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Town of Hinesburg Water Source Feasibility Study

90% Board Presentation

March 18, 2013

Purpose

- Identify potential water source options for additional capacity

Need

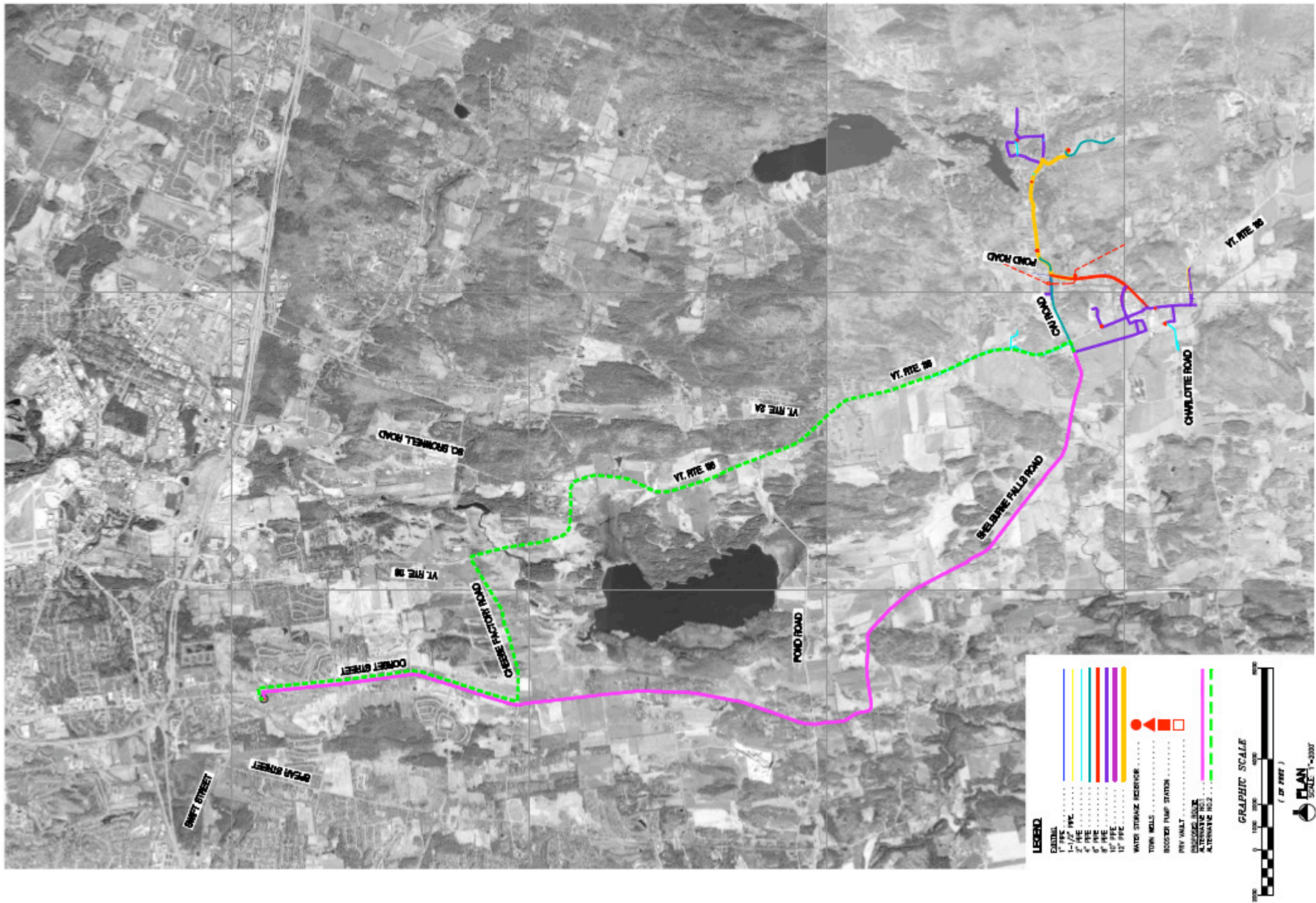
- Town wells originally permitted for 185 gpm
- Current capacity of wells has diminished to 130 gpm
- Average day demand (ADD) is approximately 130,000 gpd
- State requires ADD to be delivered in 12 hour period
 - $130,000 \text{ gpd} / (12 \text{ hrs/day}) / (60 \text{ min/hr}) = 181 \text{ gpm}$
- Water system currently not authorized to expand without State approval

