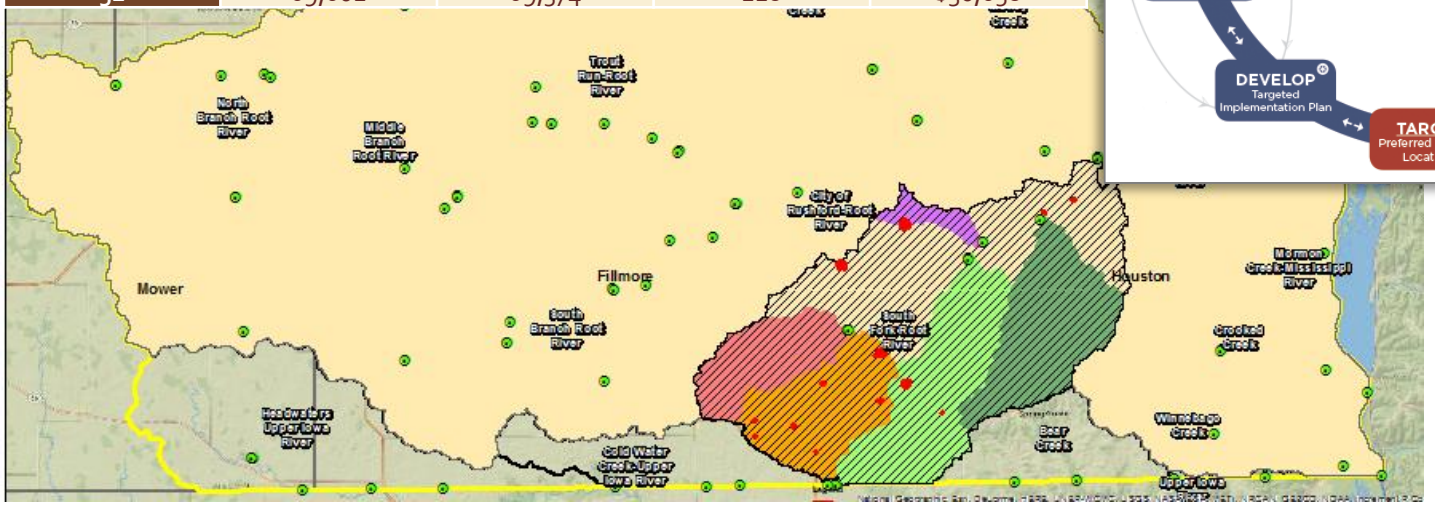


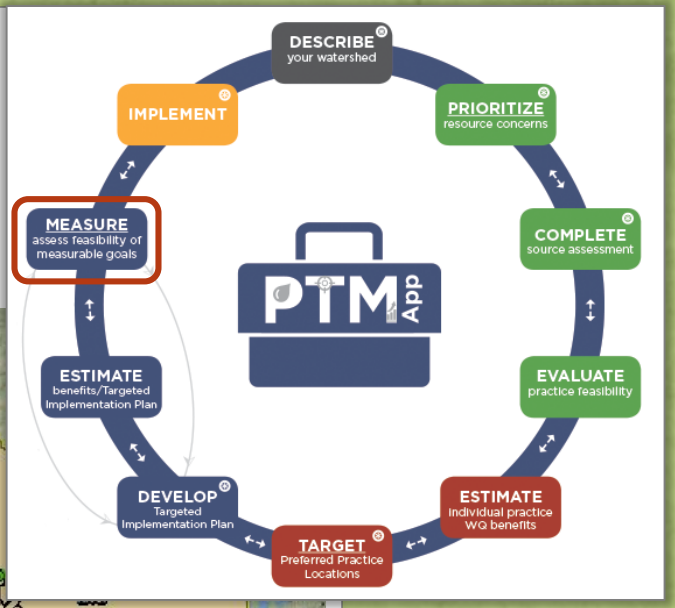
TARGET: Estimate Practice / Relative Load Reduction (at any desired downstream location)



