

South St. Louis River Draft Goal Numbers

Advisory Committee



Farms

- Complete farm projects on X % of properties identified as needing enhancements (e.g., livestock exclusion, manure storage, pasture management) where there are bacteria impairments.

What we know

3 Bacteria Impaired streams where livestock operations were identified as a possible contributor

8 possible livestock operations near bacteria impaired streams by aerial photo review

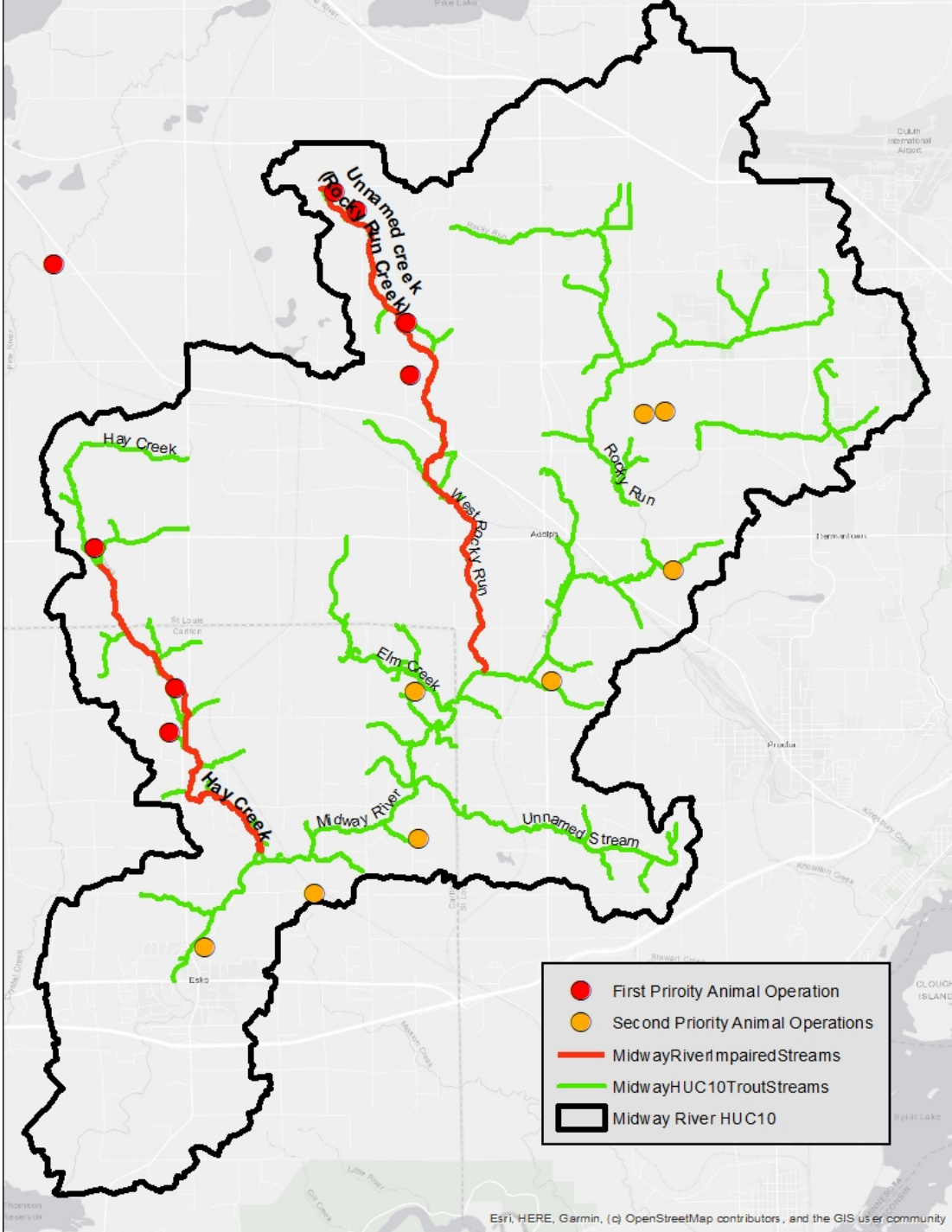
12 possible livestock operations near trout streams

Longitudinal study completed in the Midway targeting at least 3 farms & 1 farm identified in Thomson

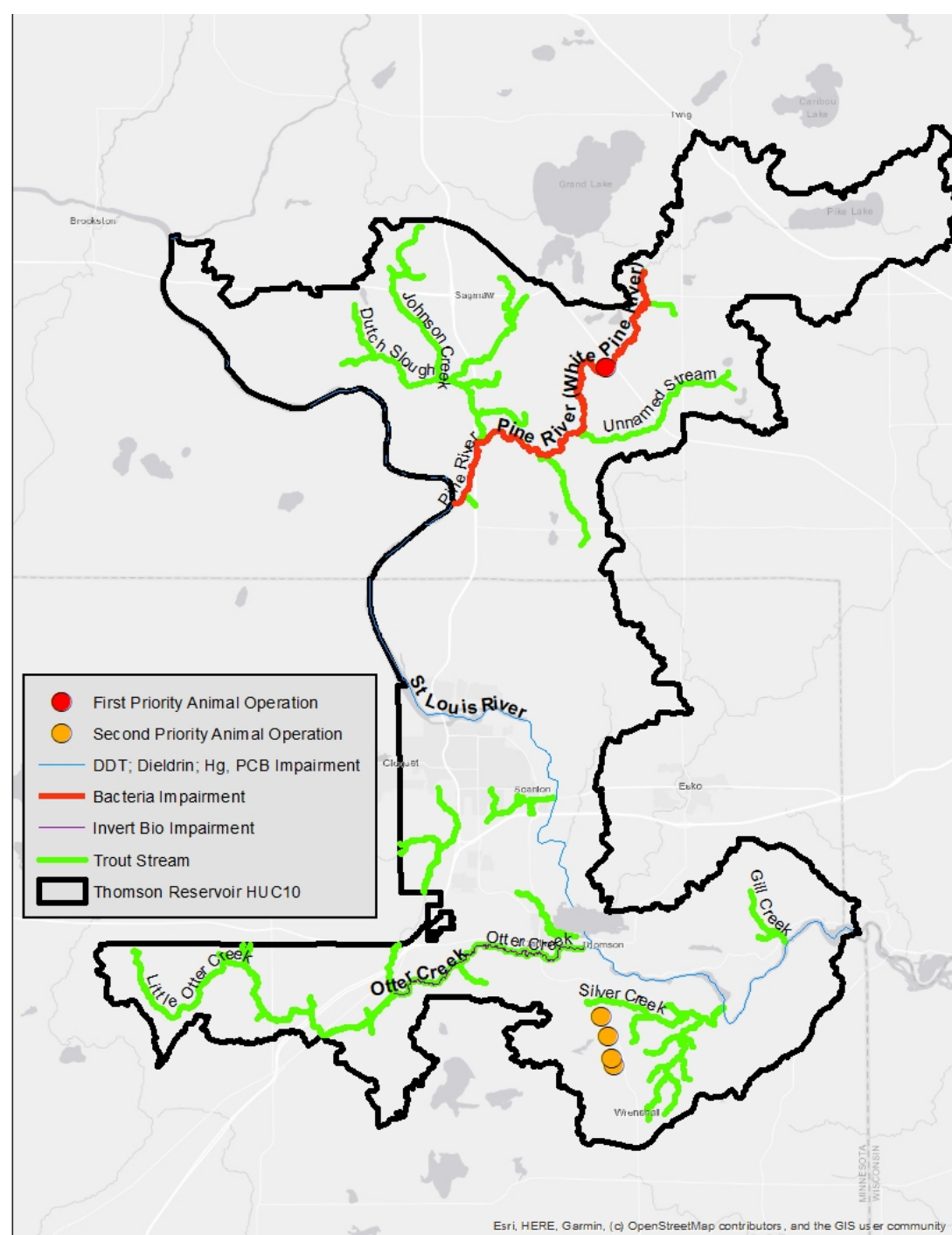
20 targeted farms



Midway
River



Thomson Reservoir





- Less history of assistance in the northern portion of the planning area; education/outreach needed
- Feedlot BMPs (Heavy use protection, roof runoff, stormwater diversions, grazing/manure management, access control) are targeted BMPs
- Ag Engineering is a bottleneck



- Several farms in Wrenshall near trout streams, but there are no impairments
- A lot of great BMP work already occurring here



Draft Goal Number

- Complete farm projects on 50 % (4 farms) of properties identified as needing enhancements (e.g., livestock exclusion, manure storage, pasture management) where there are bacteria impairments.