Source Alternatives

- Champlain Water District (CWD)
- Existing Town wells
- Other nearby permitted public water supplies
- Individual parcels
- Areas with high well yield potential

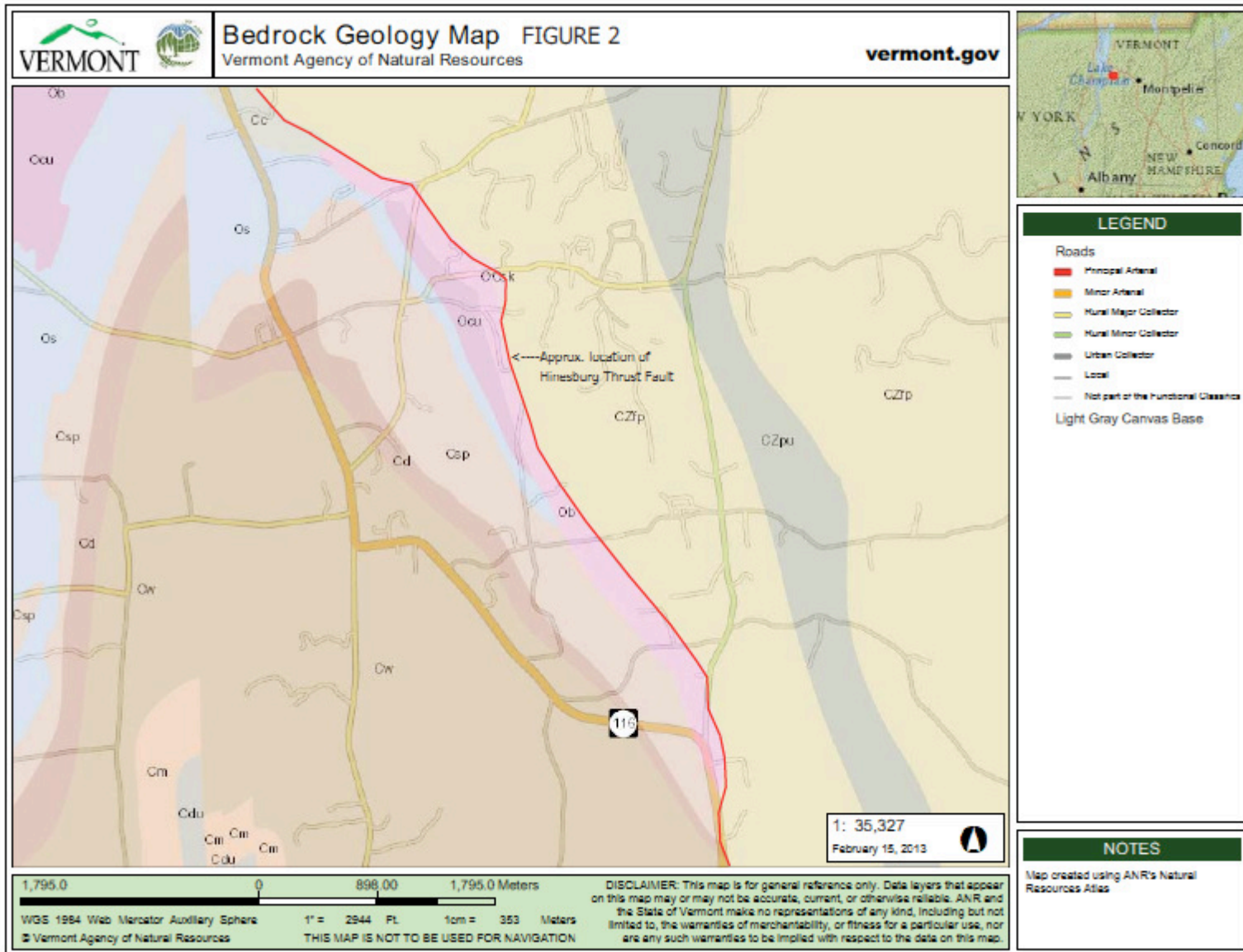
Connection to CWD

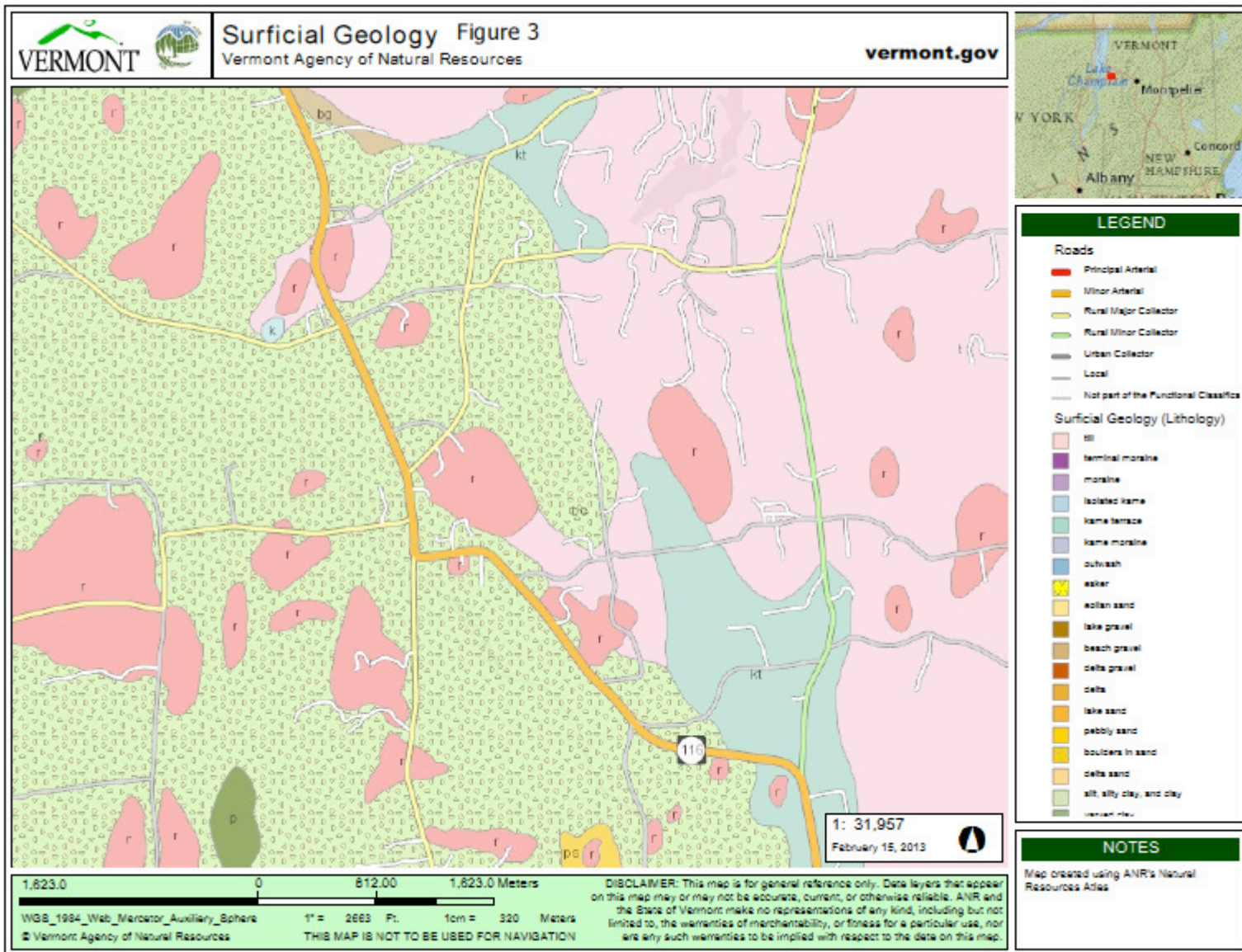
- Reviewed connection to mains in Shelburne but 8" diameter and not sufficient for transmission
- Connection would need to be to 16" main on Dorset Street
- Approximately 9 miles of new 12" main required to connect to CWD
- Total project cost approximately \$10.8M
- CWD wholesale rate is \$1.84/1,000 gallons
- Not the most economically feasible option assuming additional capacity can be found in Town via a new groundwater source

