VERMONT AGRICULTURE & ENVIRONMENTAL LABORATORY

INTRODUCING OURSELVES & OUR WORK

MAY 19, 2015

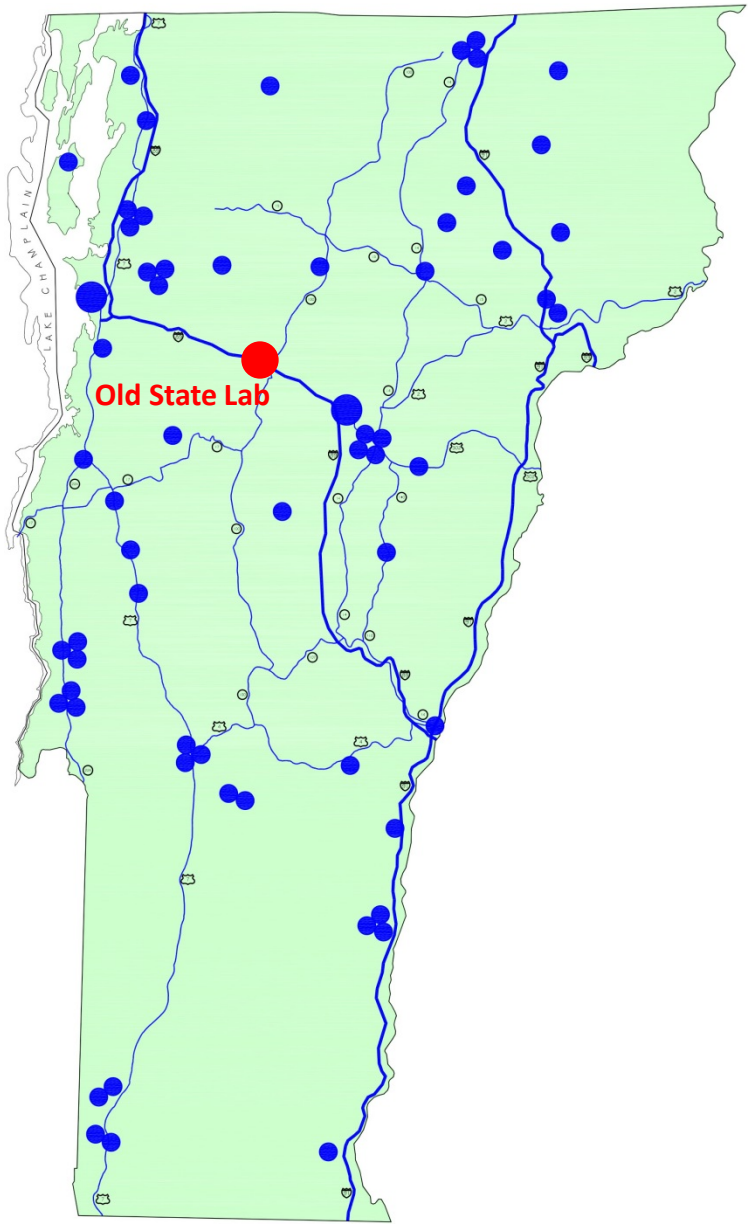
VERMONT AGRICULTURE & ENVIRONMENTAL LABORATORY

The missions of the Agency of Agriculture, Food and Markets and the Agency of Natural Resources include: support and encourage commerce while protecting the working landscape, human animal & plant health, and the environment.

Quite simply, our agencies protect and monitor our natural world: air, water, soil, trees, plants, bugs, fish, birds and animals.

Most of the state's inspectors, wardens, vets, and scientists are field based, working out of small offices or their homes. Several programs depend on citizen volunteers.

The State Lab tests samples from across Vermont. Before TS Irene, it was located in Waterbury, VT.



