VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
LAKES & PONDS PROGRAM

Shoreland Permit Application

for a Shoreland Protection Permit under
Chapter 49A of Title 10, § 1441 et seq.

RECEIVED NOV – 3 2016 WsMD

For Shoreland Permitting Use Only
Application Number: 2236-SP

Public Notice: At the same time this application is filed with Shoreland Permitting, a copy of this application must be provided to the municipal clerk for posting in the municipality in which the project is located.

Submission of this application constitutes notice that the person in Section A intends to create impervious surface and/or cleared area within the Protected Shoreland Area, and certifies that the project will comply with Chapter 49A of Title 10, § 1441 et seq. All information required on this form must be provided, and the requisite fees (Section G) must be submitted made payable to the State of Vermont, to be deemed complete. Refer to The Vermont Shoreland Protection Act - A Handbook for Shoreland Development and related instructions for guidance in completing this application.

A. Parcel Information

Landowner's Name: Vermont Fish & Wildlife Department Green Mountain Conservation Camp

2a. Physical Address (911 Address): 1051 Buck Lake Road

2b. Town - County: Woodbury - Washington | 2c. Zip: 05681

3. SPAN (The School Parcel Account Number is required for your application to be deemed complete. It can be obtained from your property tax bill. If you cannot locate your property tax bill, please obtain this information from your Town Clerk): 780-248-10813

4. Phone: 802-828-1460 | 5. Email: FWGMCC@vermont.gov

6. Name of Lake/Pond: Buck Lake - Woodbury | 7. Total Shore Frontage 6,060 (Feet)

8. Was the parcel of land created before July 1, 2014? ☑ Yes ☐ No

9. Are there wetlands associated with this parcel? ☐ Yes ☑ No
Contact the Wetlands Program (802) 828-1535 or http://dec.vermont.gov/watershed/wetlands

10. Have you ever applied for a permit with the Department of Environmental Conservation associated with this parcel? ☑ Yes ☐ No

11. What is the surface area of your parcel within the Protected Shoreland Area (PSA): 1,515,000 (square feet)
See the Vermont Shoreland Protection Act – A Handbook for Shoreland Development, Appendix C, Determining Lakeside Zone & PSA

12. What is the surface area of exisiting impervious surface on your parcel within the PSA: 360 (square feet)
See the Vermont Shoreland Protection Act – A Handbook for Shoreland Development, Appendix F, Calculating Percent Impervious Surface

13. What is the surface area of existing cleared are on your parcel within the PSA: 0 (square feet)
See the Vermont Shoreland Protection Act – A Handbook for Shoreland Development, Appendix E, Calculating Percent Clearing

B. Applicant Contact Information

1. Name: Alison Thomas

2a. Mailing Address: 1 National Life Drive, Davis 2

2b. Town: Montpelier | 2c. State: VT | 2d. Zip: 05620

3. Phone: 802-371-9975 | 4. Email: Alison.Thomas@vermont.gov

C. Application Preparer Information (If the individual preparing the application is not the landowner.)

1. Name:

2a. Mailing Address:

2b. Town: | 2c. State: | 2d. Zip:

3. Phone: | 4. Email:

D. Project Description

1. Describe the proposed project. For this application to be considered administratively complete you must attach site plans that denote existing and proposed cleared areas and impervious surface and their distances from mean water level, no fewer than three photos of the project area, and dimensions and associated surface areas of cleared areas and impervious surfaces.

Dry hydrant installation for fire department services at the new dining hall and education center. See attached documents regarding the dry hydrant location, design, and materials. The intake pipes will extend 60 feet, 40 feet extending in the water. See design plans and photos.

2. For developed parcels, how far is the existing habitable structure from Mean Water Level 150 (feet), and how far will new cleared area or impervious surface be from MWL 20 (feet)?

OR

For undeveloped parcels , how far will new cleared area or impervious surface be from MWL _____ (feet)?

