Supporting transition from nonnative *Phragmites* at wastewater treatment facilities

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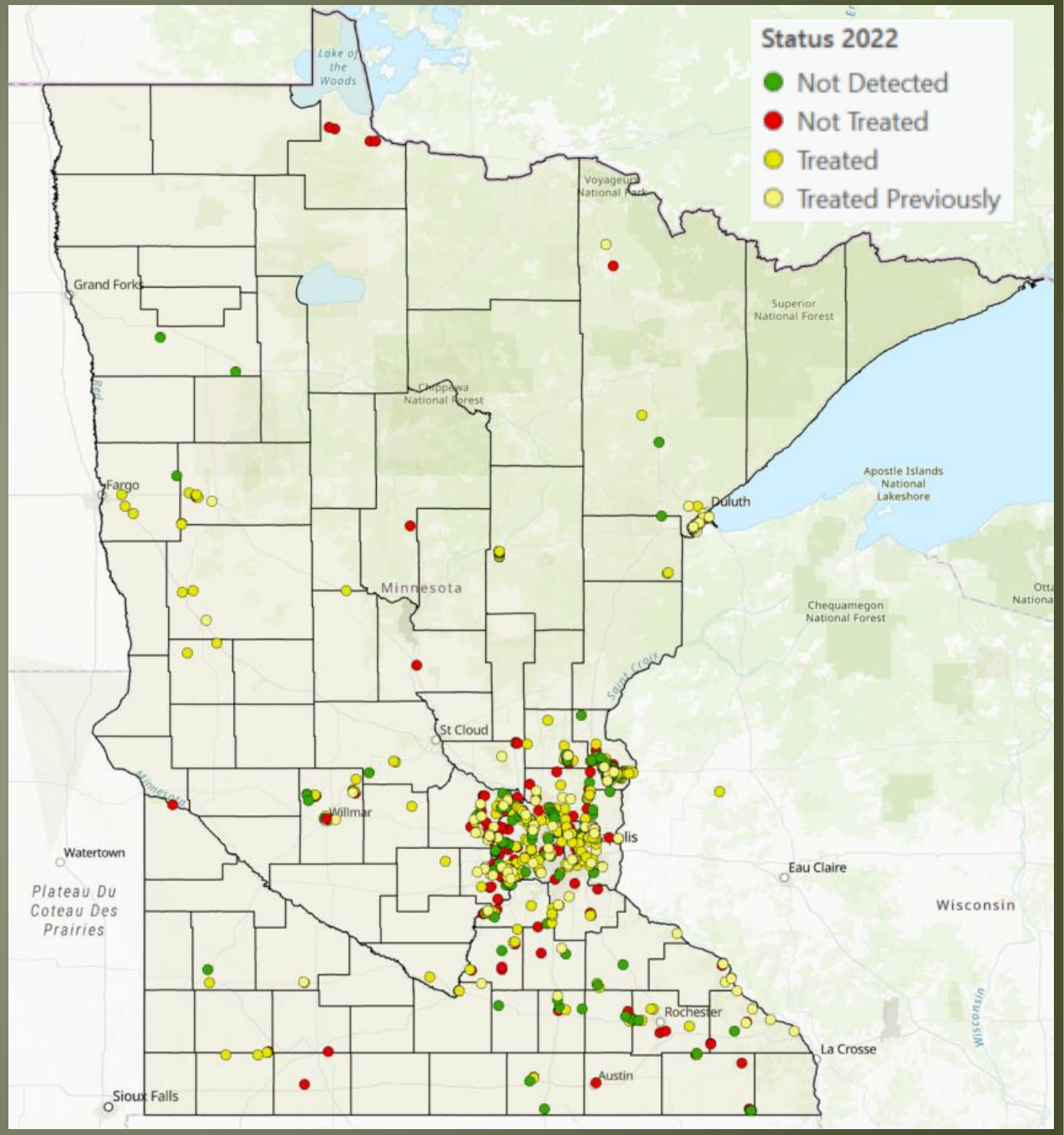
Invasive *Phragmites* - Minnesota Update

~1996 First of 16 MN WWTFs using invasive *Phragmites* goes online
~2007 Last of 16 MN WWTFs using invasive *Phragmites* goes online
2013 Listed as a Restricted Noxious Weed
2017-2019 Document distribution of invasive *Phragmites* – coordinated by UofM
2021 Regulatory status updated - Prohibited Noxious Weed – Control List
2020-2022 Statewide treatment program – funded by GLRI grant

Statewide Distribution

1542 documented populations

- Occurs in 48 of 87 counties
- ~200 acres invaded
- ~73% of populations treated in 2022 or previously
- More than 1000 sites visited in 2022

