Balancing Housing and Clean Water

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Rhode Islanders want clean water AND affordable housing

Clean Water and Open Space Bonds consistently receive the highest voter approval rates at 80% or more

Approval rates for affordable housing are close behind.

RIDEM

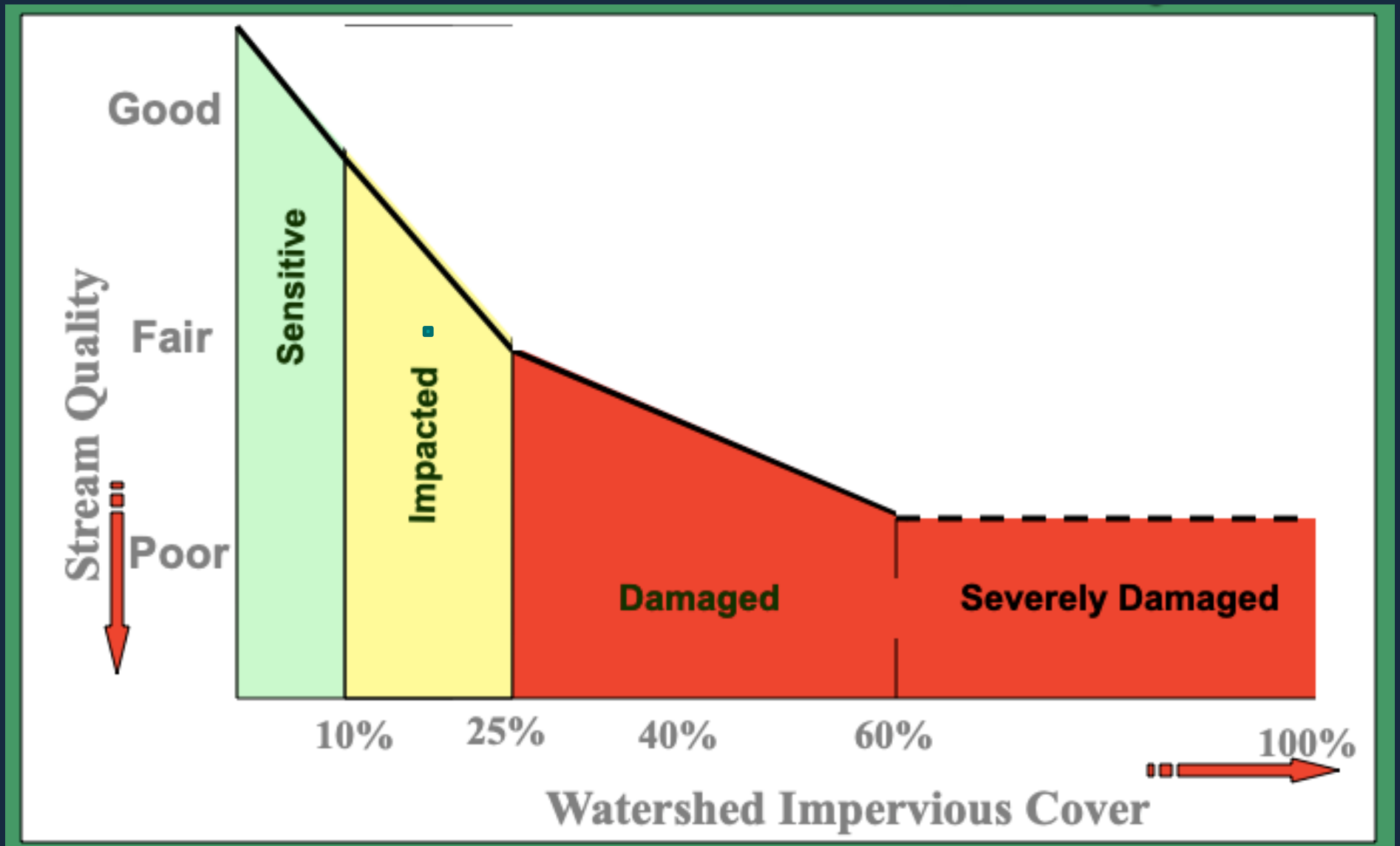
RI needs to balance housing and clean water

- Water quality is directly linked to land use
- Increase in density = decrease in water quality
- Polluted waters are very expensive to restore; prevention is critical
- State regulations alone are inadequate to protect water quality; municipal land use is needed
- Smart growth can balance housing and water quality

Impervious surfaces prevent rainwater from naturally draining into the soil

Untreated polluted runoff is directed into drains and pipes that empty into our water bodies

