The 1927 Flood

LS01451

Repeat Photography Documents Landscape Change 75 Years After An Horrendous Flood

History of the 1927 Flood

- Known as one of Vermont's most devastating events, the 1927 flood took out 1285 bridges, miles and miles of roads and railroads, and countless homes and buildings. Eighty-four people died in the flood, including Lt. Governor S. Hollister Jackson.

- The flood occurred on November 2, 3, and 4 of 1927. Rainfall averages over this period of time range from four to nine inches total.

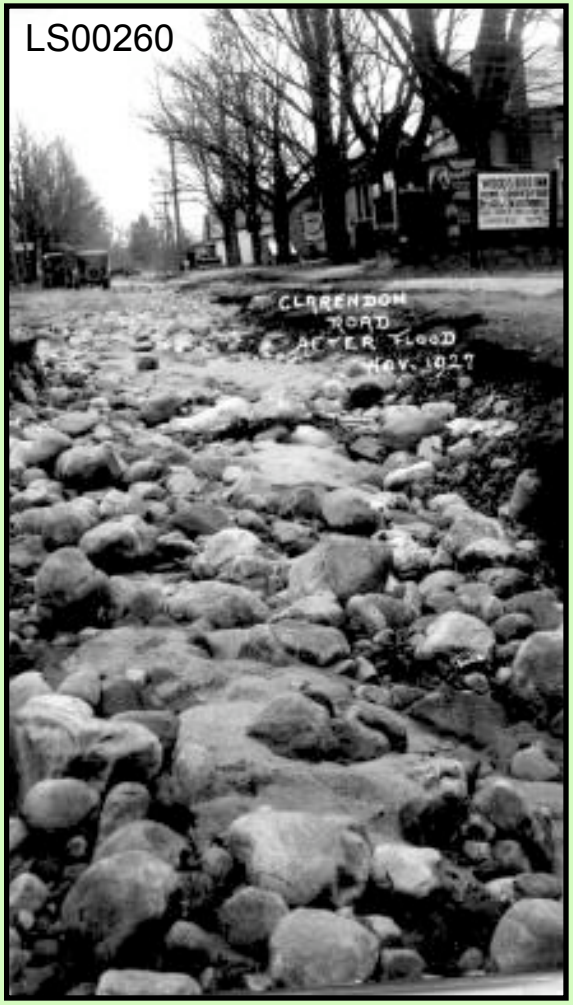
- The month of October, 1927 saw one hundred-fifty percent more rain than normal. In Northern and Central Vermont there was nearly three hundred percent more.

- The water ran into the already high rivers, causing mass flooding all over the state. The flood greatly changed the landscape, causing failing on slopes, destruction of homes and bridges, and forcing a mass rebuilding effort in all counties.

Post Flood Photography

Following the 1927 flood, the destruction was extensively documented through ground photography.

Montpelier, 1927. Photo shows flood damage at state capitol. Note variation in color on tree trunks indicating height of flood waters



Clarendon, 1927

Photo shows flooded Main Street shortly after the flood.

Aerial Photography

In the days after the flood, the federal government commissioned a flyover of the Winooski, White, Black, and Lamoille Rivers. They documented the flood damage with ninety aerial photographs, sixty-eight of which are displayed on the Landscape Change Website. (http://www.uvm.edu/landscape)

These photos accurately document the destructive forces of the flood. They also show land use and development in 1927 Vermont.

About the Project: Methods

These photos have been evaluated in terms of eight criteria: change in forestation, urban and suburban development, riparian vegetation, road building and channel change (including width, route, mid-channel island, and abandoned oxbows). Change in forestation, urban and suburban development, riparian vegetation and road building were evaluated on the scale of less change, no change, or more change. Channel changes were evaluated differently, with width being either narrower or wider today, or no change. Change in channel route was based on the scale of no change, some change, or a lot of change. Mid-channel islands were scaled as loss of island, no change or no island, and new island. The criteria for abandoned oxbow was similar, with abandoned pre-1927, no change or no oxbow, and abandoned post-1927.

Channel Change: Width

This image pair shows the narrowing over time of the river channel since the 1927 flood. On the whole the river channels represented in the photographs have not changed appreciably, but approximately 12% have narrowed and 5% have widened.

Channel Change: Route

This set of images represents the changes in the route of the Stevens Branch over the last 77 years. In general most photographs showed little change in channel route, 25% showed some change, and 2% showed a lot of change.

Channel Change: Mid-Channel Island

While many photos did not have mid-channel islands in them, those that did show that many were created after the flood. Perhaps high flows eroded the many islands that slowly came back over time.

Channel Change: Abandoned Oxbows

This photo pair shows an oxbow abandoned before the flood. This photo also shows the magnitude of flood waters as the fields throughout the photo were washed over. Very few photos had abandoned oxbows, those that did showed approximately 5% abandoned pre-1927, and 7% abandoned post-1927.

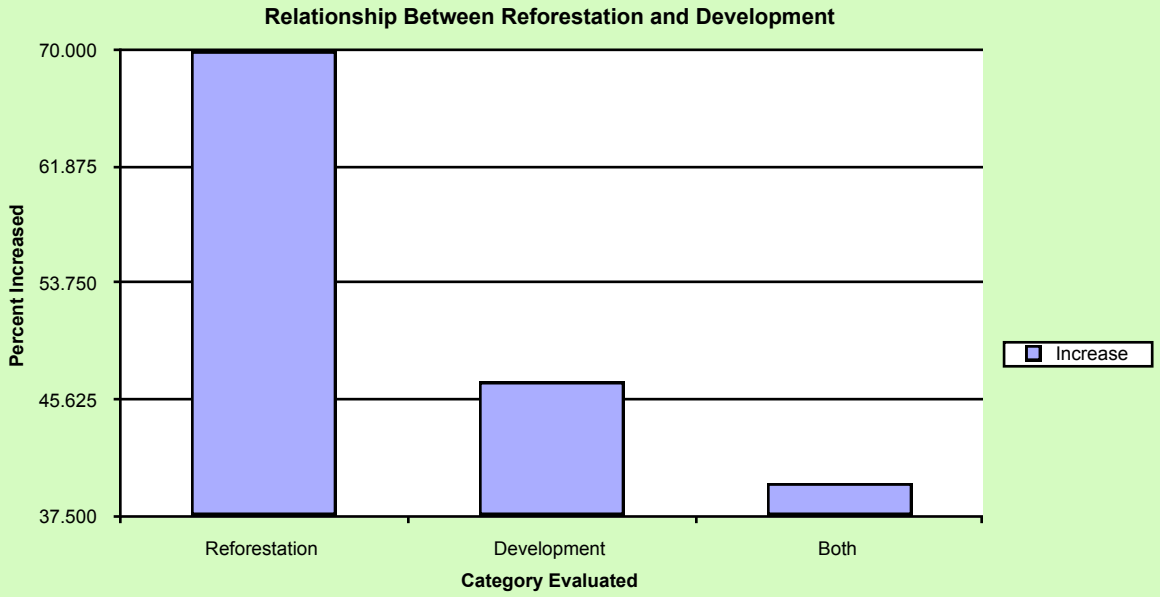
Reforestation

Photo pair shows reforestation in the greater Burlington area. Lake Champlain is in the background, and an abandoned oxbow is in the foreground of the current photo. Winooski River.

Development

This set of photos shows the development that has taken place over the last 77 years. Note bare, eroding ground in upper right of historic photo. Winooski River.

Reforestation & Development



This graph shows the relationship between reforestation and development seen through the 1927 flood aerials. Over the last 77 years both forest cover and development have increased.

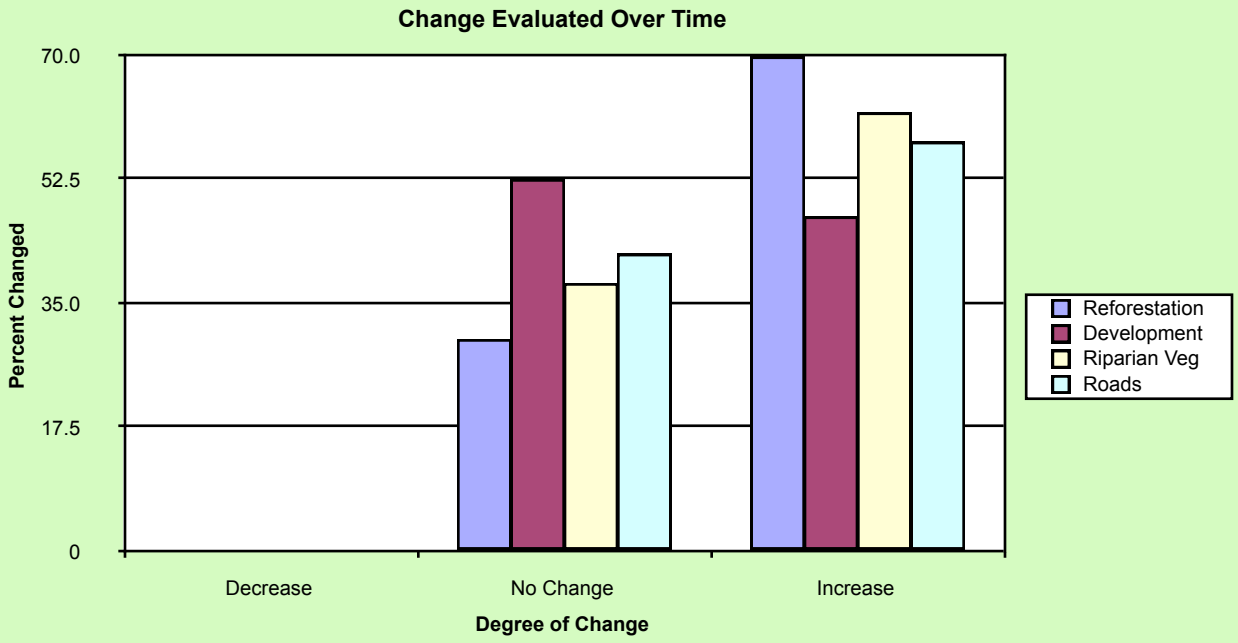
Road Building

Considerable road building has taken place in the last century in Vermont. This includes the widening of current roads, the creation of new state routes and the building of Interstate 89 (at right). Winooski River.

Riparian Vegetation

Almost all rivers in Vermont have shown an increase in riparian vegetation over the past 20 years. This photo pair shows the riparian corridor along the Connecticut River (White river at left).

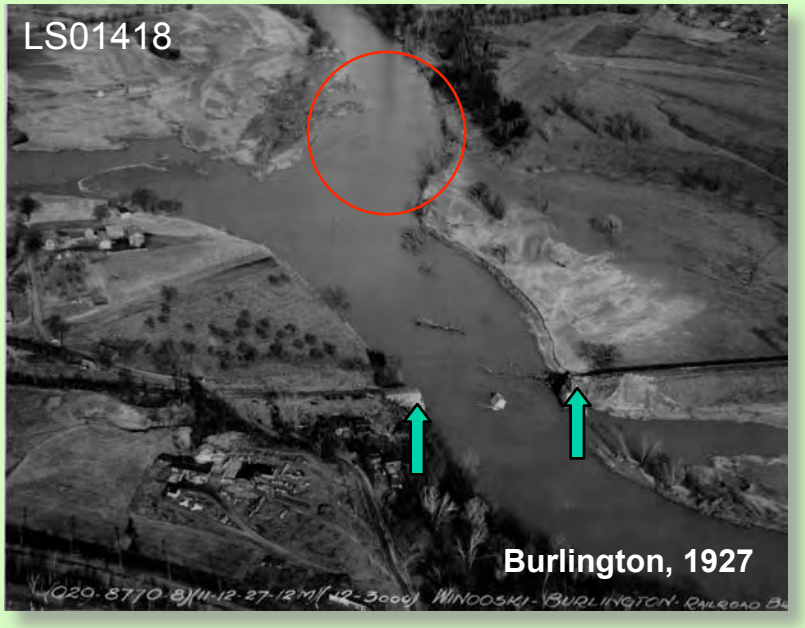
Evaluation of Change

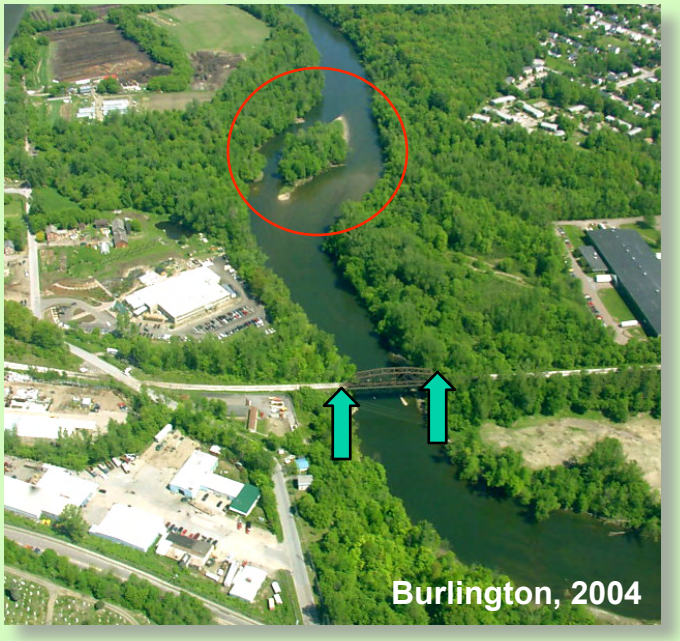


The graph above shows the general trends of forestation, development, riparian vegetation, and road building over the last 77 years in Vermont. None of the photos showed a decrease in any of the categories. The greatest increase is seen in forestation and the least increase in development.

Channel Change: Migrating Rivers

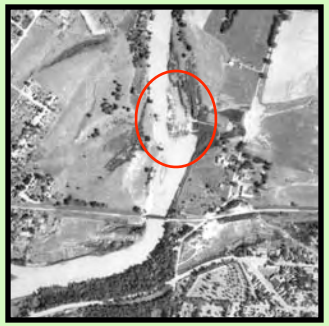
After comparing the historic aerial photographs to their current counterparts, we noticed a marked change in channel width between a few image pairs. It seemed that by using sequential historic aerial photographs we would be able to gain a better understanding of the change the channel has undergone in the past 100+ years.





The pair that started it all. Note the dramatic narrowing in channel width and the appearance of a mid-channel island along the Winooski River.

Historical Aerial Photos



1937

1942

1962

1974

1980

Aerial photos of Winooski River showing change in channel width and development of mid-channel island. These photos were used to calculate channel change and island development over time. (See graphs later in show) Photos from Natural Resource Conservation Service.

Historical Maps

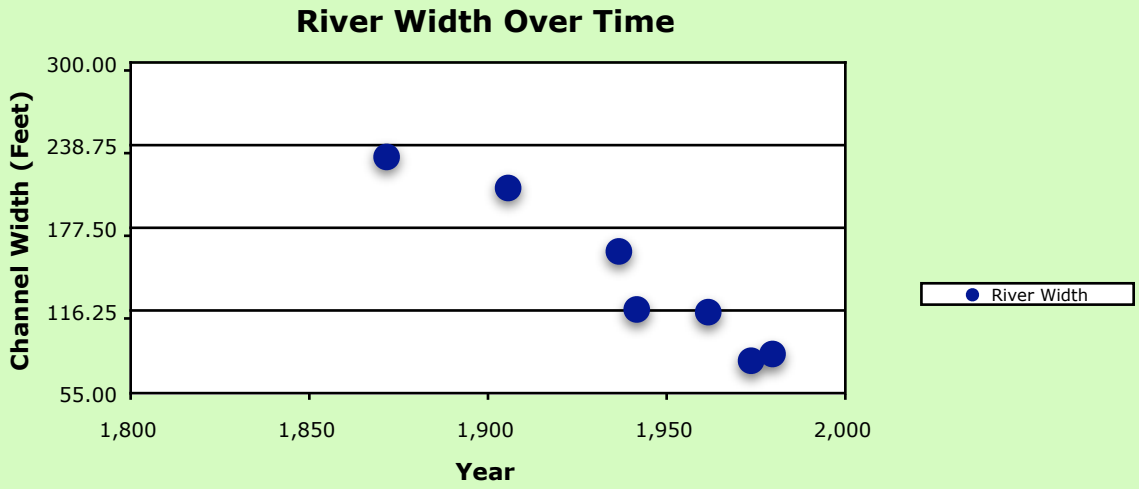
1872

1906

1948

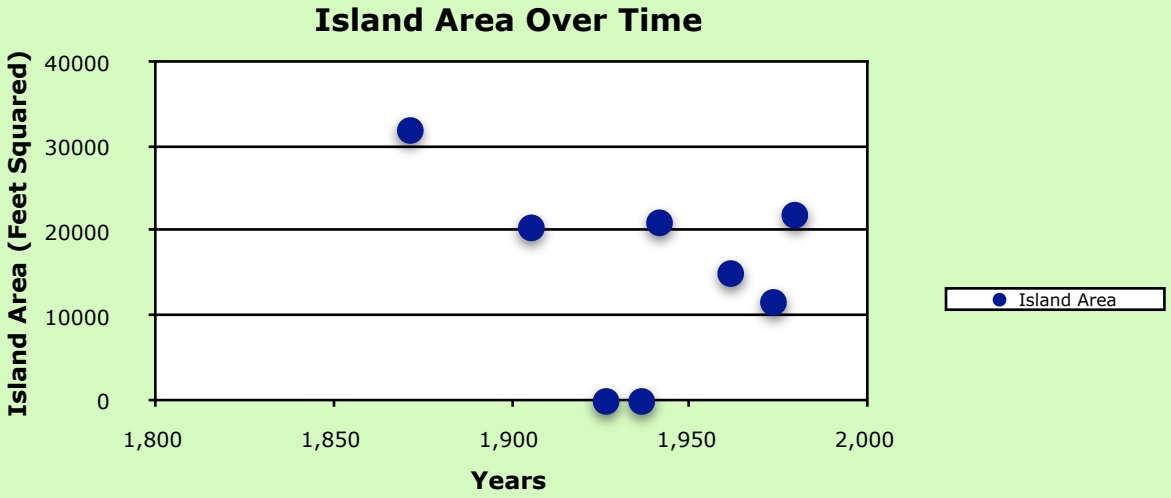
Three maps showing the field area described above. All three maps show a mid-channel island, indicating that the flood of 1927 completely removed the island. 1906 and 1948 maps 1:62,000.

Results: Channel Change



- Using historic maps and aerial photographs we were able to calculate river width for seven different times.
- Channel width steadily decreased over time.
- Change in channel width is possibly due to deforestation throughout the state in the 1800s that supplied large amounts of sediment to the rivers.
- The rise in sediment yield forced the rivers to aggrade, thus creating a wider river. The increase in forestation over the past 100 years has allowed the river to narrow and incise into the sediment.

Results: Island Area



- Island area has fluctuated over time.
- The 1927 flood appears to have obliterated the island, so much that by 1937, 10 years later, the island is still not exposed.
- The general trend shows a rapid decrease in island area due to the 1927 flood. The island then gains size over time, degrading once again between 1942 and 1974, possibly due to greater river incision rates.

The End!

By Elizabeth Stanley-Mann,
UVM 2005

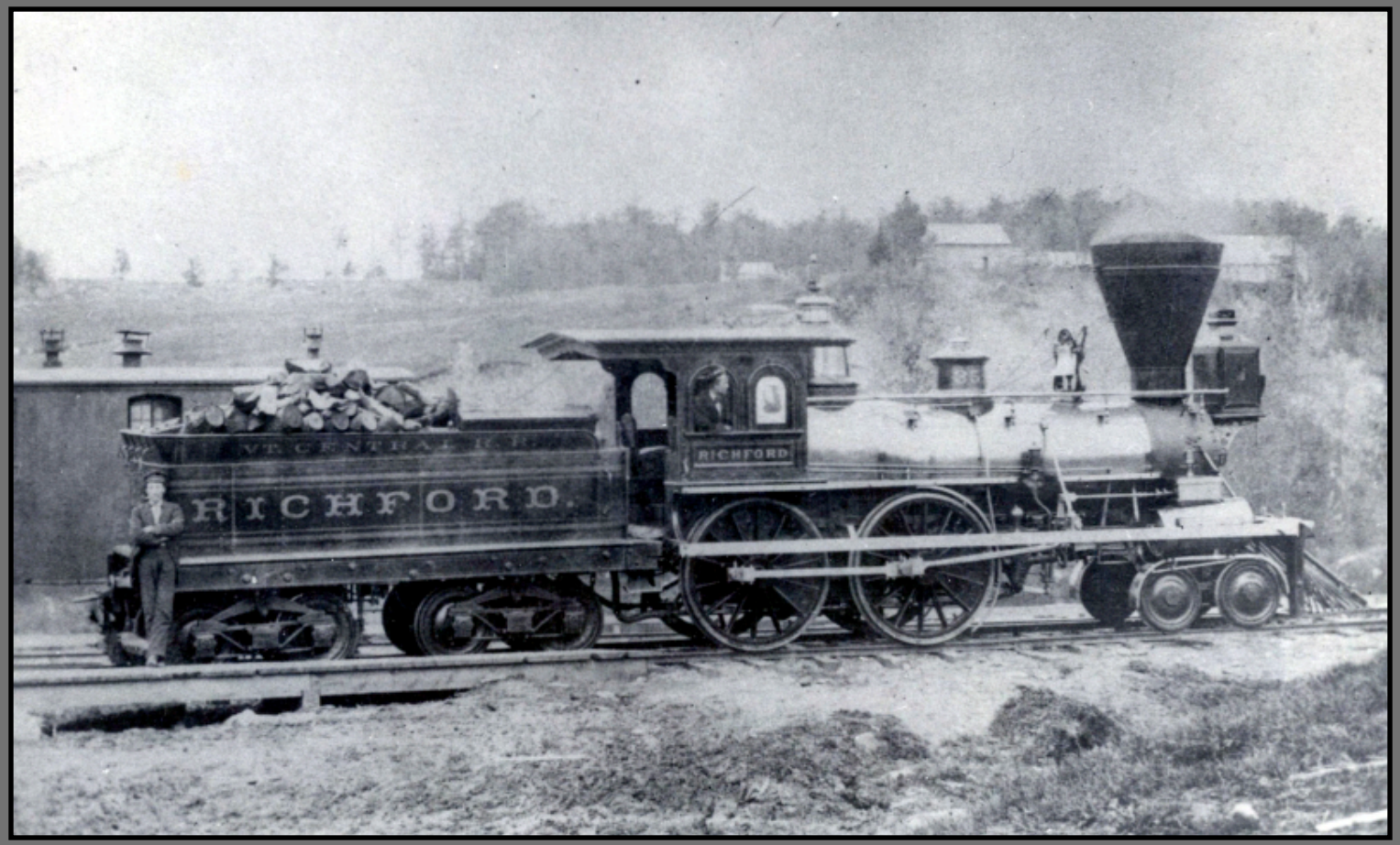
Barre:
History of a Vermont Granite Town

Maartje L. K. Melchiors

(LS00558) A view of the landscape surrounding Barre circa 1900.

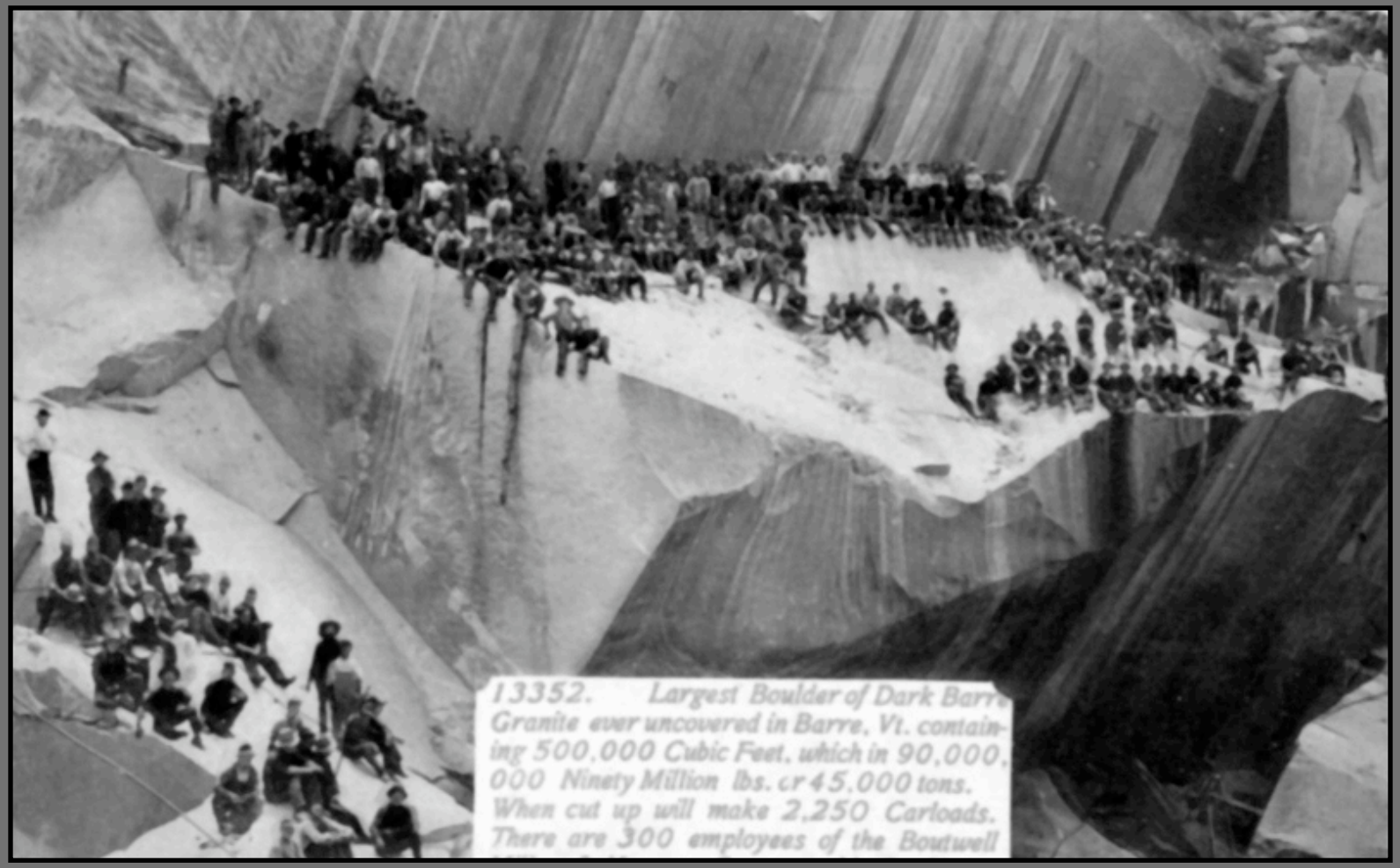
Prior to the American Revolution, the landscape that surrounds Barre was an unsettled wilderness. The land was roamed by Native Americans, who were the first to discover and utilize the vast granite deposits in the area. With the arrival of early settlers, granite became important in the construction of homes.

The development of the central railroad in Vermont, which reached Barre in 1875, signaled the beginning of the town's granite industry. It created the necessary link between Barre's granite and the world markets.



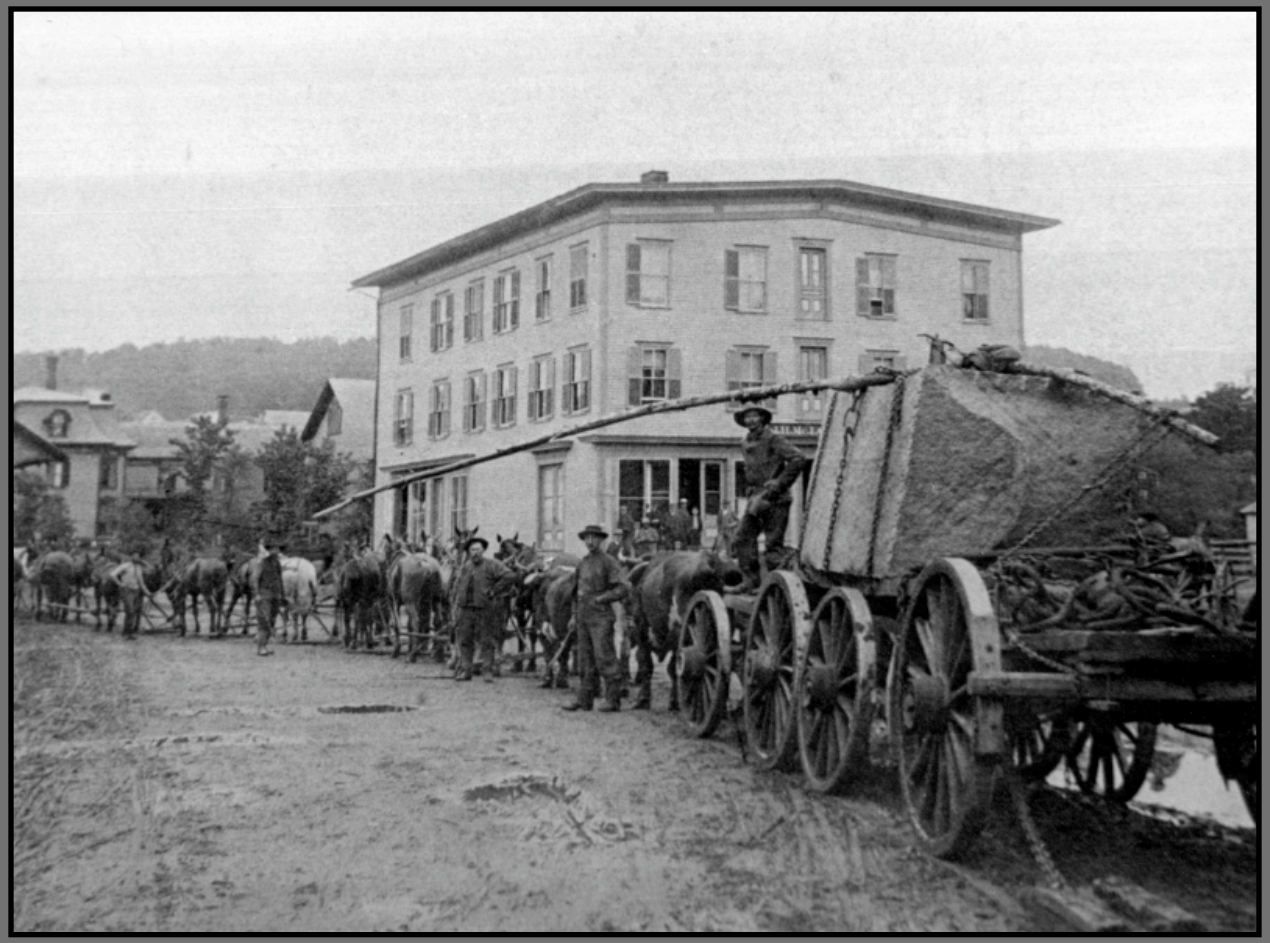
(LS11033) The image shows a locomotive which was part of the Central VT Railroad Line.

Granite deposits in Barre were estimated to contain 500,000 cubic feet of economically valuable rock.



(LS00609) Workers sitting on granite outcrop in late 1800's.

Before the development of motorized vehicles, it required as many as 30 horses or oxen to pull a large piece of granite. The railroad reached Barre by 1895, however horses were still needed to transport the granite from the quarry to the trains.



(LS 04330) This image shows horses pulling a heavy load of granite circa 1895.

From 1881 to 1893, Barre witnessed the construction of 625 new homes. 100 homes were constructed during 1900.

(LS03026) Main Street house built circa 1880.

Barre's population rapidly increased after 1875 as the granite industry surged.

(LS00561) A view of Barre in 1885.

1830: population 2,012

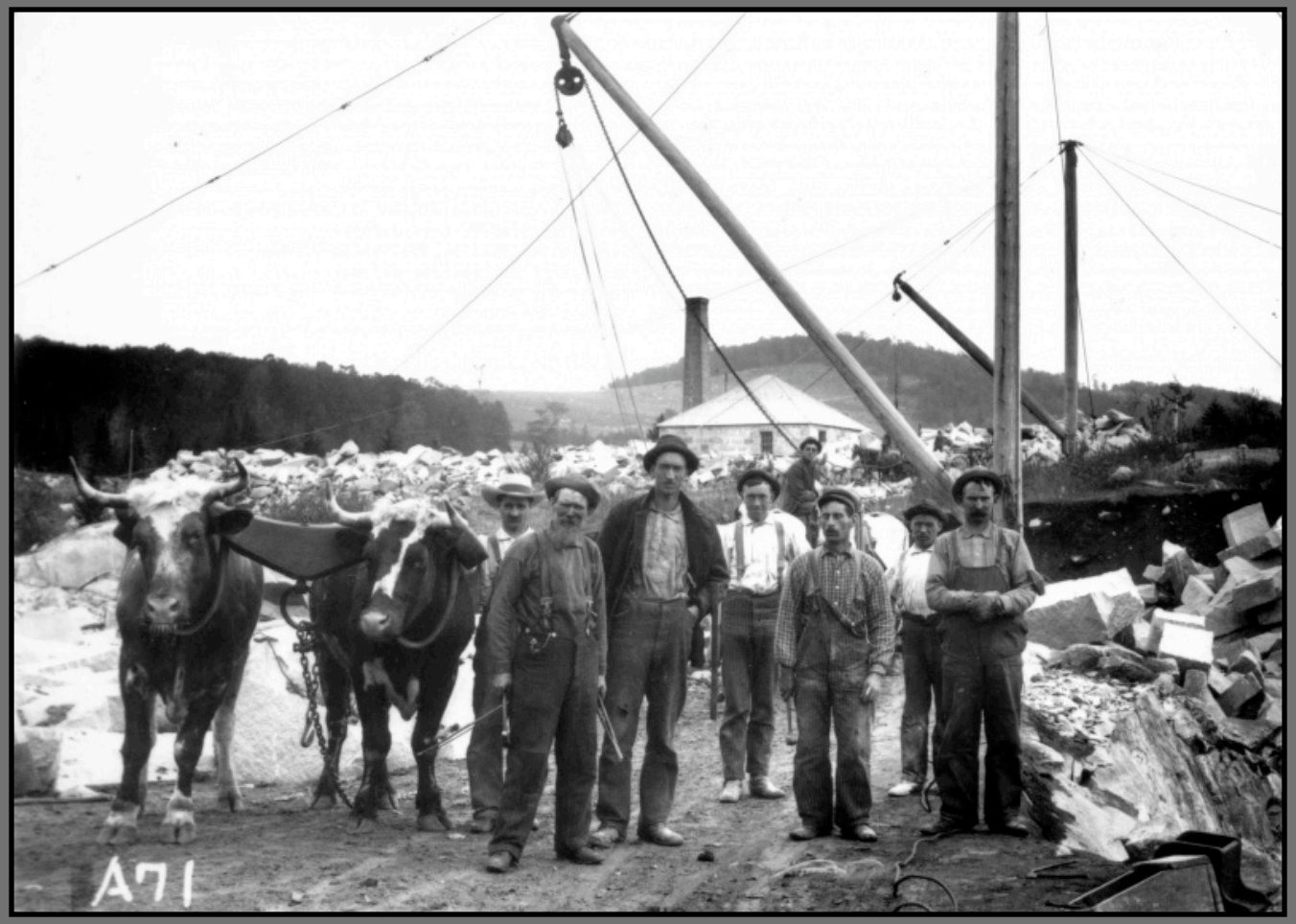
1890: population 6,790

1900: population 11,754

The rapidly growing population was fueled by the influx of immigrants from Europe who came to Vermont in search of fortune and a better life. The Scottish were the first immigrants to arrive in Barre followed by the Italians.

(LS05087) Barre stone cutters in 1890.

Only 28% of Barre's native population worked in the quarries. In contrast, nearly every foreign born inhabitant of Barre was employed in the industry.

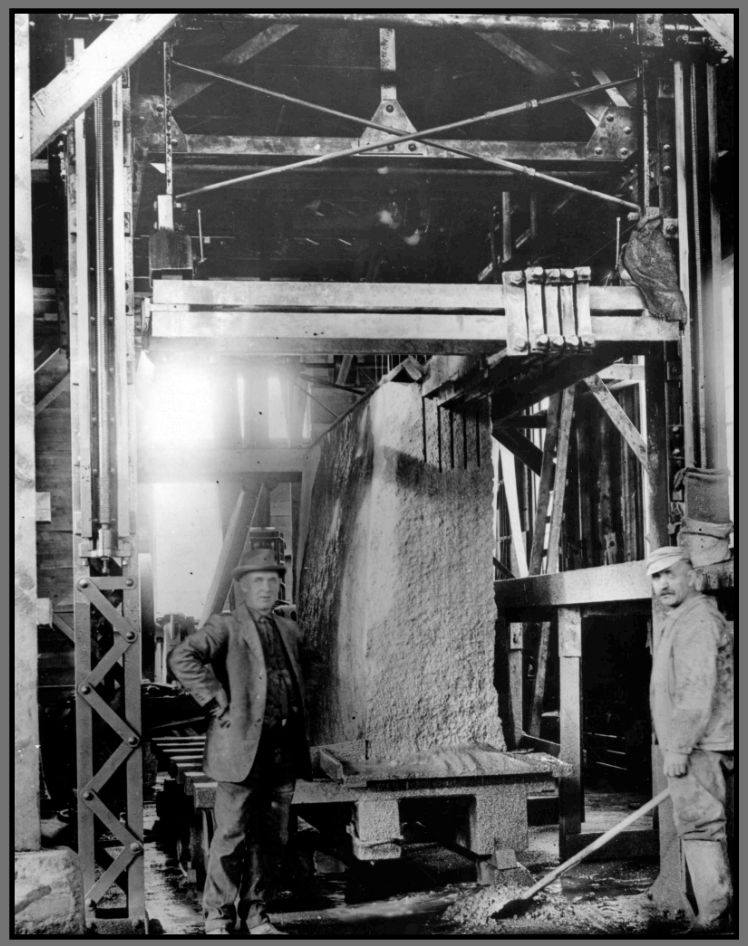


(LS02201) Workers in 1895.

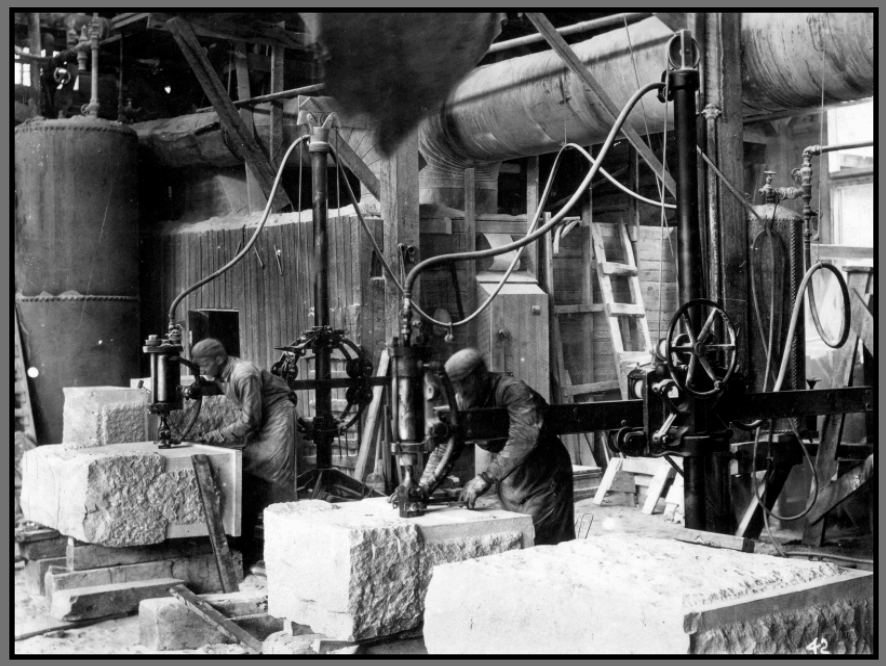
The stone cutting process required highly specialized individuals. Most of the Scottish immigrants had been trained in granite region near Aberdeen and therefore possessed necessary skills.

(LS06730) Stone cutting techniques circa 1900.

The art of stone cutting and carving…



(LS02215) Cutting a large piece of granite circa 1900.



(LS02216) Workers using surfacing machines in 1920.

(LS09903) Statue of Robert Burns, a Scottish poet, carved by Scottish immigrants in Barre circa 1899.

Immigrants from Europe greatly impacted the cultural landscape of Barre. They organized social and political gatherings and remained close to their native traditions. They formed their own neighborhoods and were particular to their own merchants and markets.

(LS10147) A view of Main Street in Barre as it appeared in 1910.

The craftsmanship of the immigrants is still visible in the architecture of Barre's Main Street.

It is estimated that nearly half of all working women in Barre took in immigrant workers to room and board between 1880 and 1910. The opportunity to take in boarders could increase a family's income by 25%.

(LS10991) A Barre farmhouse circa 1890.

The rise of the granite industry in Barre was responsible for a huge spike in population, the arrival of many foreign born immigrant workers, and the development of the town and transportation networks. Prior to the surge of the industry, Barre was a quiet Vermont town of barely 2,000 inhabitants. Within a few decades that population had increased to nearly 12,000 making it one of America's important economical centers.

(LS11467) Postcard promoting the world's largest granite quarry

Then
Now

and

(LS01428) Aerial view of Barre, 1927

(LS01478) Aerial view of Barre today

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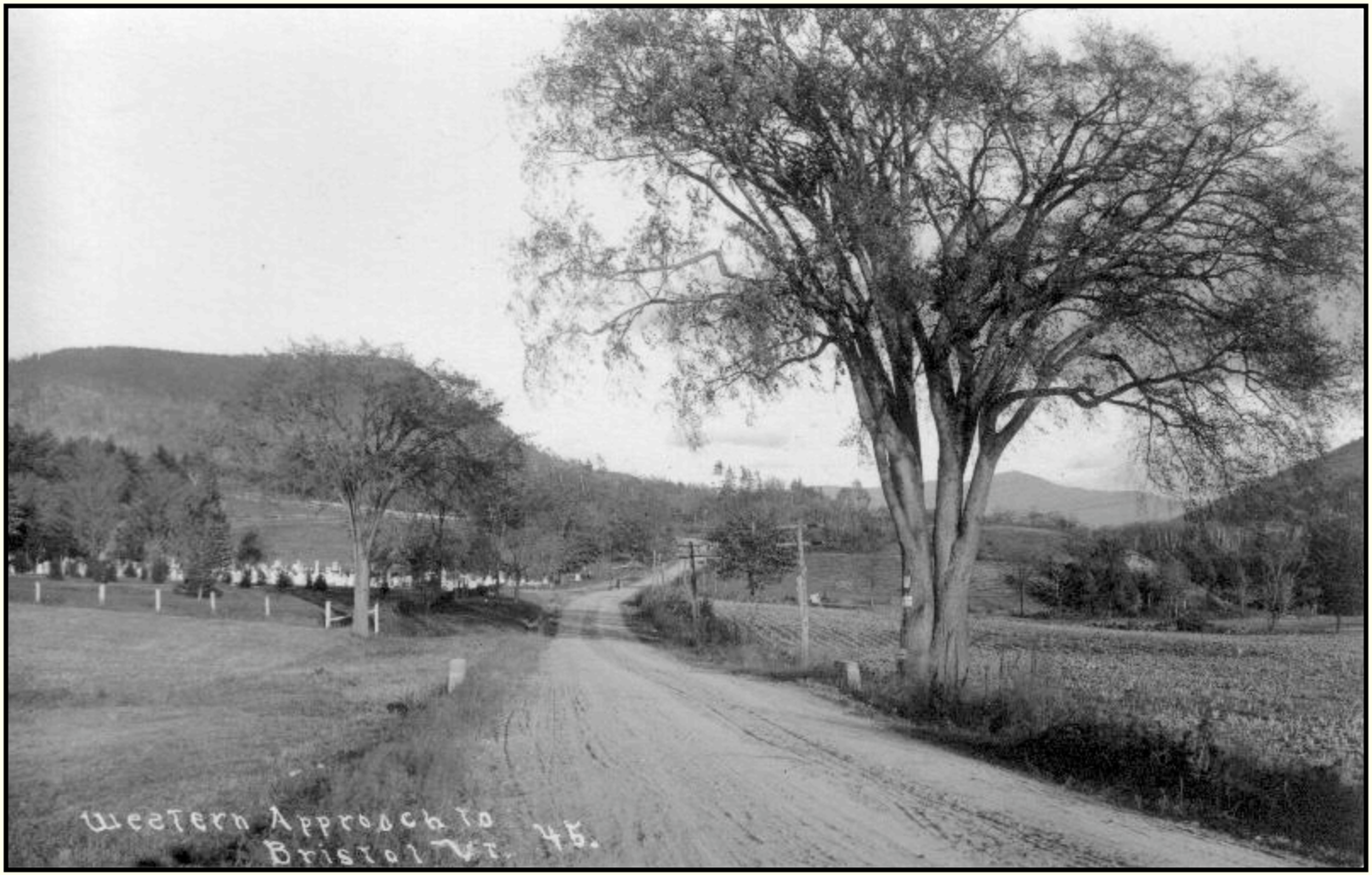
Here Lie the Bodies

A Look at Vermont's Cemeteries and their Place in the Landscape



LS07562 The Western Approach to Bristol, VT, undated. Bristol has 6 known cemeteries.

“Quick! Touch the ceiling! Get your feet off the floor!
Hold your breath... We’re coming to the cemetery!”

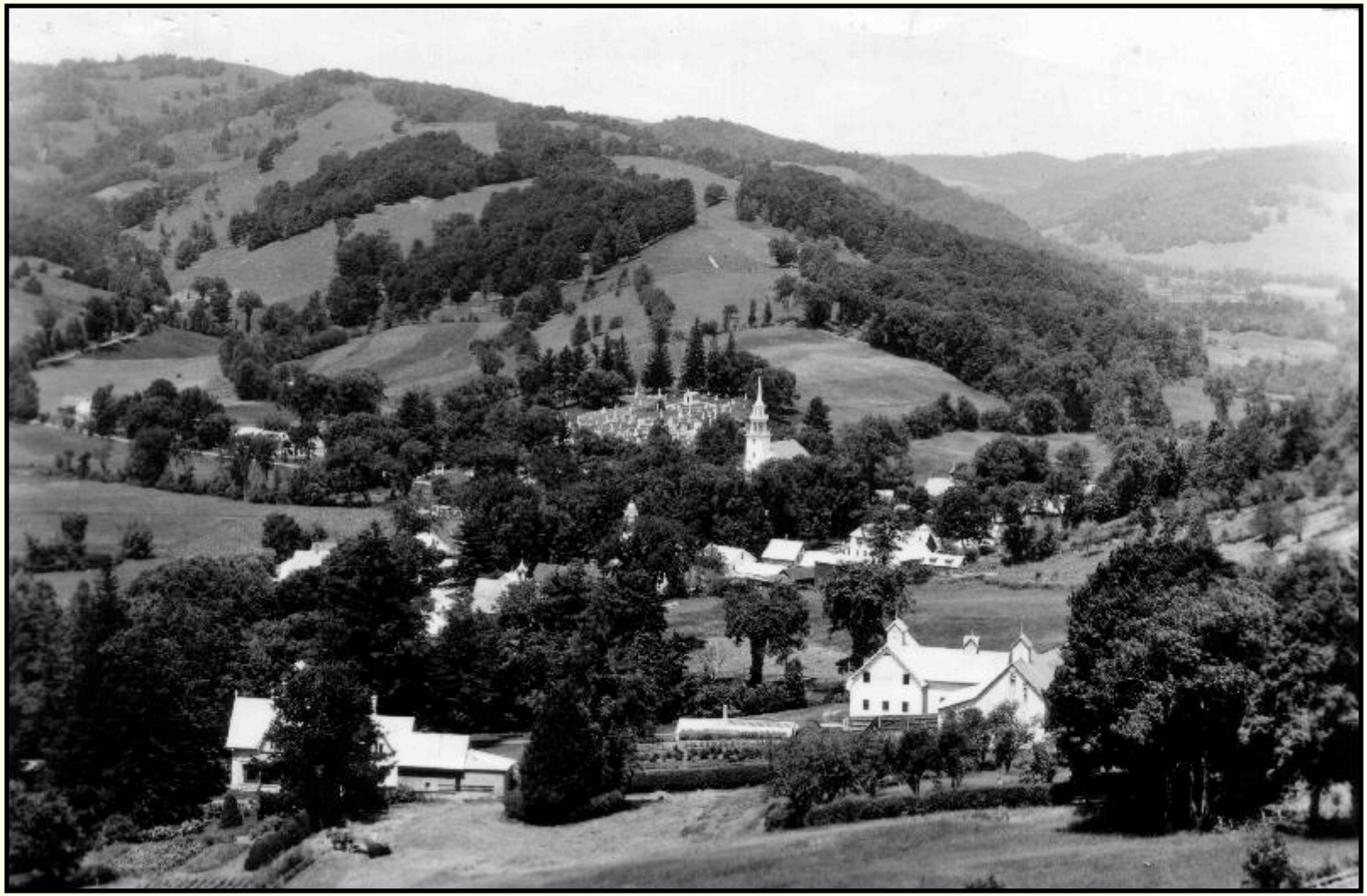
Cemeteries make many people uncomfortable, even spooked. But be brave have a look! Cemeteries dot our Vermont landscape; they are all around us. You can even spot them from the air.

LS04596 Rt. 2 East Montpelier, along the Winooski River, April 1959. The Plainmont Cemetery is one of 21 known cemeteries in Montpelier. It has 700 graves, with the first burial in 1909. Close to the Plainfield town border, it is owned & maintained by Plainfield.

Look for cemeteries next to old churches and meeting houses...

LS06344 Rockingham Meeting House, Rockingham, VT, taken after 1960. First burial in 1780, about 1200 graves. Rockingham has 13 known cemeteries.

around our cities and towns...



LS07482 Stafford, VT October 1940. Strafford has 16 known cemeteries. Cemeteries were often set on hills to protect from flooding, and often had commanding views of the town.

and along country roads.

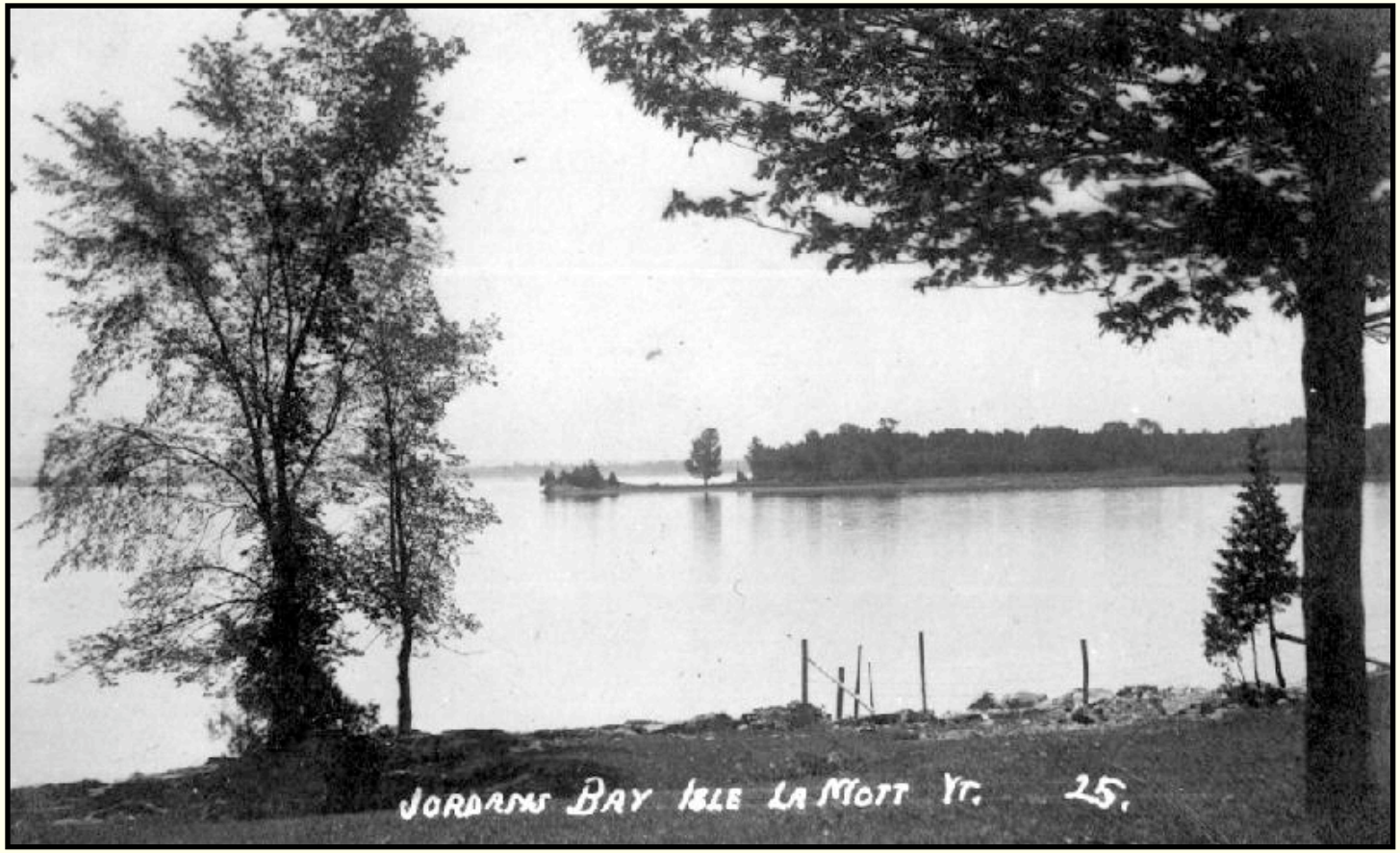
LS07310 Caption reads "Looking up Camden valley from Moraview (?) cemetery... Sandgate, VT, taken before 1942." This is probably the West End – Camdon Valley Cemetery, with 400 gravesites; burials from 1786-1980. Sandgate has 6 known cemeteries. Sometimes cemeteries were built on fertile ground, sometimes not.

West Wheelock Cemetery, Wheelock, VT, July 2005. There are 145 gravesites in this abandoned cemetery, on an abandoned road, almost half without gravestones. Used from about 1800-1905. The town has recently pledged to keep it mowed. Wheelock has 9 known cemeteries. (photo: JA)

Some cemeteries, way up in the hills, or back in the woods, have been forgotten; now overgrown and hidden. But you might spot them if you notice these tell-tale clues:

- **old stone, wood or metal gates and fences;**
- **depressions in the ground from sunken graves;**
- **escaping Lily of the Valley, or Myrtle: flowers that were often planted on graves;**
- **Cedar trees among hardwoods: Cedars were often planted at each side of the entrance, or around the perimeter. Called the "tree of life", they were planted to symbolize everlasting life after death.**

The earliest humans to be buried in Vermont were Native Americans: Archaic, Abenaki and Woodland peoples. Their graves were not marked with gravestones, so they are harder to find than the cemeteries we've been looking at. Archeologists and construction crews have found these burial grounds in Vermont, sometimes on purpose and sometimes by accident.



LS01705 Jordan's Bay, Isle La Motte, VT, undated. Isle La Motte was the site of one Archaic burial ground.

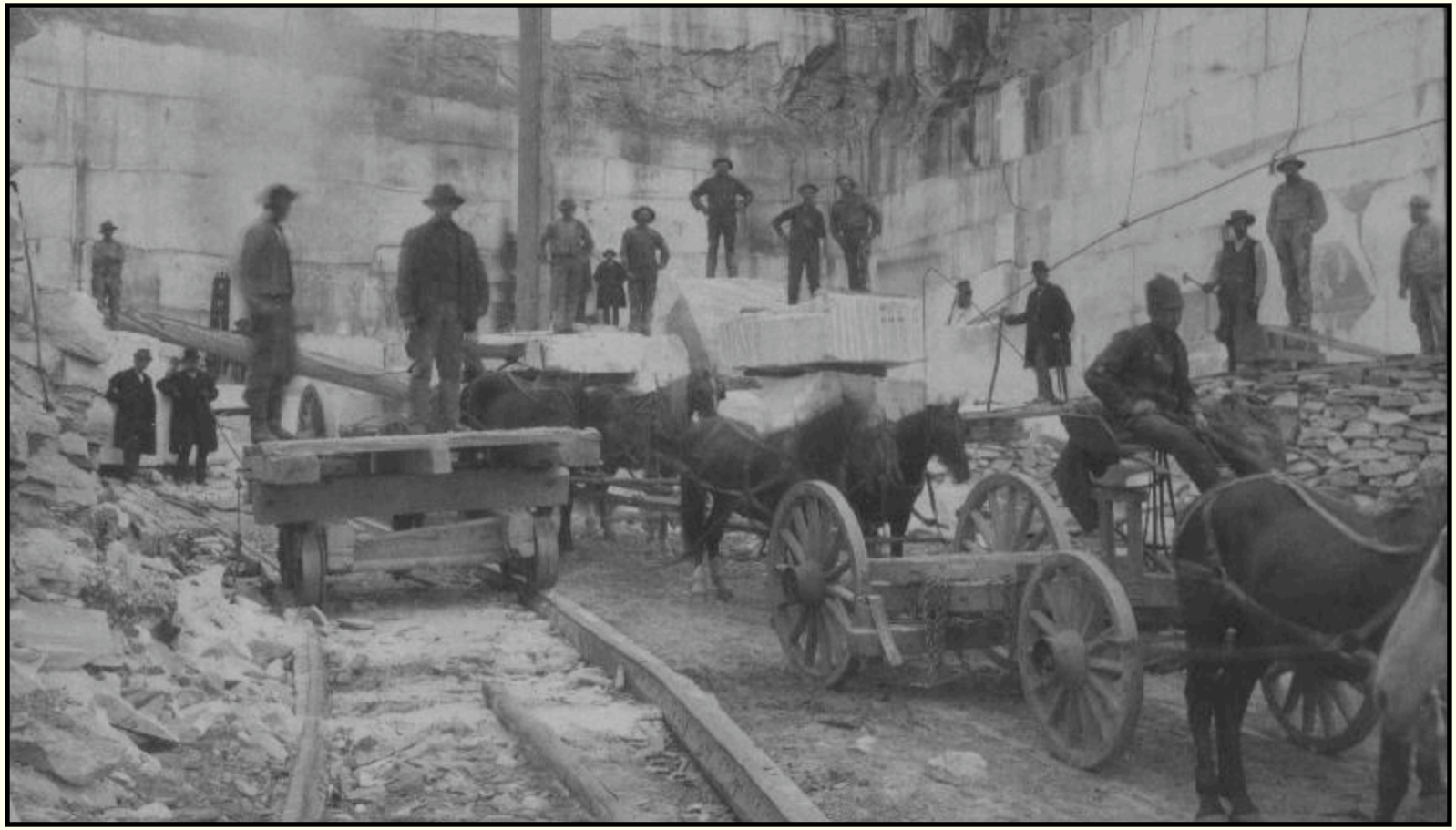
During Colonial times, the early settlers usually buried their dead near their homes, in a family burial plot. They marked the grave with

LS00631 Babcock Family hill farm, Greensboro, undated. The area is now forested, and all but the foundations gone.

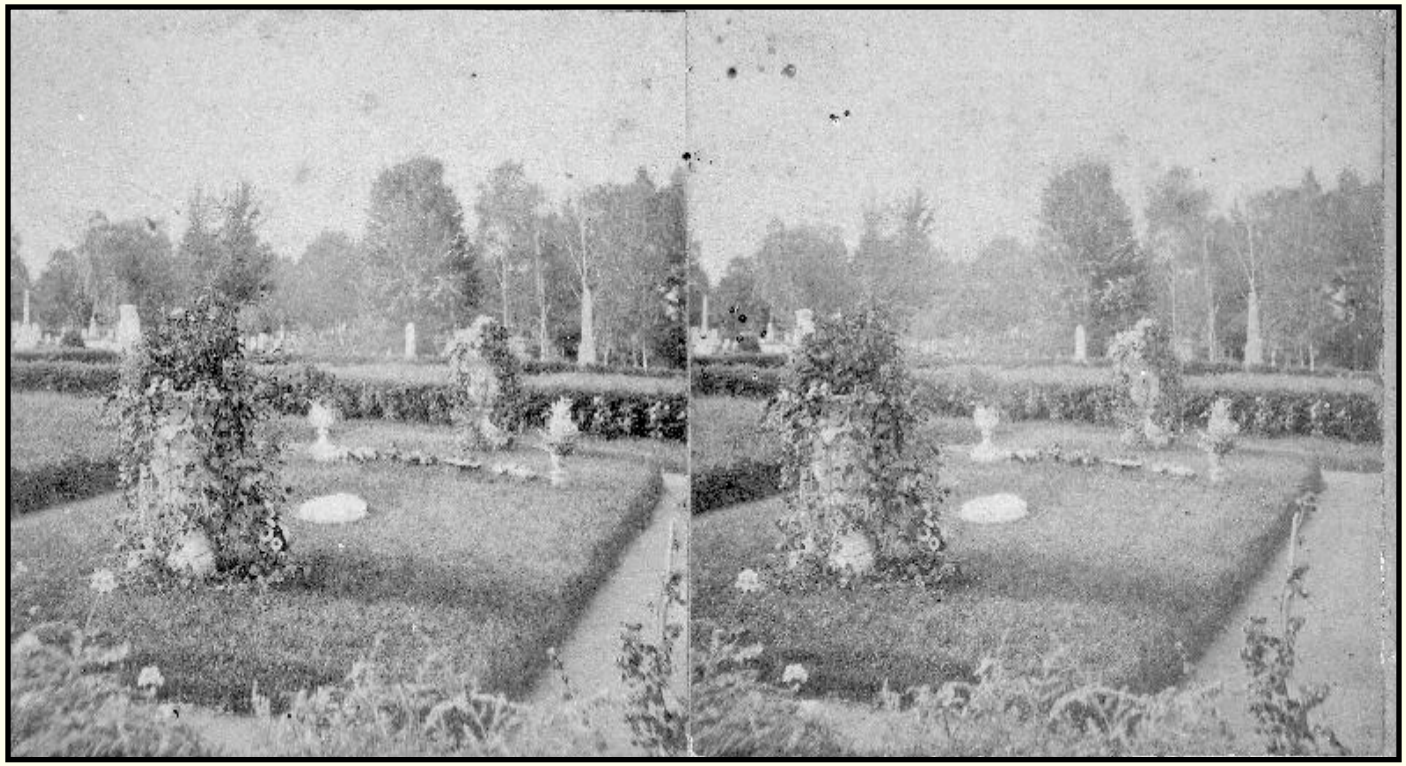
As settlements grew, graveyards near churches and in towns were built. They were plain and simple, laid out in an east-west direction so the dead could sit up and face the sun on Judgment Day. Sandstone and slate were popular for gravestones; they were softer and easier to carve than boulders, and were found locally.

LS00684 Slate Quarry and Mills, Fair Haven, VT. Postcard, mailed 1907

In cities outside Vermont, the “in” gravestone material changed from slate to white marble during Victorian times (beginning about 1880), and Vermont followed the trend. As luck would have it, there was



LS02218 Mt. Aeolus Marble Quarries in East Dorset, VT, 1887.

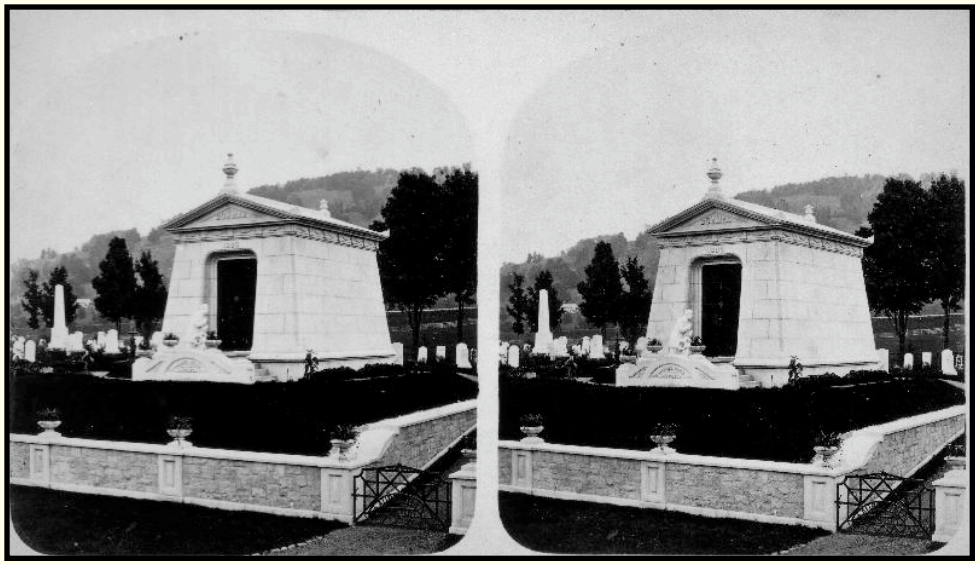


LS03185 Stereoview shows Mary Bracket's grave in Prospect Hill Cemetery, Brattleboro, VT, undated. One of 14 cemeteries in Brattleboro, Prospect Hill has 3000 graves; first burial in 1788.

Along with the marble Victorian gravestones came a new Victorian way of thinking about death, which was not as grim as in Colonial times. A new concept for graveyards was needed. Instead of the somber, plain burial grounds of the past, new graveyards, called "cemeteries" (meaning "sleeping place" in Greek) began. Cemeteries were designed to sooth and comfort. Besides gravestones there were lawns, benches, pathways, trees, flowering bushes, and sometimes even a pond. This was a place where visitors could sit and reflect, stroll and contemplate, or meet friends and picnic. This "garden" or "rural" cemetery idea inspired the movement to build public parks across the United States.

