

Forest Block Planning

Forest blocks, subdivisions, and rural
density

Developed by the
Two Rivers-Ottawa-Quebec
Regional Commission

TRORC



Lincoln Frasca, Conservation Planning Specialist, VT Fish and Wildlife Department



Izzy Cheney, Fall Intern, TRORC



Kevin Geiger, Director of Planning, AICP CFM, TRORC

Introductions



Part 1: Forest blocks,
habitat connectors, and
why we care about them



Part 2: Town planning
requirement



Part 3: Subdivision
bylaws



Part 4: Subdivision
planning and forest
fragmentation

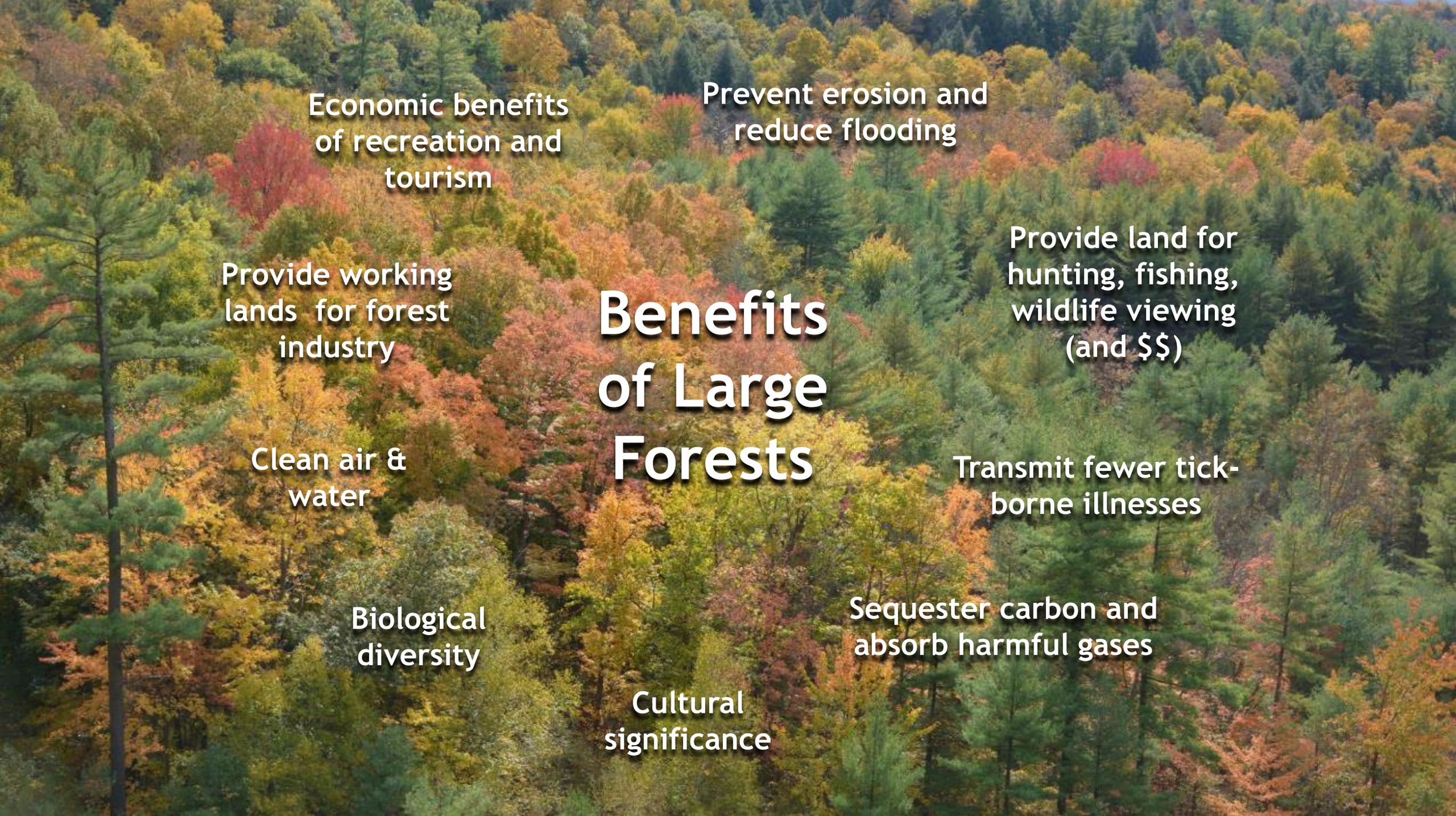


Part 5: Rural density

Goals

- ✓ Emphasize the importance of forest blocks and habitat connectors
- ✓ Outline the state planning goal and town requirements
- ✓ Explain the purpose of subdivisions as well as their impacts
- ✓ Clarify the concept of rural density
- ✓ Use maps to visualize outcomes
- ✓ **Prepare TRO towns to create effective and ecologically-conscious town plans that address forest blocks and habitat connectors and subdivision bylaws that protect forest blocks and allow for sustainable development in the region**





Economic benefits
of recreation and
tourism

Prevent erosion and
reduce flooding

Provide working
lands for forest
industry

Provide land for
hunting, fishing,
wildlife viewing
(and \$\$)

Benefits of Large Forests

Clean air &
water

Transmit fewer tick-
borne illnesses

Biological
diversity

Sequester carbon and
absorb harmful gases

Cultural
significance



This is 12% of
Vermont's GDP,
and 20,000 jobs.