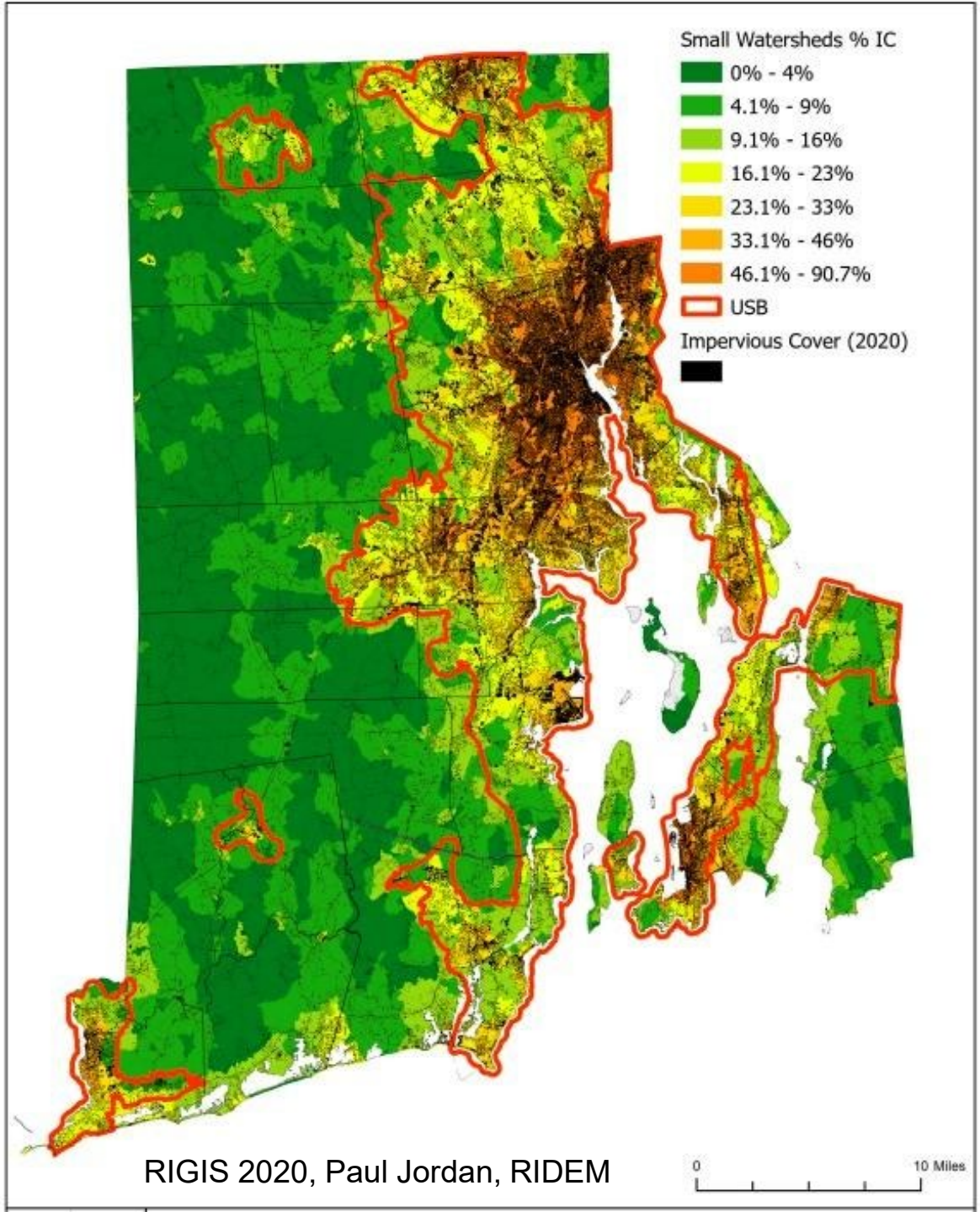
Relationship between Impervious Cover and Water Quality