In garden cemeteries, artwork was not reserved just for tombstones. Sculpture and artwork was everywhere, and often very fancy and elaborate.
In a garden cemetery look for:

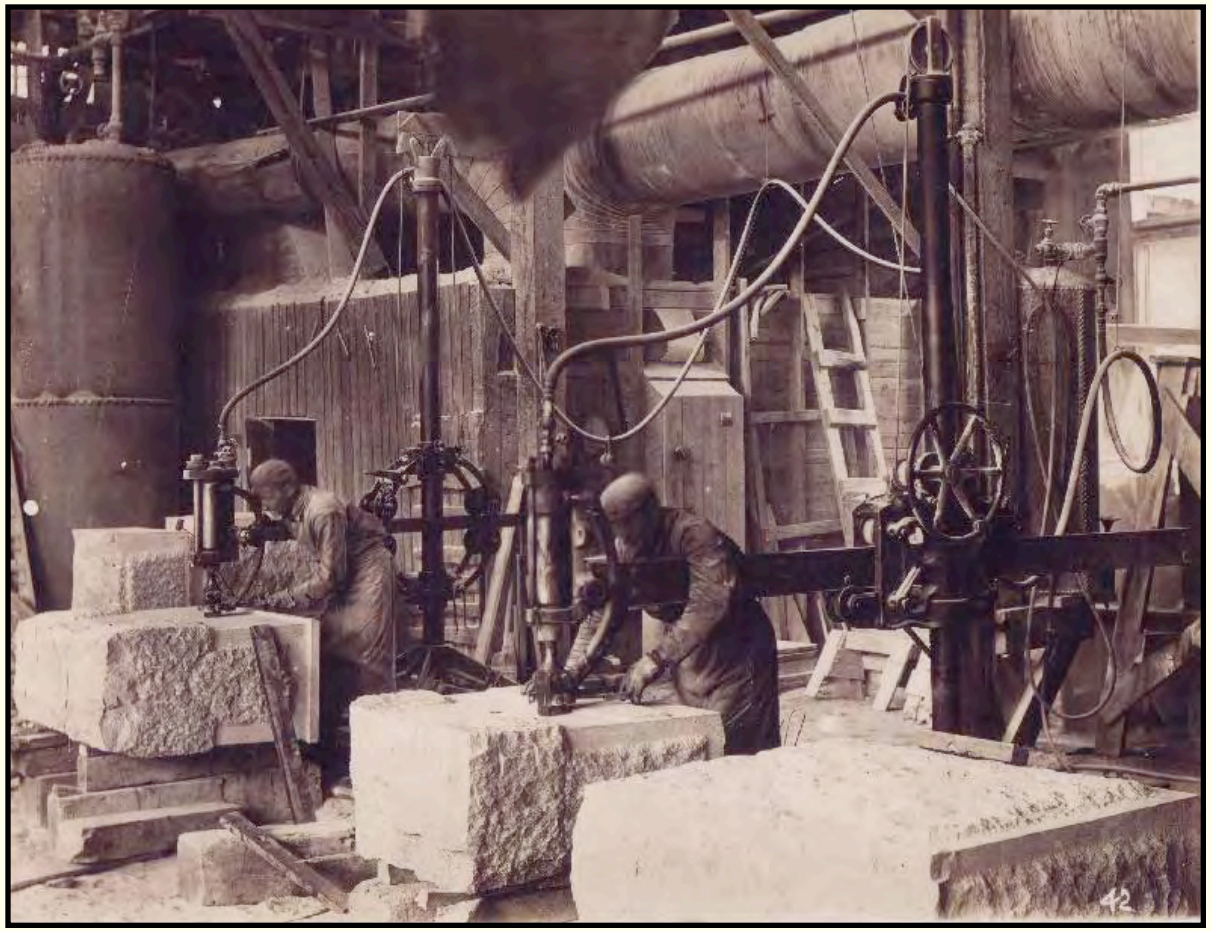
- **Mausoleums, crypts, tombs & vaults**
- **Fountains, pedestals, urns, statues**
- **Gates, fences & walls**
- **Gatehouses, caretaker's buildings & storage sheds**



LS03526 Bowman family Mausoleum, Laurel Glen Cemetery, Cuttingsville, Shrewsbury, VT; stereoview.
Undated; first burial in this cemetery was in 1817

LS05675 Mumfield(?) Stenson(?) Monument, Cemetery, Rutland, VT stereoview, undated.

But marble gravestones didn't hold up very well. They were susceptible to pollution, weathering, lichen and moss. Over time, the marble deteriorated, sometimes crumbling off into "cemetery sugar." Granite became the stone of choice (and still is). Vermont had tons of granite in its landscape. Barre became "The Granite Capital of the World".



LS02216 Pneumatic Surfacing Machines in Operation, granite cutting shed, Barre, VT, 1920.

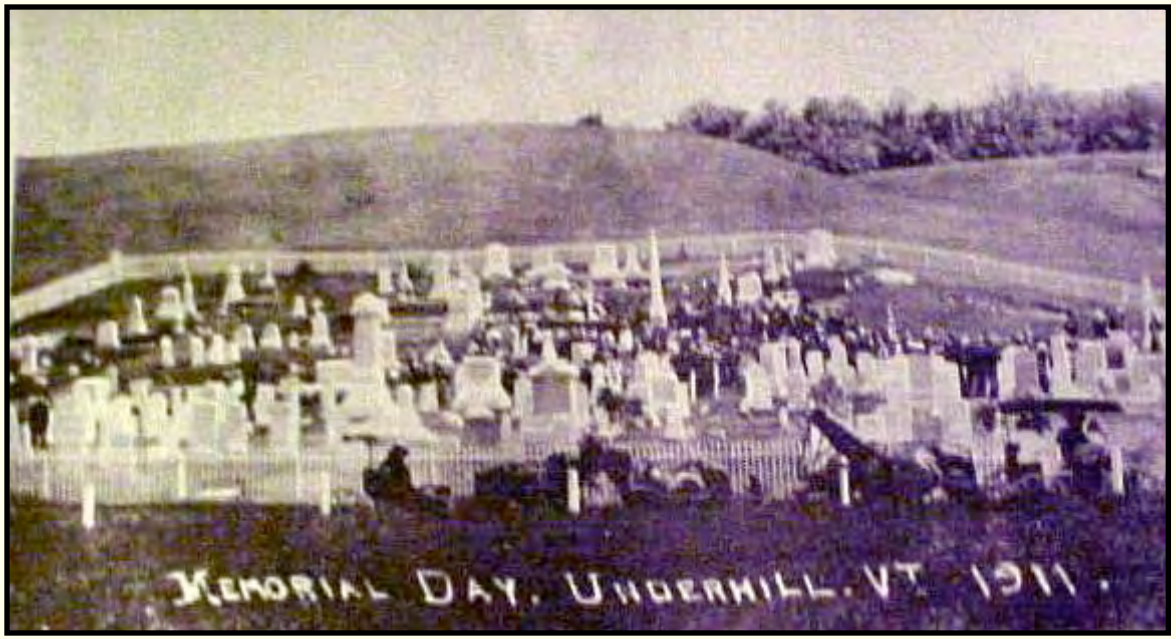
LS05981 Cemetery Entrance, St. Johnsbury, VT, Right-hand side of a stereoview, undated. St. Johnsbury has 6 known cemeteries, one with over 13,000 graves.

Whichever type of burial ground you visit family plot, churchyard, graveyard, or cemetery (and many large cemeteries are a combination) you will notice it is a great home for vegetation and wildlife. You'll understand why cemeteries got the nickname "a city's green lungs":

- **Sometime cemeteries have the largest tree species around, as cemeteries are usually not disturbed by development**
- **Sometimes they have unusual species of trees**
- **The lush vegetation and the usually quiet**

LS02719 The caption reads, "A funeral procession passes Caspian Lake House and homes enroute to the cemetery - Black and white horses pull the hearse." Greensboro, VT. undated.

Where are we headed? Will another idea for cemeteries catch on in Vermont? The newest idea for cemeteries is a “green” cemetery, where bodies are buried, or cremated remains scattered, in a natural wooded area, without embalming or caskets. Graves may be marked with flat markers, but not monuments. Green cemeteries are is less costly, have less impact on the environment, yet still provide a place for loved ones to visit, complete with hiking trails! People who like the idea believe it protects green space, rather than consumes it like the cemeteries we now know. Vermont certainly has plenty of landscape for green cemeteries. What do you think?



LS00923 Memorial Day, Underhill, VT, 1911. Underhill Flats Cemetery; since 1842 over 300 burials; still used today. There are 7 known cemeteries in Underhill.

With over 1,900 cemeteries in Vermont, there is bound to be one near you. Some Vermont cemeteries have only one grave; some have thousands. Some towns have more than 20 cemeteries within their town lines; four towns have none: Averill, Ferdinand, Glastonbury and Lewis**.** Why would that be?

There are many things to discover in cemeteries! Besides the different stone material, types plants, animals, designs and landscapes, you can discover what is on the stone itself. Carved into gravestones are artwork, names, dates, facts, sayings, and poems, each giving us clues about the life of the person buried there.

Don’t let graveyards give you the goosebumps! Have fun exploring a cemetery!

A few parting shots and last words....

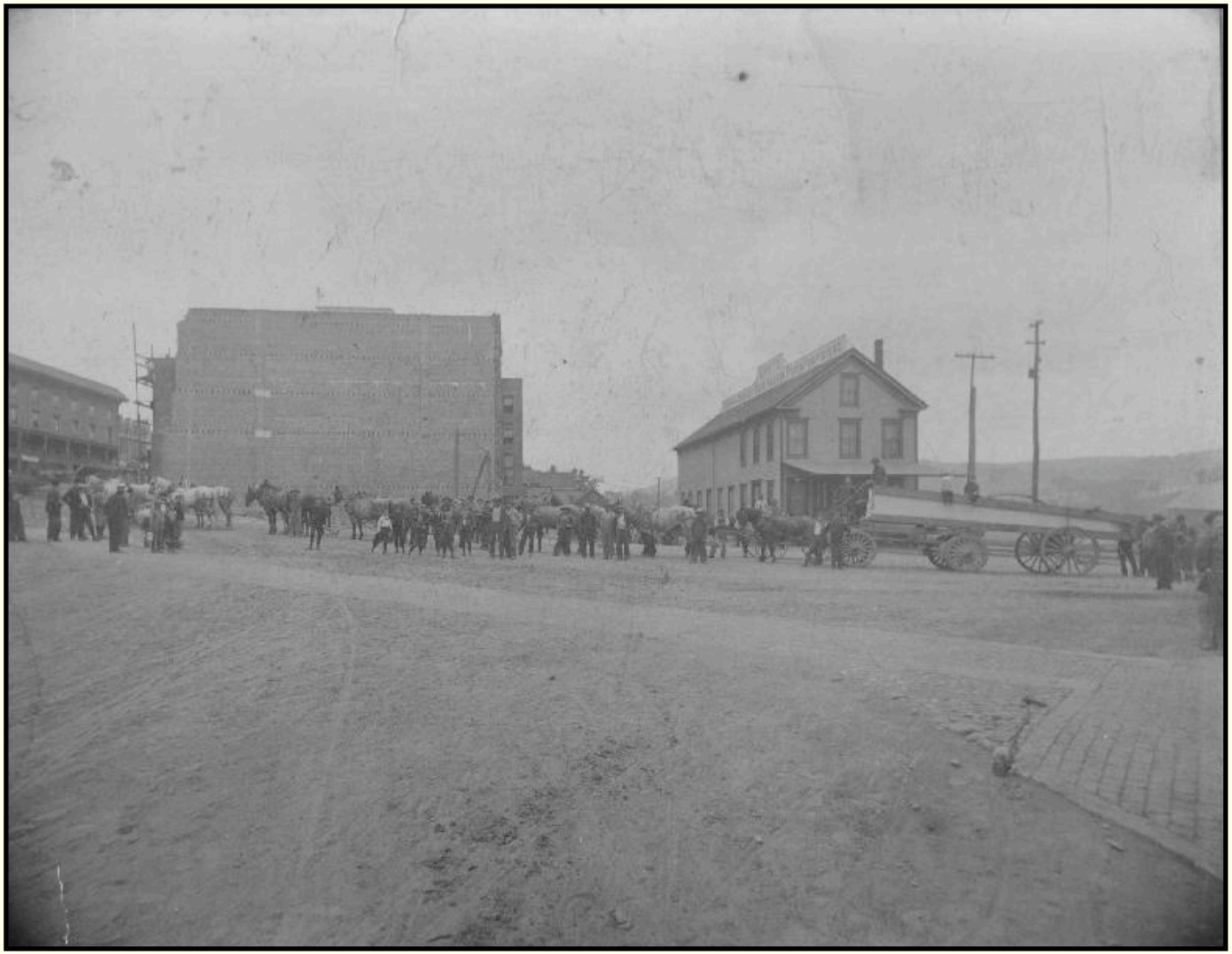
Inscription on the gravestone of Wm. F Townsend, Baptist Cemetery, Sheffield, VT:

"I came to the place of my birth, And said to the friends of my youth, Where are they? An echo answered Where are they?"

LS04876 Three people in cemetery, Northfield, VT, undated. Northfield has 10 known cemeteries.

Inscription on stone of Morman R. Drake & infant son, 1789-1883, Baptist Cemetery, Sheffield, VT:

“No costly tablet here, nor pompoms lay: No storied urn, nor animated bust
This simple stone directs the fondest way to pour our sorrows o’er their precious dust”



LS04032 Ide Family monument being carried on wagon from Railroad to Mt. Pleasant Cemetery, St. Johnsbury, VT, undated. The Ide obelisk was no “simple stone” and was surely a “ costly tablet”!

LS07023 North Hero, 1949. North Hero has 5 known cemeteries.

“I walk over the dead with every step,
They seep upward through grasslands and sidewalks,
Their gestures grand, their small intentions
A part of me ...”

Credits

Presentation compiled by Joan Alexander, Glover, VT, January 2005 as project for "The Changing Face of Vermont Landscapes" UVM course.

Prepared for use with elementary school students.

Photos

All photos: Landscape Change Program website: www.uvm.edu/perkins/landscape,

(Except West Wheelock Cemetery photo, taken by Joan Alexander)

To see more info on any of the LCP photos, just go to the LCP website, choose "Advanced Search" and enter the photo's LS number in the text search field.

Information

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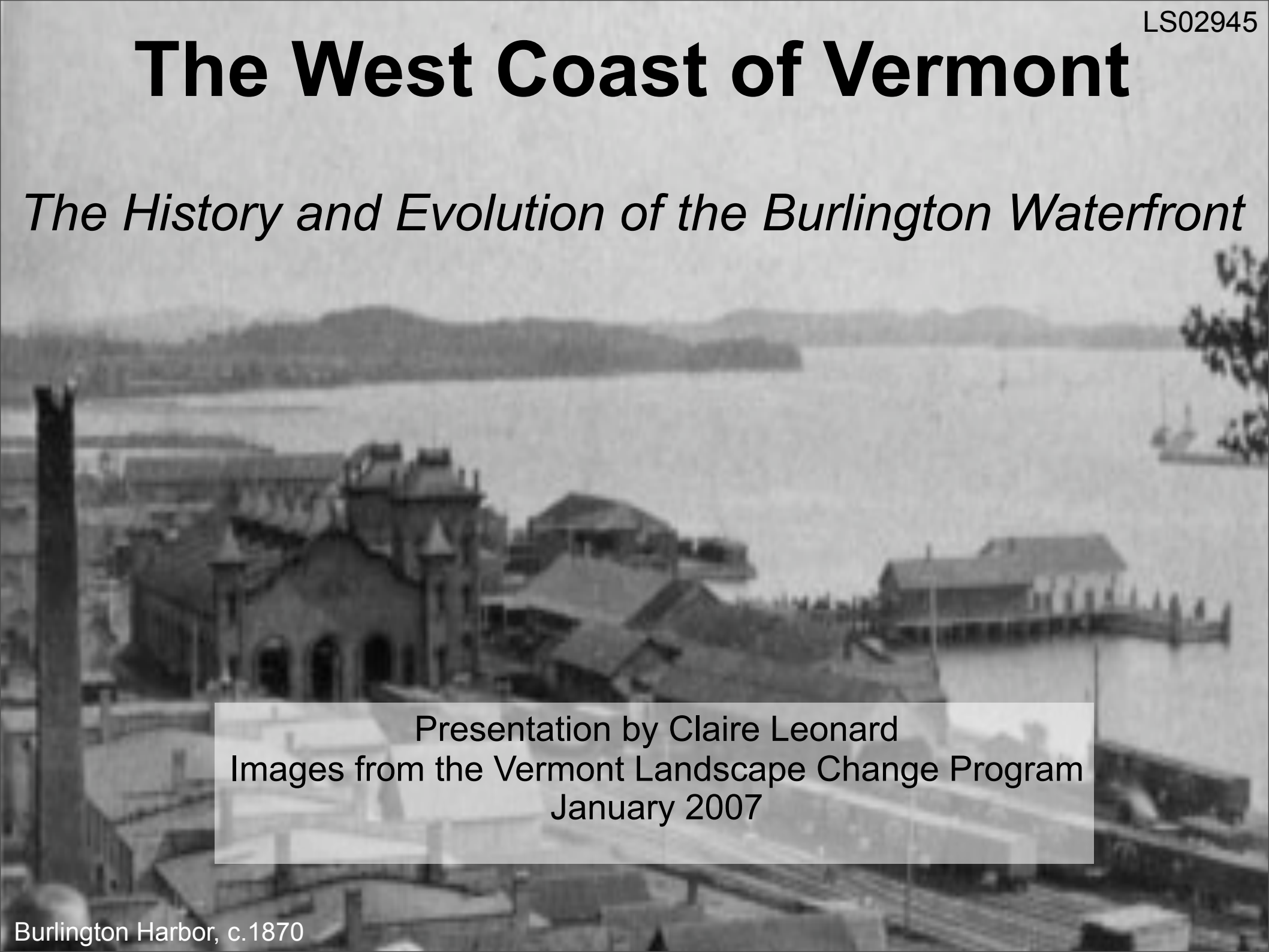
- Sanford, Huffer & Huffer Stonewalls & Cellarholes: A Guide for Landowners on Historic Features and

LS02945

The West Coast of Vermont

The History and Evolution of the Burlington Waterfront



Presentation by Claire Leonard
Images from the Vermont Landscape Change Program
January 2007

Burlington Harbor, c.1870

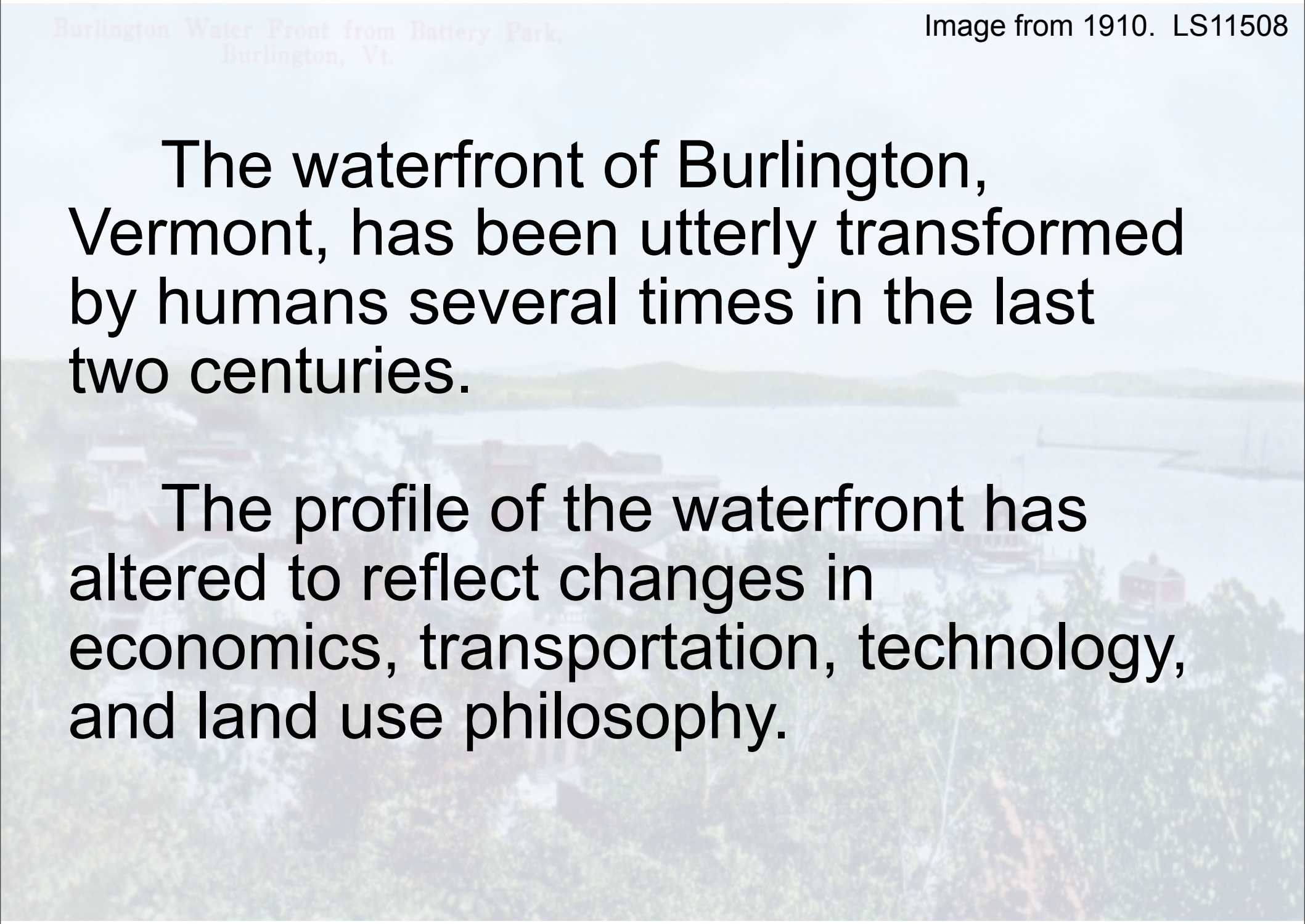


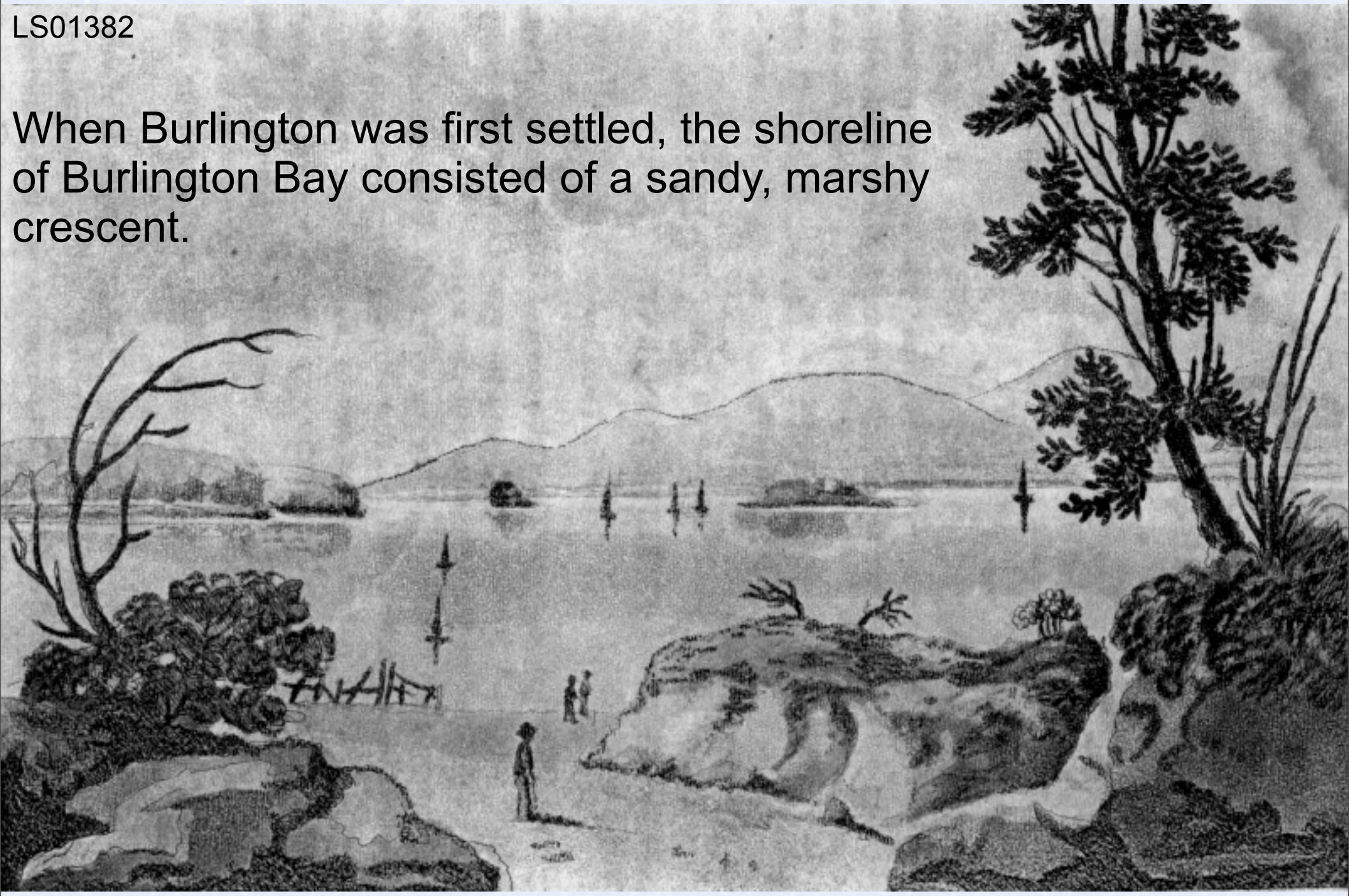
Image from 1910. LS11508

The waterfront of Burlington, Vermont, has been utterly transformed by humans several times in the last two centuries.

The profile of the waterfront has altered to reflect changes in economics, transportation, technology, and land use philosophy.

LS01382

When Burlington was first settled, the shoreline of Burlington Bay consisted of a sandy, marshy crescent.

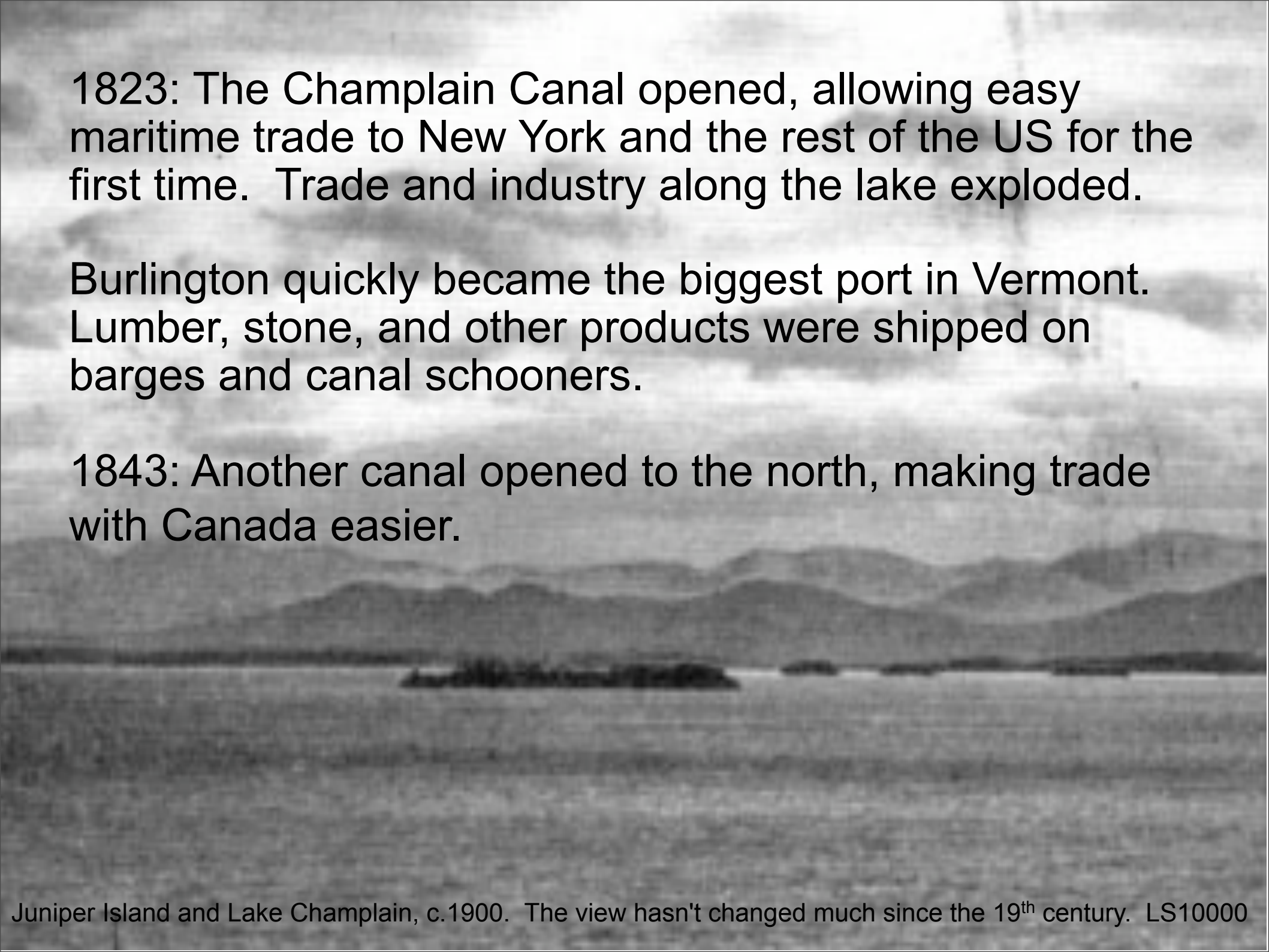


An 1811 drawing of Burlington Bay shows rocks and sand.

1823: The Champlain Canal opened, allowing easy maritime trade to New York and the rest of the US for the first time. Trade and industry along the lake exploded.

Burlington quickly became the biggest port in Vermont. Lumber, stone, and other products were shipped on barges and canal schooners.

1843: Another canal opened to the north, making trade with Canada easier.

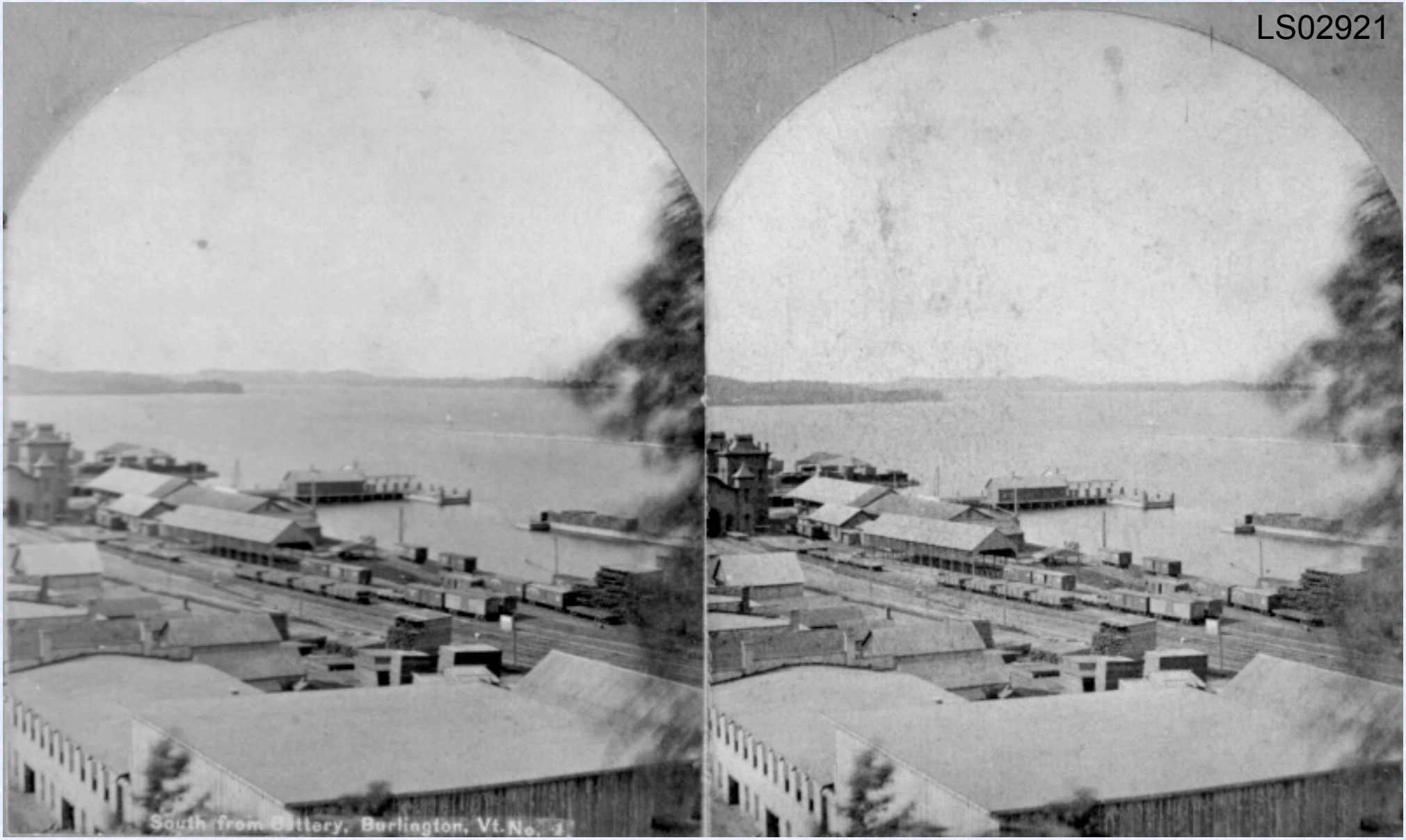


Juniper Island and Lake Champlain, c.1900. The view hasn't changed much since the 19th century. LS10000

A drawing shows Burlington Harbor in 1841, just after the first breakwater was constructed.

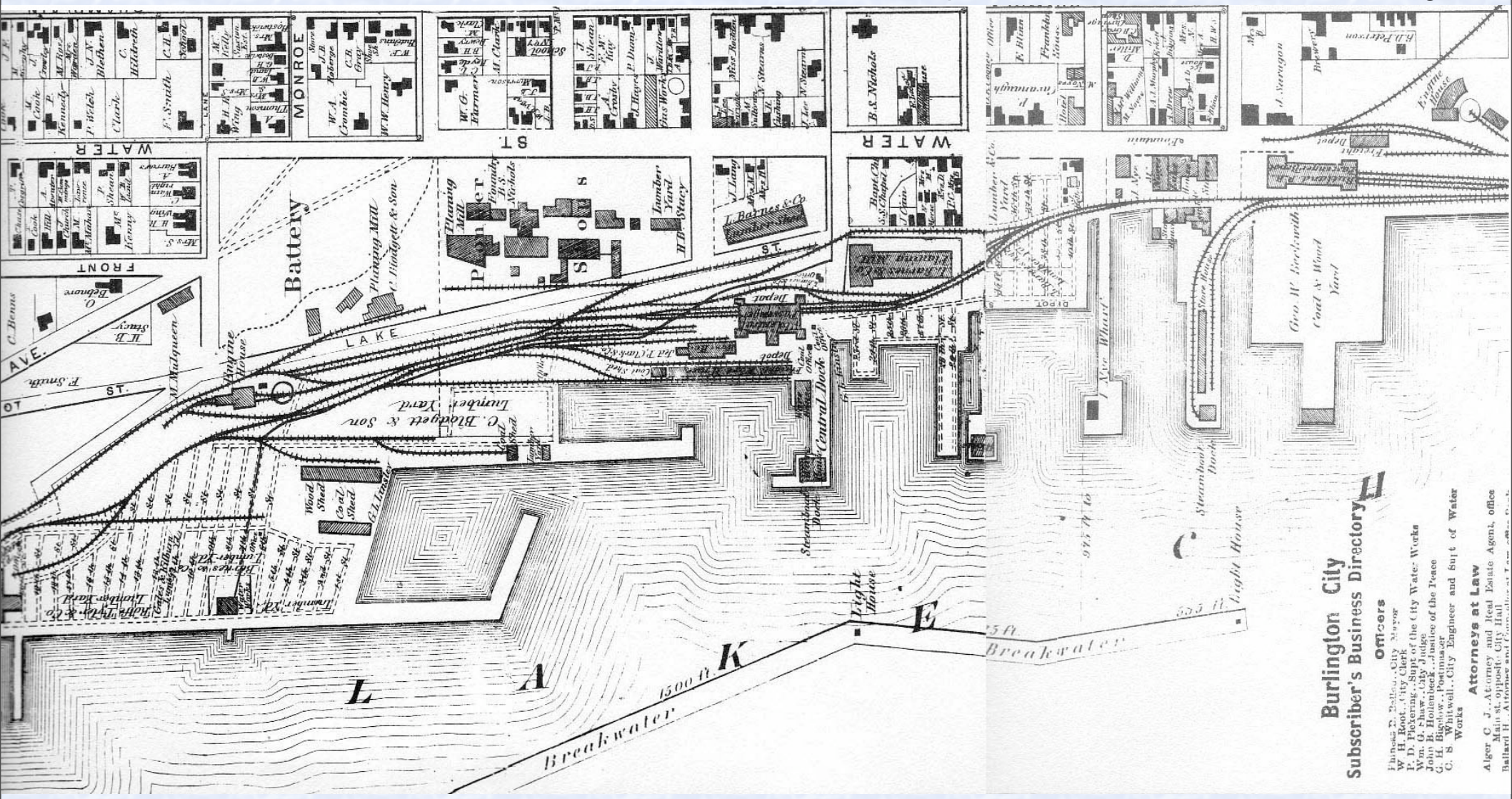
At least twelve wharves were built out into the lake. Most of the boat traffic was sailing ships, but several steamboats were operating on the lake by this time.

1849: A rail line came to the Burlington waterfront. Railroad companies, using sawdust from the lumber operations, filled in much of the lake shore, creating new land for lumberyards and rail yards. As the Vermont forests were depleted, the port shipped mostly lumber imported from Canada.



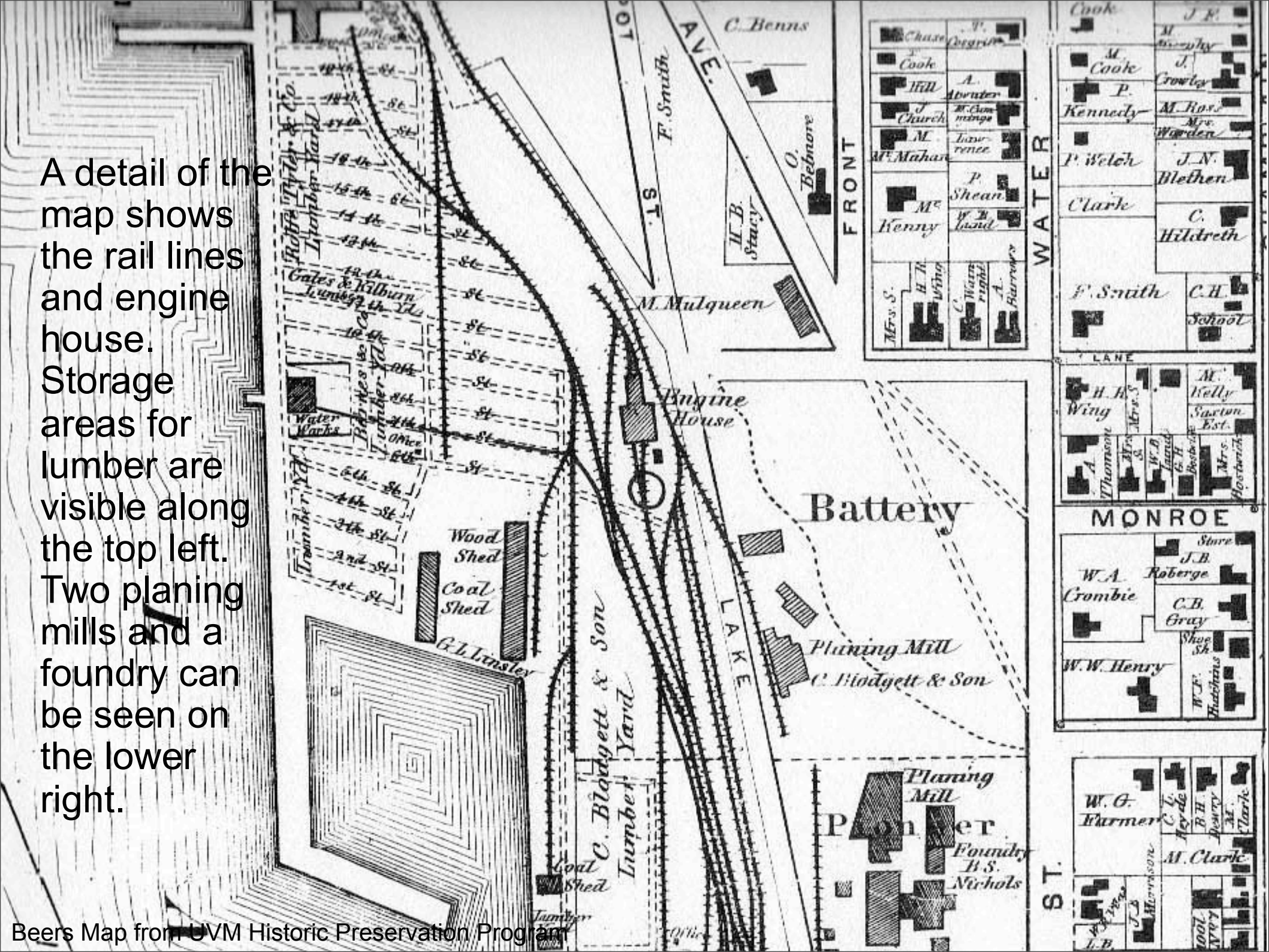
An 1865 stereoview shows industrial buildings and a railyard on filled land.

Beers Map from UVM Historic Preservation Program

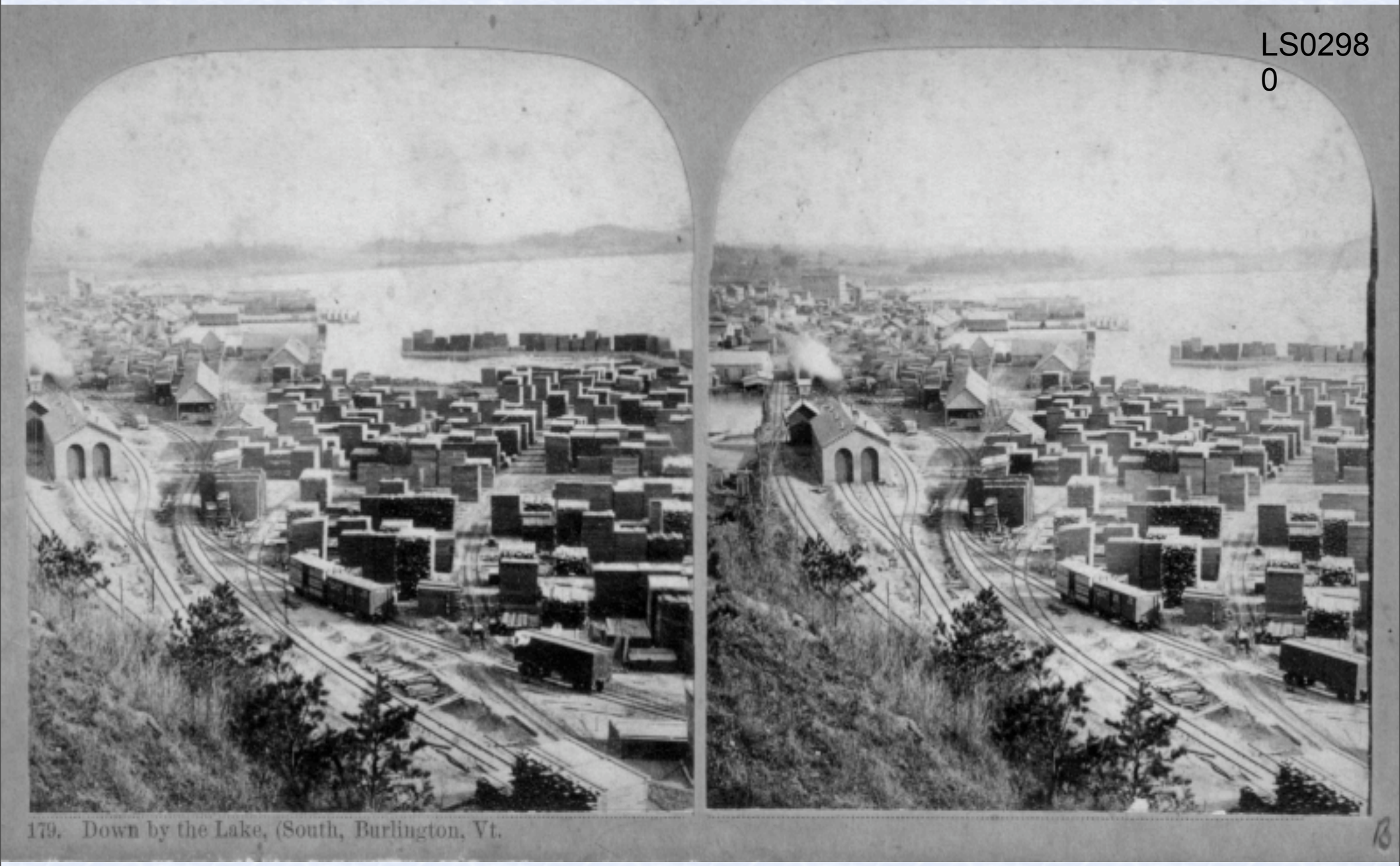


An 1869 map of Burlington shows the land and piers created by the railroad. In some places, they extended the shoreline by 500 feet. Lake Street, on the left side of the map, used to run right along the lake shore, but is now inland. To protect all the new development, the breakwater was extended in 1867.

A detail of the map shows the rail lines and engine house. Storage areas for lumber are visible along the top left. Two planing mills and a foundry can be seen on the lower right.



Beers Map from UVM Historic Preservation Program



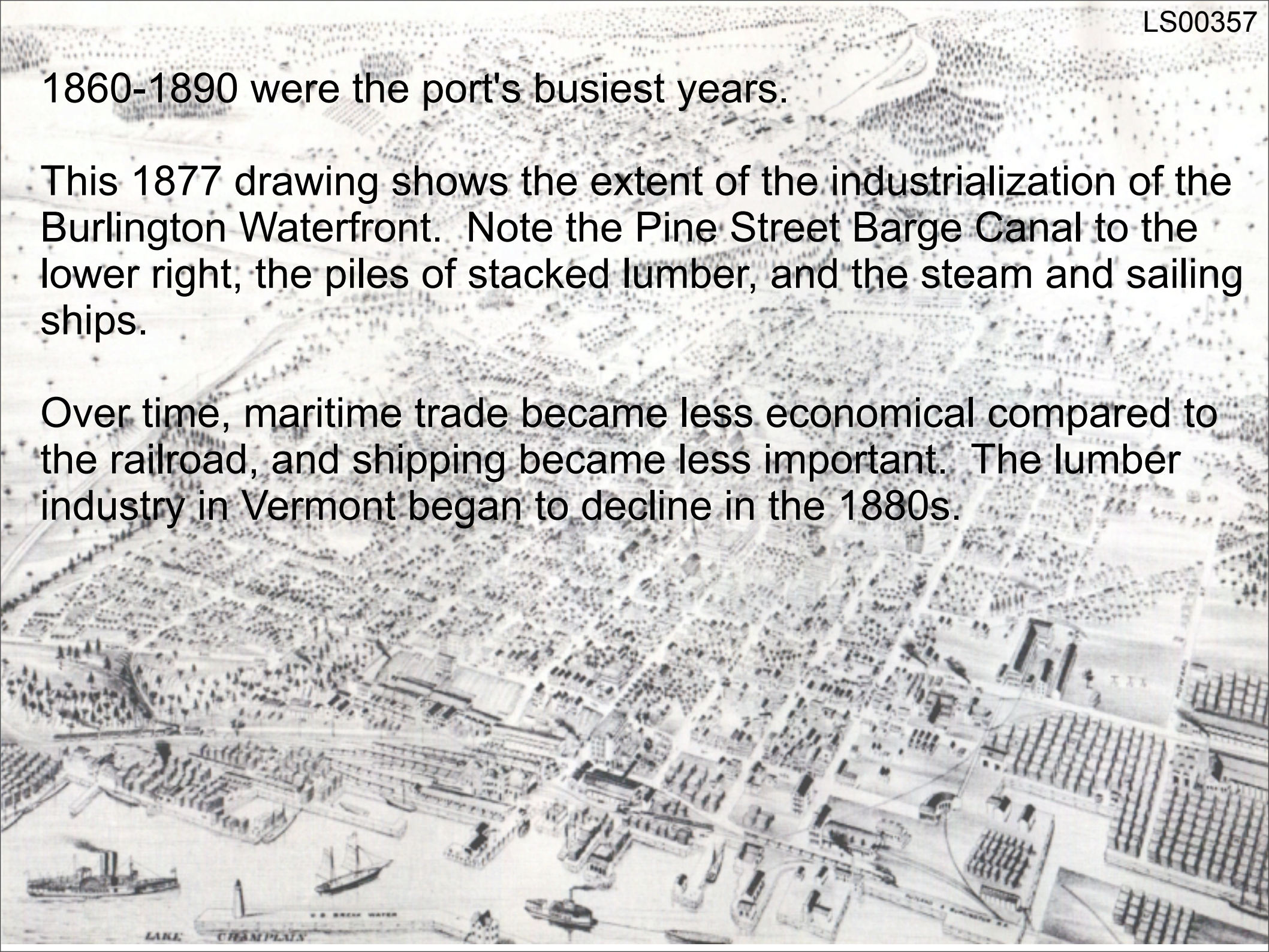
A c.1870 stereoview shows the lumberyards and train depots. Burlington was the third busiest port in the US at this time. In 1873, 170 million feet of board lumber passed through Burlington.

LS00357

1860-1890 were the port's busiest years.

This 1877 drawing shows the extent of the industrialization of the Burlington Waterfront. Note the Pine Street Barge Canal to the lower right, the piles of stacked lumber, and the steam and sailing ships.

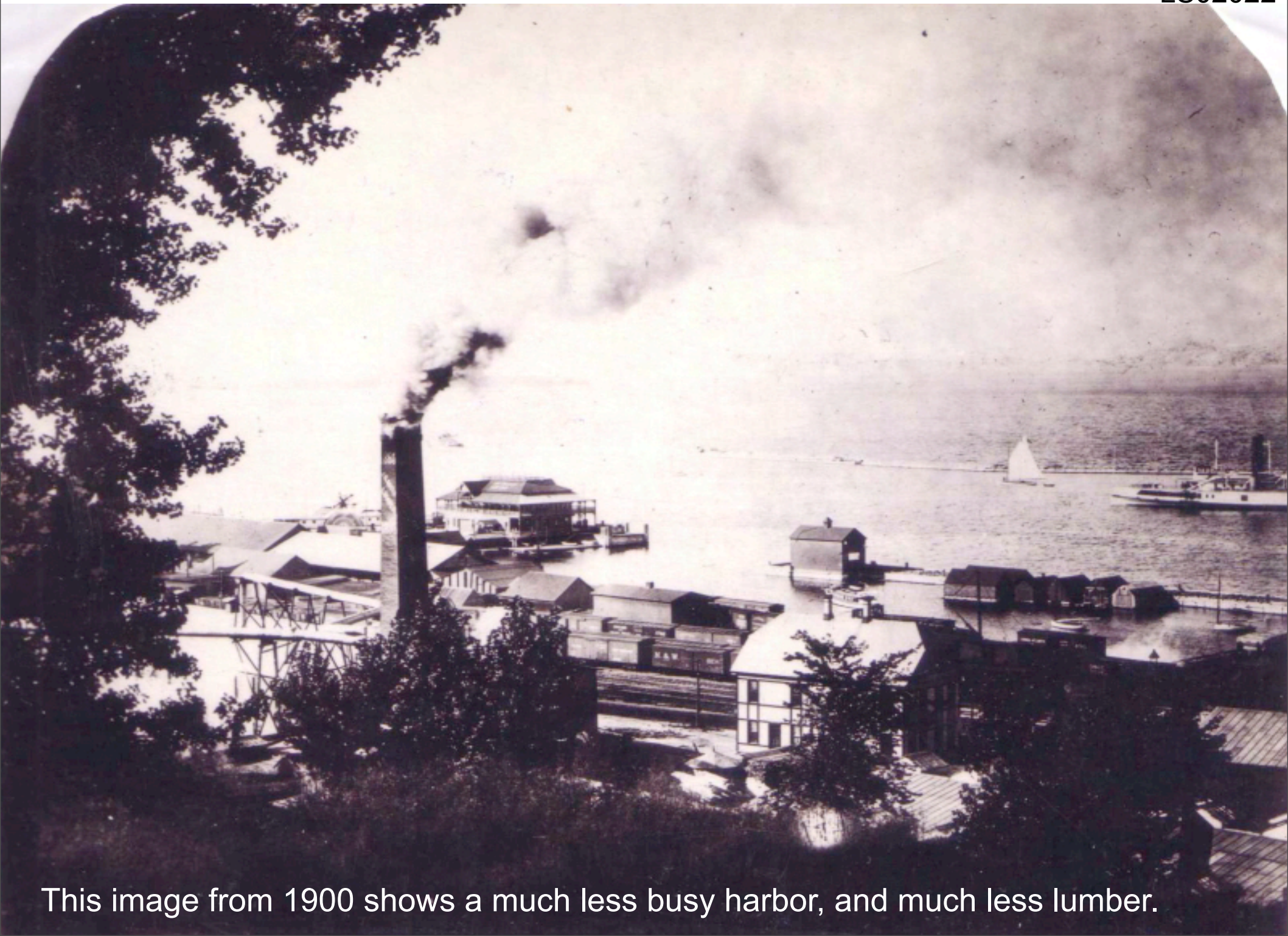
Over time, maritime trade became less economical compared to the railroad, and shipping became less important. The lumber industry in Vermont began to decline in the 1880s.



This 1888 image taken from Battery Park shows a fire on the waterfront. Note how there are more buildings and less lumber storage. Also note the yacht club on the far right.

Another 1888 image, taken from the other direction. The fire damage on the left is presumably from the same fire.

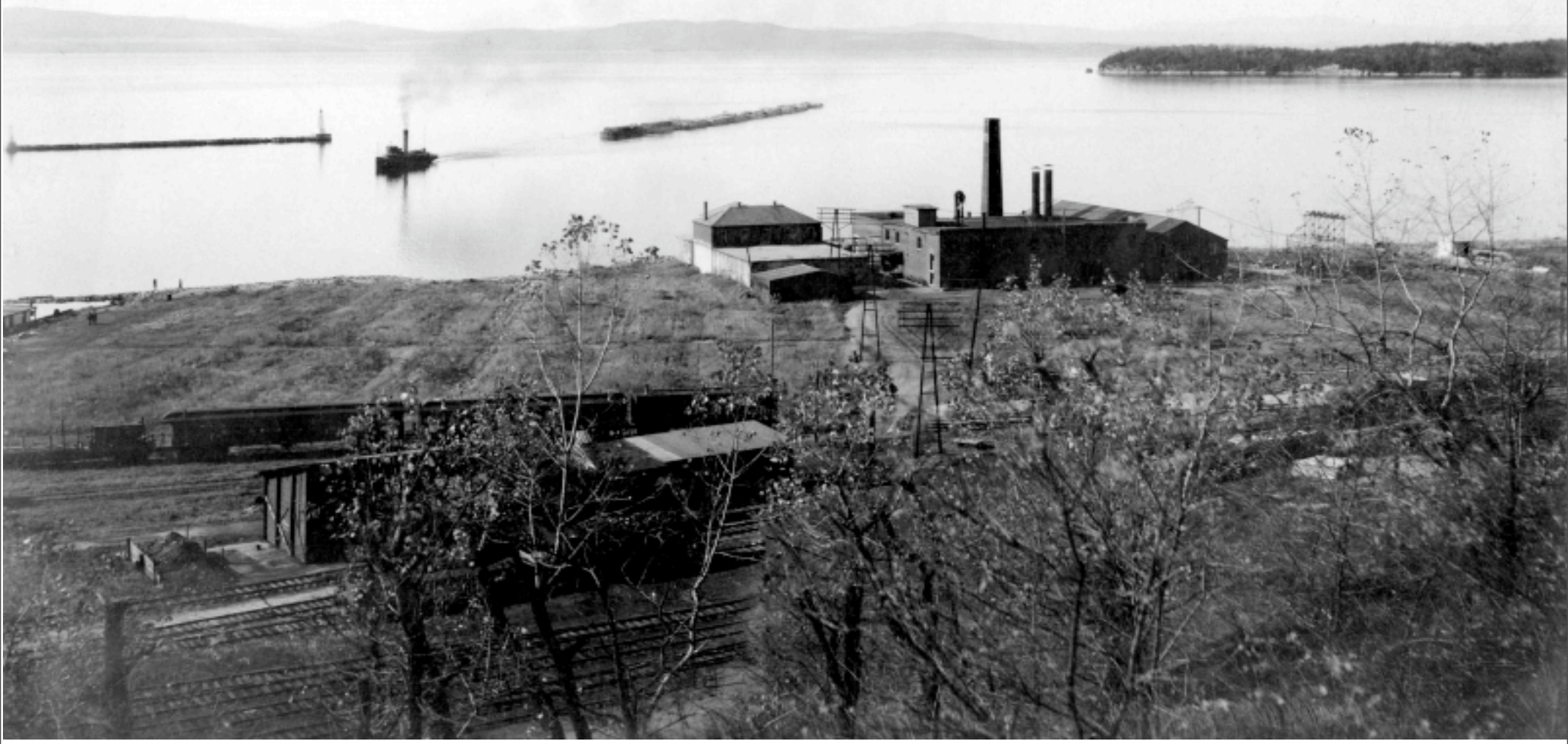
LS02022



This image from 1900 shows a much less busy harbor, and much less lumber.

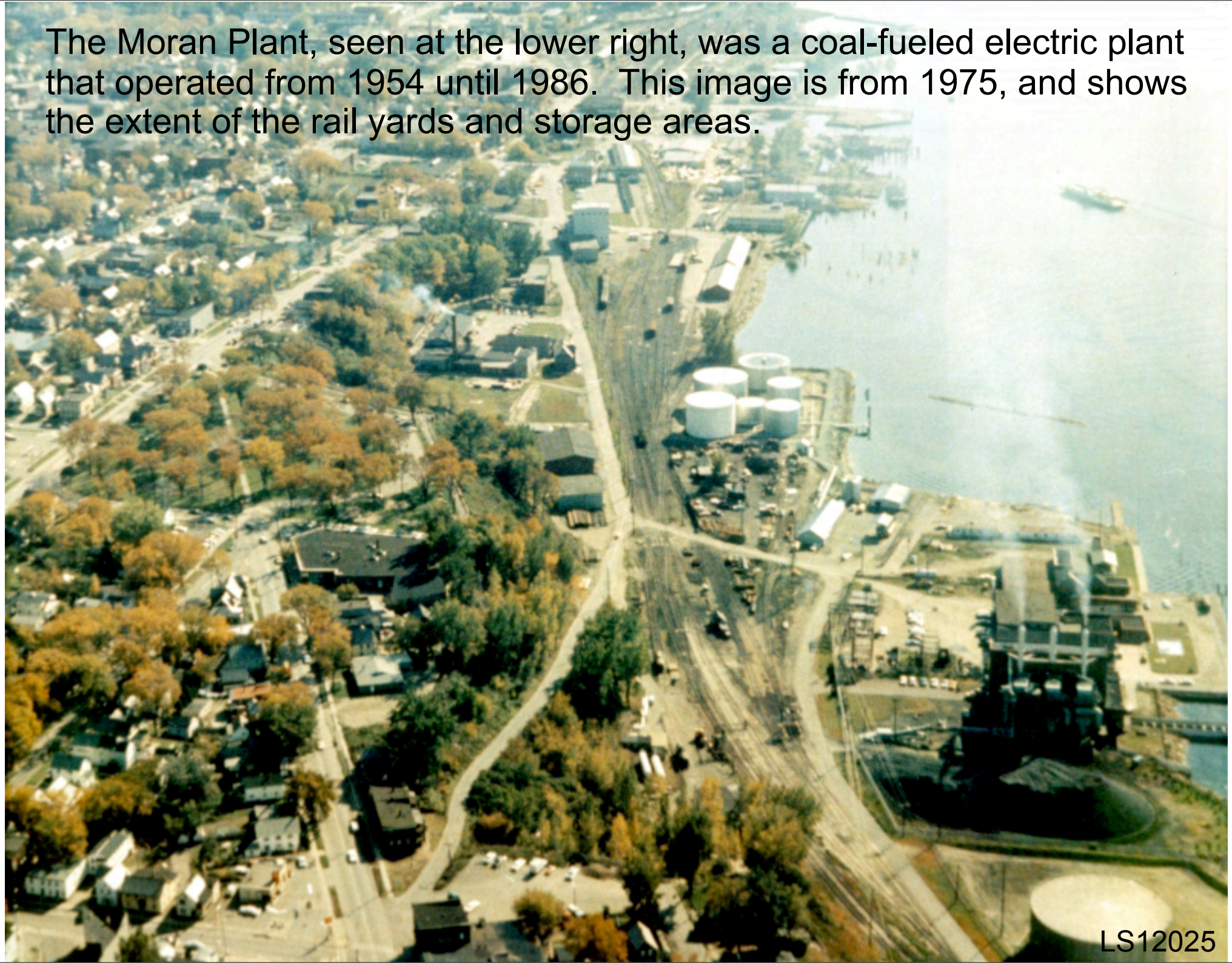
LS00080

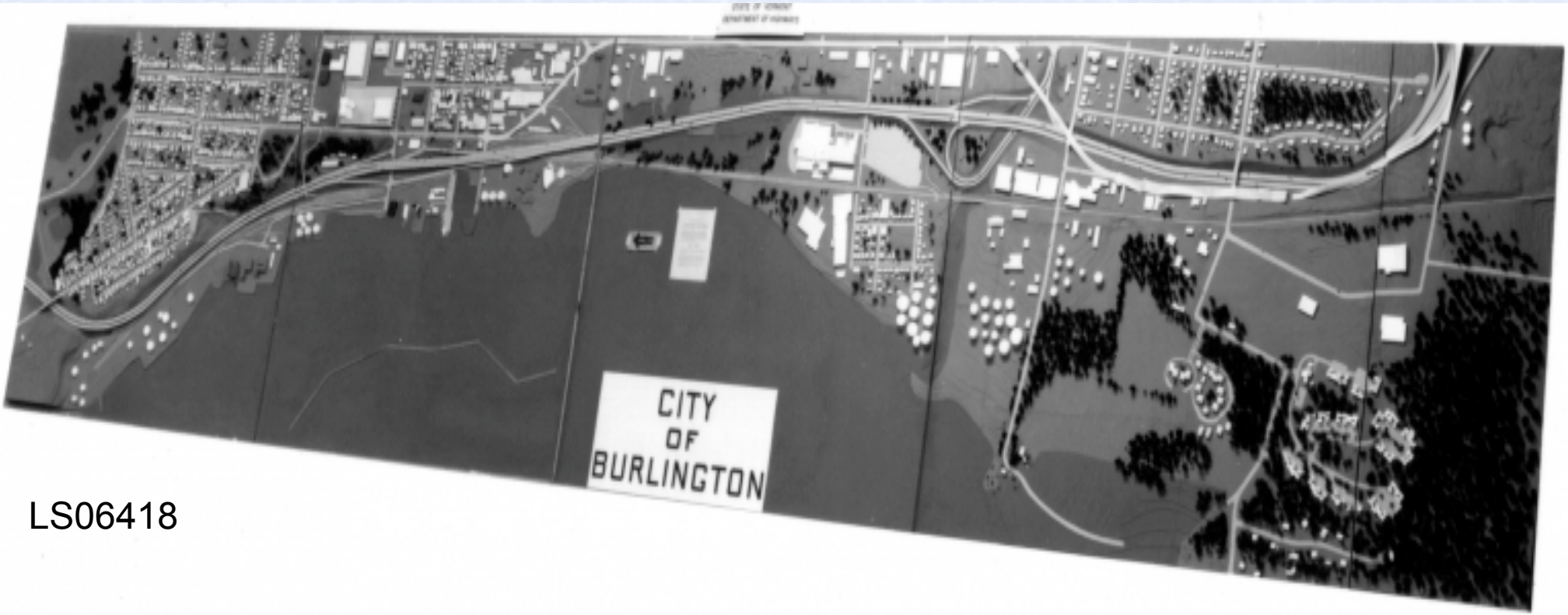
By the 1930s, the waterfront was dilapidated and underused. This photo was taken in 1930 from Battery Park, and shows bare grass and a single industrial building where the piles of lumber had been half a century before. Rail traffic at this time was reduced, because road transport had improved dramatically.



This 1935 image shows wrecked boats and a weedy landscape. The yacht club is the only building that seems to be in reasonably good condition.

For much of the 20th century, the waterfront served as a storage area for coal and petroleum products that were imported by barge or rail. The Pine Street Barge Canal (upper right) became polluted in the early 20th century by a gasworks operation. This 1951 image shows the waterfront with petroleum storage tanks and little other development. Plumes of sediment and remnants of earlier structures are also evident.


The Moran Plant, seen at the lower right, was a coal-fueled electric plant that operated from 1954 until 1986. This image is from 1975, and shows the extent of the rail yards and storage areas.
LS12025



LS06418

Be glad this never happened! This model, from the 1970s, shows a proposed elevated highway that would have run along the waterfront.