Fall foliage tourism
is 25% of the tourist
income to Vermont

Forests power Vermont's Economy

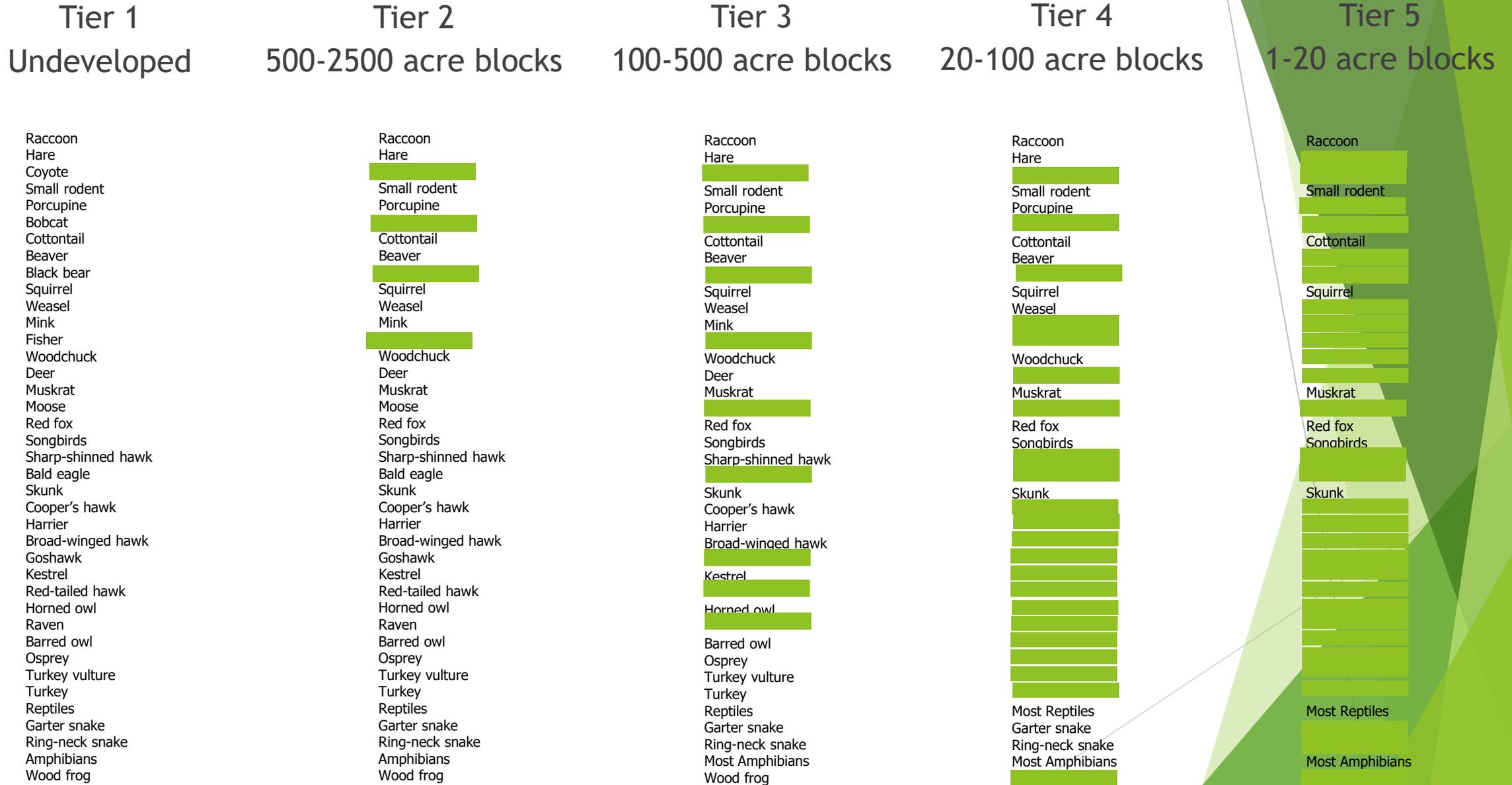
Forest products
add \$1.5 billion

Hunting, fishing,
and wildlife
viewing
contribute \$685
million

Forest recreation
and tourism
provide \$1.9
billion to
Vermont annually

Intact wetlands and
riparian areas reduce
damage from floods

Wildlife Present in Forest Patches

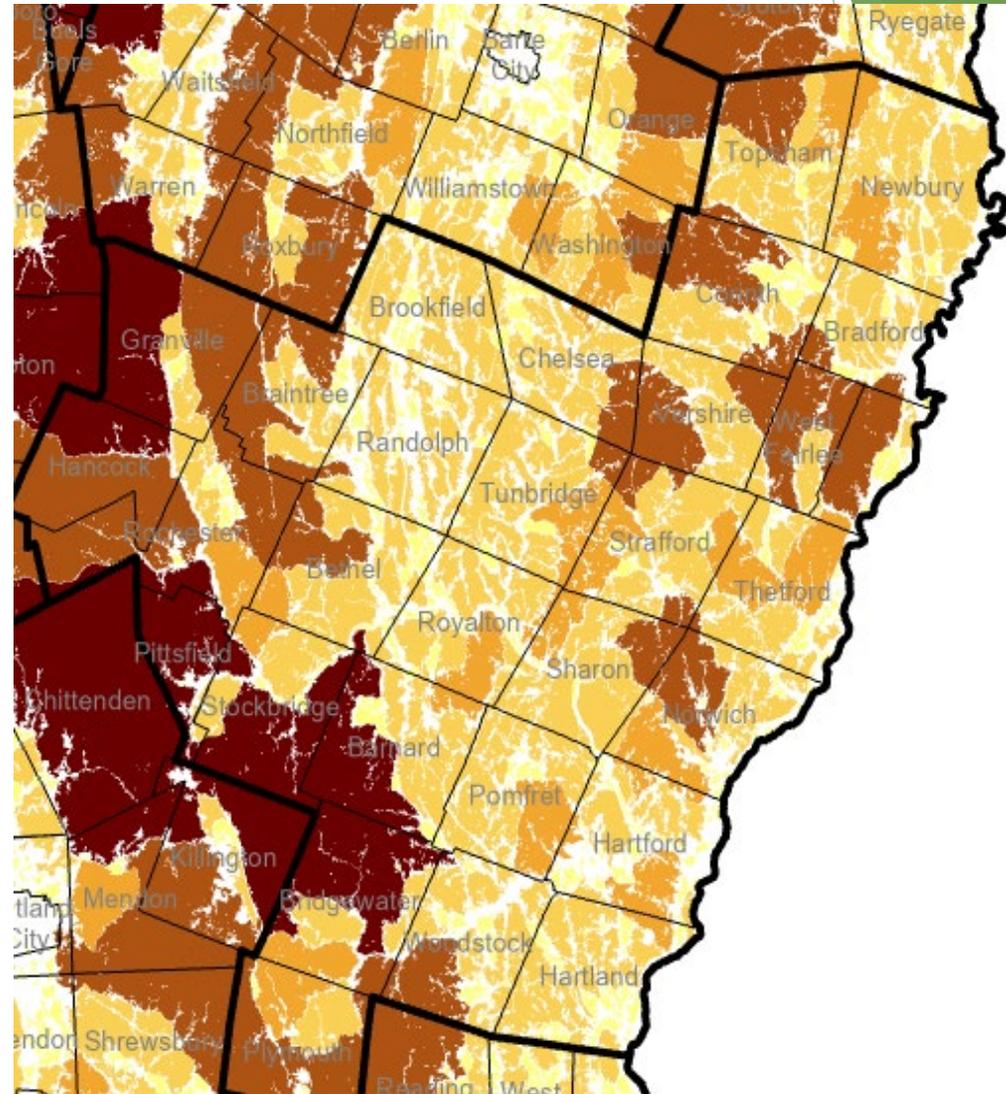
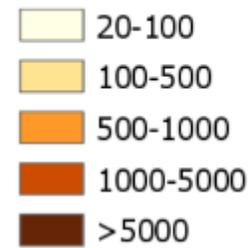


Forest Blocks

Areas of natural cover

(no roads, development or agriculture)

Habitat Block Size
(IN ACRES)



Trees Vs. Forest



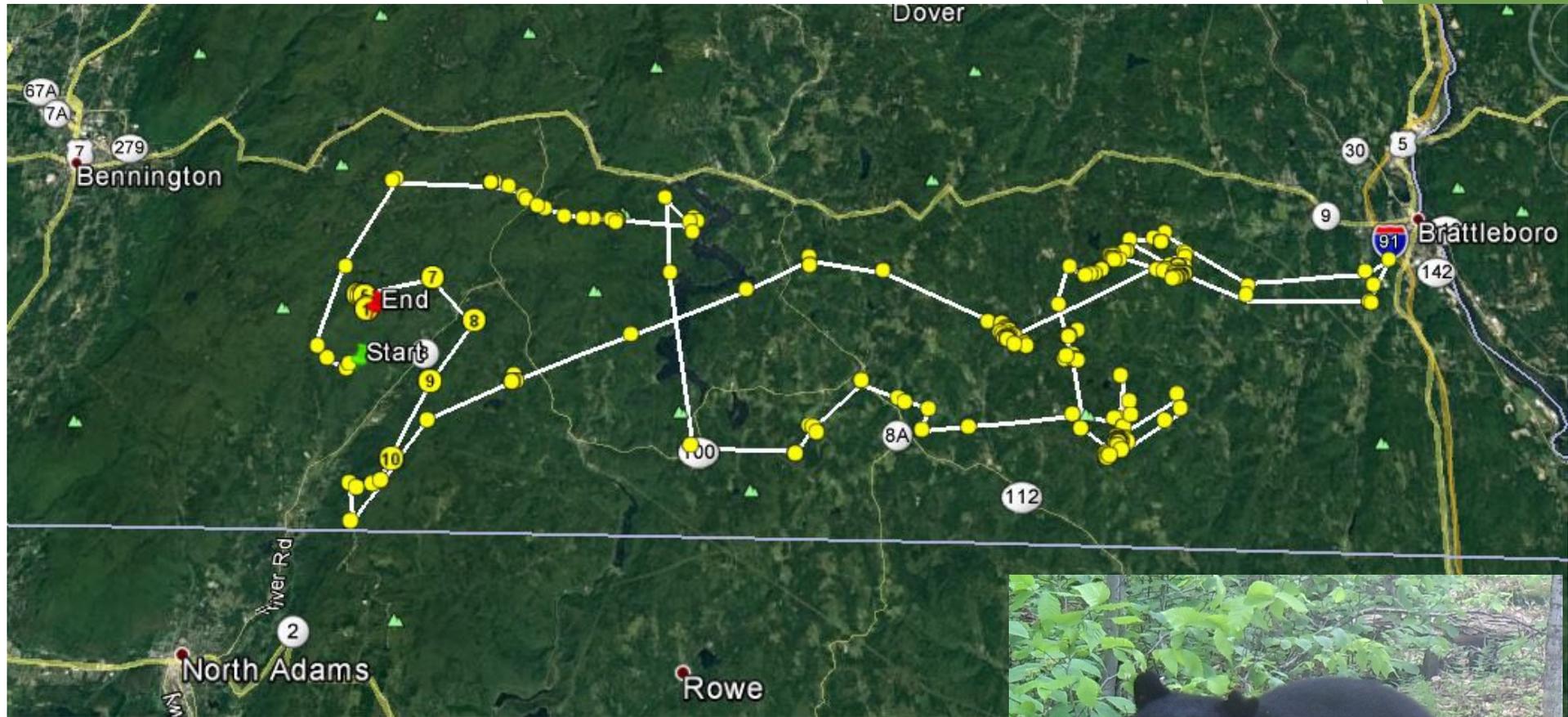


**Core Forest
Blocks**

**Wildlife
Road
Crossings**

**Small,
"stepping
stone"
forests**

**Streamside
Connectors**



Male Bear M0063

October 11 2017 - November 11 2017

Approximately 140 km/ 90miles.





MIGRATIONS IN MOTION

As climate change alters habitats and disrupts ecosystems, where will animals move to survive? And will human development prevent them from getting there?

This map shows the average direction mammals, birds, and amphibians need to move to track hospitable climates as they shift across the landscape.