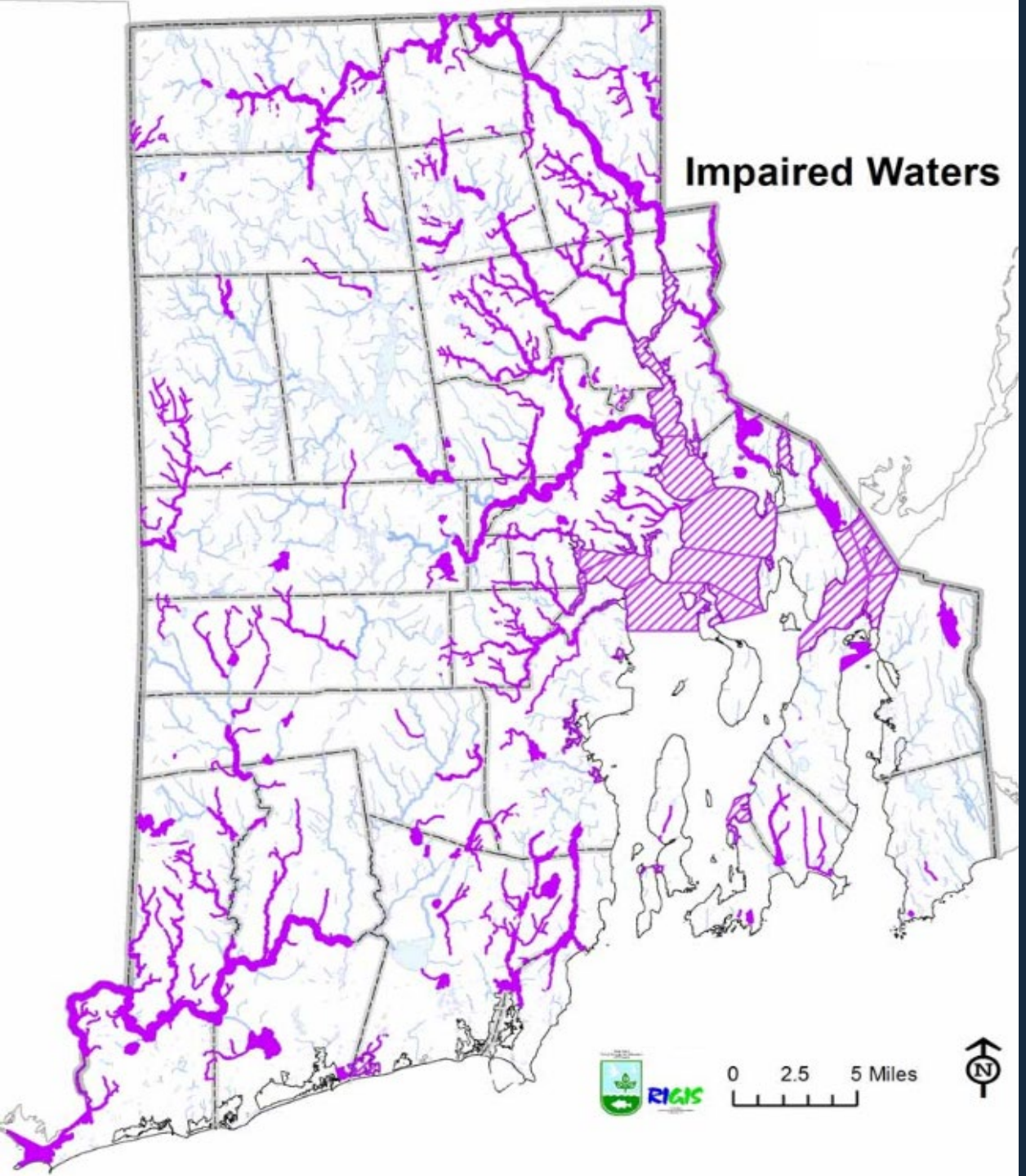


Impervious cover

USB: **27%** impervious

Non-USB: **5%** impervious





Water quality impacts are now a problem statewide

RI's tourism industry supports nearly 38,000 jobs and brings in more than $5B annually.

Beach closures due to high bacteria have far reaching economic impacts.

HIS Global Insights 2012 report

Excess nutrients in freshwater cause algal blooms that make water unsafe for recreation and complicate water supply treatment

Example local water quality problems and actions

South Shore Communities

Source: Town of Charlestown

- URI Coastal Pond research and CRMC regulations determined zoning density based on science.
- Towns adopted recommendations for lot size and OWTS setbacks from shorelines.

- Towns spearheaded use of advanced treatment systems, onsite wastewater management programs and community septic system loans with DEM.

High water table ordinance in **Jamestown** adopted to protect private well water quality

Additional study years later showed further decline in groundwater quality, most likely due to increased density and effluent from advanced OWTS is 19 mg/l.

