CHOOSE YOUR OWN ADVENTURE #1

YOU'RE THE STAR OF THE STORY!
CHOOSE FROM 6 POSSIBLE ENDINGS.

COMPLIANCE WITH THE PERMIT

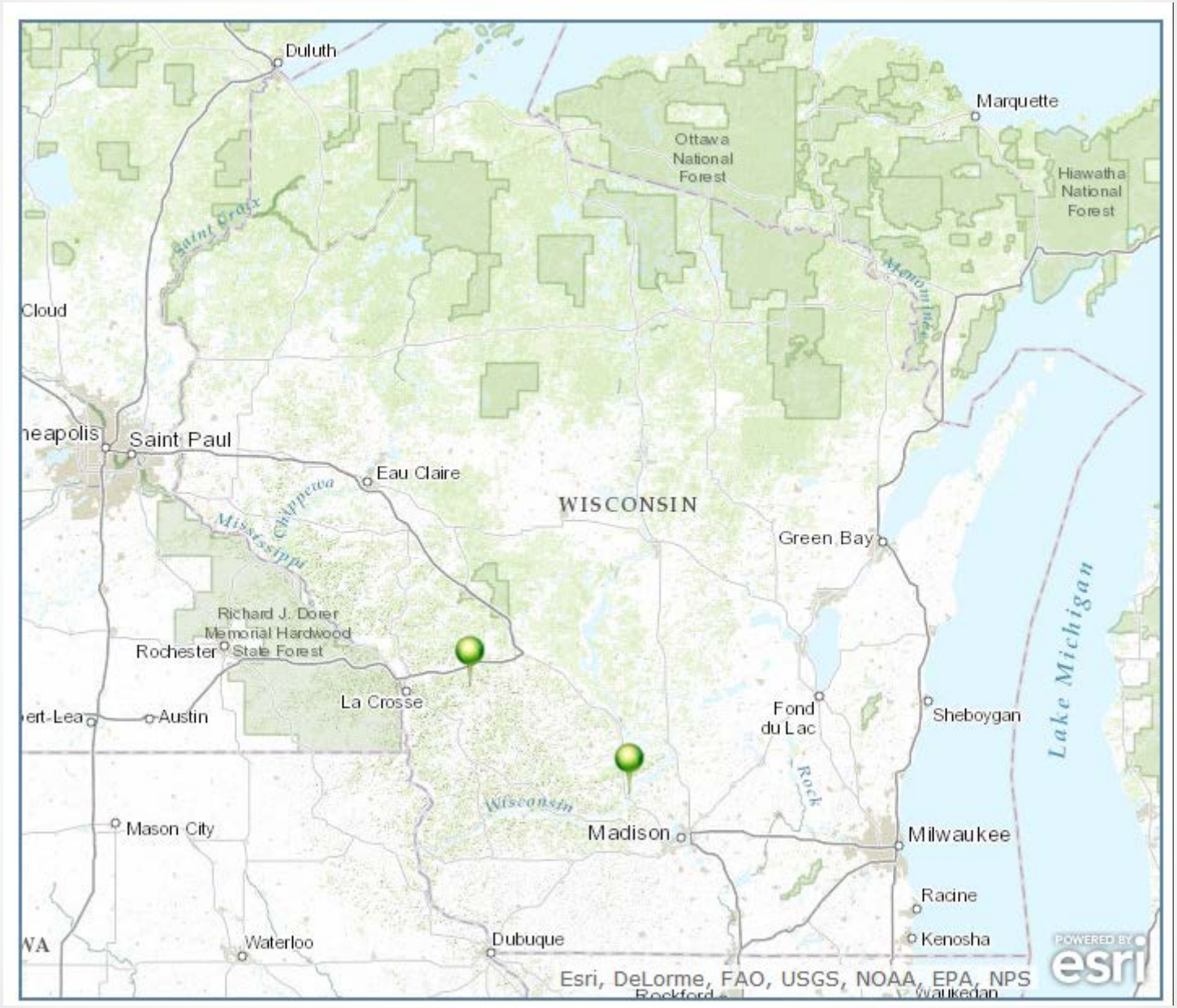
BY AMY GARBE AND AMANDA MINKS

WISCONSIN
DEPT. OF NATURAL RESOURCES

Compliance Options

- Water Quality Trading
- Adaptive Management

- Plant Upgrade
- Variance


Duluth
Marquette
Ottawa
National
Forest
Hiawatha
National
Forest
Saint Croix
Menominee
Cloud
Saint Paul
Eau Claire
Chippewa
Mississippi
WISCONSIN
Green Bay
Lake Michigan
Richard J. Dorer
Memorial Hardwood
State Forest
Rochester
La Crosse
Austin
Fond
du Lac
Sheboygan
Rock
Wisconsin
Mason City
Madison
Milwaukee
Racine
Kenosha
Waterloo
Dubuque
Rockford
Waukegan
Esri, DeLorme, FAO, USGS, NOAA, EPA, NPS
POWERED BY esri

The DNR has given your facility a new permit that includes water quality based phosphorus limits.

Go on to the next slide.

Step #1: Optimization

You begin to optimize your plant.

- Talk to industries
- Up the chemical dosage
- Multiple addition points

Results? Bio P: 0.2 - 0.09 mg/L

Go on to the next slide.

Are you able to get your phosphorus low enough to meet your limits?