Notes from 11/16 meeting

- Consider targeting farms based on a tiered system
 - Impaired Streams First priority
 - Trout Streams Second Priority
- Consider changing the goal wording to: Complete farm projects on 50 % (4 farms) of properties identified as needing enhancements (e.g., livestock exclusion, manure storage, pasture management) in priority areas.



Chloride

Manage chlorides reaching surface and ground water from road salts and water softener salts by ensuring x% of municipalities have Smart Salt Certified Staff, x% Communities achieved Level 2 Certified and education and outreach to x% of priority landowners.

What we know

Smart Salting Level 1 Certificate Holders:

- City of Cloquet
- City of Hermantown
- Thomson Township
- Carlton County
- City of Scanlon
- City of Carlton
- St. Louis County
- City of Wrenshall

No Smart Salting Level 2 Certificate Holders



Draft Goal

Manage chlorides reaching surface and ground water from road salts and water softener salts by ensuring 100% of municipalities have Smart Salt Certified Staff, 20% Communities achieved Level 2 Certified and education and outreach to 100% of priority landowners.

Notes from 11/16 meeting

- Consider targeting Smart Salt Level 2 certification to larger municipalities first. This will encourage the smaller municipalities to follow their example.
- Consider using Road Miles managed as a way to determine who would be a higher priority target.

Septic Systems

Identify and address groundwater and surface water quality problems stemming from inadequate wastewater treatment by supporting the enforcement of SSTs ordinances and inventory and upgrade X% of non-compliant systems in priority areas.



What we know

3 Bacteria
Impaired
Streams

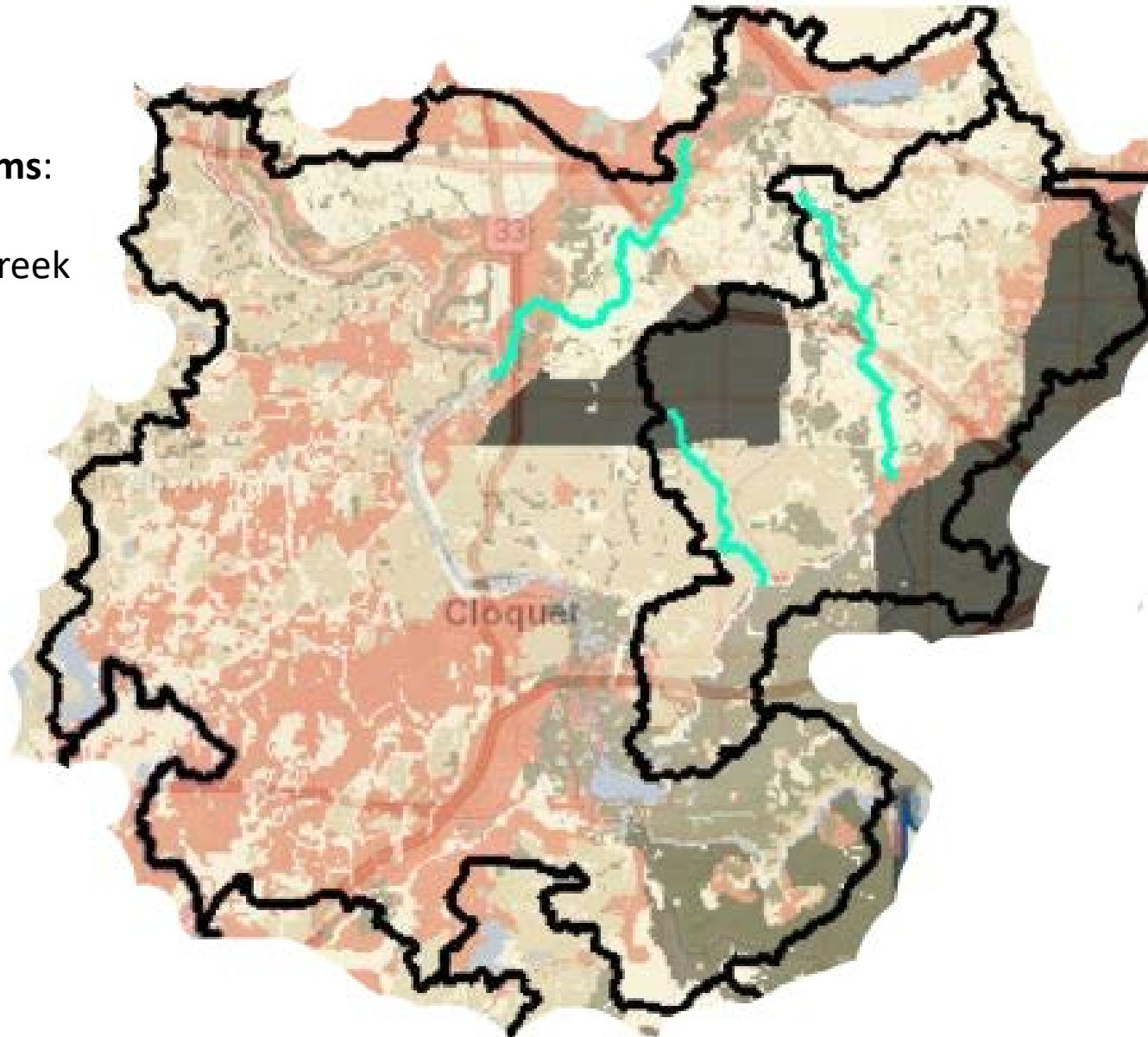
1 Phosphorous
Sensitive Lakes
(Pike Lake)

Areas of near
surface pollution
sensitivity

Areas of Near-Surface Pollution Sensitivity

Impaired Streams:

- Hay Creek
- Rocky Run Creek
- Pine River



Legend

HUC10 Watersheds



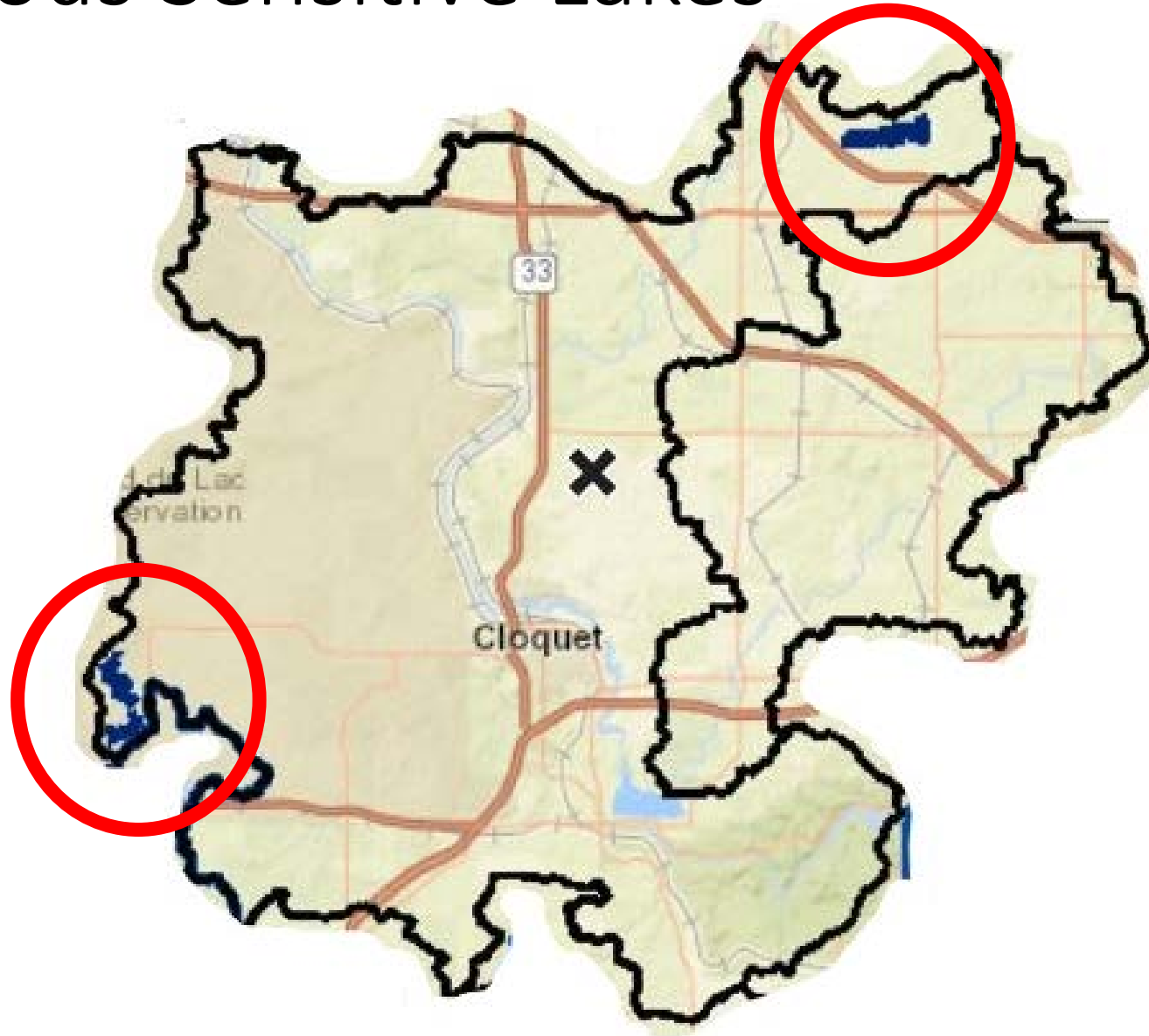
Impaired Streams by Impairment
Parameter, 2020

- Impairment Parameter - Bacteria
- Not in tribal reservation
 - Partially in tribal reservation
 - Wholly in tribal reservation

Pollution Sensitivity of Near-Surface
Materials

- High (coarse-grained material, e.g. sand)
- Moderate
- Low
- Very low
- Ultra low (fine-grained material, e.g. clay)
- Karst (high sensitivity)
- Peatlands (shallow water table)
- Surface water
- Bedrock at or near surface (high sensitivity)
- Disturbed lands (undetermined sensitivity)

Phosphorous Sensitive Lakes



What we know

St. Louis County currently replaces 10 systems a year

Funds are the limiting factor in doing more

Education and outreach is needed

Need more SSTS Professionals

Improving enforcement follow-up would help address non-qualifying systems



Draft Septic System Goal

Identify and address groundwater and surface water quality problems stemming from inadequate wastewater treatment by supporting the enforcement of SSTs ordinances and inventory and upgrade 50% of non-compliant systems in priority areas.

Notes from 11/16 meeting

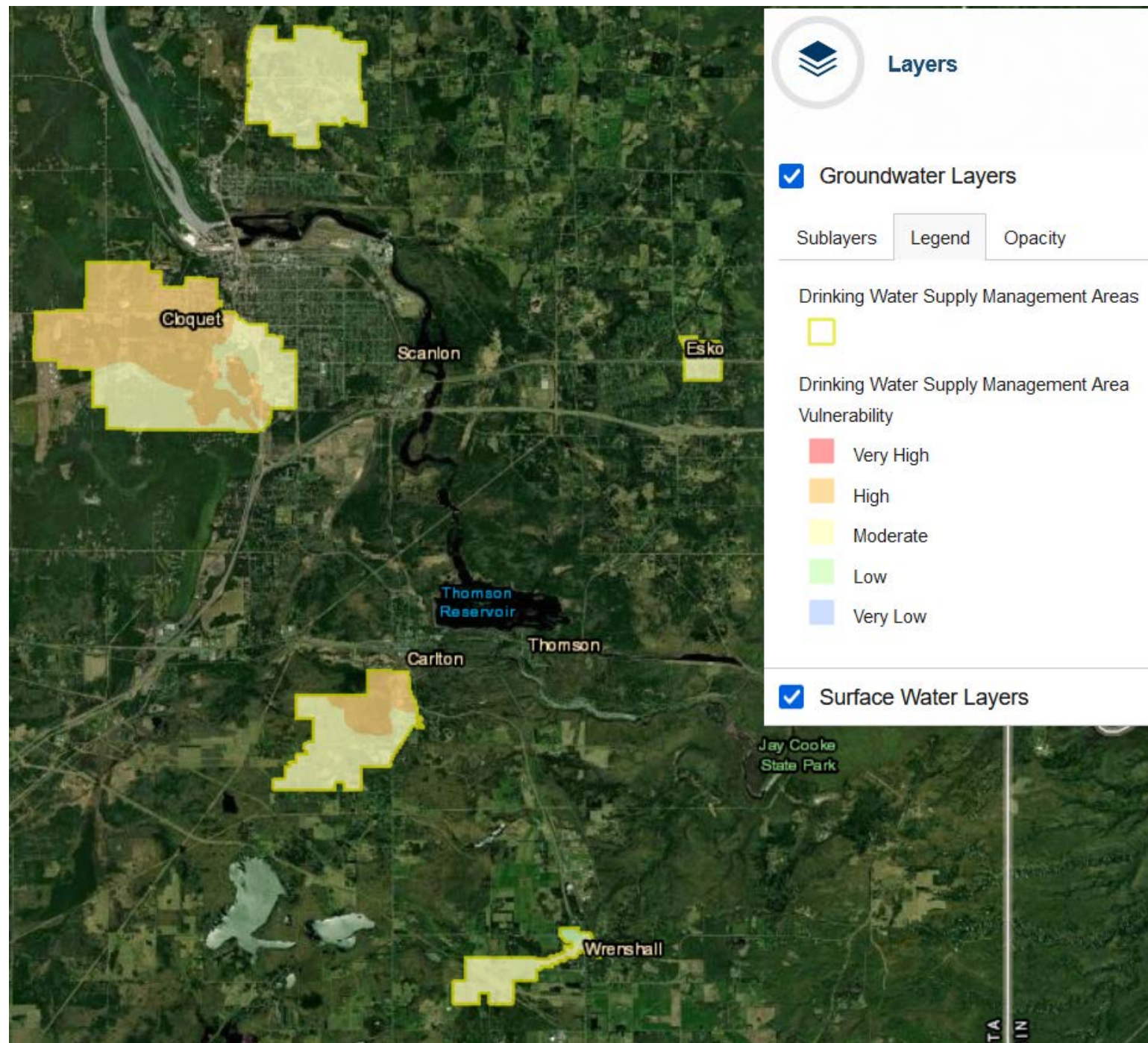
- When estimating the number of potential septic systems, use structures versus well index because the well index is incomplete
- Be mindful of the wording used; inventory can mean different things to different people
- Use the word “failing” versus “non-compliant”
- Consider changing the wording to: Identify and address groundwater and surface water quality problems stemming from inadequate wastewater treatment by supporting the enforcement of SSTs ordinances and upgrading 50% systems with a high probability to impact water quality.

Groundwater

Protect groundwater quality by sealing x unused, unsealed wells watershed wide.



DWSMAs



What we know



31% of the groundwater is highly vulnerable



Grant programs available for DWSMAs, but there is limited funding for areas outside DWSMAs



Education & Outreach is key



Increasing cost share rate for well sealing would help



Groundwater testing would help us understand water quality trends



Groundwater Goal

Protect groundwater quality by sealing 25 unused, unsealed wells
planning area wide.