MEASURE: Benefits of the Plan

Priority Resource Point ID	Annual Average Sediment to Resource	Annual Average Sediment After Treatment	Annual Average Sediment Reduction	Total Cost
	----------tons/year----------			$
13	13,569	13,524	44	$30,658
27	28,928	28,928	0	$0
28	44,327	43,800	527	$15,575
33	37,720	37,632	88	$4,183
36	11,674	11,418	256	$3,622
39	38,973	38,973	0	$0
51	69,602	69,374	228	$30,658

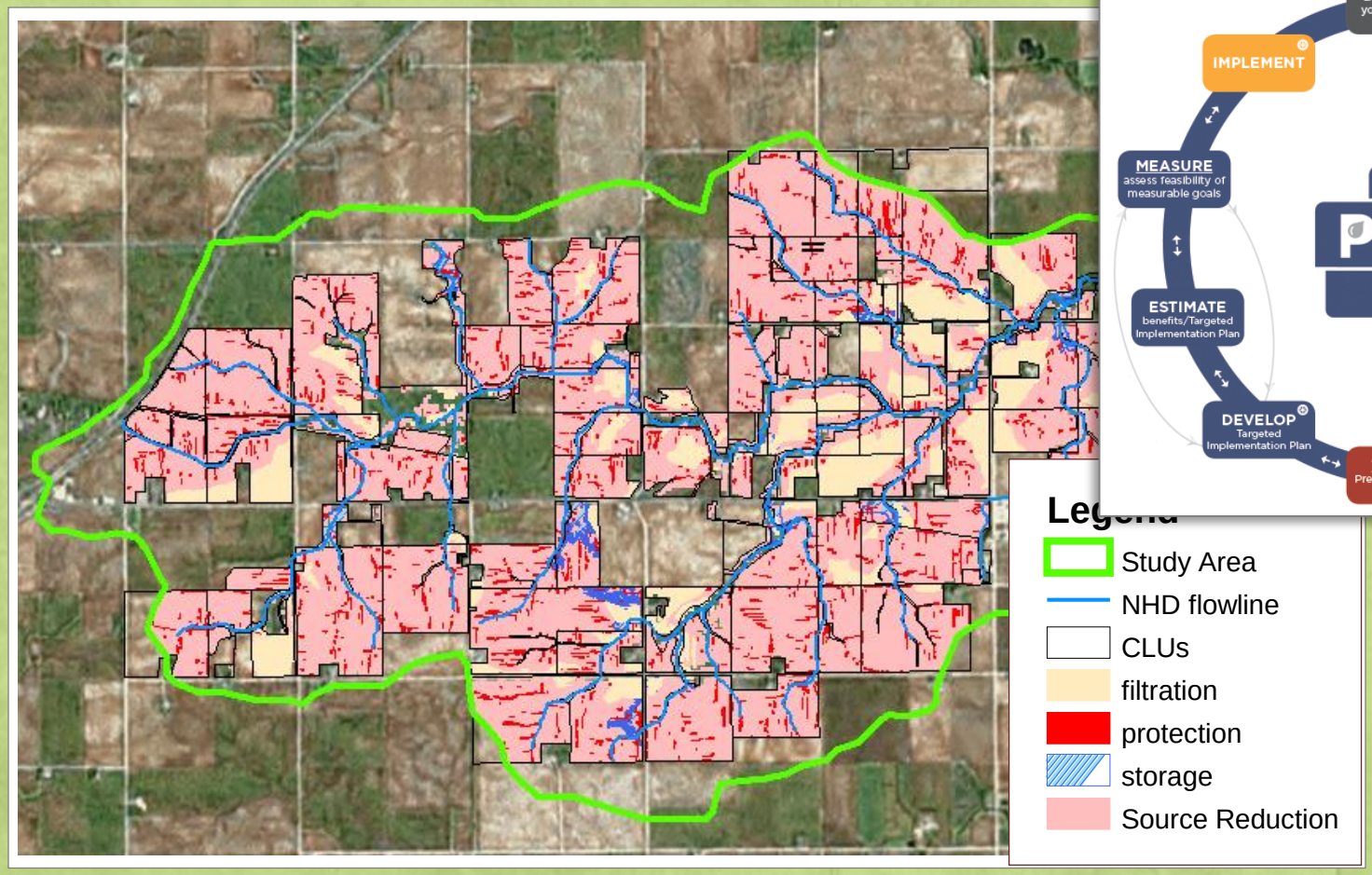


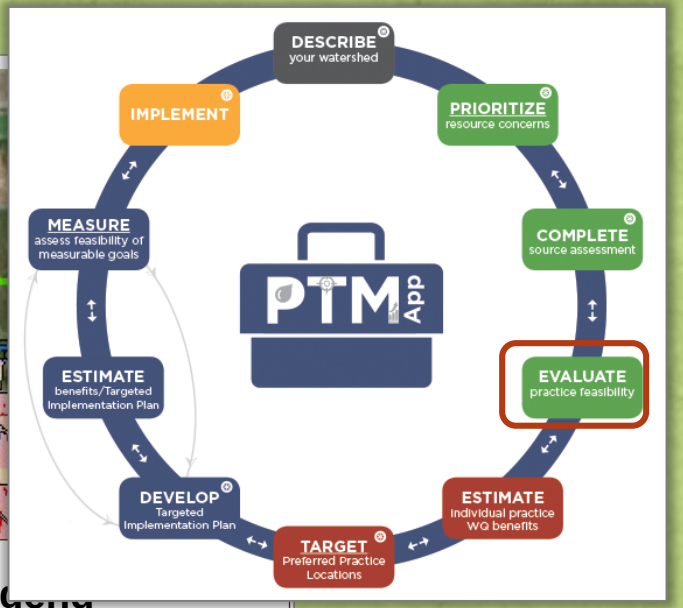


Gage effectiveness at multiple resources locations from all the BMPs implemented upstream=know how each BMP is performing!