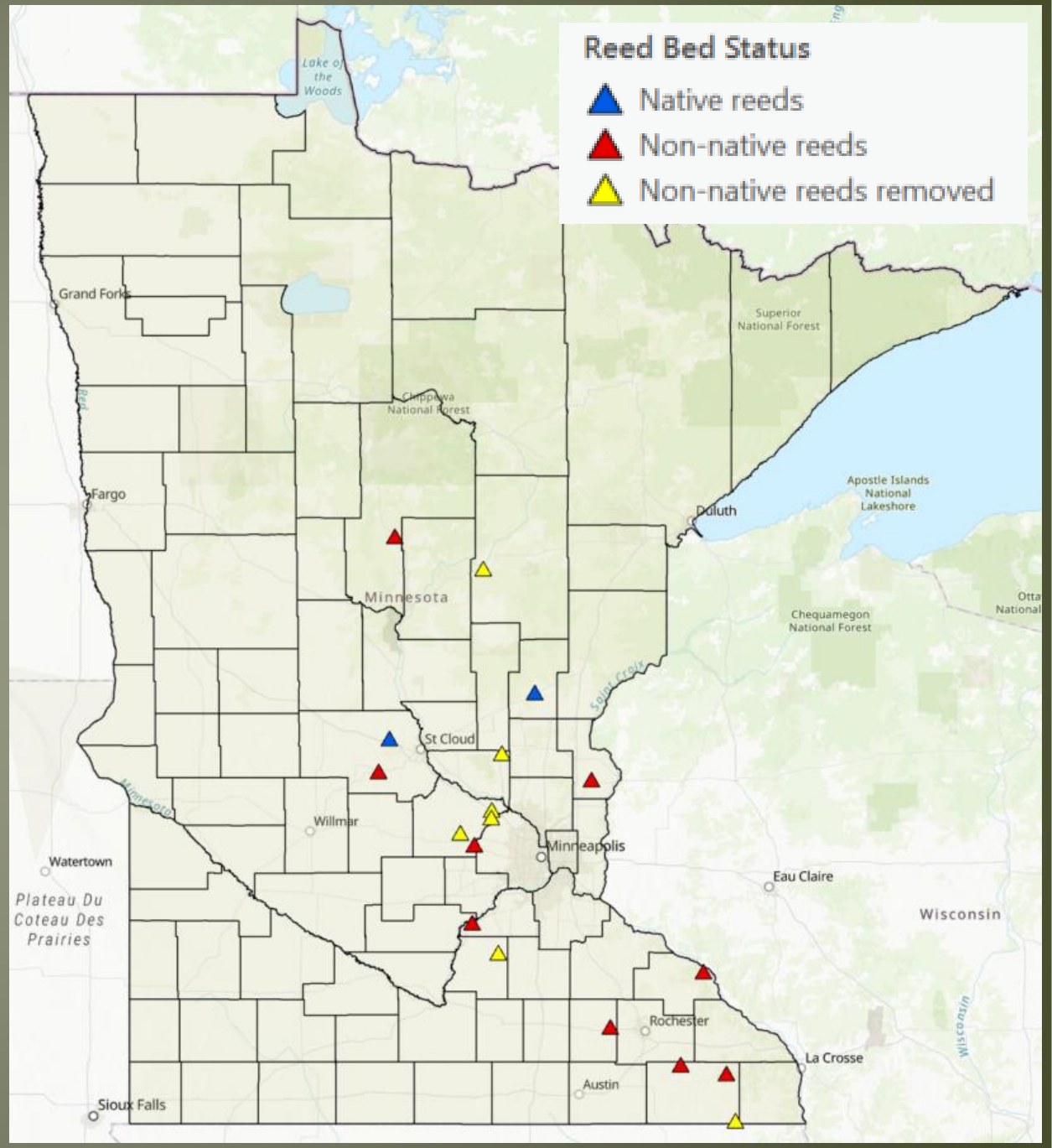


Status of WWTFs

WWTFs with reed beds:

- 2 operating with native *Phragmites*
- 8 operating with invasive *Phragmites*
- 8 have removed invasive *Phragmites*