See the Vermont Shoreland Protection Act – A Handbook for Shoreland Development, Appendix A – Estimating Mean Water Level

3. Can all new cleared area or impervious surface be set back at least 100 feet from MWL? ☐ Yes ☑ No

If no, explain why below (attach support information as needed):

The small area that will be cleared is for the dry hydrant, which needs to be near the lake. The pipes will be 60 feet long, and 20 feet will be underground from the MWL.

4a. What is the slope of the project site area: 1 %

See The Vermont Shoreland Protection Act – A Handbook for Shoreland Development, Appendix B, Determining Slope

4b. Is the slope of the project area less than 20%?

☑ Yes ☐ No If yes, skip 4c.

4c. If no above (4b), describe the measures taken to ensure the slope is stable, resulting in minimal erosion and impacts to water quality (attach support information as needed):

5a. What is the surface area of new impervious surface associated with this project: 0.00 (Square Feet)

See the Vermont Shoreland Protection Act – A Handbook for Shoreland Development, Appendix F, Calculating Percent Impervious Surface.

5b. What is the total resulting impervious surface after completion of the project and prior to implementation of best management practices: 0 (Square Feet)

For D5b, add A12 to D5a

5c. Is the total in 5b. 20% or less of the parcel area within the PSA? ☑ Yes (if yes, skip 5d.) ☐ No

If 5a is 0, check the n/a box, otherwise divide D5b by A11 and multiply by 100 for percentage. Total percentage = _____% ☐ N/A

5d. If no above (5c), describe the best management practices used to manage, treat, and control erosion from stormwater form the portion of impervious surface that exceeds 20% (attach support information as needed):

There will be a 6" pipe sticking out of the ground, but we will seed and mulch any exposed surface after the pipe is installed.

6a. What is the surface area of new cleared area associated with this project: 0 (Square Feet) See the Vermont Shoreland Protection Act – A Handbook for Shoreland Development, Appendix E, Calculating Percent Clearing.	6b. What is the total resulting cleared area after completion of the project and prior to implementation of best management practices: 0 (Square Feet) For D6b, add A13 to D6a

6c. Is the total in 6b. 40% or less of the parcel area within the PSA? ☑ Yes (if yes, skip 6d.) ☐ No ☐ N/A

If 6a is 0, check the n/a box, otherwise divide D6b by A11 and multiply by 100 for percentage. Total percentage = _____%

6d. If no above (6c), establishing vegetative cover (revegetation) is the only applicable best management practice. Please describe a revegetation plan that will be equal to or greater in surface area than the proposed new cleared area as identified in 6a. Identify the location on the parcel where the revegetation will occur and how far from mean water level it will be (attach support information as needed).

E. Landowner Certification

As APPLICANT, I hereby certify that the statements presented on this application are true and accurate and recognize that by signing this application, I agree to complete all aspects of the project as authorized. I understand that failure to comply with the foregoing may result in violation of the Shoreland Protection Act, 10 V.S.A. Chapter 49A, and the Vermont Agency of Natural Resources may bring an enforcement action for violations of the Act pursuant to 10 V.S.A. chapter 201.

Applicant/Landowner Signature: Alicia Thomas **Date:** 11/3/16

F. Application Preparer Certification (if applicable)

As APPLICATION PREPARER, I hereby certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Application Preparer Signature: _____ **Date:** _____

G. Additional Required Documentation (*Please check to ensure you have completed the following*)

- ☑ All sections of the application are complete (or otherwise indicate "not applicable")
- ☑ Application includes site plans denoting existing and proposed cleared area and impervious surface and distances from mean water level
- ☑ Application description includes dimensions and surface areas of cleared areas and impervious surfaces Application includes photos of project area

H. Permit Application Fees

Administrative Fee: $125.00		125.00
Impervious Area Fee: $0.50 per square ft.	Enter new impervious area as entered in item (5a) _____ x 0.5	—
Total Fee due:		125.00

Submit this form and application fee, payable to:

State of Vermont -Vermont Department of Environmental Conservation
Watershed Management Division -Shoreland Permitting
1 National Life Drive, Main 2
Montpelier, VT 05620-3522

Direct all correspondence or questions to Shoreland Permitting at: ANR.WSMDShoreland@vermont.gov

For additional information visit: http://dec.vermont.gov/watershed/lakes-ponds

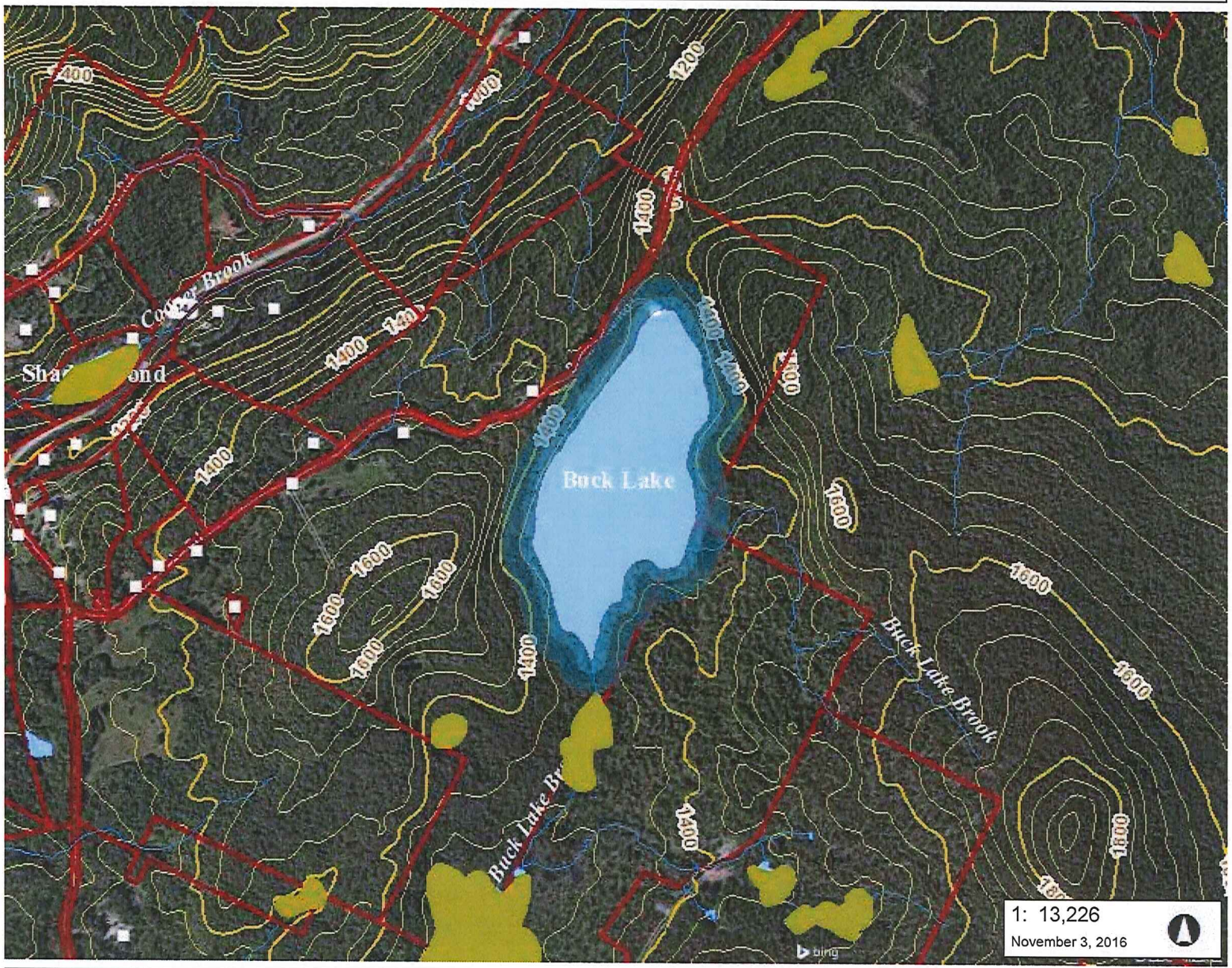
Revised April 2016

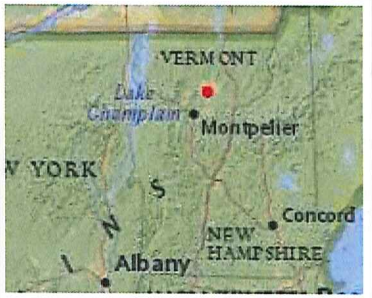
VERMONT

Natural Resources Atlas

Vermont Agency of Natural Resources

vermont.gov





LEGEND

- Shoreland 100' Setback
- Shoreland 250' Setback
- Wetlands - VSWI
  - Class 1 Wetland
  - Class 2 Wetland
- Wetlands Advisory Layer
- Buildings (E911)
- Waterbody
- Stream
- Parcels (where available)
- Town Boundary
- County Boundary