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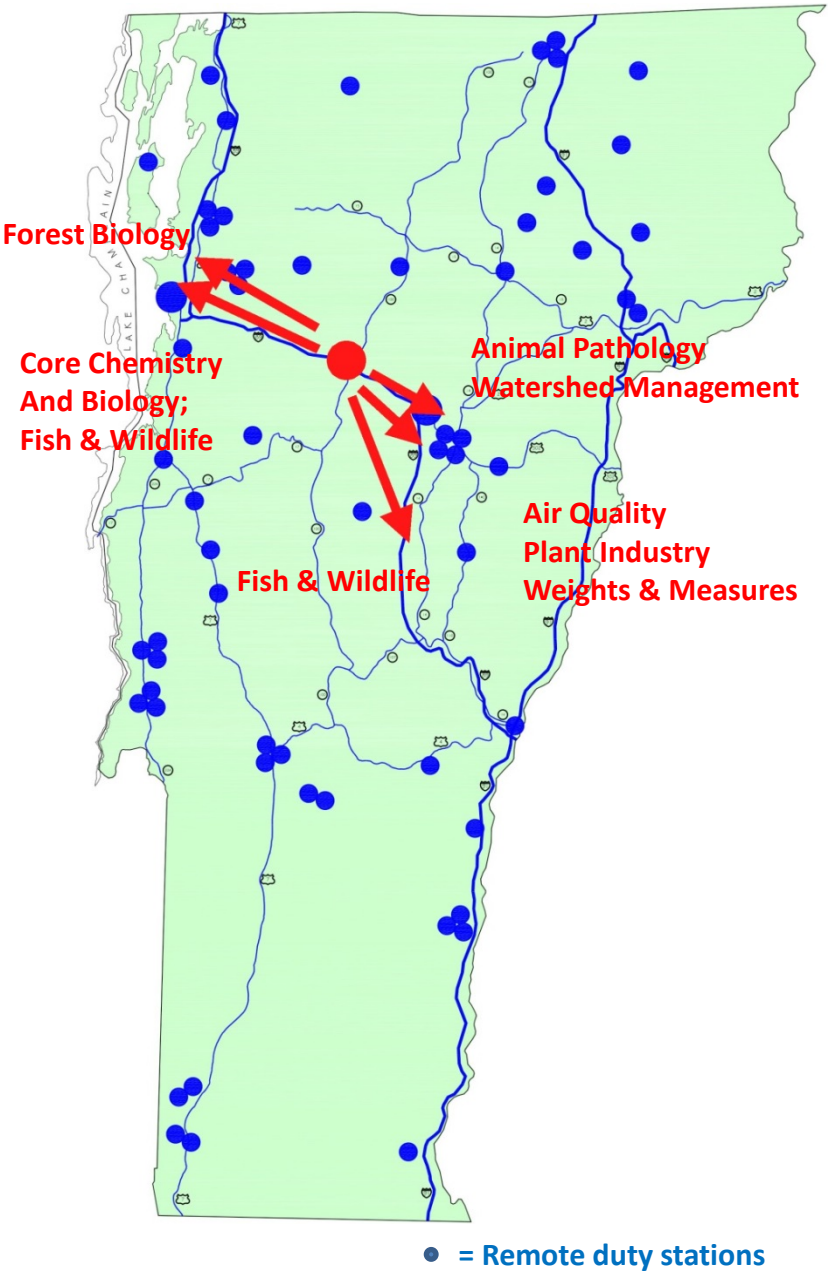
TS Irene destroyed Vermont's agriculture and environmental lab August 28, 2011. Since then, lab services have been located in five different locations.

This lab is the last major reconstruction project the State faces to repair the damage caused by TS Irene.

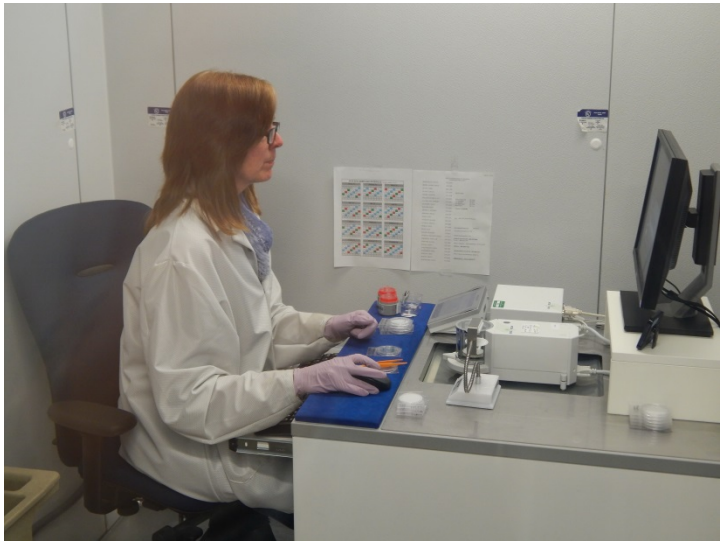


WHO ARE OUR SCIENTISTS AND WHAT DO WE DO?