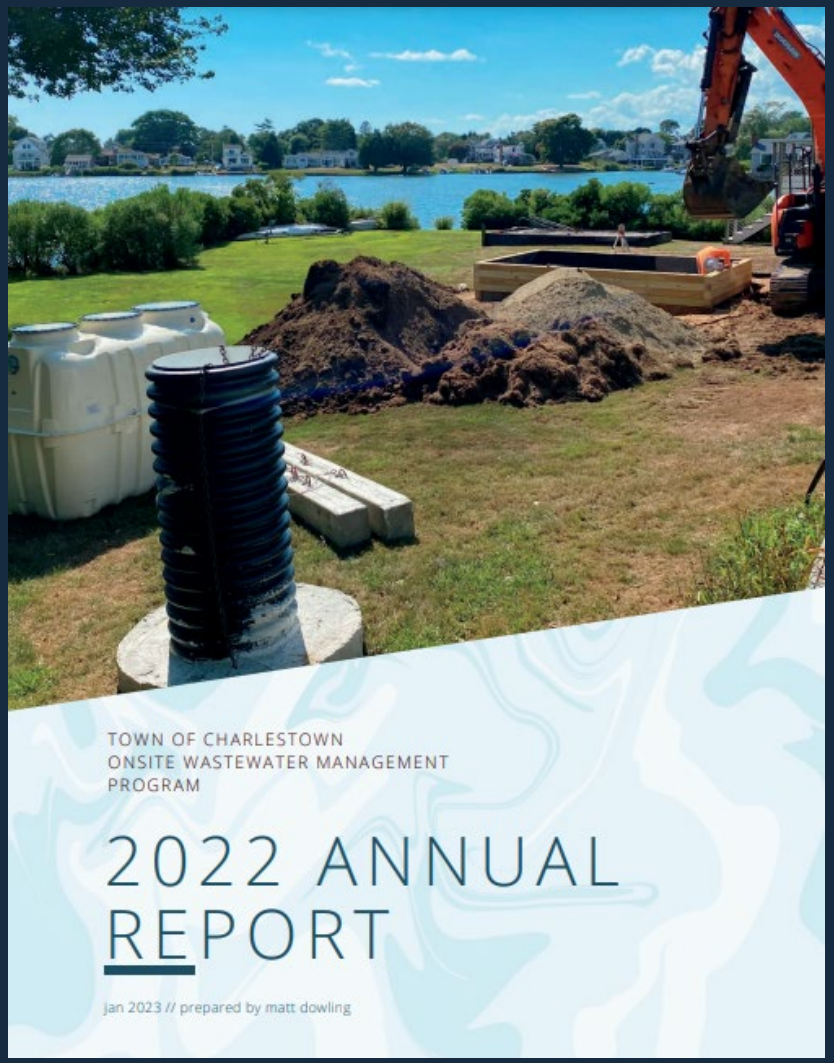
Lack of groundwater supply in **West Greenwich** led to updated well installation regulations

