

Refining the Focus Areas

Statewide Working Group, 7/9/2024
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SWG Focus Areas

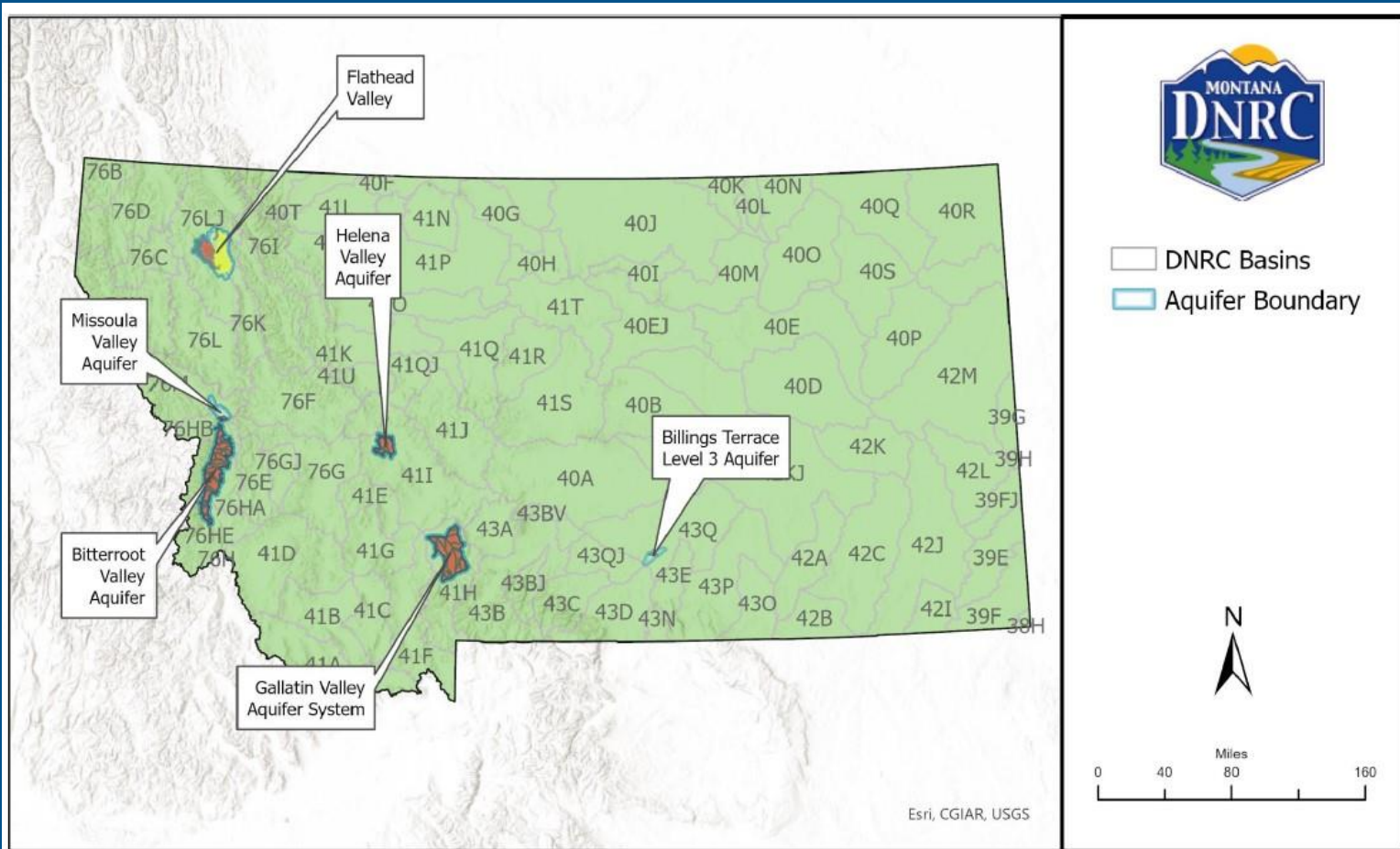


Figure 2: Location of focus areas- green, yellow, red draft (this in NOT final, just for example)

Water Quality CGWA Criteria

The ask of DEQ:

- Identify water quality limitations or where standards are not met in the 5 focus aquifers, which would be used to designate a water quality controlled ground water area
- **Yellow** : Moderate problem, enhanced study needed, some restrictions or controls are needed to reduce or reverse problem
- **Red** : Significant problem documented, restrictive controls are necessary to stop expansion of the problem

In this context, DEQ understands “controls” to mean limitations on the use of exemptions for water supply wells.