Notes from 11/16 meeting

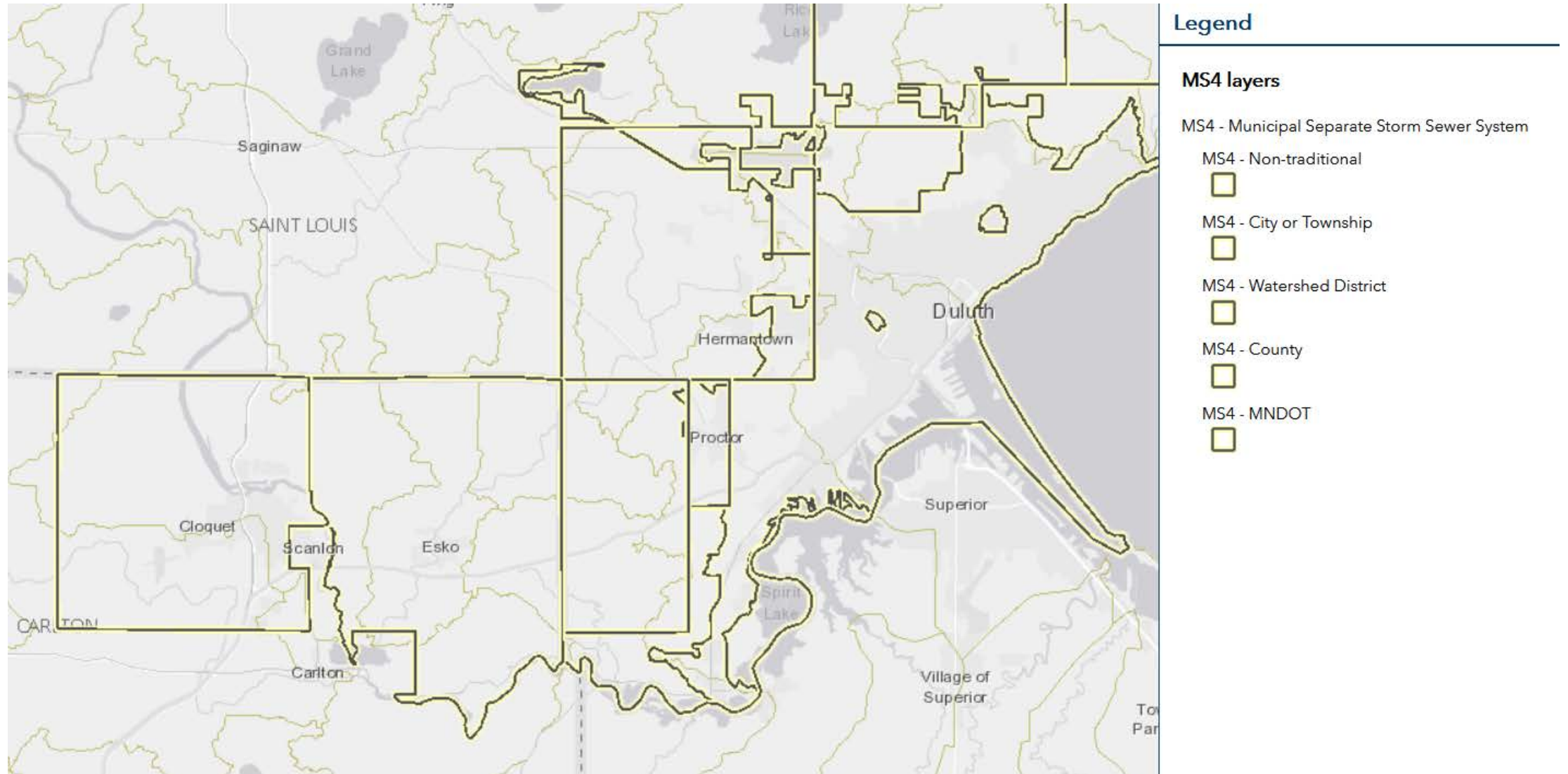
- Consider targeting a buffer area surrounding DWSMAs (example of 1 mile buffer). This could help protect the DWSMA from pollutants that have a slower travel time than what was modeled in their wellhead protection plan.

Stormwater

X % of communities have updated their ordinances to promote and implement low impact development techniques to reduce stormwater runoff volume and rate control.



What we know – MS4s



Communities with Trout Streams

- Esko
- Scanlon
- Cloquet
- Carlton
- Hermantown
- Thomson Township
- Midway Township



A person wearing a yellow safety vest and dark sandals stands on a grassy area. In the foreground, a storm drain is visible in a paved surface. On either side of the drain, the pavement is painted with the message "DUMP NO WASTE" above a fish icon, and "DRAINS TO RIVER" below it. A white sign with similar text is partially visible on the left. The background is a grassy field.

Stormwater Goal

20 % of communities have updated their ordinances to promote and implement low impact development techniques to reduce stormwater runoff volume and rate control.

Notes from 11/16 meeting

- Consider adding the word “green infrastructure” to goal wording
- Change goal wording to: 20 % of communities have updated their ordinances to promote and implement low impact development techniques/green infrastructure to reduce stormwater runoff volume and peak flows.
- Matching funds are available through the Great Lakes Restoration Initiative.

Culverts

Reconnect x miles of priority streams and tributaries to benefit aquatic life and improve water quality



What we know

- Connectivity of tributaries to mainstem rivers is very important
- Private and township culverts are a major challenge due to expense.
- Township bridge funds are an option for larger structures (>10 Feet).
- Having shovel ready projects (designs in hand) will let municipalities secure funding (bonding, left over funds) when it is available
- Culverts under new blacktop or in good physical condition are a hard sell to road authorities



What we know

- Culvert inventory completed by South St. Louis SWCD & MPCA
- Identified 34 culverts impeding fish passage / impacting hydrology
- 6 private drives, 5 township roads, and 3 county roads that are high priorities were identified



Draft Goal Number

Reconnect 30 miles of priority streams and tributaries
to benefit aquatic life and improve water quality