By the 1980s, the city began to look for ways to improve and redevelop the waterfront. Several proposed commercial projects-- including a plan for 18 story condos-- fell through. In 1989, the Supreme Court ruled that all the land the railroad companies had created by fill was a public trust, allowing limited options for development.

The “Burlington Waterfront Revitalization Plan” was developed in 1990. The plan had many goals, including:

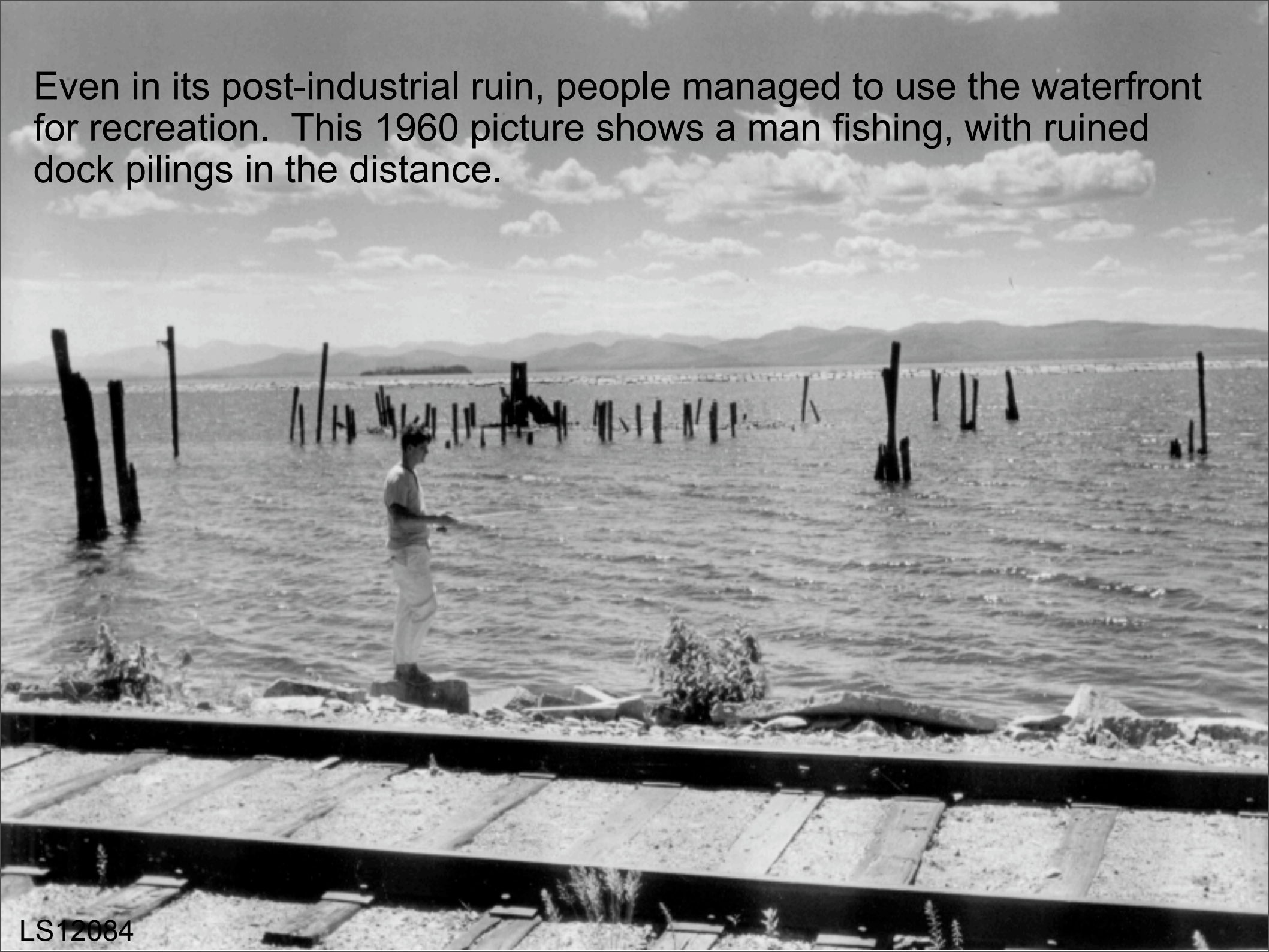
- The intention to make the waterfront an area that all the citizens of Burlington could enjoy freely year-round.
- An effort to use existing buildings (like the Moran Plant) to create community resources, such as the ECHO Center, and to preserve elements of the area's industrial past.
- Plans to make the area attractive and accessible for many different forms of recreation, including biking, skating, boating, and fishing.

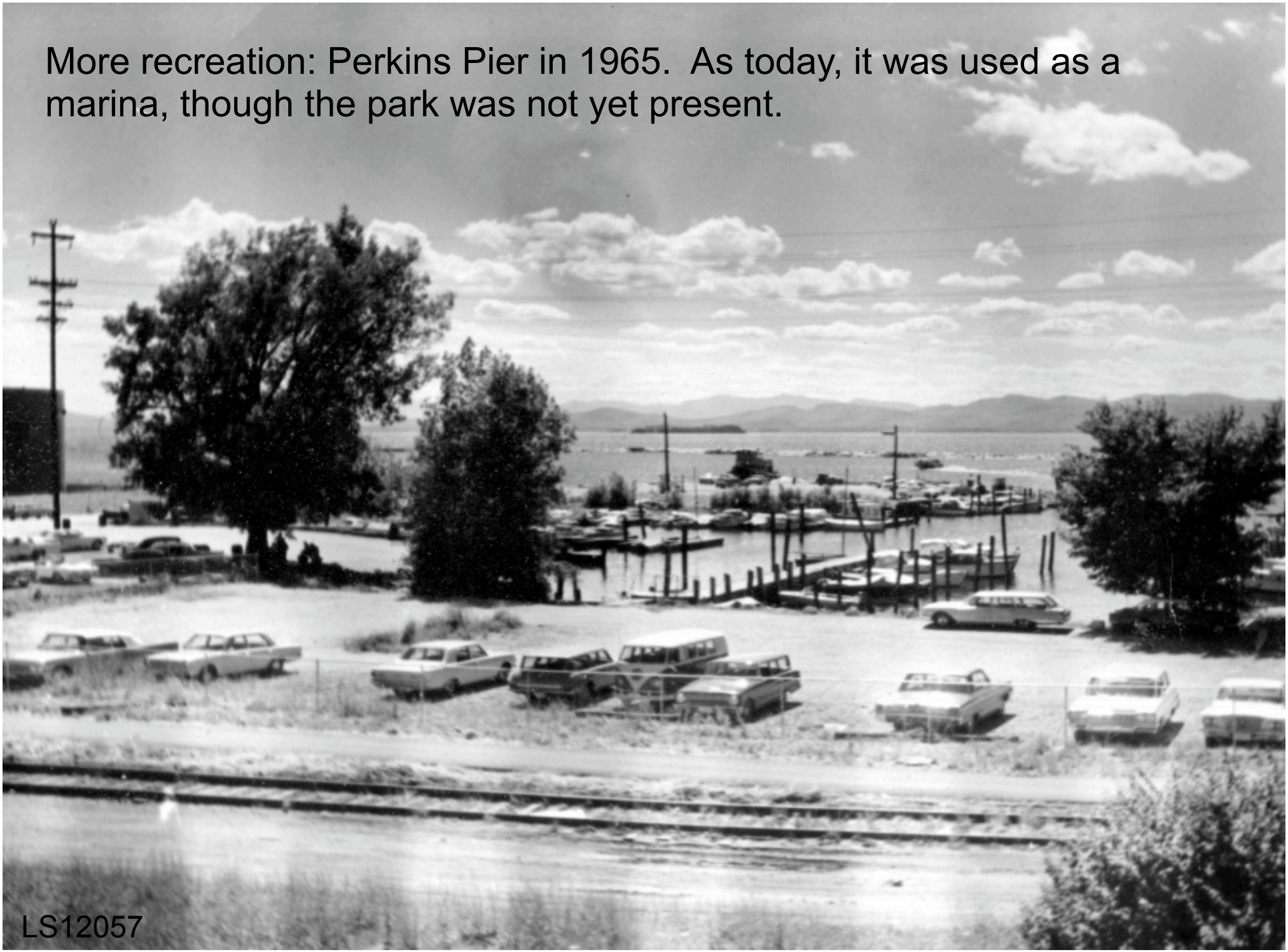
Burlington in 1980. LS00357

Recreation:

The revitalization project was focused on developing the area for recreational use. Amidst the industrial history of the waterfront, people have used the area for recreation as well. This 1909 picture shows the Burlington Yacht Club. Three similarly designed buildings have existed at that location since 1887. The first two burned down, but the Burlington Community Boathouse exists there now.

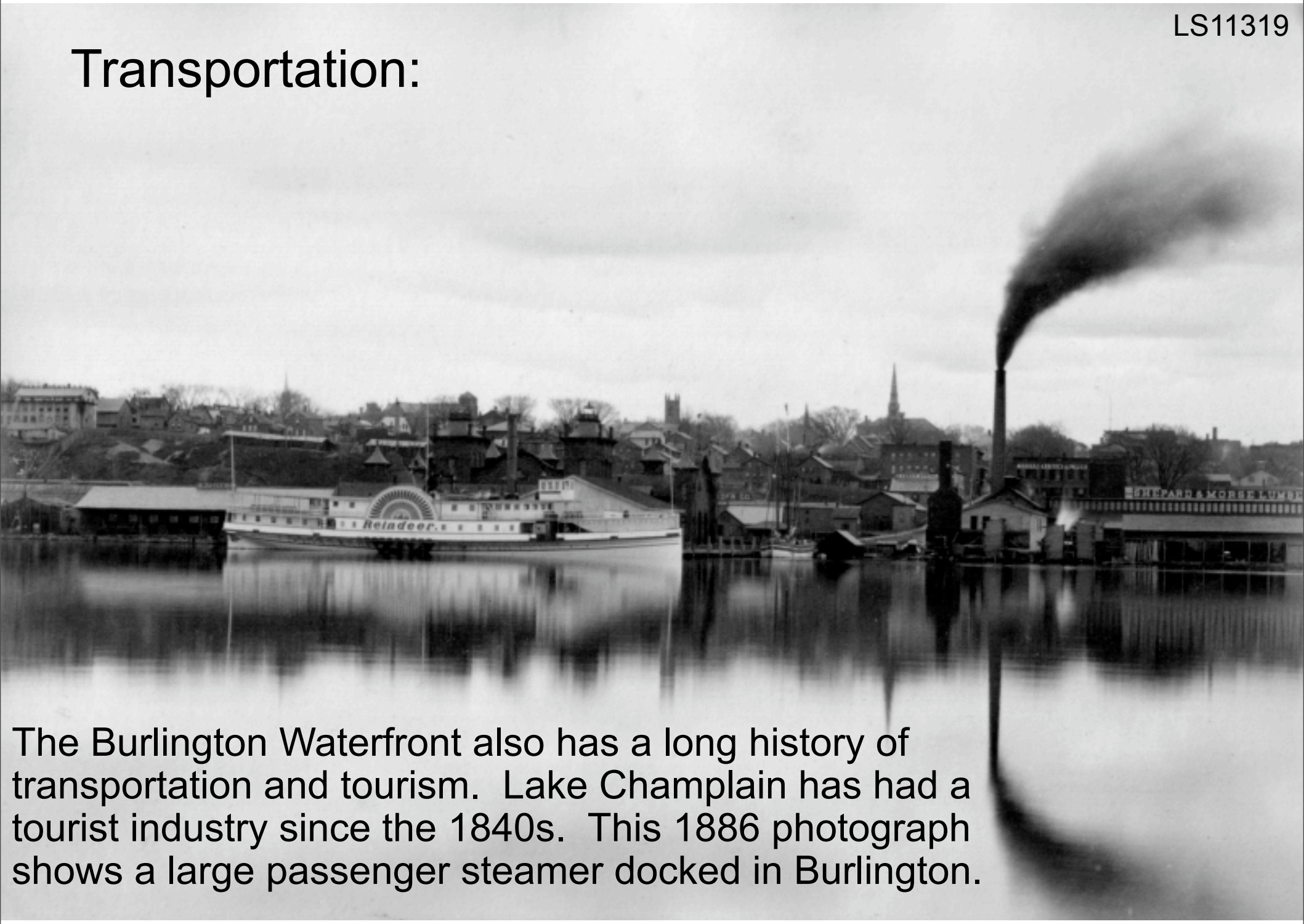
LS11291


Even in its post-industrial ruin, people managed to use the waterfront for recreation. This 1960 picture shows a man fishing, with ruined dock pilings in the distance.
LS12084


More recreation: Perkins Pier in 1965. As today, it was used as a marina, though the park was not yet present.
LS12057

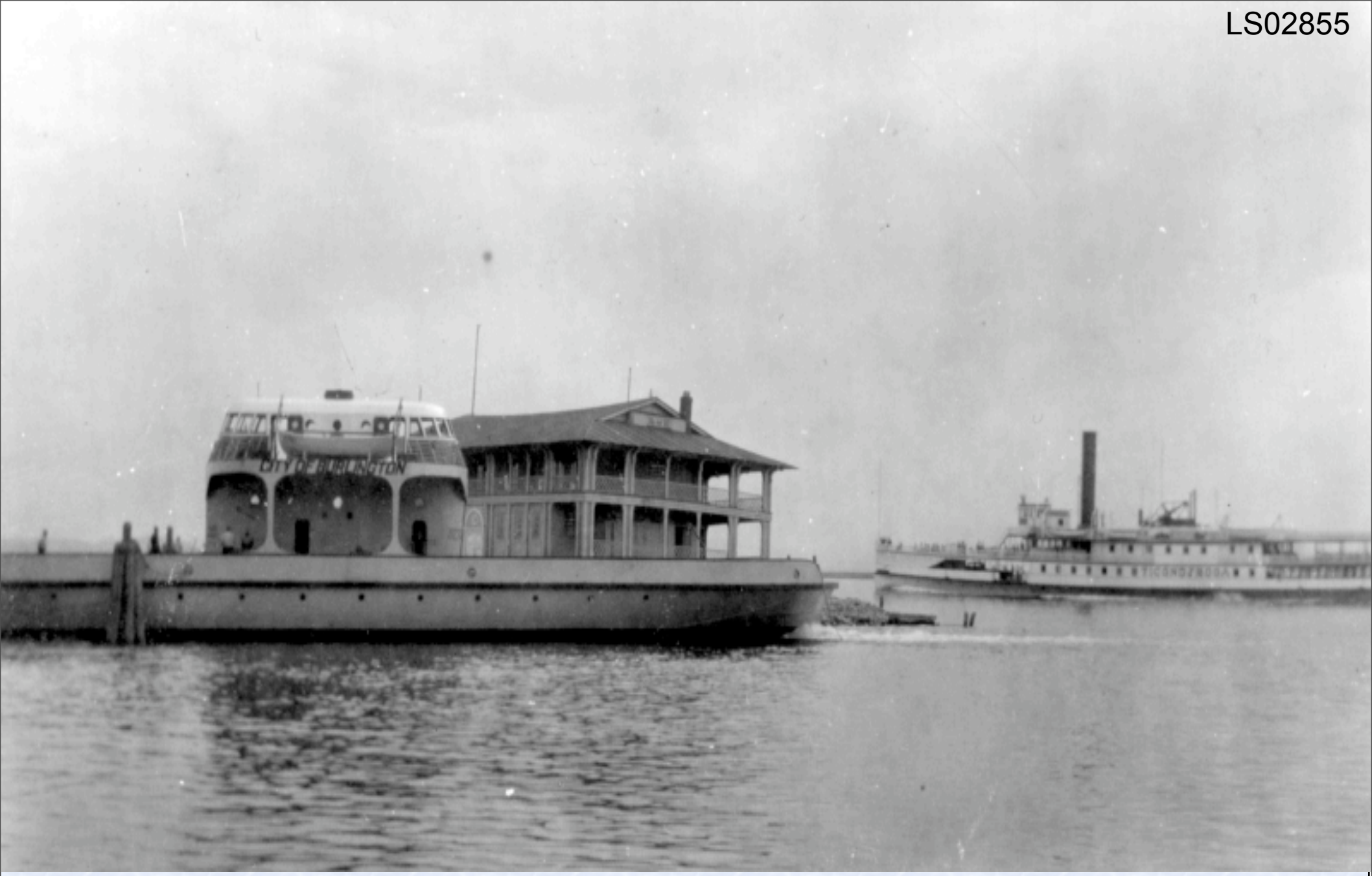
LS11319

Transportation:

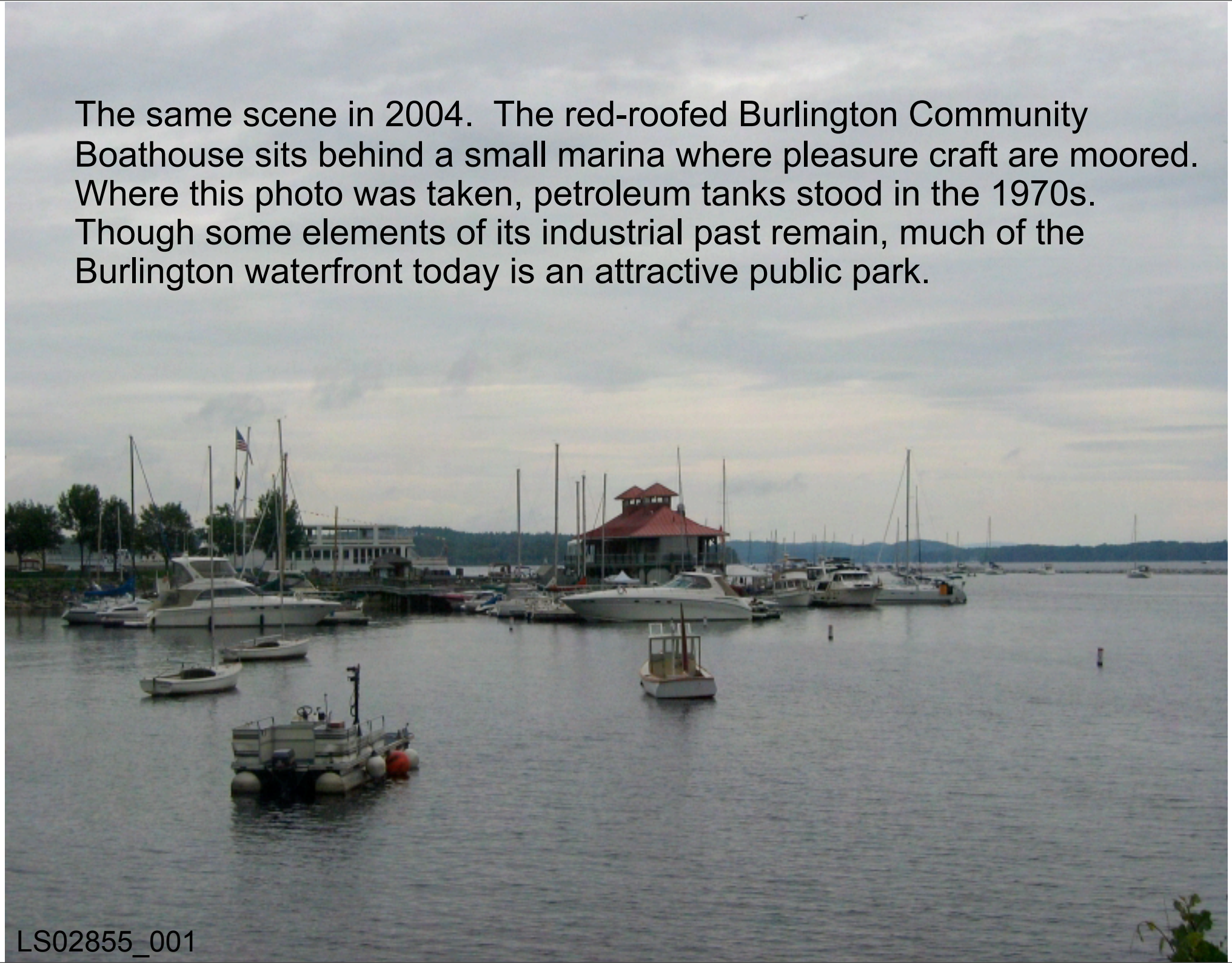


The Burlington Waterfront also has a long history of transportation and tourism. Lake Champlain has had a tourist industry since the 1840s. This 1886 photograph shows a large passenger steamer docked in Burlington.

The Champlain Transportation Company has been running ferries across the lake since the 1840s. Obviously, they've had some troubles along the way. This is the King Street Ferry dock in 1936, after a spring flood washed a number of boats onto the road, probably from the adjacent Perkins Pier marina.

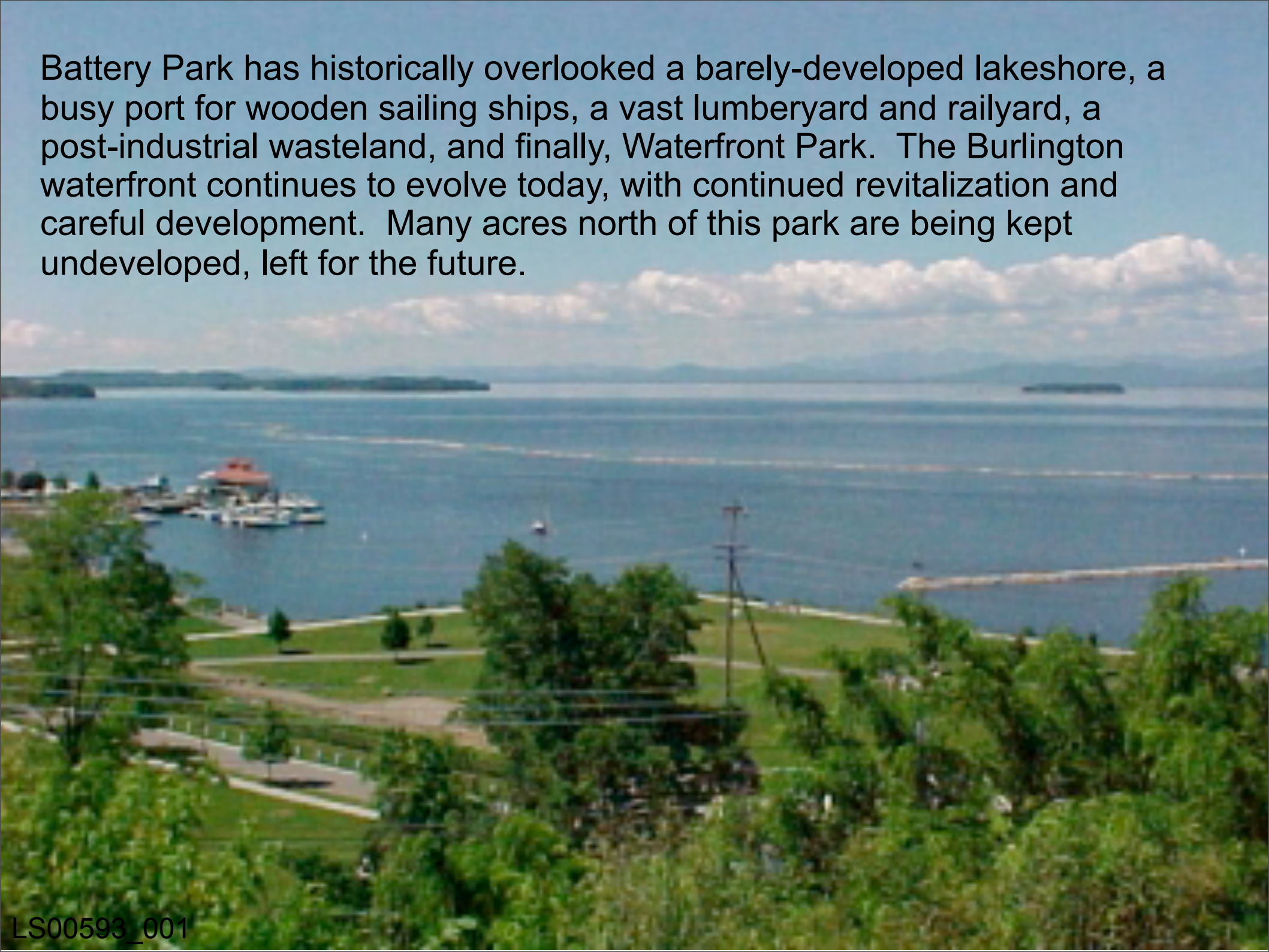


The confluence of transportation, recreation, and tourism. A ferry, the "City of Burlington", sits at dock in front of the yacht club in 1937. In the background is the steamer "Ticonderoga".



The same scene in 2004. The red-roofed Burlington Community Boathouse sits behind a small marina where pleasure craft are moored. Where this photo was taken, petroleum tanks stood in the 1970s. Though some elements of its industrial past remain, much of the Burlington waterfront today is an attractive public park.

LS02855_001


Battery Park has historically overlooked a barely-developed lakeshore, a busy port for wooden sailing ships, a vast lumberyard and railyard, a post-industrial wasteland, and finally, Waterfront Park. The Burlington waterfront continues to evolve today, with continued revitalization and careful development. Many acres north of this park are being kept undeveloped, left for the future.
LS00593_001

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The Great Outdoors: Camping in Vermont

By,

Marsh Gooding

Camping

- Camping is unique in that it is an activity that includes setting up temporary shelter. This shelter is necessary for surviving comfortably in the Vermont climate, but it is not what defines camping
- Camping is defined by the time spent outside of this shelter and interacting with the natural environment

For Work and Fun

- WORK: Whether to be closer to the worksite or to enjoy the great outdoors, setting up camp in the woods has been part of what shaped Vermont
- WORK: Early loggers camped out in the woods working to establish pastures and harvest lumber to make potash and charcoal (allroutes.to)
- FUN: James P Taylor and the Green Mountain Club began work on the Long Trail in the early 1900's to "make the Vermont mountains play a larger part in the life of the people." (greenmountainclub.org)

For Work and Fun Cont.

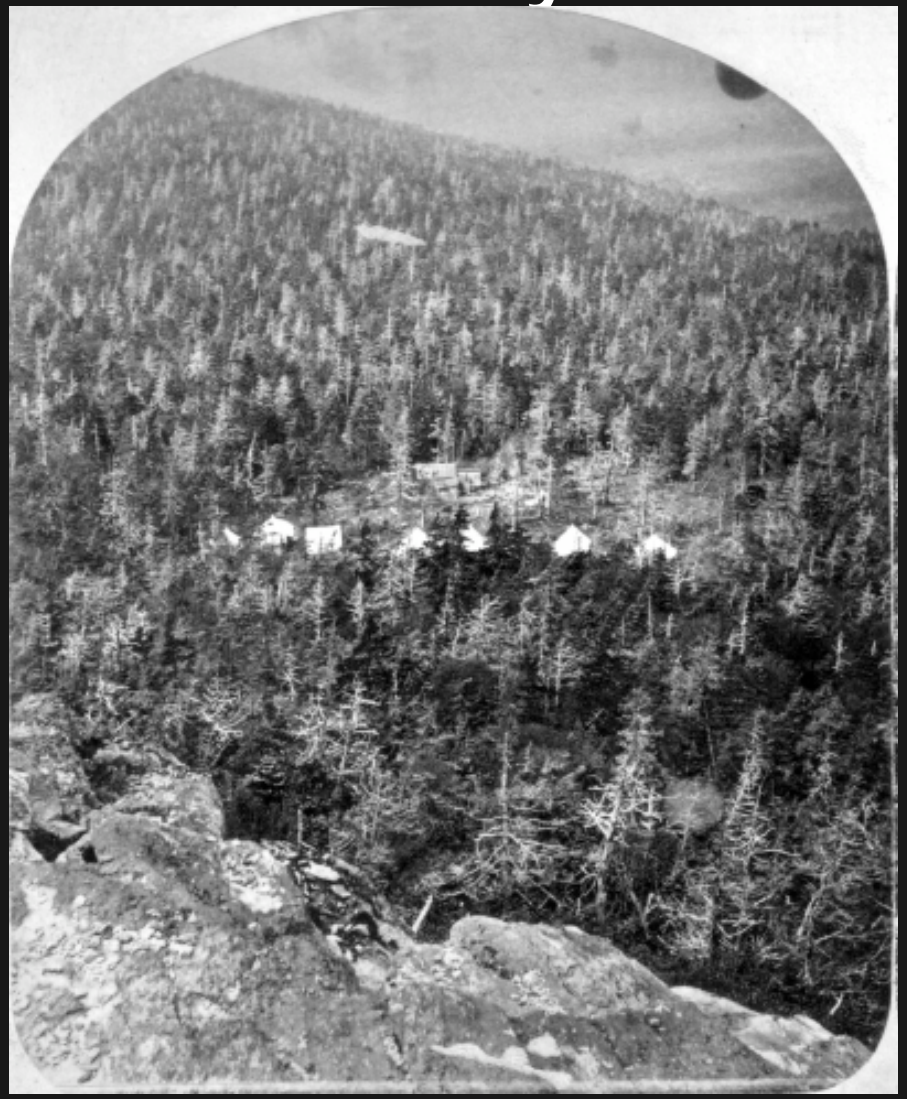
- FUN: Myron Avery's thoughts on the Appalachian trail sum up the significance of the camping experience, "Remote for detachment, narrow for chosen company, winding for leisure, lonely for contemplation, it beckons not merely north and south but upward to the body, mind and soul of man"(trailspace.com)
- This scrapbook will show the ways in which people experienced camping in the past

Camping as part of VT History

- Whether changing the physical appearance of the land or fueling Vermont's economy, logging is a large part of VT history
- The beautiful landscape that makes up Vermont is what draws tourists to this state. The great outdoors is a defining characteristic of Vermont as a place

Camping in VT History:

- Early explorers, settlers, and loggers camped in VT by necessity



A logging Camp in Killington- 1880-1890

LS04803_000

http://www.uvm.edu/landscape/search/details.php?ls=04803&sequence=000&set_seq=1&imageSet=1200344666-478bce5

Camping in VT History: Cont.

- Today, Vermont is known for it's beautiful landscape and visitors travel great distances to experience the outdoors of Vermont

http://www.uvm.edu/landscape/search/details.php?ls=12024&sequence=000&set_seq=1&imageSet=1200344798-478bcede13ee4&AddRel=

Campers at North Beach enjoy the outdoors- circa 1970 LS12024_000

Modern Camping

The Modern VT Camper enjoys synthetic tents, a camp stove, disposable dinnerware, and the North Beach Campground- 1960-1970

LS12015_000

http://www.uvm.edu/landscape/search/details.php?ls=12015&sequence=000&set_seq=1&imageSet=1200344903-478bcf48042cd&AddRel=

Circumstance

- Many early campers experienced the landscape of VT by necessity- they camped out to be closer to work. The camping experience was often long and rugged

http://www.uvm.edu/landscape/search/details.php?ls=08689&sequence=000&set_seq=1&imageSet=1200344955-478bcf7b5eaf3&AddRel=

A man sits at the Woodbury Bark Camp in 1906 LS08689_000

Working Outdoors

It wasn't only laborers who camped out in the woods- This group of military men seem to be set up for an extended stay with a stove manned by a cook in the background

LS08149_000

http://www.uvm.edu/landscape/search/details.php?ls=08149&sequence=000&set_seq=1&imageSet=1200345026-478bcfc2bbae9&AddRel=

A Good Time

- Recreational camping is not that recent of a phenomenon. People have enjoyed interacting with the outdoors for a long time- The birth of the Green Mountain National Forest in 1932 helped spark the growth of recreational camping (fs.fed.us)

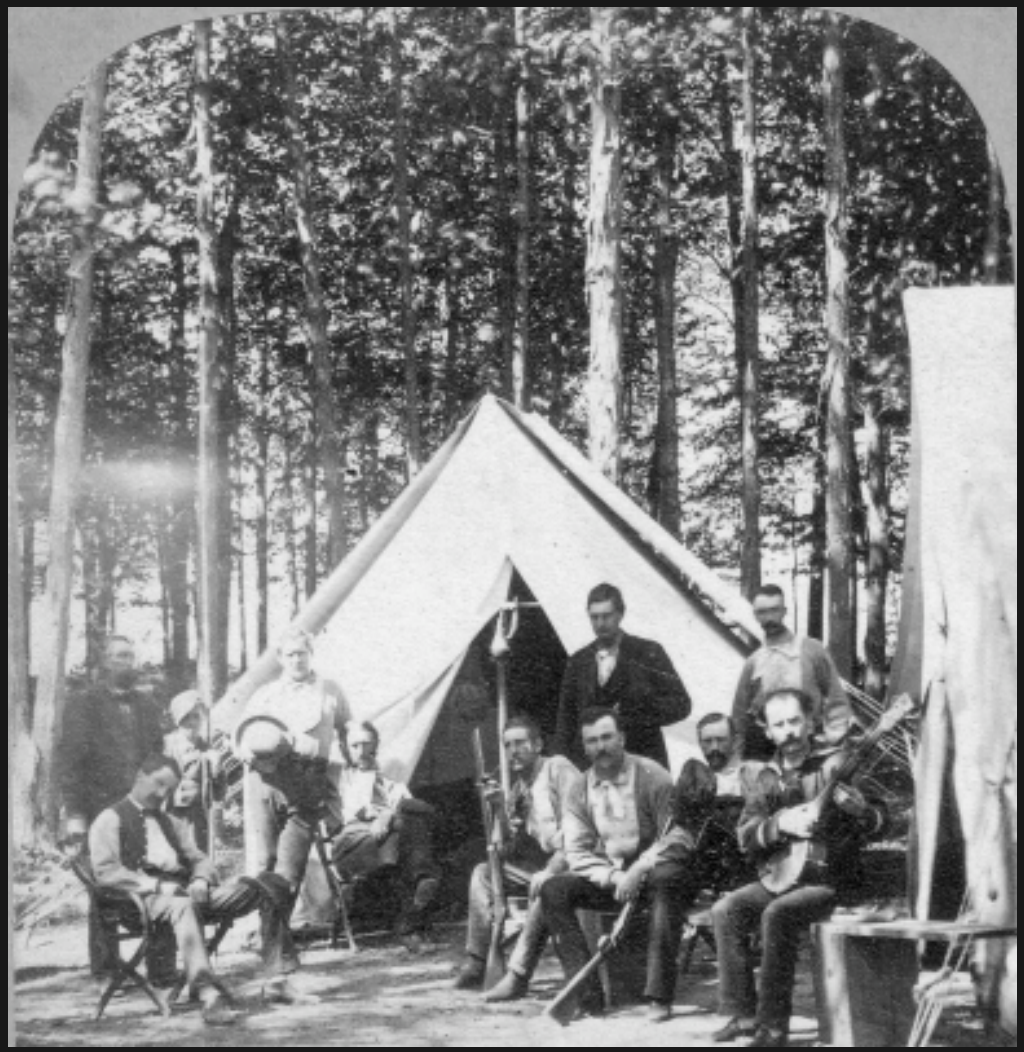
http://www.uvm.edu/landscape/search/details.php?ls=06890&sequence=000&set_seq=1&imageSet=1200345089-478bd001ea450&AddRel=

People in Montpelier gather at the start of a toboggan run LS06890_000

A Good Time Cont.

This group of campers may be out hunting, but the banjo suggests that they are able to enjoy being out in the woods- 1870-1890

LS02856_000



http://www.uvm.edu/landscape/search/thumbnails.php?imageSet=1200345130-478bd02a25211

A Good Place to Relax

- Camping can be a chance to escape- to leave society and experience nature

This looks like the birth of modern camping. Everyone including the baby is outside sitting and relaxing-

1860-1880 LS05418_000

http://www.uvm.edu/landscape/search/details.php?ls=05418&sequence=000&set_seq=1&imageSet=1200345190-478bd066cadb5

People and the Outdoors

- People enjoy the outdoors. The landscapes around us are beautiful and are often considered to be natural

These three men camp out on Camels Hump- The view might look different had the trees in the background not been felled- 1860-1890

LS11019_000

http://www.uvm.edu/landscape/search/details.php?ls=11019&sequence=000&set_seq=1&imageSet=1200345237-478bd0952ec56&AddRel=

“History, Curiosity, and Adventure”

- A group of 1934 college students were quoted saying that “history, curiosity, and adventure” were their reasons for camping (trailspace.com)

A woman sweeps in front of her tent- 1920-1960

LS06858_000

http://www.uvm.edu/landscape/search/details.php?ls=06858&sequence=000&set_seq=1&imageSet=1200345324-478bd0

Shaping the Land

- Even getting into the woods required cutting paths- In the early 1900's the Long trail began allowing people to venture into the woods (gmcsterling.org)

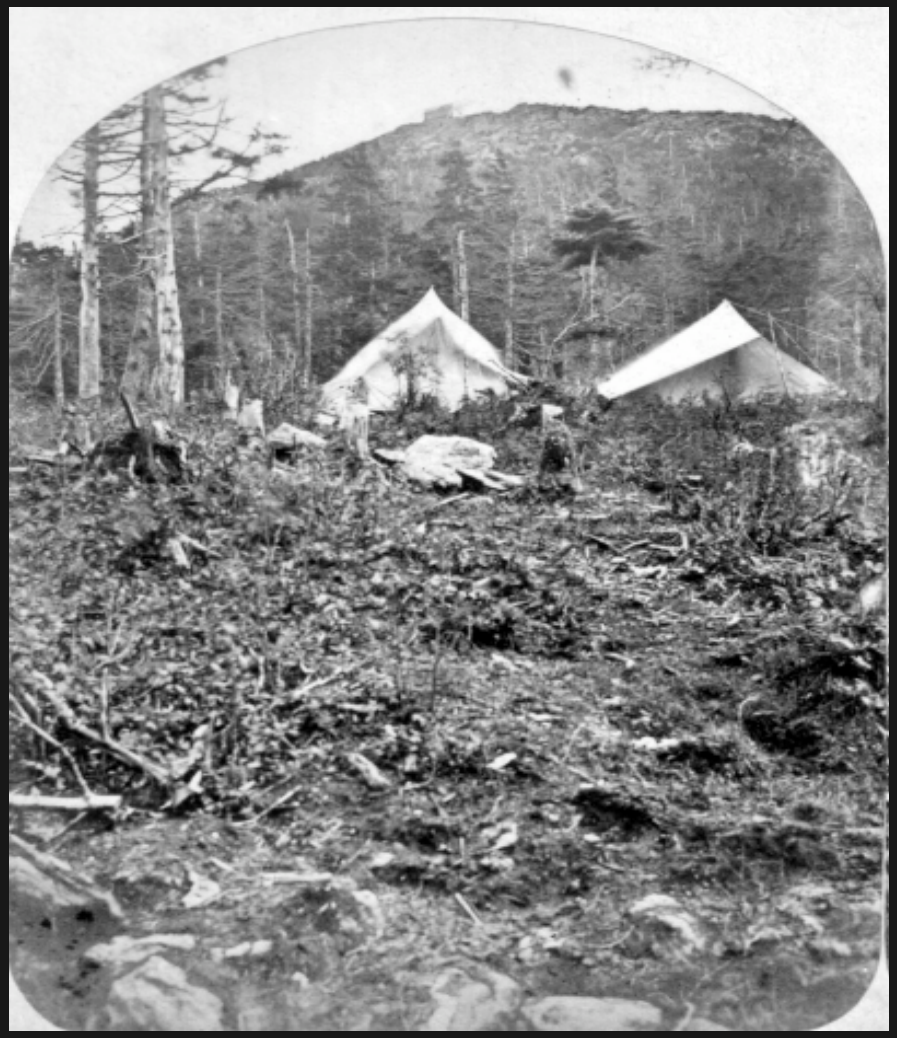
An old woman poses at a Long Trail Sign- 1940-1960

LS10779_000

http://www.uvm.edu/landscape/search/details.php?ls=10779&sequence=000&set_seq=1&imageSet=1200345388-478bd12cdcc95&AddRel

Changing Face

- Logging (supported by logging camps) helped change the physical appearance of the VT landscape and fueled the VT economy (allroutes.to)



This photo shows tents set up in a cleared area near killington-

1880-1890 LS04985_000

http://www.uvm.edu/landscape/search/details.php?ls=04985&sequence=000&set_seq=1&imageSet=1200345458-478bd172e1c8a

Camping Now

- Camping in Vermont is now all about enjoying the beauty of the landscape. It is easy to forget how big a part we have played in shaping it

This aerial view of North Beach shows a landscape shaped for camping- 1970-1980 LS11940_000

http://www.uvm.edu/landscape/search/details.php?ls=11940&sequence=000&set_seq=1&imageSet=1200345507-478bd1a38edd1&AddRel=

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The Lake Champlain Islands:
Vermont's Historic Island Paradise

LS00366_000

LS00366_001

Lake Champlain Island facts

Five islands (South Hero, Grand Isle, North Hero, Alburg, Isle La Motte) make up Grand Isle County. Samuel de Champlain was the first to discover the lake and the islands within it.

Lake Champlain and Islands were formed by receding glaciers carving it out of the earth.

The Lake Champlain islands served as a staging point for many crucial battles during the War of 1812. Each Island along our journey has some military history.

Currently the Lake Champlain Islands serve as a haven for resorts, tourism, and summer vacations.

The Sand bar Causeway

Constructed to allow passage by foot or car from Colchester to South Hero, providing a link to the main land. This is our first leg of our journey

The causeway rested on cut slabs of granite. This is a picture taken during winter revealing a frozen lake. **LS08780_000**

The causeway was prone to flooding after the ice melted as can be seen in this photo taken before the pavement was in place. **LS06554_000**

South Hero

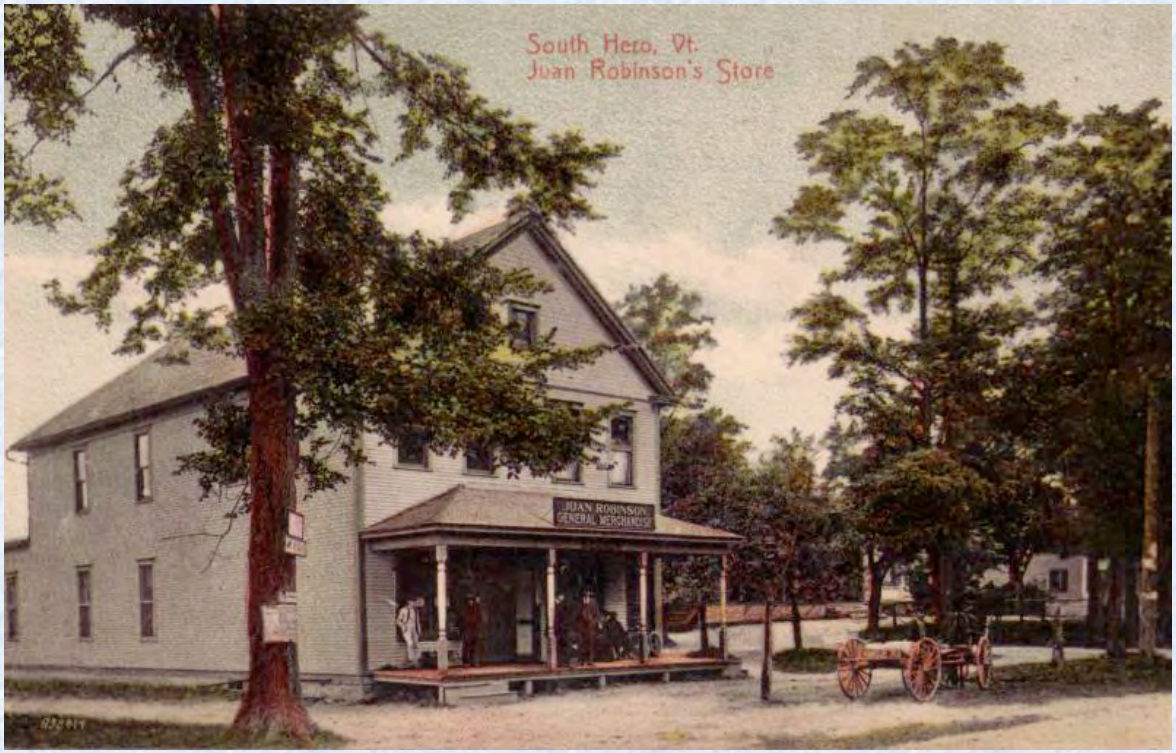
South Hero is the Southern most island, and is actually part of Grand Isle, the island was just divided in half. This section of the island was inhabited by a large community of Abenaki Indians, who remained there to as late as 1870 when a census bureau listed them as “basket makers”. Ethan Allen spent his last night before his fateful cross over Lake Champlain in the tavern of his cousin Ebenezer Allen with a group of green mountain boy veterans.

LS00371_000

LS00371_001

These side by side historic photos show a view from South Hero overlooking Keeler’s bay. The older photo shows a relatively unpopulated land, while the other photo shows a more developed island.

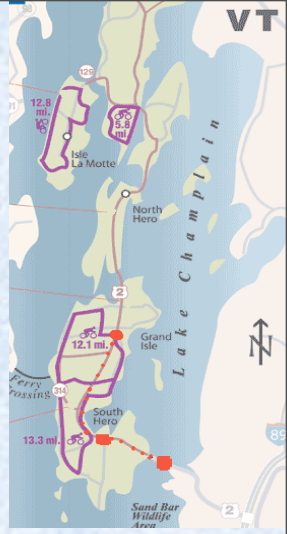
South Hero cont.



LS02437_000

This hand colored photo shows one of the island's oldest businesses, Robinson's hardware. Bought from the Keeler brothers by Juan Robinson, this business still is operating in its same location in the town of South Hero.

Grand Isle



Grand Isle was known as the “middle hero” until the townships were split up on November 7, 1798. Because of Grand Isle’s close proximity to Plattsburg, people could have had a view of the Battle of Plattsburg Bay on September 11th 1814.

LS10460_000

This picture shows two women walking along a sparse shore in Grand Isle, more recent photos show a more forested shore line.

Grand Isle cont.

LS10723_000

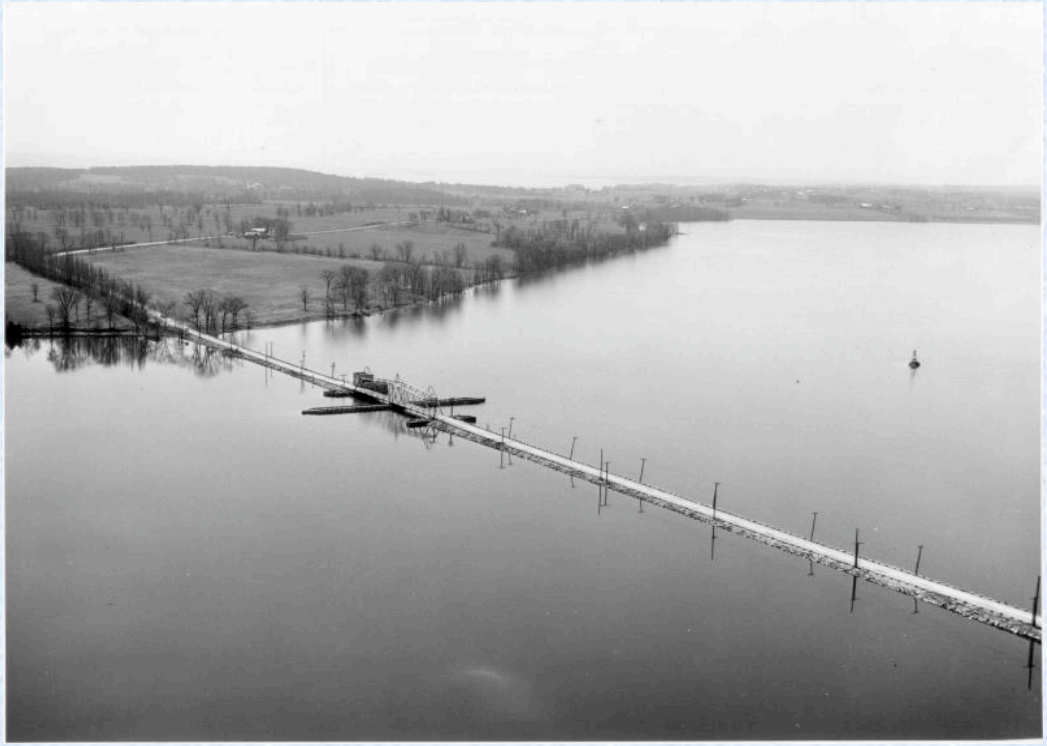
This picture is a view from a hill top in Grand Isle looking towards the green mountains and Colchester.

LS02457_000

This colored photo is of the Grand Isle Lakehouse, formerly known as the Island Villa and Mary crest Girls camp. This mansion was initially built around 1900 as a high class retreat, which was then taken over by the Sisters of Mercy as a girl's camp. Recently it has been designated as a Vermont historic landmark and purchased by the preservation trust of Vermont to cater weddings and business retreats.

North Hero

North Hero, as well as nearby Grand Isle and South Hero, originated as a land trust in October 27, 1779. This land trust was given as a means of paying back Ethan Allen and his relatives. This is the reason for it being called the “Two Heroes” in the name of Ethan and Ira Allen.



This is an aerial photo of the drawbridge that connects Grand Isle and North Hero.

LS04146_000

North Hero cont.

The photo to the right is of main street in North Hero, notice the lack of pavement and the small white cottages by the roadside.

LS02198_000

LS00368_000

LS00368_001

These side by side shots show a view from the middle of North Hero town to the lake. This area is relatively unchanged from past to present.

Alburg

Benedict Arnold anchored his fleet at Windmill point in Alburg before the Battle for Lake Champlain. The Indians allied with the British on September 6th 1776 and drove the Americans off onto the gondola Boston with several casualties. Off of Windmill Point the Thunderer was sank in 1777 carrying sick and wounded from the battle of Saratoga.

LS00369_000

LS00369_000

These side-by-side photos are a good example as to how developed the islands have become. The wooden fence has been removed and power lines dot the road. The cabin on the right has remained relatively unchanged.

Alburg Cont.

This bridge connects North Hero and Alburg, the road to Isle La Motte is located immediately on the other side.

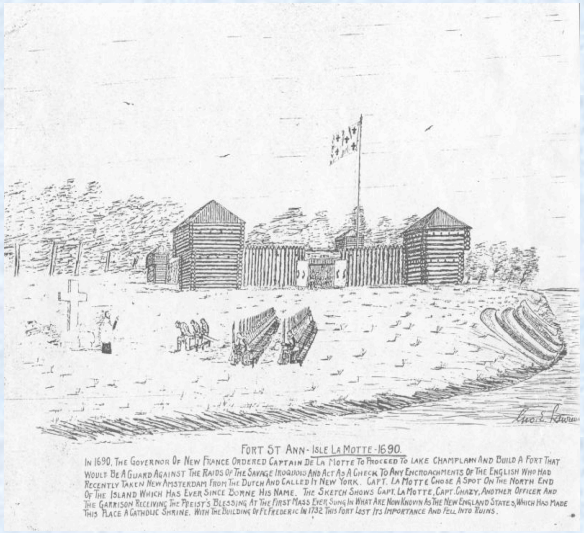
LS04133_000

This painting is of the construction of railroad tracks to Rouses Point in New York.

LS02300_000

Isle La Motte

The last leg of our journey is Isle La Motte, and it contains several historic buildings. Fort St. Anne was established in 1666 by French soldiers and became Vermont's first white settlement. Presently there is a St. Anne's shrine near the site of the fort on the western banks of Isle la Motte. Fort St. Anne was a staging area for French soldier's military movements against the British and Mohawks.



A drawing of Fort St. Anne, troops marching in the foreground and canoes on the bank. **LS01577_000**

St. Anne's Shrine looking towards New York. Notice the priests standing by the gazebo. **LS01738_000**

Isle La Motte cont.

St. Anne’s Shrine outdoor services during Summer.

LS01709_000

The Islands have been host to many a crucial battle, and have played a decisive role in keeping Lake Champlain in America's hands. Today it is hard to believe that these now peaceful shores once witnesses cannon fire and Indian attacks. **LS10722_000**

The Vermont Church: A Cultural Centerpiece Then and Now

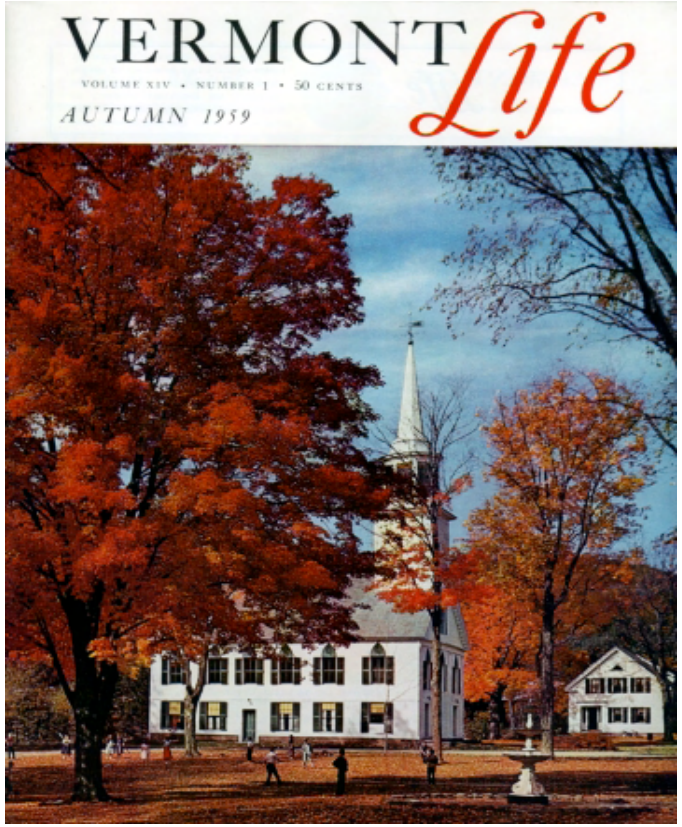
David Dyke

Congregational Church on Elm Street, 1860-1881. Woodstock, Vermont (LS01295)

The Vermont Church

Churches play a very special role in the identity of the Vermont landscape. Their regal, quaint, and sometimes rustic designs appear throughout Vermont's scenery. This scrapbook is intended to showcase the beautiful architecture of these buildings, talk a little about their past, and create an atmosphere that appreciates their contribution to the landscape that surrounds them.

Baseball on Townshend Common, 1959. Townshend, Vermont (LS12416).



Churches have always been prevalent in the Vermont landscape.

Biking on the Town Green, 1885-1900. Bristol, Vermont (LS07549).

Bethany Church, 2007. Montpelier, Vermont (LS04706).

By Law, early Vermont towns had to set aside land for the purpose of a church building.

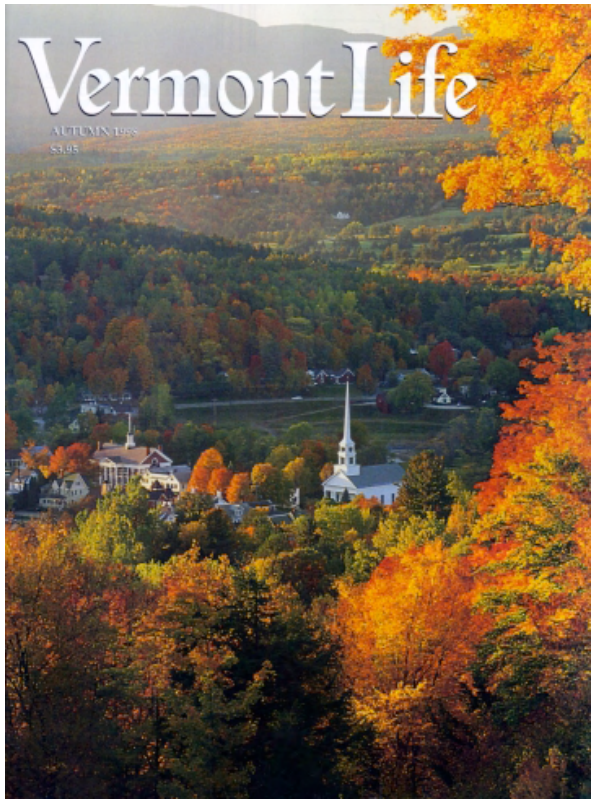
Church and Park in Perkinsville, 1860-1890. Weathersfield, Vermont (LS04916).

Church with River in Background, 1870-1889. Brattleboro, Vermont (LS03302).

Churches can be found in large towns, and rural communities.

Church Street Marketplace, 1970-1980.
Burlington, Vermont (LS07953).

Aerial View of Stowe in Autumn, 1998.
Stowe, Vermont (LS12570).



Their unique, sometimes quirky architecture makes them fascinating landmarks.

Church and Store, Village Center, 1870–1900. Tinmouth, Vermont (LS01948).

The Old Round Church, 2004. Richmond, Vermont (LS00988).

Regardless of size, style, or location, each building has its own unique story to tell, and its own unique relationship with its community.

Methodist Episcopal Church, 1860-1890. Bristol, Vermont (LS05587).

Bio: Williston Congregational Church

- Built in 1832
- Construction cost $2,300
- Exercised great political influence in the community
- Abandoned in 1899 as a result of the Methodist-Congregationalist merger

Congregational Church and Corn, 1907-1915. Williston, Vermont (LS09870).

Bio: Immanuel Episcopal Church

- Built in 1863-67
- Designed by Richard Upjohn
- Modeled after a rural English parish
- All interior furnishings came from England

Church and Graves, 2007. Rockingham, Vermont (LS03077).

Bio: Ira Allen Chapel

- Constructed in 1926
- Designed by the firm McKim, Mead and White
- Designed in the Georgian Revival Style
- Built in honor of Ira Allen, founder of the University of Vermont

Ira Allen Chapel, 2005. Burlington, Vermont (LS10565).

Bio: First Congregational Church

- Building Completed in 1869
- Built as wood structure
- Construction cost $7,826.06
- Church's land deeded by Byron Stevens and Enoch Howe

Essex Junction from Brownell Block, 1890-1920. Essex Junction, Vermont (LS01520).

Bio: The Old Round Church

- Built in 1813
- Considered to be one of the first community churches in the country
- 16 sides
- Local lore says that the round shape is beneficial “so the devil can’t hide in the corner”

Old Round Church in Richmond, 1991.
Richmond, Vermont (LS12544).

Conclusions

- Both their unique designs, and their historical significance have earned Vermont churches the right to be called important landmarks. They are deeply woven into the cultural fabric of Vermont's past. Without them, the Vermont landscape would not look the same.

150th Anniversary, 1913. Federated Church, Williston, Vermont (LS09869).

Sources

- All images come from the Landscape Change Program Website, at http://www.uvm.edu/landscape/menu.php
- Information comes from the following texts and websites:
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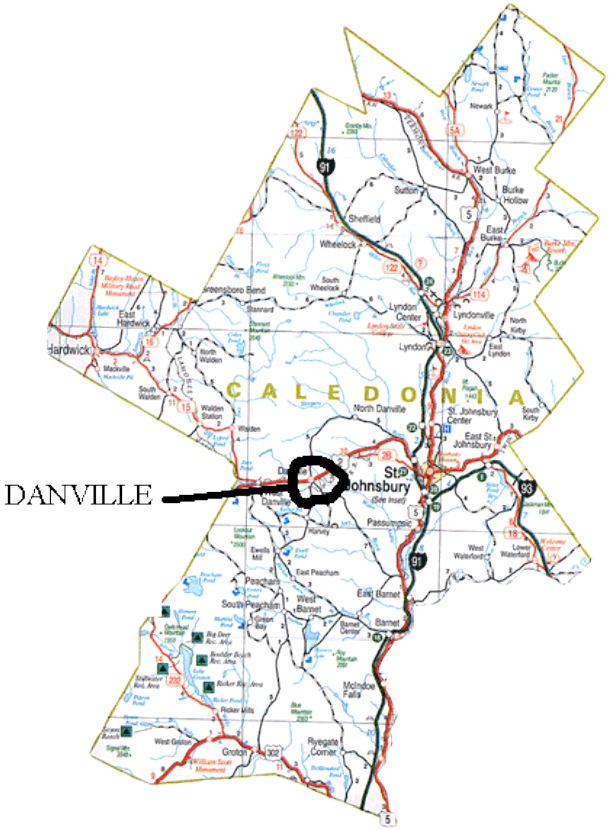
Common Space

By Jonathan Merrow

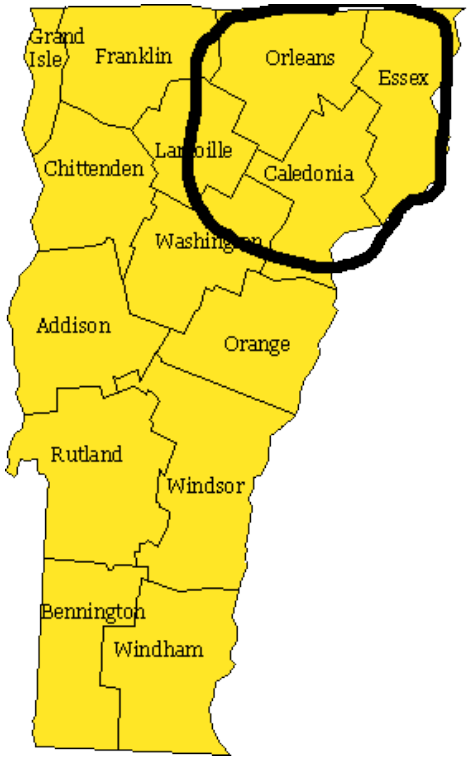
A Photo-journey Through the Towns and Villages of the Northeast Kingdom

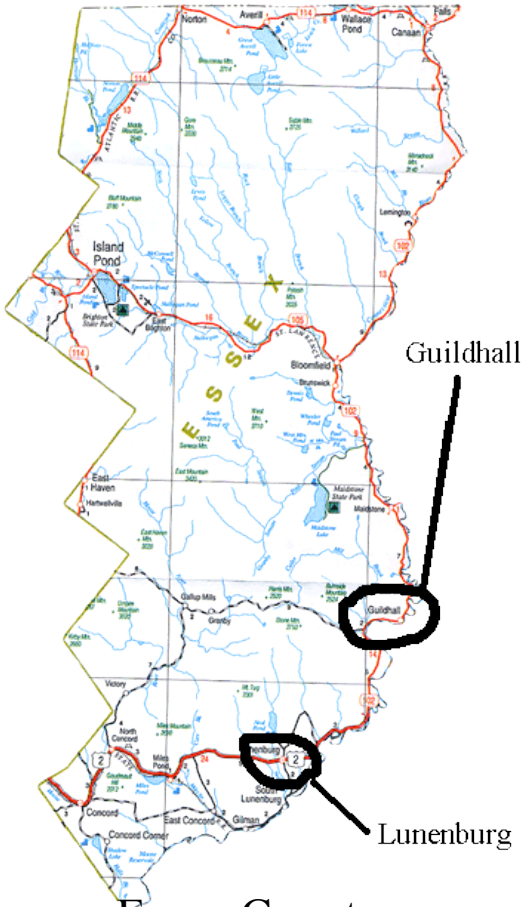
Guildhall, VT: No Date (LS04977_000.jpg)

The Northeast Kingdom



Caledonia County





Essex County

The origins of the Northeast Kingdom's town greens can be traced back to England, where towns traditionally center around the green. As late as the American Revolution, much of Northeast Kingdom was part of colonial New Hampshire, and ruled by the crown. The king's proxy, Governor Wentworth, granted town charters in the region in 1761. One of the charters' provisions stipulated that "a tract of land as near the centre of the said Township as the Land will admit of shall be reserved and marked out for town lots…" (Benton 60). In large part, we can thank the English for the greens of The Northeast Kingdom.

Danville's Green

Danville, VT: c. 1885 (LS03874_000.jpg)

Danville, VT: 7.24.05

Although each green reflects the unique qualities of its town, they all share much in common. The top-left view, taken before the roads were paved, shows the Danville bandstand, and the many buildings centered around the green. The contemporary shot on the right makes clear that the bandstand is still in use. The aerial photo on the bottom is an image from The Danville Project, an exciting plan underway to revitalize the heart of the town.

http://www.aot.state.vt.us/danville/files/home.html

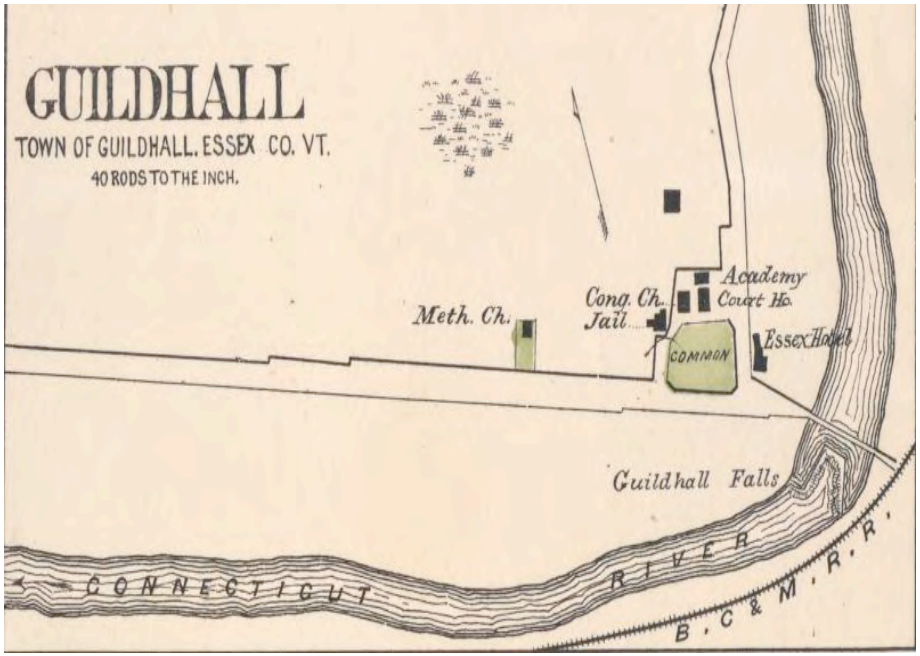
Danville's Country Stores

Danville, VT: post 1890 (LS03875_000.jpg)

The shot above captures the Morse general store situated near the green when the roads were unpaved. A horse and buggy can be seen on the road. The green is located at major crossroads, and bustles with commercial activity. The shot on the bottom right shows that the country store is still in good repair. To the right is a view of Danville's country store today.