AIR

Five remote stations monitor long-term climate changes

Back at the temporary lab in Berlin



Measuring air particulates

WATER

All watershed testing & protection

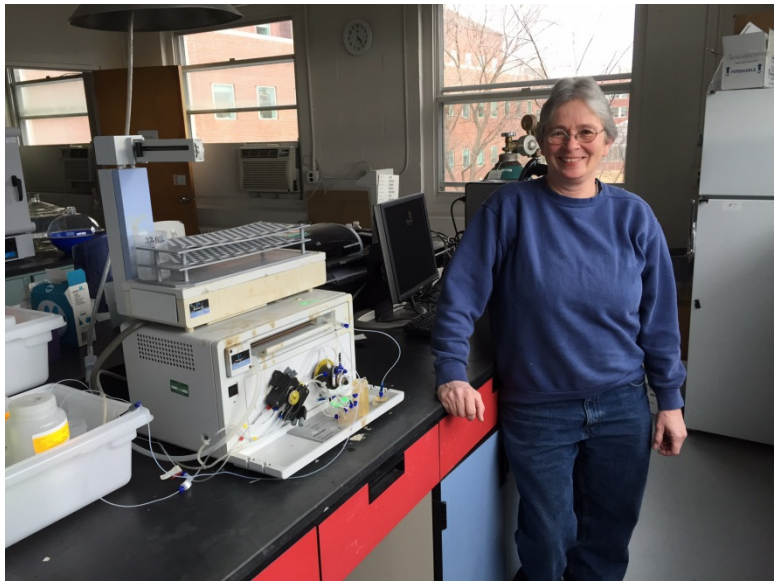
Aquatic taxonomy

Phosphorus and nitrogen testing

SOIL

Nutrients, metals & fertilizer testing

Semi-volatiles & volatiles testing



Mercury Analyzer

PLANTS

Seed and ginseng certification

Pesticide residue testing

Imported & exported plant inspection

Invasive plant monitoring & removal

TREES

Orchard fertilizer and pest support

Testing for the maple industry

Monitoring for climate change and forest health

Tree & plant disease research

INSECTS

Aquatic insect sampling

Honey bee research

Mosquito & west nile virus research

State specimen archive

FISH

State & private fish culture facility inspections & diagnostics

Watershed Management: Fish survey

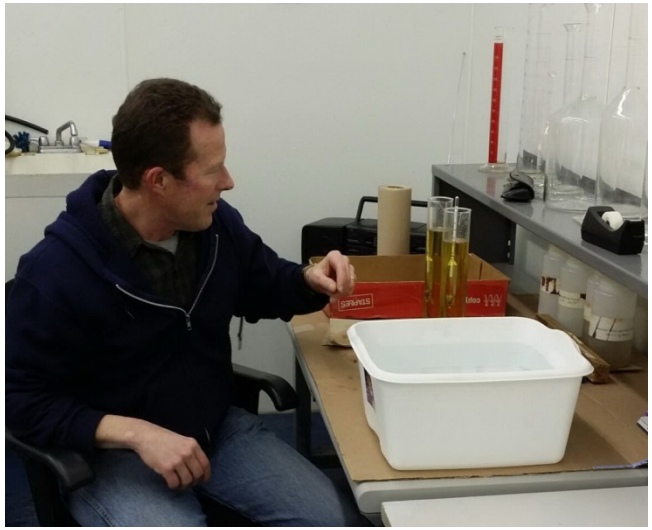
Fish health lab: bacteriology, virology, and genetic testing/research

BIRDS & ANIMALS

State veterinarians travel across Vermont

State dairy lab (mastitis, serology, pathogens)
Food safety testing, including pet food & feed.

WEIGHTS, MEASURES, and CALIBRATIONS



Calibrating maple syrup hydrometers

1000 lb proving weight

The scale truck for site visits

Very small weights!