Buffers Alternative Practice

Mower County Illustration

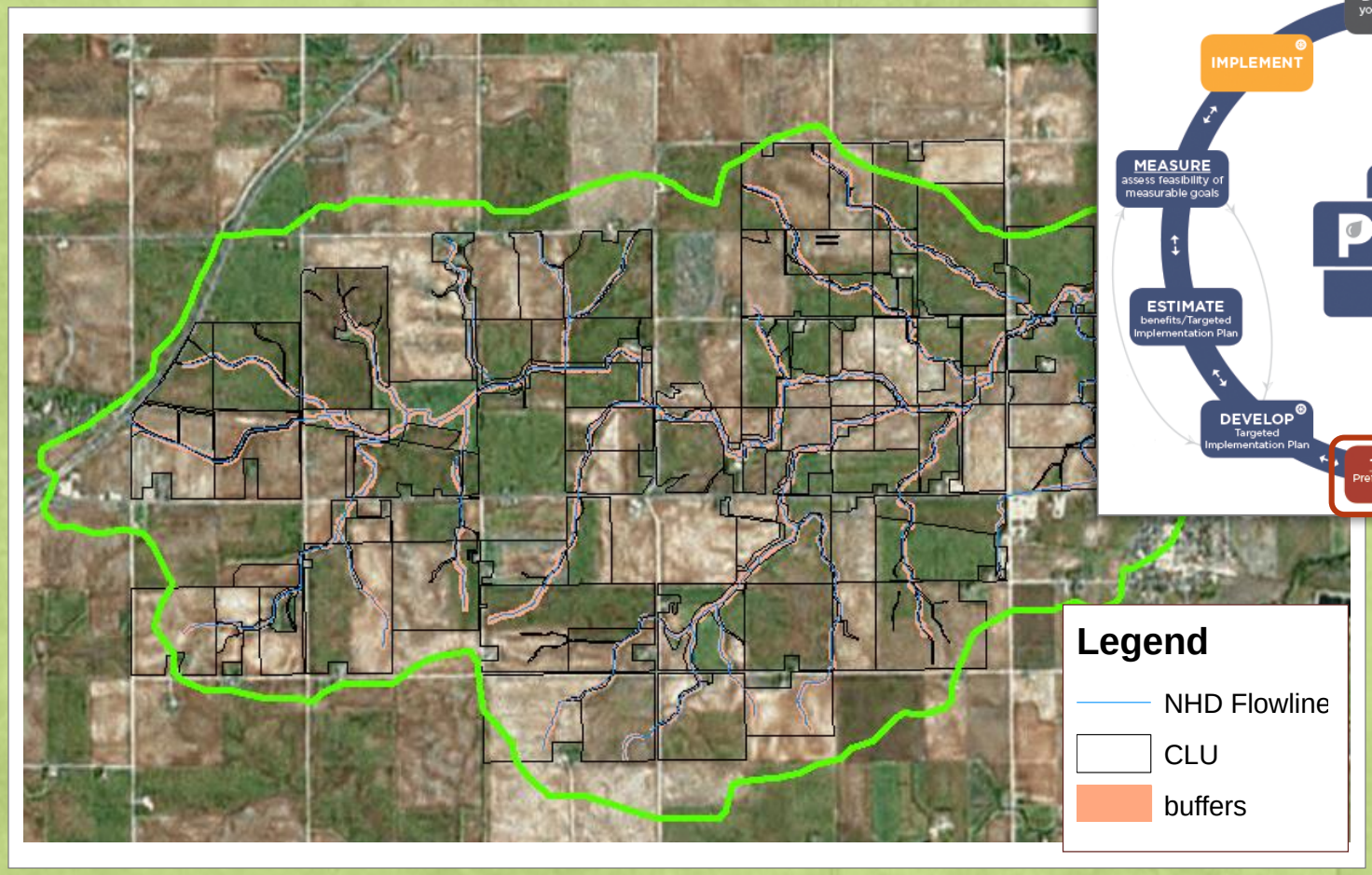


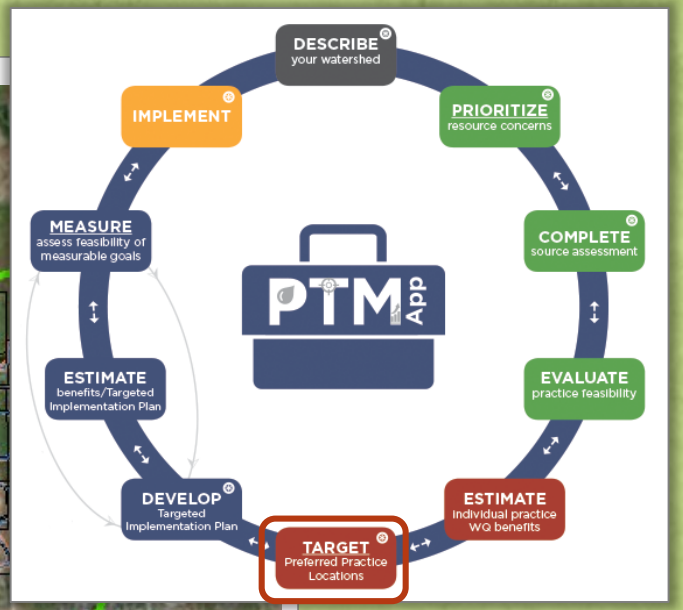


Courtesy: MN Soybean Growers Association

TARGET: "Buffers"

Mower County Illustration





Courtesy: MN Soybean Growers Association

TARGET: "Buffers"