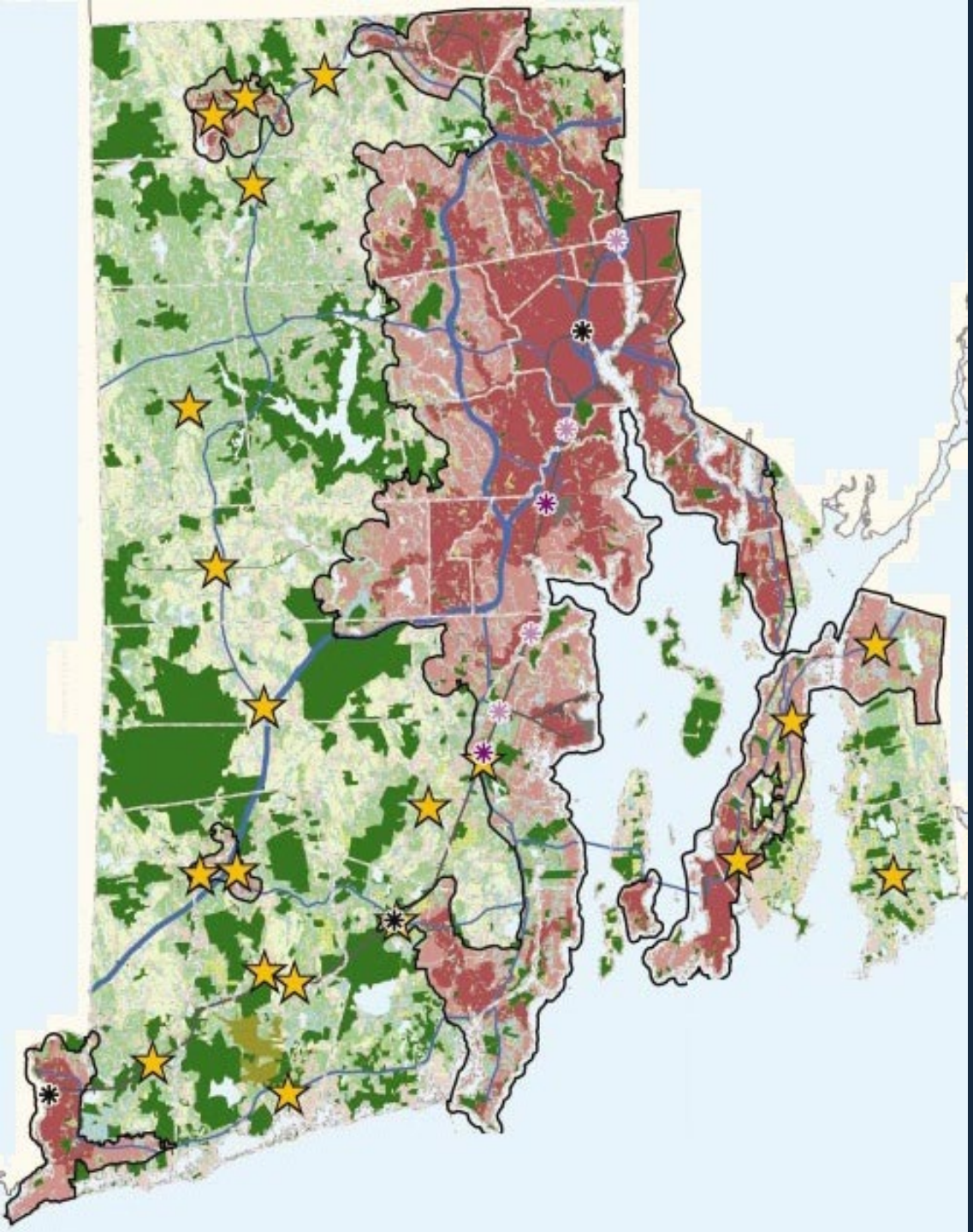
Additional testing for well water quantity and safe yield is required, beyond minimum state requirements.

Wells drilled in bedrock may have limited supply.

Charlestown eliminated cesspools!

However, 20 years after adoption of a wwmgt program, groundwater monitoring continues to show increasing nitrogen despite use of advanced treatment systems with new development and repairs.