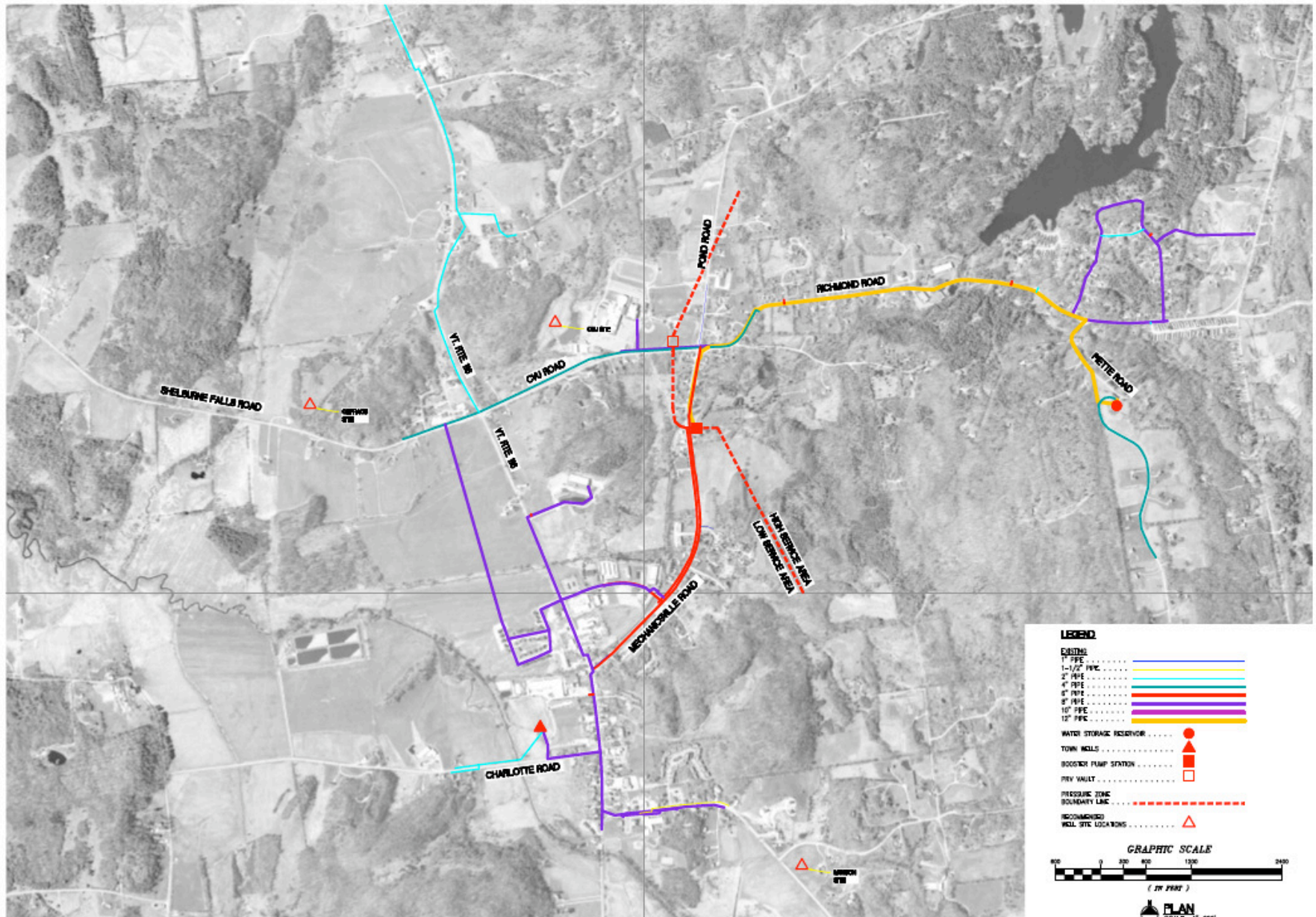


Well Sites

- Capacity of existing wells is 130 gpm
- Goal is additional source yield of at least 100 gpm and preferably 200 gpm
- Assessed areas with potential for high yields
- Initial recommended sites:
 - Munson Property
 - Champlain Valley Union High School (CVU)
 - Geprags Park