Danville, VT: 7.24.05

Deep Roots: Guildhall's Green



Map c. 1876 (LS01583_000.jpg)

Guildhall, VT: 7.23.05

Guildhall has changed little since this map was drawn c. 1876. Today its green is still surrounded by the town hall, courthouse, and Congregational church. The jail and Essex also hotel still stand. Guildhall is one of the oldest towns in Vermont.

Preserving Guildhall's Historic Buildings

Guildhall, VT: 7.23.05

Guildhall, VT: No date (LS04977_000.jpg)

The residents of Guildhall take great pride in their town's historic buildings. The trees in the picture on right indicate that the shot was taken before Dutch elm disease ravaged the region. In the contemporary view, the buildings are still in excellent shape.

Right in the Middle of Things

Guildhall, VT: c.1916 (LS01693_000.jpg)

Guildhall, VT: 7.23.05

The centrality of the town green makes it the perfect place for a country store, both in 1916 and today. The elms are gone, the street is paved and wider, and the covered bridge is now just a bridge. The store is just about the same.

The Sign by the Green

Guildhall, VT: 1949 (LS07019_000.jpg)

Guildhall, VT: 7.23.05

Even though Guildhall's sign has been redone since the shot on the left was taken in 1949, its central location in town has not: it is still a mere stone's throw from the green. The picture on the bottom right indicates that while the sign is not situated in the same place it was in '49, the building that once stood behind it is still in excellent shape.

Lunenburg's Green

Lunenburg, VT: no date (LS00812_000.jpg)

Lunenburg, VT: 7.23.05

The historic image on the left shows the bandstand, where music played on summer nights. So many trees fill the green that the town hall and Congregational church are barely discernable. A fence separates the green's edge from a dirt road. The contemporary shot on the right shows us that while the trees are less dense, the roads have been paved, and the fence is gone, the bandstand is still an integral part of Lunenburg's green.

The Town Green: a Place to Worship

Lunenburg, VT: no date (LS09243_000.jpg)

Lunenburg, VT: 7.23.05

The green was the perfect spot to congregate and exchange gossip after church. Rows of trees fill the green. The contemporary photo shows that most of the trees are gone. The building behind the Congregational church and to the left makes plain that the green continues to be a prime place to develop.

Village Greens: Changing and Changeless

Guildhall, VT: no date (**LS01690_000.jpg)**

Lunenburg, VT: 7.23.05

Amazingly, all three town greens are pretty much as they were 100 years ago. The greens provide windows into the past even as they reflect the present. The years have exacted heavy tolls on the old buildings around each. Only with great effort have these New England treasures been preserved, for which we should all be thankful.

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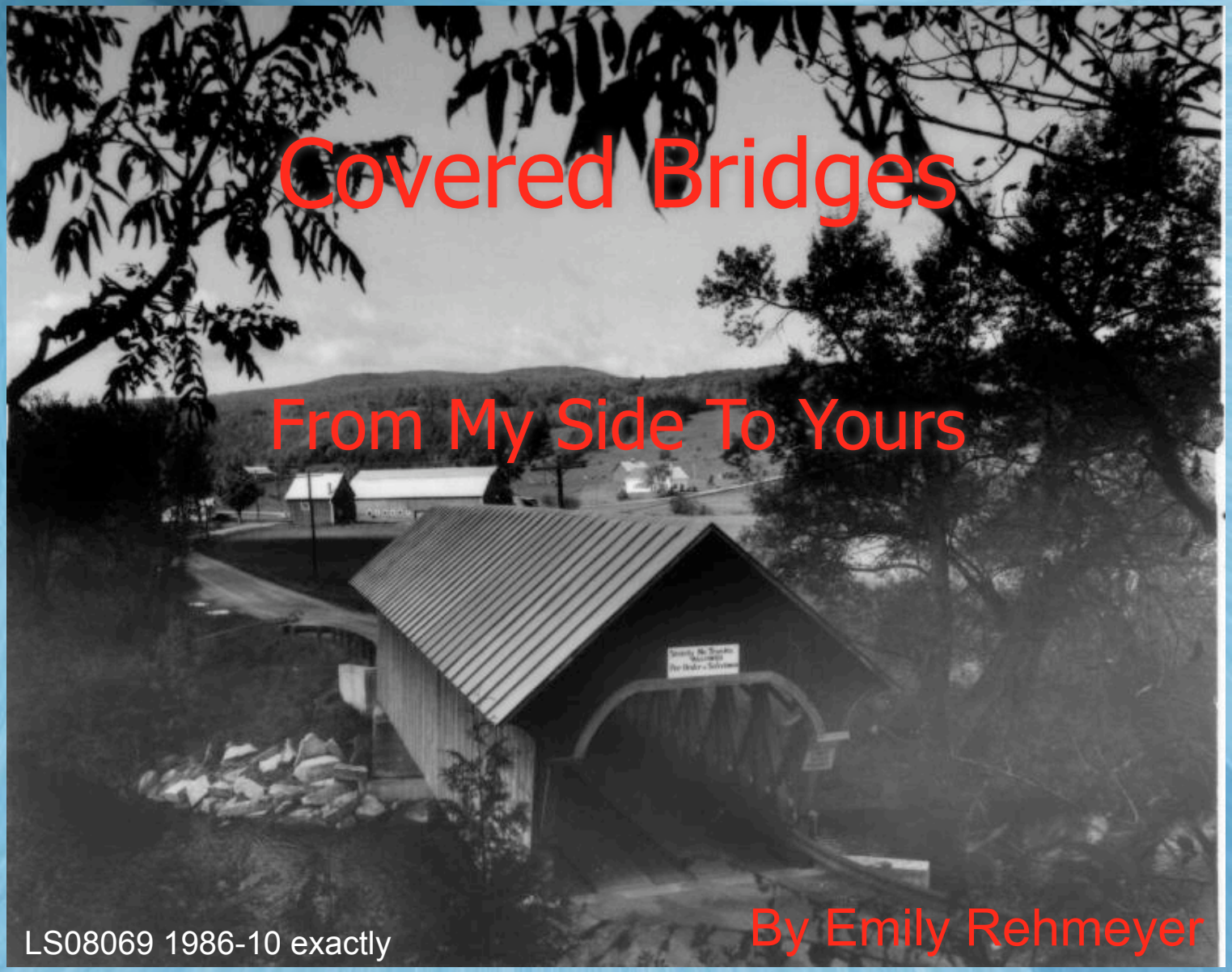
http://www.aot.state.vt.us/danville/files/home.html (The Danville Project)

http://www.vtliving.com/map/essexcountyvt.shtml (Essex county map)

http://www.vtliving.com/map/caledoniacountyvt.shtml (Caledonia county map)

Covered Bridges

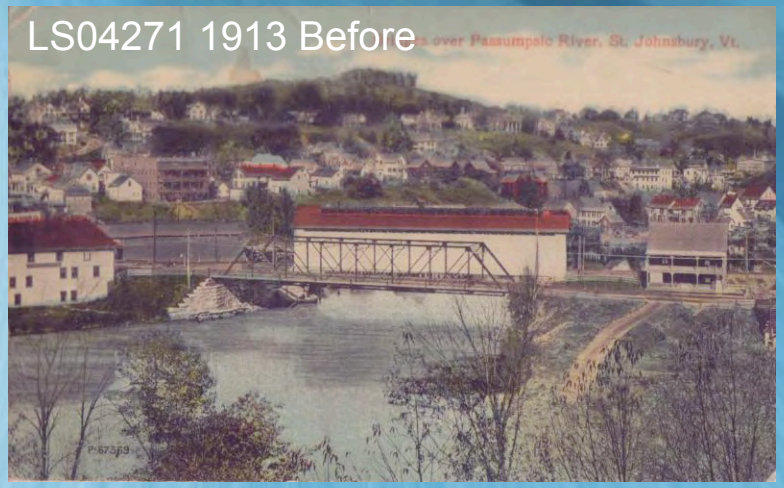
From My Side To Yours



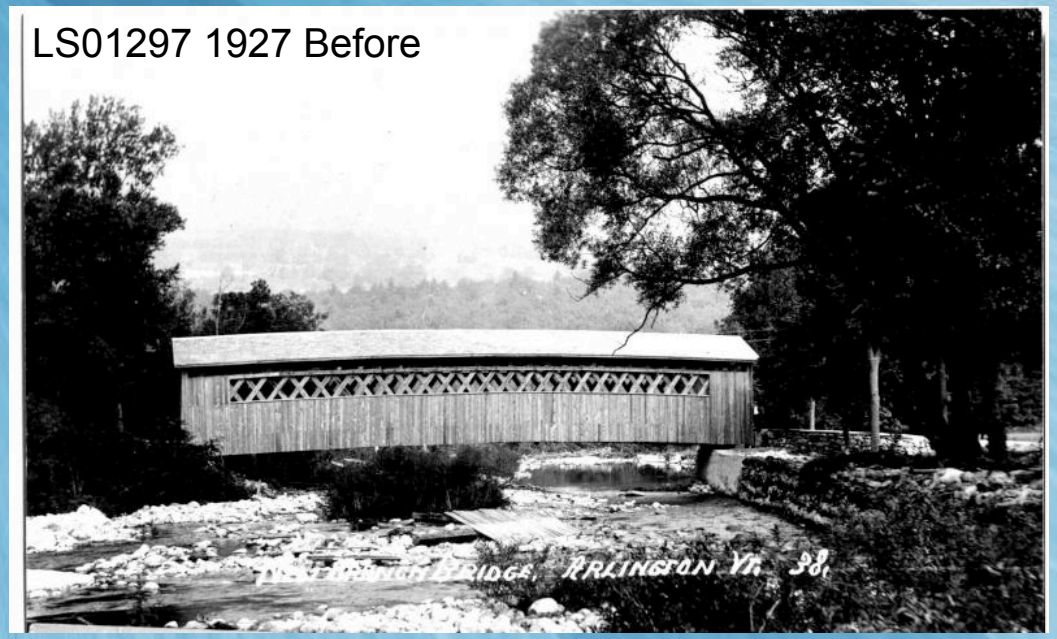
LS08069 1986-10 exactly

By Emily Rehmeyer

Understanding Old Photos



Old postcards can tell us a lot about how Vermont used to look.

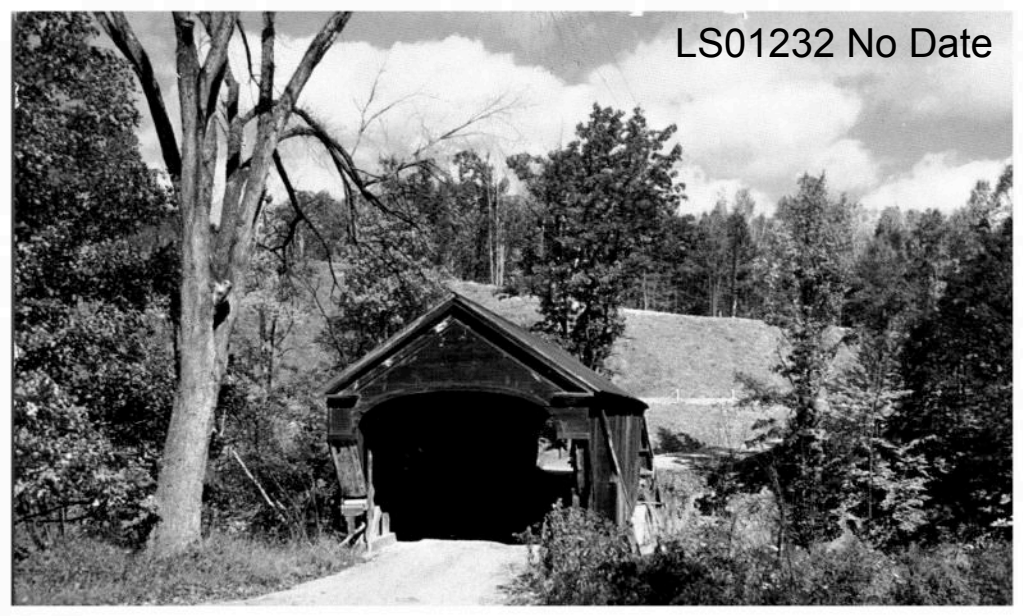


From this picture, we can gather a lot of information like how the river used to look, the type of bridge, etc.

And remember, just because a photo is old, doesn't make it any less interesting than a new one!

Why bother covering a bridge?

Covered bridges are made mostly out of wood. When wood gets wet and then dries, and gets wet again, etc., it speeds up the process of deterioration.



A timber bridge exposed to these conditions will be lucky to function for 10 years. Thus, the only purpose for covering a bridge is **to protect the wood structure underneath.**

Uses

Covered bridges were used mainly for **river crossings**.

They were used by both the **railroad** and in the **road system**.

Who used them?

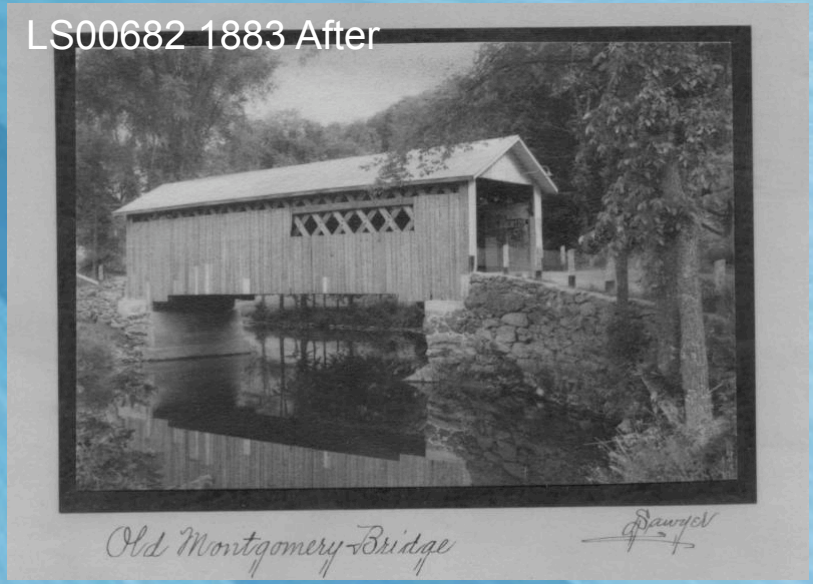
People would walk across, ride **horses** across, drive horse-drawn **wagons** and **carts**…

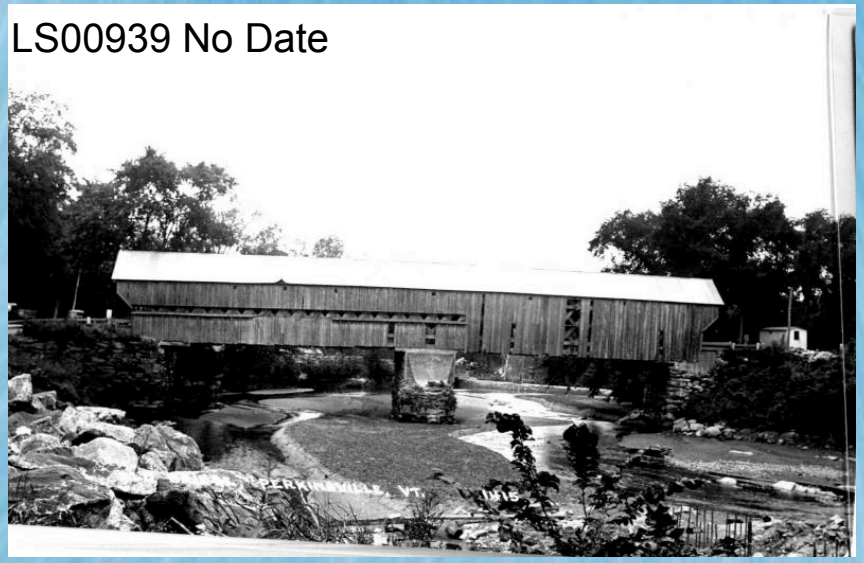
and once **cars** were invented, they used covered bridges too!

Length

There are two types of length - **single-span** and **multiple-span**.

Single-span means that the bridge stretches from one side to the other without any supports in the river bed.

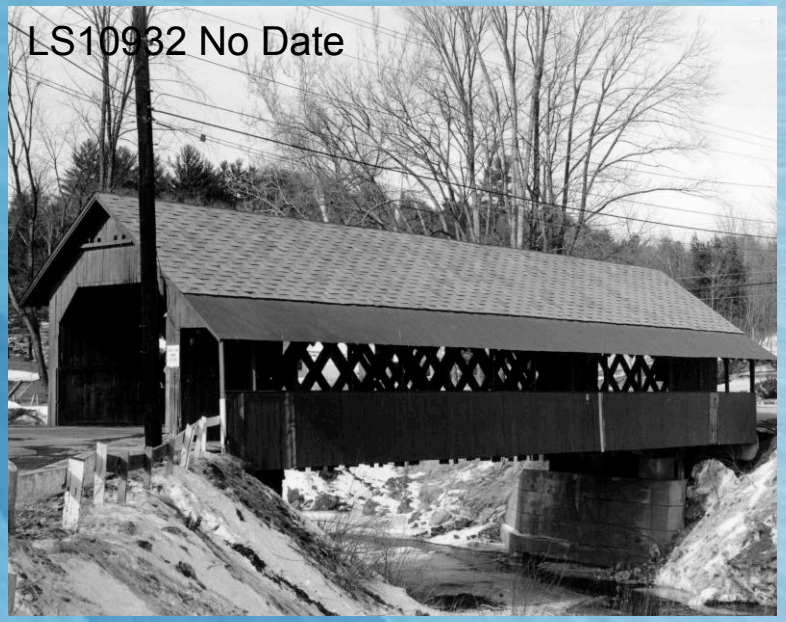




Multiple-span uses one or more supports in the river bed. This particular photo shows a “double-span.”

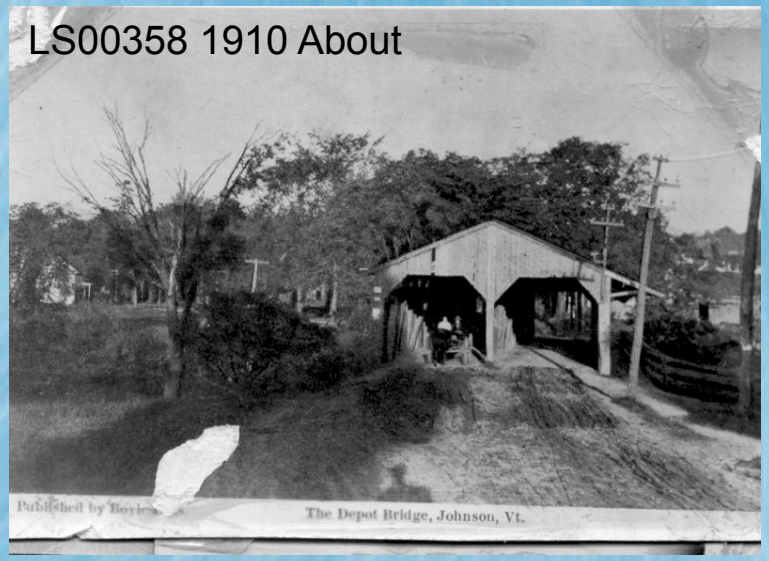
Width

The width of covered bridges ranges from **one lane**, **one lane with walkway**, and **two lane**.

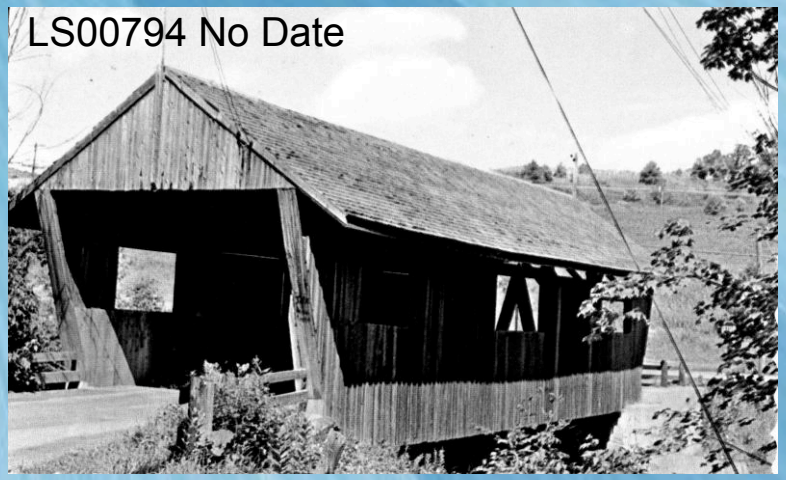


One Lane with Walkway

Two Lane



One Lane



Trusses

A "**truss**" is the framework that supports a bridge.

In this photo, the **truss** is all the crisscrossing and upright pieces of wood on the sides of the bridge. This particular truss is called a **Plank-lattice** truss.

Truss Identification

Before looking at the different types, it's important to note that you can't always tell what truss type a bridge has just from looking at images.

We know that the bridge in this image is a covered bridge, but it's impossible to tell what kind of truss was used here.

There is a reason they are called "covered" bridges after all!

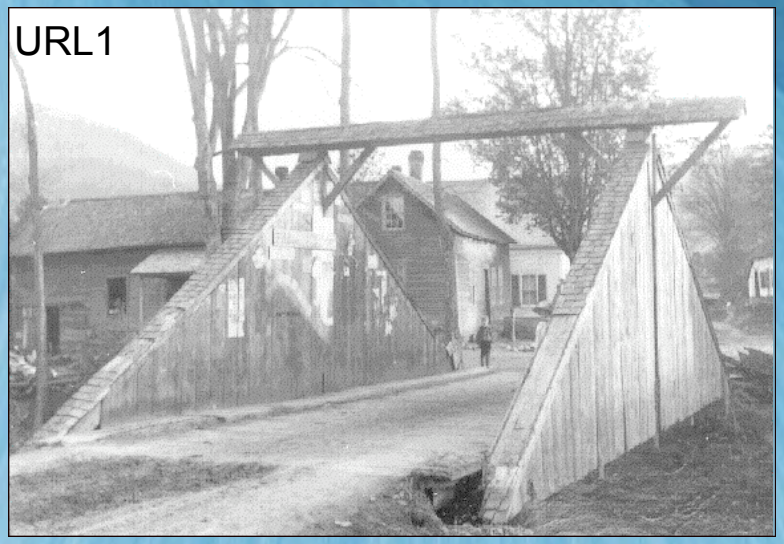
Truss Size

The type of truss that gets used depends on how long the bridge must be.

Therefore, we can divide trusses into two categories- **short span trusses** and **long span trusses**. Note, however that long span trusses can also be used for short spans, though not vice versus.

Short Span Trusses

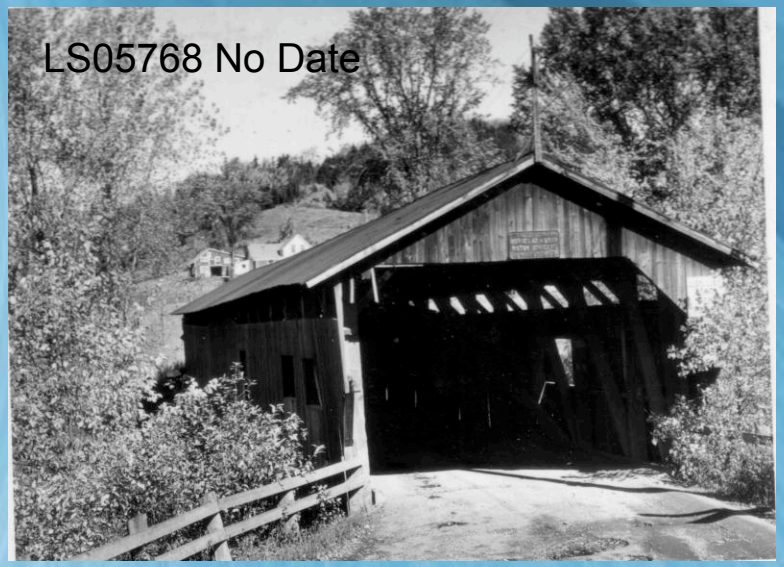
The short span trusses include the **Kingpost** and **Queenpost** varieties.



The **Kingpost** truss is identified by having one main upright post.

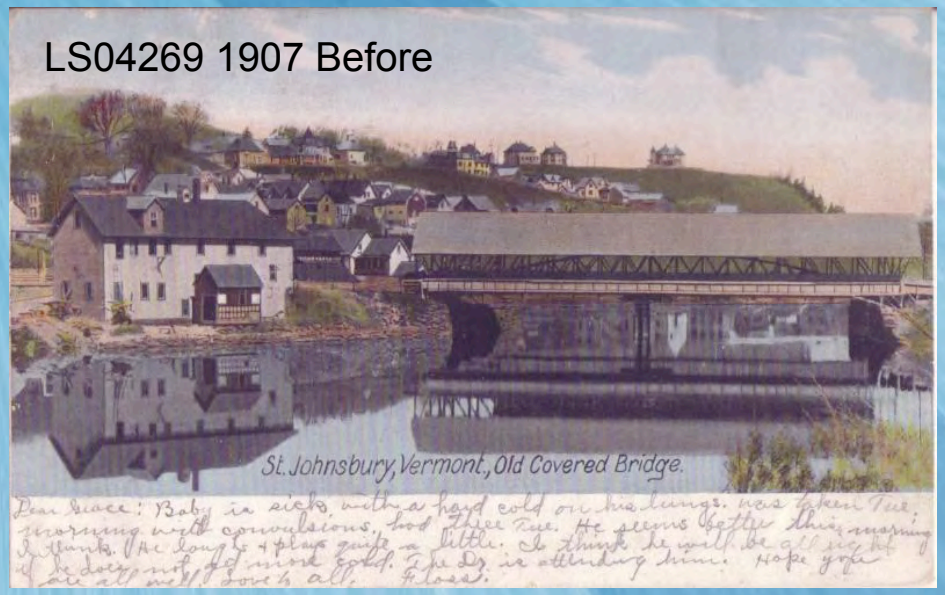
The **Queenpost** truss is the next step up. It has two main upright posts!

Long Span Trusses - Arches



The **Burr-arch** truss has a pieced arch on the inner walls of the bridge (like part of a hexagon).

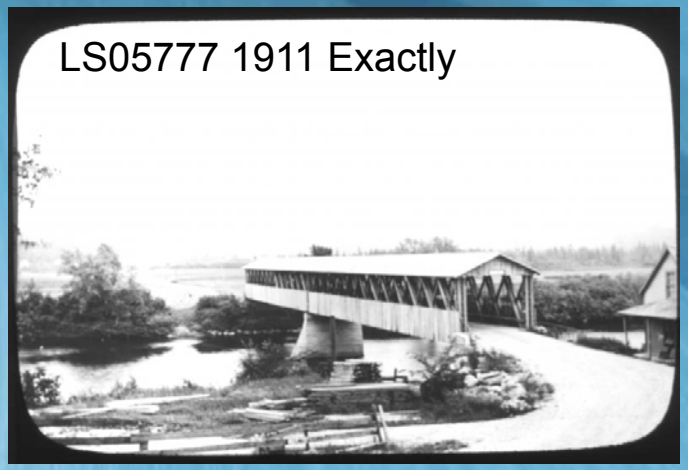
The **Haupt** truss is very similar to the Burr-arch except it's arch looks more like a part of a circle than a hexagon.



One More Arched Truss

This truss is the **Pratt** arch. This arch is smooth like a circle as well, but it is made from layers of planks, rather than just one big log.

Long Span Trusses - Crosses



This is a **Howe** truss.

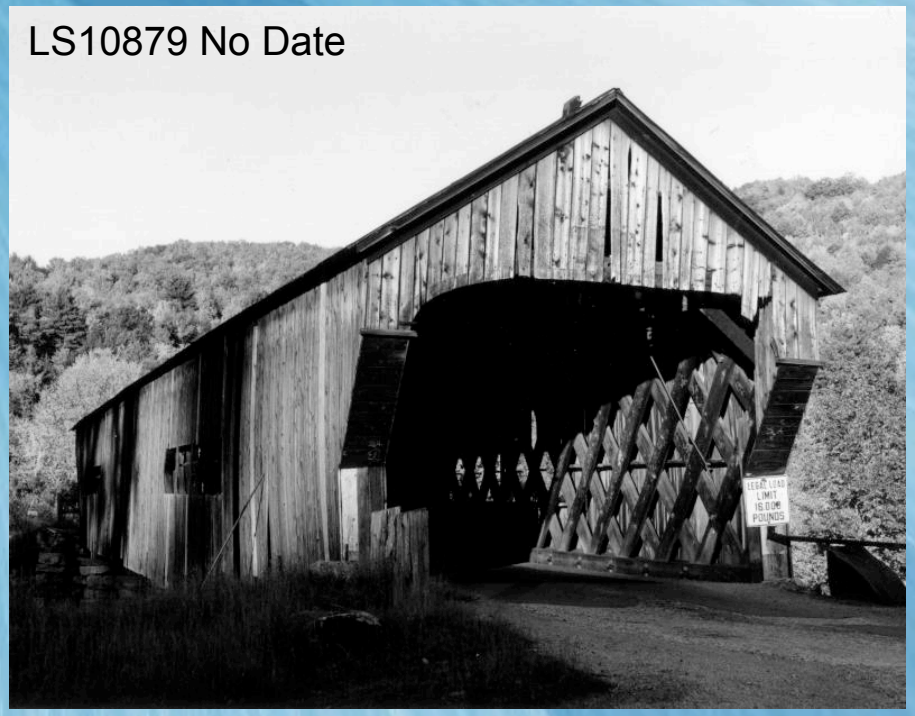
This is a **Long** truss.

All these trusses form X's or crosses along their sides. They are very similar to each other, though they have slight variances.

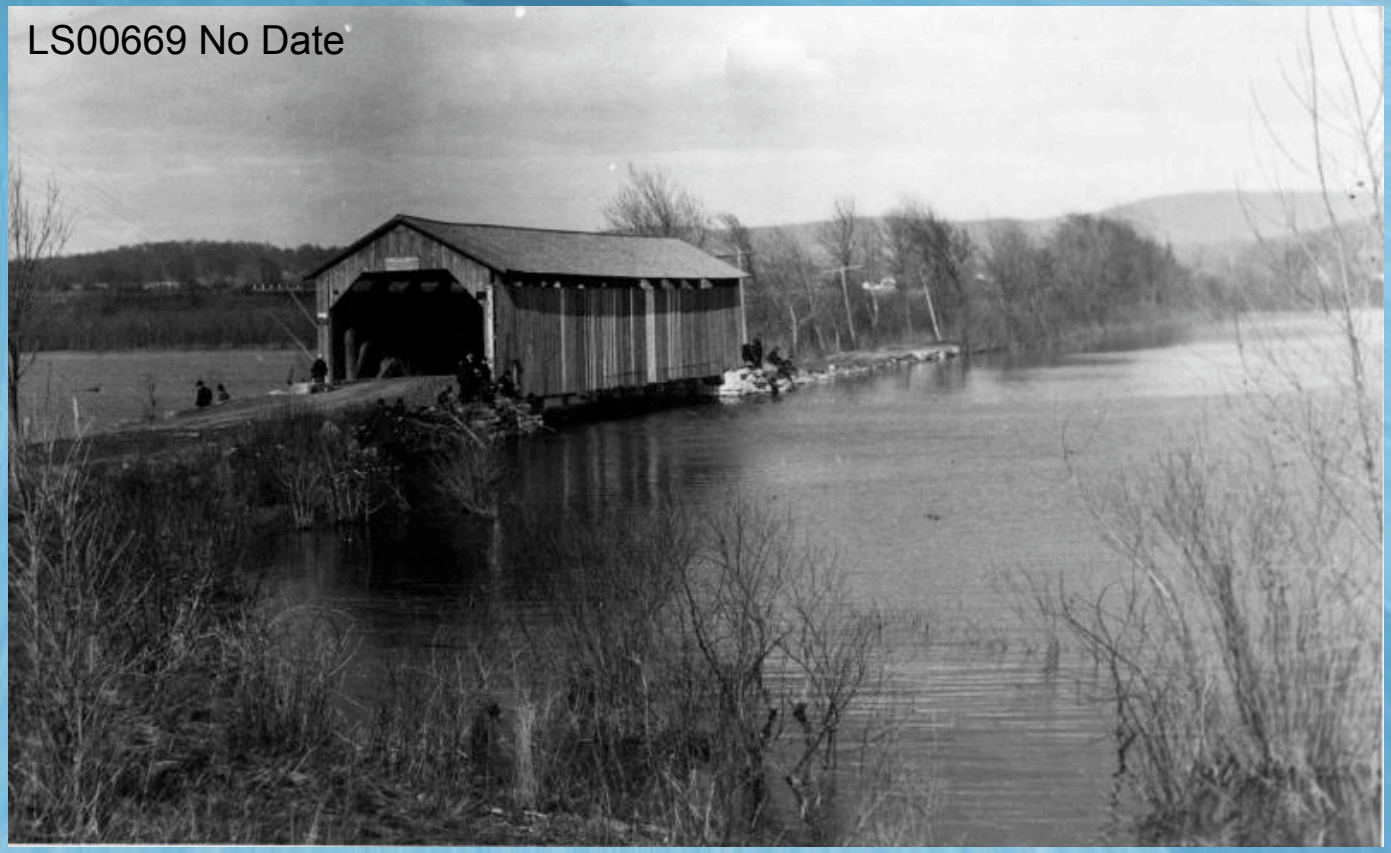
This is a **Paddleford** truss.

Long Span Trusses - Crisscross

The is the last truss. It is called the **Plank-lattice** truss and is one of the most popular trusses in Vermont. The sides of this bridge form a distinctive crisscross pattern.



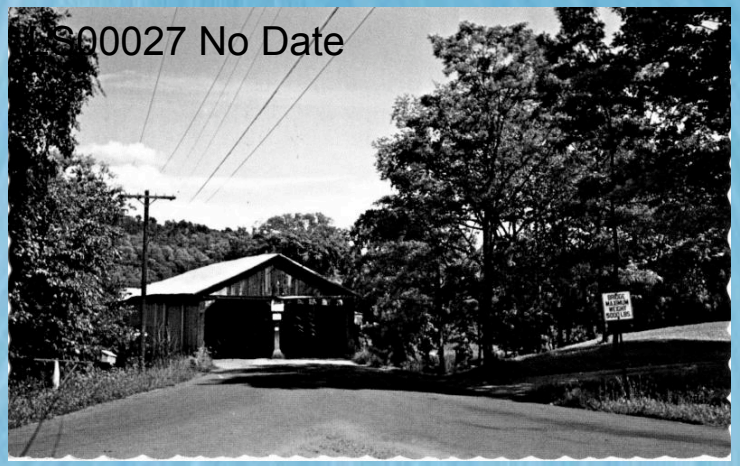
Now that we know the basics about covered bridges, let's take a look at the **history** of them!



Bay Bridge, St. Albans

Typical History of a Covered Bridge

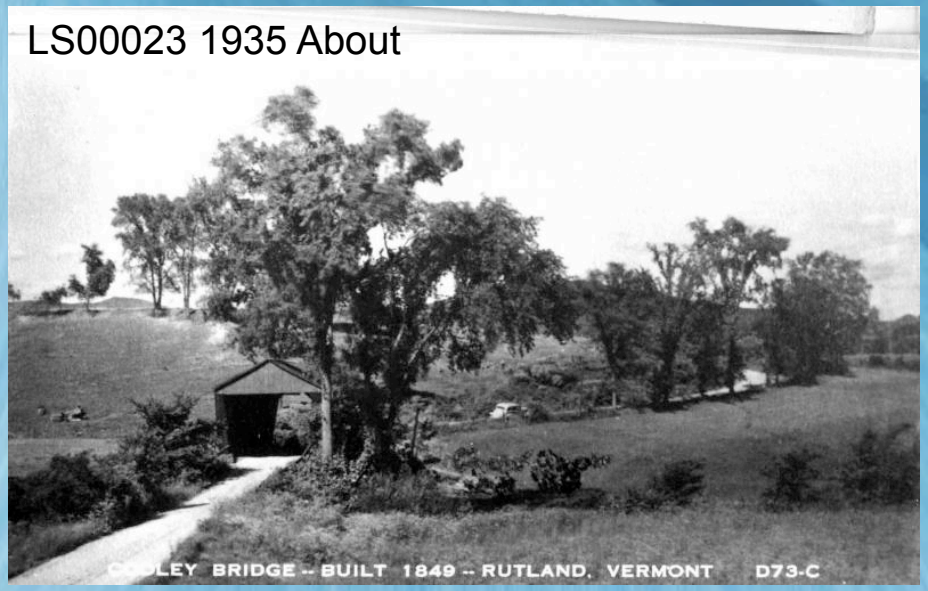
The oldest covered bridge that is still standing is the Pulp Mill Bridge in Middlebury. It was built around 1820. This is when the earliest covered bridges started to appear.



Pulp Mill Bridge

Pulp Mill Bridge Today

Another old bridge…

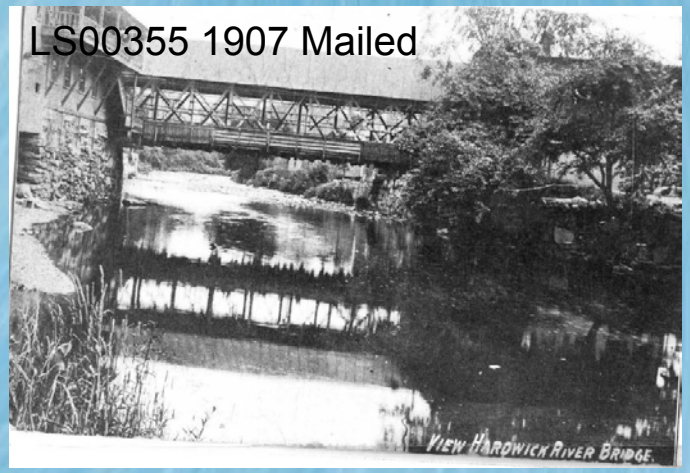


The Cooley Bridge in Pittsford was built in 1849 and is still standing today! It has a Plank-lattice truss.

Old and New

Most bridges aren't as lucky to last as long and get replaced with newer, more modern bridges.

This bridge is in Lyndon.



This bridge is in Hardwick.

They can become outdated, and something bigger is needed.

This covered bridge is being replaced by a concrete bridge in Northfield.

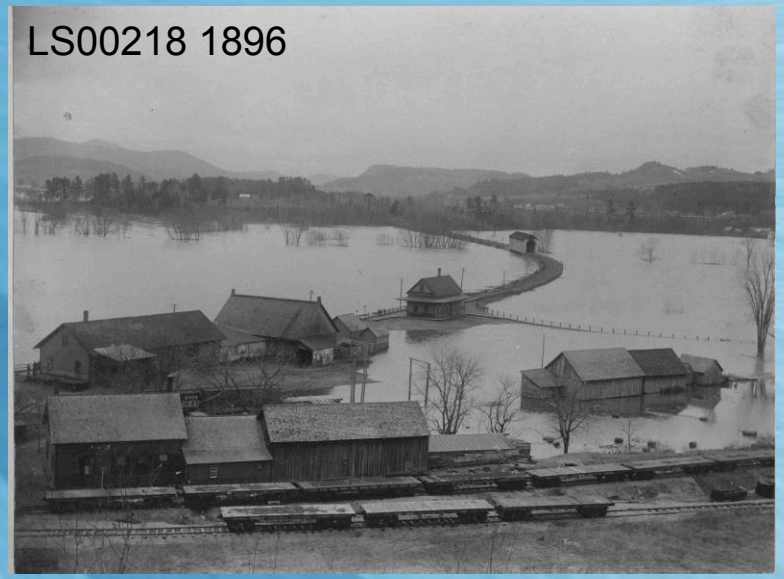
Or nature can destroy them…

Bridge Destruction Done By Nature

Fire can destroy covered bridges, especially since most covered bridges are made almost entirely from wood.

Ice jams are another natural occurrence that can destroy a covered bridge.

By and large though, **floods** are the deadliest threat to covered bridges.

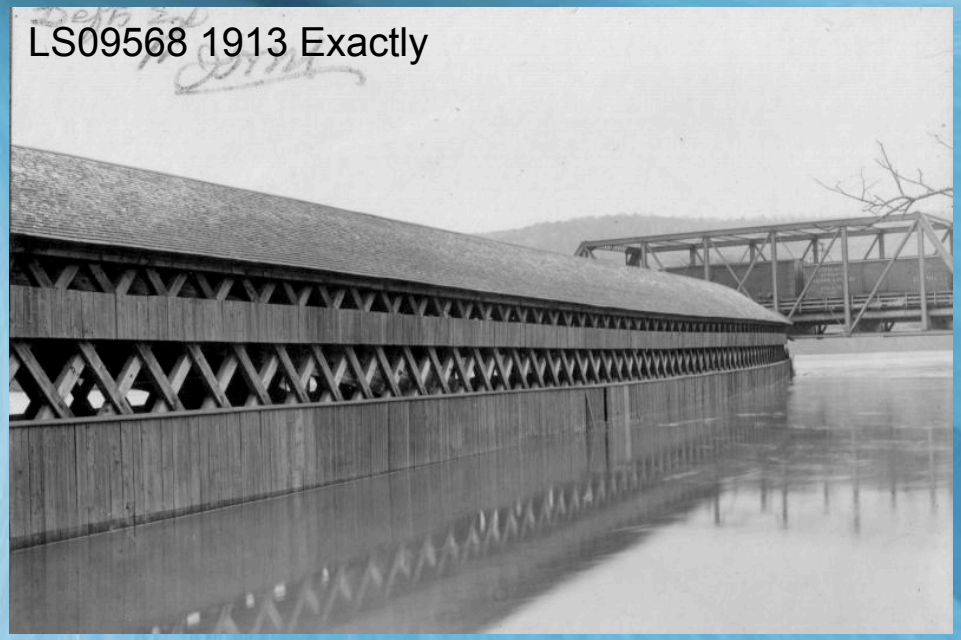


Take this bridge for example…

The flood waters have almost claimed this bridge and it's barely holding on!

Unfortunately, the flood rose higher…

and some loose logs floating down river pushed it off it's foundation.



It started to float downriver!

Until it ran into another bridge!

After the flood went away…

The bridge was grounded and full of debris. This bridge won’t be good for any crossings now!

The effect of floods can be drastic!

There were over **600** covered bridges in Vermont before the 1927 flood. Today, there are just over **100**.

Despite the dangers...

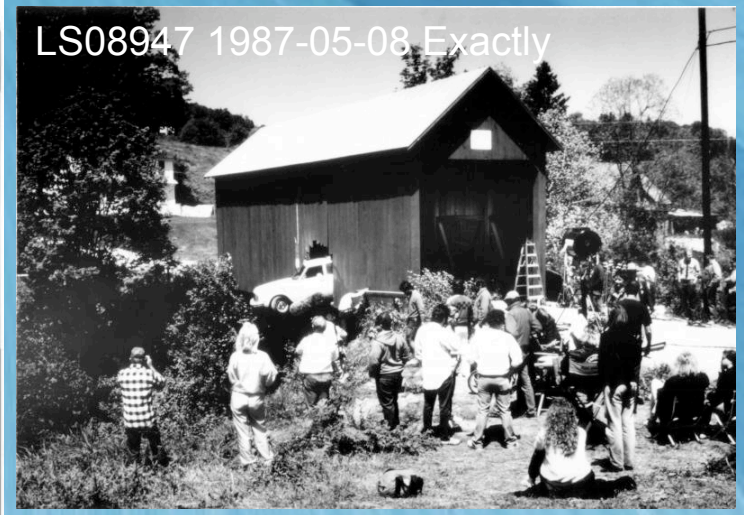
Vermont has the highest concentration of covered bridges in the US, as well as being ranked 3rd for having the most!

Overall, though...

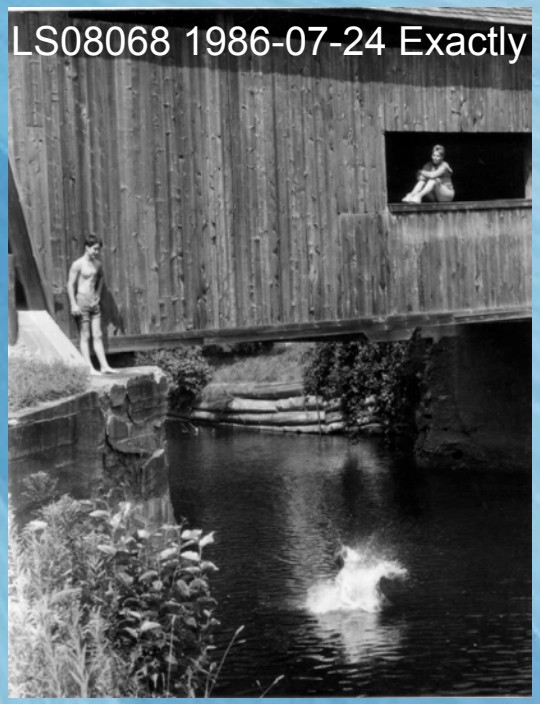
Covered bridges can be a lot of fun!

Fishing

Filming movies



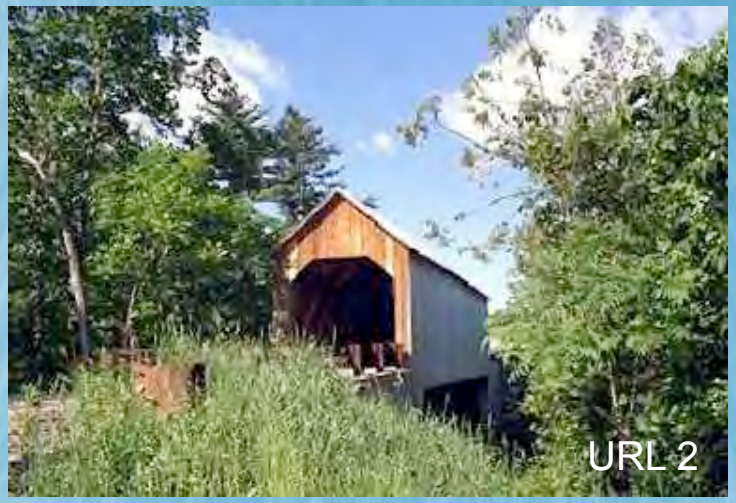
Swimming and diving



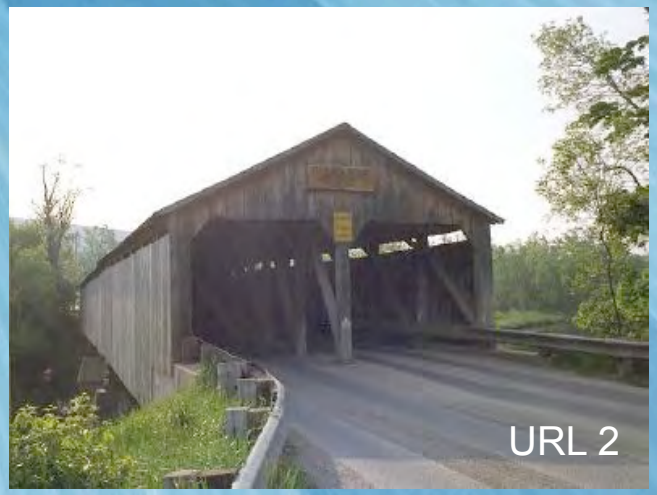
Let’s finish up with some…

Fun Facts!

Lowest - Lake Shore Bridge, Charlotte



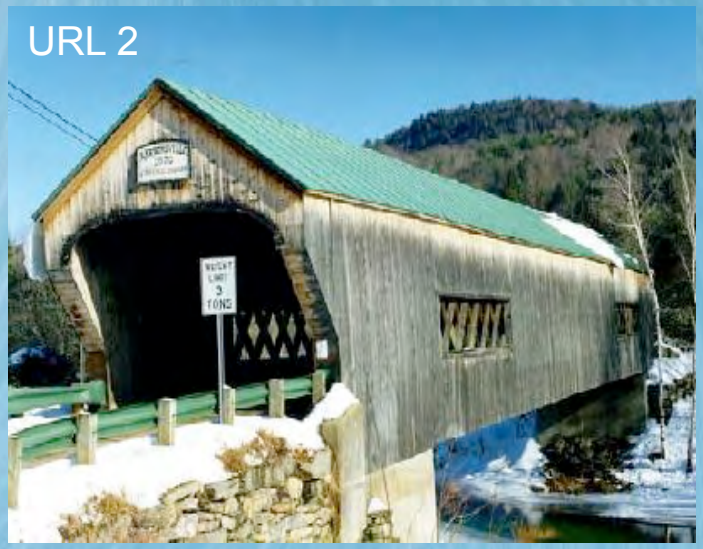
Highest - Halpin Bridge, Middlebury 41’



Oldest - Pulp Mill Bridge, Middlebury 1820

Longest Two-span - Dummerston Bridge, West Dummerston 267’

Longest - Scotts Bridge, Townshend 276’



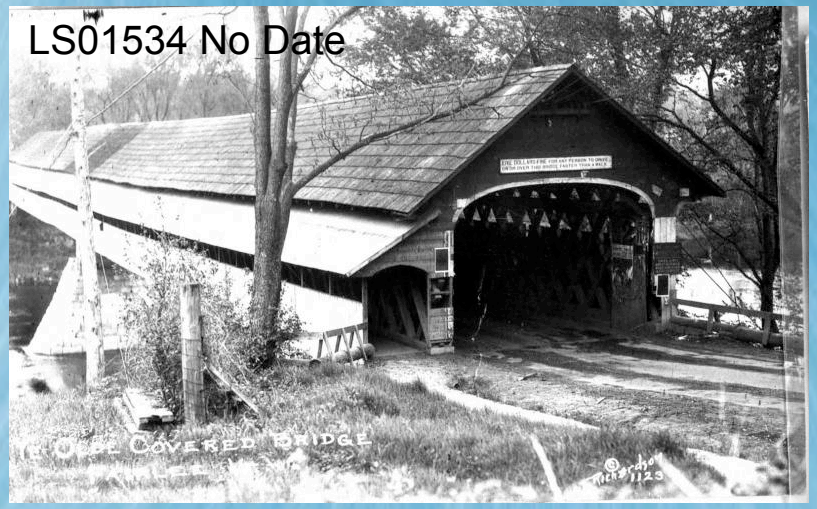
Longest Single-span - Bartonsville Bridge, Rockingham 151’

Widest - Maple Street Bridge, Fairfax 17’

Narrowest - Hall Bridge, Rockingham 12’

Wishing Bridges

It is said that covered bridges are good for wishing, and if you follow these steps, your wish is more likely to come true!



Make your wish before entering the bridge; lift your feet off the floor of your vehicle, take a deep breath, and say, “Bunny, bunny, bunny, bunny...” all the way through the bridge while thinking of your wish; then, upon coming out the other side, say "Rabbit!"

If you **wish** to know more, check out these books and websites…

More Info and Sources

URL 1 - http://www.uvm.edu/coveredbridges/conference/2003.html

URL 2 - http://www.virtualvermont.com/coveredbridge/

Landscape Change Program - http://www.uvm.edu/perkins/landscape/

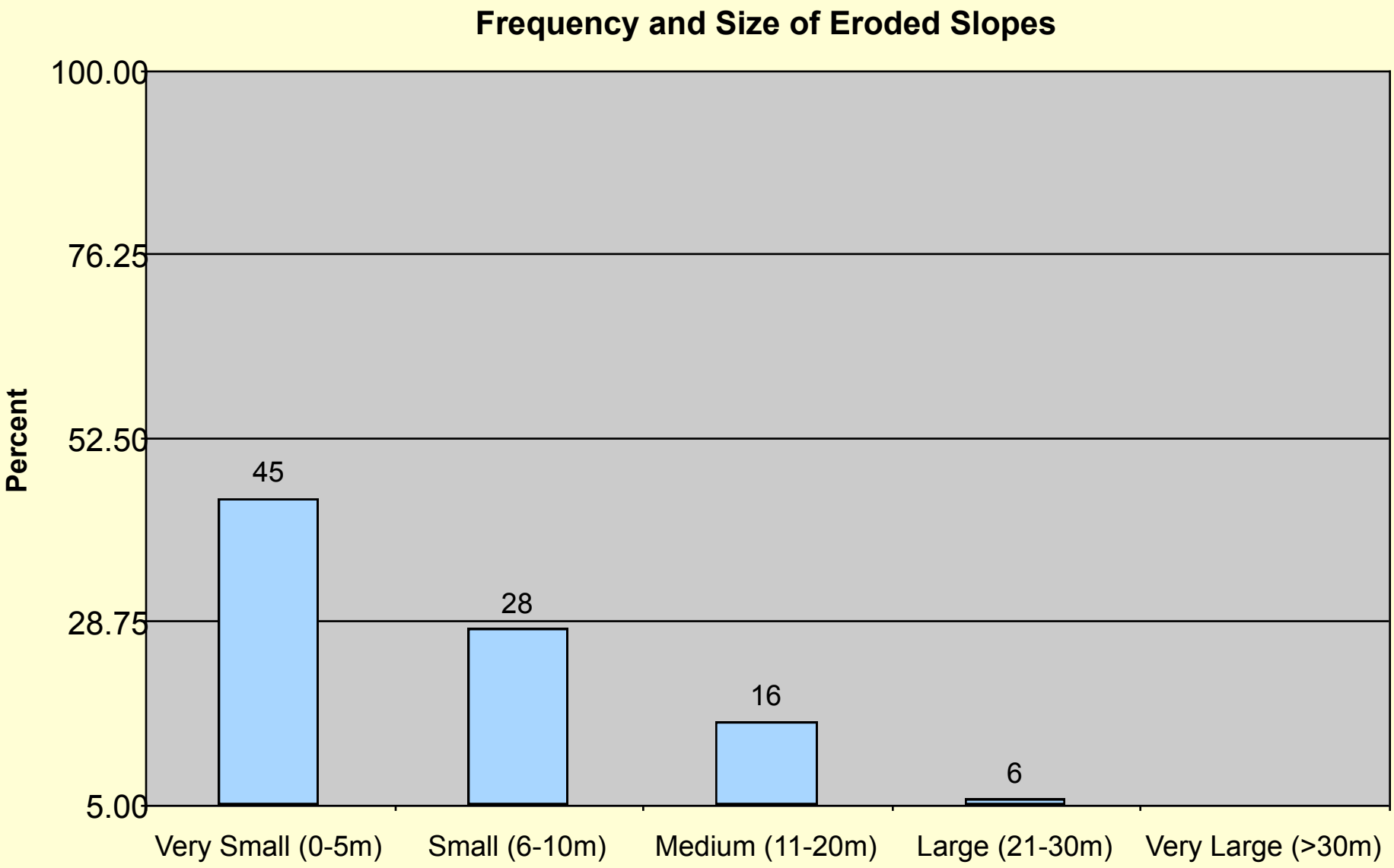
Spanning Time, Vermont's Covered Bridges Joseph C. Nelson

Created by Emily Rehmeyer
January '06 for "Changing Face of Vermont Landscape" taught by Paul Bierman

Erosion – The Tree Connection

Michala Peabody, UVM 2005

The goal is to compile visual evidence that clear-cutting is coincident with erosion in Vermont. To achieve this goal, we searched the Landscape Change Program archive using the keywords; clear-cutting, landslides, and erosion. From the search results, we categorized images with respect to the amount of tree coverage, the size of the eroded area, and other landscape characteristics including clear-cut slopes, roads, and farming. From the analysis of these images, we conclude that clear-cutting and the removal of woody vegetation increased the frequency of erosion and landslides in Vermont.

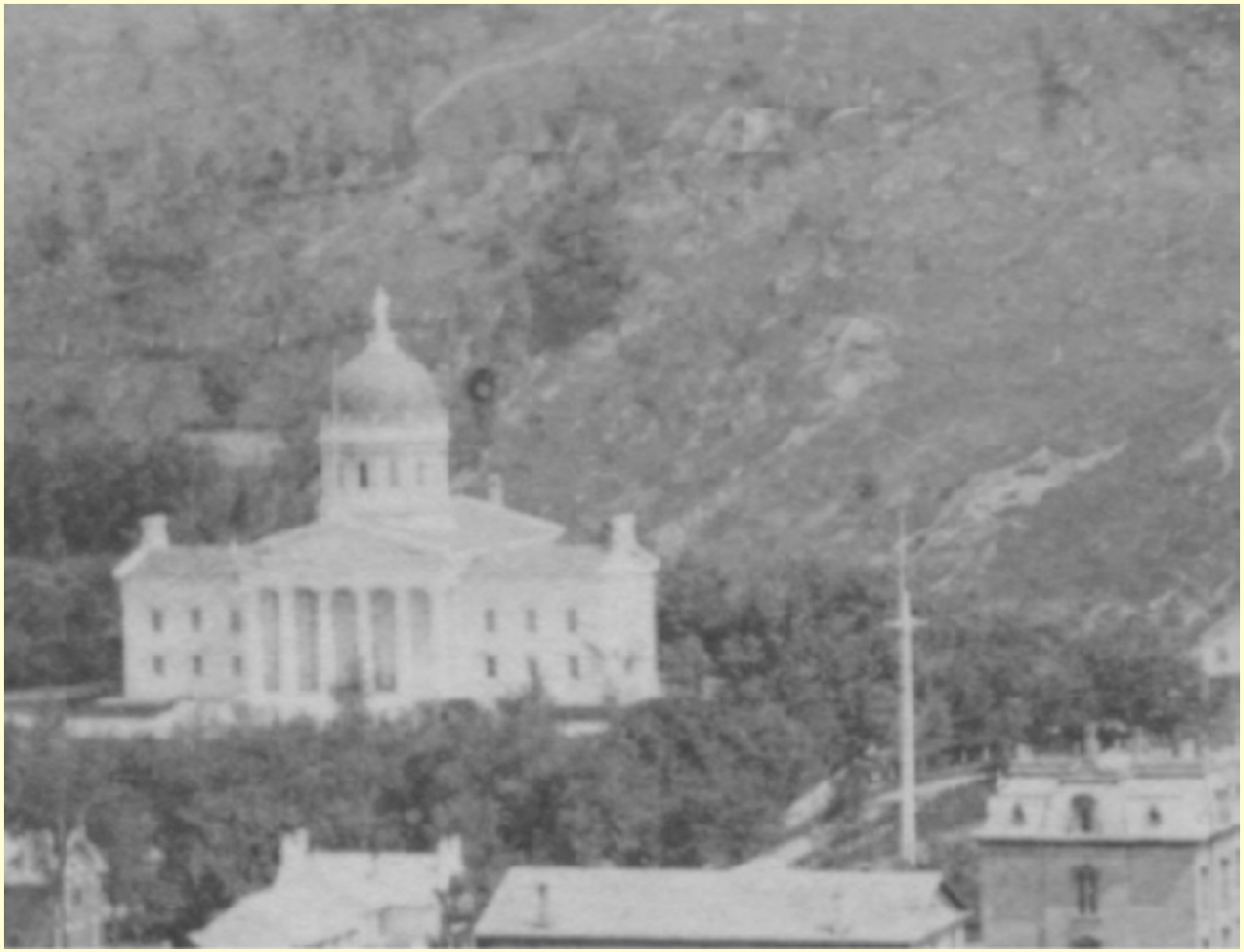


We classified erosion into five different categories depending on the size of the eroding area. You can see that very small areas of erosion are much more common than very large areas of erosion.

Very Small Erosion on a Road

Erosion can occur in many different areas, even on hard-packed roads. Look how water has washed out a portion of the old dirt road. Where are all the trees?
LS06469

Small Landslides Behind the State House



Look closely and you can see the small landslides behind the State House. Look closer to try to find vegetation on the cleared slope. Where are all the trees?
LS00410

Medium Sized Landslide

Landslides can be anywhere, including farms. Why are there no trees near the landslide?
LS04154

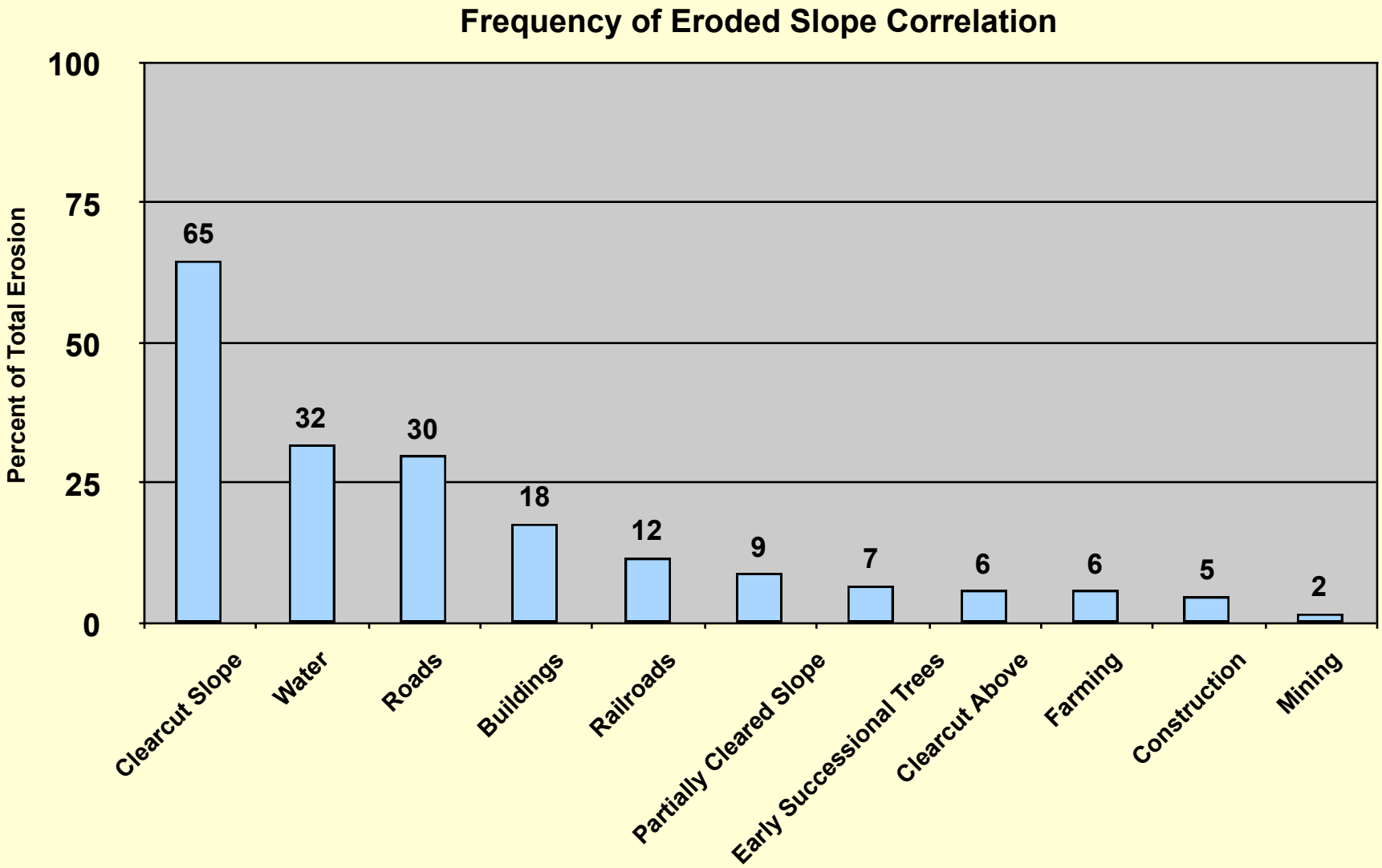
A Large Slide on the Edge of Town

How did this large landslide occur? Was there anything on the slope to keep it stable? Are there trees on the slope or around the landslide?

LS04285

Very Large Landslides can Occur Too!

Prior to 1955 there were no trees on this slope. Look what happened in December of 1955. Where did the road go? Take a trip back to Riverside Avenue in Burlington to find trees covering the entire slope today. LS01781



We found all of the images in the collection that showed evidence of erosion and classified land use in the area of the image that included erosion. Look how many images had cleared slopes! Hmm, is there a connection here?

Clear-Cutting

"Where have all the trees gone?"

No wonder the soil wasn't happy on that cleared slope, there's nothing to hold it there. Look at all of those stumps in the field.

LS03668

Rivers Can Cause Erosion

If there’s nothing on the riverbank to hold it there, then the water just picks up the soil and moves it downstream. Where did the soil go?