Water Quality Concerns

First challenge:

- DEQ doesn't have a program to systematically assess groundwater quality, either statewide or in focus areas.
- DEQ GW investigations are tied to specific scopes: contaminated site investigation/remediation, or permit decisions (mining or wastewater)
- So... why doesn't DEQ have this information?

Groundwater Assessment

The legislature assigned this to MBMG:

- 85-2-906. **Ground water characterization program -- ground water monitoring program.** (1991 legislature)
- 85-2-525. **Ground water investigation program -- advisory committee.** (2009 legislature)

Water Quality Concerns

Second challenge:

- DEQ hasn't identified any water quality concerns attributable to groundwater extraction for residential use.
- Where exempt wells are used to accommodate development, that development is accompanied by increases in nonpoint source pollution.
- Correlation, not causation.

Water Quality Concerns

Revisit DEQ's suggested criteria:

- Existing groundwater quality
- Septic system density
- Identified surface water quality issues and associated TMDLs

Provide suggestions for incorporating into yellow / red matrix.

GW Quality Metric

DEQ's nondeg rules provide a model for identifying a problem with GW quality:

- Nitrate concentrations >5 mg/L in at least 25% of no fewer than 30 wells.
- Or, NO_3 increases by >1.0 mg/L in the same 15 wells over 3 years.

Septic Density Metric

Hazard by density:

Moderate density = moderate hazard

High density = high hazard

Table 8b. (MT SWPP Table 6) UNCONFINED AQUIFERS: Hazard of potential contaminant sources.

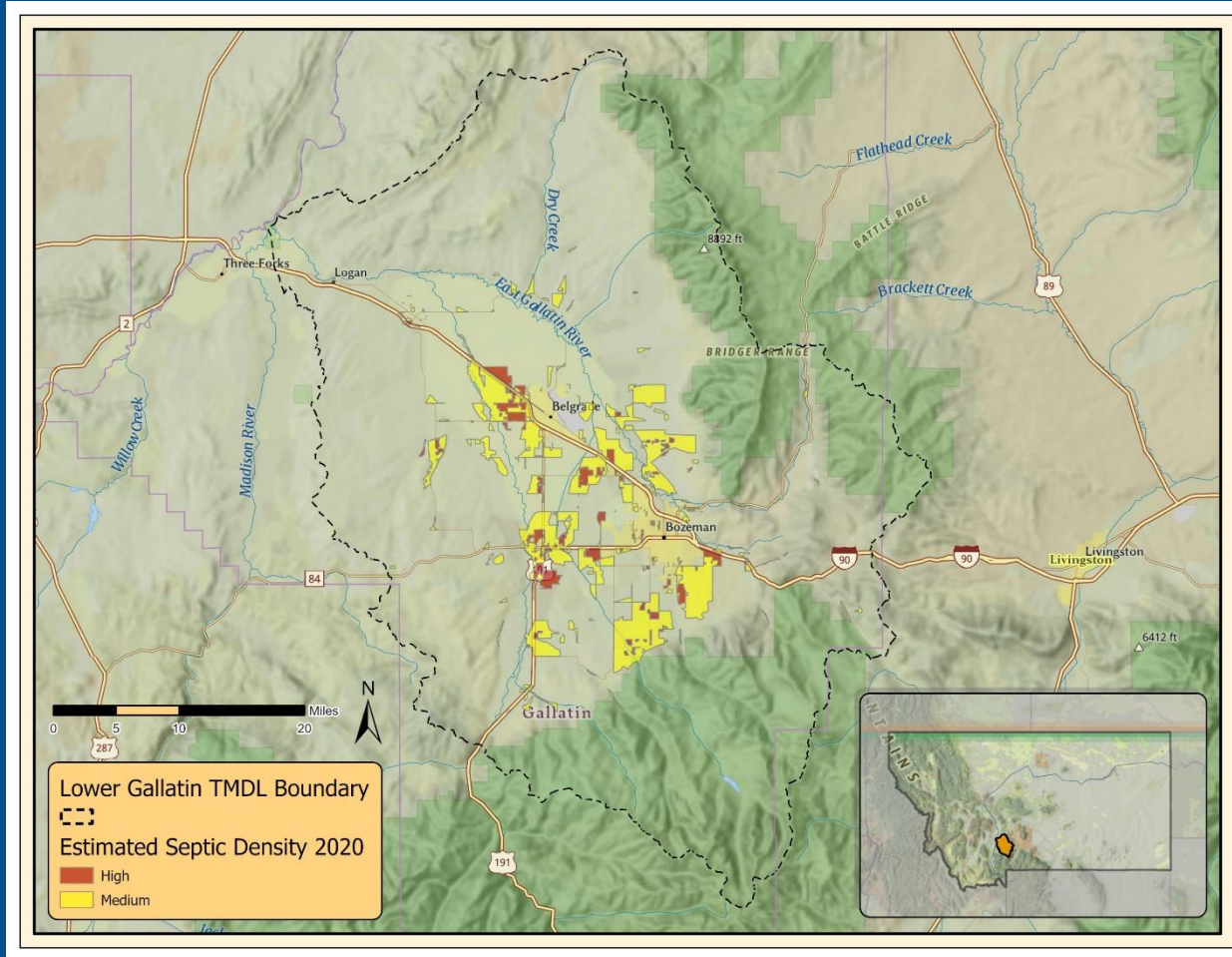
Potential Contaminant Source	High Hazard	Moderate Hazard	Low Hazard
Point Sources	Within 1 year TOT	Between 1 to 3 years TOT	Over 3 years TOT
Septic Systems	More than 300 per sq. mi.	50 – 300 per sq. mi.	Less than 50 per sq. mi.
Municipal Sanitary Sewer (percent land use)	More than 50 percent of region	20 to 50 percent of region	Less than 20 percent of region
Cropped Agricultural Land (percent land use)	More than 50 percent of region	20 to 50 percent of region	Less than 20 percent of region