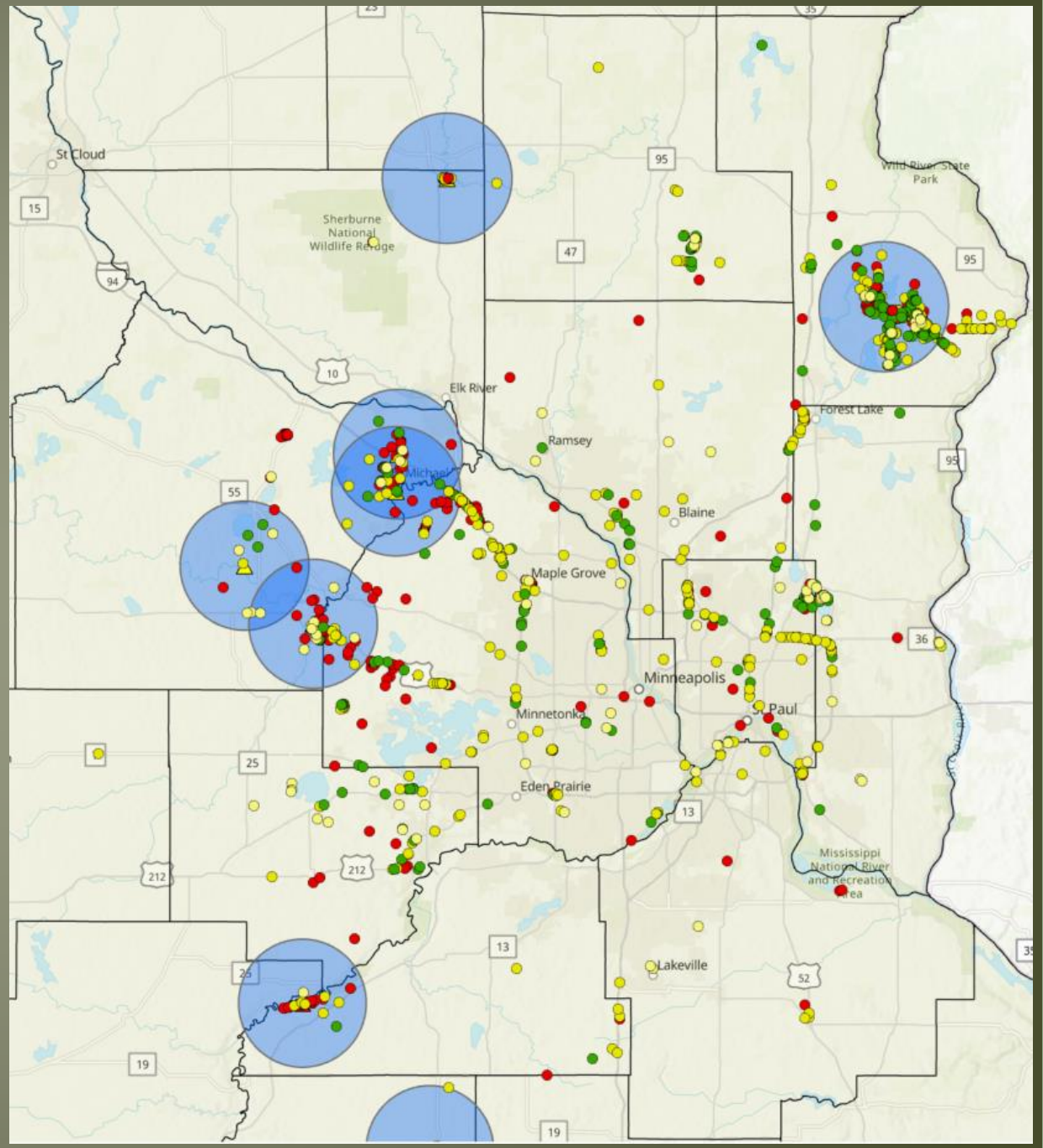
- Operate using reed beds as drying beds
- Continue using invasive *Phragmites* until alternative species identified