VOLUNTEERS ARE ESSENTIAL TO OUR PROGRAMS

Aquatic life surveys & water sampling

Counting Cerceris wasps to monitor Emerald Ash borers

Tick counts to monitor Lyme disease

Scoring trees for forest health

WE HAVE A STRONG CONNECTION WITH EDUCATION

Fish health lab: college interns

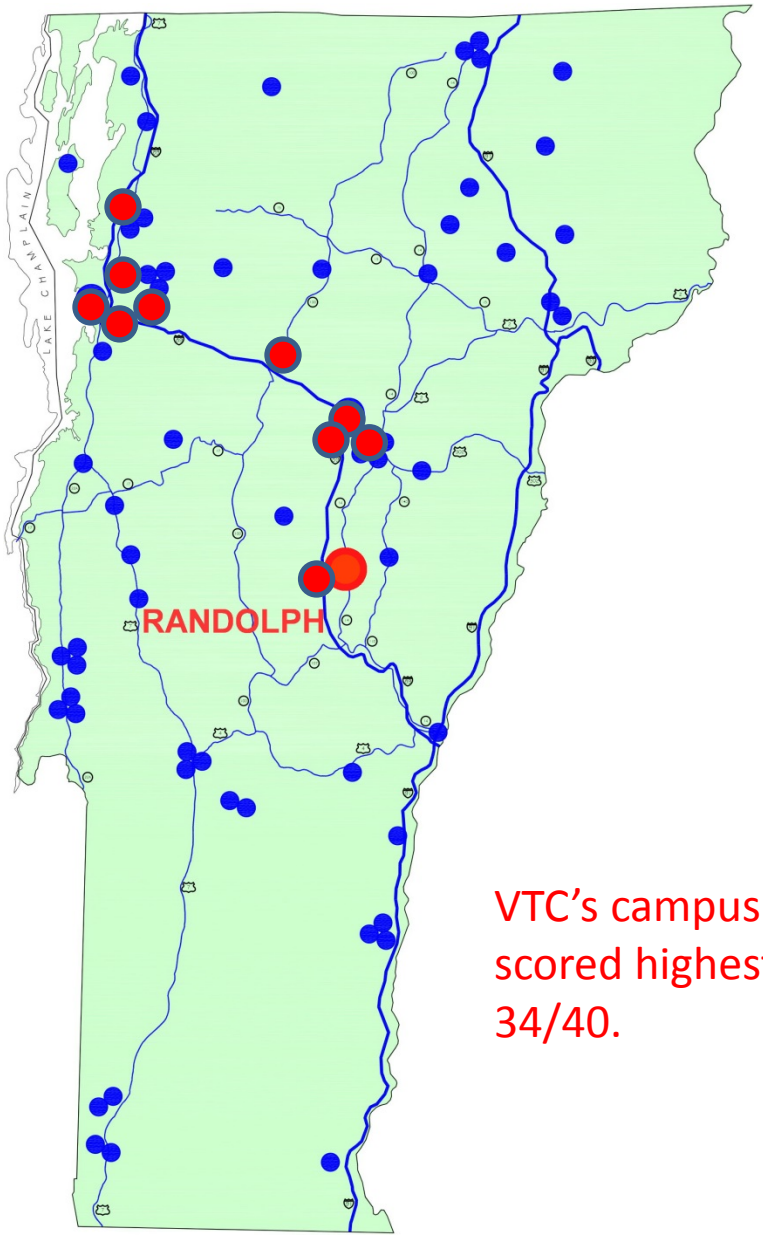
Class visits to the **Bug Lab** & school outreach