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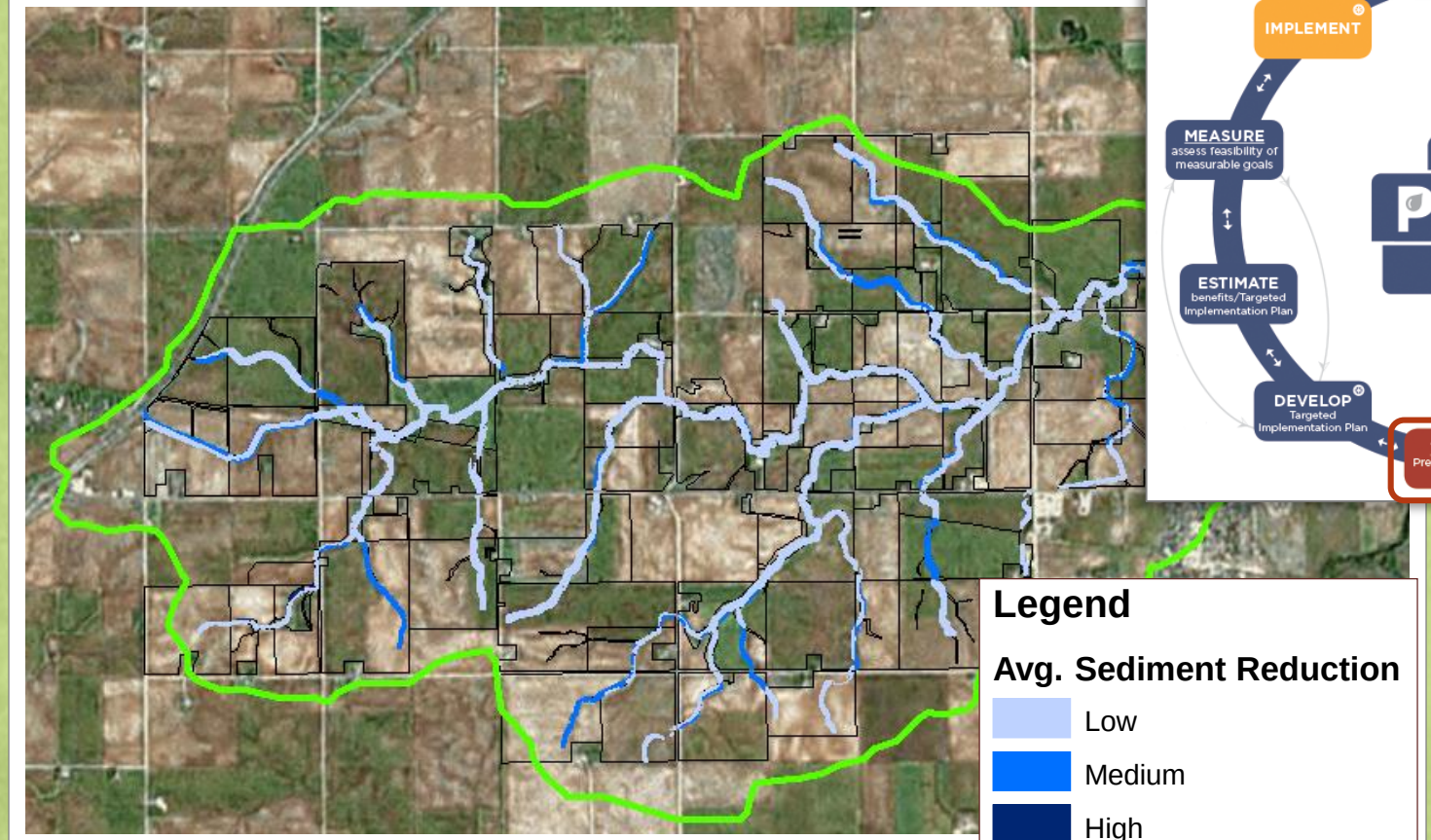