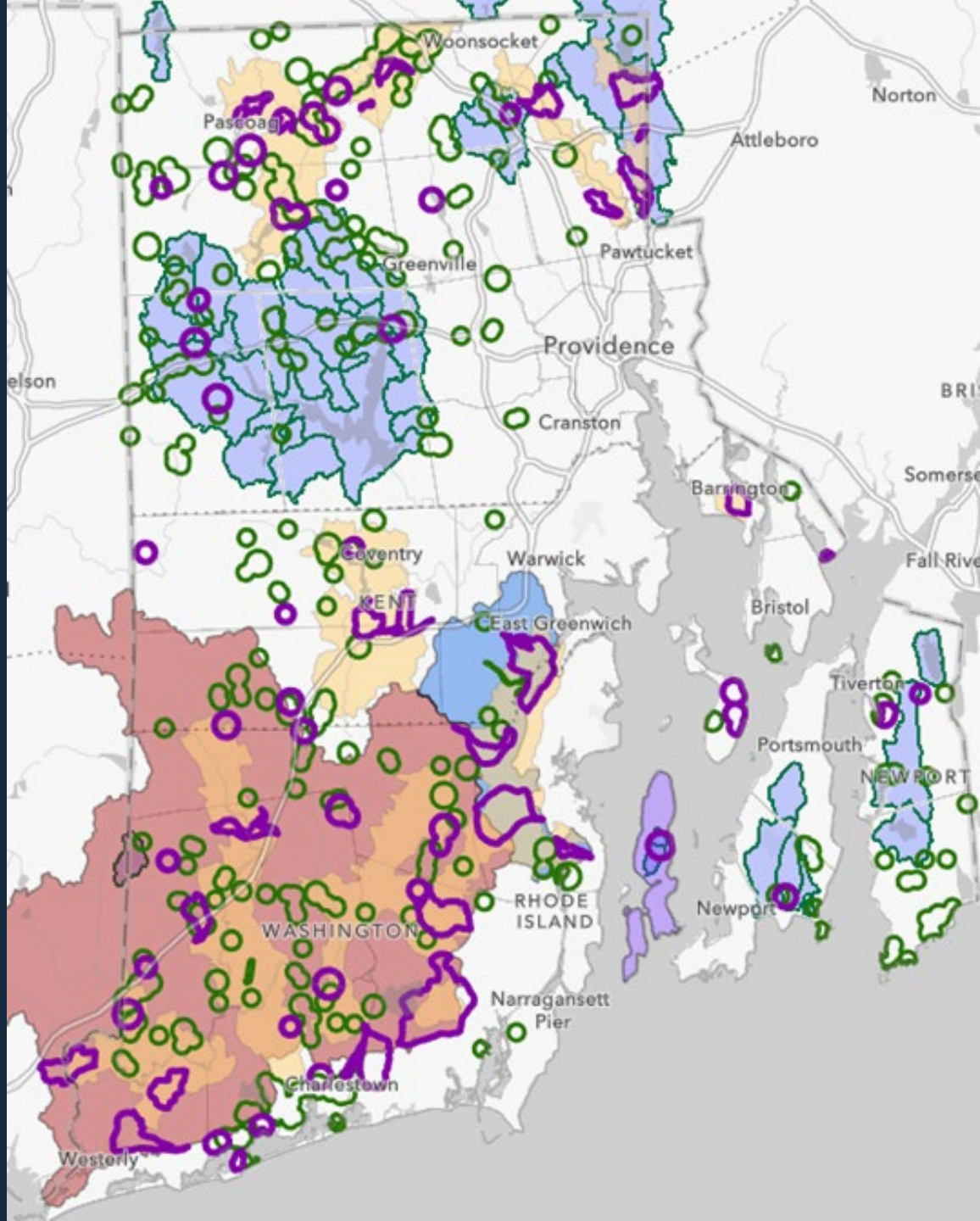


RI Land Use Plan Vision

Encourage growth within the Urban Services Boundary (USB)

Villages buffered by greenspace

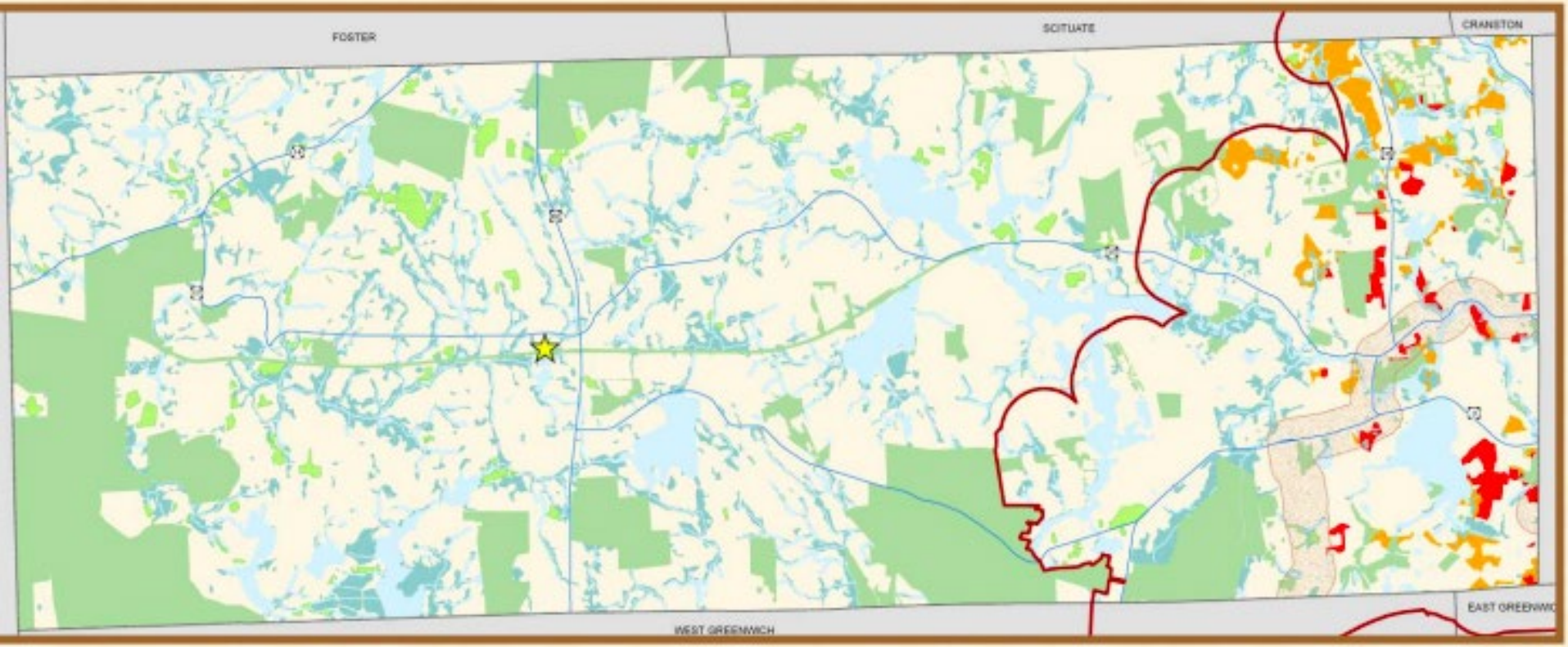
Critical drinking water supplies are located almost entirely outside of the USB