Specimen Collection: Year-round interns & volunteers of all ages

First Detector (volunteer group) training

ABOUT THE NEW BUILDING

SITE/LOCATION

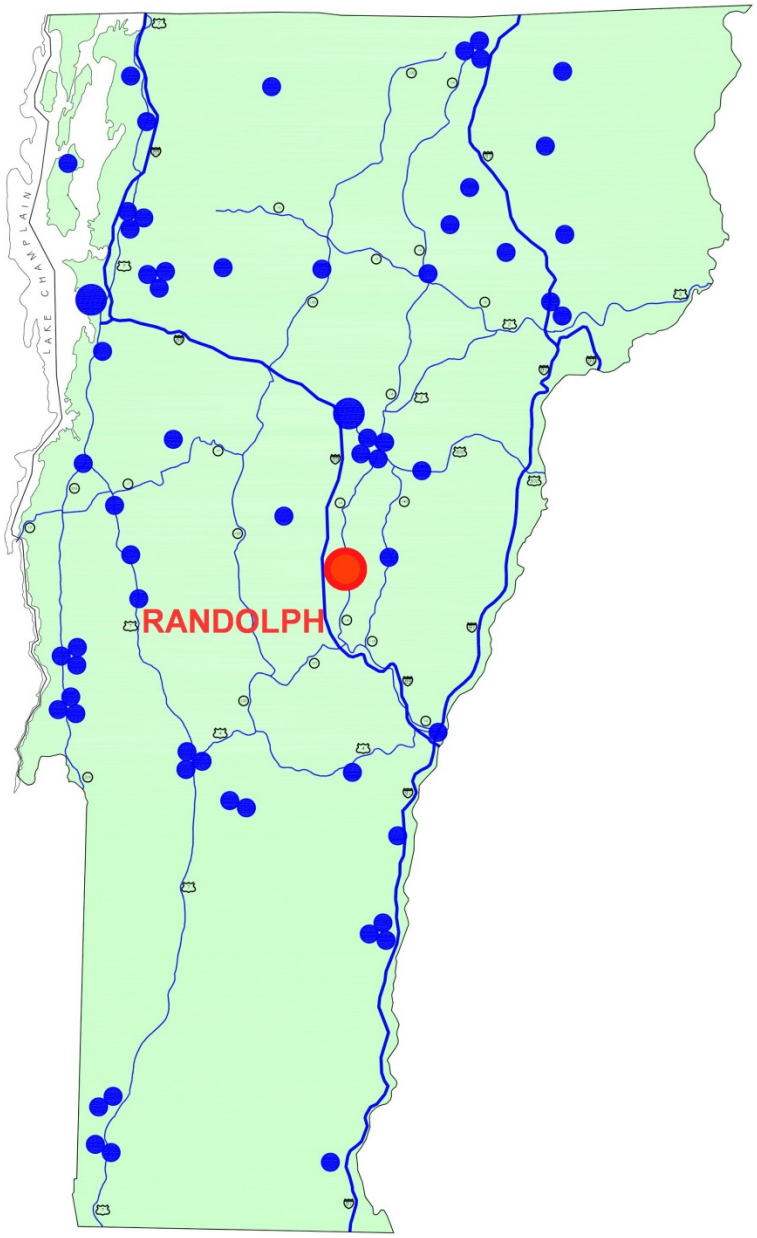


VTC's campus scored highest, 34/40.

19 sites were offered for use
They were scored with 8 criteria

VERMONT AGENCIES OF AGRICULTURE & NATURAL RESOURCES LAB FACILITY
FACILITY SITE OPTIONS CRITERIA SCORING SUMMARY

SITE	VARIATION	CRITRION 1 LOT SIZE	CRITERION 2 PHYSICAL	CRITERION 3 UTILITIES	CRITERION 4 ZONING	CRITERION 5 NEIGHBORHOOD	CRITERION 6 CONSTRUCTION	CRITERION 7 QUALITY	CRITERION 8 BENEFITS	TOTAL
1	Milton	2.8	2.8	3.2	2.8	3.2	3	1.2	1.2	20.2
2	Colchester Severance	4.3	4.2	4.3	3.7	4	4.8	1.7	2.2	29.2
3	Colchester Health Lab	3.5	3.3	4.8	4.5	4.2	4	2.2	3.3	29.8
4	Burlington 195 Colchester	1.2	1.5	4.8	2	2	1	1.5	3.2	17.2
5	So Burl Spear St	3.3	3.5	4.7	3	3.8	3.8	2.3	3.8	28.2
6	So Burl Tech Park	3.5	3.8	4.8	4.3	4.5	3.3	2.2	2.2	28.6
7	So Burl Hinesburg Rd	4	4.3	4.8	4.2	3.5	4.2	1.3	1	27.3
8	Richmond Rte 2	2.3	3	1.5	2.5	2.2	3	1.7	1.3	17.5
9	Richmond Creamery	2.3	3.3	4.3	3.8	2.7	3.5	1.8	2.5	24.2
10	Waterbury	4	3.7	4.3	4	2.8	3.8	4	4	30.6
11	Montpelier Armory	2	2.7	4.5	3.3	3.8	3.5	4	3	26.8
12	Montpelier 2 Rivers Farm	4.2	2.8	4.3	3.3	3.8	2.7	3.7	3	27.8
13	Berlin F&W Land	3.7	2.2	1.2	3.2	2.8	3.5	3.8	2.8	23.2
14	Berlin Route 12	3.8	3.5	1.8	3.2	3.7	3.2	4.3	3.7	27.2
15	Berlin Dog River Rd	4.2	3.8	2	3.8	3.7	3.7	4.3	3.7	29.2
16	Berlin Regional Library	3.3	3.2	4.2	2	3.7	2.7	3.5	3.5	26.1
17	Berlin Back Field	4.5	3.5	4.2	2	4	3.7	3.7	3.7	29.3
18	Randolph VTC Campus	4.5	4.5	4	4.3	4	4.5	3.6	4.6	34
19	Randolph Exit 4	3.6	2.4	2.6	2.8	3.2	3.6	2.8	3	24