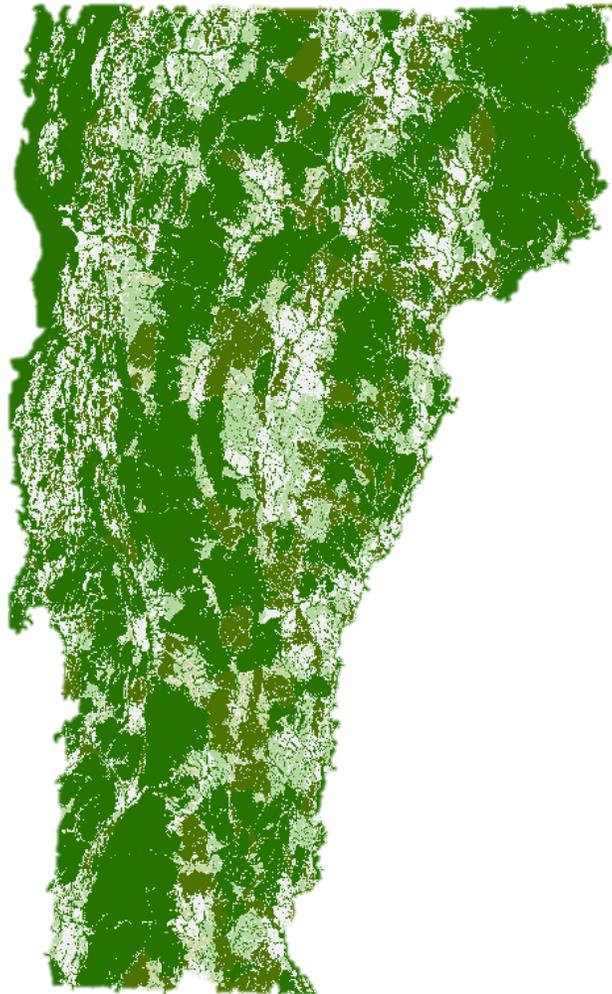
Prev



Next

-  Mammals
-  Birds
-  Amphibians

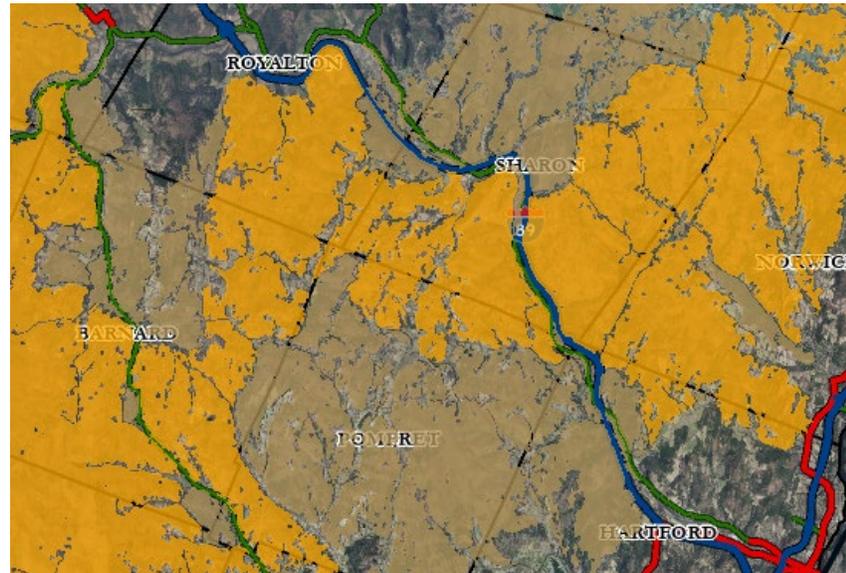
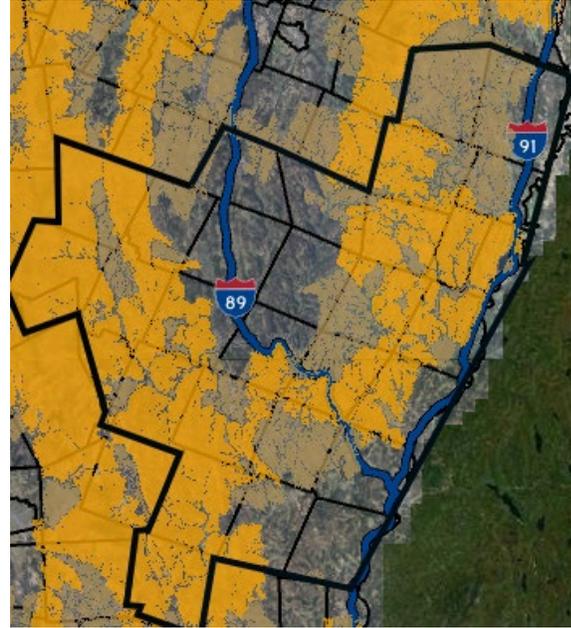
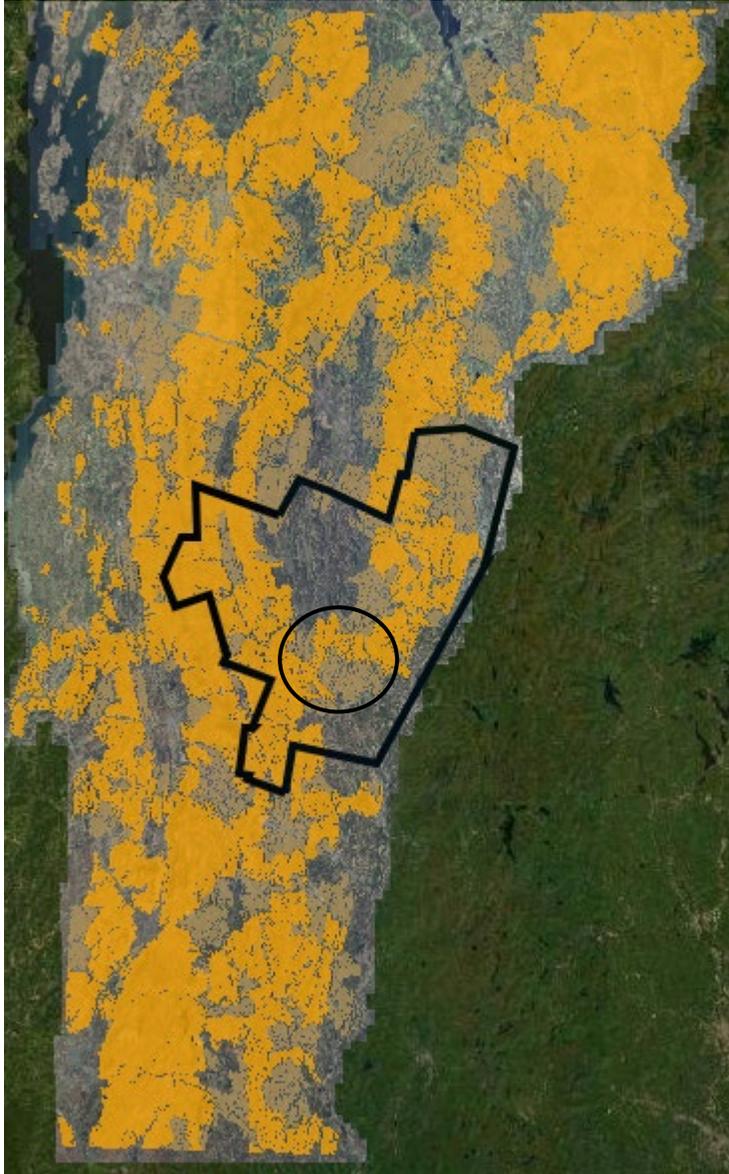
Vermont Conservation Design



Most important lands and waters for maintaining ecological function now and into the future.

- Intact
- Connected
- Diverse

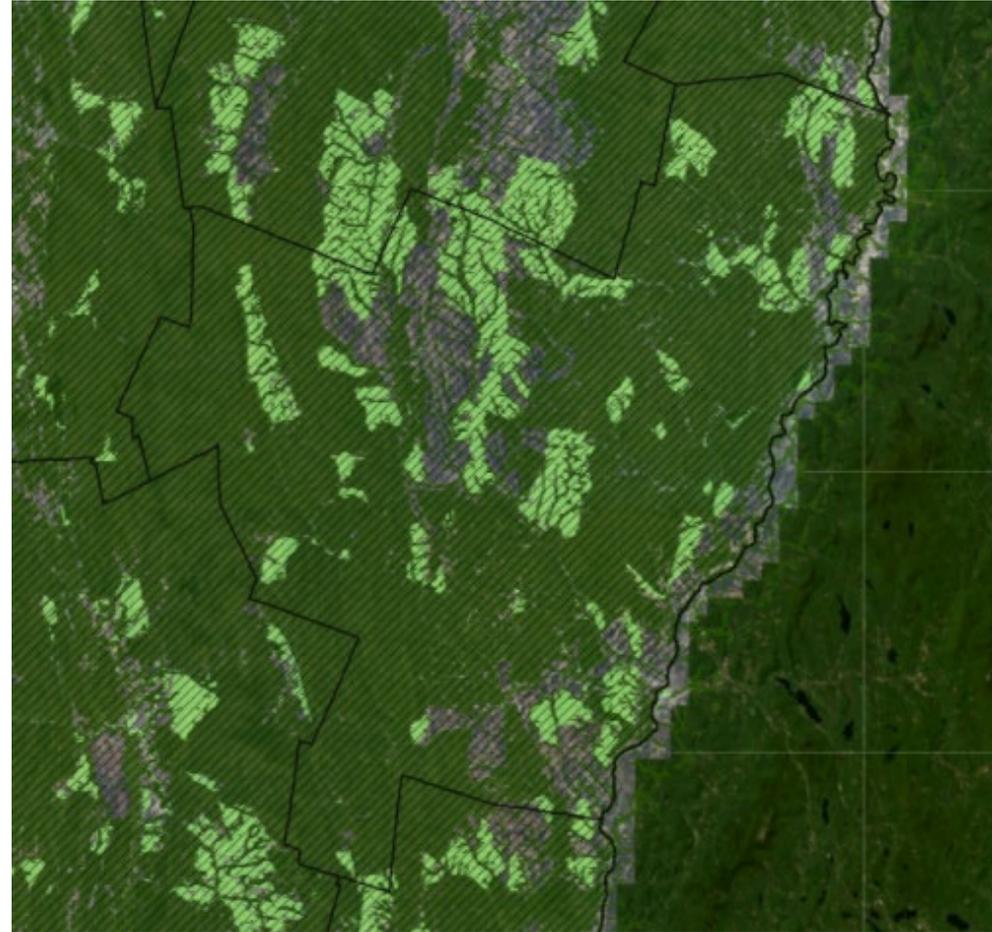
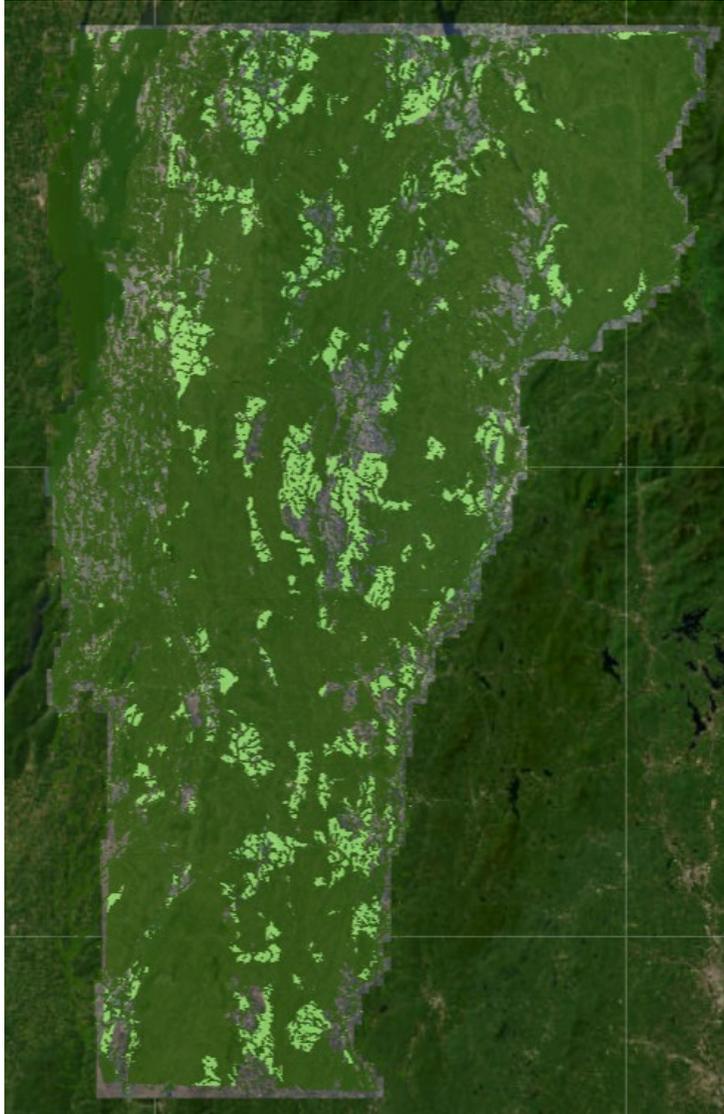
TRORC Connectivity Blocks