SW Quality Metric

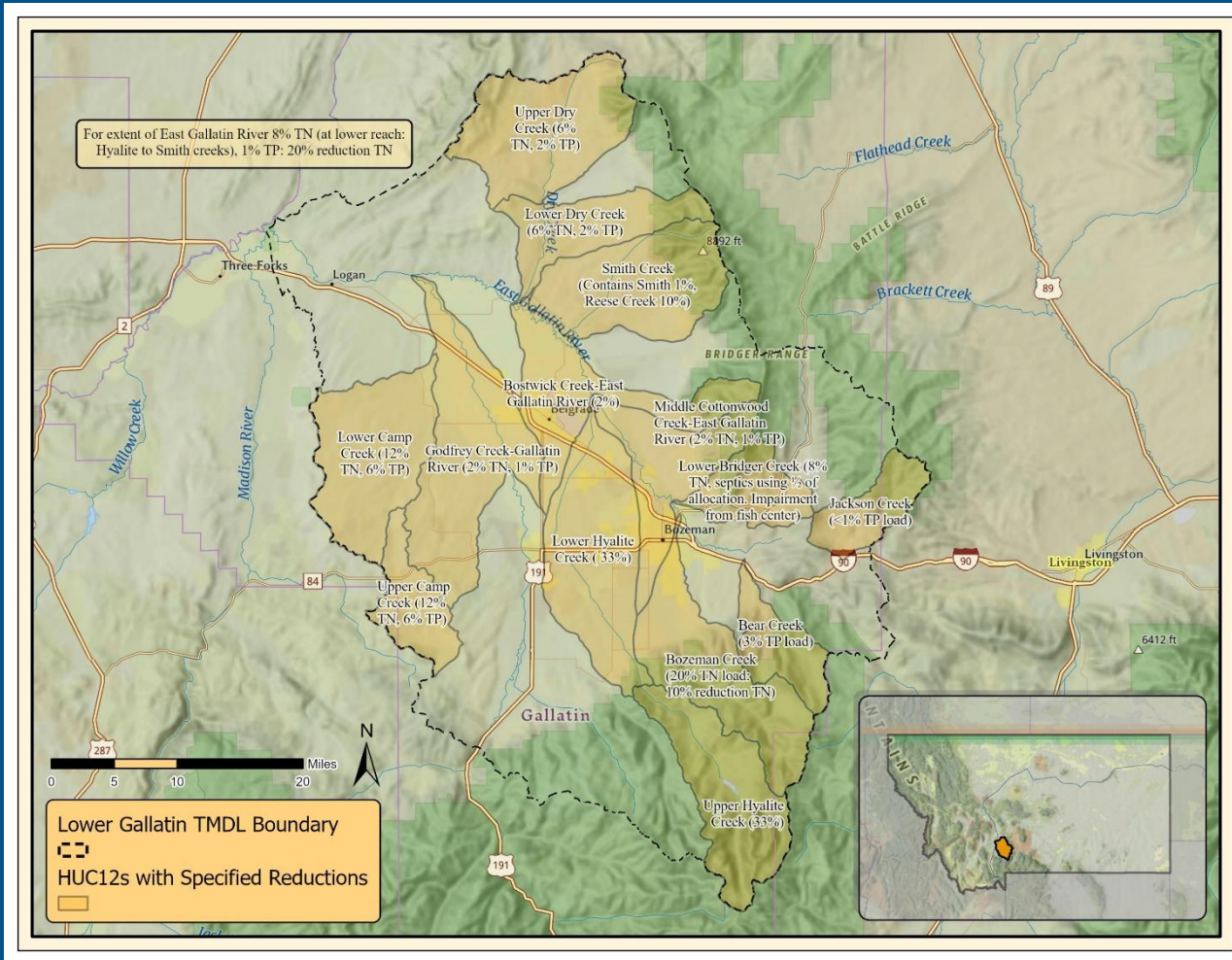
A TMDL assigns required reductions to residential nonpoint source pollution.