Yes, I can meet my limits with optimization. Turn to slide 28.

No, my final limits are too restrictive to meet by optimization. Turn to slide 7.

You tried to optimize your plant, and yet you were unsuccessful in meeting your final phosphorus limits.

You are interested in working within your watershed, turn to slide 8.

Spending money outside of your municipality is not an option, turn to slide 23.

Step #2: Loading

Columbus WWTP: 1990 lbs/yr – 290 lbs/yr = 1700 lbs/yr

Deerfield WWTP: 610 lbs/yr – 90 lbs/yr = 520 lbs/yr

Waterloo WWTP: 613 lbs/yr – 369 lbs/yr = 244 lbs/yr

Go on to the next slide.

Calculations

Columbus WWTP: 1820 lbs/yr – 240 lbs/yr = 1580 lbs/yr

1.256 MGD × 0.52 mg/L × 8.34 = 5.45 lbs/day

5.45 lbs/day × 365 days/ yr = 1990 lbs/yr

Meet 217.13 final phosphorus limits

1.256 MGD × 0.075 mg/L × 8.34 = 0.79 lbs/day

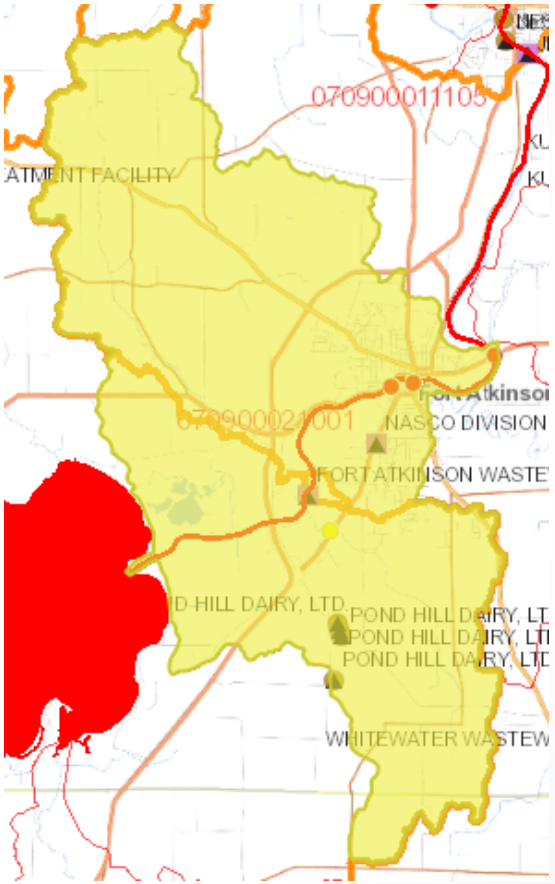
0.79 lbs/day × 365 days/yr = 290 lbs/yr

Columbus WWTP: 1990 lbs/yr – 290 lbs/yr = 1700 lbs/yr

Go on to the next slide.

Step #3: Watershed

- HUC-12
- PRESTO Results
- Other Point Sources
- Land cover
- Phosphorus Results



Go on to the next slide.