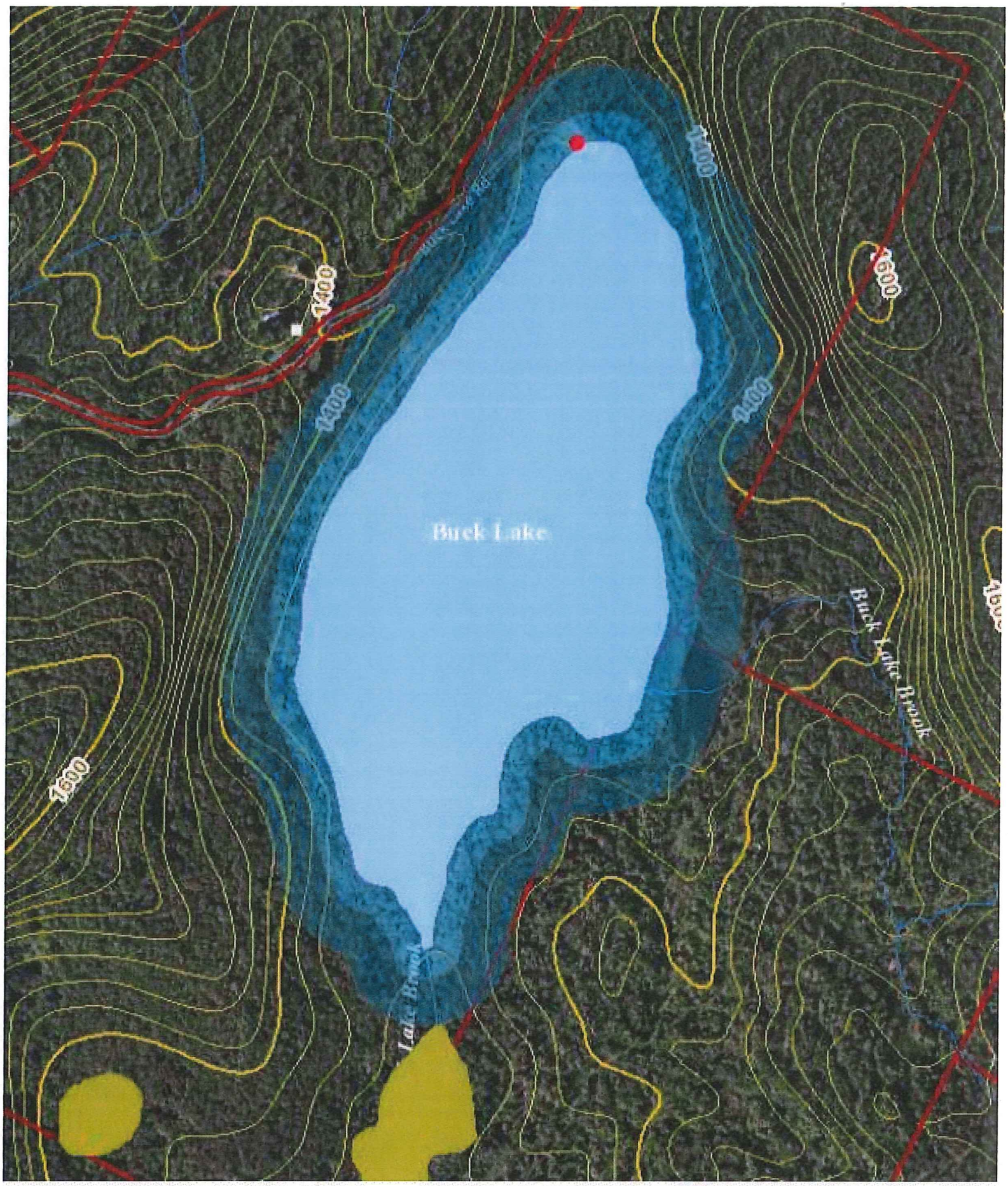
NOTES

Map created using ANR's Natural Resources Atlas

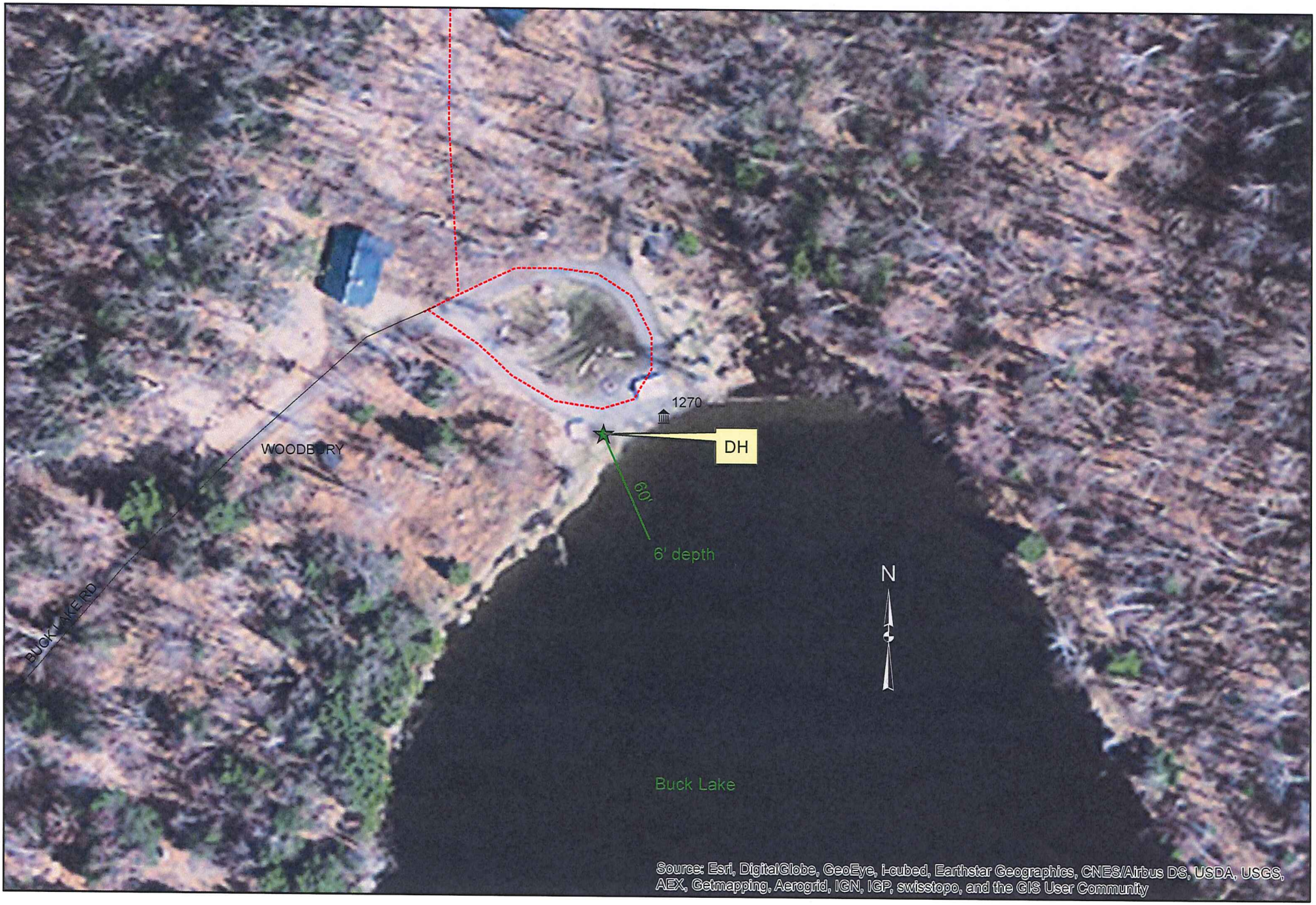
672.0 0 336.00 672.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 1102 Ft. 1cm = 132 Meters