LS06378

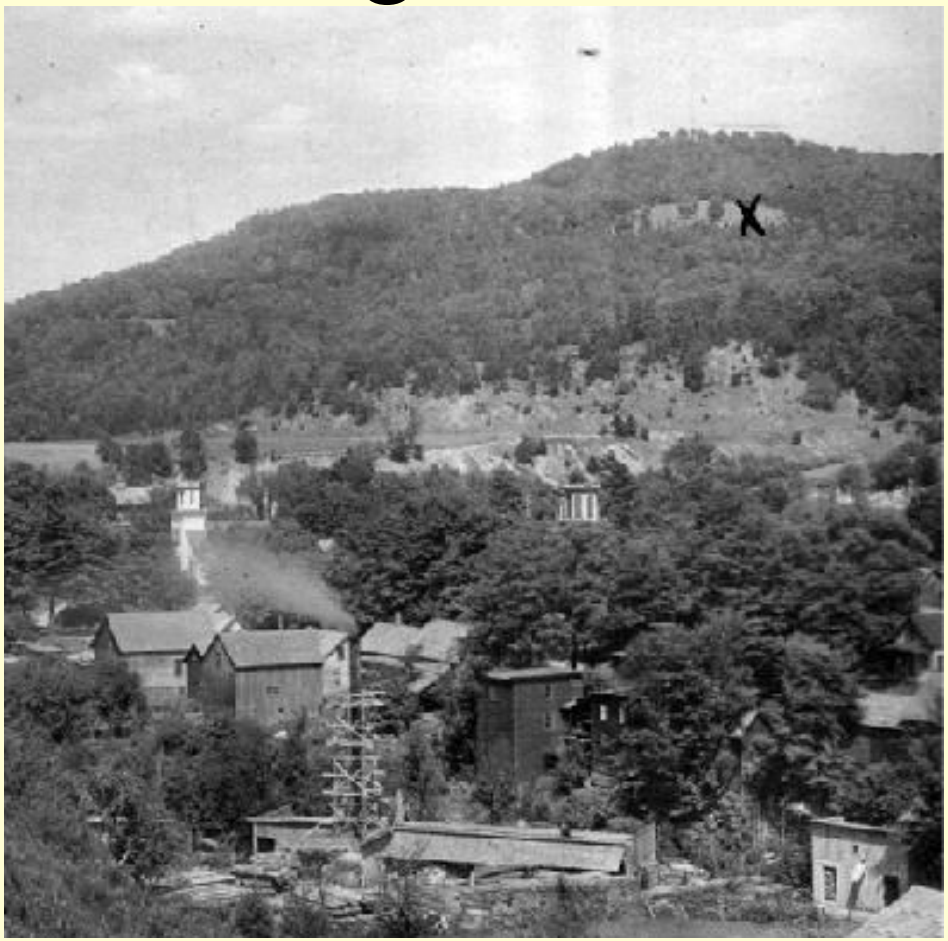
Did the Road do This?

There's not supposed to be huge chunks of soil on the roads are there?
Notice how there are no big trees on the eroding slope in the background?
LS01357

Is This Railroad Safe?

What happened to this slope? Is that a river on the right eroding the slope? What did the landscape look like before the railroad was built?
LS02477

Clear-Cutting Above a Slide



Look at the eroding slope is just below the cleared field at center.
Why would the erosion occur here?
LS01979

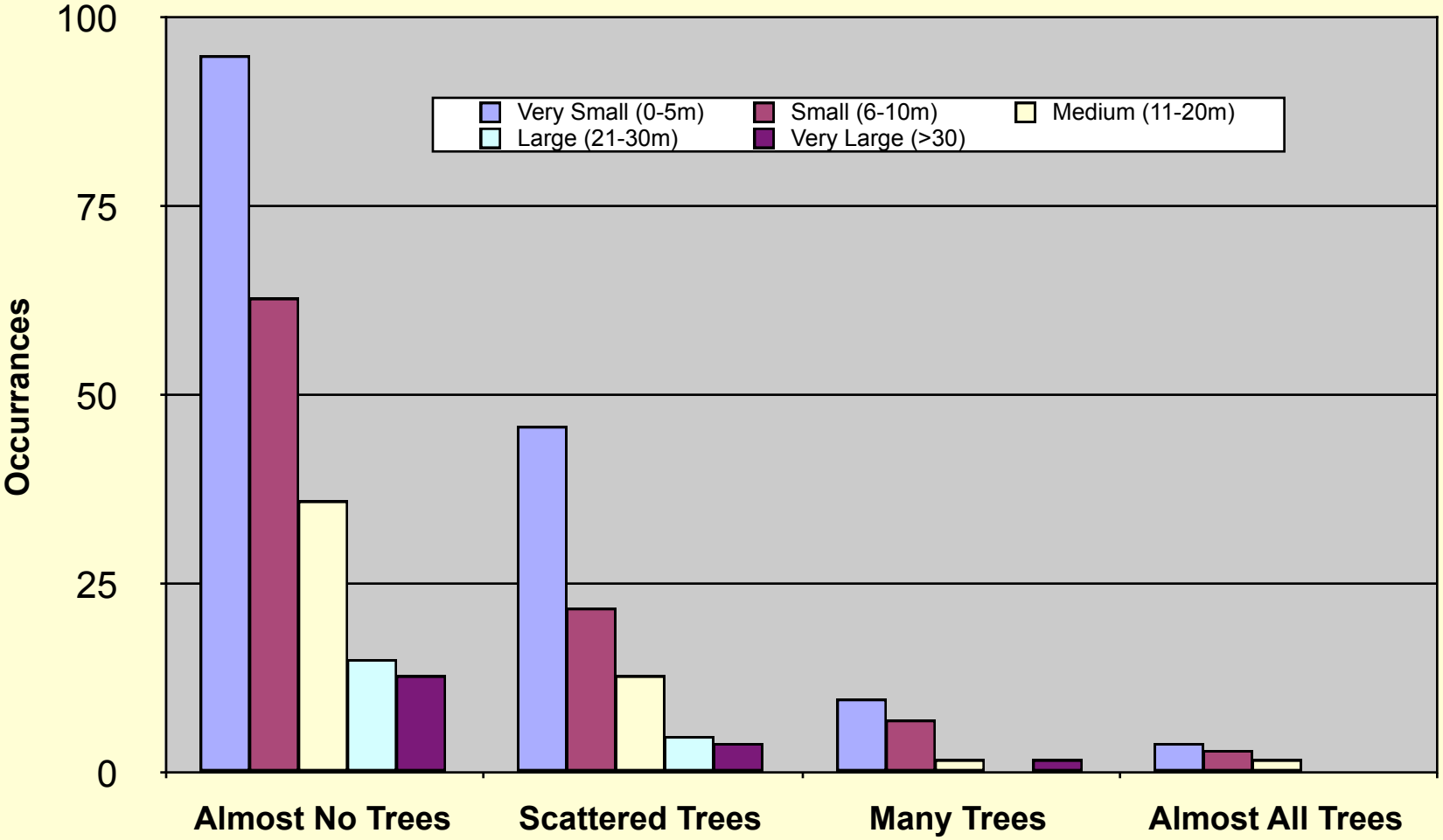
I-89 Construction

Where is all of this eroding soil from the road construction going? Look at that small cleared slope in the center with all the soil erosion.
LS04580

Relationships

- From the data collected in the images we found a strong inverse relationship between the tree cover and number of images with erosion
- 222 of the 342 images with erosion had very few trees
- Only 9 of the 342 images with erosion were completely covered by trees

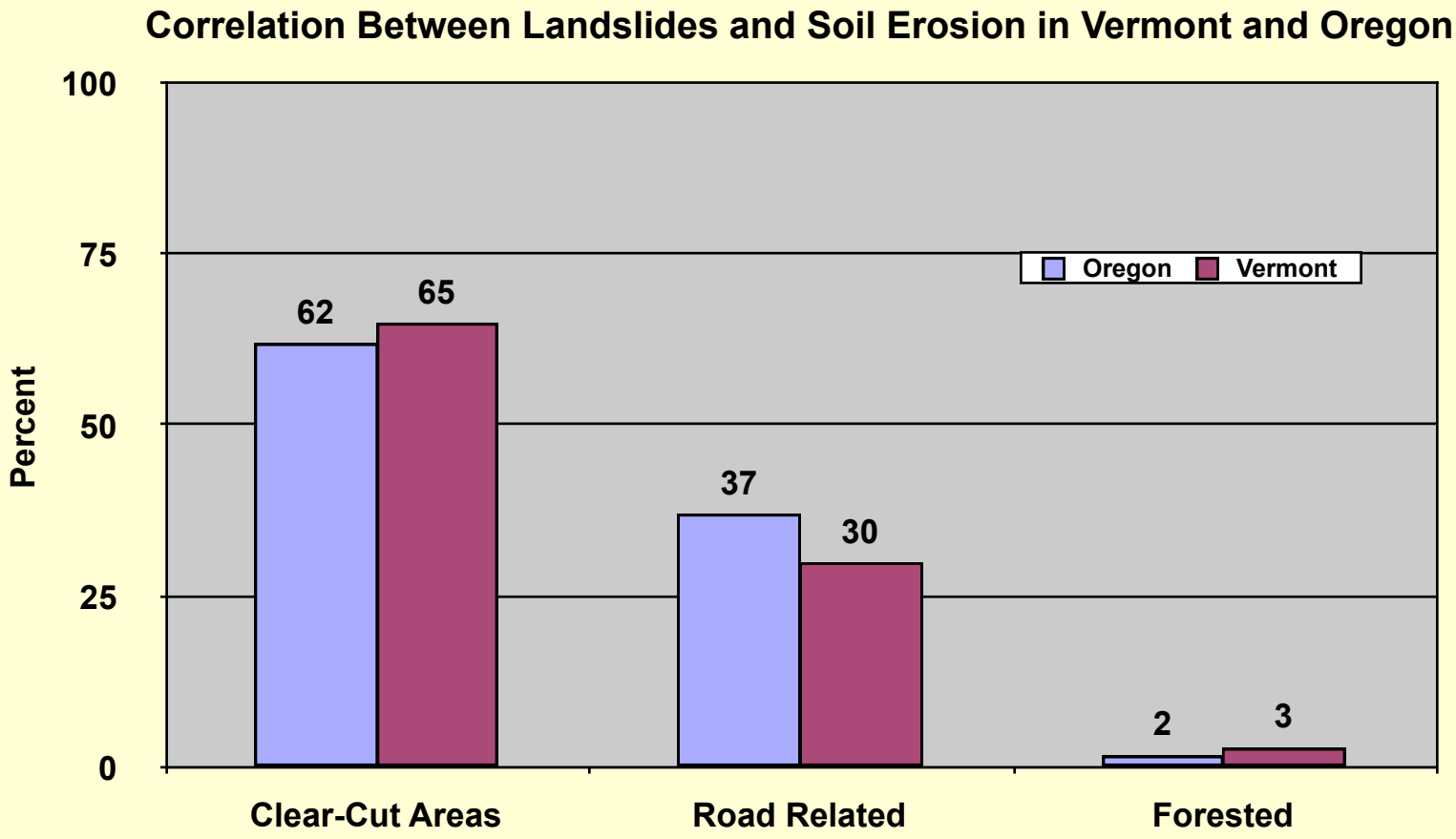
Frequency and Size of Eroded Slopes Correlate with Tree Cover



Notice there is a smooth trend of increasing tree cover and decreasing erosion. This means the smaller areas of erosion are always more common than larger areas of erosion, no matter how many trees are present.

Conclusions and Connections

- 65% of the erosion occurs in clear-cut areas
- Only 3% of the erosion occurs in completely forested areas
- Data from Vermont spanning over 150 years closely matches data from a 1996 Storm in Oregon
- Both data sets suggest people catalyze soil erosion by clearing slopes and building roads



If human actions increase the amount of soil erosion in both Vermont and Oregon by clearing vegetation from the landscape and building roads, it is probably happening in most places throughout the world.

Final Thoughts

- What can you do to decrease the amount of soil erosion in Vermont, in your town, or in your yard?
- What happens to all of the soil that gets eroded away from slopes?
- Why would erosion occur more often in cleared areas than anywhere else?
- How do trees help slopes resist erosion?

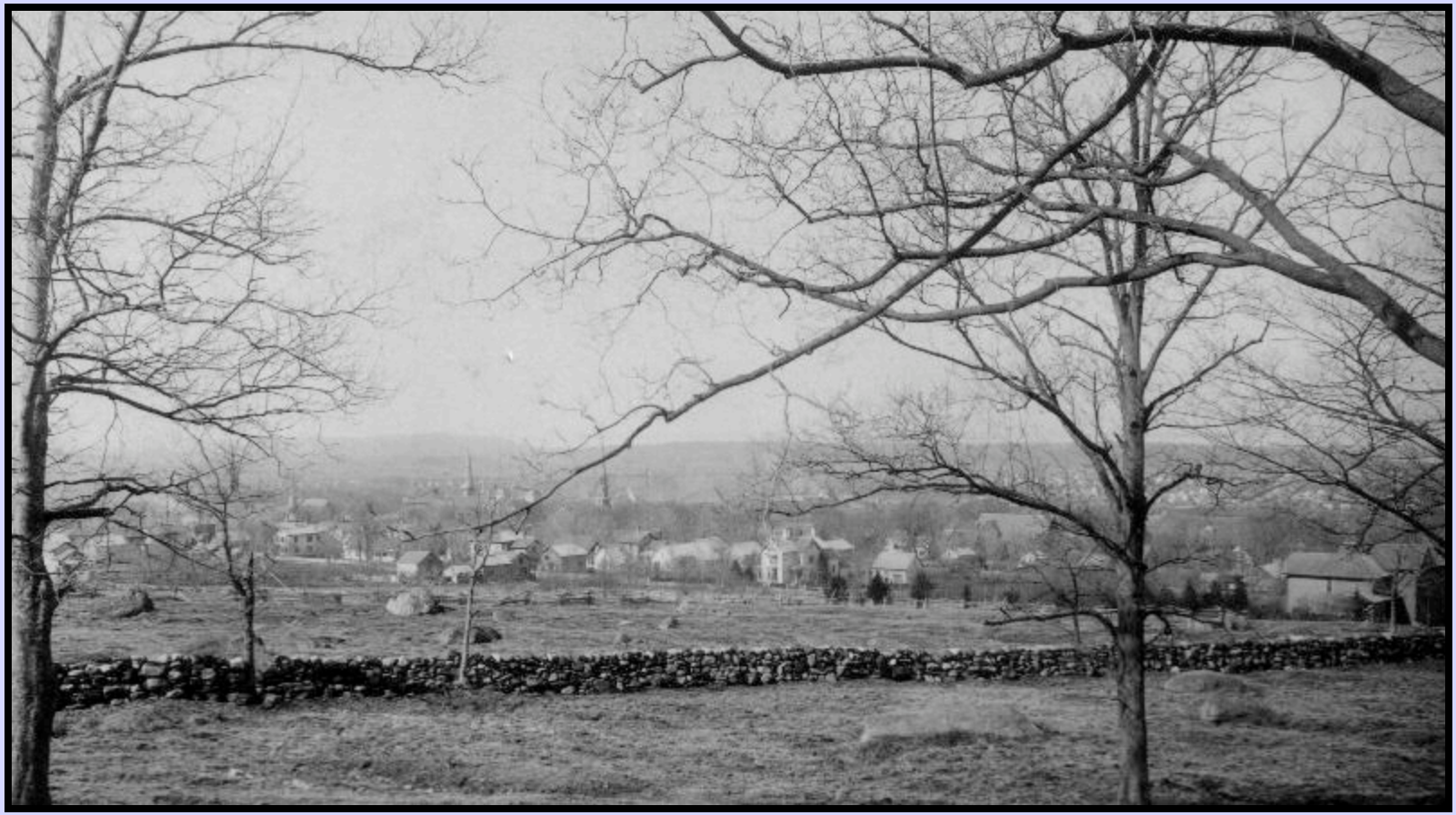
Where have all the forests gone?

A History of Deforestation in Vermont

By Charles Dabritz

Have you ever seen a stone wall in the middle of the woods?

That means the land you are looking at was once cleared.



Look at this picture from St.Albans taken in 1890. The fields are open and lined with stone walls. (LS07406)

The forested landscape we know today is a new development.

Here, a typical fall scene with a farm and wooded hillside in the distance. Washington, 1959. (LS01993)

One hundred years ago, the state was a different place, with over 70% of the land cleared.[1]

Here you can see the cleared hillside of Table Mountain in Stockbridge. June, 1897 (LS07428)

The struggle to find a balance between humans and the forested landscape of Vermont has been a long one.

This is the statehouse in Montpelier around 1900. Notice the hill behind the state house has been completely cleared. (LS04027)

The first European settlers began the deforestation of Vermont.

They lived as farmers, clearing land to meet their needs. Very much like this farm in Tweed Valley, 1897. Both the hill and valley have been cleared. (LS07409)

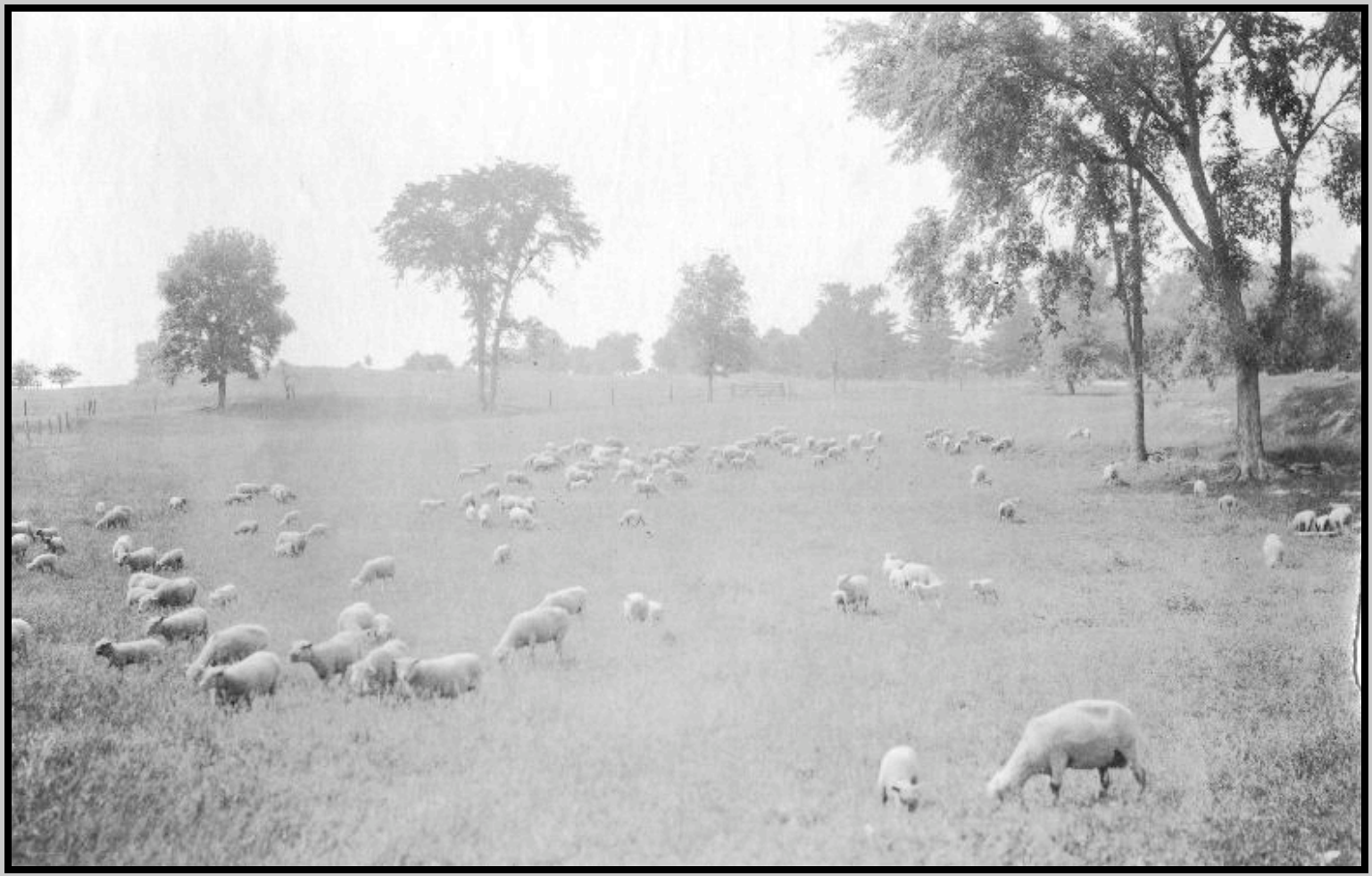
Danville (no date)LS03876

The first farmers had a tough job to do. They had to farm in an area that was not always fertile, very rocky, and certainly not flat!

By 1840, most Vermonters lived or worked on a farm, but this would soon change.

This illustration from the 1800's shows a group of Merino sheep. Merino sheep started a ranching craze in Vermont in the mid 1800's . No date. (LS00409)

By the 1840's there were 6 sheep for every 1 person [2]



Sheep grazing in St. Albans. No date. (LS00666)

Ranching became a popular way to use the land, because sheep can graze on almost anything. All over Vermont people cleared land to feed their sheep and their bank accounts.

Here a Lyndon sheep rancher keeps watch over his flock. No date. (LS04384)

Ranching died out in the 1850's, but Vermonters discovered something else to keep their land and their minds occupied…buried treasure.

A miner in Johnson around 1937. (LS02223)

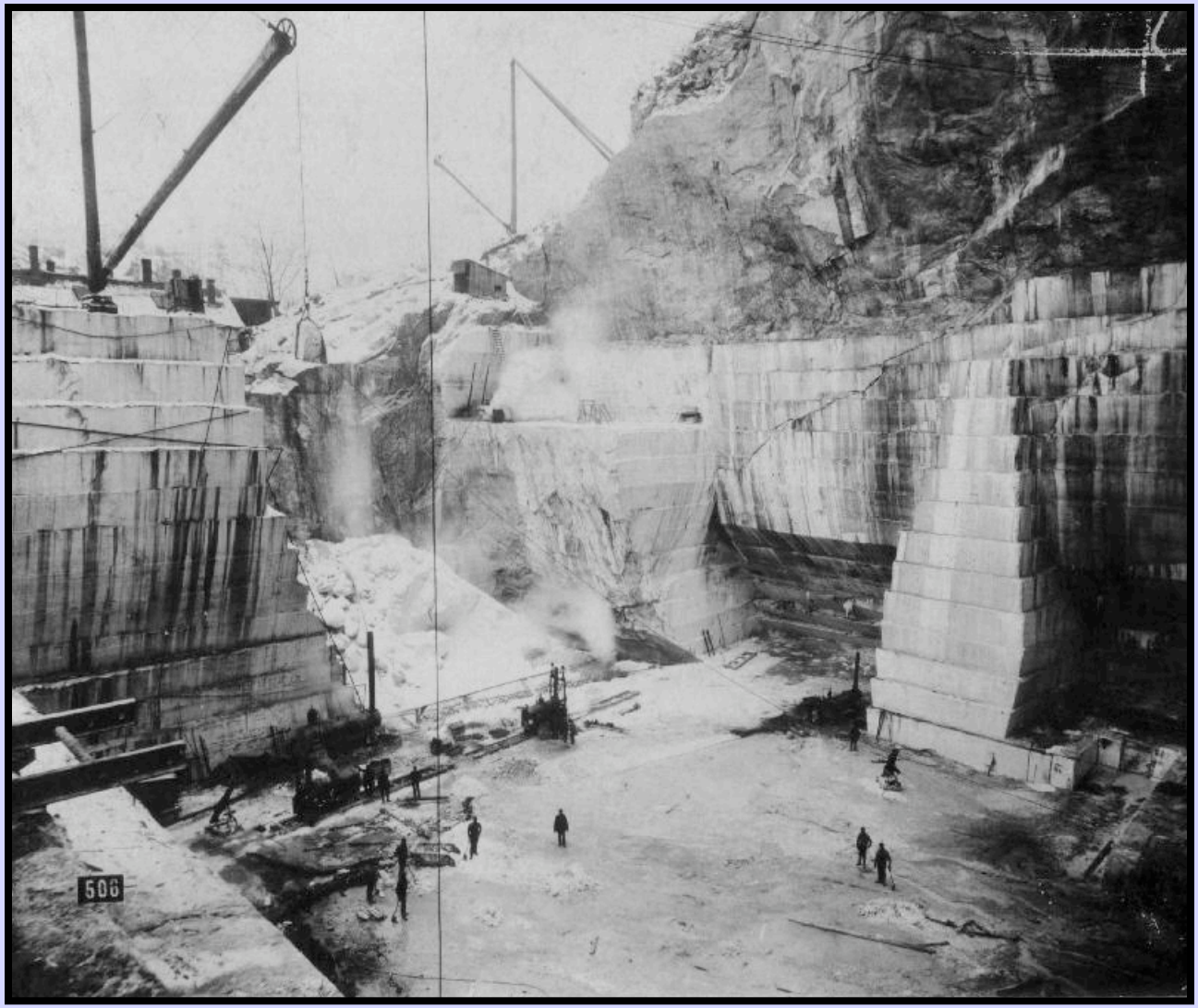
The treasure was not gold or silver, but stone…slate, marble, granite, and many other rocks were taken out of the earth.

A slate quarry and mill in Fair Haven, 1907. (LS00684)

Trees were cut, and the ground dug into to extract the heavy stones…

This granite quarry in Barre shows workers and a large derrick that was used to lift the stone. No date. (LS02207)

The geology of Vermont yielded a wealth of usable rock…



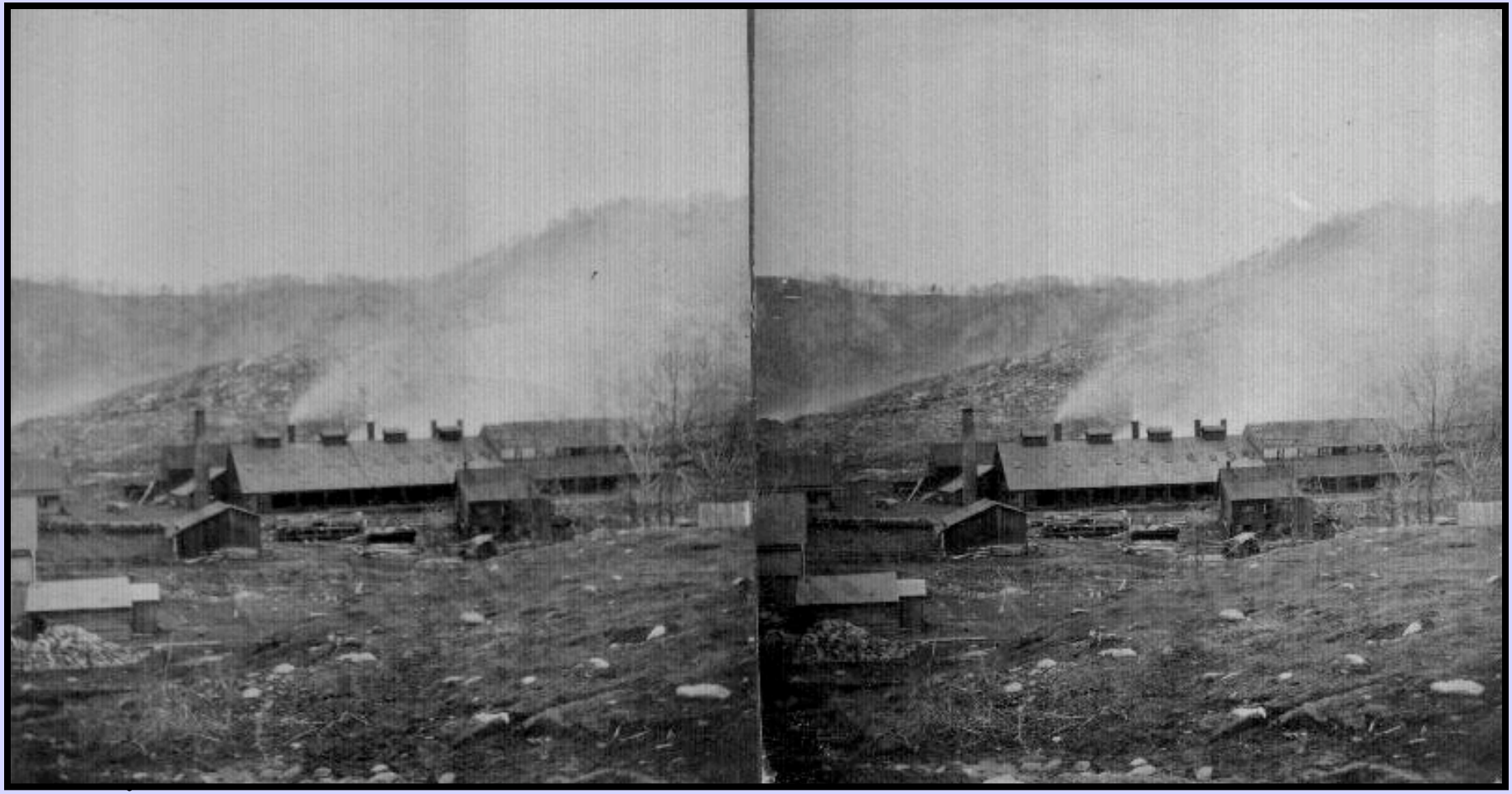
Here people work in a marble quarry in Proctor, 1920. Look how they cut into the earth to get out the rock. (LS02247)

No gold, no silver, but there was at least one metal found…copper.

The copper that was mined in Vermont left a lot of waste behind. Look at the effect of the waste on the landscape at the Ely copper mine in Fairlee. What happened to all the trees? 1896.

(LS01535)

The trees were needed to fuel the fires to smelt the ore. Poisonous gasses produced in the process killed many others.



The smelting furnace from this mine in Vershire, no date.
(LS04752)

Vermont's forests continued to shrink once people found ways to move its trees to other places. Logging became the biggest industry in the state.

The men in this picture are pulling logs from a river to send to the mill. This is the Smith Mill in Granby. 1890. (LS02156)

A good price for lumber created a clear cutting phase in Vermont's history.

This painting from the 1850's shows the an early phase of that process. Look how all the trees are beginning to be removed. (LS00849)

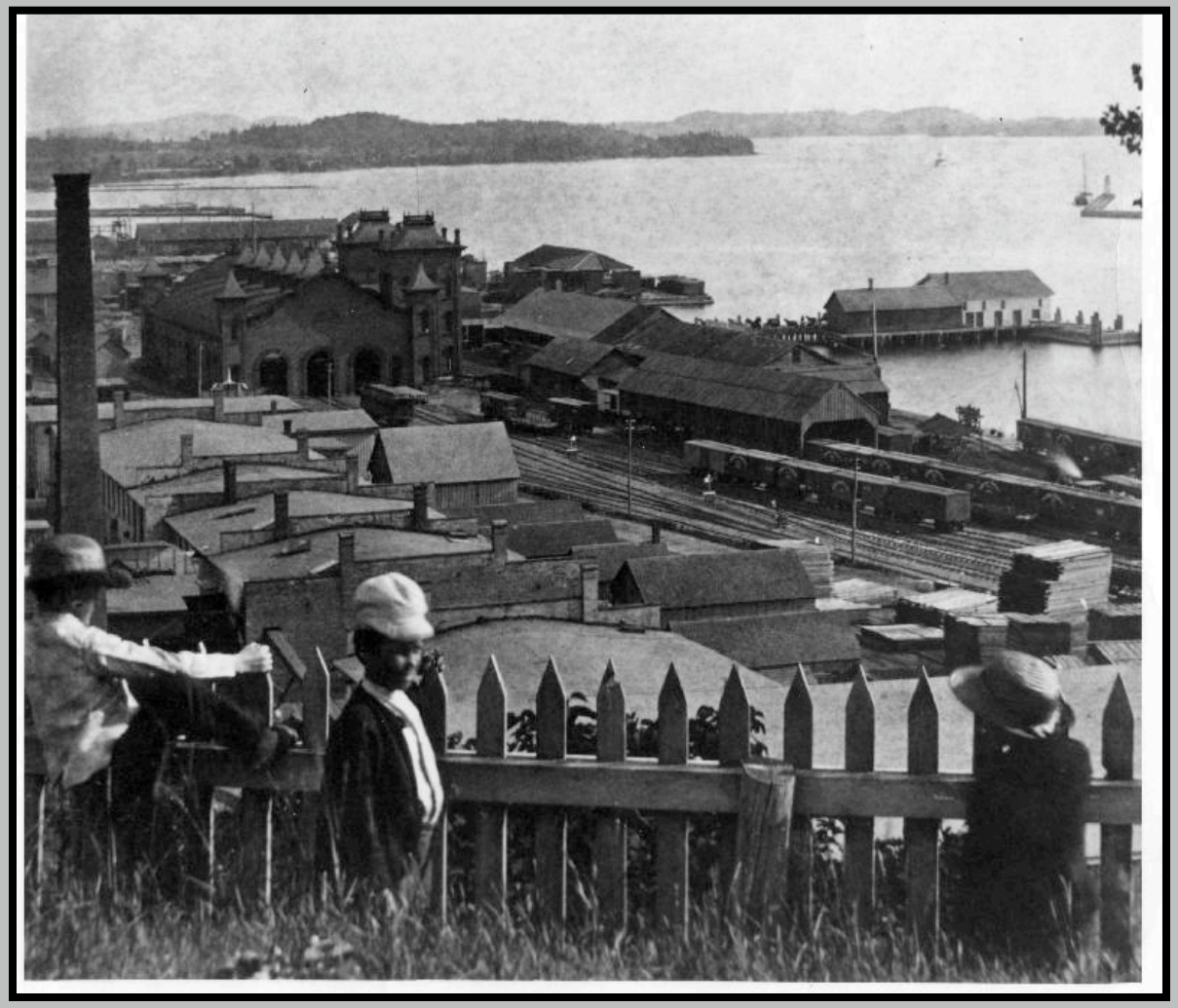
Once trees were cut there were several ways to get them to a mill or port…

Sometimes logs would be “driven” down stream in large numbers, and then stacked like in this photo. No date. (LS02112)

The use of railroads allowed wood to be moved more quickly and with less cost.

Once wood was stacked, it could be loaded onto trains and hauled in large numbers. This photo from East Haven shows men loading logs onto a train. No date. (LS02158)

So many trees were shipped out of Vermont that Burlington, on Lake Champlain, became one of the biggest timber shipping ports in the United States! [(3)]



Several children look down on the lumber port from Burlington's Battery Park. Look at how the railroad tracks lead right into the port. No date. (LS00078)

Logging had a huge impact on the landscape. By the 1870's the forests were so depleted much of the wood shipped from Burlington came from Canada. [4]

Here is another view from Battery Park. Notice all the stacked lumber ready to ship.

No Date (LS02972)

New technologies brought new challenges…

Rutland, 1914 (LS06466)

The automobile stuck in the muddy dirt road would need some help.

More land was cleared to pave roads and make way for the future…

Barton, 1908. (LS07028)

As the population increased, so did the need for better roads. Vermont was ready to join the Interstate Highway system. But first they had to turn this:

The future site of the interstate in Sharon-Royalton. 1967 (LS07120)

Into this:

Not only did they need to clear a path for the road, but notice the area around the future highway. It has been cleared to support the construction. Montpelier, 1959 (LS04414)

Even the rocky terrain of Vermont did not stand in the way of these new generation roads…both trees and rock were cleared to make way for I-89.

A crane and boulders rest in what will be Interstate 89 outside of Montpelier. 1959 (LS06102)

Not until the 20th century did people began to “preserve” forests, and think about ways to interact with their environment in nondestructive ways.

Here two men plant trees. Look at all the saplings the man in the background has in the basket. No date (LS05766)

Old view of Topsham No date. (LS00352)

With ample time and care, forests have returned to Vermont.

These two views of Topsham show extensive reforestation of the area. Where land was once cleared, trees have taken over.

Present view, 2000

Vermont still has farms and quarries. People still raise sheep and log their land, but new practices have been developed so these are done more in balance with the natural landscape.

Here you can see a farm in Peacham with a forested background. 2004 (LS00026)

And sheep grazing at Shelburne Farms.2004. (LS02960)

Reforestation has taken hold in Vermont. By looking at our past, we can become more aware of our future, and ensure that the forested landscape of Vermont is used in a healthy, productive manner.

The once cleared hillside behind the state house has now been reforested. 1900. (LS04027) 2000. (LS00226)

Resources:

1. Albers, Jan. *Hands on the Land* MIT Press. Cambridge, MA. 2000 p.202 (back to slide 4)
2. Albers, 246 (back to slide 9)
3. Albers, 226 (back to slide 21)
4. Albers, 225 (back to slide 22)

All photos are found as part of the Landscape Change Program at:

http:// www.uvm.edu/landscape

For information on the early settlers impact on the environment see:

Cronon, William. *Changes in the Land*. Hill and Wang, New York .1983

For information on New England's sheep craze see:

Wessels, Tom. *Reading the Forested Landscape*. Countryman Press. Woodstock, VT. 1997

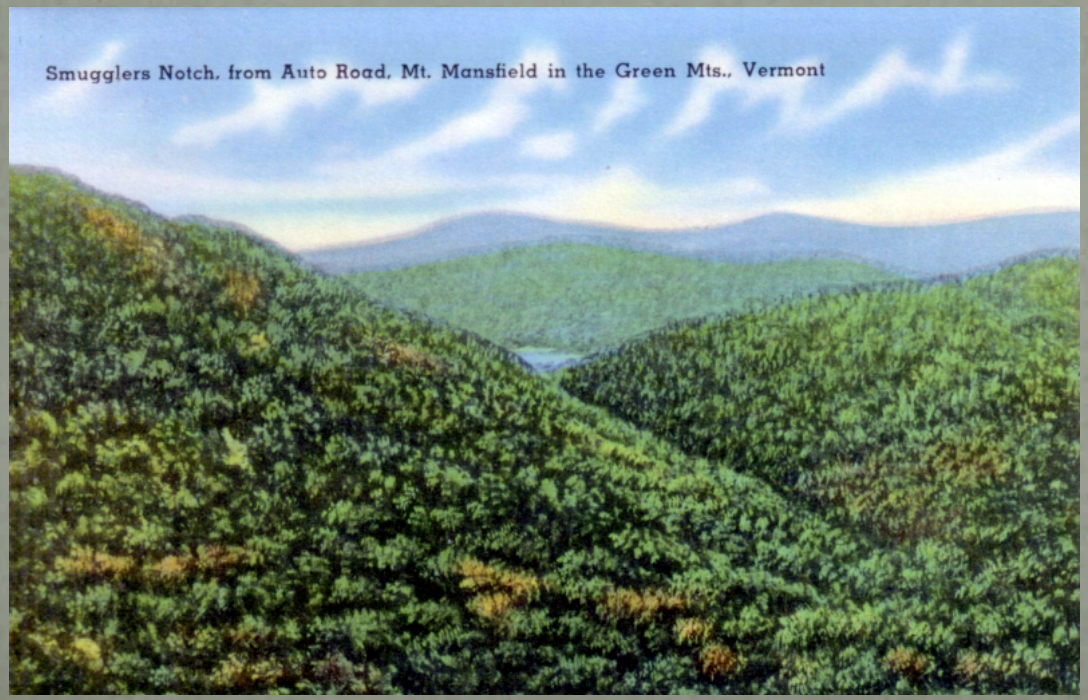
The Forests of Vermont: Here Today, Gone Tomorrow

A history of Vermont's Forested Landscape

By Kyle Adelman

Today's Vermont Forests

Currently encompassing 4.6 million forested acres, Vermont's land is 78% forests making it the fourth most heavily forested state in America. 82% of Vermont Forests are privately owned.



LS11475 Shows a 1915 postcard of the heavily forested Smuggler's Notch in Stowe.

But it hasn't always been like this…

In the 1760s, estimates propose that 90% of Vermont land was covered in pristine forest.

LS00797 Drawing of Lake Memphremagog 1700 – 1800.

Once There Was Virgin Forest

The forest at the time included many tree species, some of which were six feet in diameter, as tall as a thirteen story building, and more than 300 years old.

LS06457 Taken in 1913 shows a picture of a large and healthy old Chestnut tree in an unknown town. These were once a common sight in the Vermont landscape, but due to logging and blight these trees are now a rare in Vermont.

Native American Impact

The Abenaki Native Indians were the first humans to impact Vermont's forests clearing river and lake sides with fire to create land for dwellings and crops.

LS03538 This 1875 stereoview image depicts the Black River and cleared slopes. The Abenaki called the Black River Elligo-sigo which means "a good place to plant crops or return to them".

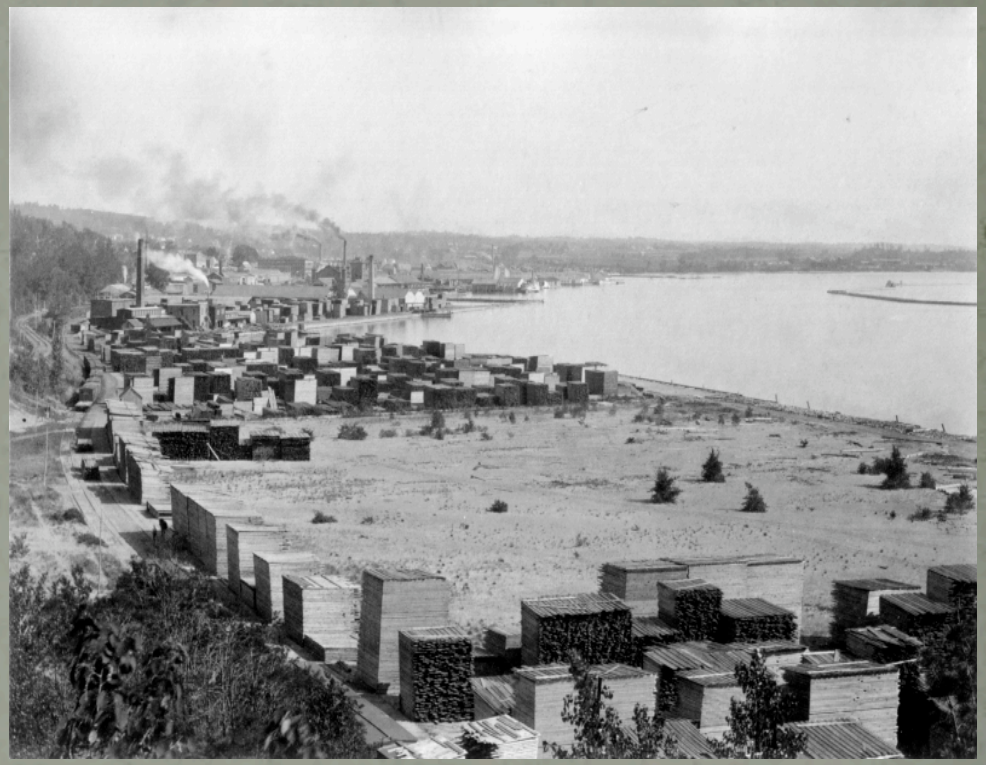
Clearing for Farmlands

European deforestation in Vermont began in the Champlain Valley. Farmers cleared forests to create fields, and loggers cut giant softwoods for out of state resale.

LS10788 Image was taken in 1958 in an unknown town. It depicts a clear cut field.

Booming Industry

By the mid-1800s logging overtook agriculture as Vermont's main industry. Around this time Burlington was considered the third largest lumber port in the country.



LS10343 Shows the Burlington waterfront with train tracks and stacks of lumber between 1860 and 1880.

Clear Cutting Consequences

The landowners of these times did not consider how to renew their timber resources; neglectful clear cutting left the land susceptible to soil exhaustion, loss of wildlife, erosion, flooding, and increased fire danger.

LS03011 Shows an 1875 clear cut slope with soil erosion occurring along the shore line in the town of Barnard.

Deforestation

Prior to the 20 th century an estimated 70% of Vermont's lands were clear cut and deforested.

LS00411 Presents a clear cut slope with slash debris in New Haven in 1875.

Abandoned Field Regrowth

As westward expansion gained in popularity, Vermont's economy began to suffer. Farmlands began to be abandoned and the price of farms dropped dramatically. The rate of Vermonter migration was extreme and by the year 1870 over 1/3 of residents moved out of state.

LS08595 Image shows Camel's Hump Mountain from an unknown town. Taken in 1968 this image has an abandoned clear cut field in the center which is experiencing regrowth of small bushes in the foreground.

A New Breed of Forest

After all of the extensive forest cutting that occurred, the forests of Vermont rebounded but in a different form. Before any cutting took place, Vermont was largely a softwood forest, the natural regeneration of abandoned logging areas and farms brought Vermont a new forest population

LS07428 Depicts Table Mountain with a cleared hillside that is experiencing regrowth. This photograph was taken in Stockbridge in the year 1897.

Regrowth

Much of the deforested land has been allowed to return to a healthy forested state.

LS00878 Shows the Montpelier State House in 1870 with a cleared hill side in the background.

LS11203_001 Depicts the State House in 2007 with a reforested hill side.

Sustainable Harvesting

- Today the lumber industry functions much more conscientiously and massive clear cutting has stopped. Now loggers make their cuts with the future in mind, and areas are often planted with seedlings to ensure the forest will be renewed.

LS08895 Lumber being cut in a 1955 in an unknown town.

Conclusion

- Vermont's forests are among the states' most valuable resources. The land has experienced a long history of natural successional growth , interrupted by the clearing and logging efforts of men. It is important for people to understand the history of the land they live on, in order to comprehend how and why it developed its current appearance.

LS05850 Planting Trees in Royalton in 1939.

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Simpler Times:

A Collection of Vermont General Stores

by

Christopher O'Donnell

January 12, 2008

Statement of Importance

Vermont is known for many things: maple syrup, autumn, great cheese, and the small town friendliness and ambiance that many communities across Vermont possess. Part of that small town ambiance is the presence of a general store, where the locals gather, shop, and converse. Historically, general stores served in absence of the many specialty stores that we see today. A general store was not only a place to obtain food, but clothing, hardware and other general household supplies, locksmith services, often the local post office was located in a general store, and many other services housed under one roof. Many people from outside of Vermont envy this gathering place where personal relationships develop, since it is lacking from so many larger communities. In the following slideshow, I will show several historical examples of Vermont general stores, where you can see how these iconic establishments looked in the past.

Charles D. Warren General Store

Williston, Vermont

1898-1905

LCP #: LS02587_000

East Braintree General Store

East Braintree, Vermont

The above images display how the East Braintree General Store looked around 1907, and compares it to how it looked in 2007. With 100 years passed, not much has changed in the overall structure, with the farmer's porch still intact. In the midsts of modernization and corporate box stores, many of Vermont's general stores are still open today, providing their community with goods and services, along with helping the local economy.

Foreground Image LCP #: LS01776_000

Background Image LCP #: LS01776_001

Lincoln General Store
Lincoln, Vermont

Time can prove to be a huge influence in general store architecture. This picture, taken sometime between 1870 and 1900, depicts a very common architecture style for that time period, with second floor balconies and a farmer's porch.

LCP #: LS00328_000

Lincoln General Store
Lincoln, Vermont

Also, time can prove to change the architecture drastically. The Lincoln General Store, displayed above in 1994, has undergone a serious makeover compared to the previous historical photograph.

LCP #: LS00328_001

General Store of E.W. Gilman
Marshfield, Vermont

This photograph was taken on or around 1912 for a postcard. The Greek Revival style of the store indicates that is was most likely constructed in the mid-19th century.

LCP #: LS01762_000

General Store of E.W. Gilman
Marshfield, Vermont

Time does not always prove to change the appearance of a general store. This image was taken in 2005. While some signs of modernity are apparent, the overall structure has seen minimal change.

LCP #: LS01762_001

Johnson & Green General Store
Canaan, Vermont

This photograph, taken between 1900 and 1910, depicts a very common aspect of general stores: housing the local post office. What is not so typical of general stores that is shown here is the selling of fur coats. North Star Furs was a featured product at Johnson & Green.

LCP #: LS00127_000

The Green Brother's Store
Burlington, Vermont

Unfortunately, not all general stores survive the test of time. This picture taken in 1929 shows the remains of The Green Brother's Store, located in downtown Burlington.

LCP #: LS10426_000

The Kellogg Store
Plainfield, Vermont

This photograph displays the Kellogg Store as it looked in 1879. The store was built in 1804 by Andrew Wheatley, and is the second oldest continuous business in all of New England.

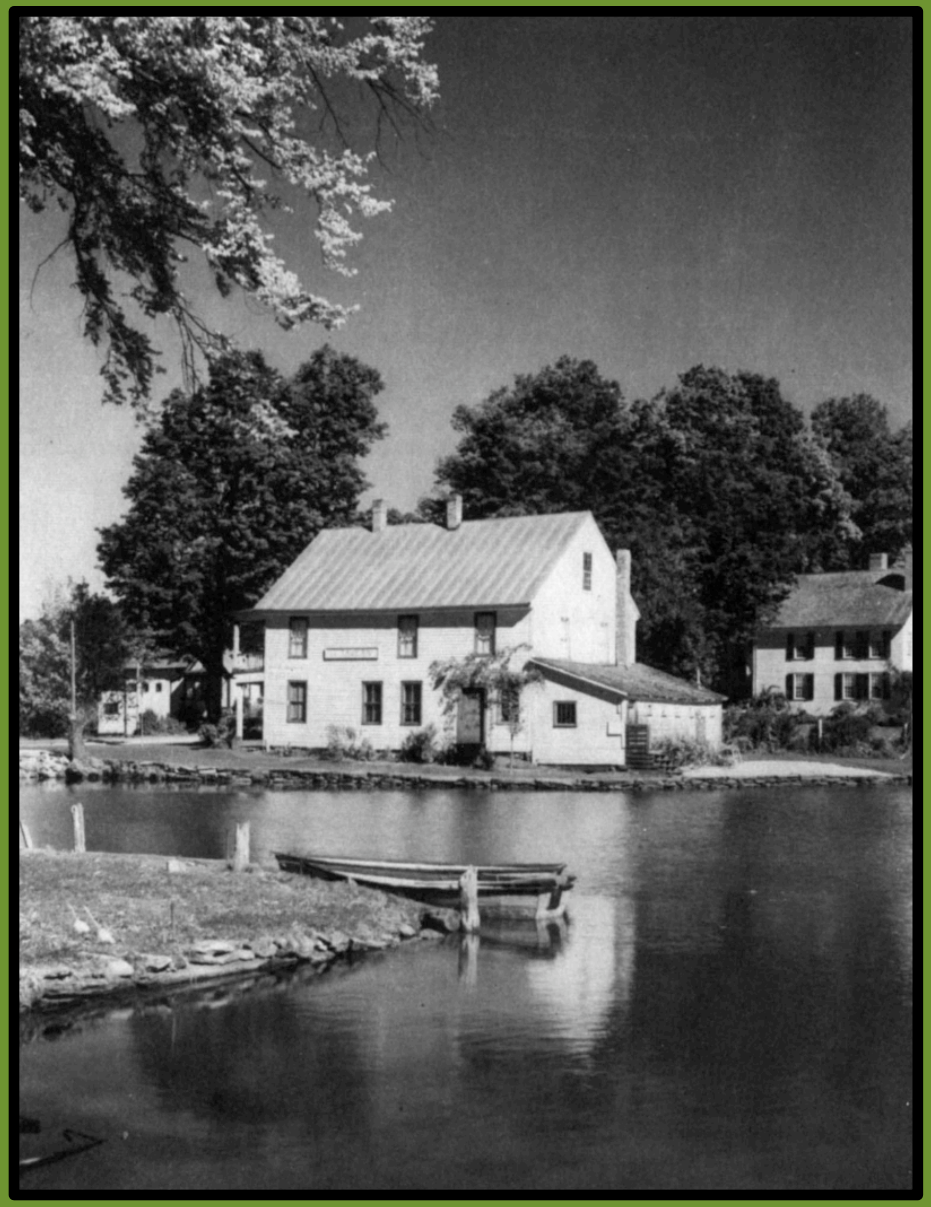
LCP #: LS01914_000

Pope's Store
Greensboro, Vermont

In this rare image, the interior of a general store dated around 1910 is displayed. The store has an emphasis on sugaring equipment, which provides an insight as to how prevalent maple sugaring was to the local economy during this time frame.

LCP #: LS02778_000

Barnard General Store
Barnard, Vermont



A Vermont general store would not be complete without a picturesque setting. The Barnard General Store and post office, located in the same building, is displayed in this photograph on the bank of a river in 1943.

LCP #: LS01333_000

South Peacham General Store

South Peacham, Vermont

Historically, general stores of Vermont have been a place to display local advertisements and fliers, as seen in this early 20th century photo of the South Peacham General Store. Today, this is still a time-honoured tradition to convey news and promote local businesses.

LCP #: LS12324_000

S.Y. Walker's Store
Brattleboro, Vermont

The above image is a stereoview of S.Y. Walker's Store between 1870 and 1880. Stereoview was a popular image format during this period, as it allowed people to view a photograph in 3D form.

LCP #: LS03482_000

Londonderry General Store
Londonderry, Vermont

This picture, taken in 1916, displays the newly constructed general store for the town of Londonderry, adjacent to a covered bridge displayed on the far left. The postcard is appropriately named "The New Store."

LCP #: LS04541_000

Londonderry General Store
Londonderry, Vermont

The F.A. Morse Store was the general store of Rutland when this photograph was taken, some time between 1860 and 1870. The porch is decorated with products, signs, and advertisements, making it a welcoming establishment.

LCP #: LS08498_000

New Maple Corner Store
Calais, Vermont

This last slide displays the Maple Corner Store located in Calais. The historical photograph shows what the store looked like in 1913, before the devastating fire that destroyed the store in 1948. However, the fire would prove to be ineffective in closing the store. It was quickly rebuilt and the background picture shows what it looked like in 2000.

Background Image LCP #: LS00146_001
Foreground Image LCP #: LS00146_000

Conclusion

Vermont general stores have been vital to many communities. While some stores have either closed down due to financial reasons or have been transformed into another establishment, many are still thriving businesses and assets to their community. They serve as the town gathering place, the best store to get chicken at, a tourist attraction, the local locksmith, or possibly even the local 911 dispatch. Either way, the general stores of Vermont are well established within their community, and the loss of such a store would be much more than the loss of a place to buy milk and eggs from.

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Gone Hunting:
A Look at Vermont's Heritage

Kelly Koetsier

LS09086

- Vermont is a state that many would consider to be very culturally rich, and proud to celebrate its heritage. For centuries one such celebration, for many Vermonters, has been hunting. Although hunting is very deeply rooted in Vermont, it is not celebrated by all, for reasons which are vast. So let’s spend a day in the woods and try to see what hunting has to offer.

Ah, deer camp, and it looks like all the boys have arrived early. Is anybody else cold, let's go inside. (LS07066)

- This picture is dated 1935 and highlights the outside of the Barre Hunting Club with a group of its members. This location is still believed to be an active hunting club.

No better way to catch up and plan for the next day then with a game of cards and a drink. Looks like our hunter is tired and is going to bed. (LS07074)

- This picture highlights a group of hunters in 1935, but the act of hunting is actually centuries old. Hunting was originally done as a method of proving food, shelter and clothing (JNH), but is now considered a source of recreation (Microsoft Encarta).

5 AM, everybody up, its time for breakfast. Don't want to hunt all day on an empty stomach. (LS07064)

- While in the woods, hunters usually hunt by themselves or in small groups. But while back at camp, there is no better time then to sit around and converse with friends.

Look at the time, 6 AM. It's time to go. Good luck boys, we're headed to find the big bucks. (LS09036)

- This picture is dated 1978 and highlights a pair of hunters using a spot and stalk method of hunting. The purpose of this style of hunting is to cover a lot of ground, and trying to see what is out there (JNH).

Let's got to the top of the hill, we ought to be able to see. (LS09038)

- This picture, also from 1978, highlights the same two hunters as the previous slide, and it is very clear that the hunters have covered some ground. This can be observed by viewing the forest cover type, here the hunters are in a clearing, surrounded by conifers, and in the previous picture they could be seen in a deciduous forest with much larger trees.

This looks like a good spot, can you see anything? (LS09086)

- While hunting it is very important to keep a close watch on what is going on around you (Dizard). In this picture from 1962, two men can be seen in the process of trying to spot deer in a field.

No, not from here, we should head down into that swamp, there's always a good one down there. (LS10721)

- Another common method of hunting is known as stand hunting. While hunting on a stand the goal is to sit and wait, letting the desired game come to you. For this method of hunting, a hunter sets up in an area were he has the ability to see a large area, like in this picture from 1955.

Alright, alright, we should go down there but I need a break first, I am not as young as I used to be. (LS09039)

- After covering a lot of ground during a day, a break is always welcome.

Hey, get up, you know if you lie down, you'll never get back up, we have deer to find. Hey whose dog is this? (LS03357)

- This undated picture, is taken at Shelburne Farms, and highlights a very different style of hunting. By the presence of the shot guns and dogs, these are likely bird hunters. In this style of hunting dogs are used in the seek out and recover game.

That's my dog, you boys got your licenses? Sure do officer, what brings you way out here?
Just doing my job. (LS09054)

- At the turn of the 19th century, over hunting was such a problem, that some populations were almost entirely wiped out (DHG). As a result states began to create rules are regulations that were designed to protect game species. Game wardens, like the one in this picture, are state officials that are designated with enforcing these laws.

Hey let's get down in that swamp. I just know he is going to loop around and push some deer right to us. (LS09085)

- This 1962 picture shows two hunters looking out over a swamp that is surrounded by heavy forest cover. Areas like this are very thick, and deer will bed down in an area like this to hide and escape predators (JNH).

Hey, look, a deer! It's a buck, shoot, sh… BANG.
Nice shot, he went down right over there. (LS09088)

- We have seen these hunters before in 1962, and although they are in a very similar area, judging by the background, they have very different body language. In this photo one hunter is looking through binoculars, and the other is ready with his gun, it is very likely that they have just spotted something.

Now the real fun starts, let's get this old boy out of here and back to camp. (LS07073)

- This 1935 photo shows a hunter who has had a little bit of success. He can be seen dragging his deer with a rope through snow and around stumps. The front legs can be seen tied to the neck of the deer, this helps in preventing them from getting caught on trees and stumps.

I don’t remember crossing this fence, but I guess we have to now. I think camp is just through that thick stuff. (LS07072)

- Part of being a hunter, means that you need to hunt ethically. A major part of this, is that if you shot and animal, it is your responsibility to get it out of the woods, no mater what’s in your way, including a fence, like in this 1935 picture.

Almost there, I can here the boys down there at camp. I could really use a cup of coffee. (LS07071)

- Dragging a deer with two people is always a lot easier, especially when there is snow on the ground, and the under story is very thick.

Wow. Looks like we aren't the only ones who had some luck. (LS07069)

- This 1935 picture highlights the success of a couple of hunters at the Barre Hunting Club. Hunting seasons have a tendency to overlap, allowing hunters the chance to harvest different types of game, at the same time, which is why there are both bear and deer in this photo.

After a long day in the field, the guns need cleaning. A great time for one last congratulations. (LS07070)

- Cleaning your gun makes sure it stays in optimal condition. This falls under the category of ethics, an improperly cared for gun has a chance to become off in its aim, which increases the likely hood of wounding an animal (DHG).

Unfortunately it's time to go. Let's load up your deer and get out of here. Another hunting season has come to an end. (LS07067)

- Today, especially with the increase of anti-hunters, the act of showing off your deer on the hood of your car is no longer the preferred method. In 1935, when this picture was taken people were usually very interested to see the success of hunters. Much of this feeling comes from the deep rooting hunting has in Vermont's Heritage.

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You Can't Get There From Here: the coming of the Interstates to Vermont

LS07036_000

LS07036_001

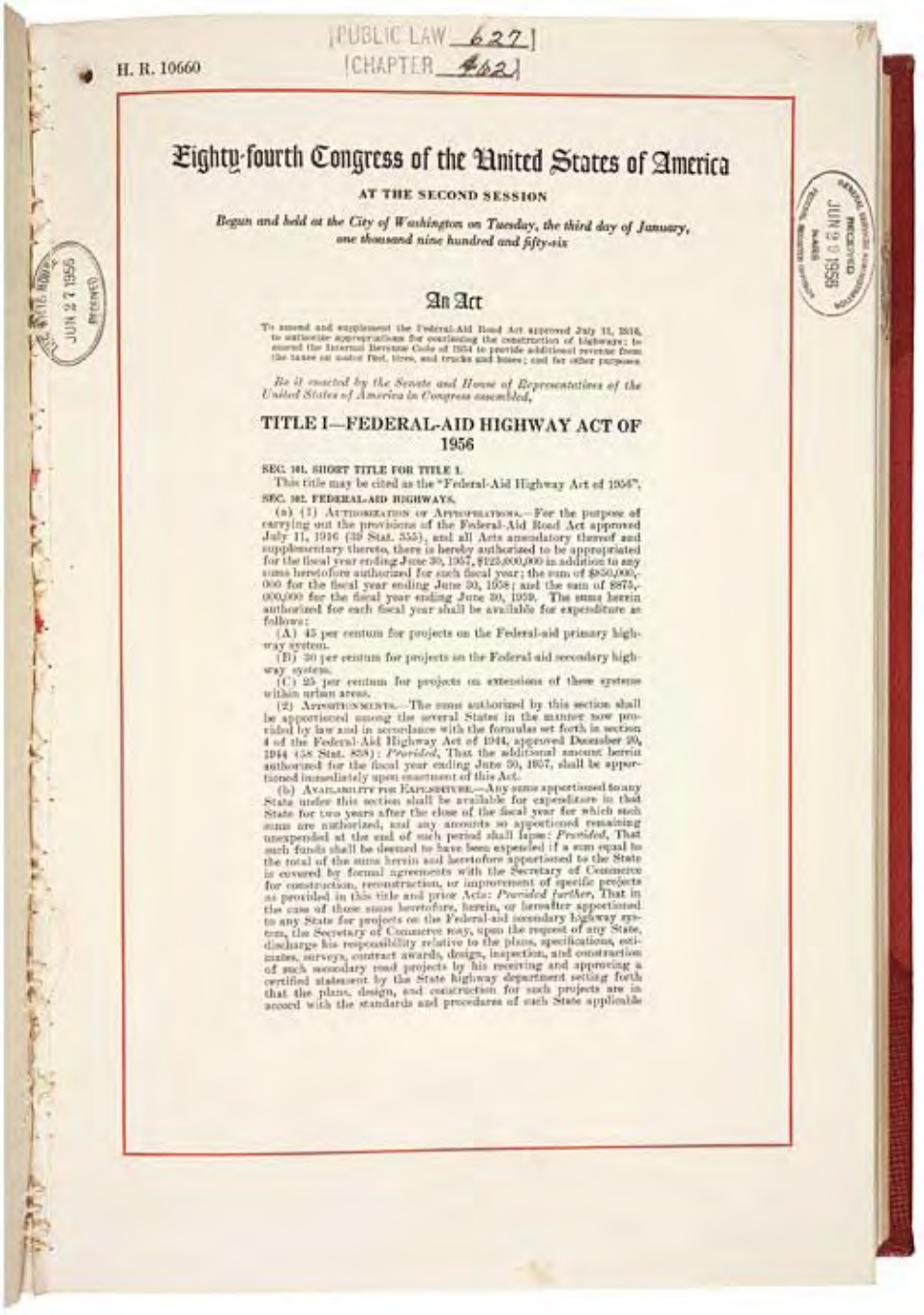
Interstate 89 between Williston and South Burlington in 1962 and then two years later in 1964. These photos illustrate the transition from small roads to major highways.

By Nancy Columb

The first idea for a set of superhighways came from President Eisenhower when he traveled across the US as a lieutenant colonel in the army (right)[1] and when he was in Germany and witnessed the Autobahn[2].

The Autobahn increased vehicular safety and could be used for military purposes; this is what President Eisenhower envisioned for the United States.

In 1956 President Eisenhower received support from the Federal-Aid Highway Act to begin constructing what he called the "National System of Interstate and Defense Highways." [3]



[PUBLIC LAW 627]
[CHAPTER 462]

H. R. 10660

Eighty-fourth Congress of the United States of America

AT THE SECOND SESSION

Begun and held at the City of Washington on Tuesday, the third day of January, one thousand nine hundred and fifty-six

An Act

To amend and supplement the Federal-Aid Road Act approved July 11, 1916, to authorize appropriations for continuing the construction of highways; to amend the Internal Revenue Code of 1954 to provide additional revenue from the taxes on motor fuel, tires, and trucks and buses; and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

TITLE I—FEDERAL-AID HIGHWAY ACT OF 1956

SEC. 101. SHORT TITLE FOR TITLE I.

This title may be cited as the "Federal-Aid Highway Act of 1956".

SEC. 102. FEDERAL-AID HIGHWAYS.

(a) (1) AUTHORIZATION OF APPROPRIATIONS.—For the purpose of carrying out the provisions of the Federal-Aid Road Act approved July 11, 1916 (39 Stat. 355), and all Acts amendatory thereof and supplementary thereto, there is hereby authorized to be appropriated for the fiscal year ending June 30, 1957, $125,000,000 in addition to any sums heretofore authorized for such fiscal year; the sum of $850,000,000 for the fiscal year ending June 30, 1958; and the sum of $875,000,000 for the fiscal year ending June 30, 1959. The sums herein authorized for each fiscal year shall be available for expenditure as follows:

(A) 45 per centum for projects on the Federal-aid primary highway system.

(B) 30 per centum for projects on the Federal-aid secondary highway system.

(C) 25 per centum for projects on extensions of these systems within urban areas.

(2) APPORTIONMENTS.—The sums authorized by this section shall be apportioned among the several States in the manner now provided by law and in accordance with the formulas set forth in section 4 of the Federal-Aid Highway Act of 1944, approved December 20, 1944 (58 Stat. 838): *Provided*, That the additional amount herein authorized for the fiscal year ending June 30, 1957, shall be apportioned immediately upon enactment of this Act.

(b) AVAILABILITY FOR EXPENDITURE.—Any sums apportioned to any State under this section shall be available for expenditure in that State for two years after the close of the fiscal year for which such sums are authorized, and any amounts so apportioned remaining unexpended at the end of such period shall lapse: *Provided*, That such funds shall be deemed to have been expended if a sum equal to the total of the sums herein and heretofore apportioned to the State is covered by formal agreements with the Secretary of Commerce for construction, reconstruction, or improvement of specific projects as provided in this title and prior Acts: *Provided further*, That in the case of those sums heretofore, herein, or hereafter apportioned to any State for projects on the Federal-aid secondary highway system, the Secretary of Commerce may, upon the request of any State, discharge his responsibility relative to the plans, specifications, estimates, surveys, contract awards, design, inspection, and construction of such secondary road projects by his receiving and approving a certified statement by the State highway department setting forth that the plans, design, and construction for such projects are in accord with the standards and procedures of such State applicable

LS08768

It didn't take long for construction to start in Vermont. This is the beginning of some construction on Interstate-91 in Brattleboro in 1958.