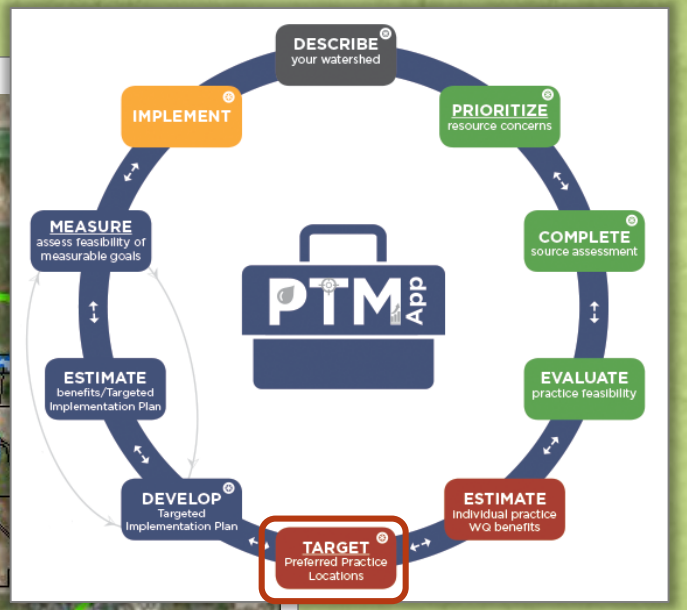

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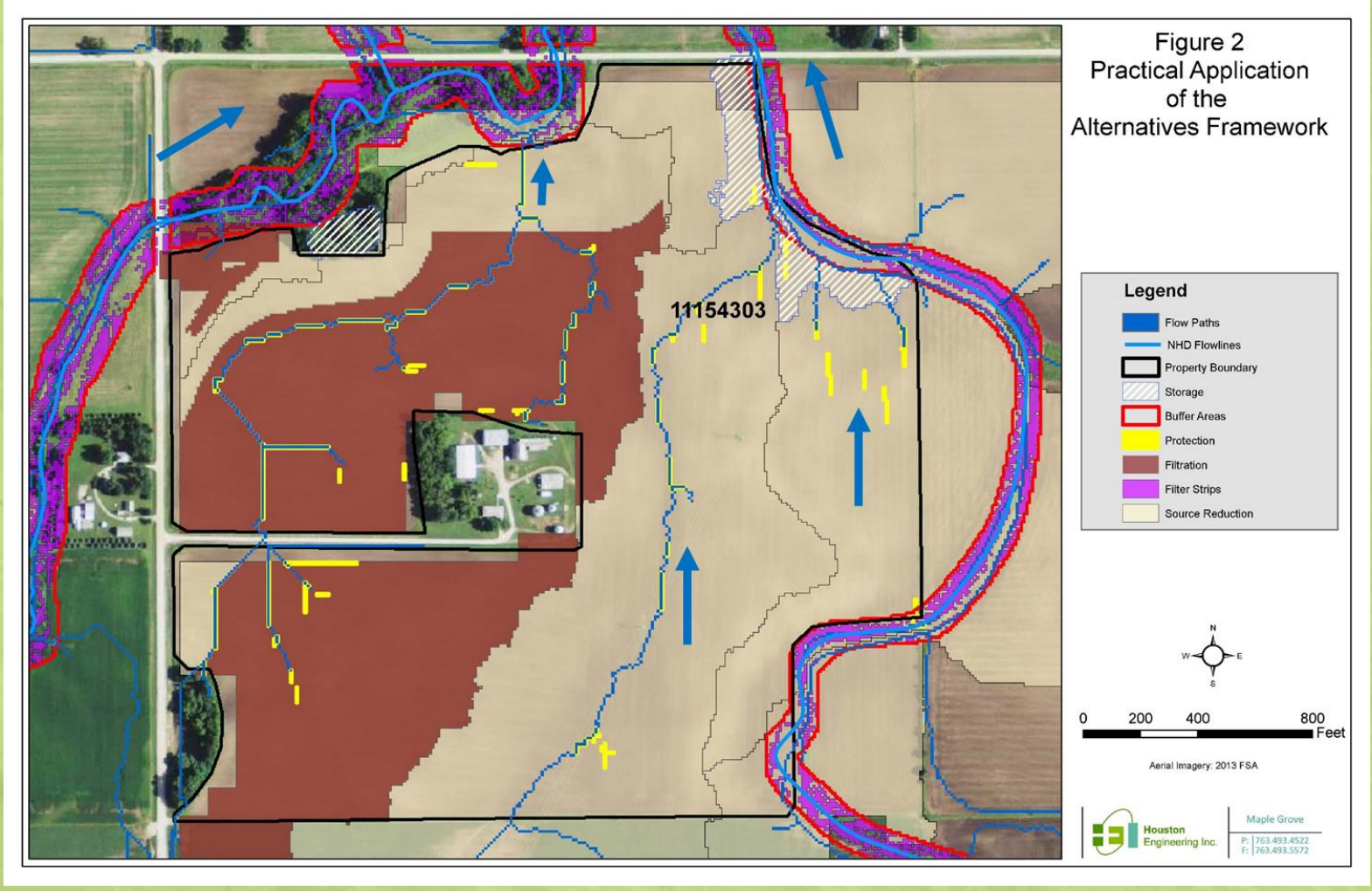
TARGET: "Buffers"