THIS MAP IS NOT TO BE USED FOR NAVIGATION



Dry Hydrant location
MWL
PSA
Parcel Boundary



0 30 60 120 Feet

Woodbury
Buck Lake - Potential Dry Hydrant
72°23'48.069"W 44°28'1.366"N

Rural Fire Protection (RFP) Water Supply Site Assessment Form

(Revised 5/28/15)

Date: 4/20/16 Town: WOODBURY County: WASH Fire Department: WOODBURY
Site Name: BUCK LAKE Site ID Number: WOODBURY 20 16 RFP
Approx. Access/Standpipe Location: SS MILL POND LN Long: -72°23'40" W Lat: 44°28'1" N
Property Owner/Address: STATE
Largest Fire Load/Flow within 1000ft _____ 1.5mi radius: _____
Site Assessment Completed by: TROY DARE Project: 2016 RFP PROGRAM
Needed Fire Flow (if known): 1000 T gpm Existing RWS Repair ☐ Out of service Date: _____
Agreements (circle applicable - check when complete): Landowner ☐ Grant ☐ Other ☐ _____

Water Source: BULK (Lake) Pond Wetland River Stream Brook
Recommended System: Dry Hydrant Basin Pressure (Wet) Drafting
Type of Recharge: stream seep spring groundwater river
Rate of Recharge: Poor Fair Good Excellent
Site Accessibility: Asphalt (Dirt) Parking Area Driveway Other: _____
Depth of water where system intake will be located: 6 ft ASSUMING 3' OF ICE
Lift @ NWL: 5-6 ft Horizontal Distance: 60-70 ft Elevation (approx.): 1350 ft
Connection Information: Hose: ☐4.5" ☐5" ☑6" Thread Size: ☐4.5" ☐5" ☑6" » ☑Male ☐Female ☐Storz
Estimated Flow Rate of System (from New Hydrant Flow Spreadsheet): 1150 gpm
Land-use: Private Res (Recreation) Farm Village Other: _____

Water Source Information & Calculations for fire purposes (estimate):
Volume (static water bodies) = Surface Area x intake depth x 7.48gal/cf x (2/3)
Surface Area: — ft x — ft = 2 MILLION sf (☑From GIS Software)
Volume: Area 2MM sf x (Intake depth 5 ft [redacted] x 7.5gcf x (0.67) ≈ 50 M. gal
Volume in Winter months ≈ 10 M gal

Note: Thickness of ice must be deducted from the intake depth value for winter months volume. If not known at time of survey use 2ft.