SITE/LOCATION

VTC's campus offers opportunities for collaboration.

Central location in the state.

VTC's programs: agriculture, horticulture, engineering, and veterinary technology

Orange county's strong working landscape economy

Proximity to higher ed & health care institutions (Gifford, VT Law School, Dartmouth, Dartmouth-Hitchcock Medical Center

BUILDING INFORMATION

Concept Phase Statistics

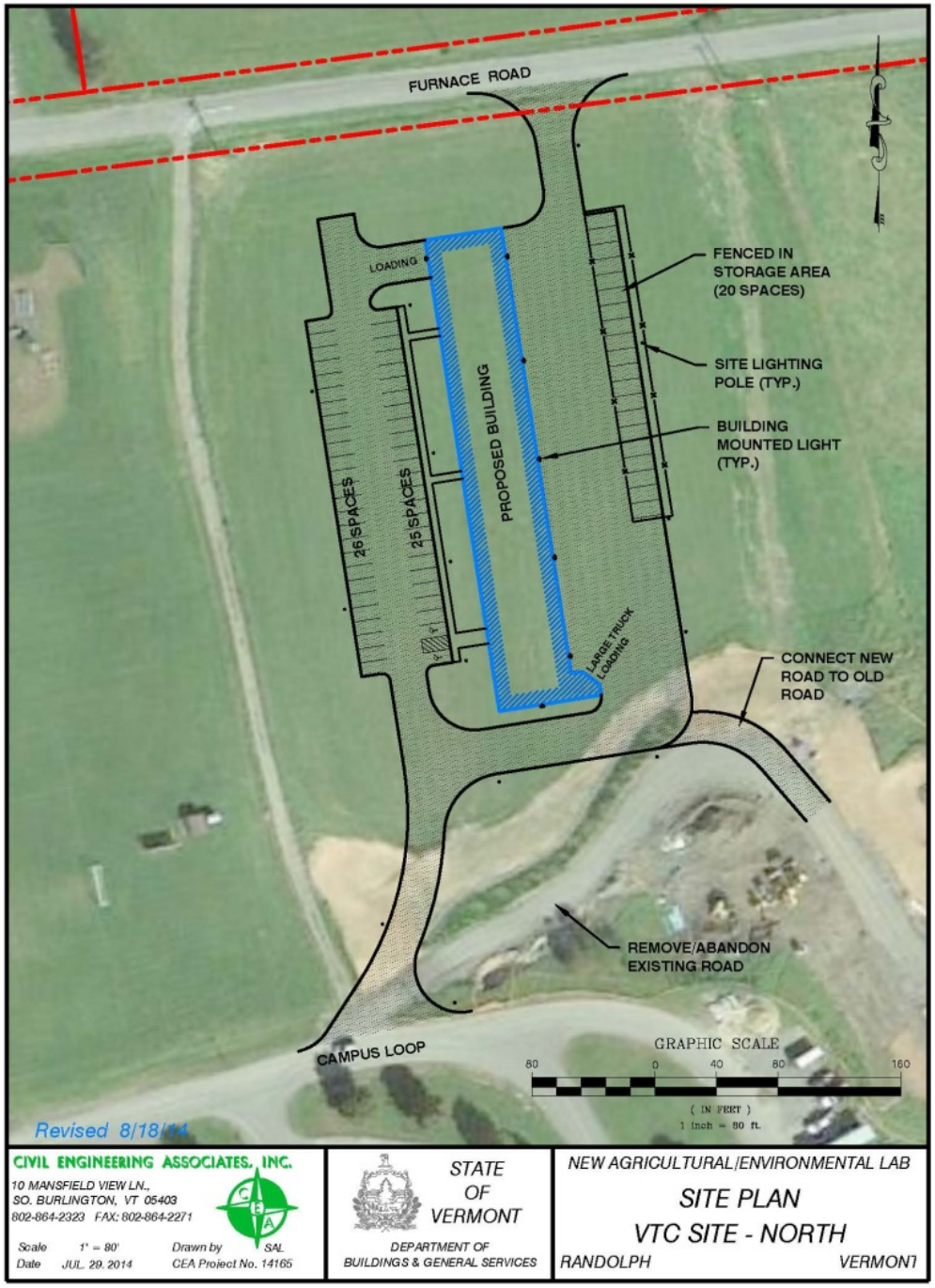
- **Approximately 34,000 sf lab**
- **Wood chip heat & solar collectors**
- **Total project cost: $25,600,000**