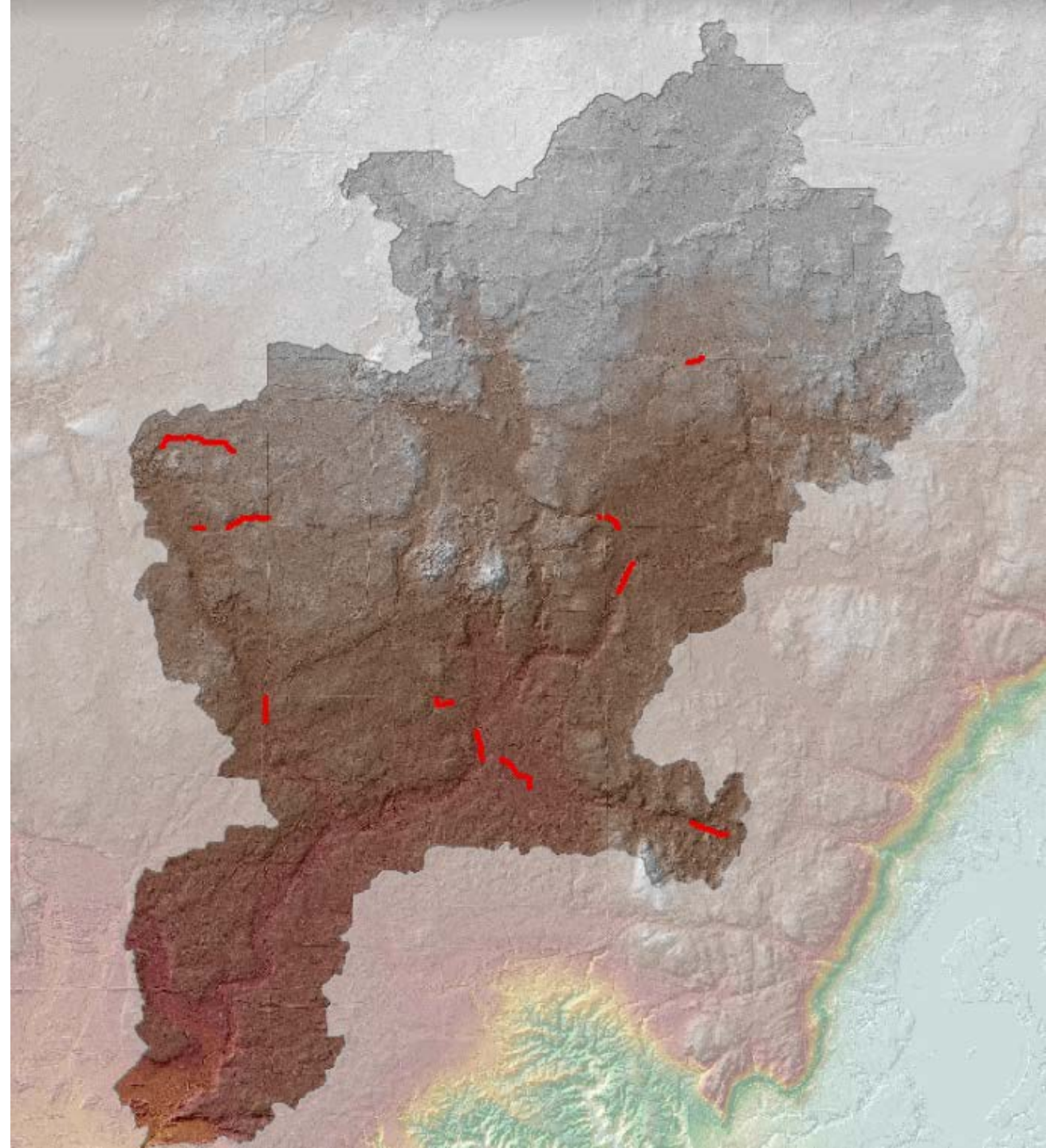


Stream Restorations

Restore stream reaches that have been altered by human activity, including impounded, straightened, and incised stream reaches on x linear feet of high priority streams and tributaries.

What we know

- South St. Louis / MPCA watershed study has identified 13 ditched/impounded stream reaches





Draft Goal Number

Restore stream reaches that have been altered by human activity, including impounded, straightened, and incised stream reaches on 3,600 feet linear feet of high priority streams and tributaries.

Forests



Protect & manage
X acres of private
owned forests in
areas that protect
surface water,
drinking/ground
water quality and
riparian habitat.