Flow (flowing water bodies at time of survey) = Q = Area x Velocity (attach any survey or calc. sheets)
Cross sectional Area — sf x Velocity — f/s x (60sec/min) x (7.5gal/cf) = — gpm

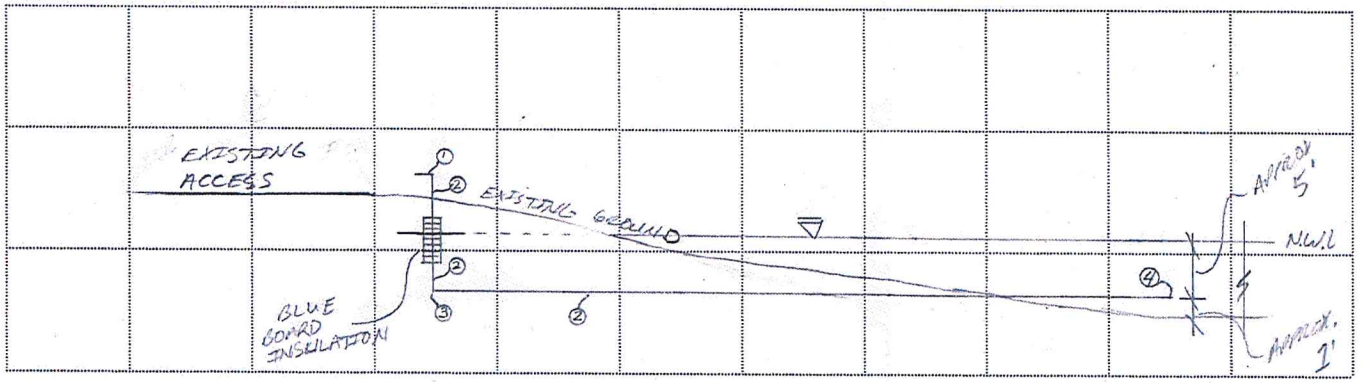
Permitting/Signoff Needed: Permitting Applications and Contact Information: www.vtwaterquality.org
☐Stream Alteration/ Water Quality (State) ☑Lakes and Ponds (State) ☐Wetlands (State) ☐Army Corps (Federal) ?
☐Cultural Resources (Federal) ☐F&W Access (State)
Integrity: Dist ☑ Intact ☐ Unknown ☐ Landform Slope: ≈ 1%
Date Cultural Resources Review Completed (if applicable): _____
Notes: _____

☑ **State Fish & Wildlife Access:** Approved ☐ NOT Approved ☐
F&W Concerns/Comments: _____
F&W Rep: Name: _____ Title: _____
Note: All RFP systems in VT State F&W Accesses must have a signed Memorandum Of Understanding (MOU) between the Town/FD before construction; and the RFP Technician must be present to assist and insure the system is installed as agreed upon.

Field Notes: INSULATE RISER

Field Sketch:

SEE GIS MAP & DESIGN



Scale: 1"= 10'

Site Map
Not To Scale

Dry hydrant installations on a river or stream should ALWAYS: 1) Make sure the construction work is clean & neat. 2) If needed only use clean stone fill. 3) All exposed soil shall be seeded and mulched immediately upon project completion. 4) While working in shallow steams use a hay bale or sand bag cofferdam system. 5) In-stream construction is generally limited to June 1st to October 1st (and maybe more restrictive in specific streams). 6) Permitting is required for any in-stream work. Municipalities shall apply for the appropriate permit by contacting the Vermont ANR River Management Stream Alteration Engineer in your area.