	Pre-Irene	2013 Feasibility Study	Current Design
Space	34,110+ s.f.	35,375 s.f.	34,004 s.f. (includes capacity for emerging testing)
Staffing	27 + 16 part-time	26 + 16 part-time	32 + 21 part-time (includes staff for 10-year plan)

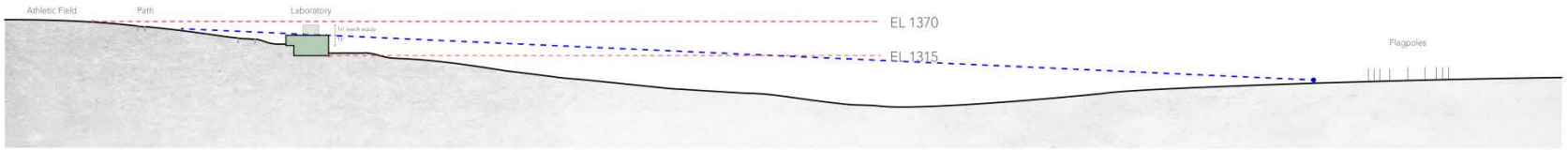
Highlights of the design so far:

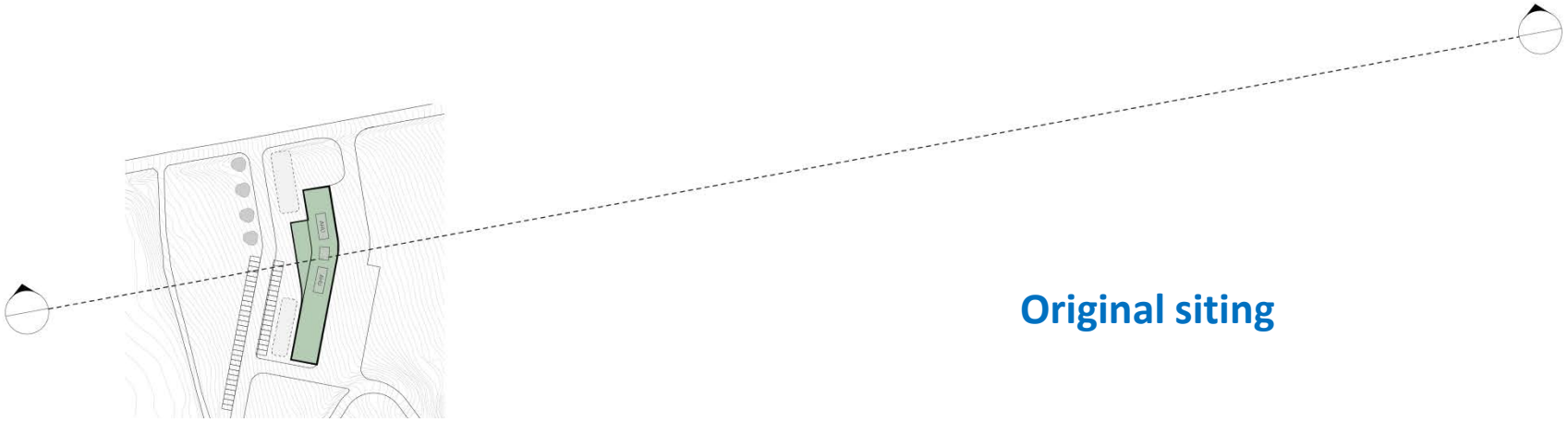
- The building will use as little ground as possible (less than 3 acres), and keep the rest of the site in agricultural use.
- Through rigorous programming, every space and function has already been described. This lab is super efficient: 72% is lab space compared to the normal 50-60%.
- We have accepted an Efficiency Vermont challenge to use 50% less energy than a typical lab.
- This project will be at least LEED Gold equivalent (version 4.0).