70% of a forested watershed
protects lake water quality



Assumed similar protection of
groundwater and streams

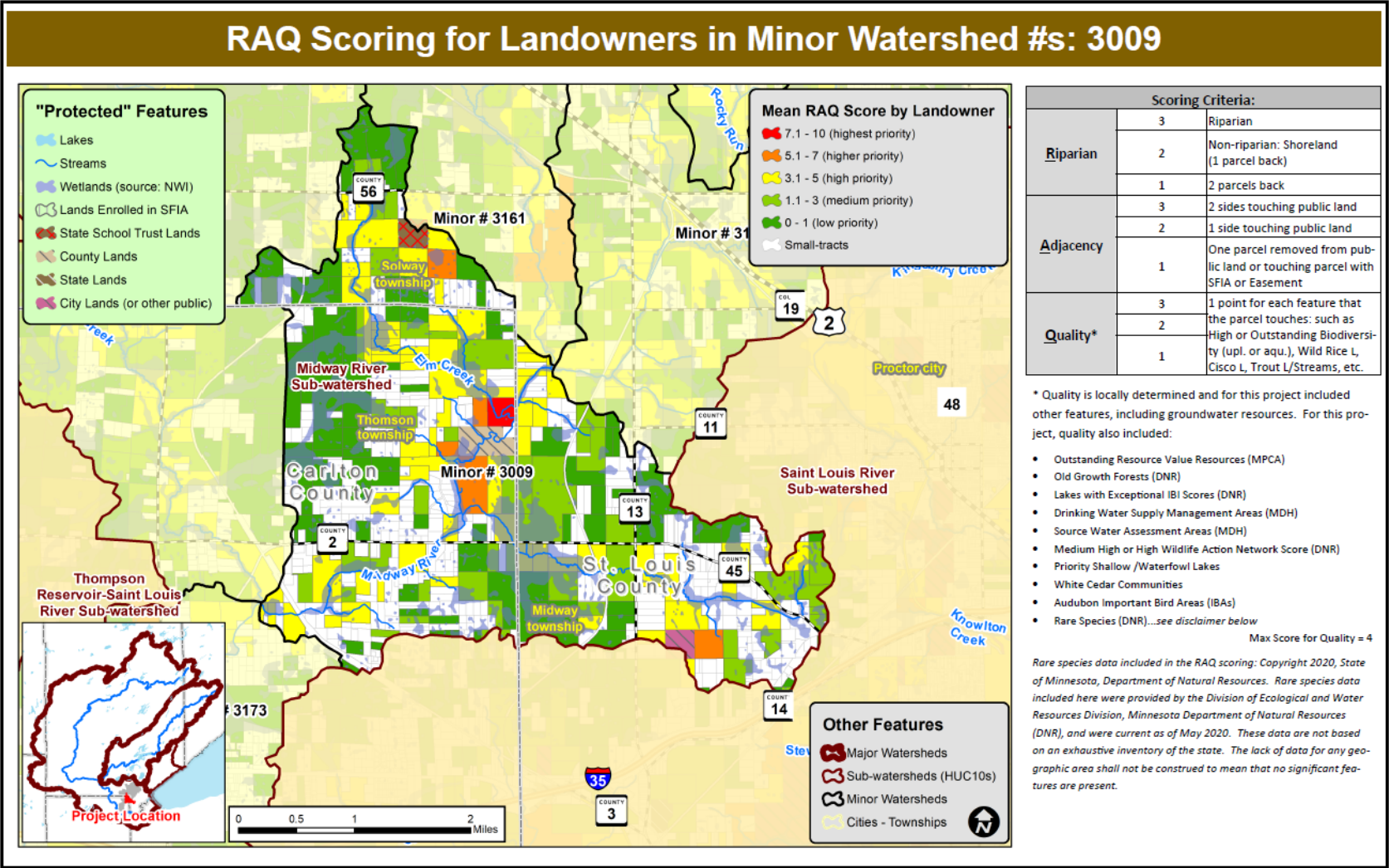


Riparian forests provide stream
shading and habitat

What we know - Midway

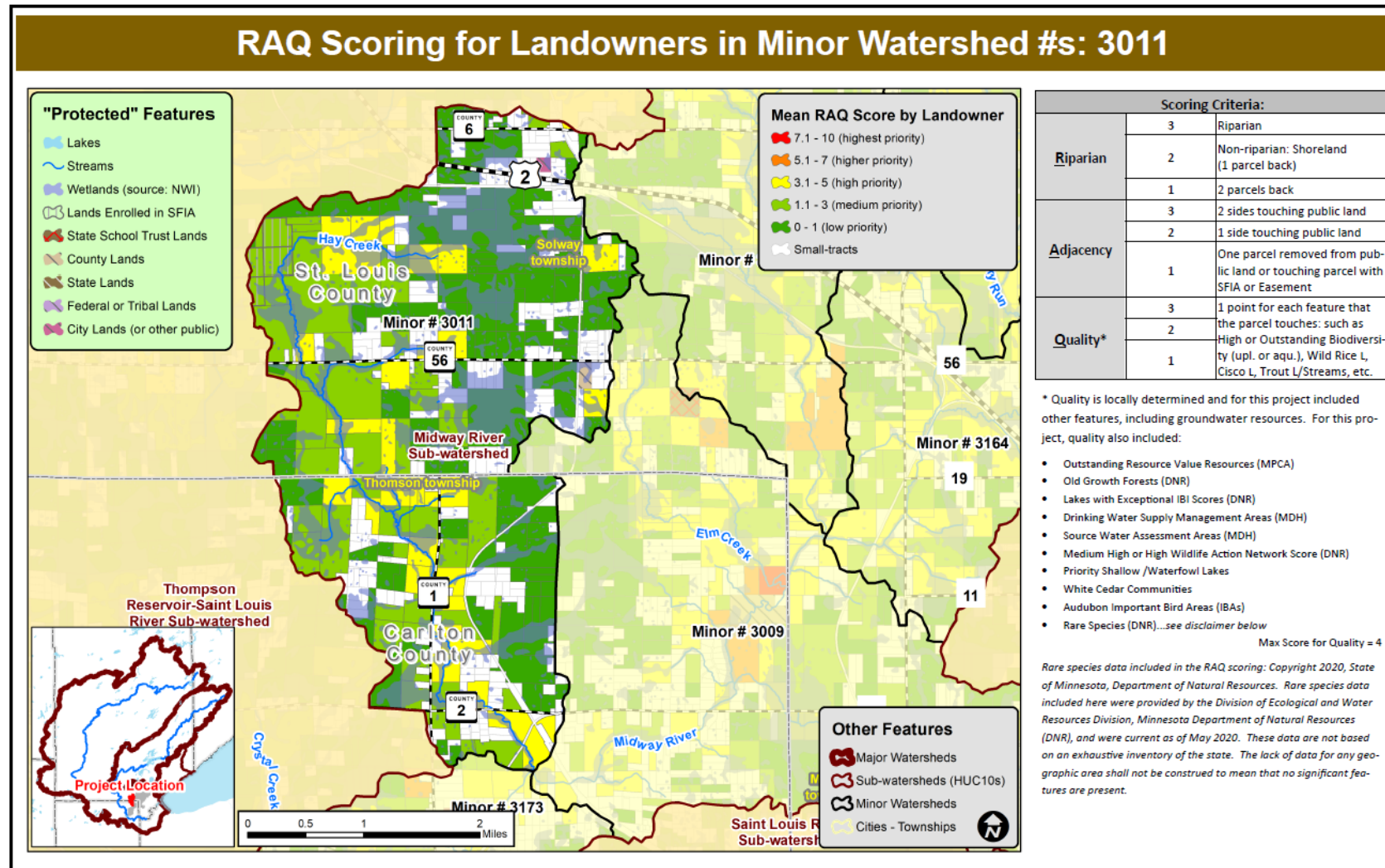
- Heavy development area with projections of future high development
- Sensitive groundwater recharge areas are at risk from development and need protection for both drinking water and surface water
- High Priority Tributaries with incredible cold-water inputs and large trout populations

RAQ Data – Elm & Anderson Creek Subwatershed



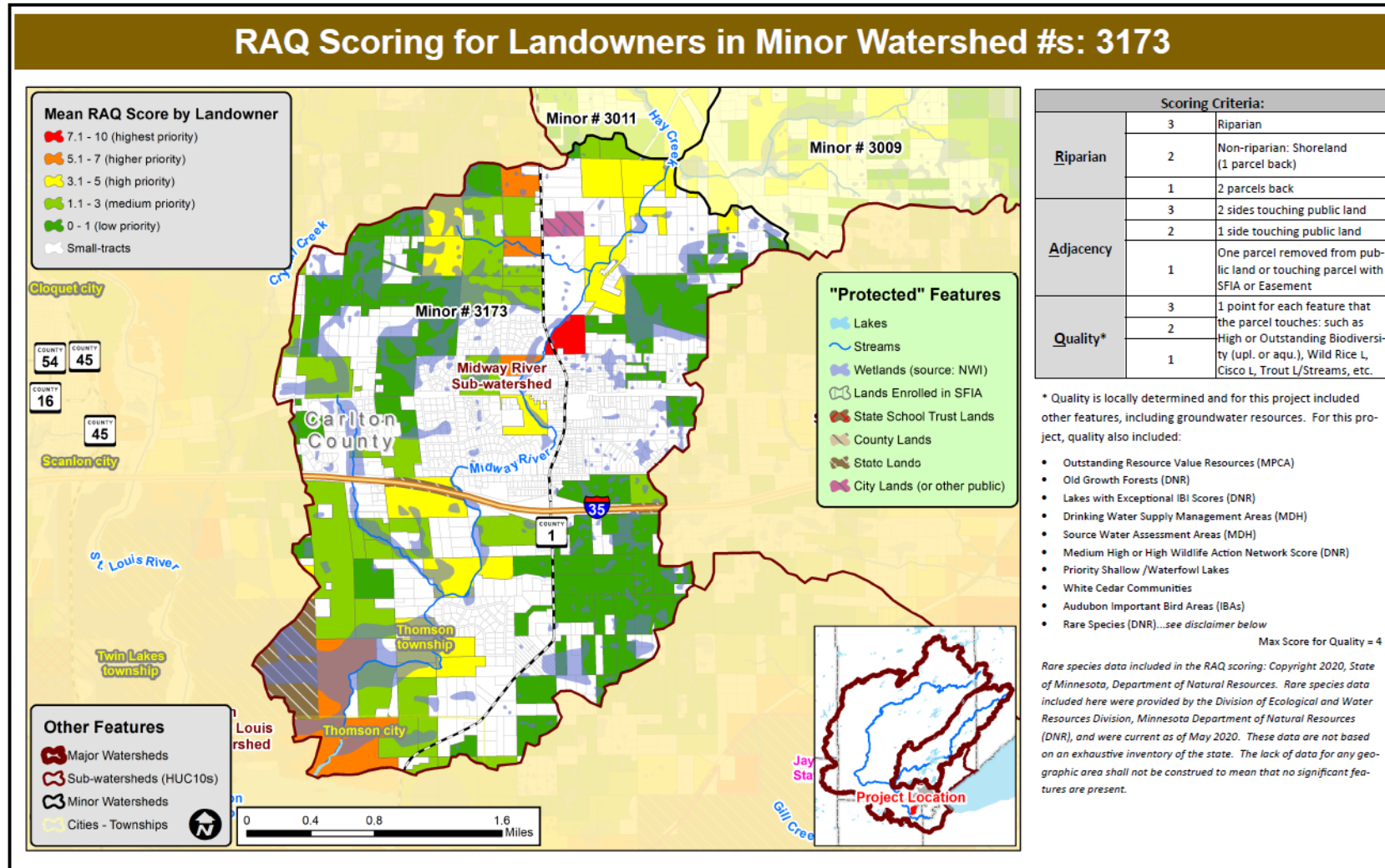
Some areas indicated as low priority are actually very important groundwater recharge areas.