Step #2: Loading

Columbus WWTP: 1990 lbs/yr – 290 lbs/yr = 1700 lbs/yr

Deerfield WWTP: 610 lbs/yr – 90 lbs/yr = 520 lbs/yr

Waterloo WWTP: 613 lbs/yr – 369 lbs/yr = 244 lbs/yr

Go on to the next slide.

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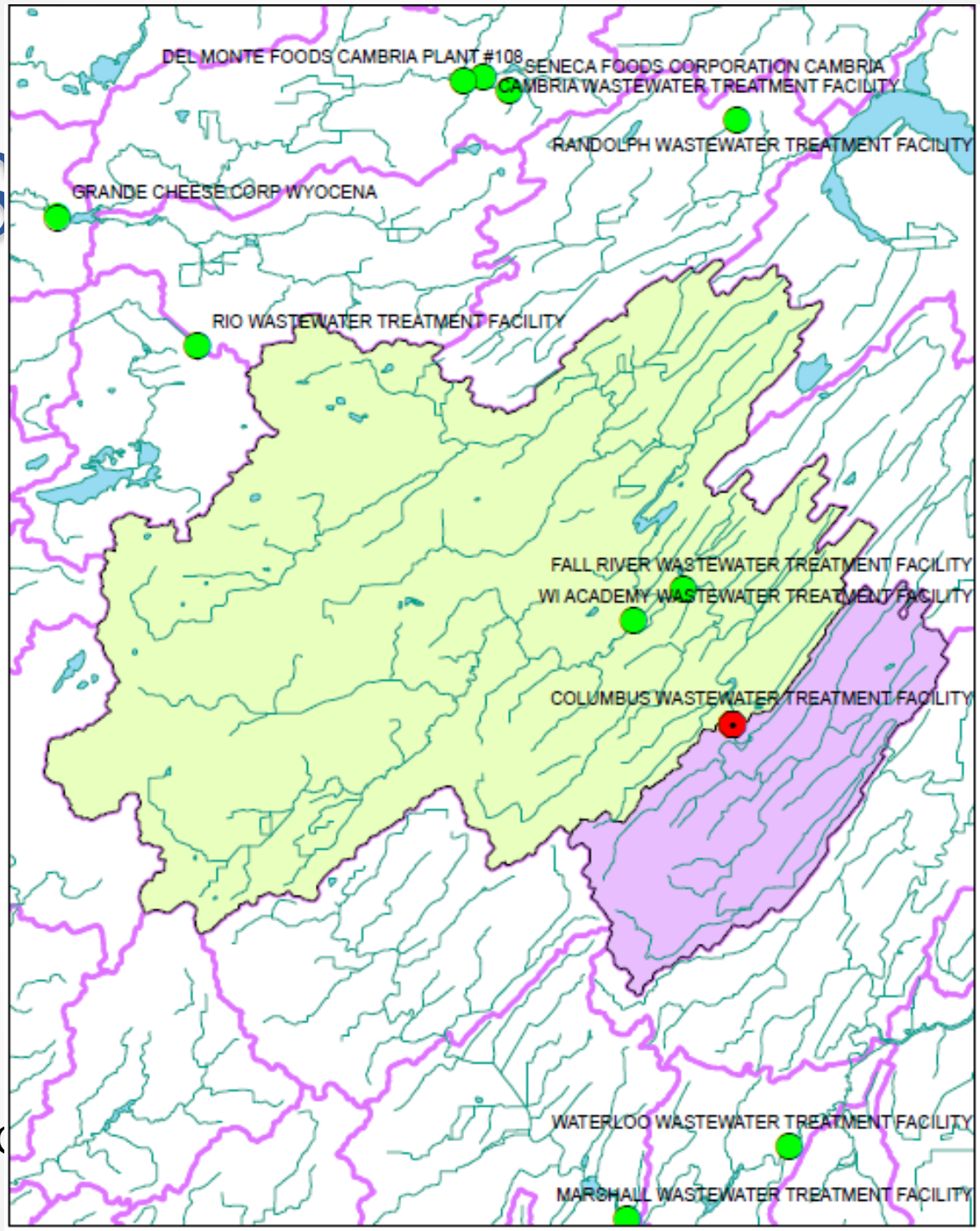
DEL MONTE FOODS CAMBRIA PLANT #108
SENECA FOODS CORPORATION CAMBRIA
CAMBRIA WASTEWATER TREATMENT FACILITY
RANDOLPH WASTEWATER TREATMENT FACILITY
GRANDE CHEESE CORP WYOCENA
RIO WASTEWATER TREATMENT FACILITY
FALL RIVER WASTEWATER TREATMENT FACILITY
WI ACADEMY WASTEWATER TREATMENT FACILITY
COLUMBUS WASTEWATER TREATMENT FACILITY
WATERLOO WASTEWATER TREATMENT FACILITY
MARSHALL WASTEWATER TREATMENT FACILITY