Distribution around WWTFs

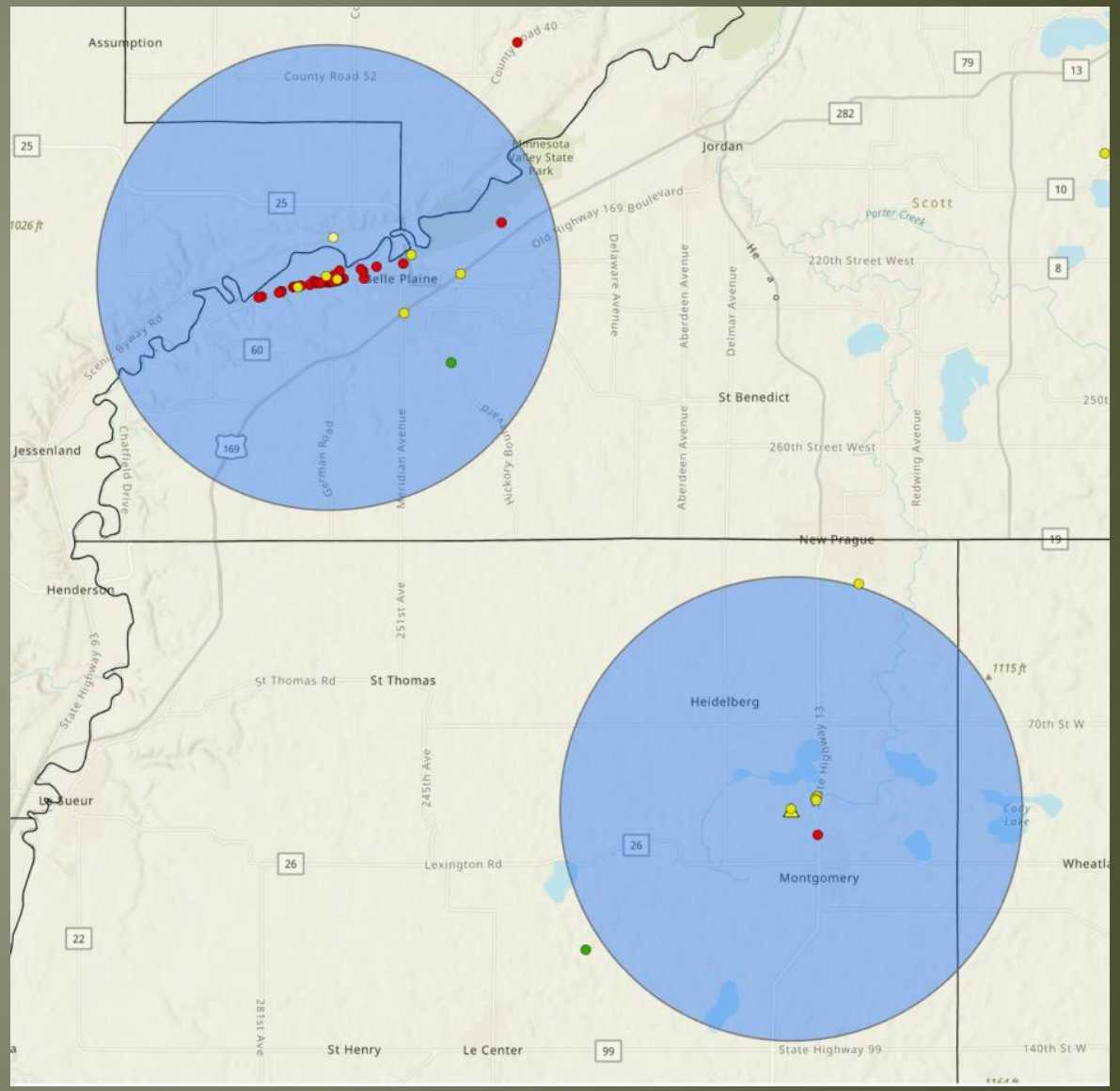
Thirteen County Metropolitan Area
has 77% of total populations (1182)

- 7 Wastewater Treatment Facilities
- % of total populations:
  - Chisago County - 23%
  - Hennepin County - 15%
  - Wright County - 8%



Distribution around WWTFs

Belle Plaine and Montgomery



Wastewater Treatment Facility Transition

Cost-effective best practices for eliminating non-native *Phragmites* and transitioning reed beds

Guidance/support for WWTF operators

Wastewater Treatment Facility Transition

Screen robust native populations
as reed bed alternative

Wastewater Treatment Facility Transition

Methods for propagation and establishment of native reeds

Alternative species

- Identify alternative species for reed beds
- Work with WWTFs to establish alternative species

Alternative species

Species	Common Name	Siltation	Salt	Nutrient	Disturbance Stress Tolerance	Normal Water Level	Flooding Frequency	Flooding Depth (inches)	Flooding Duration
Phragmites australis ssp. americanus	Native Phragmites								
Bolboschoenus fluviatilis	River bulrush	H	M	M-H	M	30" to wet/saturated	H	30	MedSht
Calamagrostis canadensis	Canada blue joint grass	M	L	L	L-M	moist-wet/saturated; tolerate 3-6"	H	6	MedLong
Carex lacustris	Lake sedge	M	M	M	M	wet/saturated to 24"	M	24	Long
Heirochloe odorata	Sweet grass								
Schoenoplectus atrovirens	Green bulrush	M	M	L-M	M-H	30" to wet/saturated	H	30	MedSht
Schoenoplectus cyperinus	Woolly rush	M	M	M	M-H	36" to wet/saturated	H	18	Long
Schoenoplectus tabernaemontani	Softstem bulrush	M	L-M	L-M	L-M	12 to 48	H	24	Long
Silphium perfoliatum	Cupplant								
Spartina pectinata	Cordgrass	M	L-M	M-H	M	3" or less	H	18	MedLong
Solanum lycopersicum	Tomato								

H = High / M = Moderate / L = Low

Plants for Stormwater Design: Species Selection for the Upper Midwest
by Daniel Shaw and Rusty Schmidt, 2003, MPCA

Questions?

More information at:
www.mnphrag.org

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