Mower County Illustration

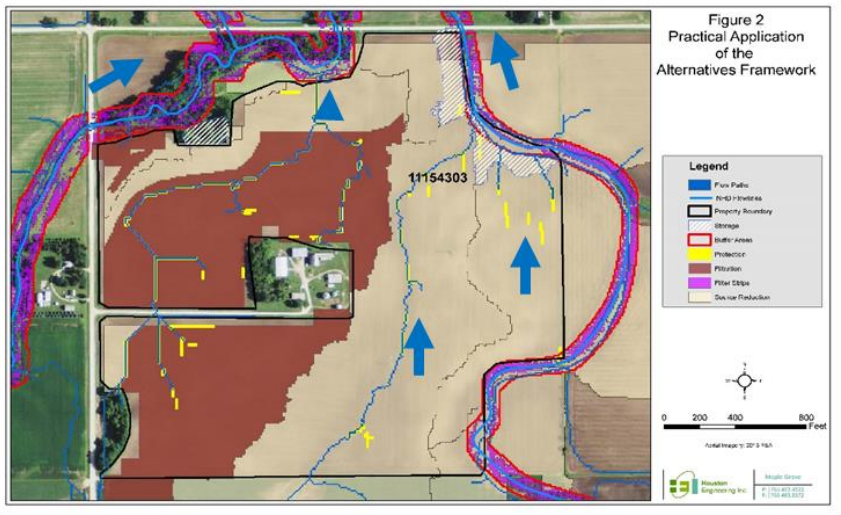


Courtesy: MN Soybean Growers Association

TARGET: "Buffers"

Mower County Illustration

Check All That Apply	Assessment Method
✓	PTMApp
	NRCS Conservation Plan
	ACPF toolbar
	Agren Inc. Tools
	Technical Assistance
	Other (write in description)



Land Parcel: 11154303

Water Quality Protection Practice Menu

Practice Type	Count	Sediment Reduction‡, tons/year				Total Nitrogen Reduction*, lbs./year				Agricultural Profitability†, $/year
		Sum	Mean	Max	Min	Sum	Mean	Max	Min	Mean
Storage	3	3.3	1.1	1.7	0.1	11.1	3.7	8.0	0.6	Low
Filtration	4	2.1	0.5	1.5	0.1	74.2	18.6	33.7	5.7	High
Protection	58	0.3	0.0	0.1	0.0	8.6	0.1	0.8	0.1	High
Source Reduction	7	119.7	17.1	41.0	0.0	274.7	39.2	81.7	0.2	Medium
Vegetative Buffer	71	5.4	0.1	2.0	0.0	103.2	1.5	26.4	0.0	Medium

‡ Applicable when considering the treatment of overland flow.

* Applicable when considering the treatment of subsurface or tile flow.

† Suggest considering the profitability of the land affected by buffer requirements in addition to the water quality metrics.

Courtesy: MN Soybean Growers Association

PTMApp STATUS

- PTMApp Desktop Testing– **Complete**
  PTMApp applied in two 1W1P Pilot Watersheds

- PTMApp Web Programming – **Nearly Complete**
  Beta Version: January 2016

PTMApp NEXT STEPS

- **BWSR Adoption ($335,000/yr)**
  - Business Plan Implementation
  - Training
  - Education & Outreach
  - 1w1p use
  - Development
- **Data Needs ($2.8 million)**
  - Hydro conditioned Lidar
  - Time of travel grids
- **Enhancements identified – gaps ($600,000)**
  - Near channel sediment sources
  - Altered hydrology

"Availability of good information lies at the heart of effective and equitable decision-making"

(Allen and Kilvington 1999)

InternationalWaterInstitute

Flood research and watershed education for the Red River Basin

Charles Fritz

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Red River Basin Decision Information Network

WWW.RRBDIN.ORG