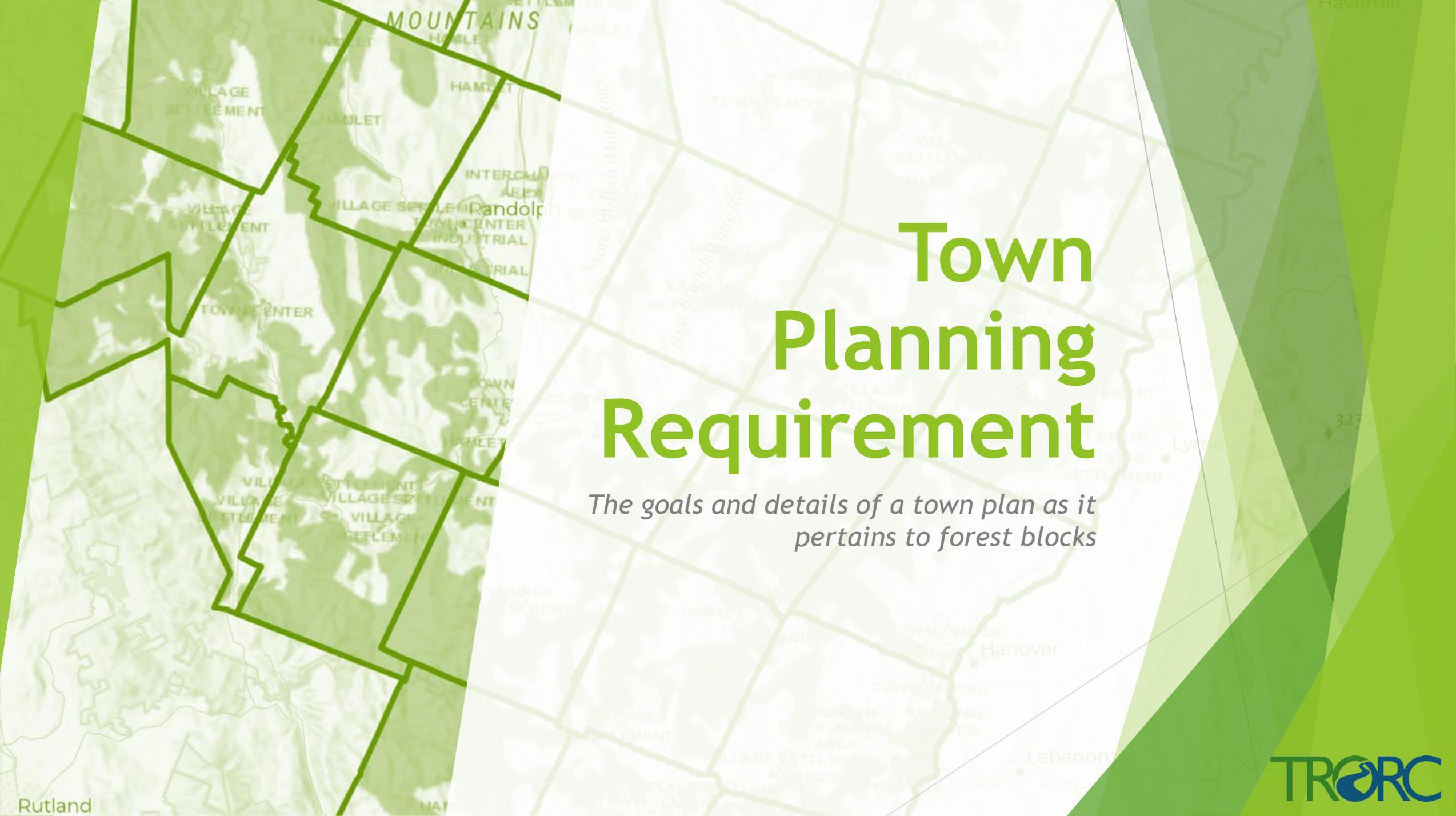


Wildlife Road Crossings



VCD Overall Priorities



The background features a map of Vermont with various geographical labels such as 'MOUNTAINS', 'Rutland', 'Hanover', and 'Lebanon'. A prominent green outline highlights a specific region in the western part of the state. Overlaid on the map are several semi-transparent green geometric shapes, including a large triangle on the right side. The title 'Town Planning Requirement' is centered in a large, bold, green font.

Town Planning Requirement

The goals and details of a town plan as it pertains to forest blocks

Requirement of All Town Plans

24 V.S.A. § 4382: A town plan shall include "A land use plan and statement of **present and prospective land uses** that:

- (A) Indicates those areas **proposed** for forests, recreation, agriculture...residence, commerce, industry, public and semi-public uses...open spaces, areas reserved for flood plain, and areas identified by the State, the regional planning commission, or the municipality that require special consideration for...**the maintenance of forest blocks, wildlife habitat, and habitat connectors...**
- (D) Indicates those areas that are as **important** as forest blocks and habitat connectors and plans for land development in those areas to **minimize forest fragmentation and promote the health, viability, and ecological function of forests.**

Requirement of All Regionally Approved Town Plans

- ▶ 24 V.S.A. § 4302: "Vermont's forestlands should be managed so as to **maintain and improve forest blocks and habitat connectors.**" This includes "maintaining low overall density."



State Planning Goals

- ▶ Vermont law (24 V.S.A. § 4410) states that bylaws (both zoning and subdivision) “are adopted for the purposes set forth in section 4302,” the most relevant being, “(6) to maintain and improve the quality of air, water, wildlife and land resources.”

Subdivision Bylaws

*What are they, how do they work, and
how can they help preserve forest blocks?*

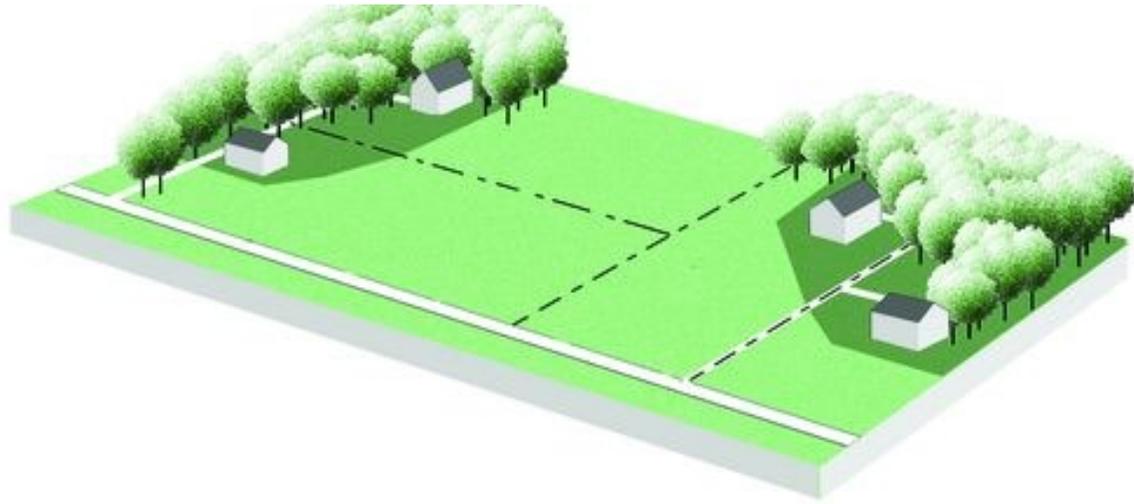


What is a subdivision bylaw?

- ❑ Deals with “subdivisions” (i.e. the creation of new property boundary lines and lots)
 - ❑ Adopted and administered just like zoning
 - ❑ Can be combined with zoning in a “unified bylaw”
 - ❑ **Can be scaled so that it only kicks in at certain sizes, number of lots, pace of lots, etc.**
 - ❑ Can have differing standards by district
- ▶ NOTE: Towns with both zoning and subdivision become a “10 acre town” under Act 250 instead of a “1 acre town”, unless the Selectboard resolves by ordinance to not have this occur.

Subdivision vs. Zoning

- ▶ While zoning bylaws are mostly about the “what”, subdivision bylaws are about the “where”
- ▶ If you are only doing zoning, you are often too late to protect many natural resources. In rural areas, regulating subdivisions is a BETTER WAY to ensure:
 - ❑ proper road layout, access and transportation interconnections
 - ❑ effective stormwater management
 - ❑ lots are buildable
 - ❑ land is not needlessly fragmented
 - ❑ impacts to natural resources such as prime farmland, wetlands, critical habitat, etc. are reviewed
- ▶ Through the regulation of **lot line placement; roads, utilities and buildings;** and the use of **clustering and/or density** requirements, rural-style subdivisions can still be done, preserving much of the value to the landowner (and maybe even increasing it), and also leaving large parts of the original parcel intact so that they retain their ecological value.



Subdivision Planning

*Placing lot lines and cut
lines and building envelopes to
minimize forest fragmentation*

Where to begin?

- ▶ Subdivision, like zoning, begins in the Town Plan.
- ▶ The Town Plan should recommend adopting subdivision bylaws if you want to have them.
- ▶ The Town Plan is where the community can provide background on the ecological/agricultural/forestry/rural character value of lands, and set policies on their protection to form the basis for later regulatory standards.
- ▶ The town plan should clarify the goal: **preserve forest blocks and minimize forest fragmentation**

What is fragmentation?

- ▶ “. . . when larger parcels are divided and sold or transferred into multiple parcels, often through the process of subdivision, the result can be **disjointed land ownership patterns** that promote new housing and infrastructure development (roads, septic, utility lines, etc.). When this development occurs, it can fragment the landscape and **negatively affect plant and animal species, wildlife habitat (called habitat fragmentation), and water quality.**”

From The Final Report of The (Vermont) Roundtable on Parcelization and Forest Fragmentation, May 2007.

Fragmentation standard examples

► Fragmentation Standard Example #1

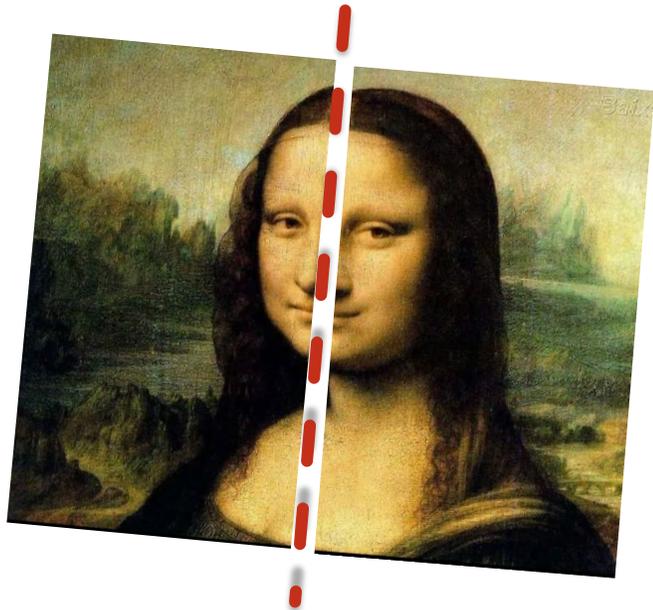
Subdivision of land identified as forest blocks shall be permitted only where the Planning Commission finds that the subdivision has been planned to minimize the loss of forestry potential by providing for building densities, lot sizes, and the use of cluster planning designed to economize on the costs of roads, utilities, and land usage.

► Fragmentation Standard Example #2

Conservation of Open Space - All major subdivisions in the Rural and Rural Residential Districts will be required to maintain at least 80% of the total acreage of the original lot in contiguous and undeveloped acreage that is able to function as a single lot for forestry, agriculture, or conservation purposes.

Impacts of fragmentation

- ▶ Subdivisions always fragment land, but poor lot design can unnecessarily chop up land, limiting its future use for agriculture, forestry or conservation.



Lot lines

- ▶ Lot line placement can be regulated. In this example the sensitive areas have been protected not only by permit or easement, but also by drawing the lot lines so they are best managed as a whole and protected.
- ▶ Site restrictions would be the next best way to achieve this.