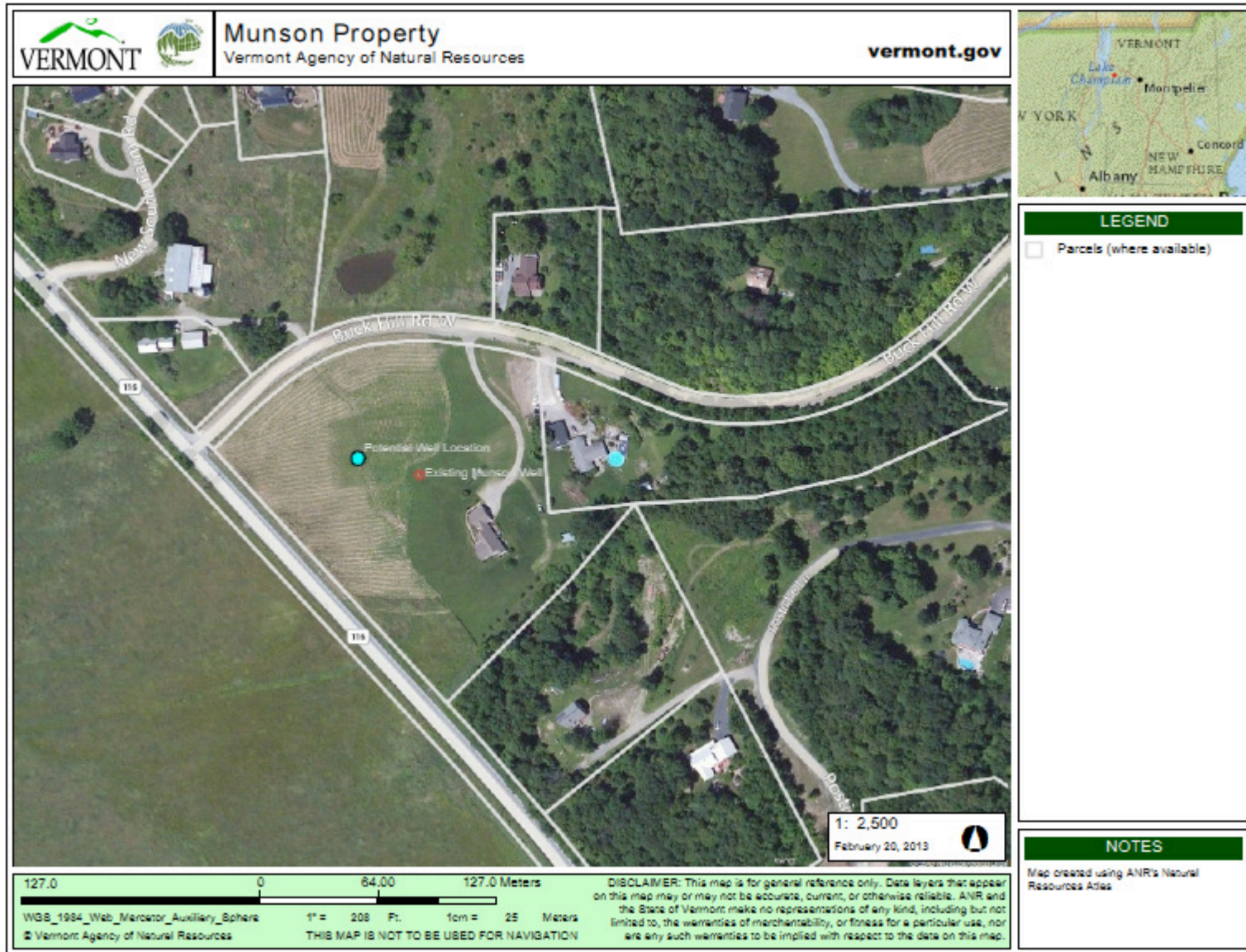






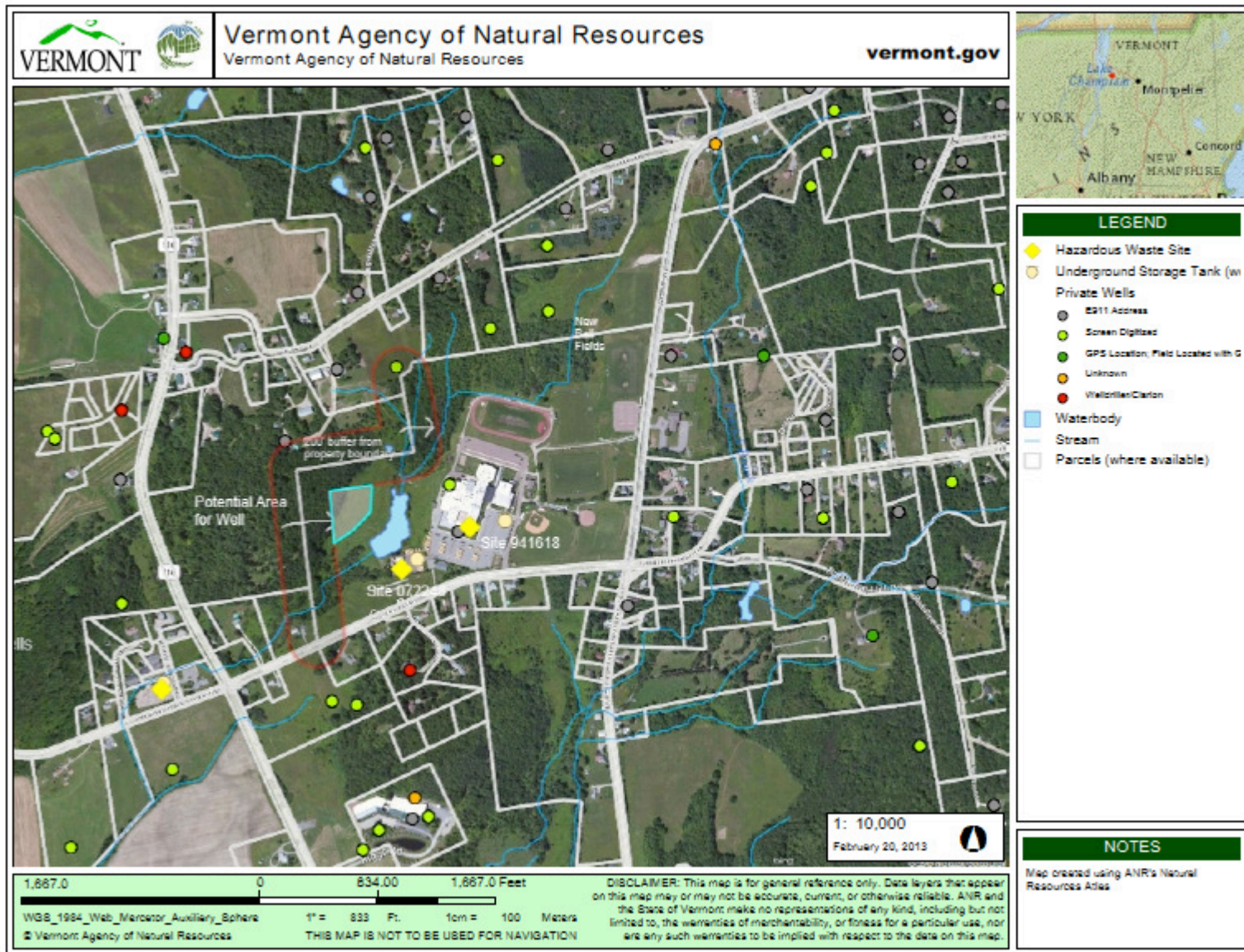
Munson Property

Costs	Pros	Cons
Construction Cost: \$1.275M Total Project Cost: \$2.0M	<ul style="list-style-type: none">• Near Village and existing water line and sewer line• Adequate isolation area• Good potential for high yielding well• Surficial material mapped as silt/clay which provides protection from shallow PSOCs	<ul style="list-style-type: none">• In RR2 Zoning Area so land purchase/easements likely expensive (\$375,000)• On-site septic systems upgradient of property require 2 Year TOT calculations• May need to bring sewer service to this area• Loss of tax revenue from parcel not being developed for residential use



CVU

Costs	Pros	Cons
Construction Cost: \$0.73M Total Project Cost: \$1.1M	<ul style="list-style-type: none">• Available land that meets siting criteria and has drilling rig access• Moderate yielding well (CVU) on the