Mapping Potential Sites Suitable for Higher Density Residential Development

Technical Paper # 160

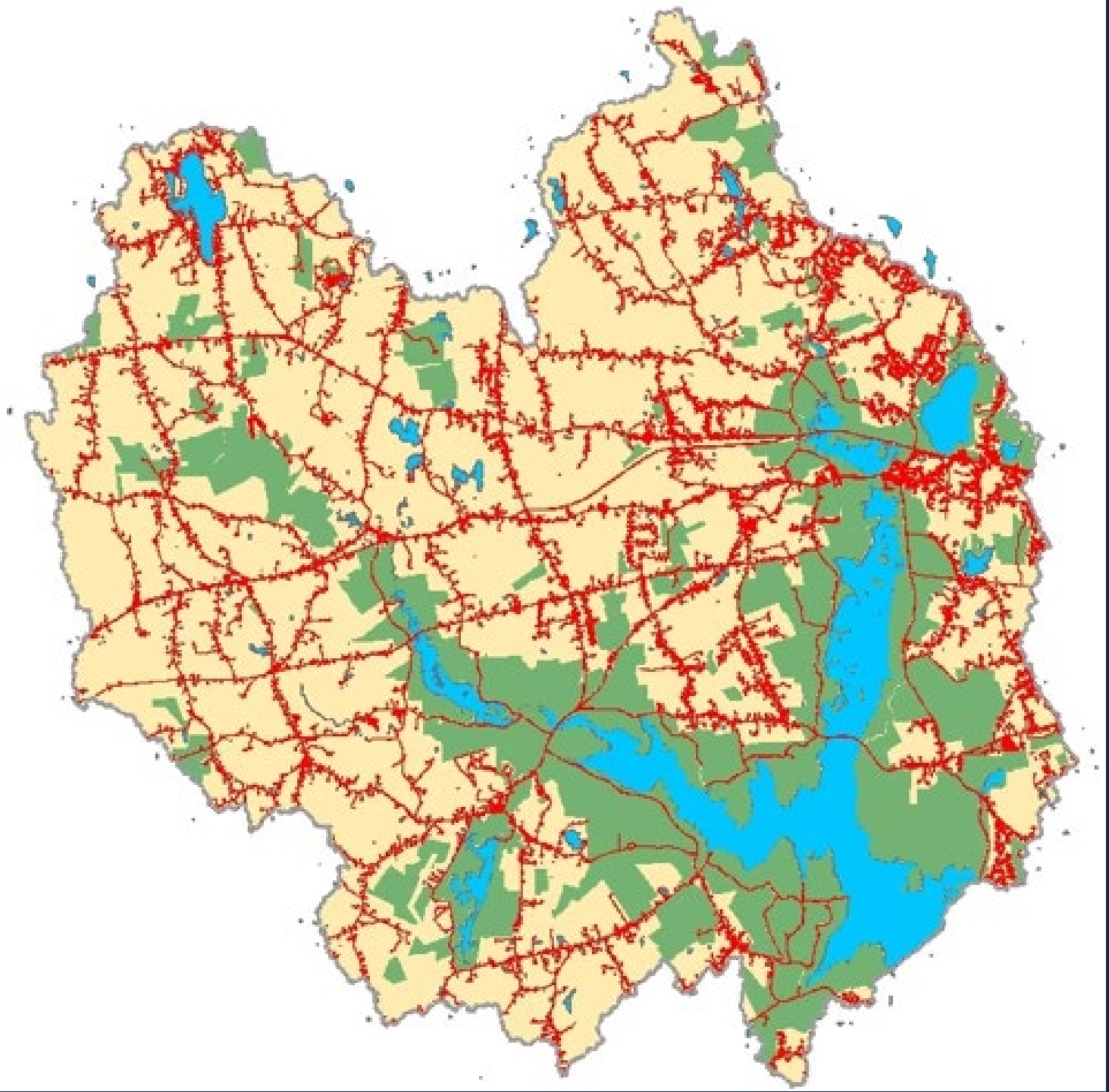
Rhode Island Statewide Planning Program, March 2008