Design Flow (GPM): 1250

Approx. Water Volume:

Summer: 5 MILLION

Winter: 2.5 MILLION

See Attached Location/GIS Map

Bill Of Materials

#	Description	No.	Unit	Unit Cost	Total
1	90° DH HEAD w/ 6" NH	1	EA	300.00	300.00
2	6"Φ SCH 40 PVC PIPE	100	LF	7.00	700.00
3	6"Φ SCH 40 PVC 90° ELBOW	1	EA	35.00	35.00
4	6"Φ SCH 40 PVC HORIZONTAL STRAINER W/ BACKFLUSH	1	EA	250.00	250.00
	6"Φ SCH 40 PVC COUPLING	4	EA	15.00	60.00
	BLUE/PINK BOARD INSULATION	—	—	—	150.00
	LABOR	—	—	—	800.00
	Miscellaneous	—	—	—	500.00
	Excavation	12	HR	150.00	1800.00
	Total				$4,595.00

Notes

- This design does **NOT** certify your rural water supply site for a 2% (50 year return period) drought condition. For the Insurance Services Office to give credit for this water supply it must meet the Suction Supply requirements of the Fire Suppression Rating Schedule as to accessibility, availability, needed fire flow, duration, pumper capacity and distances. The 2% drought volume must be determined by a Vermont registered /licensed professional engineer, hydrologist, or similarly qualified person.
- INSULATE RISER AS SHOWN - SEE "TIPS & RECOMENDATIONS"

WOODBURY 2016 NEW
BUCK LAKE

VERMONT RURAL FIRE PROTECTION TASK FORCE
Vermont Association of Conservation Districts (VACD)
Rural Fire Protection Program - Randolph, VT 05060

Drawn by: TROY DARE

Reviewed by:

Date: 4/26/16 Sheet 1/5

Dry Hydrant Flow Worksheet

Town: Woodbury **Suction Hose: 6 in**
Site: 2016 RFP New **Date: 4/20/16** **Flow: 1155 gpm**

USE WITH THE HANDOUT "DRY HYDRANTS & OTHER WATER SUPPLY INNOVATIONS"
ENTER DATA BELOW, REFER TO HANDOUT WHEN NEEDED

(4, 6, 8, 10, 12 INCH PIPE ONLY)

6 in= PIPE 1 size (SMALLEST)
140 =C value (100,120 or 140)
8 in= PIPE 2 size
140 =C value (100,120 or 140)
10 in= PIPE 3 size
120 =C value (100,120 or 140)
10 in= PIPE 4 size
140 =C value (100,120 or 140)
1155 gpm= design delivery rate
1323 ft= elevation
6 ft= static lift
75 dF= water temp(HIGHEST POSSIBLE)
80 ft= total length of PIPE 1
0 ft= total length of PIPE 2
0 ft= total length of PIPE 3
0 ft= total length of PIPE 4

5 ft= strainer loss (if PIPE 1 size)
0 ft= strainer loss (if PIPE 2 size)
0 ft= strainer loss (if PIPE 3 size)
0 ft= strainer loss (if PIPE 4 size)

none = reduction #1
none = reduction #2
none = reduction #3
none = reduction #4
6 = suction hose inside diameter
(4.5, 5, 6 INCH DIAMETER ONLY)

PIPE 1
0 =# of 45d elbows
2 =# of 90d standard elbows
0 =# of 90d long turn elbows
0 =# of tees or crosses
0 =# of gate valves
0 =# of butterfly valves
0 =# of swing check valves

PIPE 2
0 =# of 45d elbows
0 =# of 90d standard elbows
0 =# of 90d long turn elbows
0 =# of tees or crosses
0 =# of gate valves
0 =# of butterfly valves
0 =# of swing check valves

PIPE 3
0 =# of 45d elbows
0 =# of 90d standard elbows
0 =# of 90d long turn elbows
0 =# of tees or crosses
0 =# of gate valves
0 =# of butterfly valves
0 =# of swing check valves

PIPE 4
0 =# of 45d elbows
0 =# of 90d standard elbows
0 =# of 90d long turn elbows
0 =# of tees or crosses
0 =# of gate valves
0 =# of butterfly valves
0 =# of swing check valves

---------- RESULTS ----------

5.0635 PSIA PUMP PRESSURE **Design is OK!**

(5 psia or greater means system will work)
(inputs must be changed to make it a positive 5 psia value)