Site Location: North edge of VTC's campus

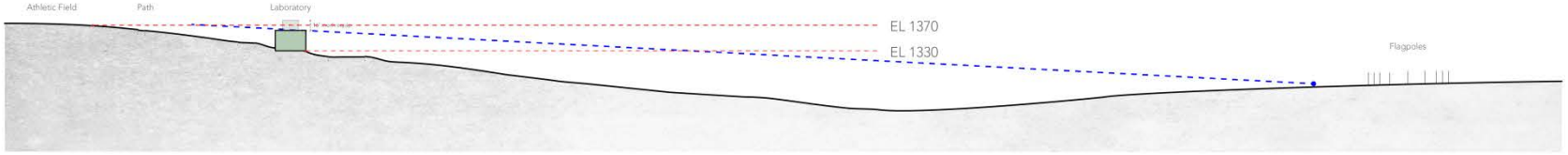


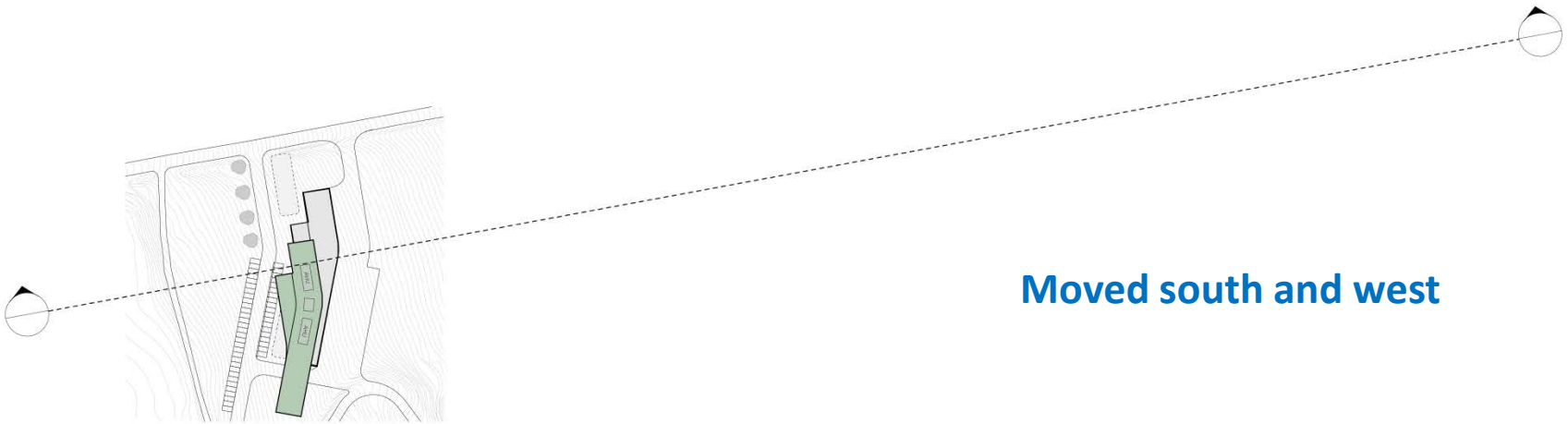
Conceptual Site Plan





Original siting





Moved south and west

Original siting

Moved south & west

SCHEDULE

Appropriation: May 2015
Design: now through summer 2016
Permitting: early 2016
Construction begins: end 2016
Construction complete: early 2018

Weighing In: Contact for Questions & Suggestions

Sandy Vitzthum, Project Manager

Vermont Buildings & General Services

802-505-3389

sandra.vitzthum@state.vt.us

Weights & Measure's 500 kg calibrator

Air Quality's one-millionth-gram micro balance

Trivia question: What is the range of mass our lab can measure by balance?

A magnitude of 500,000,000,000!

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OPENING 2018!