- SWG focus area TMDLs:
 1. Billings **X no TMDLs**
 2. Helena ✓ 2007 (lumped)
 3. Flathead Valley (northern) ✓ 2014 (lumped)
 4. Missoula & Bitterroot ✓ 2014, 2014 (lumped)
 5. Gallatin ✓ 2013 (specific reductions)

Septic System Density



Surface Water & TMDLs



Water Quality Criteria

Hanging DEQ's suggestion on the four-cell matrix framework:

DEQ suggestions		Moderate problem, enhanced study needed, some restrictions or controls are needed to reduce or reverse problem	Significant problem documented, restrictive controls are necessary to stop expansion of the problem
Ground water Quality	Water quality in the source aquifer (groundwater track)	Moderate septic system density (150-299 per square mile)	High septic system density (>300 per square mile) Nitrate concentrations >5 mg/L in more than 25% of ≥ 30 wells
	Water quality in connected surface water (surface water track)	Surface water impairment	Surface water impairment with a TMDL that requires reductions of development-related nonpoint sources.

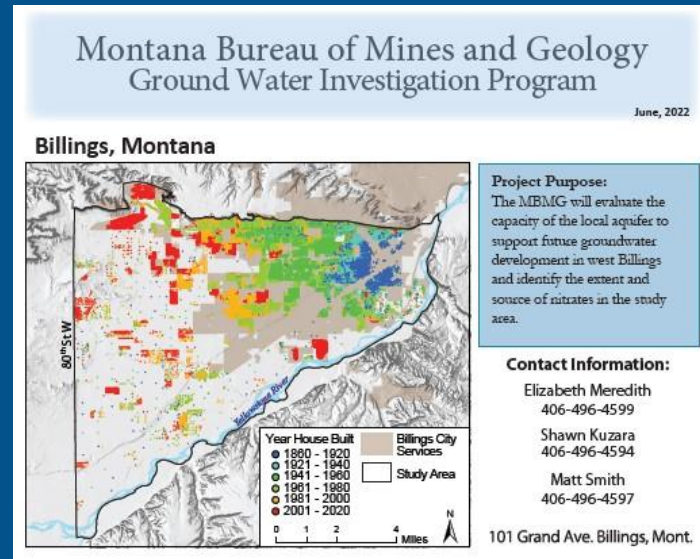
And? Or?

This is a suggested starting point. Considerations such as combining or overlapping factors and use of “and”/”or” operators should be discussed.

Water Quality Concerns

DEQ's conclusions:

- Increasing development contributes to a variety of WQ issues.
- With the potential exception of Billings, none of those issues are directly attributable to unrestricted withdrawals from exempt wells.





Questions?

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