There was more than just road to be built when it came to Vermont's hilly and uneven areas. This is construction of bridges on Interstate-91 in Rockingham.

LS05905

Signs had to be posted as well so that drivers would know how far to the next destination they were, and where to expect an exit ramp; another example of safety features

LS08123

The terrain around Vermont was not always conducive to straight-up paving of roads. Here outside of Montpelier a crane removes steep rock outcroppings along where the road will go.

LS06519

Before the Interstate Highway System, many places in Vermont were farmland with a few scattered houses and one or two main roads. This aerial photo from 1927 of some land along the Winooski River between Williston and Richmond depicts that scenario.

LS01458_000

LS01458_001

Here is the same area along the Winooski River in 2004, now with many more houses and Interstate 89 running through the middle. Even the covered bridge was replaced with a metal one.

But as a result of skyrocketing farming prices and the increasing ease of importing goods due to railways and the Interstate, much of the previous farmland has been reforested. That is evident here in Royalton, Vermont in 1927, where much farmland is visible.

LS01444_000

In the same area, 77 years later, some of the area is still open but there is much more forest than before. Interstate 89 is also a major change to the area.

LS01444_001

LS07035_000

Here is the very beginning of road layout and an exit ramp for Interstate-89 in Williston, Vermont around 1961.

LS07035_001

Three years later, in 1964, the road is finished and complete with road signs. It is now available for cars to travel on.

LS09336

Here men from the Vermont Highway Department dump roadside litter into the truck. Aside from the accumulation of litter, many other large trucks could travel the interstate allowing for growth of business by speeding up the delivery process and driving down warehouse storage costs.

From all the construction and planning by the state and federal governments came the Interstates of today that we all know and love: I-89 and I-91 here in Vermont, such as this stretch outside of Middlesex.

LS01432_001

From dirt roads and covered bridges…

To asphalt, cement, and metal.

1. Weingroff, Richard F. "Federal-Aid Highway Act of 1956: Creating the Interstate System". Public Roads. 1996. http://www.tfhrc.gov/pubrds/summer96/p96su10.htm

2. GE 342 - Military Geology PowerPoint Presentations. University of Missouri -Rolla. http://web.umr.edu/~rogersda/umrcourses/ge342/

3. "National Interstate and Defense Highways Act". 1956. U.S. National Archives & Records Administration. http://www.ourdocuments.gov/doc.php?flash=true&doc=88

Lumberjacks

Harvesters of the Land or Environmental Visigoths

By Matt Kuhn

Logging In Vermont

Logging has long been an important profession in Vermont. The methods, equipment, operations, industries and landscape impacts surrounding logging were numerous and varied considerably. These activities have impacted Vermont landscapes drastically, leaving marks still observed today. This presentation tells the story of these activities and their impacts. Hopefully this story will interest you and make you want to learn more about logging history and it's role in landscape change. LS12007

Equipment

The equipment used for harvesting trees has evolved over time. One of the most traditional methods is seen above as a man fells a tree with an axe at the Lumberjack Roundup in Salisbury Vermont, 1962. LS09092

Saws

Hand saws were used to both fell trees and, as seen here, cut them to length as well. These men are using a two-handed crosscut saw. LS05124

Chainsaws

Eventually along came the chainsaw, simultaneously increasing efficiency and danger for loggers. LS08895

Horses

Once trees had been felled, limbed, and cut to length they had to be removed from the woods. Here you can see one of the oldest methods for skidding logs as a man leads a team of horses from the woods. LS08979

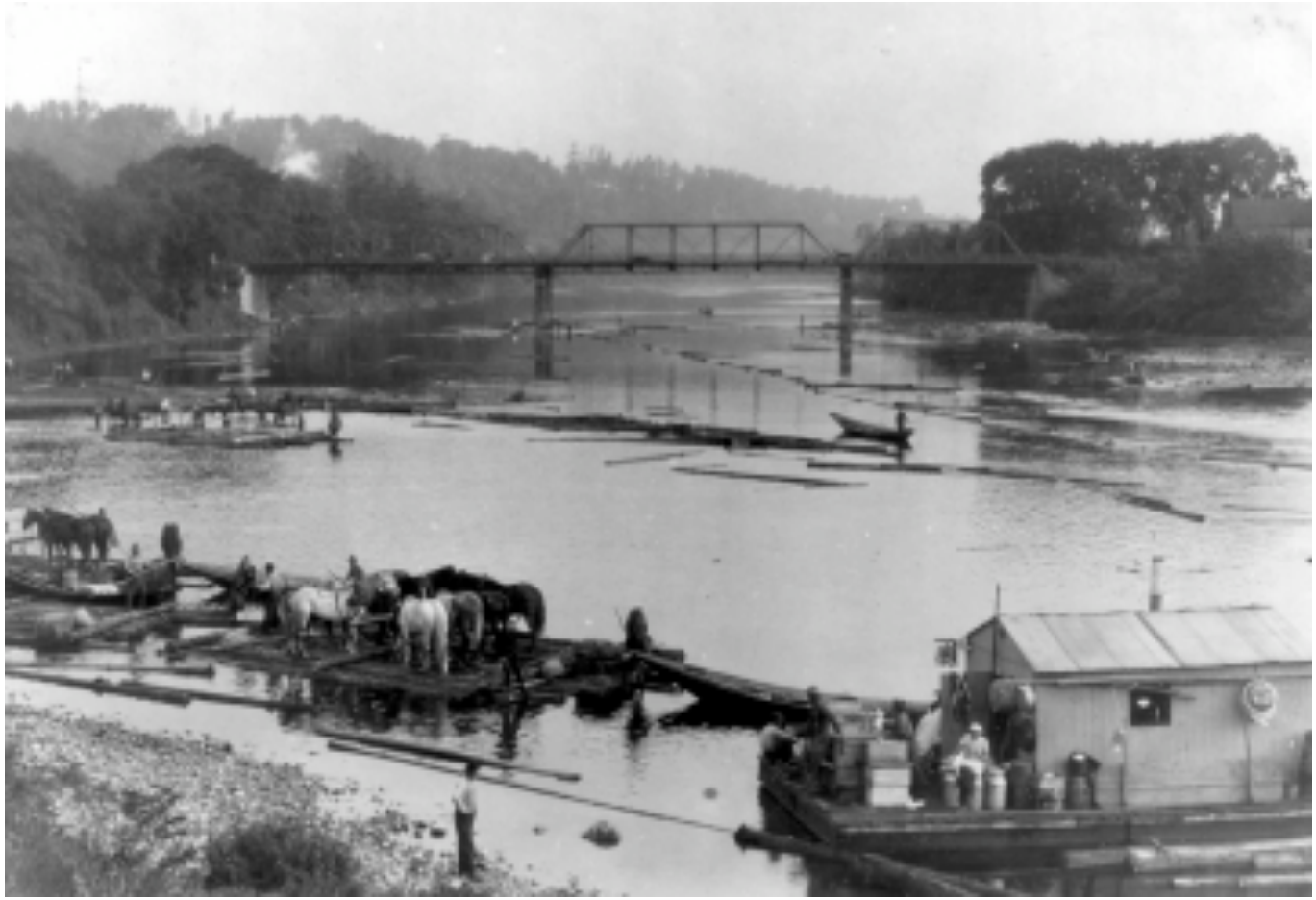
Tractors

Powerful Tractors were used to transport trains of logs. LS07965

Trucks

They were transported with trucks as well. LS11705

Rivers



Rivers were a very important for transportation, sorting, and storage of logs. This picture shows a river logging camp. Men in canoes are seen grouping and directing logs. LS09624

River Hogs

These men called river hogs had the precarious job of driving the logs down the river. They followed the logs down the river on river banks or riding on logs. This job lasted from sunup to sundown. Many of these men lost their lives in the process.
(3)(4) LS08700

Breaking Logjams

As logs were driven downstream they often became hung up in what was called a logjam. The men had to “pick” the logs that they thought would loosen the jam. Usually when the jam was freed it caused the logs to rush downstream and posed a serious risk to the men riding logs. In some cases dynamite was used to free the jams. (2)(3) LS03725

Tree climbers

One of the more interesting ways of taking down a tree. This logger has climbed this tree with the use of a harness and is in the process of cutting it down piece by piece from the top down. This method was used when a tree was located near something that could be damaged if felled traditionally. LS11979

Fuel wood Harvesting

I-1 Every farmer put up wood - sometimes with powered sawing machines.

Harvesting fuel wood was a necessary part of life for early settlers of Vermont. These men are in the process of putting up wood. The wood had to be cut to length, called bucking, then split, and stacked. LS02630

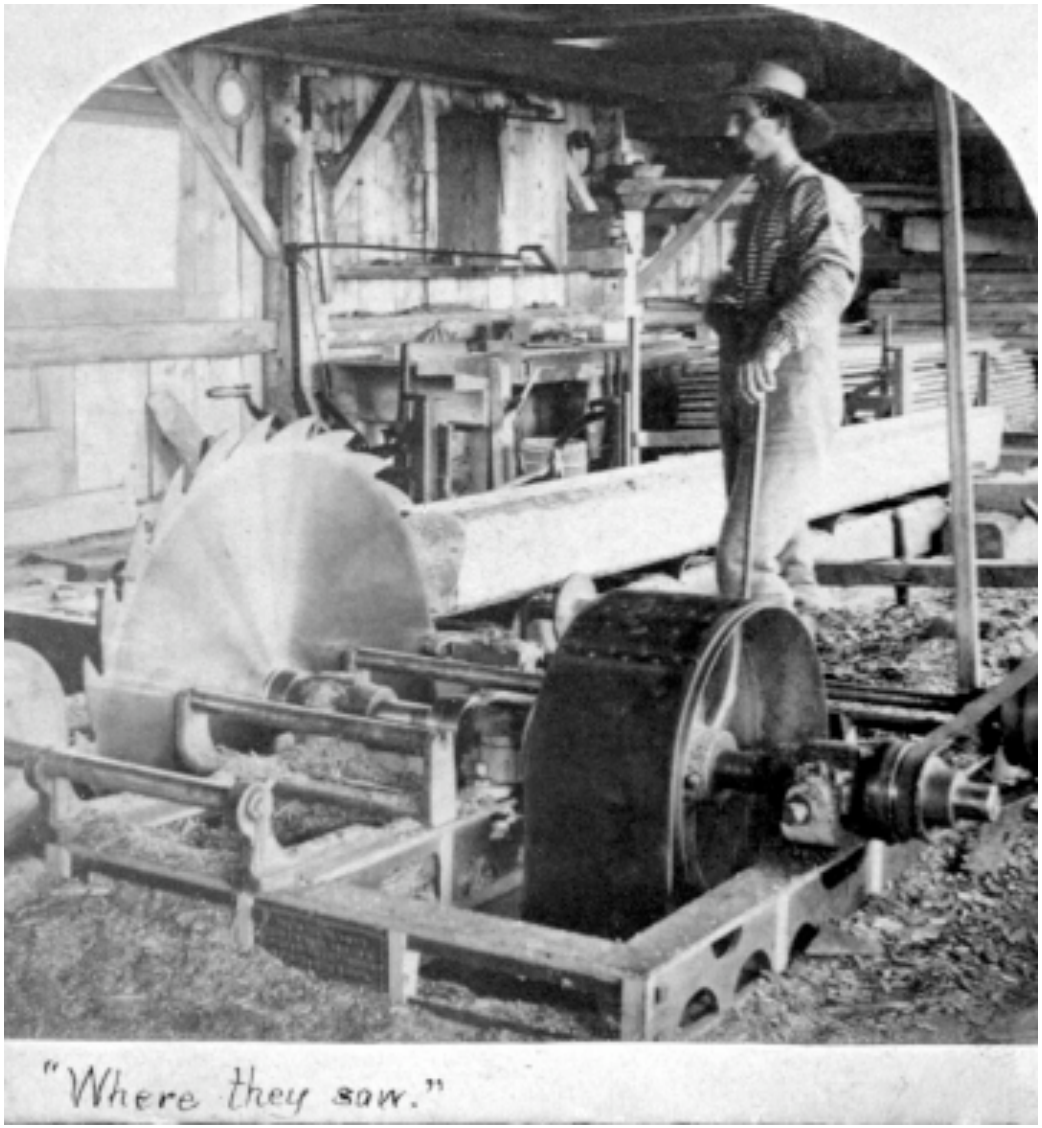
Fuelwood Harvesters

Here is a larger operation of fuelwood harvesting. LS08701

Sawmills

One of the major destination of logs were sawmills. Here the logs were milled into lumber for construction. LS10896

Inside the Mill



This man called the sawyer operated the circular saw. LS00414

Water Power

Water power was used to power mills. This image shows a series of dams and a paper mill. The dammed water was used to turn waterwheels that would in turn power the machinery. LS02273

Logging Camps

This picture depicts just how large logging camps were. These camps often included churches, schools, dining facilities, stores, doctors offices, stables, and equipment storage facilities. These camps were moved often as the occupants cleared the land surrounding the camp. (1) LS08691

Lumberjack Roundup: Some times lumberjacks need to kick back and have fun. The lumberjack roundup in Salisbury Vermont was one way this was accomplished.

LS 05600, 08939, 05596, 08938

Landscape Impacts

There were many impacts on the landscape due to the activities described in this presentation, typically negative. This was due to poor practices such as clear cutting as seen above. Clear cutting lead to erosion, habitat destruction and sediment deposition in rivers and lakes. This image shows damage from the 1938 hurricane. LS00411

Landscape Impacts continued

Before logs could be transported downstream, the streams had to be cleared. This practice seriously altered the natural system of the rivers. (2)

The building of dams caused buildup of sediment behind the dam. They interrupted the movement of fish up and down these rivers. They sometimes led to floods when a dam broke or overflowed.

Discharge from paper mills was deposited directly into rivers. This discharge included chemicals that were hazardous to wildlife and humans alike. This discharge was often warmer than the river water and affected oxygen levels in the stream leading to the loss of some wildlife.

Riparian zones were often removed so the river hogs could have access to the river banks. This led to riverbank erosion and increased runoff and pollution.

Resources:

1. Harvesting the Hardwoods: Logging, Lumbering, and Forestry in Southern Appalachia.
http://www.etsu.edu/cass/Archives/Subjects/Hardwoods/intro.htm

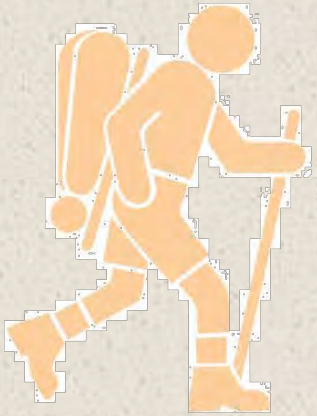
2. Logging on the Connecticut River
New England Transportation Institute and Museum
http://www.newenglandtransportationmuseum.org/river_logging.html

3. Logging and the Use of Rivers
http://www.geo.msu.edu/geo333/river-logging.html

4. The Sawmill
Lumbering in Michigan: Michigan Historical Museum
http://sos.state.mi.us/history/museum/explore/museums/hismus/prehist/lumber/sawmill.html

The Long Trail:

Abbreviated



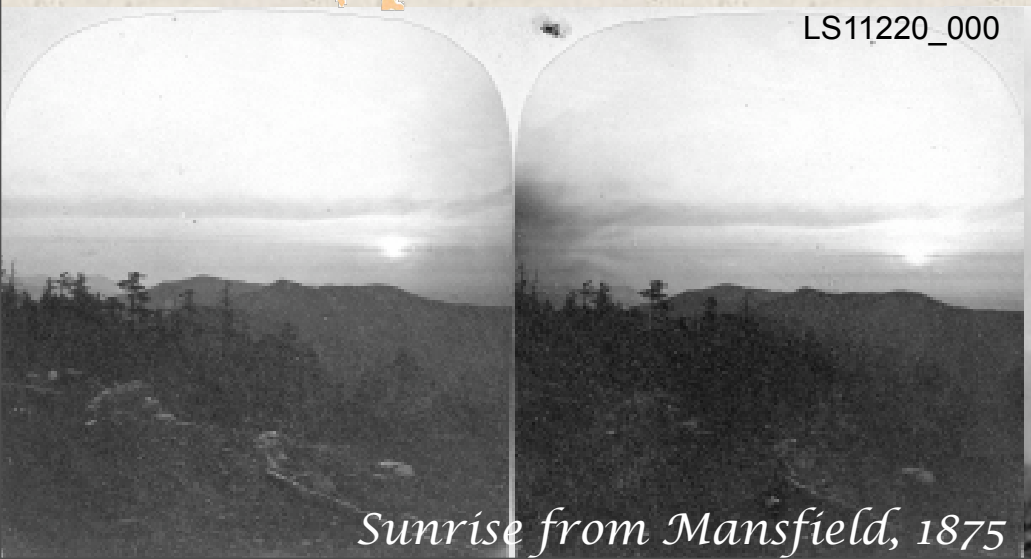
By: Aaron Shore

Purpose

Hiking the Long Trail has been a dream of mine since I came to UVM four years ago. It is America's oldest long-distance hiking trail, measuring 270 miles from Canada to Massachusetts.

I created this scrapbook so others could share my experience, and learn the history of the trail.

Enjoy.

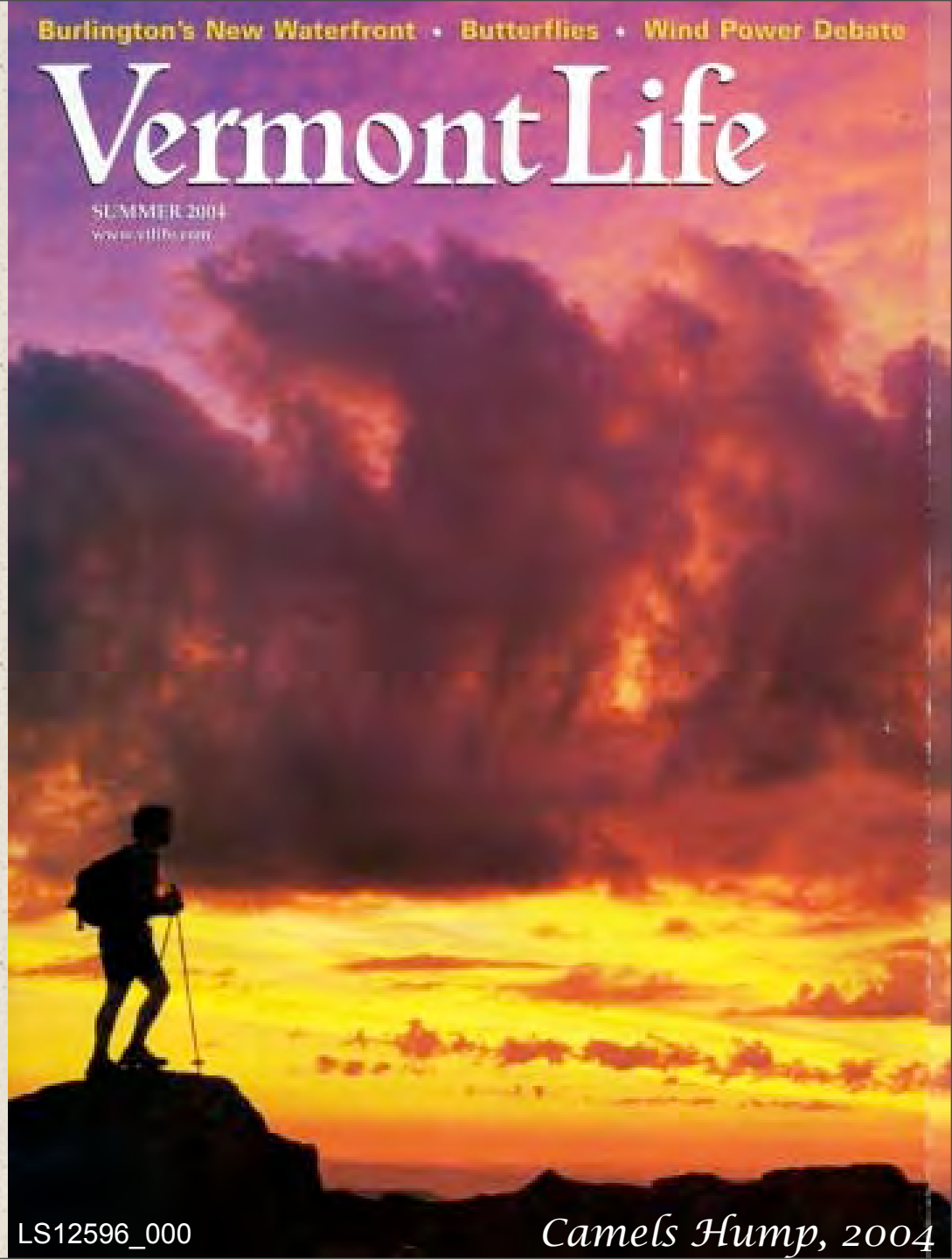


Sunrise from Mansfield, 1875

Camel's Hump, 1880

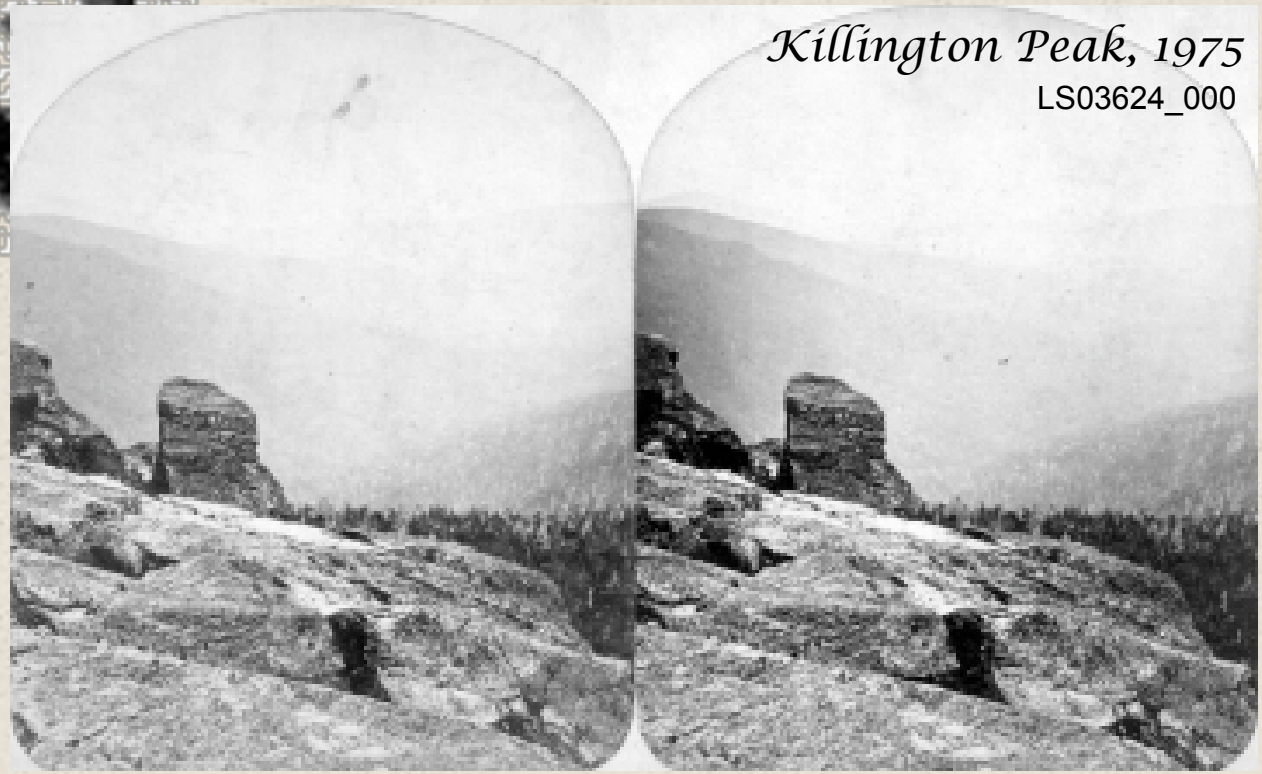
I began my trip in southern Vermont with James Taylor and this image in mind. I wanted to be a part of the beauty that the Vermont landscape encompassed and was known for.

James Taylor, a professor at the Vermont Academy, first conceived the trail in 1910. His goal was to "make the Vermont Mountains play a larger part in the life of the people."



LS12596_000

Camels Hump, 2004



A view from the top of Killington Peak. The reason James Taylor first conceived the Long Trail was because he couldn't take his students into the wilderness without bushwhacking. He wanted to be able to travel from Killington Peak to Pico Peak, a short walk on a trail.

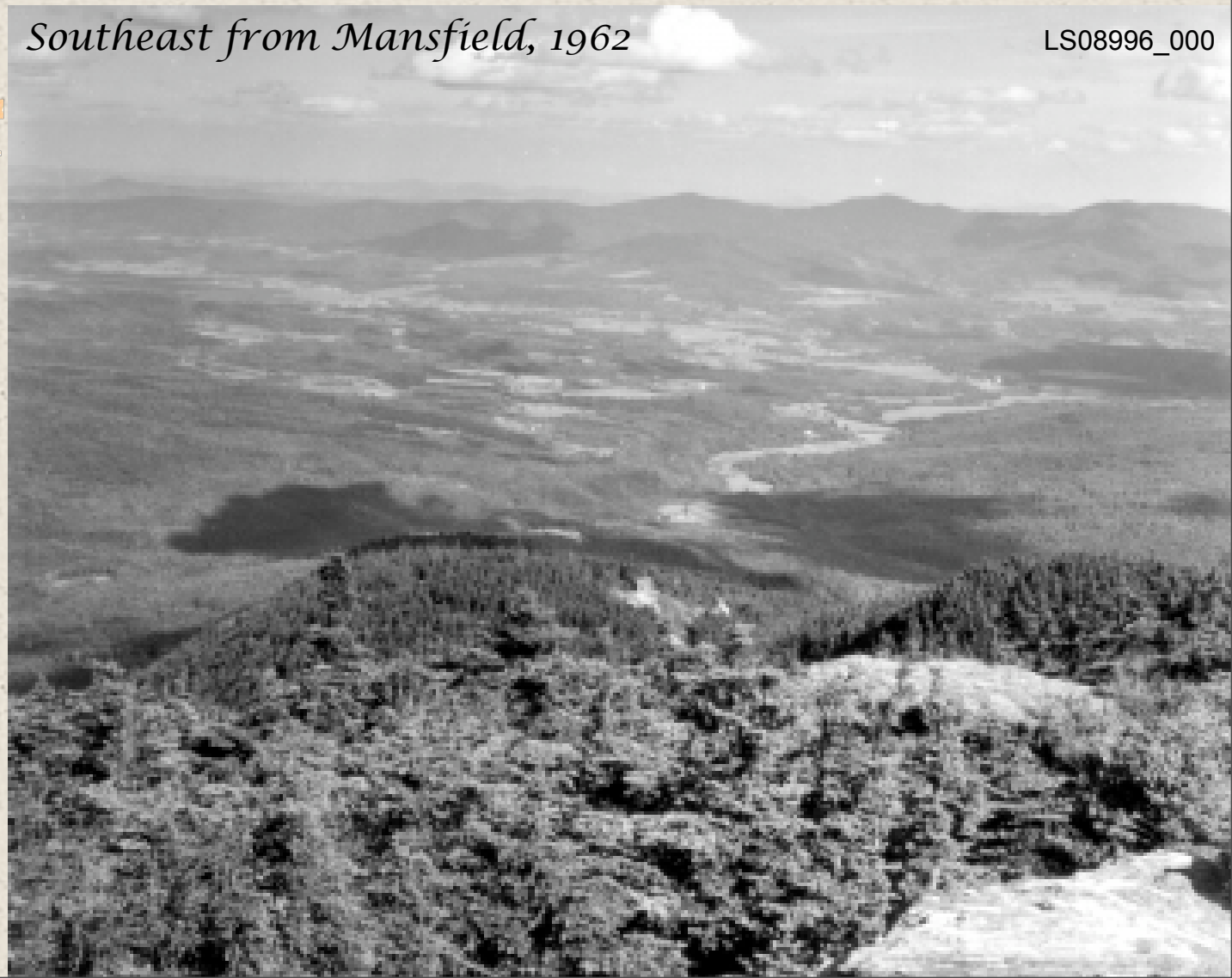
During the first 10 days of my trip, I went from excited to dismal. I rarely saw anyone else on the trail and there were far more trees than mountain top views. I finally came across this nice women who told me about the Green Mountain Club (GMC).

Little Rock Pond, 1977

In 1911, a group of 23 people, including Mr. Taylor, got together in Burlington, VT and formed the GMC. It was their job to begin cutting the Long Trail, and to provide trail maintenance and protection.

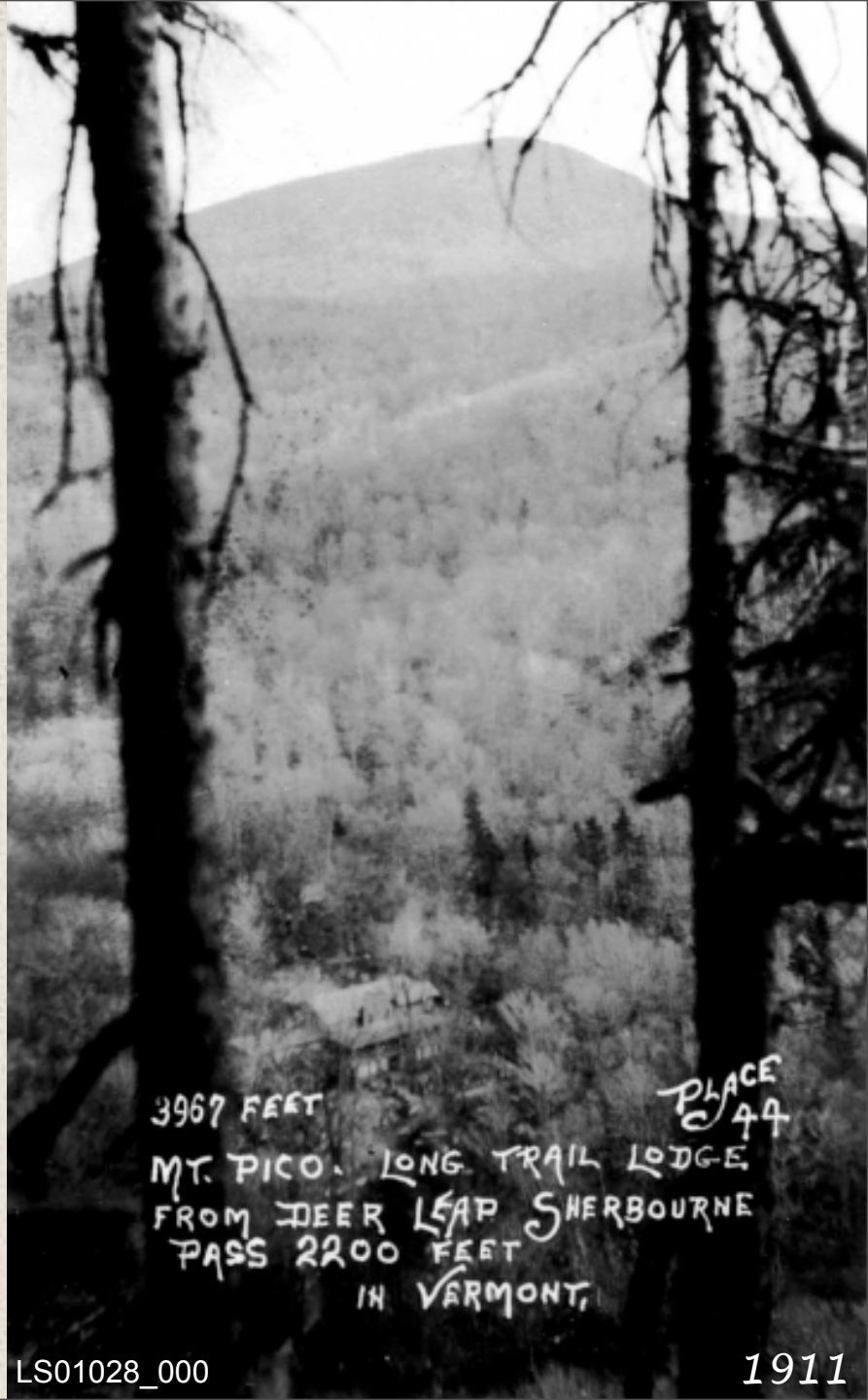
The following summer construction began of the first cut path, from Mt. Mansfield. Within a decade, 209 miles of trail was cleared and over forty-four overnight facilities were provided.

Most of the shelters along the trail are very primitive, consisting usually, of only three walls and a wood floor. Almost every shelter I encountered was rat infested and smelled worse than an outhouse. Thankfully I brought a tent and managed to avoid this atrocity.



Days after my encounter with the woman, her name was Mary, I met another older man. He said he was 74, but he didn't look a day older than 50. He gave me this photograph and a little history lesson.

In 1923, the Long Trail Lodge was constructed to be the base of the GMC and the heart of the Long Trail. The lodge was constructed of logs and lumber found in the woods in close proximity of the construction site. The lodge encompassed other elements of the mountains as well, including a natural rock wall that was built into the lodge.



The most fascinating thing about the lodge was that the Long Trail actually ran right through the lodge, and meals were given to any who desired them. Unfortunately, and to the dismay of many, the lodge was destroyed in 1968 by a fire and the GMC was moved to Montpellier.

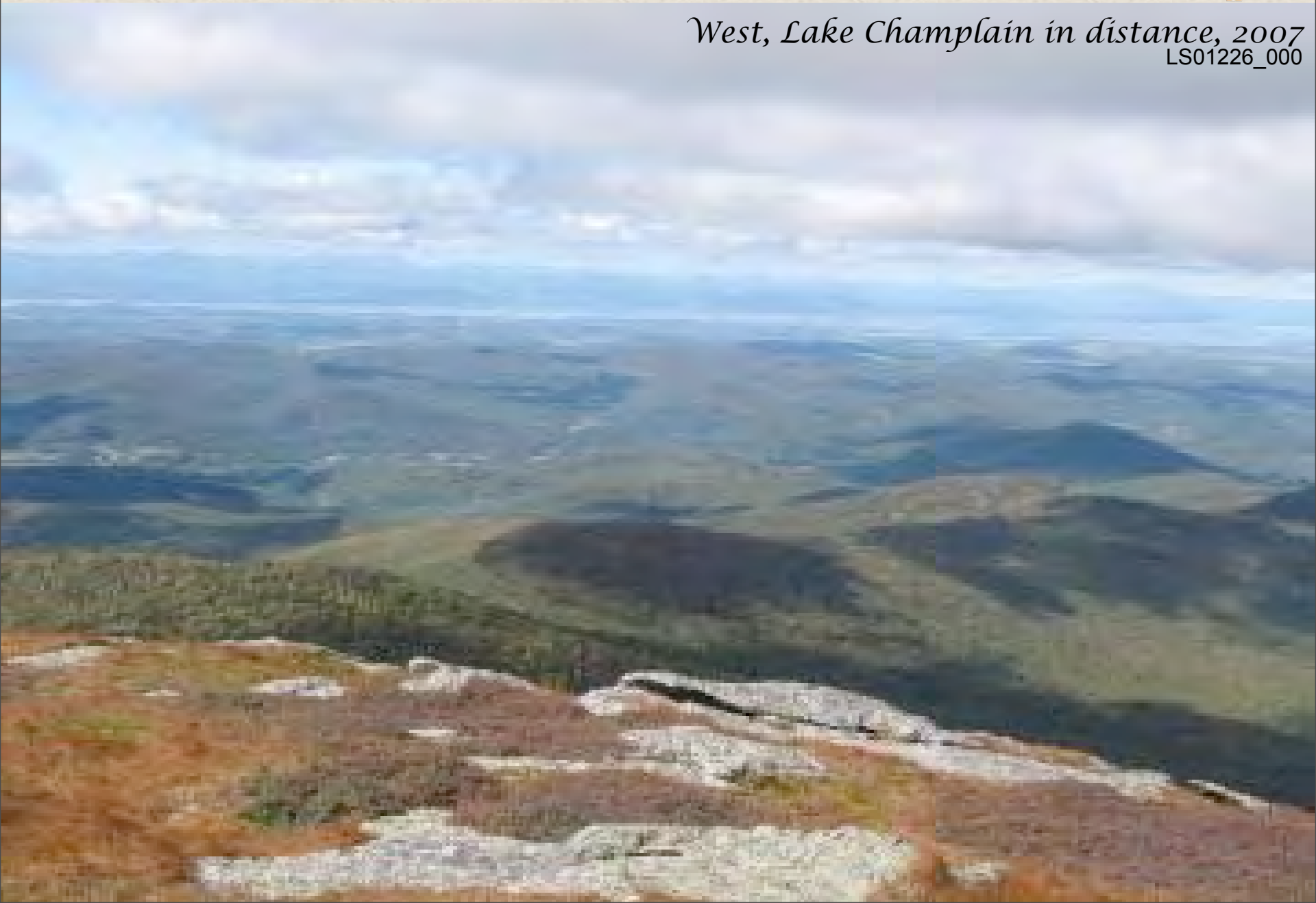
After a quick bite, I was back on top of the world. (Or at least VT)

After many long days, uncountable blisters, and too close a call with a black bear, I reached my halfway point. And to my delight, a young man, a student at a school in New Hampshire, stayed with me in the most amazing shelter I've been in yet. He told me about the 60s.

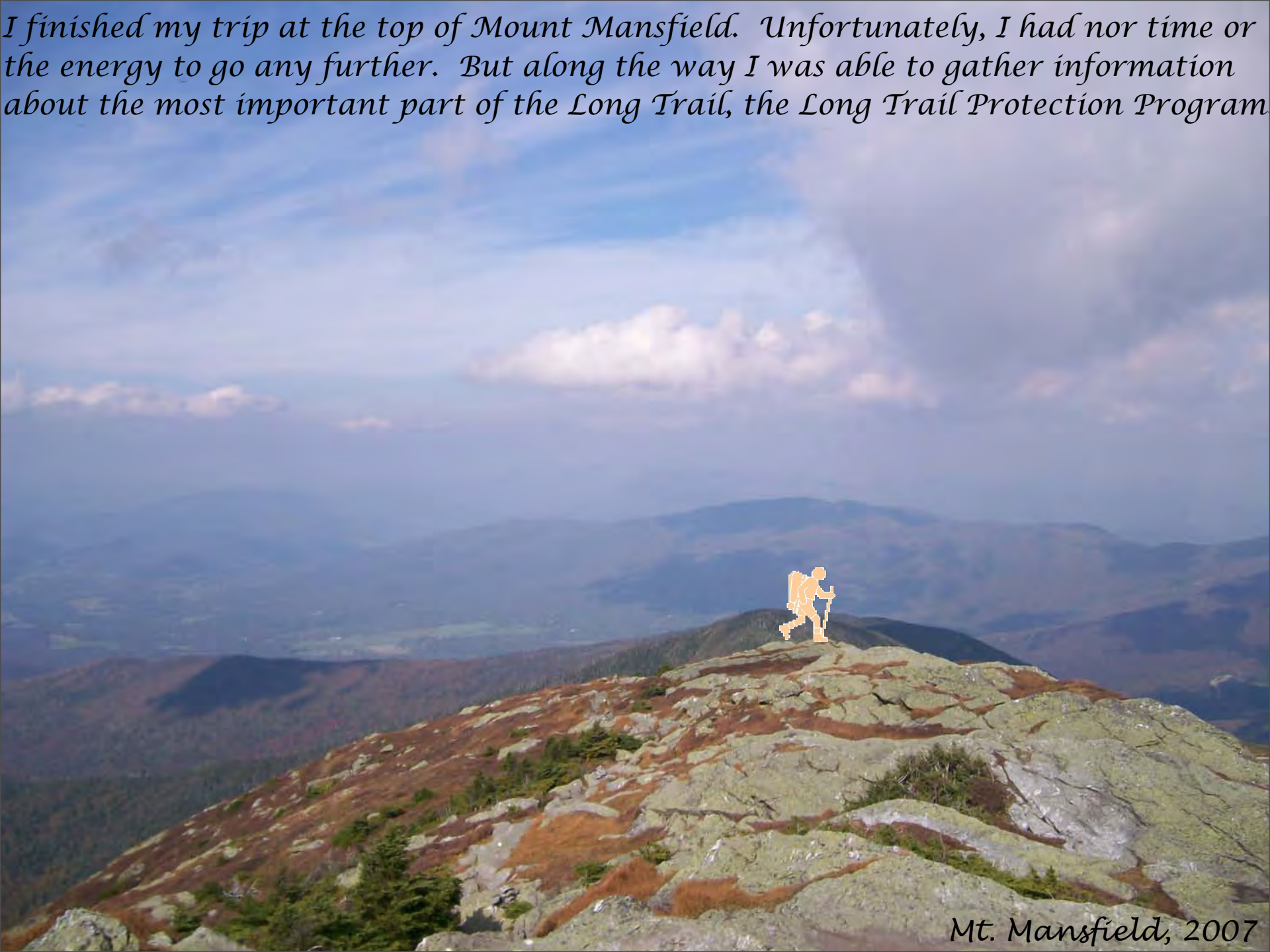
Middlesex, 1965

During the 60's there was a "back to nature" reform movement that drove countless young adults to the wilderness, and in Vermont, this meant the Long Trail. Overuse meant cramped shelters and garbage everywhere. The GMC had to take action. They launched a number of new initiatives, including the removal of dumps at shelters, a "carry-in, carry-out" policy, and information about responsible trail and camping practices.

25 days in and I get my greatest gift yet…



I finished my trip at the top of Mount Mansfield. Unfortunately, I had nor time or the energy to go any further. But along the way I was able to gather information about the most important part of the Long Trail, the Long Trail Protection Program



Mt. Mansfield, 2007

The Long Trail Protection Program has permanently conserved over 61 miles of trail, and 19 shelters, as well as preserving the summits of major mountain peaks along the way. Before the program, in 1986, over 60 miles of trail were in danger of being sold or taken from the public. Unfortunately, there are still 10 miles of the Long Trail that lack any sort of legal protection and could be cutoff from the trail and the public at any time.

To this day, because of the GMC, the Long Trail Protection Program, and volunteers, the Long Trail is still available to anyone who wishes to make Vermont part of their life.

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Club Symbol, Slide 5

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Man Hiking, All Slides

THE EVOLUTION OF MAIN STREET, BURLINGTON VERMONT

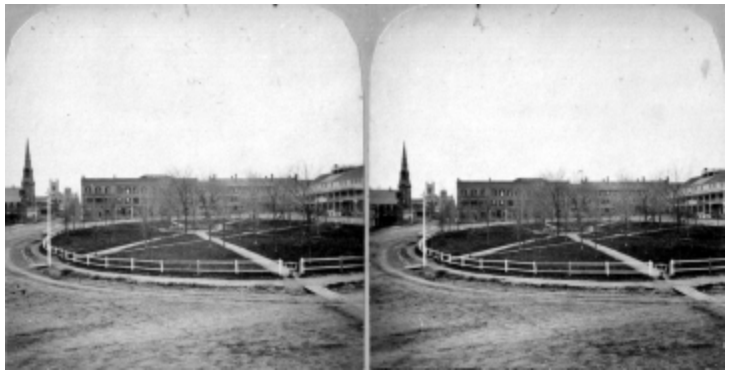
By Khurram Malghani

1830-1890: A HUMBLE BEGINNING

- Main Street Burlington now the busiest street in the city was once just a path. These two images taken at the UVM campus illustrate its humble beginnings. The path is between the photographer and the fence. Old Mills building can be seen in the background. In the picture below in front of Pomeroy Hall there is a well used path, running horizontally across the picture. Main Street currently occupies the same tract of land.

- LS02843_000 (top, 1863-1874)
- LS02850_000(bottom, 1830-1890)

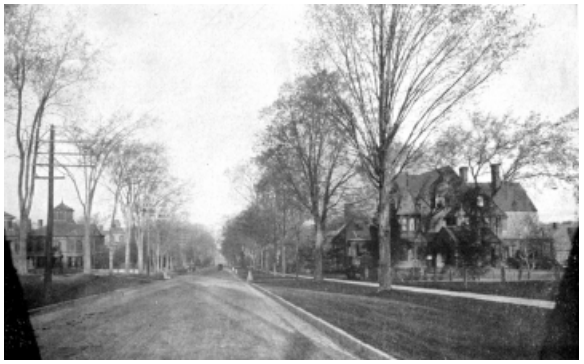
1870-1877: TOWN CENTRE

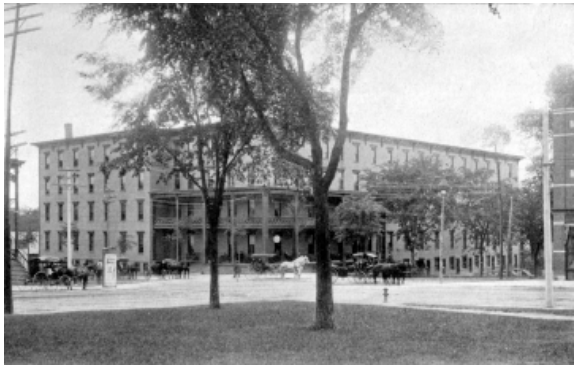


- By the time the path (that we now call Main Street) reached the town centre it widened to a street. The two pictures show the intersection of St. Paul Street and Main Street (top). And the City Clerks Office on Church Street and Main Street (bottom).

- LS10353_000(top) Corner of Main and St. Paul Street
- LS02869_000(bottom) Corner of Main and Church Street

1885-1902: UTILITY POLES





- In these pictures taken between 1885 and 1902 utility poles are first sighted. The street has stone curbs and an accompanying paved sidewalk(top). Near the waterfront the street lacked any curb.

- LS10335_000(top) Main Street with Utility Poles on the left side.
- LS10346_000(middle) Corner of St. Paul and Main Street.
- LS00072_000 Corner of Main Street and North Avenue.

1907-1920: SIGNS OF DEVELOPMENT

- During the early 1900s, signs of sizable development appear as the path is widened to make way for the street through the University campus. Where the farmers have brought their full carts of melons to sell.
- The Main street in downtown Burlington during the period also not only had utilities illustrated by the poles but it also had a Trolley Bus Service.

- LS10177_000(top) Wagons in front of Morril Hall.
- LS11602_000(bottom) Intersection of Main and Church Street.

1920-1940: A PATH BECOMES A ROAD

- The arrival of the cars forced the construction of paved roads. There are a handful of cars depicted on a post card illustrating Hotel Vermont at the corner of St. Paul Street and Main Street(top right). To accommodate vehicular traffic, Main Street was paved by 1934(bottom).

- LS11601_000(top left) Vermont Hotel
- LS00841_000(top right) Paving Main Street
- LS00936_000(bottom left) Main Street after the paving looking east.
- LS00031_000(bottom right) Main Street after the paving looking west.

1927 – 1951: AS THE ROAD DEVELOPED SO DID UVM

- Development at UVM also kept pace with the advancements at the Main Street. Three major buildings; Waterman, Southwick and Fleming museum were added to the campus soon after Main Street was paved.

- LS09938_000 UVM Aerial view – 1927 (top)
- LS10067_000 UVM Aerial view – 1951-1957(bottom)

1945 – 1959: POST WWII DEVELOPMENTS

- After the Second World War Main Street east of the University campus saw tremendous growth, fueled by the demand for new residential, commercial and services areas. Away from the crowded downtown Burlington.

- LS06585_000 Aerial View. Looking west towards the lake Main Street cuts diagonally across the image.

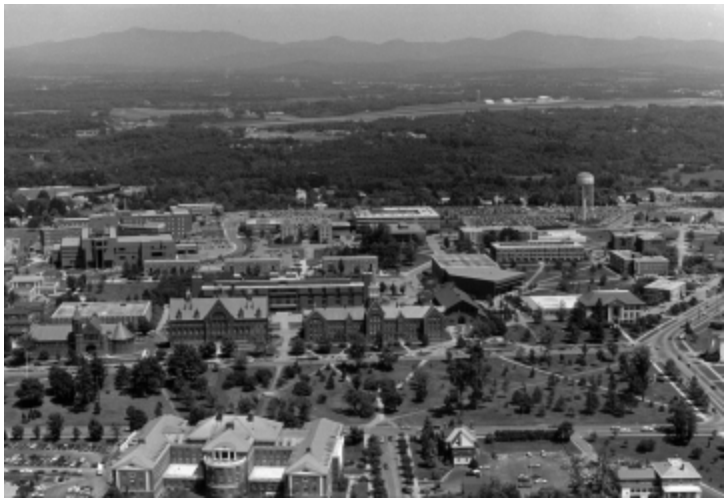
1959-1960: ARRIVAL OF THE INTERSTATE

- Burlington became connected to the interstate highway system via the Main Street at Exit 14. This gave rise to further development in the area.

- LS09978_000 (top) Aerial View of Main Street crisscrossing the picture from bottom right.
- LS10411_000(bottom)Exit 14 – Junction of Main Street and I-89.

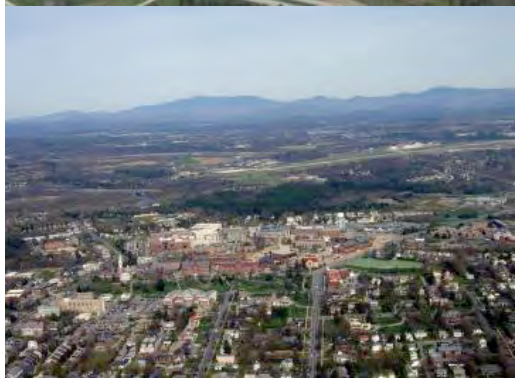
1970-1990: MAIN STREET FEEDS UVM GROWTH

- A well connected Main Street to the Interstates gives UVM and Fletcher Allen Hospital easier access to greater population in the neighboring regions. Fueling their growth as illustrated by the clustering of new buildings at UVM campus.



- LS09937_000(top) Burlington water reservoir and UVM's south campus.
- LS10069_000(bottom) Aerial view of UVM campus with the airport and the Green Mountains in the background

CONTEMPORARY MAIN STREET.



- Main Street has come a long way since its early beginnings. It has seen a tremendous growth east of the UVM campus as illustrated by the top and the middle picture. On the other hand the change from UVM to downtown has not been as drastic as witnessed to the east of UVM over the last couple of decades.

- LS00031_001(top) Main Street opposite the UVM Rugby field.
- LS06585_001(middle) Aerial view of Exit 14 on I-89. Staples Plaza is on the left of Main Street, Sheraton hotel is to the right, UVM south campus, Burlington and the Lake in the background.
- LS09978_001(bottom) Aerial view or Burlington. Main Street run vertically from the bottom right to the UVM campus.

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LS10147

Main Street

Main Streets Then and Now

By Aly Fox for GEOL196

- Main streets, simply, are the principle streets in a town. They are often called "Main Street", though every town's main streets are different.

LS02306_001

Main Street, St. Albans 2004

LS02580 Main Street, Barton 1903

This is a journey through the eyes of Vermont's Main Streets. It will show the changes Vermont has gone through, as a result of both humans and nature.

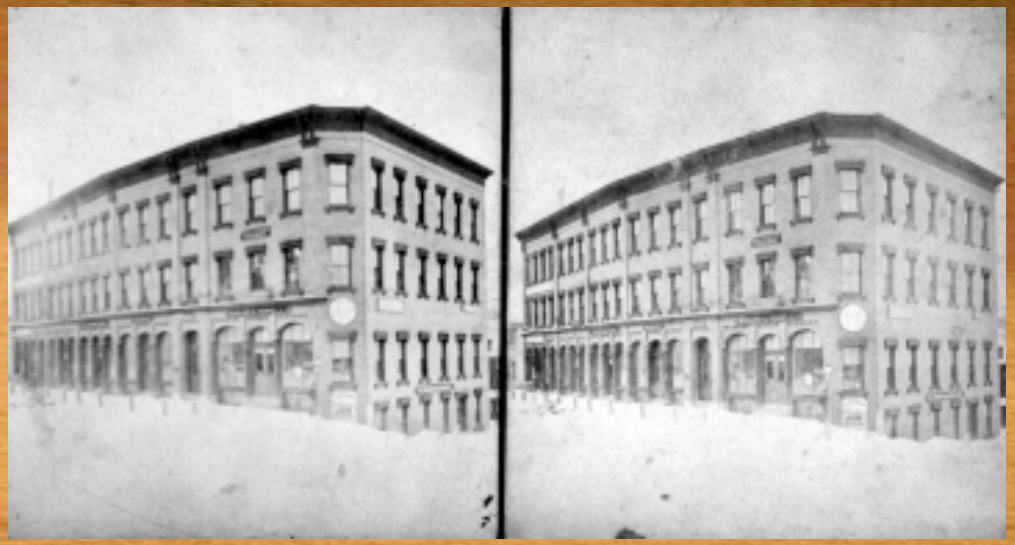
Hardwick, then and now

A postcard from 1905

A photograph 100 years later

LS02394_000, LS02394_001

If there was not a town sign, a Main Street was an indicator of settlement.



St. Johnsbury- corner of Main and East, 1880

Same corner, 2005

LS04699_000,001

LS05973_001

What makes a "principle" street? Classically, Main Streets were the commercial centers. That is still the case today- on any of the "main drags" in Vermont you can find some combination of stores and eateries.

Main Street, St. Johnsbury, 2006

As populations grew, towns grew and changed, some Main Streets have been taken over by other main streets- such as Church St. in Burlington, the pedestrian commercial zenith.

Church Street, 1863-1875

LS02893_000

Church Street, 2004

LS02893_001

Disasters have been known to strike Vermont. Both natural and man made forces have caused some towns to rebuild their main streets. Take Bristol, for example- in 1924 a fire struck Main Street. Notice the gutted buildings post-fire.

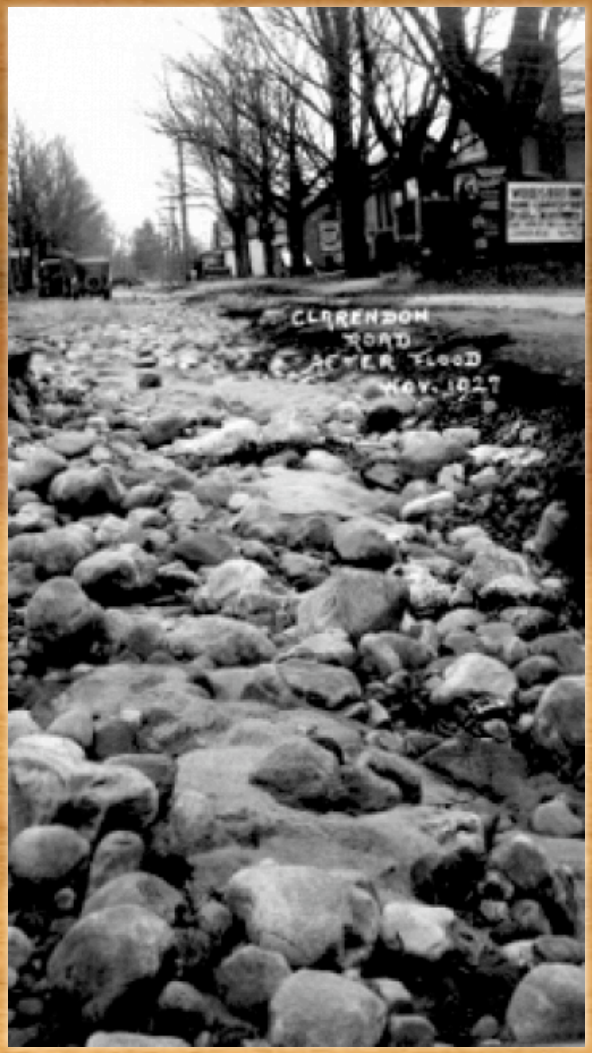
LS08201

The 1927 flood also caused damage to many towns

LS02444

LS11357

Main Street, Montpelier, 1927



LS00260

Flooded Main Street, Claredon 1927

Main Street, Richford, 1927

LS02472

These two photos, and the previous two photos, show serious damage to the main thoroughfares in various Vermont towns. A drive through any of these towns today show how the towns have been rebuilt.

The introduction of cars made Main Streets wider

Photos from 1914 and 2000 in Morgan, Vermont.

LS00012_000

LS00012_001

Notice the changes!

LS07734

A car on a dirt road at a toll gate, Winhall 1916.

In 1916, there were 10,000 cars driving in America- on unpaved roads. The technology of pavement existed, and just needed some time to make its way up to Vermont.

Today, our Main Streets are changing and losing prominence due to sprawl

Aerial view of Colchester, 2004

LS01465_001

Mega-shopping centers, such as the one in Williston, take away business from local efforts. This is a major cause of change in our small towns.

LS10279

Williston, today

Williston, 1925

http://www.elpais.com/elpaismedia/diario/media/200504/04/economia/20050404elpepieco_2_I_SCO.jpg

Preservation efforts are being made to keep our Main Streets in tact

LS07386_001

Springfield, today

Institutions like Vermont Division for Historic Preservation and the Main Street Center (national) are working towards preserving the historic Main Streets in Vermont.

The landscape of Vermont has changed drastically since the land was settled. The biggest impact has been the expansion of towns and cities.

Main Street, Brattleboro 1913

LS00158_000

Main Street, Brattleboro 2000

LS00158_001

Vermont's main streets are the hallmarks of the many small towns found within. The towns will continue to evolve as the landscape does as well.

LS07606

Main Street, Wallingford 1914

References

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Image on Slide 14 courtesy of: http://www.elpais.com/elpaismedia/diario/media/200504/04/economia/20050404elpepieco_2_1_SC0.jpg

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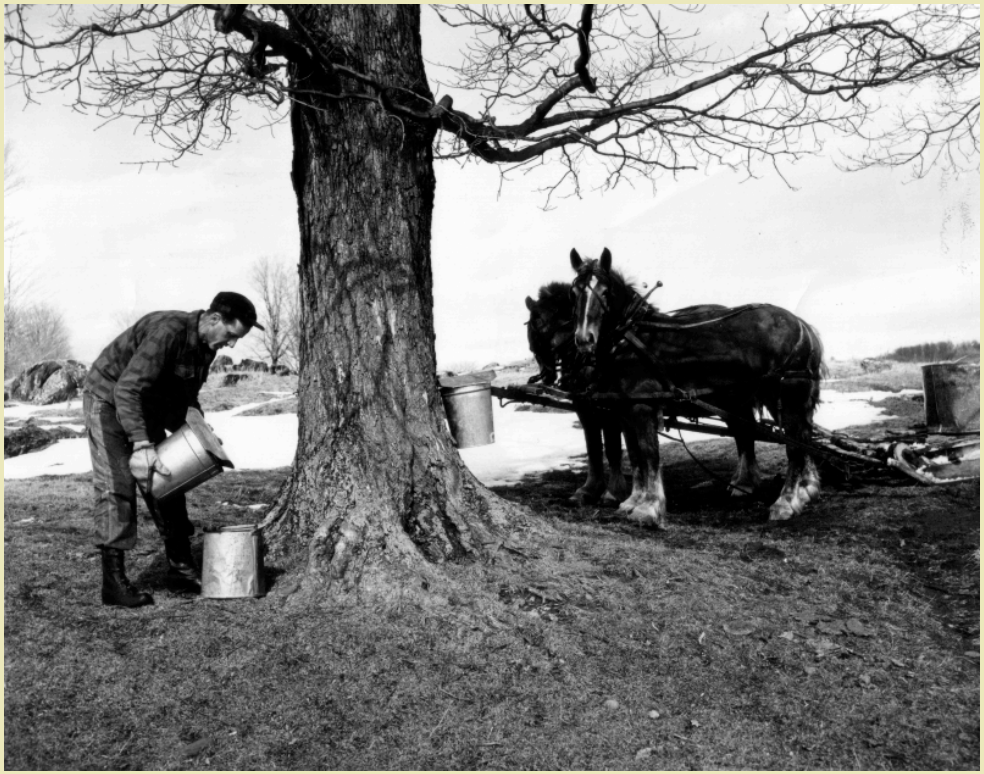
Maplemont:
The Sugar Maple Tree Industry of Vermont



By:
Eileen Stoner

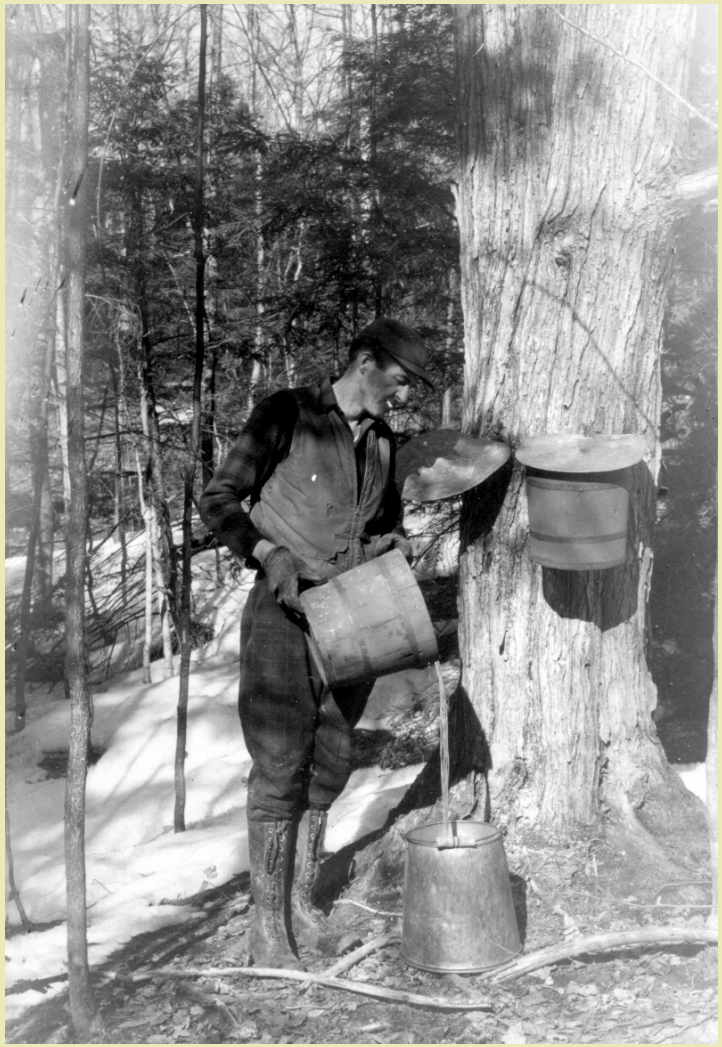
LCP archive: Image **LS05917_000** was taken in Montpelier, VT. It shows a man with two draft horses taking sap from a sugar maple tree.

Maple Syrup as an Icon

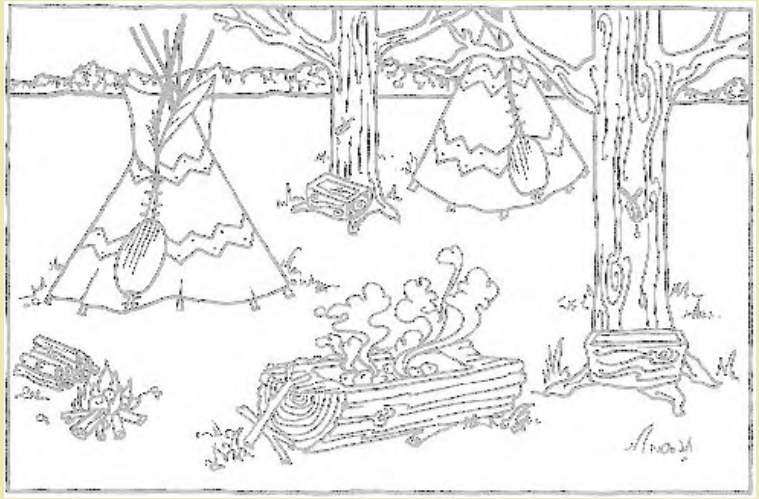
LCP archive: Image **LS08845_000** was taken around 1960 in Montpelier, VT in front of the state house. It shows a car towing a maple syrup shack that states "see Vermont Maple Syrup Made."

Vermont's maple syrup production is number one in the country. It is such an icon to Vermont, besides being the state tree, because there is an abundance of sugar maple trees. Along with this large quantity, sugar makers make maple syrup production a way of life. This is important to display through great images and fun facts in order to show the connection between the people and Vermont's landscape.

First discovered by Native Americans, they termed maple syrup as “Sinzibukwud,” translating into “Sweet Buds.” Their discovery was passed onto the first European settlers.

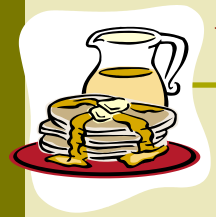


LCP archive: Image **LS08834_000** was taken in Vermont, showing a man pouring sap into a bucket after collecting from a sugar maple tree.



http://www.lmsugarbush.com/images/493_coloring_pages_-_indian.jpg

Without sugar maple trees, there wouldn't be any pure treat your pancakes. Vermont landscape was full of maple



LCP archive: Image **LS08835_000** shows a forest, or "sugarbush," of maple trees with several collecting buckets in Vermont. Season is just right, in early spring with traces of snow, for collecting sap. (Date Unknown).

“Sugaring” season is during early spring, usually in the beginning of March. Early spring allows the flowing of sap due to freezing and thawing out temperatures.

The tree being tapped should be at least 40 years old.

LCP archive: Image **LS08839_000** shows a large sugar maple tree that is around 200 years old. Image taken in unknown town of Vermont. “Without a doubt this tree was standing when earliest settlers came to Vermont” is written on the back of the photograph. (Date Unknown).

Hard at work. Making Pure Vermont Maple Syrup takes time, knowledge, and practice. First step is tapping into the old trunk.

LCP archive: Image **LS10713_000** taken in Vermont in 1956 shows a man tapping into a maple tree. Looks like a lesson for the girls holding the jars to collect the sap.