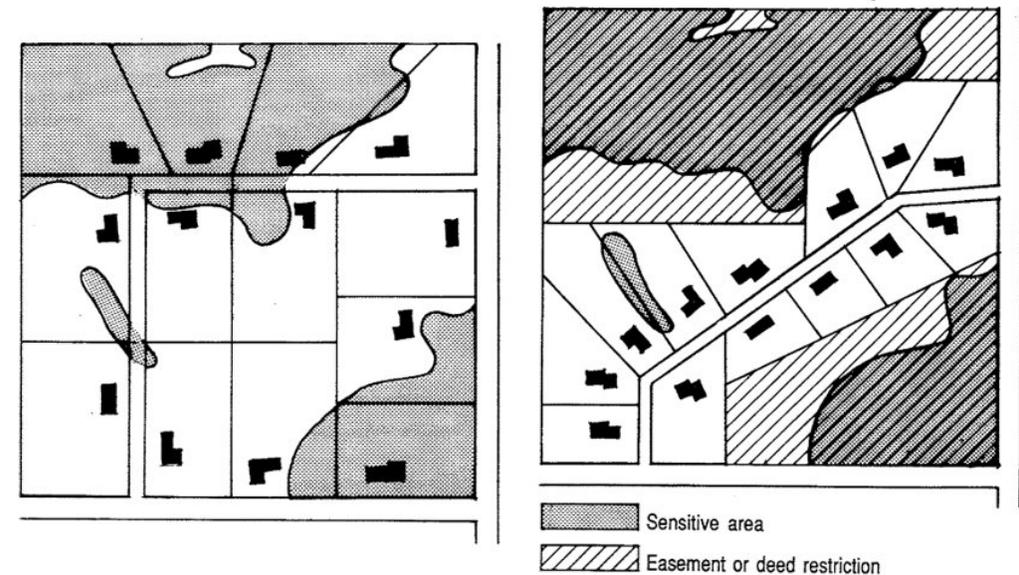
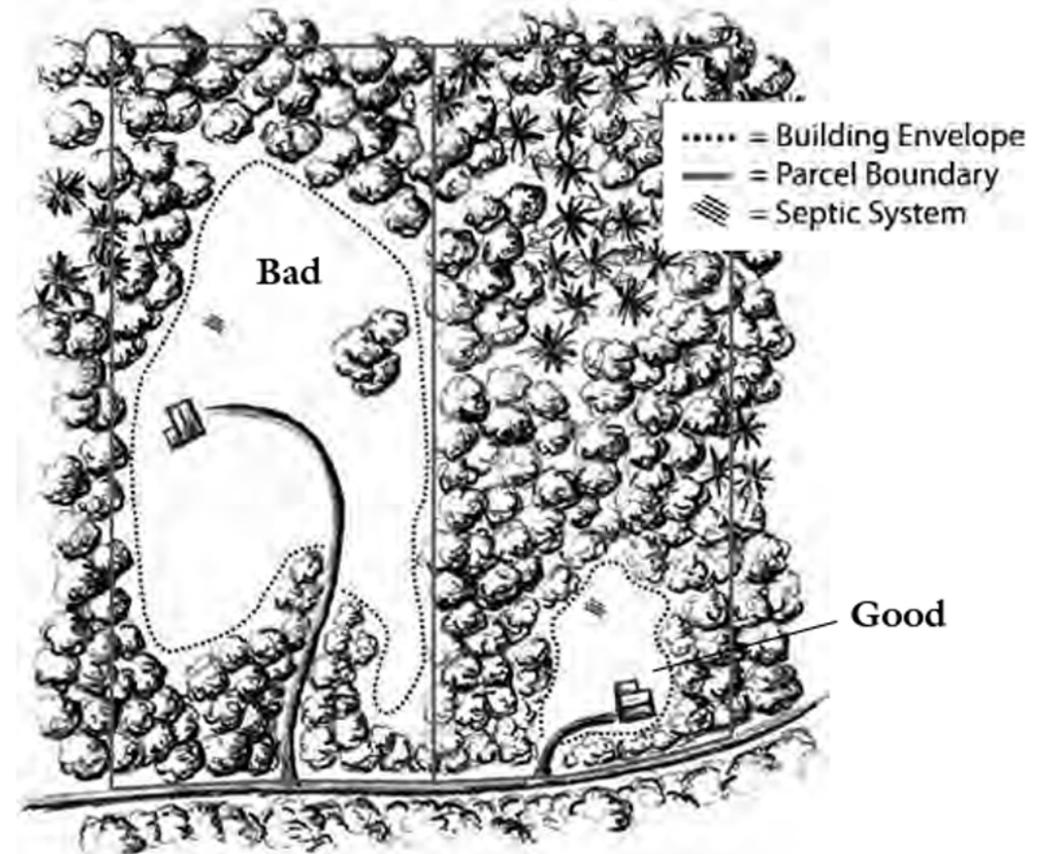


Figure 2-13. Conventional two-acre lot subdivision with homes located on sensitive but buildable land, compared with improved layouts protecting those resource areas, as encouraged by new regulations adopted by the Maine Department of Environmental Protection.

From Randall Arendt's *Rural By Design*, page 21.

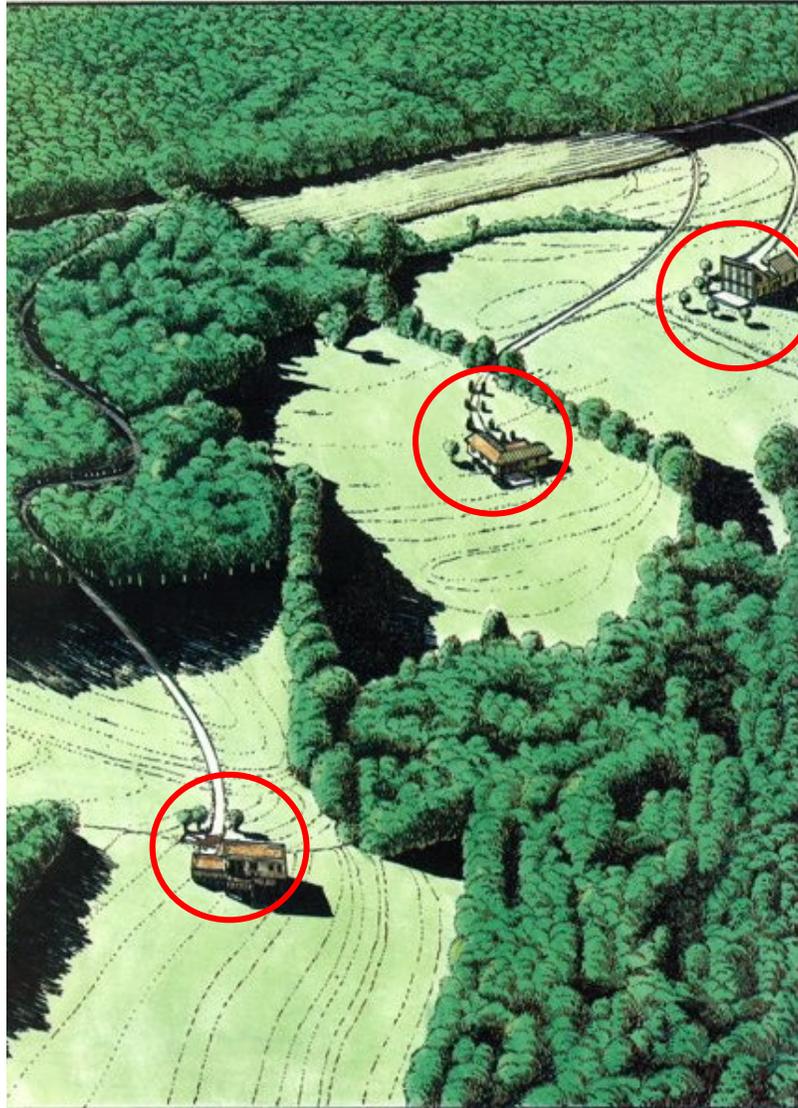
Site restrictions

- ▶ Building “envelopes” can be used to approximately site structures. These should be flagged on the ground.
- ▶ “Cut lines” and/or ground disturbance boundaries can be established. These should be flagged, especially if there are any larger trees that are to be saved.

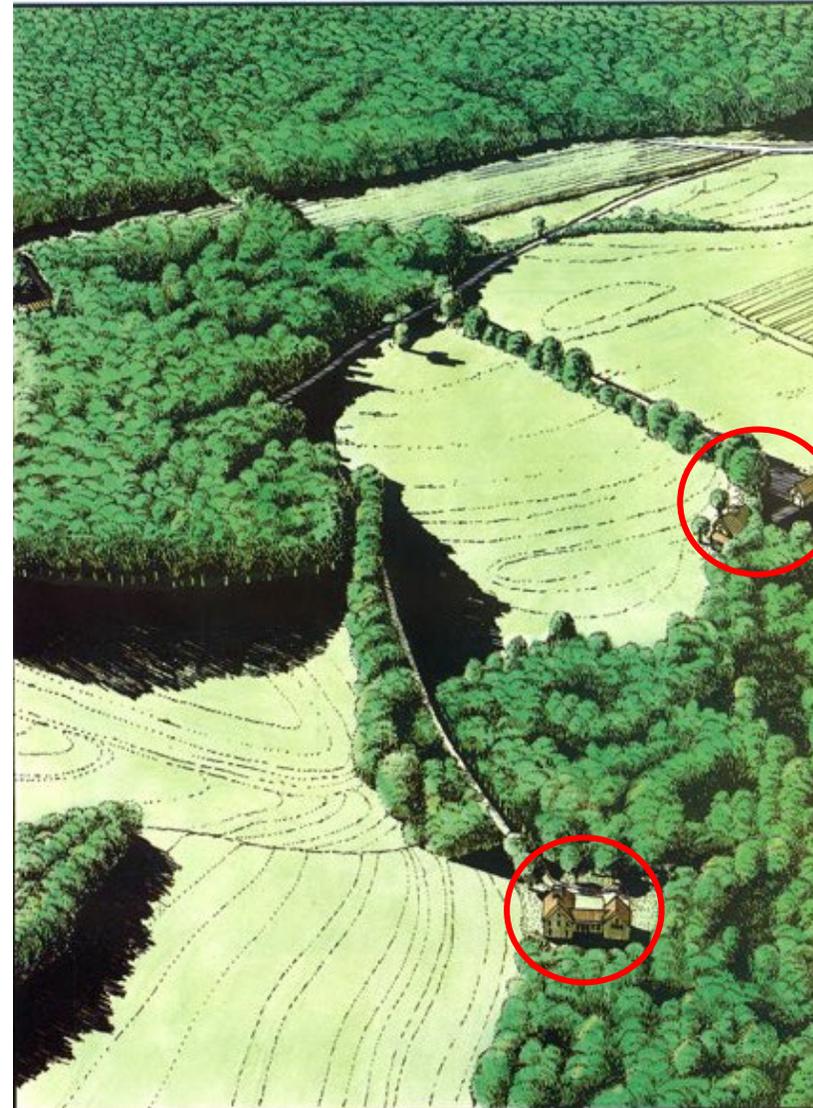


From Climate Change and Land Use, Chittendon Country RPC p. 3

You can let them go here . . . or tell them they can't.