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Step #4: Compare

Water Quality Trading

- Trade Ratio (assume 2:1)
- Total credits: 3400 lbs/yr

Adaptive Management

- In-Stream: 0.344 mg/L
- Total Reductions Needed: 5270 lbs/yr

Columbus WWTP: 1990 lbs/yr – 290 lbs/yr = 1700 lbs/yr

Congratulations! You have selected Water Quality Trading as your compliance option. Your permit will now include a compliance schedule for BMPs to become effective.

The End.

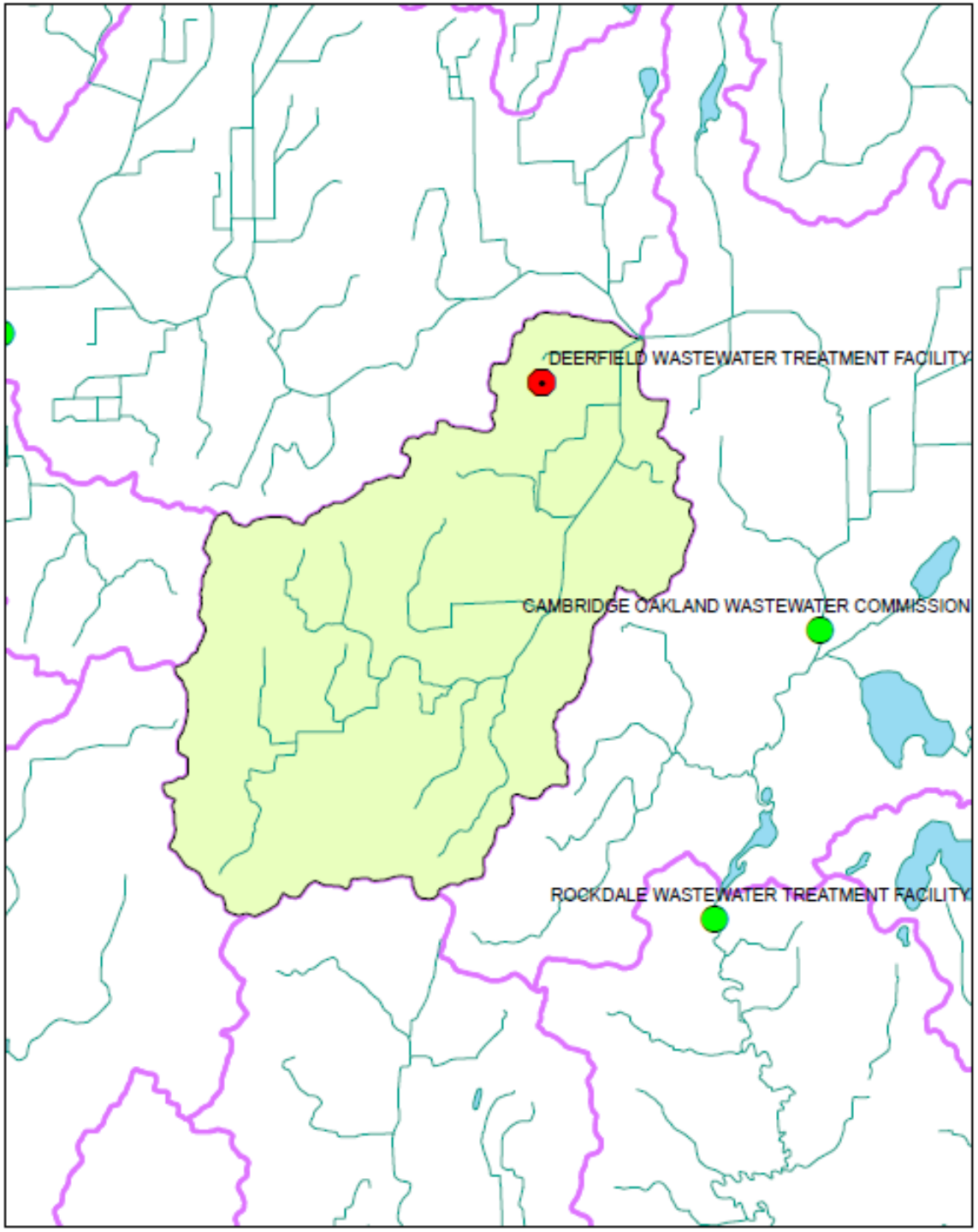
Step #2: Loading

Columbus WWTP: 1990 lbs/yr – 290 lbs/yr = 1700 lbs/yr

Deerfield WWTP: 610 lbs/yr – 90 lbs/yr = 520 lbs/yr

Waterloo WWTP: 613 lbs/yr – 369 lbs/yr = 244 lbs/yr

Go on to the next slide.


DEERFIELD WASTEWATER TREATMENT FACILITY
CAMBRIDGE OAKLAND WASTEWATER COMMISSION
ROCKDALE WASTEWATER TREATMENT FACILITY

Step #4: Compare

Water Quality Trading

- Trade Ratio (assume 2:1)
- Total credits: 1040 lbs/yr

Adaptive Management

- In-Stream: 0.09 mg/L
- Total Reductions Needed: 680 lbs/yr
- 20 years
- Can meet interim limit

Deerfield WWTP: 610 lbs/yr – 90 lbs/yr = 520 lbs/yr

Congratulations! You have selected Adaptive Management as your compliance option. You know have 20 years to implement BMPs and have your receiving water meet water quality criteria.

The End.