After tapping, the sap is collected by metal buckets or tubing. The farmer then transfers the sap to a large container to be transported back to a sugarhouse.

LCP archive: Image **LS02307_000** was taken around 1955 in an unknown town in Vermont. It shows a man collecting sap through metal buckets attached to the maple tree. There is a large container in which the sap will be poured into and transported by horses.

Metal Tubing was invented in the early 1900s, making it a little easier for the sap collector. Plastic tubing was later invented in 1959.

Plastic Tubing →

http://content.answers.com/main/content/wp/en/thumb/e/e5/300px-Sap_plastic_tubing.jpg

LCP archive: Image **LS06867_000** was taken around 1935 in Plainfield, VT. Shows early metal tubing from maple trees collecting sap.

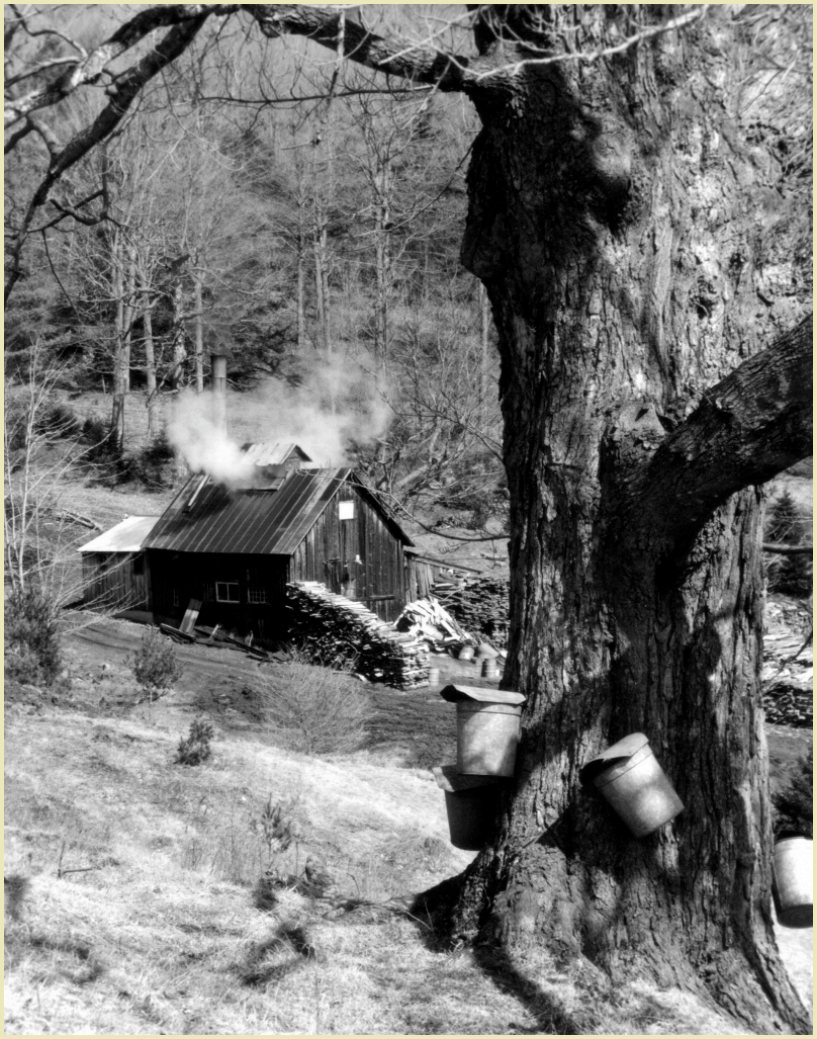
The good old days of a horse drawn sleigh were replaced by the invention of the tractor. They're on their way to the sugarhouse.

LCP archive: Image **LS00674_000** taken around 1915 in St. Albans, VT. It shows a man standing by a bucket of sap being pulled on a sled by horses.

GH-5 Gathering maple sap at Broinla farm - tank held 380 gallons of sap!

LCP archive: Image **LS02684_000** shows a tractor pulling a sled carrying a large tank holding 380 gallons of sap. Image taken in Greensboro, VT. (Date Unknown).

Arrival to the sugarhouse! Steam is flowing out indicating evaporation of water. In order to make pure maple syrup, water must be boiled out of the sap.



LCP archive: Image **LS08051_000** was taken around 1935 in Cambridge, VT located on Elm Grove Farm. It is of a large maple tree with a sugarhouse in the near distance.

The boiling may take place outside of or in the sugarhouse over a hot fire.

LCP archive: Image **LS00408_000** shows a man in Vermont boiling water out of sap to make maple syrup in a large pot over fire. (Date Unknown).

Proud and accomplished. Sugarhouses are where the magic happens. Packaging and other products may also be made here.

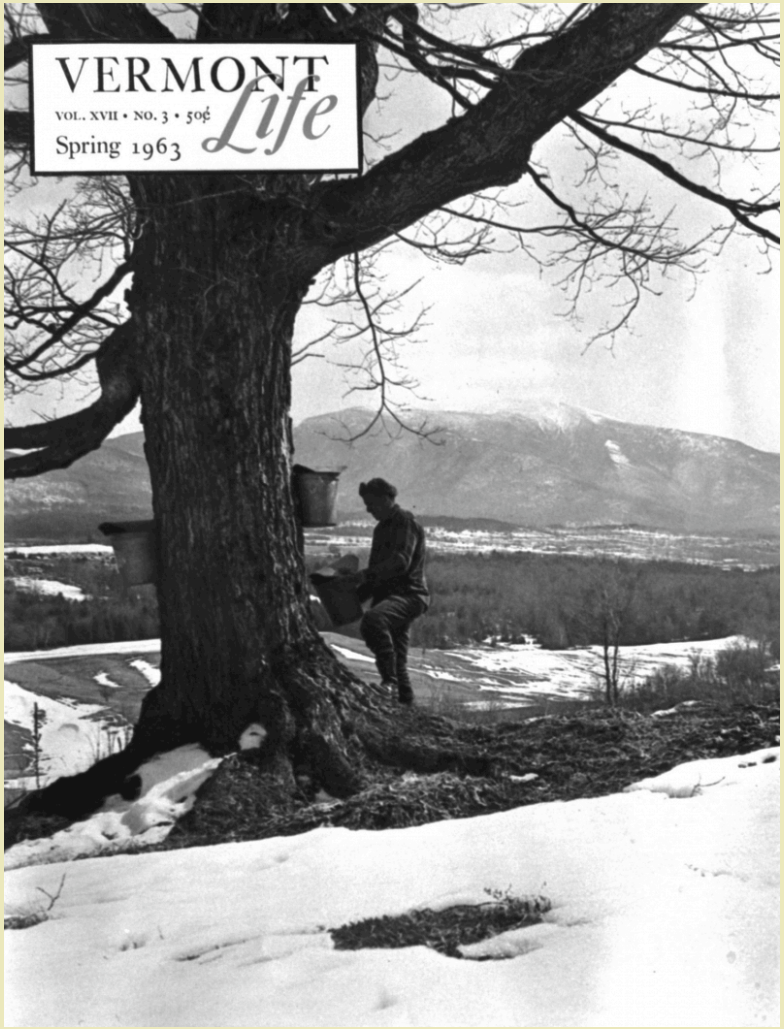
LCP archive: Image **LS06147_000** is taken in Wilmington, VT around late 1800s-early 1900s. Two men, Albert W. Ray and Francis E. Ray, two horses, and Buster the dog stand in front of their sugarhouse.

Party time End and beginning of the “sugaring” season can mark times of festivals in Vermont.

A-11 Sugaring-off Party at the Miller-Kaiser sugarhouse.

LCP archive: Image **LS02632_000** is taken in Greensboro, VT showing a Sugaring-off party at the Miller-Kaiser sugarhouse.

CLAIM TO FAME 1: Sap collecting and maple syrup production is such an integral part of Vermont and its people. That's why it made the cover of *Vermont Life* magazine!



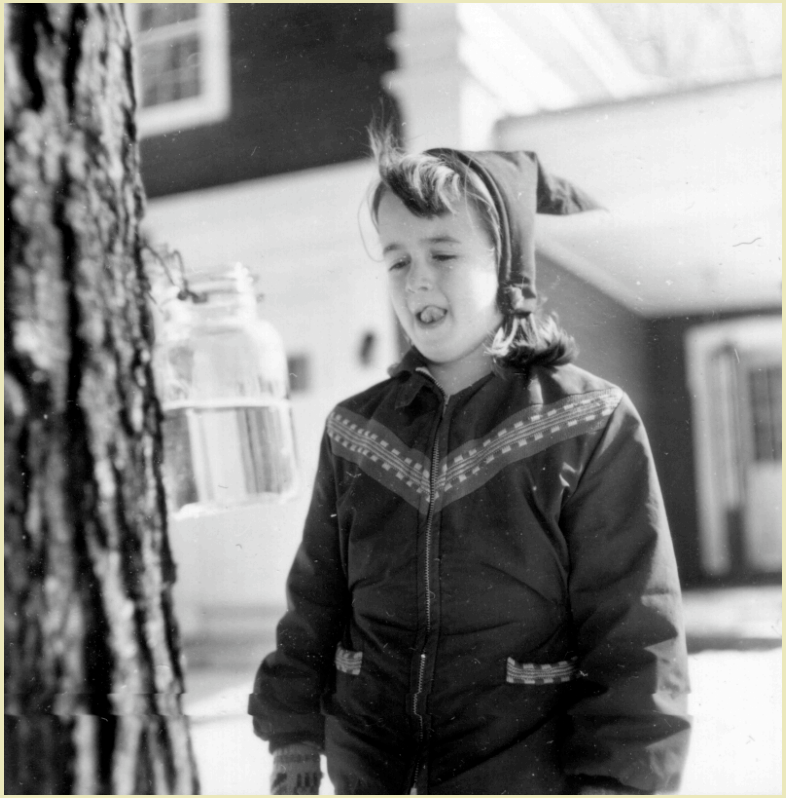
LCP archive: Image **LS07659_000** was the cover of *Vermont Life* magazine in spring 1963. Image was taken of a man collecting sap from a sugar maple tree in Cambridge, VT.

CLAIM TO FAME 2: Is that President Nixon? Is he holding a can of pure Vermont maple syrup? Yes! Even the President (V.P. at the time) can get a hold of such extravagance.

LCP archive: Image **LS08884_000** was taken at a Maple Festival in 1959. It is of several people, in particular Vice-President Nixon who is holding a can of Vermont's pure maple syrup.

Why Maplemont?

Next time you want to enjoy a delicious treat with your pancakes or French toast, this will help you understand where it comes from. It's important to learn about this industry and where it came from so that something that was once seen as a delicacy, doesn't get lost in a world of production. It is a way of life for many and it shows how the sugar maple trees coating Vermont have contributed to peoples' lives.



LCP archive: Image **LS10714_000** taken in 1956 in Vermont of a little girl licking her lips watching sap drip into a Mason jar from a tree.

a View to a Mill

Katie Gallagher

Introduction

The mills in the Burlington/ Winooski area have always been a focal point for the cities. Originally they were what defined the city of Winooski as a center for commerce. All of the mills have gone through various changes of purpose.

Now all three of the main Burlington/ Winooski Mills serve a purpose far different from what they were originally designed to do. Especially Chace Mill, which is the last building you see as you cross the bridge into Winooski from Burlington.

Three mills surround the Winooski/Burlington border.
Woolen Mill, Champlain Mill and Chace Mill.

These mills were the livelihood of the Burlington/Winooski area. Bringing in commerce and jobs. Some of these jobs were given to young children.

Image source: http://www.historyplace.com/unitedstates/childlabor/

This boy worked at the Chace Cotton Mill.

Mills were large open rooms filled with many machines. This mill is not one of the Burlington mills, but is similar to how the mill would have been set up. The mill pictured is a cotton/textile mill.

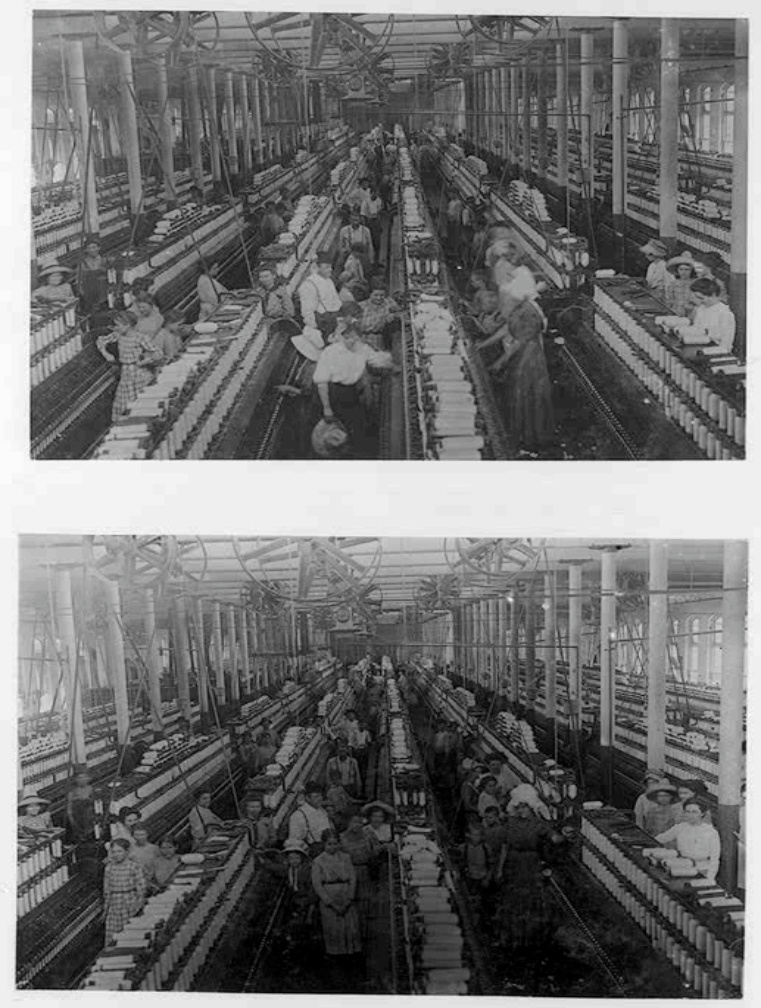


Image from: http://www.loc.gov/exhibits/treasures/images/vc007060.jpg

LS00035_000.jpg

Chace mill was built in 1982 by the Winooski Mill Co. Around 1900 Burlington Cotton Mills bought the mill then in 1906 the Chace family of Massachussetts bought it out, after that Green Mountain Power bought the mill and turned it into a hydroelectric plant in 1929. In 1931 American Woolen Co took over the Chase Mill.

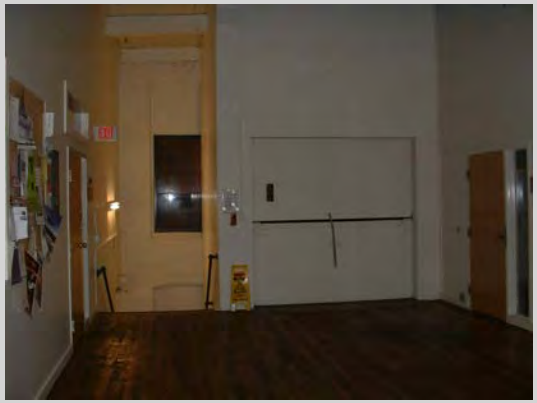
Image Source: http://personalweb.smcvt.edu/winooskimills/millshistory/homeframe.htm

The Chace Mill started being used year-round in 1904 when a steam-power system was installed in the mill providing 900 horsepower to the mills. At one time the mill housed 30,496 spindles, which was a lot.

While the production of child laborers and large machines has stopped, Chace is now a site for a different type of production including a web developer, yoga studio, hair salon, etc.

Above: Some walls have been constructed, but the floors have stayed the same. The dark spots are from machine oil from when the mills were in use. If you were to kneel on the floors today you would get oil all over your pants.

The elevator



The same mill windows now a site for a much different job.

Photos by Katie Gallagher

LS00035_001.jpg

This is a picture of Chace Mill as it looks today.
Very similar, just a new addition of a stoplight.

Longevity seemed to be a major consideration when the Mill was built in 1892. It is built almost entirely out of brick and stone. To save wood from rotting at any point that the beams (which were wooden) were to be joined with the stone a steel plate was installed, so that the wood could not absorb water.

This mill while not a Chace Mill is a great example of the architecture of the building.

Image Source: http://rockymountmills.com/about.htm

The flood of 1927 had a large impact on all of the mills with the water from the Winooski River coming in and flooding many of the buildings, but shut down production for only 3 days.

Chace Mill was luckier than these buildings.

LS00038_000.jpg

LS01329_000.jpg

The mills then.

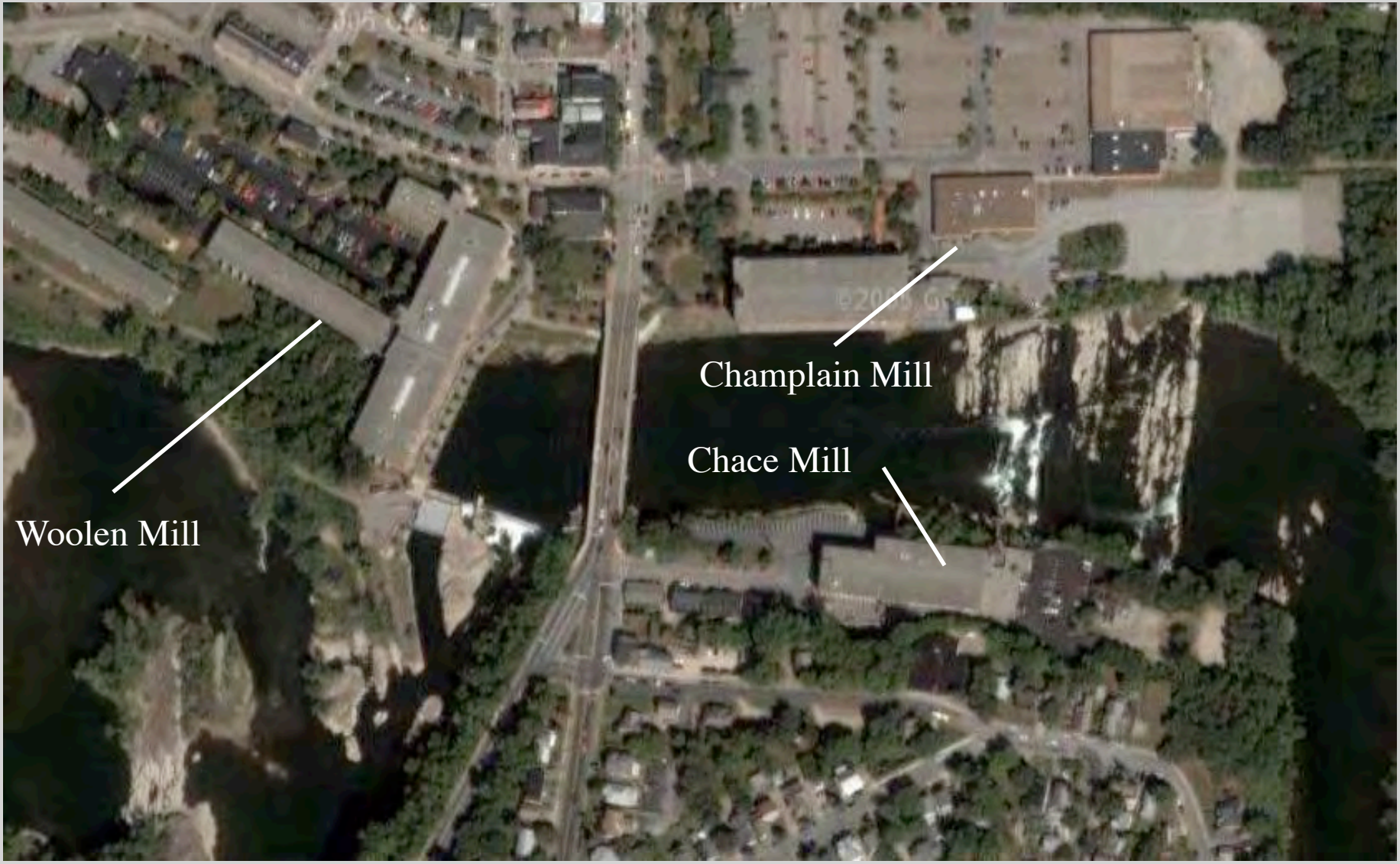
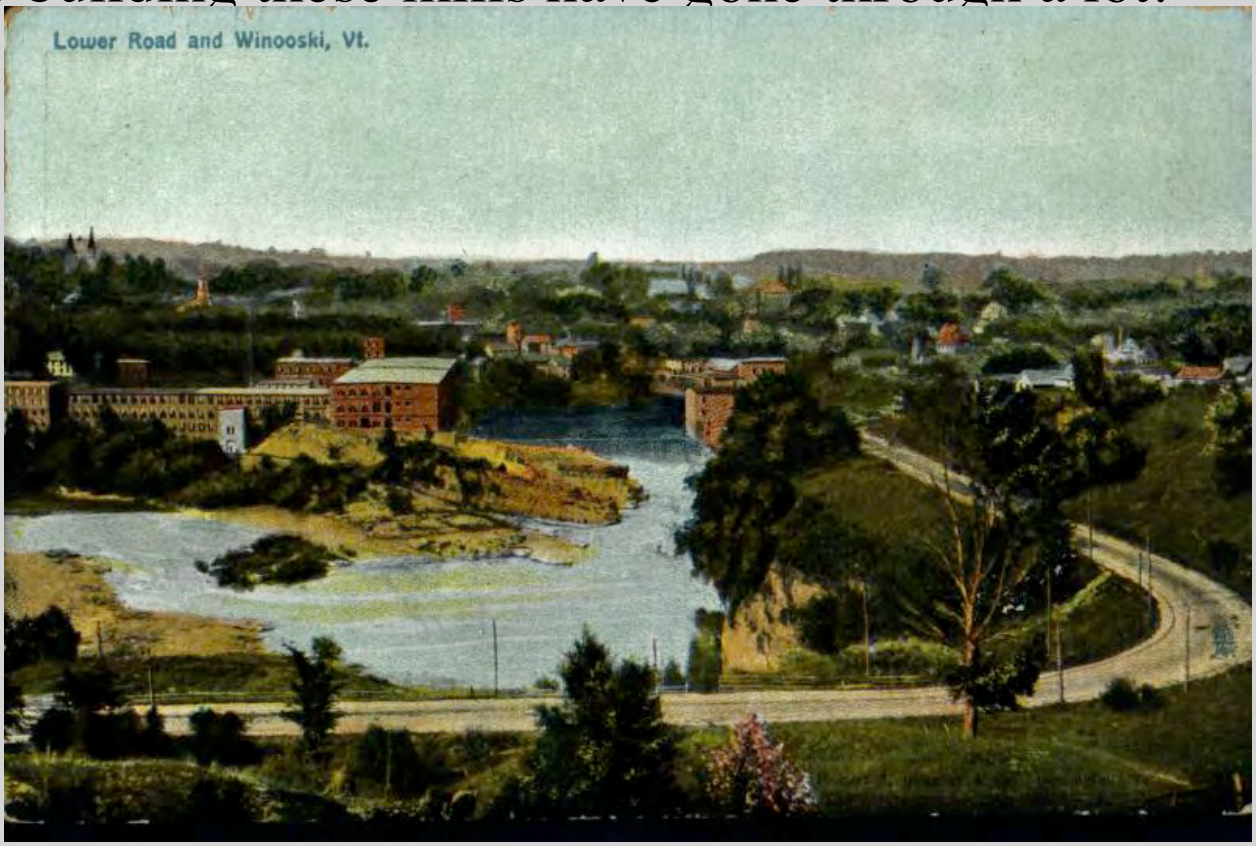


Image Source: maps.google.com

The mills now. Surrounded by the bustling cities of Winooski and Burlington.

Each of the three mills has their own history and it can be found in the buildings themselves. The Heritage Winooski Mill Museum has put together murals of the mills over time. It is remarkable to see how the use of the buildings has changed over time. From a dirty, textile mill to a pristine office building these mills have gone through a lot.



LS00598_000.jpg

And will probably go through a lot more.

Cool Links

Heritage Winooski Mill Museum:

http://personalweb.smcvt.edu/winooskimills/HeritageWinooski.html

Website with lots of information and great sources from the students at St. Michael's College:

http://personalweb.smcvt.edu/winooskimills/Default.html

Montpelier: Capitol Village

The State House (1925 about)
LS00836_000

The State House (7/10/2000)
LS00342_001

A photographic history of major events for the Statehouse, Montpelier, and Vermont

The state of Vermont has grown considerably from the late 1700's to today, and no town better exemplifies this change than its capitol city, Montpelier...

Aerial View of State Capitol (1955 exactly)

LS04075_000

Montpelier became the Capitol of Vermont in 1805

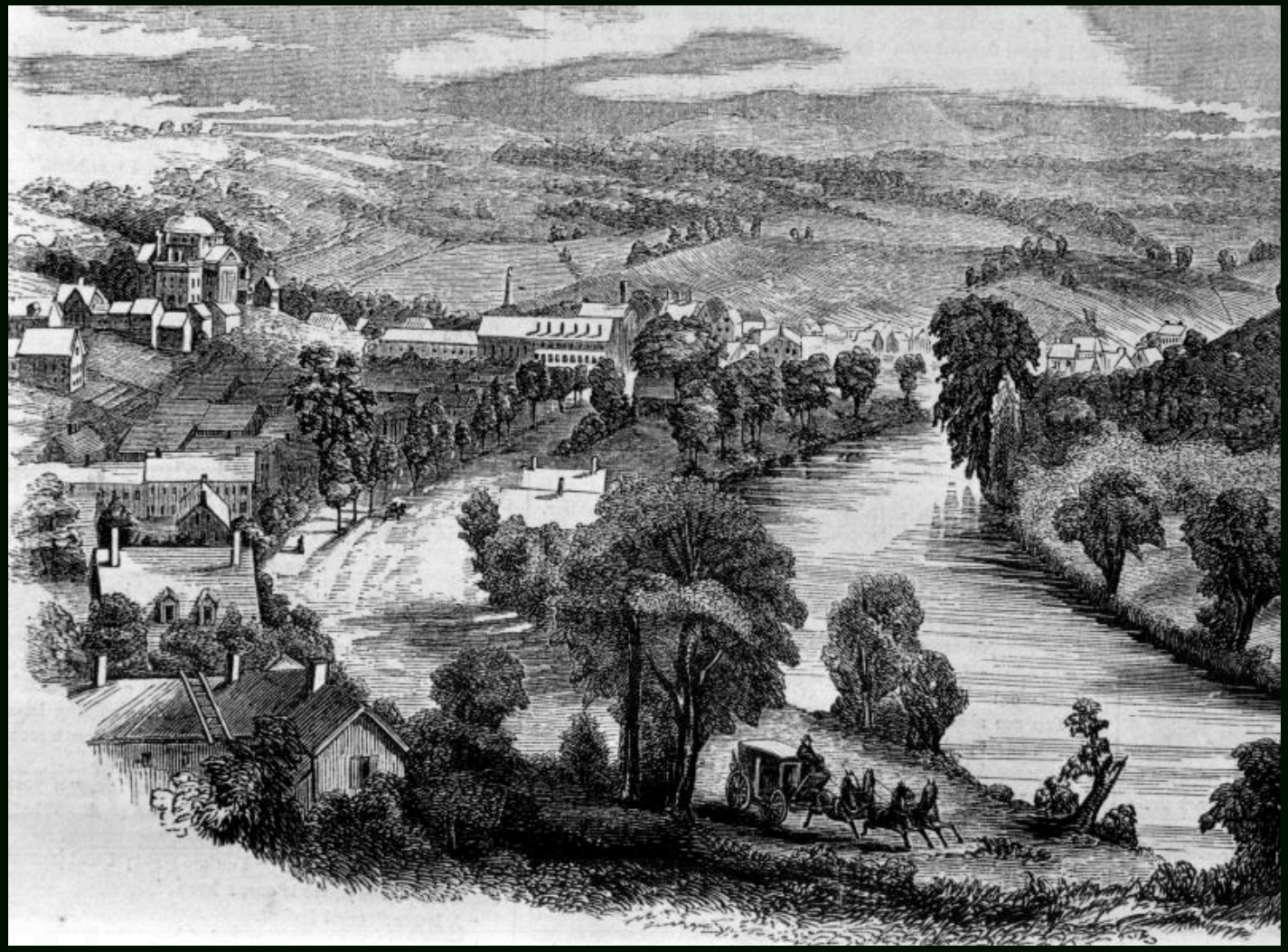
The first Capitol Building was built in 1808

First Known Image of Montpelier (1821 about)

LS06266_000

Even though it was the state Capitol, Montpelier was still mostly rural in the Early 1800's.

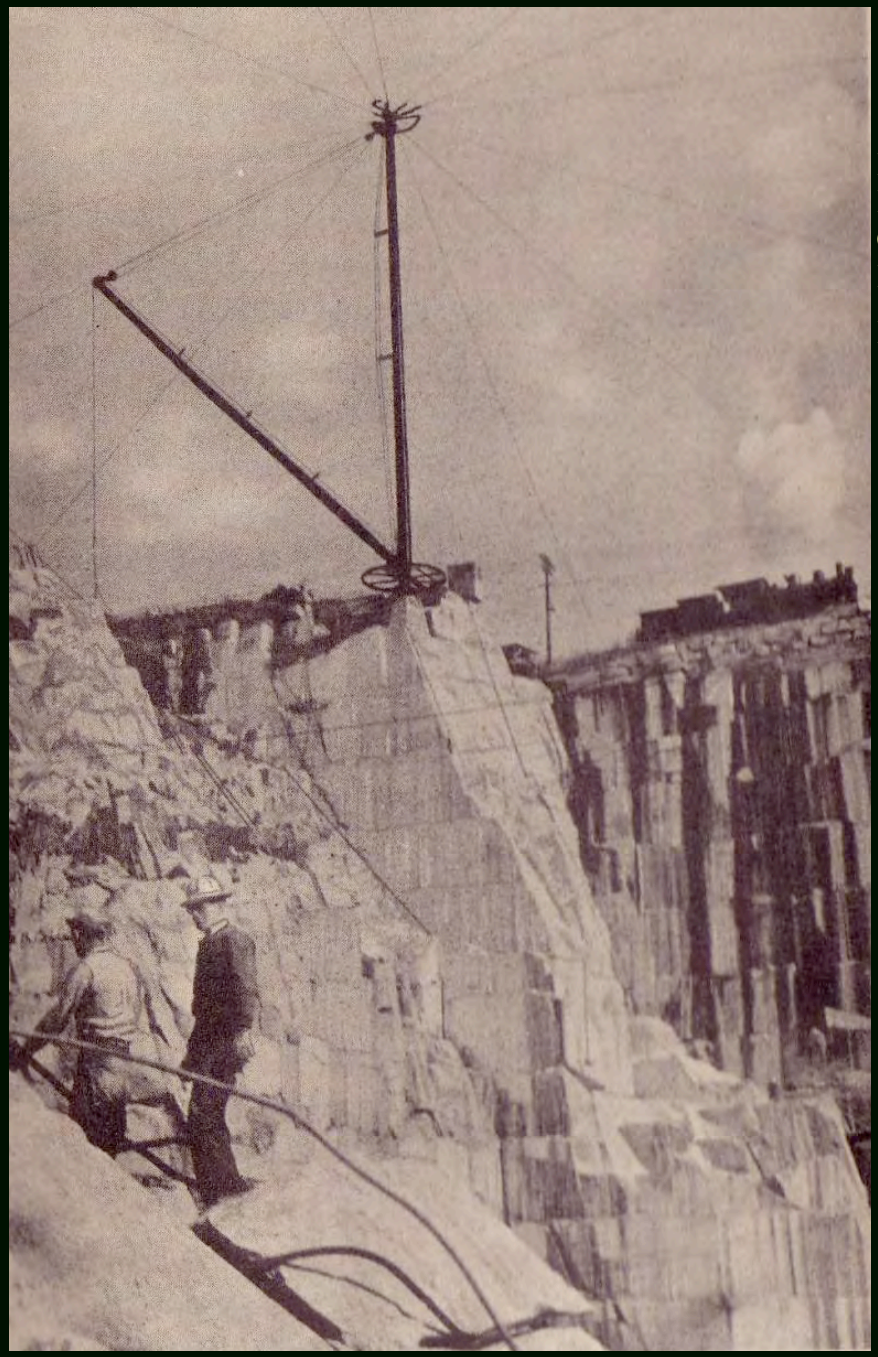
The second Capitol was built in 1838



View of Montpelier, looking East (1857 about)

LS06227_000

GRANITE WAS DRAWN 10 MILES FROM THE NEIGHBORING TOWN OF Barre BY OX CART TO BE USED IN THE CONSTRUCTION OF THE NEW BUILDING.



Derricks at Rock of Ages Quarry (No Date)

LS00552_000

The Statehouse that we have today was built in 1859 after a fire destroyed most of the previous one

The statehouse in Montpelier is surrounded by physical souvenirs of Vermont's past...

The Statehouse has undergone many incarnations

1803

1838

1857

1908

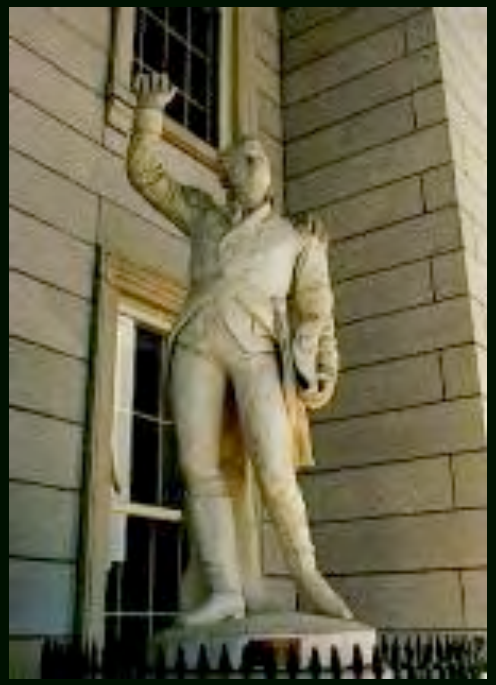
1940

2002

On top of the capitol dome is Ceres, the Roman goddess of agriculture.

The original Statehouse dome was sheathed in copper and painted red, not covered in 24-carat gold-leaf like it is today

Ethan Allen's brother, Ira Allen wrote of Vermont's inhabitants: "They are all farmers..."



On the front portico stands a statue of Ethan Allen leader of the Green Mountain Boys

Agriculture has always been one of the major sources of livelihood for Vermont

Montpelier Farm with open fields (1949 exactly)

LS07015_000

In the early 1900's, extensive logging had reduced the total woodland area to 25%

Note the lack of trees behind the Statehouse

In French, The word "Montpelier", can be translated as "Bare Hill"

Bare Hill Behind the Statehouse (1900 before)

LS04027_000

Luckily the State has recovered its forests.

Postcard View Looking into Village from Southwest (1906 (mailed))
LS00152_000

View Looking into Village from Southwest (8/23/2000)
LS00152_001

Many towns were devastated by the flood of 1927...

Main Street During the Flood of 1927 (Nov. 4))
LS00172_000

But Montpelier was one of those most affected…

Main Street flooded in 1927 (1927 (Nov. 3-4)
LS00603_000

Due to its geographic location between steep valleys, Montpelier was especially prone to flooding...

Flooded Courthouse and Bank (1869-10-04 exactly)
LS03906_000

Flooded downtown (1869-10 exactly)
LS03922_000

In the aftermath, the city was cost over 3,200,000 dollars in damages, but only one life was lost.

State Street after flood (1927)
LS01133_000

Even today, the city is prone to natural disaster, and is in constant danger

Main St. during the flood of 1992

Arial view of 1992 flood

But through all disaster the capitol and the city has persevered, The city has grown with the state, and the state with the city

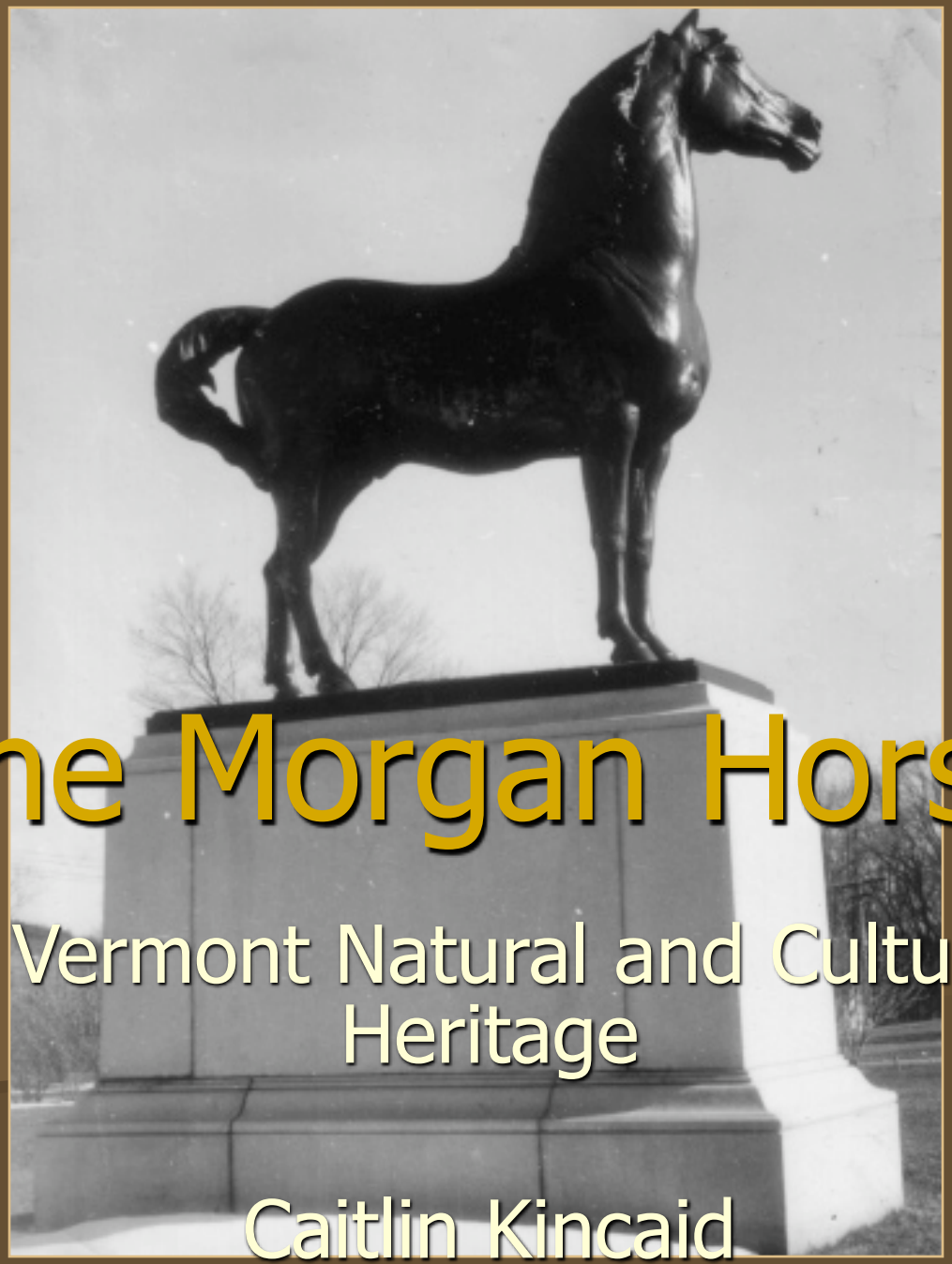
Main Street (before 1900)

LS05638_000

Main Street (after 1940)

The statehouse acts as the ultimate reminder of Vermont's history and position, a grand golden beacon, rising in granite from green hills, surviving flood and fire, to serve as the home of representatives from the entire state

"They hewed this state out of the wilderness, they held it against foreign foe, they laid deep and stable the foundation of our state life, because they sought not the life of ease, but the life of effort for a worthy end."
-Theodore Roosevelt (words written on plaque in Statehouse front hall)



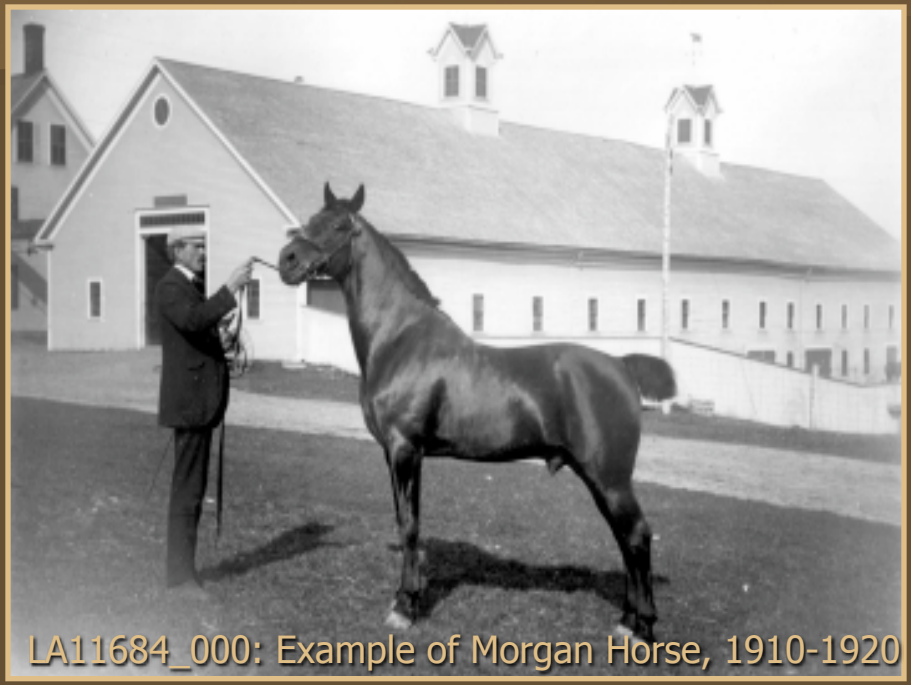
The Morgan Horse

A Vermont Natural and Cultural Heritage

Caitlin Kincaid

LS06143_000: Morgan Horse Statue, 1930-1970, Danville, VT

America's First Horse Breed


LA11684_000: Example of Morgan Horse, 1910-1920

LS1687_000:Example of Morgan Horse 1910-1920

- In 1795, a singer and composer by the name of Justin Morgan acquired a young horse by the name of Figure and moved his family and the horse from Springfield, Massachusetts to Randolph, Vermont. Unbeknownst to Morgan, Figure would become the founding sire of the entire Morgan breed.

The General Purpose Horse

http://www.morganphotoarchive.com/1900.htm: 1900 carriage ride, 1900, East Burke, VT

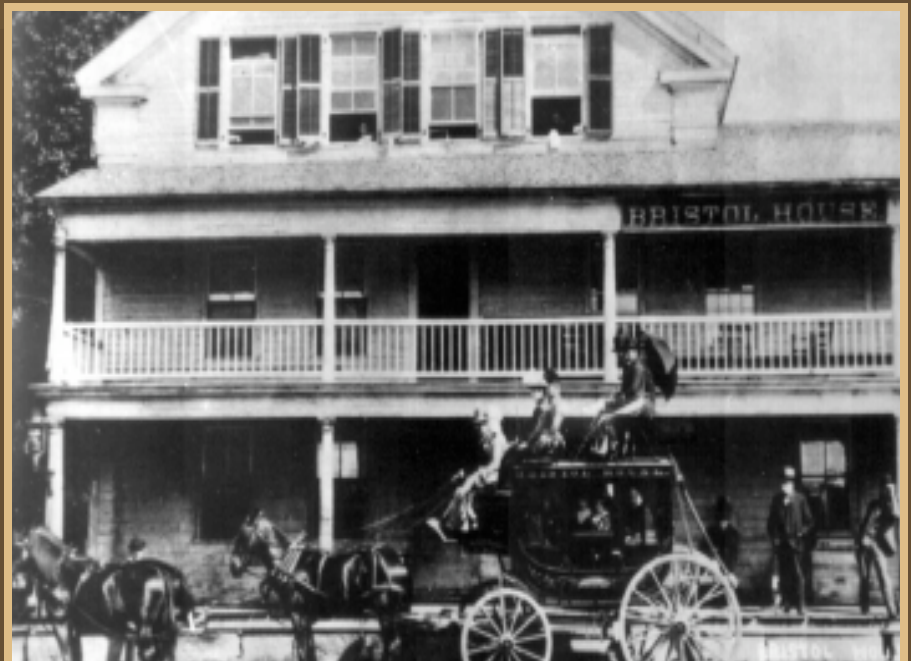
- With his gentle demeanor and athletic prowess, Figure became famous throughout New England. His most enduring quality was his ability to pass on all of his exemplary traits on to his fledglings. By the early 1800s, farmers, businessmen, doctors and horse enthusiasts were clamoring to own Figure's colts.
- His offspring became so well known and so widely used, that the Morgan became known as the general purpose horse. From pulling farm plows, to carrying the family to Sunday church in a stylish carriage, Morgan's could do it all.

Farm & Family Appeal

- Morgans had great cross-over appeal. While they were stately enough to pull wealthy businessmen around, they also were reliable and cheap enough for farmers across Vermont to own. Morgans were able to go from pulling a plow for 10 hours straight to pulling a carriage into town without any fatigue.

Stagecoach Era

LS06081_000: Bristol House stage coach, 1887, Salisbury, VT



LS06231_000:Bristol house stage coach, 1880-1900, Bristol, VT

- Morgans became the primary horse for stagecoach's travel. Inn's and taverns throughout Vermont offered stagecoach travels throughout New England. This was the beginning of the Morgan's expanse throughout the country.

Military Use

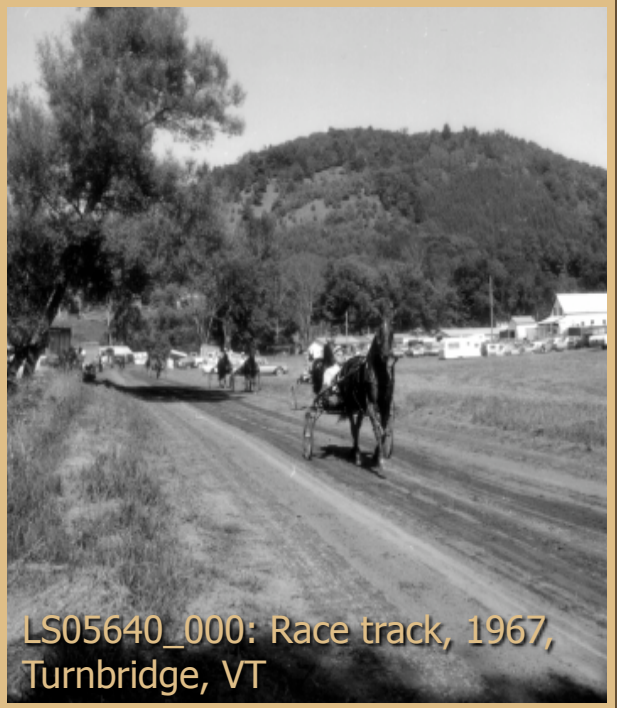
LS01580_000: Military officer and mount,1914-1919,Williston, VT

LS10504_000: Military officer and his mount, 1940-45, Burlington, VT

- Morgans were extremely vital in early warfare. They were prized well above other breeds for their calmness and responsiveness during hectic battles. During the Civil War, the First Vermont Calvary was entirely mounted on Morgans.

At The Races

LS08373_000: Day at the races, 1860-1880,Turnbridge, VT


LS05640_000: Race track, 1967, Turnbridge, VT

- As more mechanized modes of transportation and equipment emerged, the demand for Morgans, and horses in general, fell. However, being the all purpose horse, the Morgan found wide success and popularity on ranches out west and on the Northeast's race tracks. To this day, the Morgan still holds world records in trotting and driving events.

Creating A Breed

http://www.uvm.edu/morgan/,
Colonel Joseph Battell

LS06151_000: Morgan Horse Farm,1950, Windsor, VT

- It was shortly after the turn of the century, when Morgan enthusiasts began to worry about preserving the breed. Breeders were beginning to mix Morgan's with other breeds in order to create more variety. However, in doing so, they greatly diluted the Morgan's genetics. Vermonter Joseph Battell began a concerted effort to concentrate the Morgan breed. He started both the Morgan Horse Register and what has since become the University of

Morgan's Today

LS12553_000: Winter sleigh ride:1993, Woodstock, VT

LS08885_000:Police officer and mount, 1959, Windsor, VT

- Today, Morgans are just as popular as ever. While they no longer are clearing fields and forests, they have found homes across all fifty states in at least twenty countries world wide. They still compete heavily in national and international carriage and driving events. They can be found in 4-H lessons, and as mounts for police officers.

UVM's Morgan Horse Farm

http://www.uvm.edu/morgan/: Morgan Horse Farm, 1995-2003, Weybridge, VT

LS06146_000: Morgan Horse Farm, 1930-1970, Weybridge, VT

- Morgans and Morgan horse farms can be found in every corner of Vermont. Today, the equine industry accounts for around $27 million per year in Vermont. The Morgan farm started by Joseph Battell still exists today and is operated by the University of Vermont. Today, the farm is used for educational purposes.

Sources

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Picture Resources

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Gettin' Stuck – It's Mud Season in Vermont

By Tacia Eriksen

GEOL 196

“Ahhh... Mud Season in Vermont”

Franklin
LS06485

- Vermont enjoys four official seasons each year, but also struggles through an additional bout with mud season, that persnickety period of time between winter thaw and spring growth when just about anything is liable to go wrong.
- This image shows a muddy and rutted road.
- There are a horse and buggy up the road in the distance.

“Mud Season in Vermont." Vermont Living: Vermont's Internet Magazine. 8 Jan. 2008 http://www.vtliving.com/mudseason/index.shtml

Horse and Buggy in Mud

- Mud season is a unique time of year in Vermont, and there are many wonderful stories to be told of grapping with the muck, the mire, the dirt, and the sludge.
- Vehicles get stuck, horses get stuck, people get stuck, and that is just the beginning.
- This image shows a man and his horse and buggy on a very muddy road.
- The wagon wheels and horse's legs are deep in the mud.

Town Unknown
LS05861

Horse and Buggy in Mud. 1913. Vermont State Archives. Landscape Change Program. University of Vermont. 10 Jan. 2008 http://www.uvm.edu/landscape/search/details.php?ls=05861&sequence=000&set_seq=1&imageSet=1199994166-4786753620050&AddRel=

Buggy on a Muddy Road

Town Unknown
LS06477

- Winter in Vermont officially begins at the winter solstice, which occurs on either December 21 or 22, and ends at the spring equinox, around March 21 or 22.
- Toward the end of March, the winter season begins to lessen its grip on the state and patches of bare ground appear while precipitation turns from snow to rain.
- This hand-colored lanternslide shows a horse and buggy on a muddy, washed-out road.

"The Weather and Climate of Vermont." Vermont Geographic Alliance. 8 Jan. 2008 http://academics.smcvt.edu/vtgeographic/textbook/weather/weather_and_climate_of_vermont.htm#mud%20season

Traveling on a Muddy Road

- The rainy and wet transition from winter to spring is often referred to as mud season.
- In the past, when the majority of the state's roads were still dirt, mud season could bring travel to a standstill, schools would be forced to close until the roads dried out, vehicles, horses, and people alike would often become stuck in the mud.
- This image shows a traveler in a buggy braving a gravel road with muddy tire ruts in it.

Franklin
LS06482

"The Weather and Climate of Vermont." Vermont Geographic Alliance. 8 Jan. 2008 http://academics.smcvt.edu/vtgeographic/textbook/weather/weather_and_climate_of_vermont.htm#mud%20season

Car on Muddy Road and Improved Road Later

Arlington
LS06497_000

Arlington
LS06497_001

- These images depict the before and after effect of mud season on a road in Arlington, VT.
- The improved road is wider than the old road.
- The large tree on the left side in the before photograph is not present in the after image.
- The improved road is not as muddy as the old road.

Improved Road. 1913. Vermont State Archives. Landscape Change Program. University of Vermont. 10 Jan. 2008 http://www.uvm.edu/landscape/search/details.php?ls=06497&sequence=000&set_seq=1&imageSet=1199992603-47866f1bec850&AddRel=

Car Stuck in Mud

- The Scenes of Vermont website lists this fond mud season memory from Liz Hurd on their Mud Stories page:

- "Mud season is the time when everyone piles into someone's car after school and we struggle to make it down the old dirt roads. Many times we have to get out and push allowing ourselves to be covered from head to toe with mud. All true Vermonters love mud season!"

- This hand-colored lanternslide shows a black car on a very muddy road.

Rutland
LS06164

Hurd, Liz. "More Mud Stories From Vermont!" Scenes of Vermont. 8 Jan. 2008 http://www.scenesofvermont.com/mud2.htm

Car Stuck in Mud

Rutland
LS06466

- Another fun story, this one from Mike Allen, depicts car keys being lost in the mud after the driver of a stuck vehicle exited through the car's window, since the car was buried in mud up to the bottom of the doors.

- This hand-colored lanternslide shows a black car stuck in a very muddy road.

Allen, Mike. "More Mud Stories From Vermont!" Scenes of Vermont. 8 Jan. 2008 http://www.scenesofvermont.com/mud2.htm

Car Stuck in Mud

- Dairy farmer Charles Keeler of Brookfield states:
- "You can plow snow, but not mud. There's not much you can do about mud except wait for it to go away. The only thing to do is add gravel – 18 inches is a pretty good surface – but mud season occurs before the town gravel pit melts out."
- This image shows a car stuck in the mud on a rural dirt road.

Town Unknown
LS09432

O'Reilly, Jane. "In Vermont: Mind Over Mud." Time Magazine. 10 May 1982. 8 Jan. 2008 http://www.time.com/time/magazine/article/0,9171,925357-2,00.html

Road Curving Around Rock Outcropping

Town Unknown
LS06505

- The Green Mountain Club, with headquarters in Waterbury Center, VT both advertises and cautions against outdoor activities during mud season.
- On their website, mud season is listed as April 15 through the Saturday of Memorial Day weekend.
- This image shows a muddy road curving around a rock outcropping.

"Mud Season Hikes." Green Mountain Club. 8 Jan. 2008 http://www.greenmountainclub.org/page.php?id=60

Dirt Road Through Forest

- The GMC also asks people to: “help protect the fragile alpine tundra and prevent soil erosion by staying off the trails during Mud Season,” while further cautioning about specific popular hiking trails, stating: “the sensitive alpine vegetation on the summits of Mt. Mansfield and Camel’s Hump are most vulnerable to damage.”

- This image shows a dirt road running through a forest, with several muddy tire ruts lining the road.

Stockbridge
LS06559

"Mud Season Hikes." Green Mountain Club. 8 Jan. 2008 http://www.greenmountainclub.org/page.php?id=60

Wagon on Side of Dirt Road

Stockbridge
LS06570

- Some mud season hiking guidelines the GMC does offer include:

1. Walk through the mud, not around it.
2. Hike in the lower-elevation hardwood forest with southern exposure.
3. Avoid the spruce-fir forests at higher elevations.

- This image shows a wagon on the side of a muddy dirt road which runs through a forest with rocky outcrops and large bounders.

"Mud Season Hikes." Green Mountain Club. 8 Jan. 2008 http://www.greenmountainclub.org/page.php?id=60

Person on Muddy Road

- The Vermont Vacations website depicts Vermont's famed mud season, "as passing quickly as the hills turn to green."
- This image shows a person working on the side of a muddy, spring road.
- There are patches of snow and trees along the side of the road and a sludgy gully forming toward the front of the image.

Town Unknown
LS09434

"Spring in Vermont." Vermont Vacation: the Official State of Vermont Tourism Site. 8 Jan. 2008 http://www.vermontvacation.com/seasons/spring.asp

A Muddy Street Beside Pittsburgh Paints

Springfield
LS10415

- In a Time Magazine article titled, “In Vermont: Mind over Mud,” Postman Julian Hill, who drives 63 miles a day on his rural delivery route, states: “detours add five miles in mud season.”

- This image shows a woman pushing a child in a baby carriage across a muddy street next to Pittsburgh Paints in Springfield, VT.

O'Reilly, Jane. "In Vermont: Mind Over Mud." Time Magazine. 10 May 1982. 8 Jan. 2008 http://www.time.com/time/magazine/article/0,9171,925357-2,00.html

Park in Town Center

- The Vermonter's Vermont Blog describes mud season as: "that most wonderful time of year in Vermont," when there is "not much anything that anyone can do…except to wait for the ground to dry up enough for the towns to grade the road."

- This image shows the Woodstock town green surrounded by dirt roads and houses.

- The dirt street travels from the foreground at center and splits around the circular green.

Woodstock
LS07759

"Mud Season in Vermont and Other Dirty Deeds." Vermonter's Vermont Blog. 14 Mar. 2006. 8 Jan. 2008 http://www.vermonter.com/vtpress/?p=21

Farm Plowing in Spring

Corinth
LS09159

- This picturesque excerpt, from Chris Bohjalian's *Midwives: A Novel*, details the correlation between maple sugaring and mud season:

- "…the mud was a nightmare that year, but the sugaring was amazing. That's often the case. If the mud is bad, the maple will be good, because mud and maple are meteorological cousins of a sort. The kind of weather that turns dirt roads in Vermont into quicksand in March – a frigid, snowy winter, followed by a spring with warm days and cold, cold nights – also inspires maple trees to produce sap that is sweet and plentiful and runs like the rivers swollen by melted snow and ice."

- This image shows a farmer plowing his field the old fashioned way with draft horses and a walking plow.

"Vermont Only: Maple and Mud Season." Vermont Only. 8 Jan. 2008 http://www.vtonly.com/loremar9.htm

Tractor Pulling Car

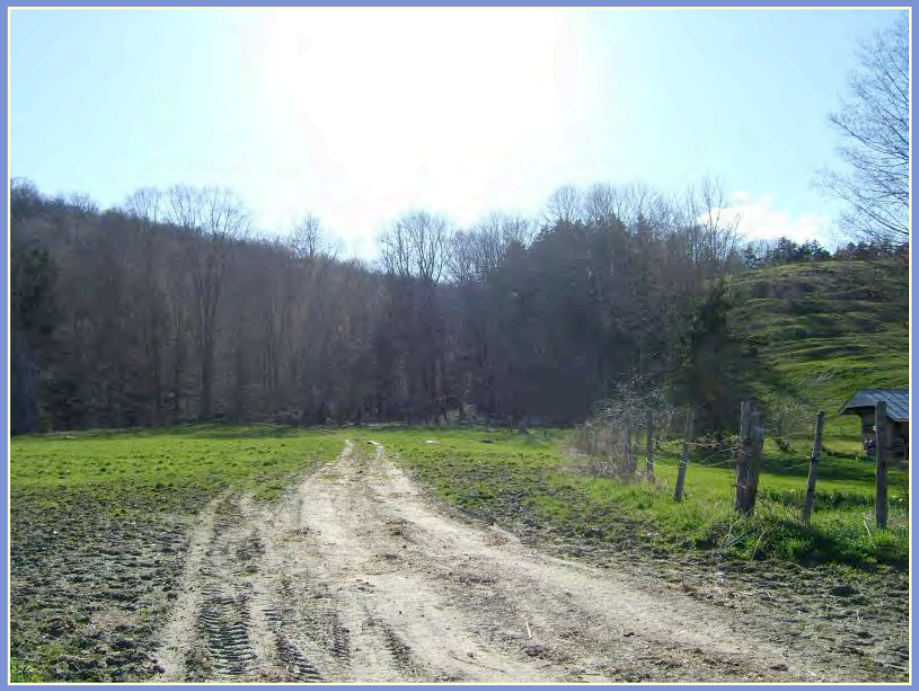
- To conclude, mud season is…
- "That time of year when the simple task of making it home after a day at work becomes a challenge."
- When the oft scoffed at, "jacked-up, four-wheel-drive trucks," with tires bigger than cars become the most viable means of transportation, sometimes the only means of travel able to pass Vermont's rural dirt roads.
- This image shows a tractor pulling a car out of the mud on a rural dirt road.