View of Site D After Conventional Development



Aerial View of Site D After Creative Development

Roads and buildings are tucked away in natural landscape features and *on the edge* --> minimal disruption

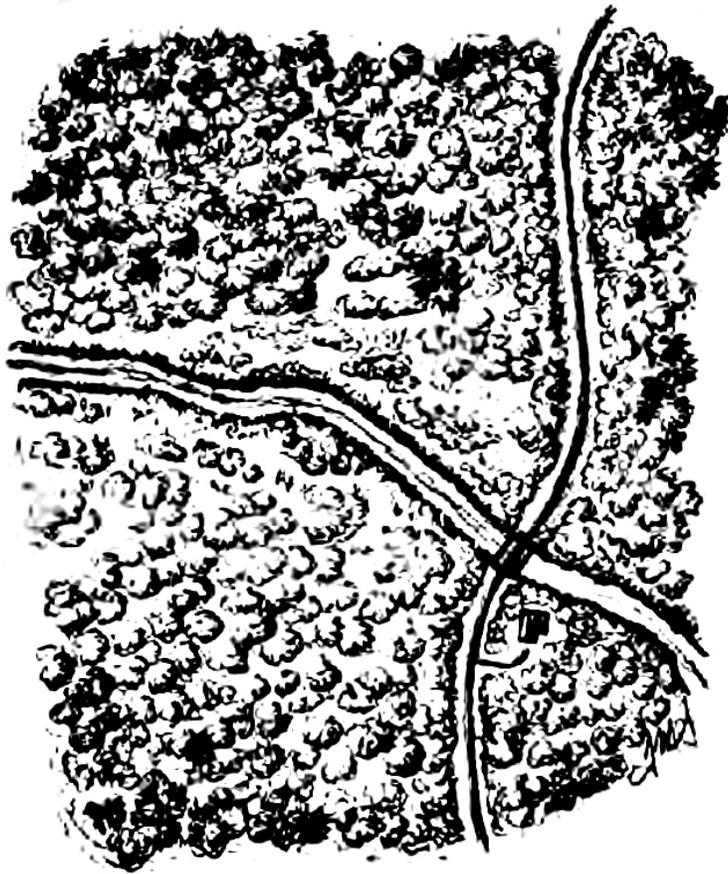
Rural Density

Conceptualizing and visualizing density

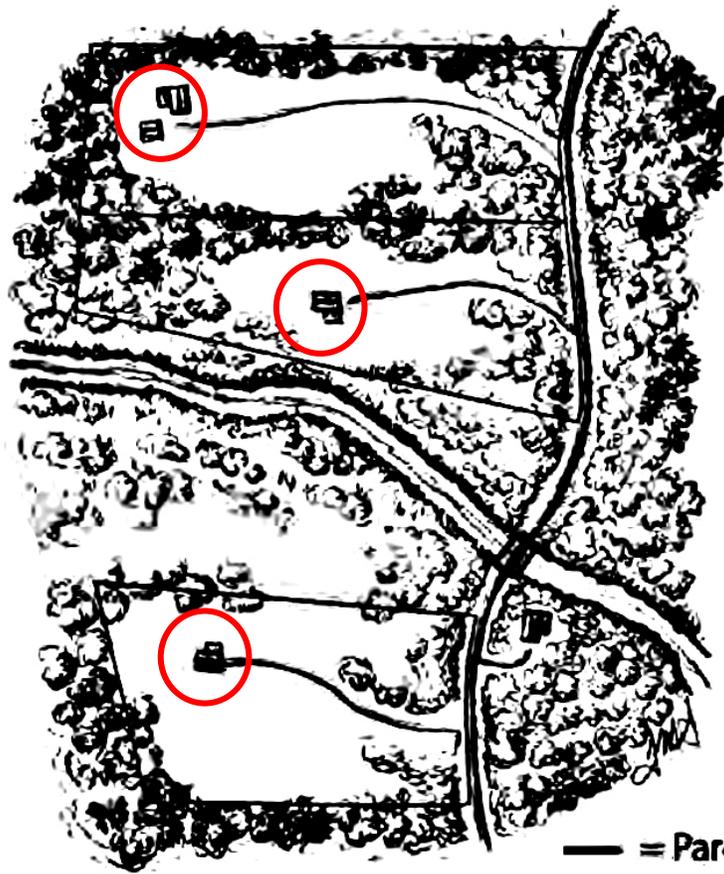


Rethinking density: rural density

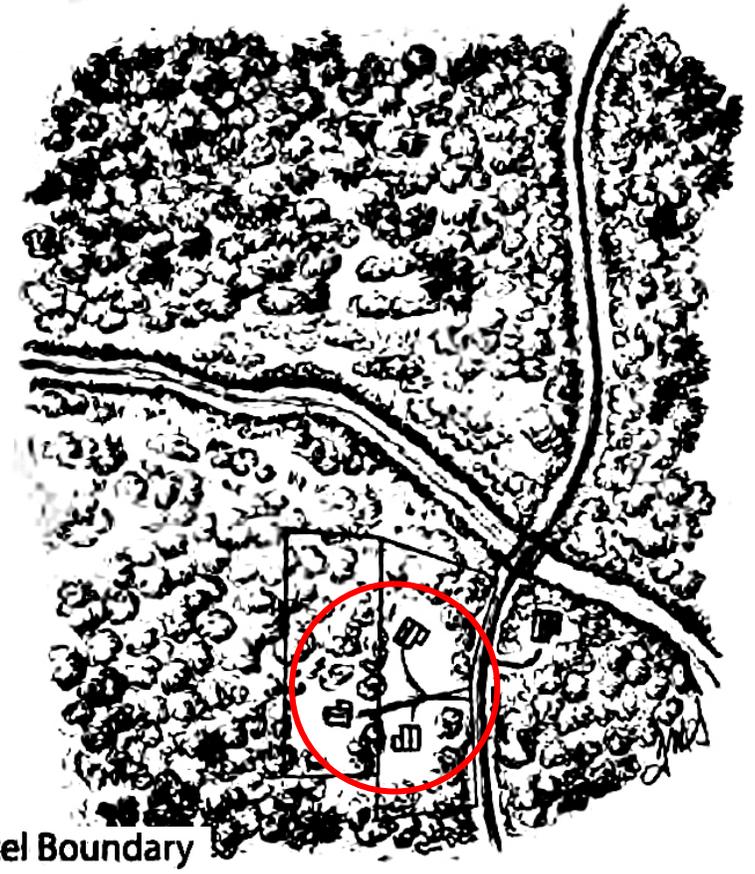
- ▶ **Rural** density refers to the ecologically-conscious placement of developments relatively close together (compared to the size of the lot) while still reasonably distanced.
- ▶ Rural density gives you the SAME number of buildings per original parcel, but on a smaller portion of the land to protect forest blocks.
- ▶ Rural density preserves rural character in areas without public sewer and water.
- ▶ Can lessen development costs and still preserve land value, while meeting conservation objectives.



Parcel before development



Parcel developed with conventional road frontages and setbacks results in "spaghetti lots" that reduce forest cover

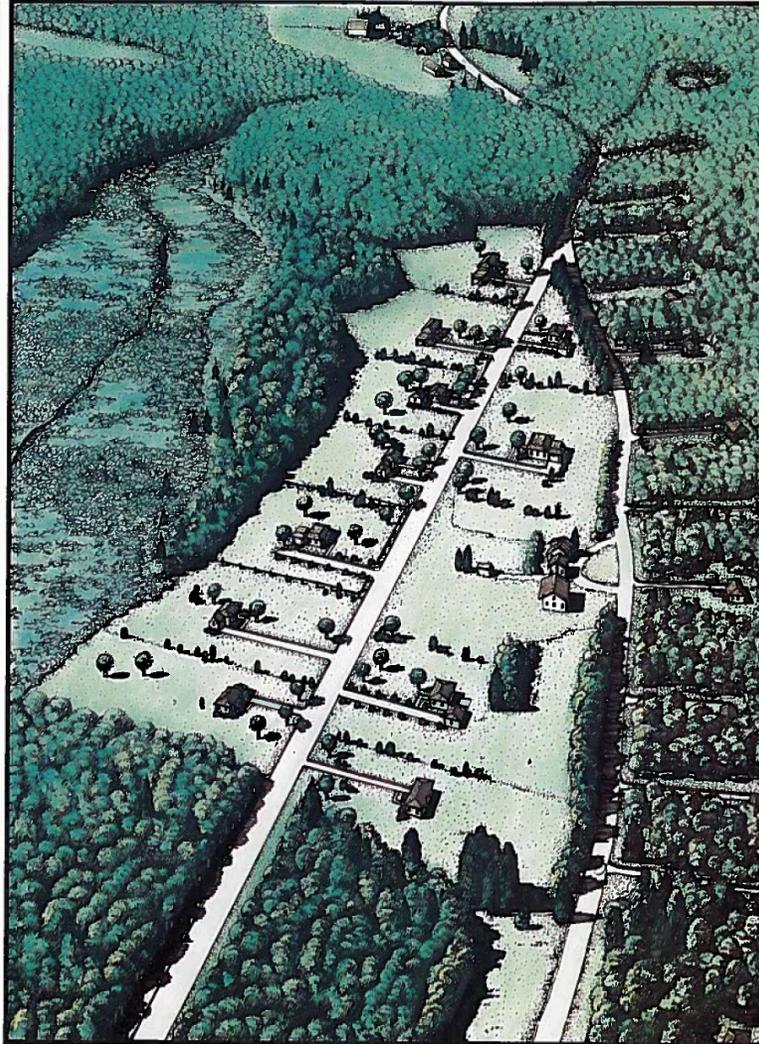


Parcel with clustered development, minimizing forest fragmentation while preserving privacy and the functionality of remaining forestland.

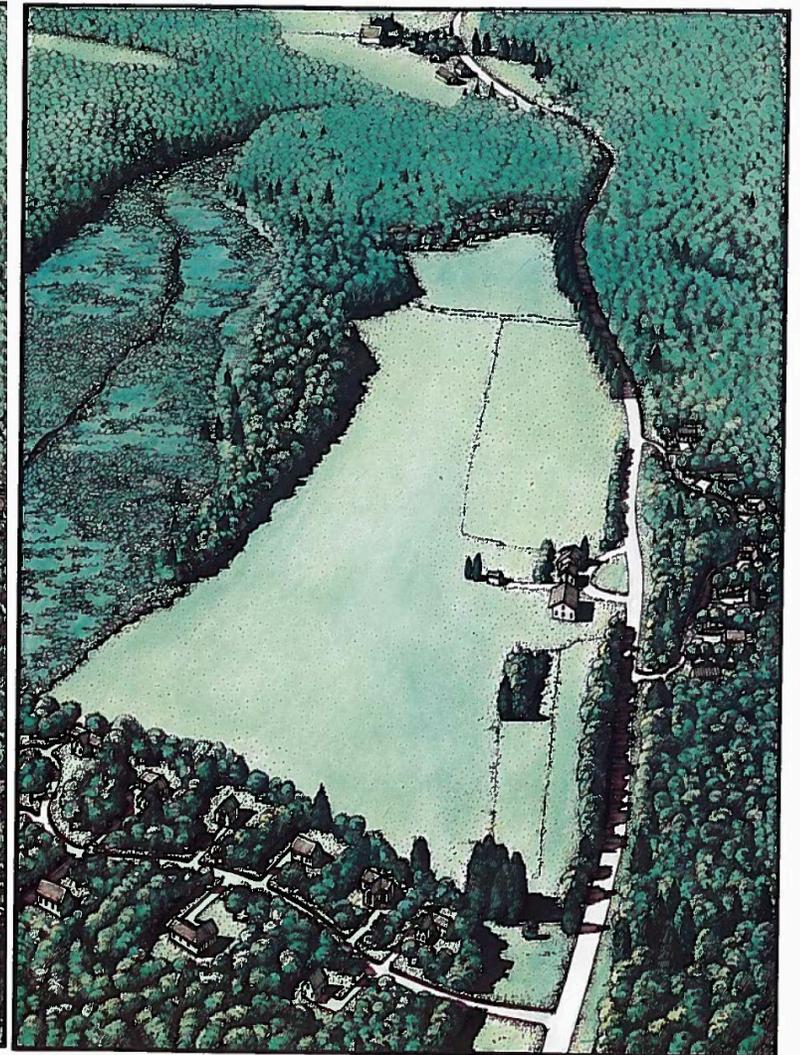
— = Parcel Boundary



Aerial View of Site C Before Development



Aerial View of Site C After Conventional Development

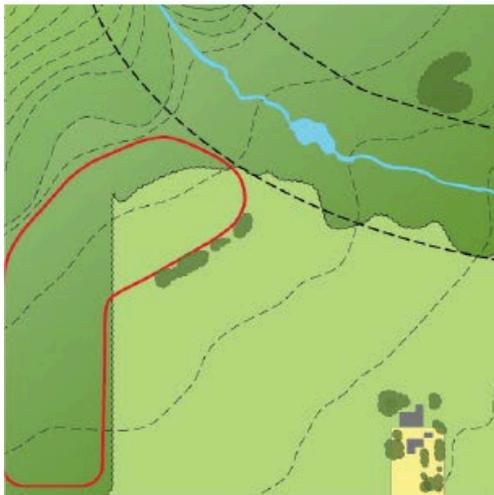


Aerial View of Site C After Creative Development

From *Dealing with Change in the Connecticut River Valley: A Design Manual for Conservation and Development*, by Prof. Robert Yaro, Randall Arendt, Harry Dodson and Elizabeth Brabec, p. 42-43