RAQ Data – Hay Creek Subwatershed

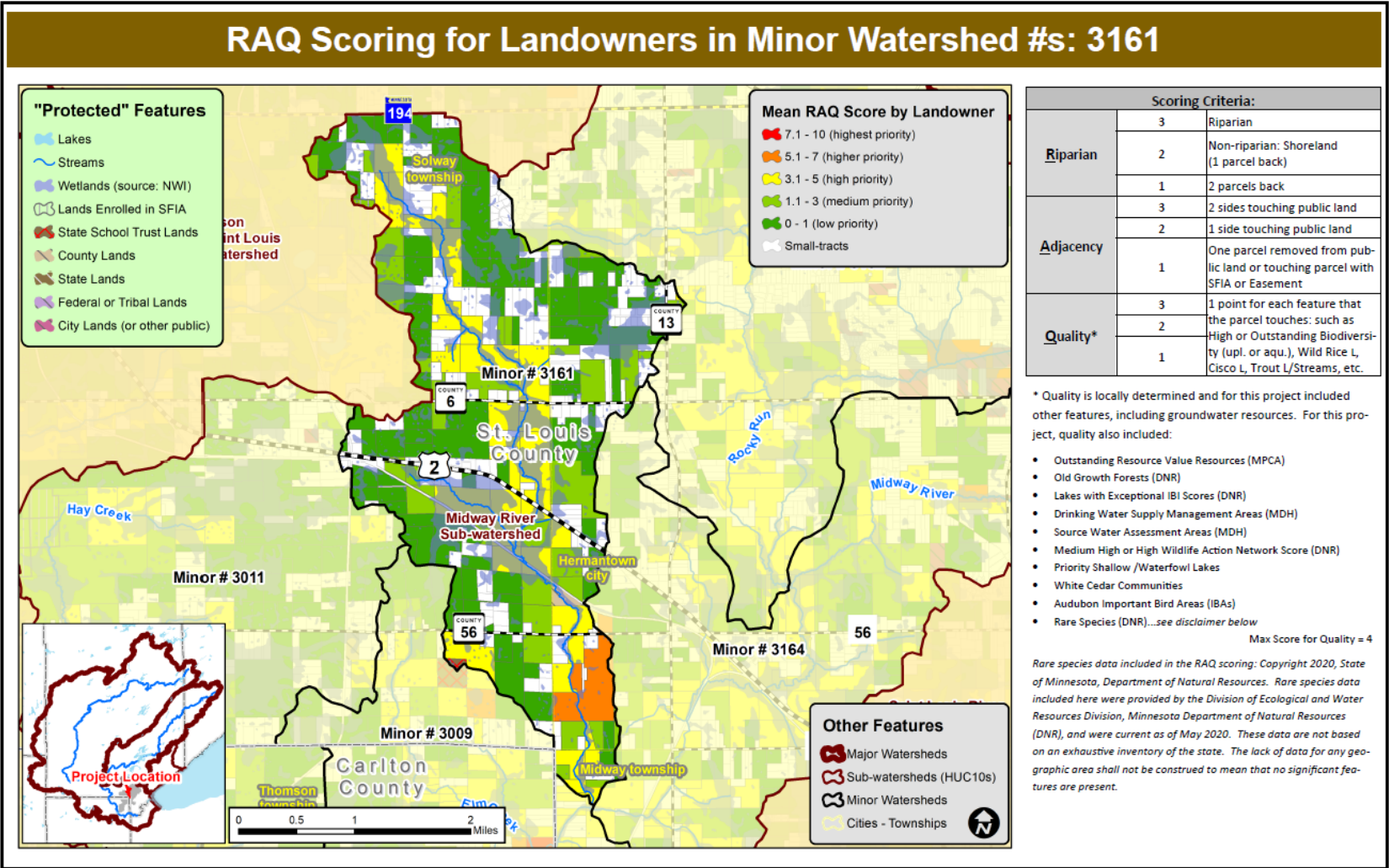


Some areas indicated as low priority are actually very important groundwater recharge areas.

RAQ Data – Hay Creek Subwatershed



RAQ Data – Midway Headwaters Subwatershed

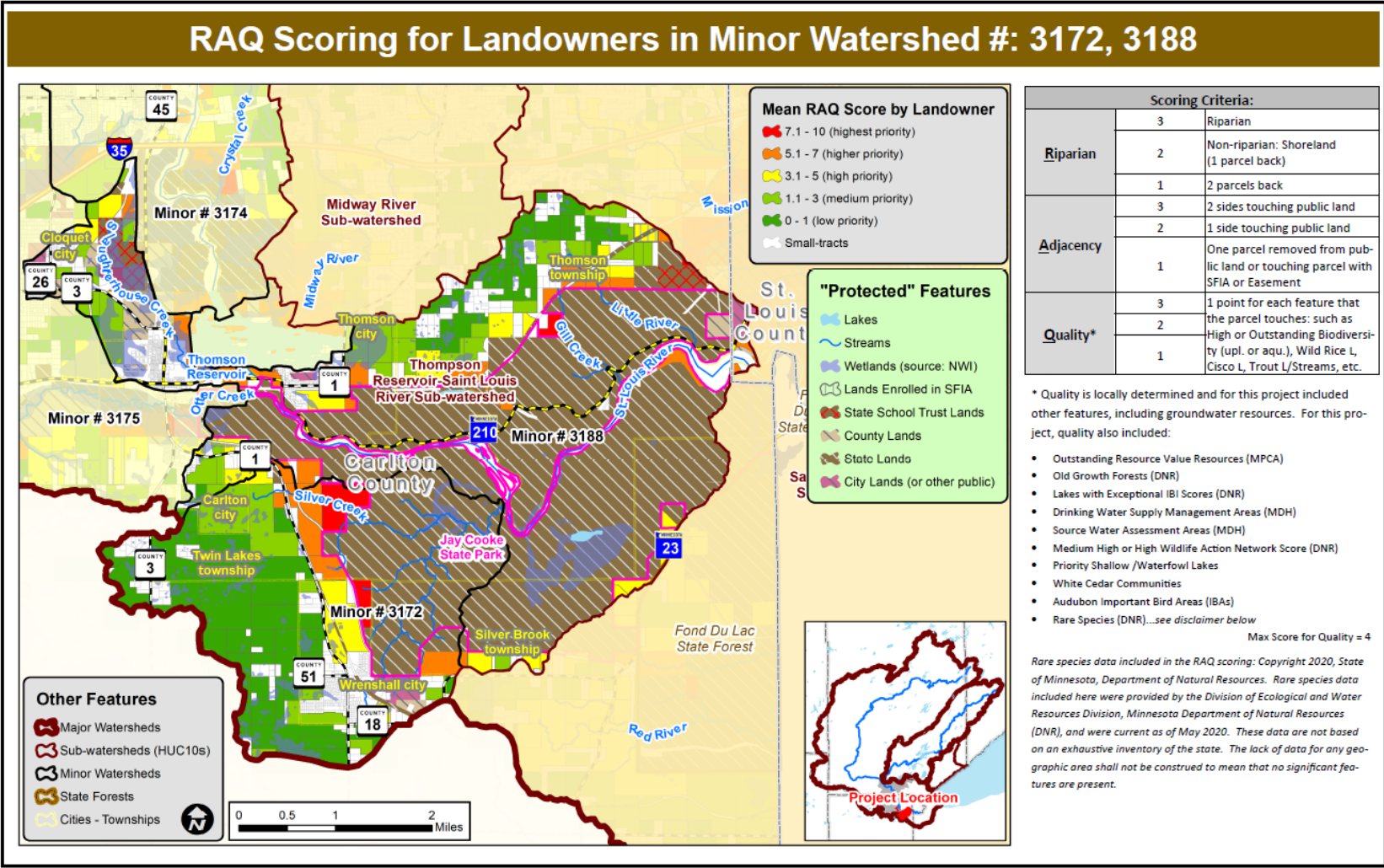


Forestry Goal Calculations - Midway

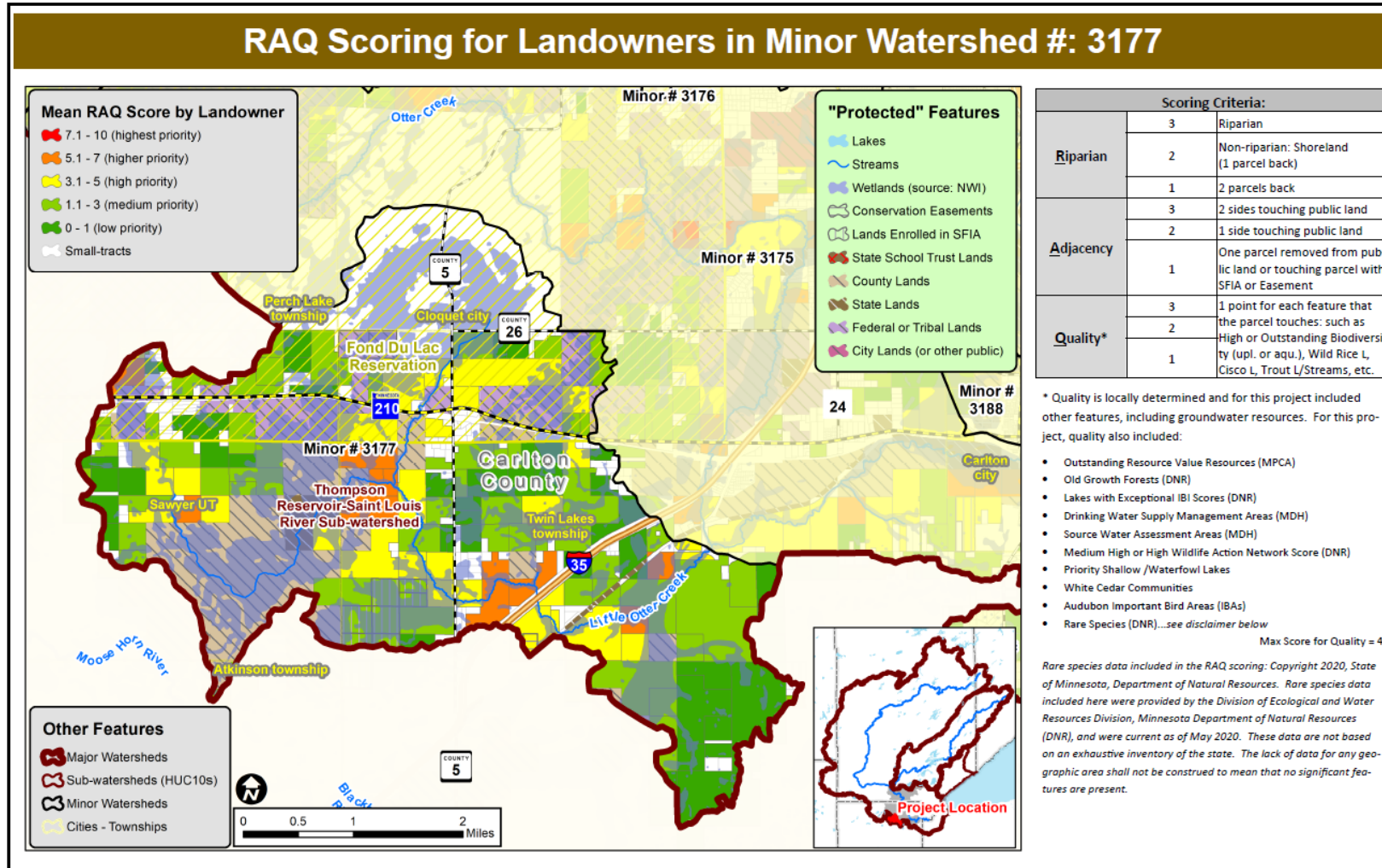
- Potential to protect a total of 3282 acres to meet protection goal
- ~11 forest management plans per year