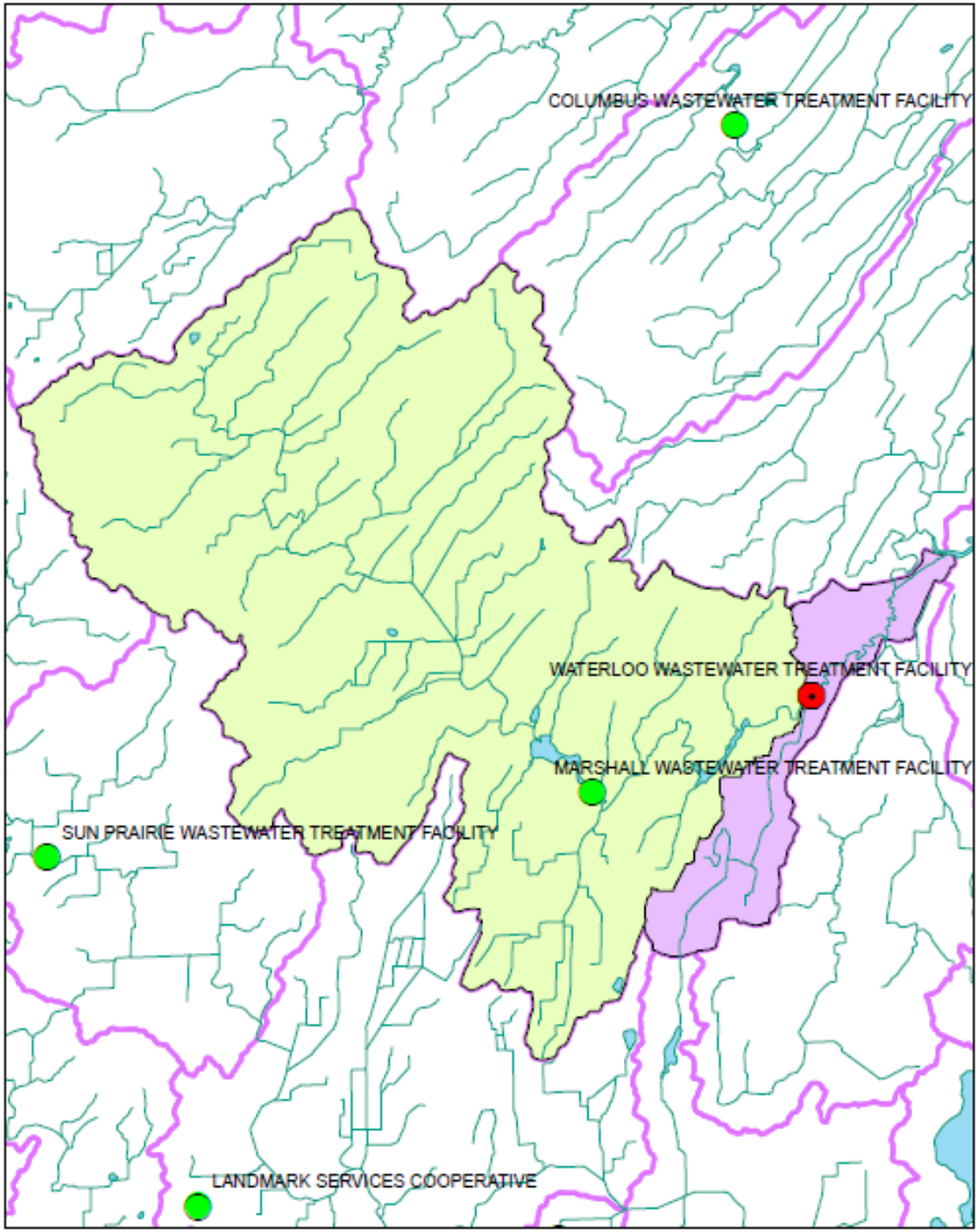
Step #2: Loading

Columbus WWTP: 1990 lbs/yr – 290 lbs/yr = 1700 lbs/yr

Deerfield WWTP: 610 lbs/yr – 90 lbs/yr = 520 lbs/yr

Waterloo WWTP: 613 lbs/yr – 369 lbs/yr = 244 lbs/yr

Go on to the next slide.


COLUMBUS WASTEWATER TREATMENT FACILITY
WATERLOO WASTEWATER TREATMENT FACILITY
MARSHALL WASTEWATER TREATMENT FACILITY
SUN PRAIRIE WASTEWATER TREATMENT FACILITY
LANDMARK SERVICES COOPERATIVE

Step #4: Compare

Water Quality Trading

- Trade Ratio (assume 2:1)
- Total credits: 488 lbs/yr

Adaptive Management

- In-Stream: 0.234 mg/L
- Total Reductions Needed: 2354 lbs/yr

Waterloo WWTP: 613 lbs/yr – 369 lbs/yr = 244 lbs/yr

Congratulations! You have selected Water Quality Trading as your compliance option. Your permit will now include a compliance schedule for BMPs to become effective.

The End.

Go to slide #7.

Upgrade

1. Your facility wants to make sure final limits are met. No issues.

2. Compared WQT, AM, and Upgrade

Go to slide #28.

Variance

283.15(4)(a)1

a. Naturally occurring pollutant
b. Water levels prevent
c. Human caused conditions
d. Dams
e. Physical conditions
f. Economic impacts

Go on to next slide.

Update- Possible Statewide Variance

- Anyone can apply for an individual TP variance per. 283.15
- Act 378 was passed April 2014 to investigate a statewide TP variance
- Current status:
  1. Two consulting firms retained to evaluate fiscal and economic impacts statewide and across various point source categories