Rural density preserves rural character

- ▶ 1 acre is about the size of a football field
- ▶ You might be able to see your neighbors, but you won't be *right* next to them



Existing Landscape

Subdivision Sprawl

Conservation Neighborhood

Baker Turn, Quechee, VT – 1 unit/1 acre



1.25 acres
1 family









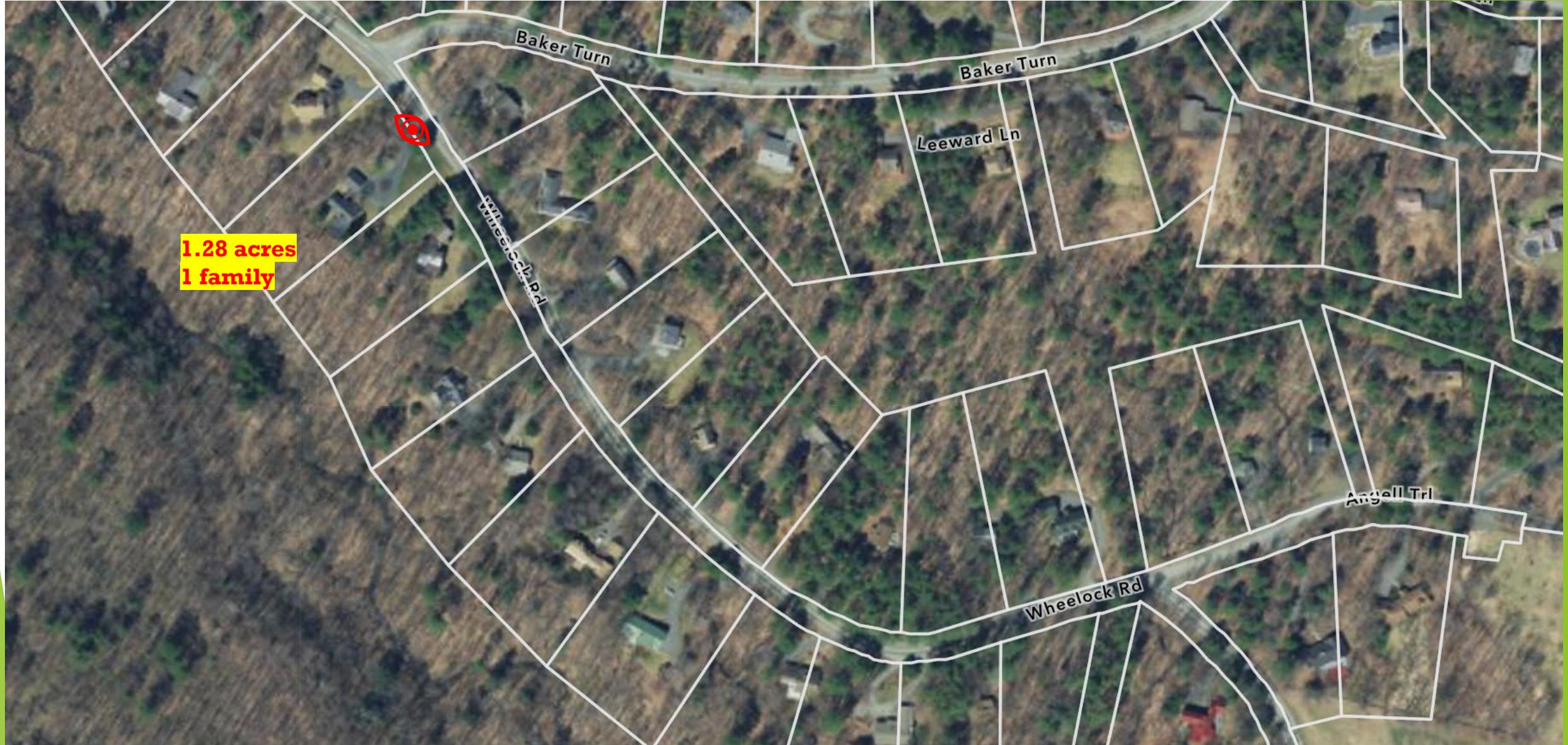


Baker Turn, Quechee, VT – 1 unit/1 acre



1.25 acres
1 family

Wheelock Road, Quechee, VT – 1 unit/1 acre



1.28 acres
1 family



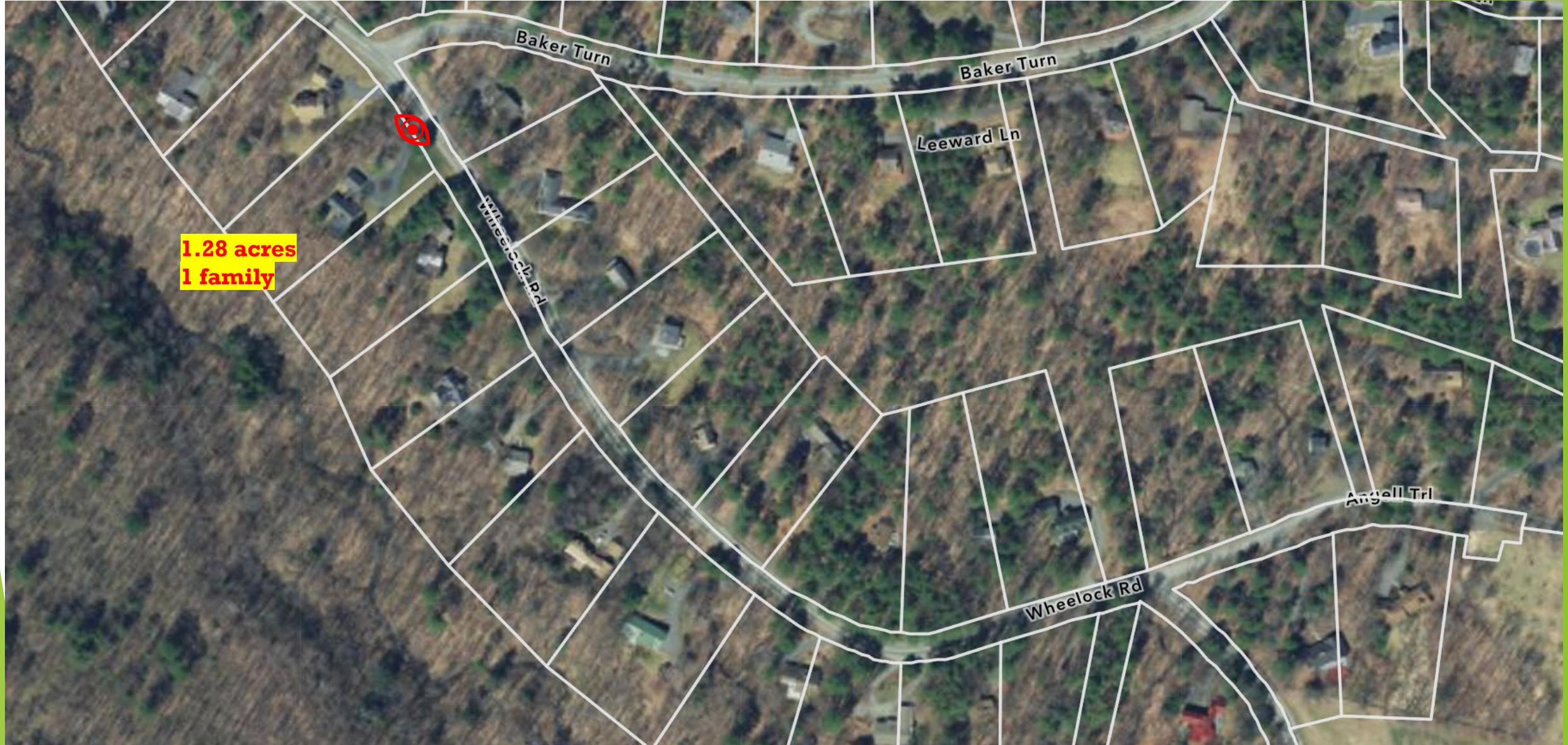






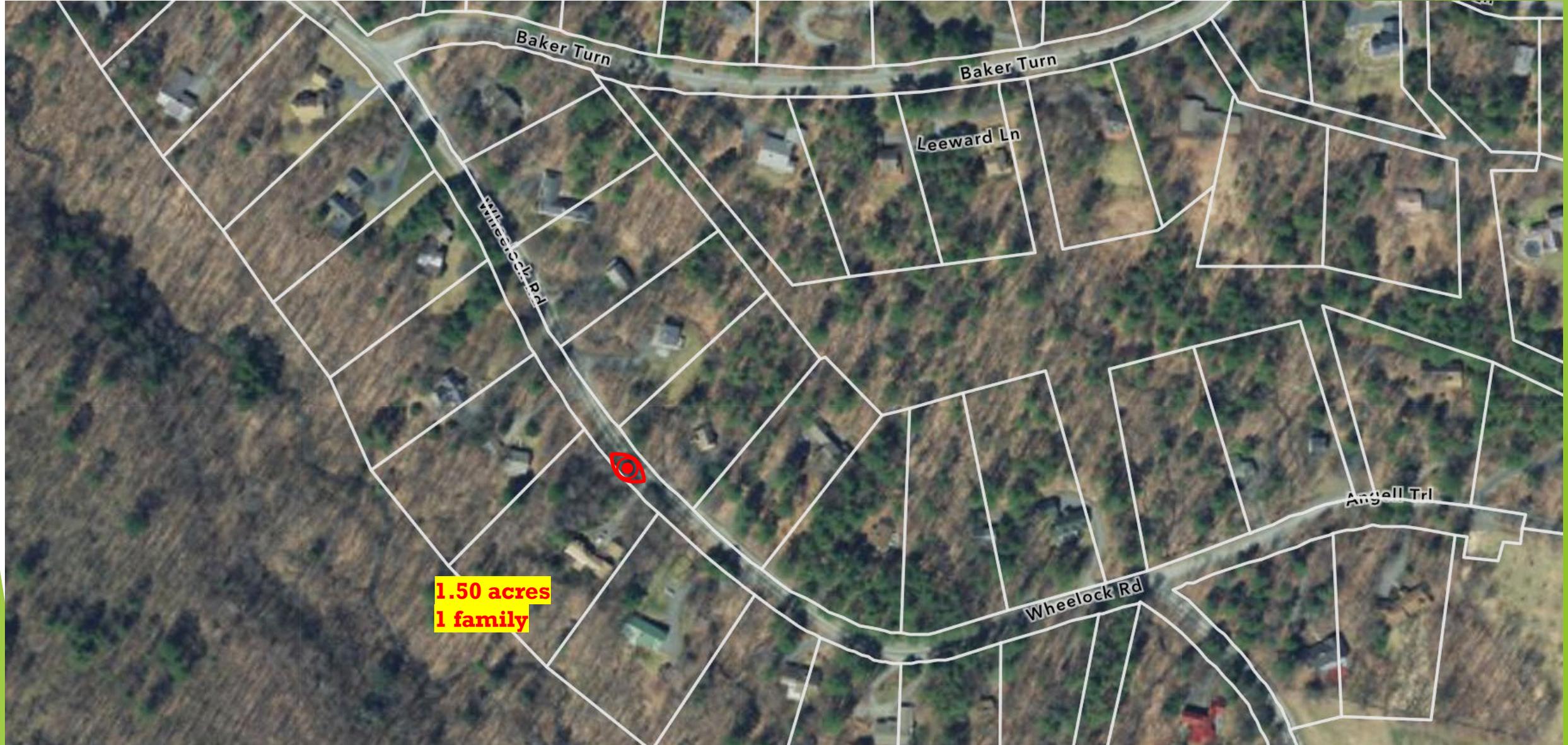


Wheelock Road, Quechee, VT – 1 unit/1 acre



1.28 acres
1 family

Wheelock Road, Quechee, VT – 1 unit/1 acre



1.50 acres
1 family

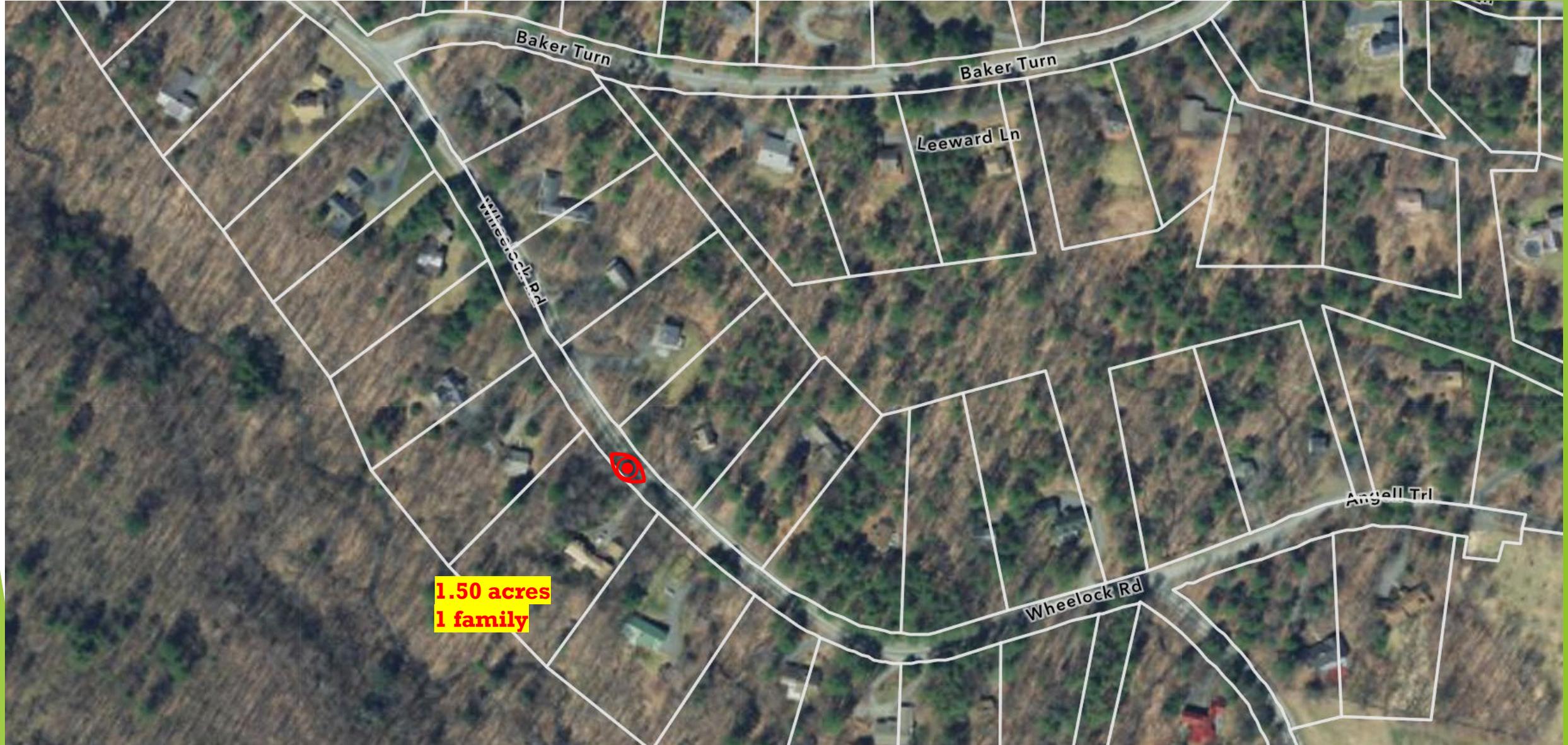






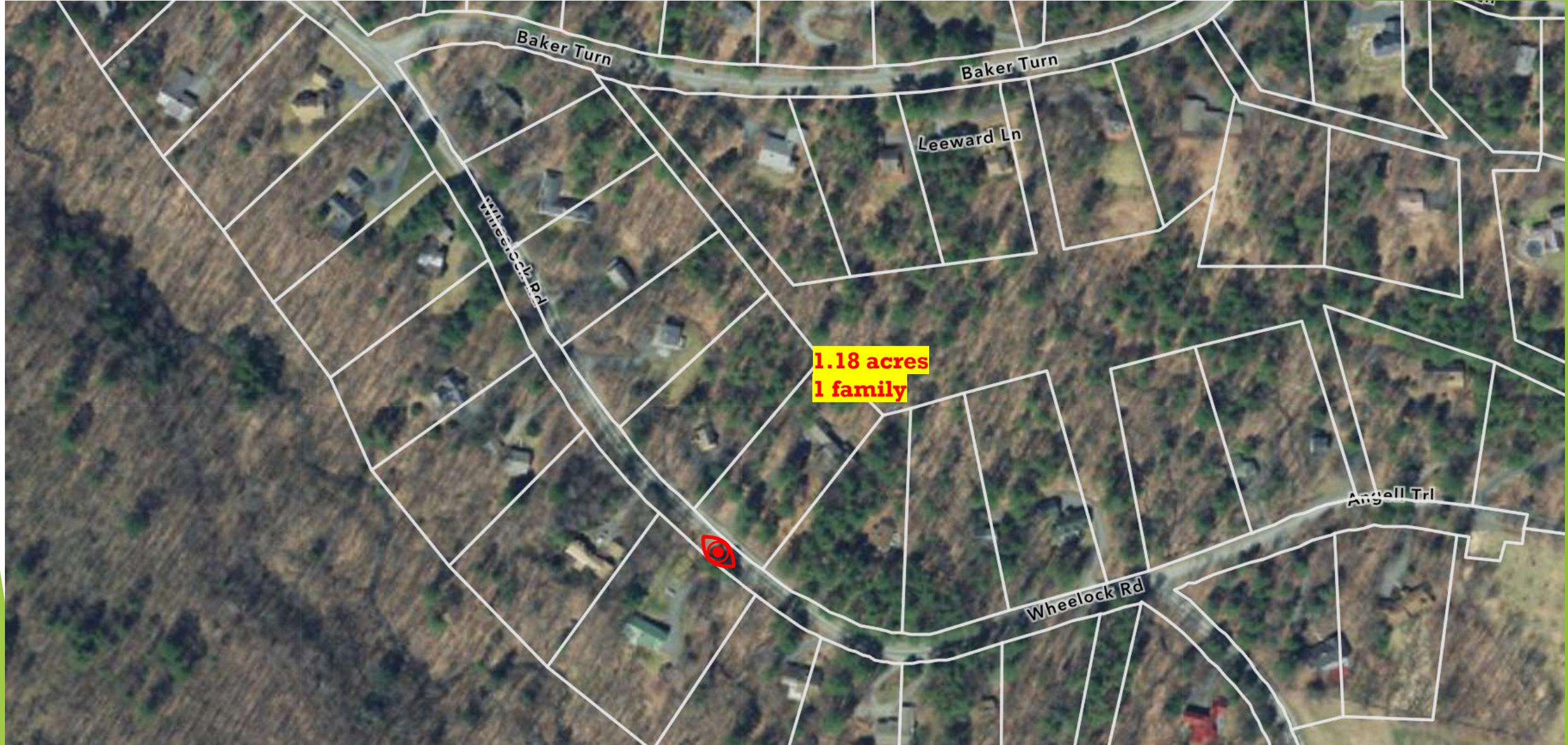


Wheelock Road, Quechee, VT – 1 unit/1 acre



1.50 acres
1 family

Wheelock Road, Quechee, VT – 1 unit/1 acre





Resources

- ▶ Vermont Natural Resources Council (<https://vnrc.org/>)
- ▶ *Dealing with Change in the Connecticut River Valley: A Design Manual for Conservation and Development*, by Prof. Robert Yaro, Randall Arendt, Harry Dodson and Elizabeth Brabec
- ▶ Climate Change and Land Use, Chittendon Country RPC
- ▶ Conserving Vermont's Natural Heritage: A Guide to Community Based Planning for the Conservation of Vermont's Fish, Wildlife, and Biological Diversity, by the Vermont Fish and Wildlife Department (http://www.vtfishandwildlife.com/library/maps/Community_Wildlife_Program/complete.pdf)
- ▶ Essentials of Local Land Use Planning and Regulation, by the Vermont Land Use Education & Training Collaborative. (<http://www.vpic.info/Essentials.html>)
- ▶ Community Planning Toolbox, by Vermont Natural Resources Council (<http://vnrc.org/resources/community-planning-toolbox/>)
- ▶ *Visualizing Density* by Julie Campoli and Alex MacLean <https://www.lincolnst.edu/publications/books/visualizing-density>

Questions?

- ▶ **Lincoln Frasca**, Conservation Planning Specialist, VT Fish and Wildlife Department
lincoln.frasca@vermont.gov
- ▶ **Izzy Cheney**, Fall Intern, TRORC
- ▶ **Kevin Geiger**, Director of Planning, AICP CFM, TRORC
kgeiger@trorc.org