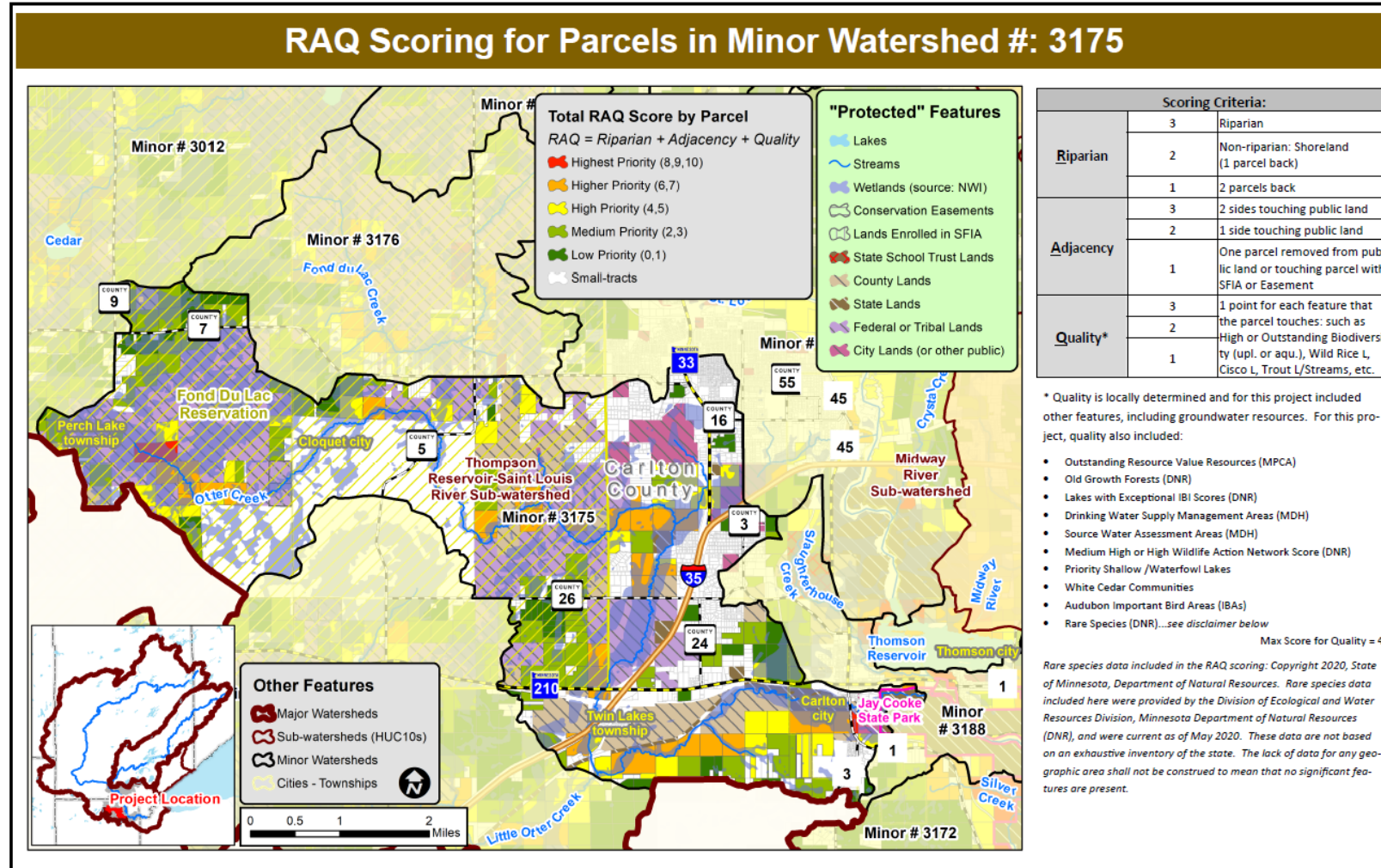
RAQ Data – Slaughterhouse Creek Subwatershed



RAQ Data – Little Otter Creek Subwatershed



RAQ Data – Little Otter Creek Subwatershed



Forestry Goal Calculations - Thomson

- Potential to protect a total of 3853 acres to meet protection goal
- ~12 forest management plans per year





Draft Goal Number

Protect & manage 7135 acres of private owned forests in areas that protect surface water, drinking/groundwater water quality and riparian habitat

Notes from 11/16 meeting

- Consider adding the RAQ in the goal language to be clear about what we are targeting.
- We need to carefully define “protection
- Consider also looking at smaller parcels (under 20 acres) in developed areas.
- Consider including the number of woodland stewardship plans in the goal number along with the acres protected.



Shoreland

x acres of shoreline in prioritized lakes and streams have natural buffers and near shore areas are protected and restored to reduce erosion using bank stabilization, bioengineering, etc. techniques.

What we know



Midway Watershed Study will be available soon to help prioritize resources.



There is a lack of woody material in streams that is affecting hydrology



Riparian Restoration outreach through Coastal Program– Carlton SWCD

A photograph of a stream with a grassy bank and sunflowers. The stream is in the background, surrounded by dense green vegetation and trees. In the foreground, there is a grassy bank with several tall sunflowers. A vertical white line is positioned to the right of the text 'Draft Goal'.

Draft Goal

- 50 acres of shoreline in prioritized lakes and streams have natural buffers and near shore areas are protected and restored to reduce erosion using bank stabilization, bioengineering, etc. techniques.

A dark, atmospheric photograph of a lake at dusk or dawn. In the foreground, a wooden dock extends into the water. Three people are on the dock: a man stands on the left, a person sits in the middle, and a child stands on the right. The background shows a calm lake reflecting the dim light, with a dense line of trees on the far shore.

Draft Goal

- Shoreline ordinances are updated, developed, and enforced for 100 % of municipalities with priority resource shoreline areas.

Communities with Trout Streams

- Esko
- Scanlon
- Cloquet
- Carlton
- Hermantown
- Thomson Township
- Midway Township



Watershed Storage Discussion Takeaways

- Watershed wide, there has been little change in acre/feet storage, but more modeling would be needed to determine local effects.
- The number of 1-2 inch rainfall events have increased significantly over time
- The number of low flow events have decreased over time.