     - Decision due date: **December 19, 2014**

IF yes…

Act 378 goes to EPA for review and approval

IF no…

Continue to use the individual TP variance process or pick a different option

Go on to next slide.

Go back to slide #7.

If Act 378 Variance becomes available…

- Interested point sources must certify that they cannot achieve compliance without a major facility upgrade, and that they agree to the following:

1. Interim TP limits
   - First permit- 0.8 mg/L
   - Second permit- 0.6 mg/L
   - Third permit- 0.5 mg/L
   - Fourth permit- WQBEL

2. Implement a watershed project within the HUC 8 watershed:
   - Enter into an agreement with DNR to achieve a specified annual reduction target
   - Enter into an agreement with a third party to achieve a specified annual reduction target (DNR approval required)
   - Make a payment to participating County LCDs at $50/lb of TP to achieve a specified annual reduction target

Go on to next slide.

Annual Reduction Target Calculator

- If TMDL-derived limit…

Current TP Effluent Concentration – Wasteload Allocation = Annual Reduction Target

- If NR 217.13 limit…..

Current TP Effluent Concentration – 0.2 mg/L = Annual Reduction Target

Go on to next slide.

Congratulations! You are in compliance with your final phosphorus limits. Rejoice in your victory!

The End.

Go back to slide #6.

Go back to slide #24.