Coventry

Impervious cover associated with residential lot sizes

Lot size	Dwelling units/acre	% Impervious cover
10 acres	0.1	2.4%
5 acres	0.2	5%
3 acres	0.333	8%
2 acres	0.5	12%
1 acre	1	20%
.5 acre	2	25%
.25 acre	4	38%

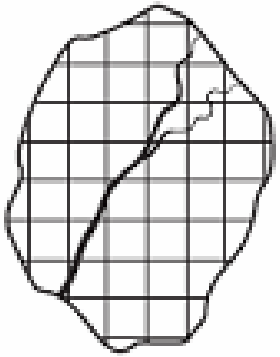
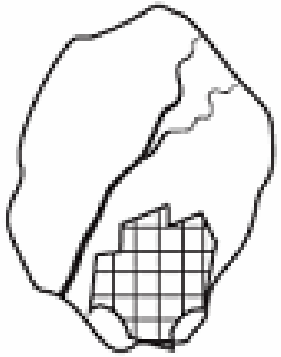
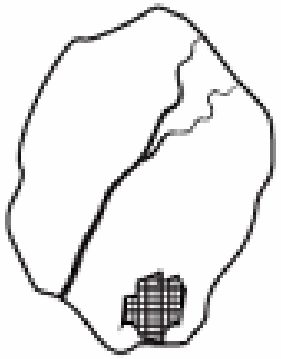


Scituate Reservoir Watershed

Total watershed:
4% impervious

Eastern watershed:
9% impervious

Compact growth can reduce impervious cover

Scenario A	Scenario B	Scenario C
		
1 unit per acre	4 units per acre	8 units per acre
Site: 20% impervious cover **Watershed: 20% impervious cover**	**Site: 38% impervious cover** **Watershed: 9.5% impervious cover**	**Site: 65% impervious cover** **Watershed: 8.1% impervious cover**

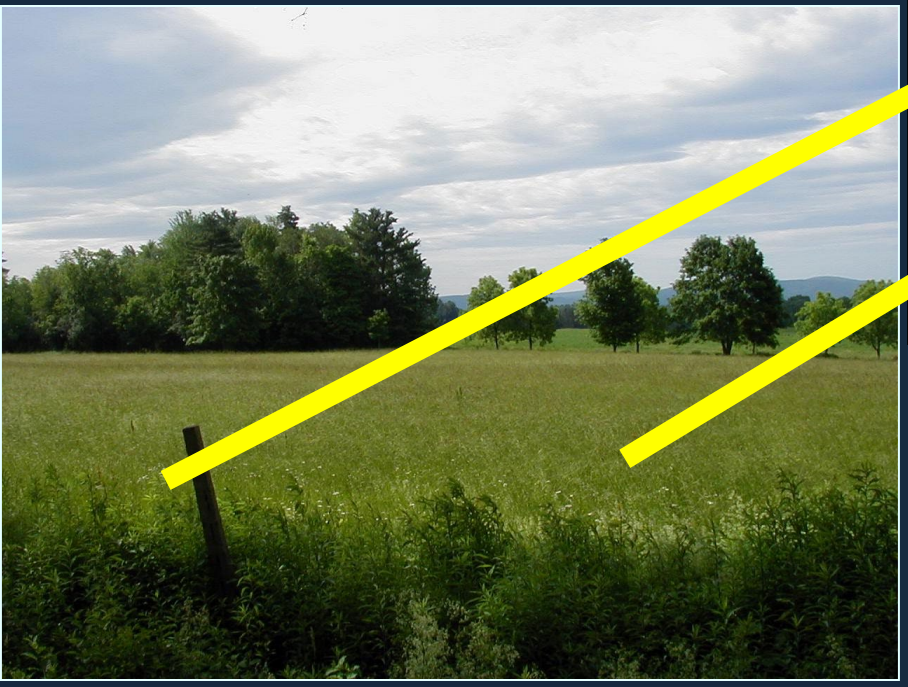
Techniques to balance housing and water quality

- Conservation Development
- Village Development
- Transfer of Development Rights

Conservation Development

Transfer of Development Rights

Owner of “sending” parcel sells development rights in exchange for a permanent conservation easement.



Owner of “receiving” parcel buys development rights to build at densities higher than allowed under base zoning.

Key points

- Housing density needs supporting infrastructure
- The best locations for density are within the USB
- Compact growth can avoid impacts to water quality
- Towns outside of the USB should maintain low density but use compact growth
- The State must provide financial and technical assistance