property, so potential for good well• Clay overburden – protection from shallow sources of PSOCs• Cooperative property owners, easement reasonably priced?	<ul style="list-style-type: none">• Nearby well on CVU property reported to have a drillers yield of zero, so also potential for low yielding well• Close to existing water line, but water line would need to be upgraded• Two hazardous waste sites on the property, which may be PCOC – evaluation needed• On-site septic systems nearby



Geprags Park

Costs	Pros	Cons
Construction Cost: \$0.54M Total Project Cost: \$0.81M	<ul style="list-style-type: none">• Conserved land• Existing wells• Close to adequate water line• High yielding wells• Relatively low cost to determine if Well 2 has potential• May be able to utilize Well 3 if water bearing fracture(s) that are under the influence of surface water are either cased off or grouted; afterwards well could be deepened• Land available for additional wells if results for Wells 2 and 3 are unsuccessful	<ul style="list-style-type: none">• Well 3 is considered to be groundwater under the direct influence of surface water (GWUDI); would require surface water treatment to utilize well as it is now• Well 3 would need to be grouted or have the casing extended to eliminate surface water influence• Well 2 may also be GWUDI; microbiology testing required



Recommendations

- Conduct further investigations at the Munson Property, CVU, and Geprags Park
- Munson Property
 - Discuss potential purchase price with Munsons
 - Future work could include drilling larger well adjacent to existing well
- CVU
 - Research hazardous waste sites and test sampling wells (\$5,000)
- Geprags Park
 - Conduct water quality tests, grouting/casing and short-term drawdown tests of Well 3 (\$25,000) and/or Well 2 (\$10,000)
- DWSRF Planning Loan option for next steps (0%, 5 years)

Questions?