Town Unknown
LS09433

"Mud Season in Vermont." Vermont Living: Vermont's Internet Magazine. 8 Jan. 2008 http://www.vtliving.com/mudseason/index.shtml

The End

- All images in this presentation may be accessed by typing in the LS number underneath each image in the quick search field at http://www.uvm.edu/landscape



Town Unknown
LS11685_001

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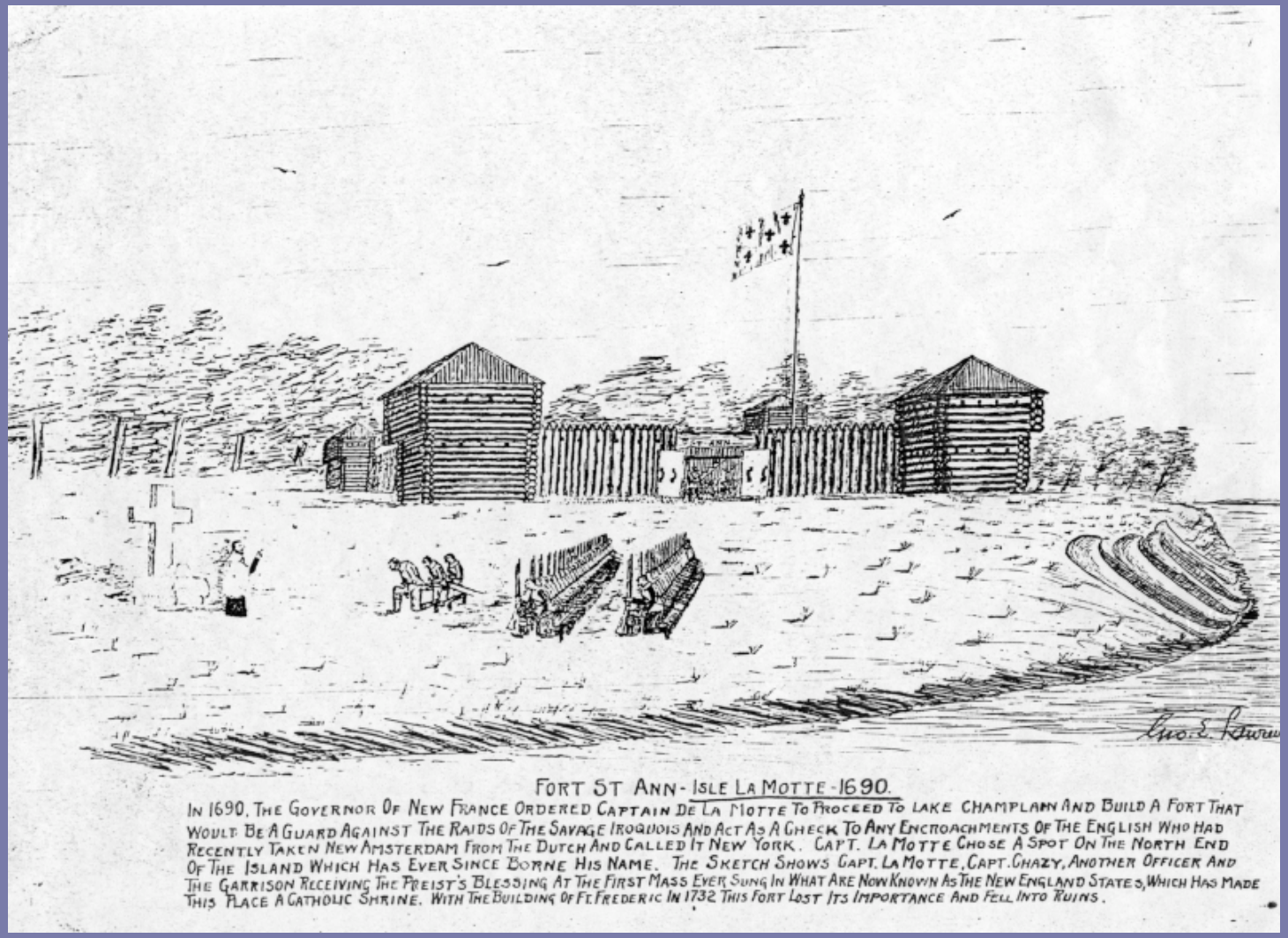
A Nautical View of Vermont

LS07055

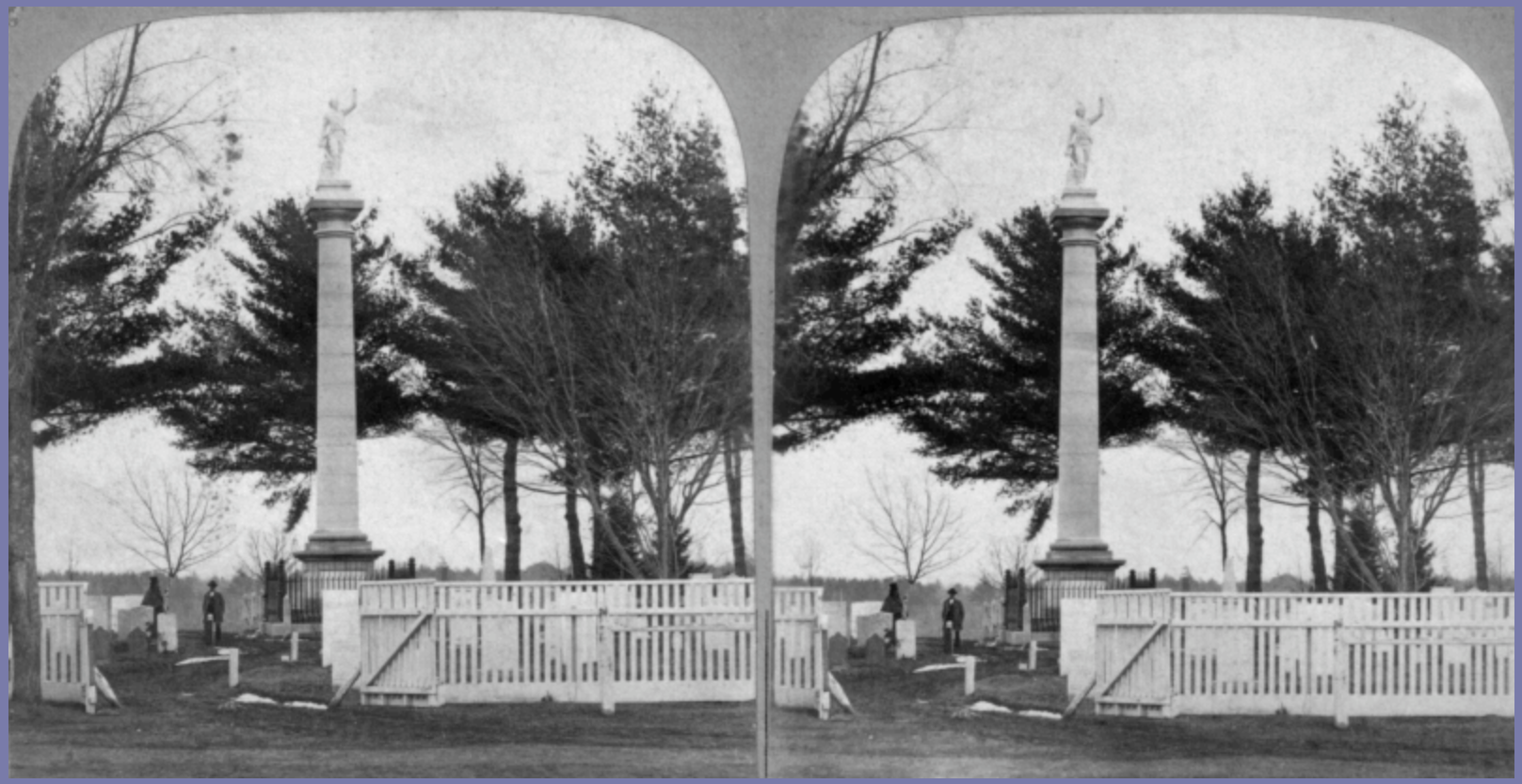
Christy Leonard

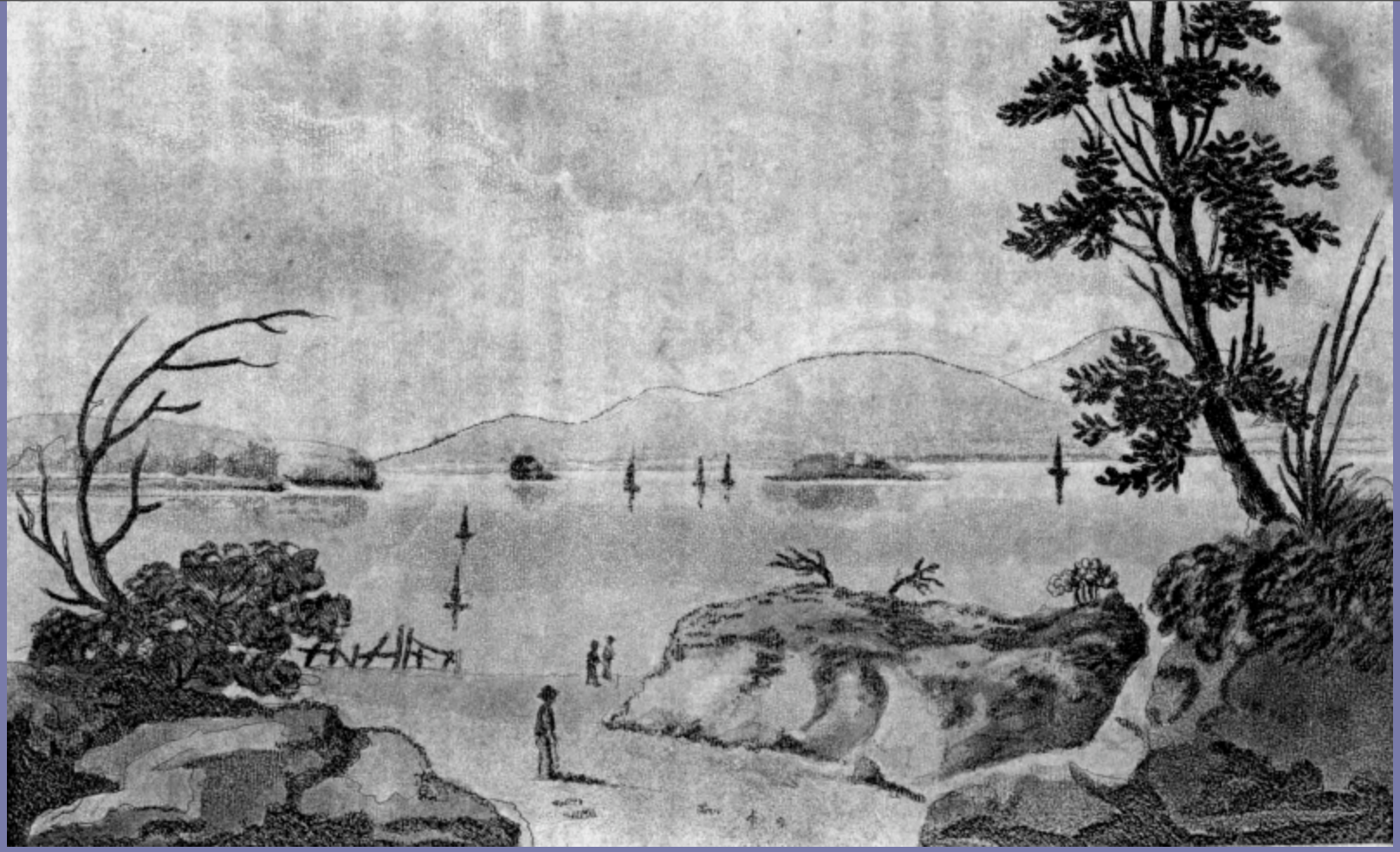
The importance of boating in the Champlain Valley grew during French and British military conflicts over waterways. Vermont waterways were important because they provided access to the rugged interior land of New England. This drawling shows Fort St. Ann, Isle LaMotte 1690. The fort sits along the shore of Lake Champlain. Canoes are pulled onto the shore in the right hand side.

LS01577



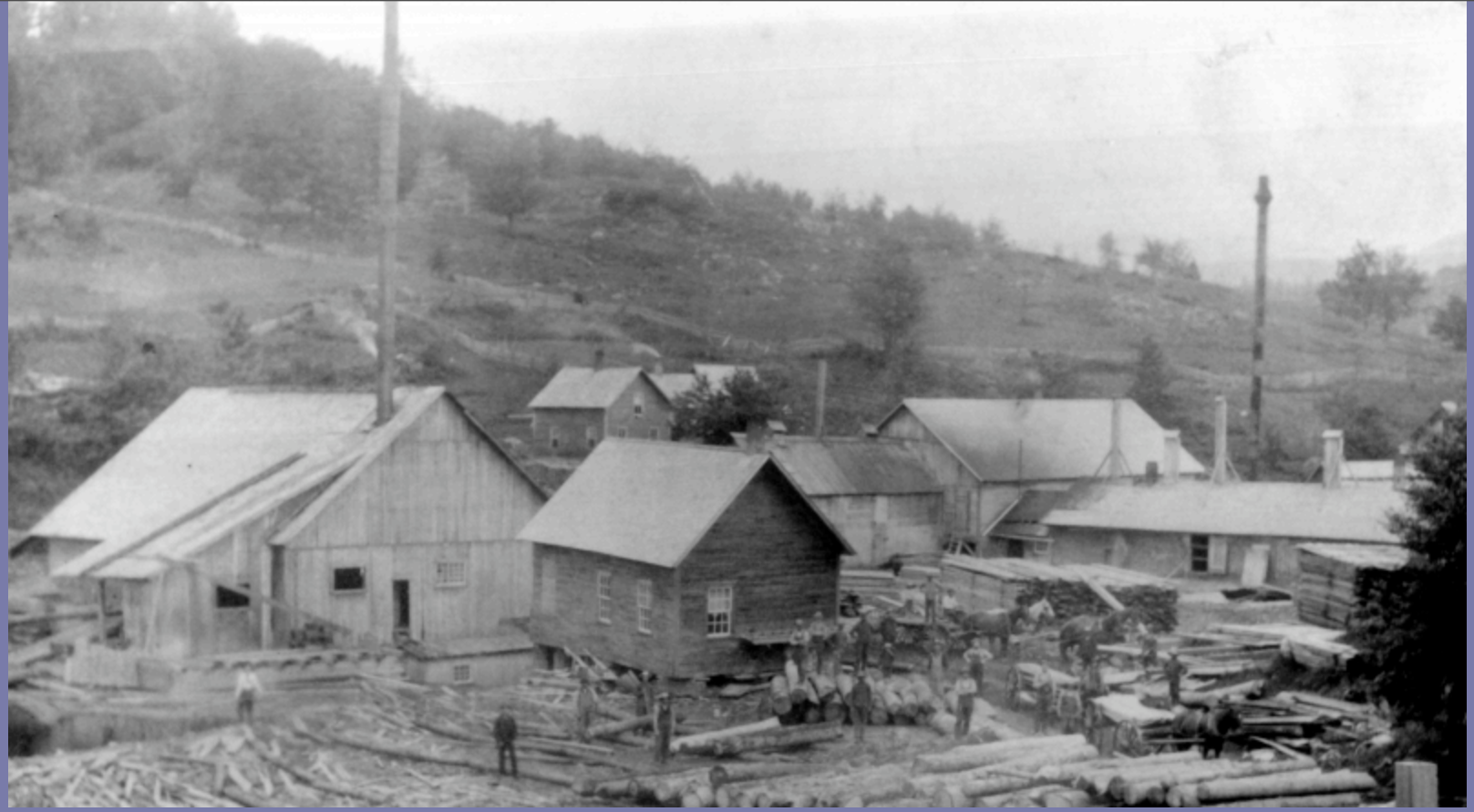
Conflict again was brought to Vermont's waterways with the Revolutionary war. With the end of the war, the British lost control of Lake Champlain, and the Americans eagerly took advantage of the newly gained waterways to develop new trade routes. Remnants of the Revolutionary war are still seen in Vermont. The stereoview below shows Ethan Allen Monument at Green Mount Cemetery taken between 1873 and 1890. LS02887



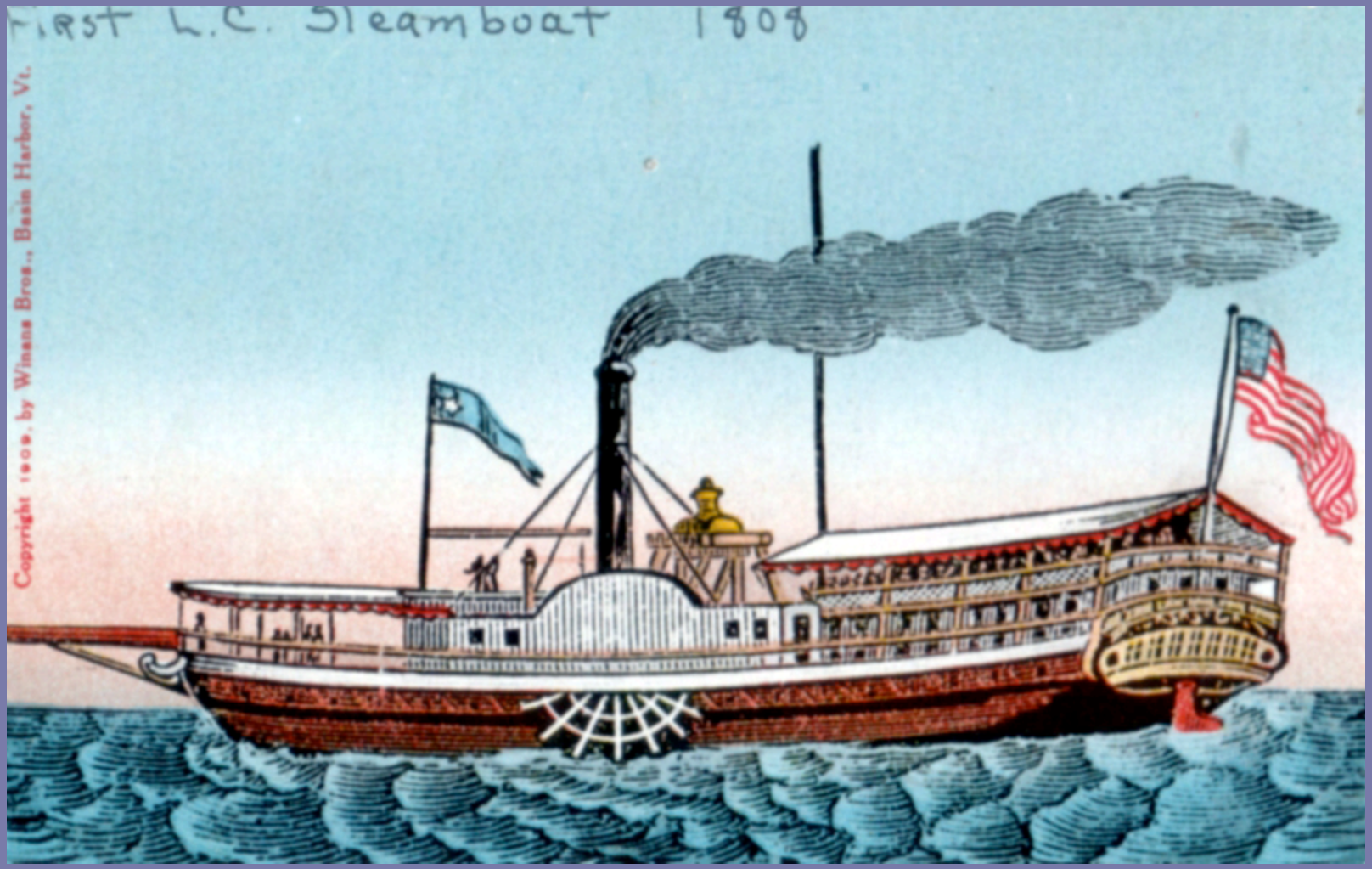


Vermont was settled and commercialized from 1783 to 1812. During this time, a manufacturing industry developed to harvest and mill the newly accessible virgin timber. The timber was then transported along Vermont waterways by sailboats. The image above is an illustration of Burlington Bay in 1811. The illustration shows three men observing and six sailboats sailing the lake. LS01382

The construction of the Champlain Canal connected the Hudson and Champlain Valleys, allowing natural resources from northern New England to profit American industry. Cargo was transported from conventional canal boat to sailing crafts at the end of each canal. The photo above was taken July 1941 and shows a canal lock on the old Champlain Canal in Saratoga, NY. (www.co.saratoga.ny.us.html)



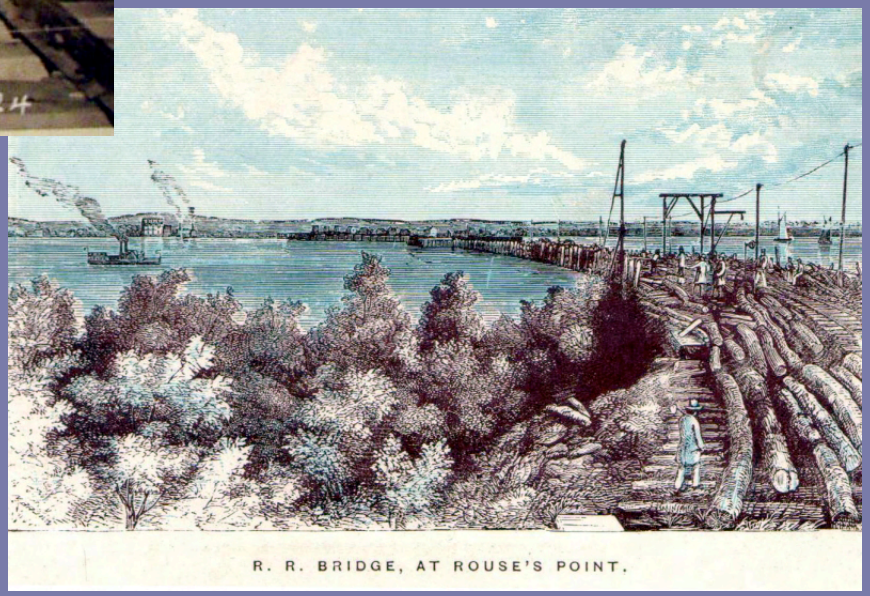
The opening of the Champlain Canal allowed extractable industries such as, stone quarrying, timber cutting, and iron mining to boom. The image above was taken in Lowell, VT between 1860 to 1900. It displays a saw mill which was used to cut the newly harvested timber. The picture shows numerous buildings and sheds along with horses. This photo also displays clear cutting, which took place as the timber industry boomed. LS04496



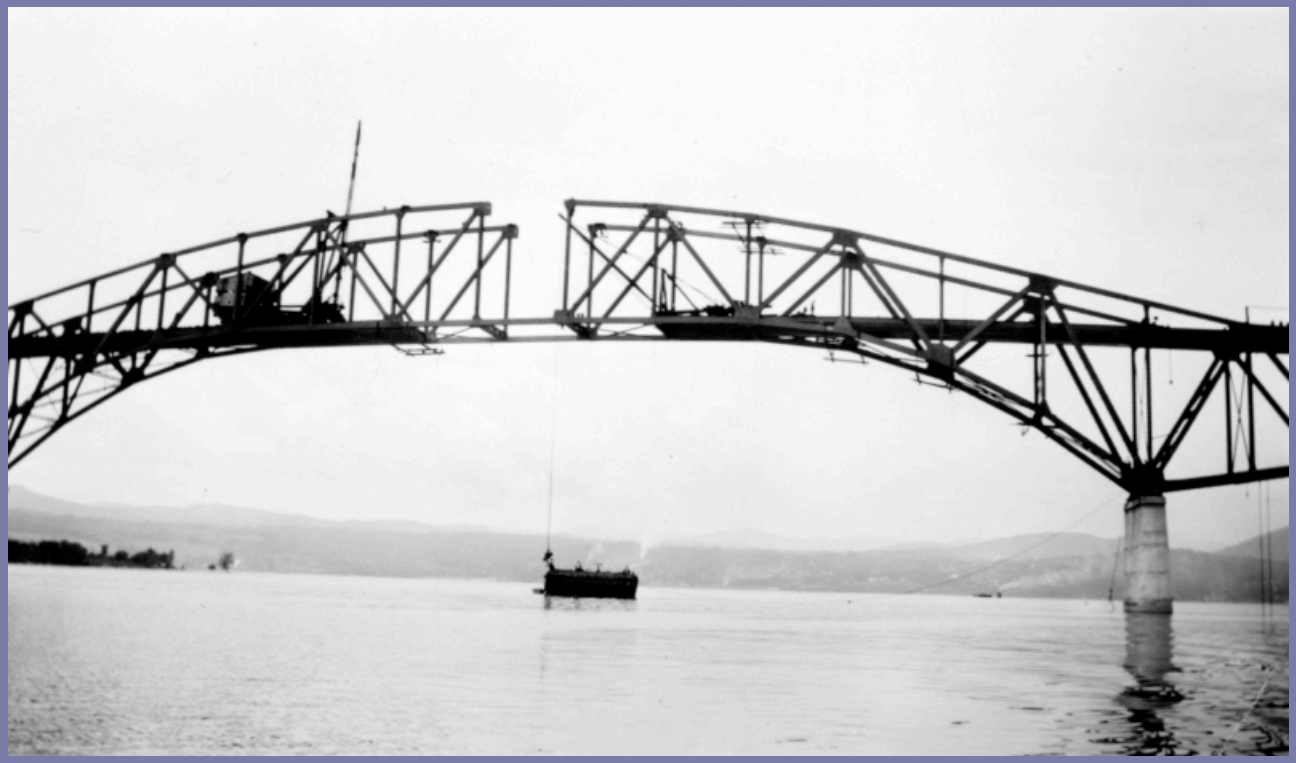
Opening of the Champlain Canal brought steam navigation to Vermont. The image above displays a post card which depicts the first steamboat on Lake Champlain, and the second steamboat in the world. It was built and launched in Burlington, VT in 1808. LS11311

The development of the rail system caused the decline and termination of canal use. This photo shows a steamer being moved to a museum because it was no longer needed for commercial use.

The picture to the left depicts a railroad crossing Lake Champlain. It was new investments like this that caused the termination of canal use, and therefore decline of commercial boating. LS02300



This image shows the construction of the Champlain Bridge in Addison, VT 1929. LS06711



Passenger steamers declined with the construction of bridges which crossed the lake and introduction of the automobile to the region. The photo above also displays the construction of the Champlain Bridge in Addison, VT 1929. LS06713

Boating in Lake Champlain Colchester, VT 1967. LS05565

From 1945 to present day waterways of Vermont have primarily been used recreationally. The increase in recreational boats caused an increase in public beaches and beach goers. A concern over the lake's water quality and health also increased with increasing recreational use.

Cedar Beach on Lake Champlain, 2007. LS00722

Boating in Vermont has had a large impact on both the landscape and waterways of the state. Vermont was only able to extract its natural resources because there was a method to transport them, via boating. Boating is now a large attraction for tourist to the state, helping to support the local economy.

Image was taken in 1964 and shows people boating on Lake Champlain at DAR state park. LS09100

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An Uphill Town Underwater: The flood that made history in Sharon, Vermont

University of Vermont
Gregory Baldwin
7/24/05

November, 1927 Vermont

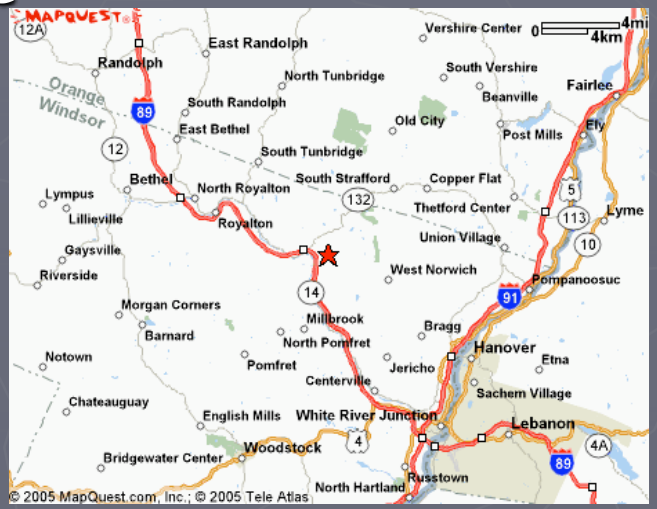
LS00172_000 (Main St during the flood, Richford, VT)

LS00172_001 (Present day Main St, Richford, VT)

- October, 1927 rainfall for the state of Vermont was already 50% above normal.
- A tropical storm, thought to go out to sea, collided with a high pressure barrier in New England causing torrential downpours on Vermont
- Governor Weeks pronounced the disaster as "The greatest catastrophe in Vermont's history"
- 9,000 people were left homeless; 275 houses destroyed;1500 damaged; 1250 bridges destroyed; 84 dead.

Sharon, VT

- Sharon is a six square mile town located in the eastern-central part of Vermont
- Sharon was chartered in 1761
- The White River flows diagonally through the center of the town
- Currently, there are 1411 people living in the town according to the 2000 census report



www.mapquest.com (map of town)

Sharon's location in the state

Highway bridge, center of town

The 1927 Flood: Sharon, VT

LS06374_000 (washout during the flood)

Aerial view of Sharon and the white River, November 1927, and April 2000

Two aerial photographs, one taken in 1927, and the other taken in 2000.
In the 1927 photo, the destruction of the flood can be seen. There are flood deposits visible, along with the excess water expanding the width of the river at the top of the picture. The 2000 Picture is the same, though without the flood damage. The railroad bridge was rebuilt and there is now an interstate running through what use to be a forested area.

What happened to Sharon?

Markings were made along the northern interstate bridge of how high the water rose during the flood.

Currently, the markings read up to sixteen feet.

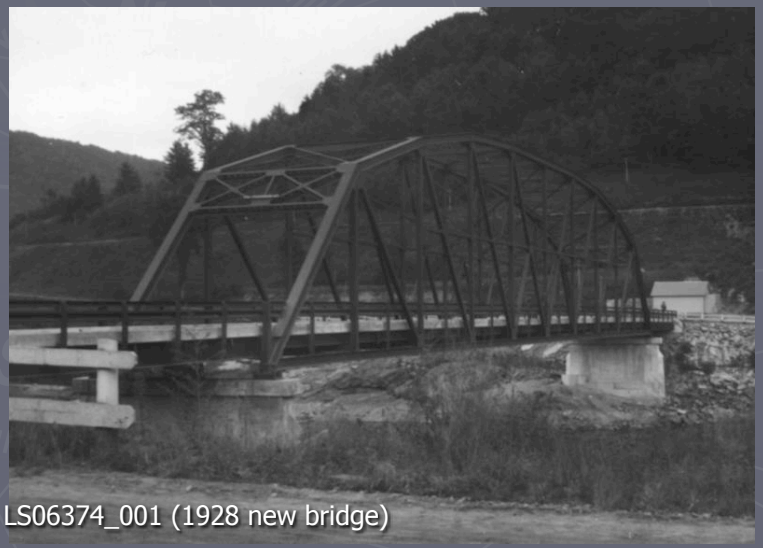
The spring thaw usually raises the river in this spot not much more than a few feet.

Water passing underneath the interstate bridge is seldom seen over one foot in depth.

The Flood: Sharon, VT

LS06374_000 (washout during the flood)

(Current view) 7/05


LS06374_001 (1928 new bridge)

Before the iron bridge was built in 1928, there was a wooden bridge that stood in the same spot. It was swept away during the flood. The new iron bridge was built higher and stronger than the old bridge.

Restored in 1994, the iron bridge is still in use today

The Railroad Bridge

LS01450_000 (the washout of the railroad bridge in Sharon, 1927)

- Just over $7,000,000 in damage was done to the railroads throughout the state, including the Central Vermont Railroad (CVRR) that ran right through Sharon.
- The CVRR bridge in Sharon was one of the first railroad bridges in the valley to fall.
- There is still debris in the water, left from the previous bridge, that has proven to be treacherous to swimmers and bridge jumpers. Though the water is naturally deep, railroad ties and spikes were left behind.

The Deaths Resulting: Sharon

3 of the 84 deaths that occurred in Vermont happened in Sharon.

Claude Reynolds and her two children were washed away in their house, after an attempt to be saved by her brother.

The picture shows where part of the highway washed out just a little south of Sharon. Steep banks are visible where the water washed away part of the road.

LS01451_000 (Arial view of the white river)

The Sharon Dam

Pictures taken 7/05, The Sharon Dam

It was the rush of water from the fall of the dam that took the lives of the Reynolds family. It was also the suspected reason for the amount of damage done to West Hartford, VT a few miles down the river.

Broad Brook

Two bridges along the road were washed away due to the rising water of the Broad Brook in Sharon.

(A Shallow Chute of the Broad Brook in Sharon, 7/05)

(A view of one of the rebuilt bridges on Broad Brook, 7/05)

Baldwin Hill

The overflow of Quation Brook along Rt. 132 in Sharon caused a washout on Baldwin Hill leading into Strafford, VT.

(Quation Brook, 7/05)

(Baldwin Hill leading into Strafford, 7/05)

Sharon Roads

LS06606_000 (Flood damage to the highway just south of Sharon)

After the flood, it was estimated that more than 25% of all the roads in Sharon were washed out, including the washout of the steel highway bridge.

The picture shows part of the washout along the highway in Sharon.

New Roads were built due to the damage the flood left behind

LS06607_000 (Construction work for a new road in Sharon)

Road Construction that was being done in Sharon for a cutoff road in 1928

Closing Thoughts…

The Flood of 1927 was one of the greatest disasters the state of Vermont has ever seen. The whole state felt the effects of the flood, along with other areas all throughout New England.

Sharon, the small town along the White River, survived the disaster though it saw a significant amount of damage. Roads, bridges, railroads, and homes were all destroyed along with people's lives. Somehow, people were able to work together, and rebuild the small town into what it is today.

Photos

Photos:

Landscape Change Program Website

http://www.uvm.edu/perkins/landscape/

(*Photos with LS captions)

Other Photos taken by Gregory Baldwin.

Sharon, Vermont. July 23, 2005.

(Sharon Church, and Historical Society 7/05)

LS01448_001 (April 2000)

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'School trip in the snow' Barre, Vermont 1920-1940 LS 05162

The tracks of skiing through three Vermont mountains

CHRISITNE HERTZ

FOR THE LANDSCAPE CHANGE PROGRAM

JANUARY 2007

a glimpse into skiing's past

This scrapbook will provide a glimpse into the history of alpine skiing in the state of Vermont. Skiing has had a tremendous impact on the lifestyles of Vermonters and the economy and landscape of this state. It will follow the development and transformation of three mountains: Burke, Stowe and Killington.

The snowy road to Stowe

Stowe, Vermont LS 06994

before the tracks emerged:

three mountains before skiing

Mount Mansfield from the valley before ski trail Stowe, Vermont 1907-1915 above: LS 11692

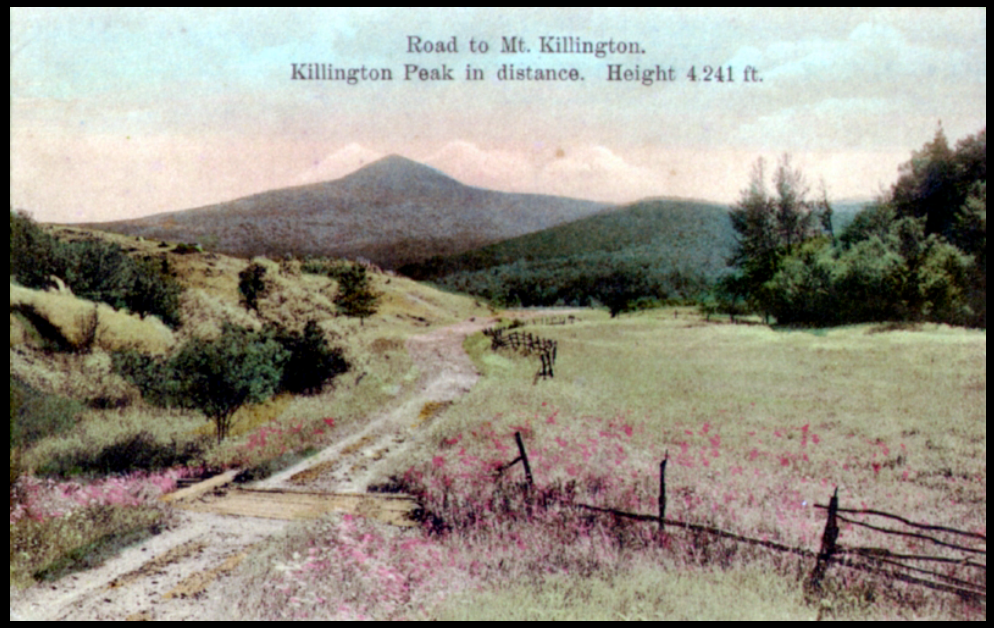
Before alpine skiing emerged on Mt. Mansfield other tracks did- a road was constructed to the top of the mountain in 1870 for horses and later adapted for automobiles in 1920. Guests often stayed at the Summit House, later named the Mansfield Hotel.

LS 10579

before the tracks emerged:

three mountains before skiing

Burke Mountain and rural road LS 08991
Burke, Vermont 1930-1940



Dirt road leading to Mt. Killington LS 00716

Killington, Vermont 1907-1915

Burke is located in a very rural part of the state of Vermont and is described by Jules Older as a 'mountain surrounded by abundant beauty and little else.' The mountain remained relatively untouched, with the exception of a devastating forest fire that nearly deforested the mountain at the turn of the century. From Killington peak in 1763 Reverend Samuel Peters christened the state of Vermont and the mountain remained in contention as the highest peak in the state for decades.

before the tracks emerged:
three mountains before skiing

Fire tower on the top of Burke Mountain LS 03741

Burke, Vermont 1930

Road with view of the mountains LS 01029

Killington, Vermont 1900-1910

Early development for both mountains was slow- including a fire tower for Burke Mountain and a road to the base of Mount Killington.

fresh tracks:

three mountains and the beginning of skiing

Ski jumping at the Stowe Winter Carnival

Stowe, Vermont 1922

Left: LS 06937 Right: 06939

Stowe hosted its first Winter Carnival in 1922 and, along with an ice acrobat and sculptures, the town created a ski jump. A decision that, literally, propelled Stowe to the forefront of alpine skiing.

fresh tracks:

three mountains and the beginning of skiing

The Mansfield Hotel 1930-1945

LS 11457

A combined public and private effort was needed to create most ski resorts including Burke, Stowe and Killington. In 1933 Craig Burt, the owner of the Mansfield Hotel, and Perry Merrill, the director of the Vermont Forest Department, persuaded the Civilian Conservation Corps (CCC) to build a trail down Mt. Mansfield. Stowe's first trail was named

fresh tracks:
three mountains and the beginning of skiing

Parking lot at the top of
Burke Mountain

Burke, Vermont

1930-1940

LS 03117

Burke Mountain had a road and two trails built by the CCC in the 1930s, including Wilderness and Bear's Den, both still in use. Land for ski mountains were often bought by or donated to the Vermont Forest Department and later developed by private investors.

early days:

three mountains and the development of skiing

Burke Mountain on opening day Burke, Vermont 1956 Left: LS 10768 Right: LS 10769

Burke Mountain developed by thirteen local business men incorporated as 'Ski Burke Mountain!' The group received an appropriation from the Legislature to create ski trails designed by 'trail design master' Charles Lord. The mountain officially opened in 1956.

early days:
three mountains and the development of skiing

Skiers on a chair lift LS 10735

Stowe, Vermont 1958

Skiers on a double rope tow LS 10732

Killington, Vermont 1958

The development of Stowe continued throughout the 1940s and 1950s, marked by the introduction of the chair lift in 1940 and increasing expansion.

Killington, originally purchased by the young Pres Smith in 1958, began as a small, rural mountain.

early days:
three mountains and the development of skiing

Eager skiers awaiting their lessons LS 10734

Killington, Vermont 1958

Skiers in a lesson at Spruce Peak LS 10736

Stowe, Vermont 1958

Throughout the 1950s skiers began to flock to the sport, and programs such as Killington's Gradient Learning System expedited learning to ski. In the early 1960s ski resorts and their coupled towns were expanding at a rate far greater than that of towns without ski mountains.

early days:
three mountains and the development of skiing

Heading toward the base lodge LS 10733

Killington, Vermont 1958

Killington expanded unlike any other mountain: when the mountain opened in 1958 it was one hill. Today it is composed of six different mountains covering 77 miles of alpine ski terrain. The town of Sherburne had a 1038%: increase in the housing units in its community from 1960 to 1970.

early days:
three mountains and the development of skiing

Ski racks at the base of Killington in 1958

LS 10731

Concerns over Killington's further expansion resided in two prominent arguments: Only five mountains in Vermont rise above 4,000 feet, and three of these are already marked with ski trails. Second, many identify Vermont with a certain quaint New England feel, which a sprawling modern resort village might spoil.

becoming an industry:
three mountains and the expansion of skiing

Skiers on the trail LS 05839

Killington, Vermont 1971

Chair to the summit

Burke, Vermont
date unknown

LS 07992

"[The] desire to conserve natural resources and preserve a rural way of life sometimes runs counter to the American Dream- the dream of pushing back the wilderness to eke out a living, of pursuing an opportunity and creating a better life with hard work, determination and vision. Carried to an extreme, a contemporary 'no-growth' attitude would even discount the historic importance of recreation and tourism as an integral and sustaining component of the Vermont economy." –Karen Lorentz

becoming an industry:
three mountains and the expansion of skiing

Governor Snelling LS 07994

Montpelier, Vermont 1977-1985

Above: Killington in 1967 (LS 07980)

Below: Stowe in 1968 (LS 05714)

As ski areas and the ski industry continue to expand across Vermont, towns and citizens are called upon to make vital decisions that will effect the future of not only their lifestyles but also their economy, and their landscape.

the mountains today:

Stowe, Vermont

LS 08086

To take a look at what the mountains look like today, click on the following links to their web pages (works only in powerpoint)

Burke Mountain

Killington

Stowe

Vermont Blizzards: Snow Removal then and now

It is clear that snow has always been a part of the landscape in Vermont, so how have things changed? My scrapbook captures the evolution of snow-removal technology. LS07086

Vermont 1959

Blizzard of March 1888

Look how far we have come! This photograph depicts Main Street in Brattleboro, Vermont after a big snow.

Notice there seems to have been no attempt to remove snow from the roadway. If you look closely you can see a horse and cart traveling across the snow. LS01896_000

Snow Rollers

The reason the snow was not removed from Main street in the previous picture is because before the plow and the automobile, people used snow rollers.

LS02787_000

Greensboro, Vermont 1923

R-19 Four horses and very large wooden rollers were used to pack the roads for winter sleding travel well into the 1930's. Cars spent the winter on blocks!

Snow Rollers continued

The purpose of these rollers was to pack down the snow (not remove it) in order to provide a smooth surface over which horses and carts could pass. LS03955_000 Vermont, 1941.

Snow Rollers

This picture gives a better idea of what snow rollers looked like and the materials they were composed of. Snow rollers were often constructed with two wooden barrels centered around a cast iron bearing to support a steel arbor. A platform was built over the rollers for a conductor, and a neck yolk was present to hold the horses. LS03993_000 Newark, Vermont 1955.

Winter Travel

This picture shows why it was not necessary to clear all the snow from the roads. Since most travel occurred by horse and cart, having packed snow made it easier for the carts to slide along. LS01934_000 Ryegate, Vermont 1907.

The beginning of the Snow

With the invention of the automobile, packed snow on the roads was no longer safe. Snow rollers were replaced by plows with V-shaped wings.

R-3 Another view of the snowplow. Bulldozer plow was used from 1940's through most of the 1950's!

Greensboro, Vermont 1950

The Snow Plow continued

R-5 The large bulldozer with plow and wings had hard work getting through, let alone making a wide road!

Although the plows were originally driven by horses, bulldozers were all the hype in the 1940's and 50's. LS02789_000 Greensboro, Vermont 1950.

The evolving methods…

It is obvious from these two photographs why Vermont's snow removal program needed a face-lift. Below: LS07913_000 Stowe, Vermont 1963.

So how did Vermont get from point a (the picture above) to point b (the picture to the right)? The answer: Vermont's Agency of Transportation. Above: LS11586_000 Burlington, 1880.

The Modern Plow

Williamstown, Vermont
1965

Today Vermont's Agency of Transportation is equipped with multiple plows and snow removal devices. They follow a three step process including salt application, sand application, and a chemical de-icing process. LS07087_000

Everyday life

The best part of new snow removal technologies is the effect it has on people's everyday lives. During the earliest blizzards in Vermont roads were impassable for days, newspapers were shut down, and mail was not delivered for up to a week!

This picture depicts a mailman in Burlington making sure mail was delivered the day following the big Valentines Day Blizzard of 2007. This is a perfect example of how snow removal technology has bettered every day activity. LS12149_000

Compare..

These two pictures depict powerful blizzards: one from 1888 and one from 2007. Although the Valentines Day blizzard left cars covered in snow, the roads were cleared the day after, unlike the picture above.

Above: LS12147 Burlington, 2007

Below: LS11584 Burlington, 1888.

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Snow and the effects it has on Vermonters!

Base Lodge at Sugarbush, LS10790 Warren, 1959

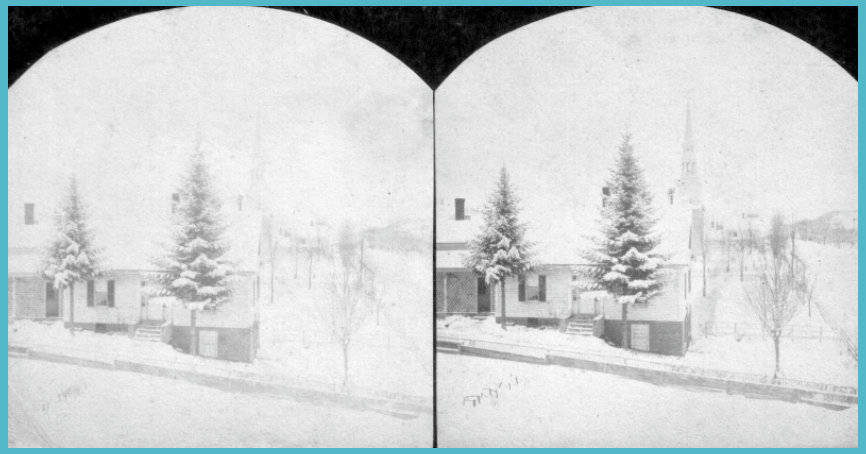
Vermont during those harsh months of Winter!

By Jessie Peters

I created this scrapbook in order to show how the snow effects Vermonters, in both good and bad ways!

I displayed images about major storms and also images about recreational activities that people participate in!

It's a very important and interesting topic that pertains to any Vermonter. We all attend the University of Vermont snow is a major part of our lives! Enjoy the slideshow!



A House in Winter

St. Johnsbury, 1875

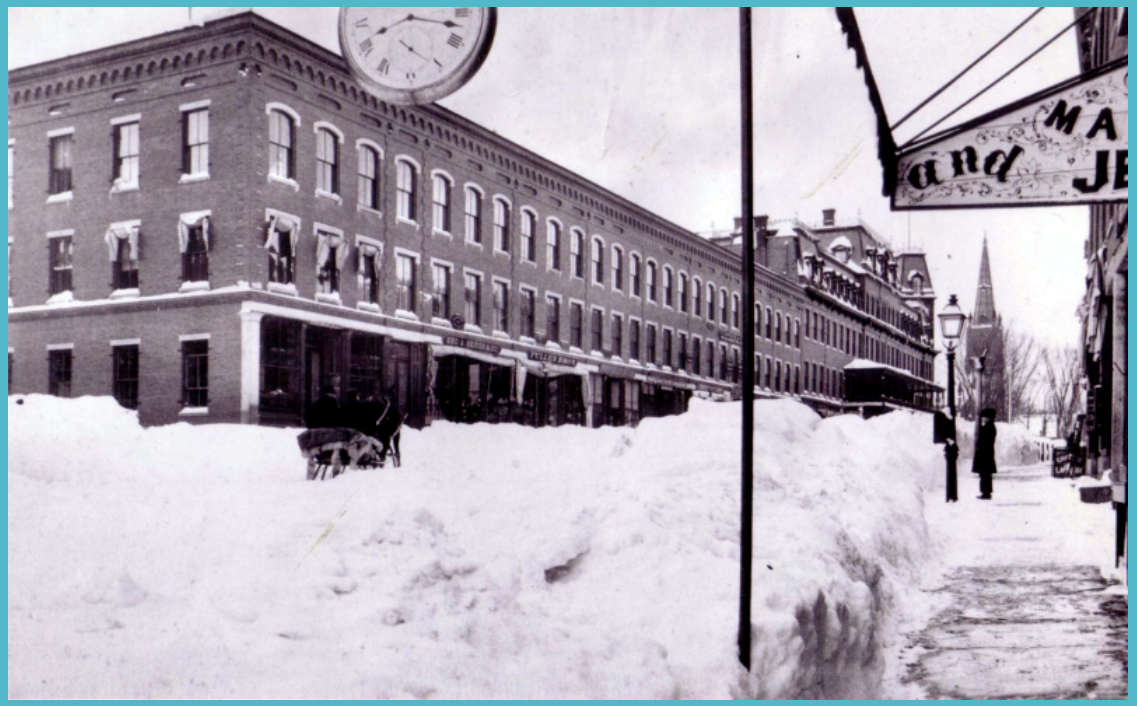
LS04701

Blizzard of '88

1888 Blizzard, Burlington, LS11583

Brandon, 1888, LS01898

In March of 1888, a terrible storm known as the Blizzard of 1888 hit the entire East Coast. This nor'easter kept people out of work and off the roads for days. Vermonters were accustomed to such harsh weather but there were 15 feet high snow drifts and snow so thick that you couldn’t see in front of you!



Main Street after blizzard, Brattleboro, 1888, LS01896

Ice is a major hardship for Vermonters as it creates dangerous driving conditions, which lead to many car accidents.

Before cars, people had to worry about damage to their farming equipment, animals and heating their homes.

Car in Ice Jam, LS09112

Hardwick, 1964

Ice Storm, Greensboro, date unknown, LS02741

Other Big storms

College Green after storm, Burlington,LS10360

Winter Snowstorm, Burlington, 1880, LS11585

After a Snowstorm, Bristol, 1930, LS08228

and the aftermath...

“…treacherous for driving, perfect if you happen to be a snowboarder or a skier.”

Collins, click here

Car Accident on the Interstate 89… 1970

Montpelier, LS07875

Don’t just stand there… get out and enjoy the snow!

Town unknown, 1955, LS02307

Collecting sap!

Town unknown, 1964, LS09107

Dad with his son, ice fishing!

Pick-up ice hockey!

Middlebury, 1960, LS05702

Brookfield, 1982, LS08056

Boys cutting and harvesting ice!

Town and year unknown, LS05614

Skiing is a major sport for Vermonters!

Ski lift on a beautiful ungroomed trail, Stowe

1958, LS10738

Skiing started as a means for transportation to get down impassible roads in the winter.

Later it became a hobby and grew to be one of the most popular sport in Vermont!

People on skis, Stowe

1958, LS08914

The Winter Carnival!

This event dates back to before the Civil War! It is held in January and involves all sorts of winter sports to participate in!

Burlington Winter Carnival, LS10242

The first winter carnival was held in 1921 to decrease the winter blah's and increase the excitement of winter! It sure stuck because it still goes on today!

1922, LS06933

Stowe Winter Carnival, ice castle!

Ski jumper at the Stowe Winter Carnival!

1922, LS06937

At the Winter Carnival you will find, "... breathtaking ice sculptures, live music, great food, costumes, crafts, contests, parades, bonfires, and fireworks and of course there's the crowd. Winter carnivals are among the most anticipated annual events in Vermont, and whole communities come out to celebrate!"

-Vermont Living, click here

Ice Acrobat putting on a show!

Stowe, 1922, LS06935

Stowe, 1922, LS06936

Thanks to the Landscape Change Program archives, I was able to put together this scrapbook to display how snow effects the lives of Vermonters! Although there may be hardships when a snowstorm hits Vermont, people are able to get outdoors and enjoy themselves with various activities that include all ages!

Burlington, 1965, LS12016

Child playing on ice!

The Sweet Stuff: Maple Syrup in Our Past, Present, and Future….

It's Sticking With Us!

By Barbara Snelling

What is Maple Syrup?

- Maple Syrup is a thick, sticky liquid that is made from the "sap" of Maple trees.
- "Sap" is a sweet water that is created by the Maple trees in spring to make the leaves sprout after the long winter.

Sap dripping into a bucket

(Courtesy of http://www.k12.nf.ca/jakeman)

What Trees Contain Sap ?

- Three different types:
  - Sugar Maple
  - Black Maple
  - Red Maple

LS08837_000. jpg

But How Does Sap turn into Maple Syrup?

LS10713_000.jpg

- Warm days and chilly nights of spring prompt the sap to start flowing in Maple trees. The first step to producing Maple syrup

  is tapping the tree.

Collecting Sap

- Sap needs to be collected every day. It is taken from the trees to holding tanks near sugar houses, or sometimes piped directly to houses depending on the technology preferred.

(picture courtesy of http://www.theworkshop.ca/ruralskills/maple%20syrup/Sap_Gathering.jpg)

Boiling

- At the sugarhouse, Maple syrup is boiled for hours in a large pan called an evaporator, to remove all water- leaving only the sugar left.

Bottom of Evaporator

(maplehillfarms.biz/ production.htm)

Evaporator Pan

maplehillfarms.biz/ production.htm

Filtering

- After the syrup is boiled, it must be filtered to separate any small impurities that were in the sap. It is poured through layers of a soft, thick cloth.

www.vtpuresyrup.com/images/photos/filters

Syrup as we know it…

Was not always done this way. Methods of collecting and boiling have changed since its discovery by the Native Americans. So how has it progressed?

Photo courtesy of http://www.potsdam.k12.ny.us/hs/sipher/maple/mapleinfo/index.html

The History Begins…

We will now take a look at the progression of Sugaring in Vermont from the 1900's to today.

LS09067_000.jpg

- # How sap was collected in the early 1900's

LS08848_000.jpg

Maple Sap Collection (1939)

Gathering Maple Sap in a Sugar Bush (1929)

LS01886_000.jpg

How Sap was Boiled in the Early 1900's

Cauldrons were used to boil the sap, and wood was built around them to keep the heat centralized.

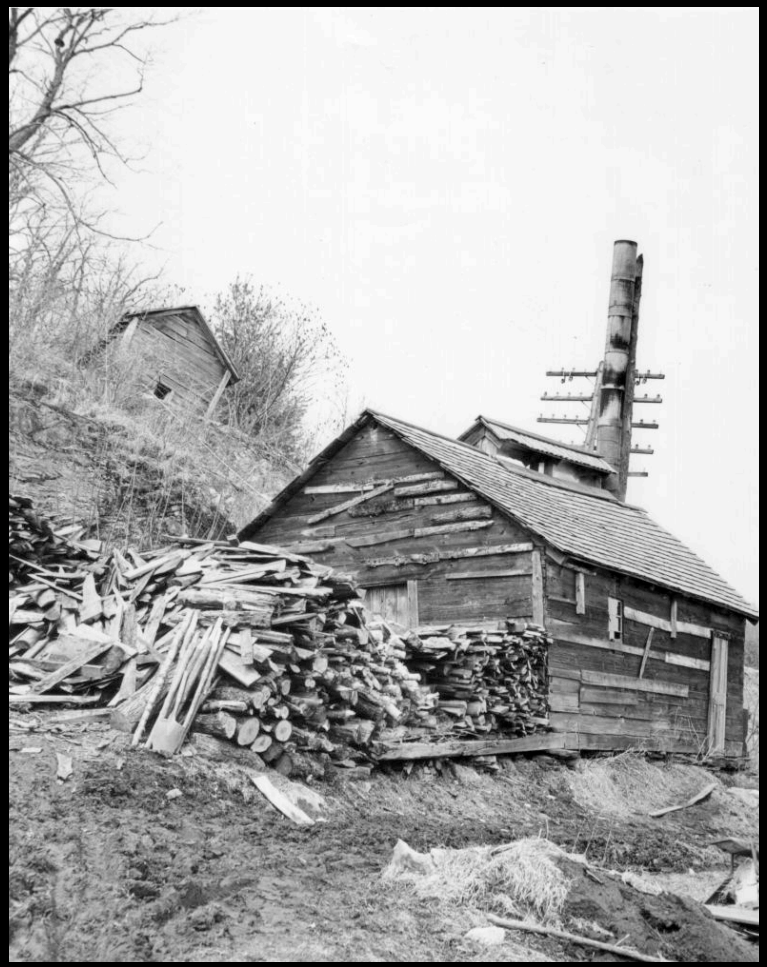
"Sugaring" **LS00408_000.jpg**

Changes Begin: Horses were used to transport the sap from the trees to the sugarhouse. Wooden buckets would be replaced by tin buckets by the late 1900's.

Men in Collecting Sap in Forest LS08838_000.jpg

People Outside Sugarhouse LS08846_000.jpg

More Changes : In the mid- late 1900's sugar houses were built, allowing sugar makers to stay warm and make syrup faster….



Sugarhouse and Firewood (1955)
LS08844_000.jpg

Sugar House (1969) LS05966_000.jpg

Sugar houses improved over time, as production grew….

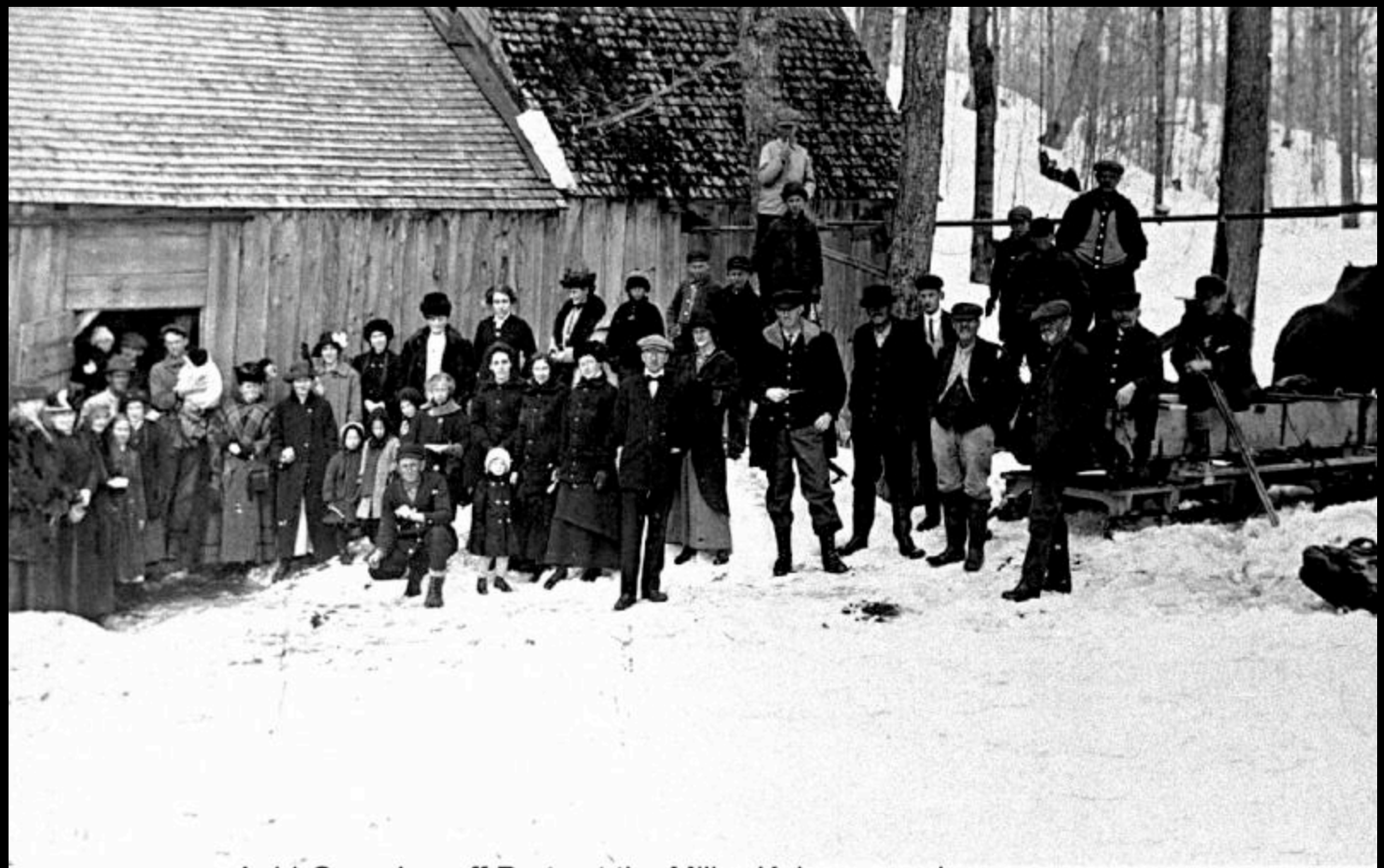
Men at Sugaring House (1981) LS08052_000.jpg

Although technology improved for boiling and Sap collecting, many sugar makers still stuck to traditions- despite the times…

Sugaring Time (1968) LS05917_000.jpg

Oxen and Maple Sap Collection (1975)
LS09071_000.jpg

“Sugaring” Parties were an important part of the season in the 1900’s and still are today. They are occasions where the community comes together and socializes, boiling sap, eating “sugar on snow”, and enjoying the traditions of the season.



A-11 Sugaring-off Party at the Miller-Kaiser sugarhouse.

LS02632_000.jpg

Collecting Maple Sap is almost a dance between a man and his trees… It usually is done alone, and very rarely involves more than two people. Some trees are tapped for centuries, and the connection runs deep….

Man Collecting Sap LS08834_000.jpg

Sugaring isn't just for the product, it's about spending time with your surroundings, and listening to your environment…

Horses With Sap Collection Sled LS08833_000.jpg

Maple Sugaring has always been a family tradition, and passing it on to future generations is an important part of the process…

E-17 Thomas Gebbie ready to gather sap at sugaring time - pretty small tanks in those days!

LS02667_000.jpg

Maple Facts:

- It takes approximately 40 gallons of sap to create just 1 gallon of Maple syrup!
- Vermont is the largest producer of Maple syrup in the country 37% in the year 2000 alone.
- Weather has the biggest impact on syrup. A cloudy day will make dull, bland syrup.
- The tourism industry has a very positive impact on syrup, and presently syrup is sent to countries all over the world.

LS08854_000.jpg

My Last Words:

Maple syrup production will remain in our future, its in our blood- just like the mountains…

Pleasant Valley in Early Spring LS09065_000.jpg

The Expansion of UVM

1791 - 2007

This scrapbook is an attempt to show the incredible expansion of the University of Vermont. Since its charter in 1791, the University has grown from its earliest years with only a handful of students and a single teacher to its current status as a modern university with upwards of 10,000 students and a full faculty and staff offering degrees in an innumerable number of subjects.

Matthew Meikleham

Geology 196

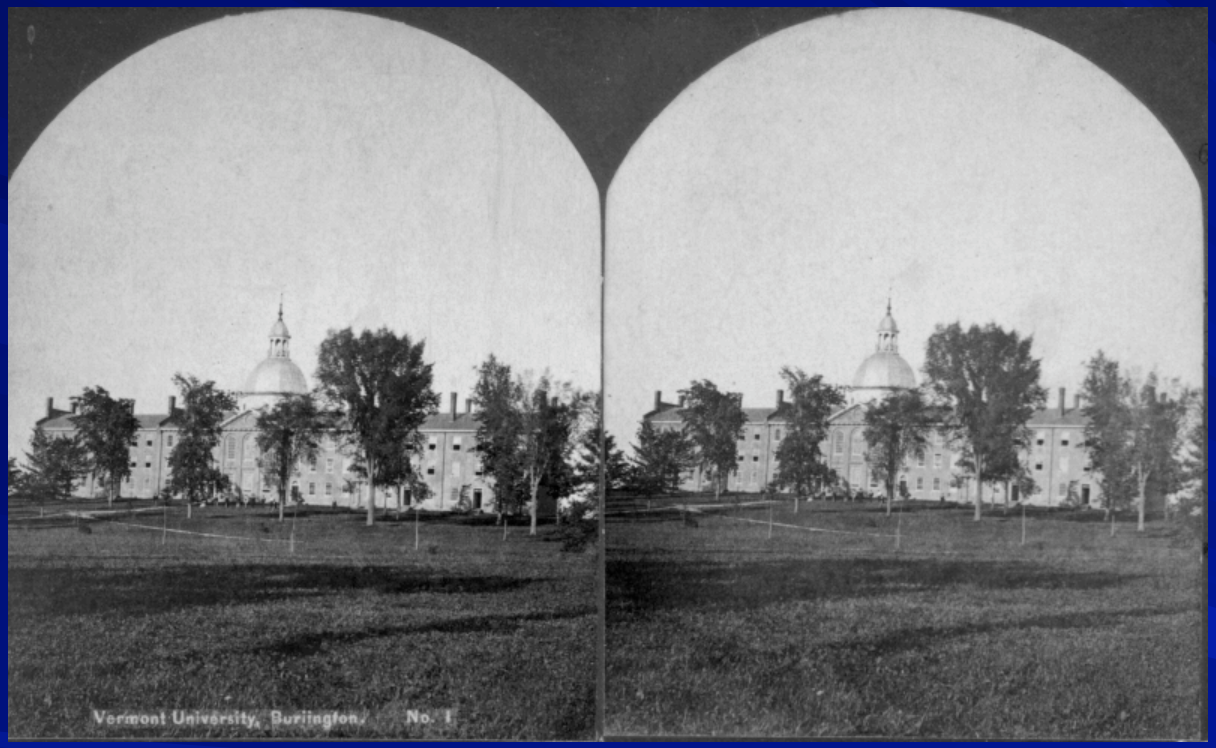
January 10, 2007

View of Burlington Facing West (1870s)

LS10241_000

This is an early photo of Burlington, VT. At this time, it was already the largest city in Vermont. The city was able to grow rapidly thanks to the Champlain-Hudson canal. But, as you can see it is still sparsely populated, and the trees in the foreground are quite young.

The College Edifice



LS02854_000

A stereoview of the original College Edifice, later called "Old Mill." This was the first major building to be built on campus, completed in 1807 at a cost of just over $25,000. Tuition at this time was about $12 a year. Notice the large dome on top of the building. This building was largely destroyed in an 1824 fire.

Lambda Iota (Founded 1836)

This is a photo of the Lambda Iota fraternity house. Lambda was the first fraternity at UVM. The fraternity was created as a student protest over the college banning of tobacco. It is unclear when the fraternity's house was built, this picture is relatively new, though, from around the 1930s.

LS10176_000

University Row (Late 1800s)

LS10780_000

Under University President Matthew Buckham, UVM saw tremendous growth. Building after building on University Row were built during the late 1800s to accommodate this growth. Notice the renovated College Edifice, now Old Mill in the background of the photo.

Converse Hall (1905)

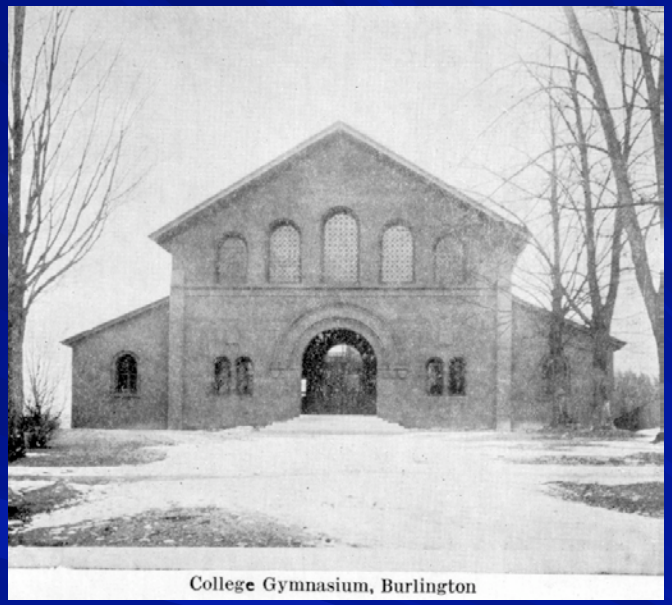
This is an early photo of Converse Hall. In order to accommodate the increase in enrollment at UVM, two new dorms were built between 1895 and 1900. Converse Hall was built to house Men, and Grassmount Hall was built to house Women. Women had just recently been admitted to the University. Forty-two women enrolled in 1894-1895.

LS09974_000

Construction of Royall Tyler Theater (1901)

LS11520_000

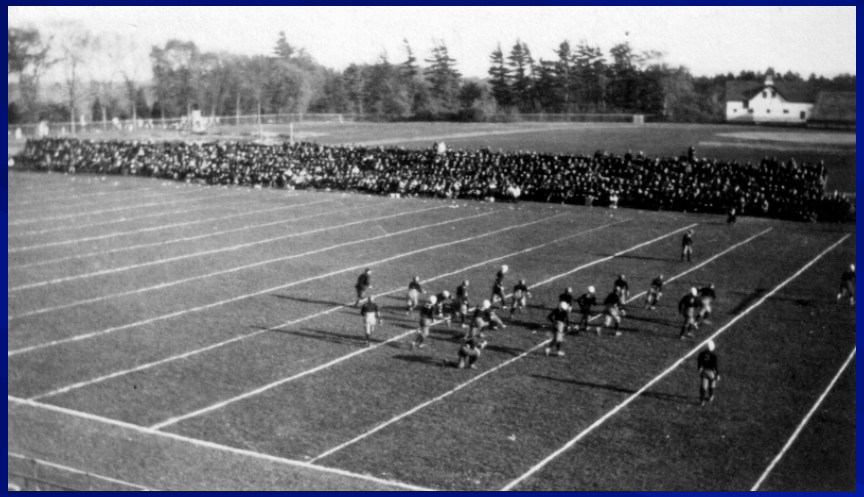
Royal Tyler Theater, aka Old College Gymnasium (~1910)



LS10417_000

These images show the construction of and an old picture of the Royall Tyler theater, which was originally built as a college gymnasium.

Centennial Field (1905 – 1920)



LS10156_000

LS10047_000

These photos show two early pictures of Centennial Field. The first picture shows a football game in progress. Many at UVM don't realize that the school did have a football team in its middle years that competed against some of the Ivy Schools. The second photo is of the bleachers at the Centennial Field baseball field. The old UVM fight song would have been sung at these games: "We'll trim Harvard, we'll trim Yale, and there ain't no team that we can't whale, rah rah for Vermont!"

Aerial View of University (1927)

LS09938_000

This 1927 aerial photo of UVM captures some of the early growth the University saw. Morrill Hall, Royall Tyler Theater, Converse Hall, and Old Mill can all be seen clearly. The UVM reservoir can is also discernable along main street. Notice, though that there is still very little to no growth north of Main Street.

Construction in the Mid-1900s

LS10135_000

LS10611_000

These photos show Fleming Museum on the left, and the construction of the Waterman Building on the right. Waterman was completed in 1941 at a cost of about $1.25 million. It served a number of purposes: as an extension of the library, classroom and office space, a dining hall, a bowling alley, and for a while, low-rent apartments on the top floor.

Aerial View of UVM Looking East (1950)

LS10066_000

This aerial photo taken in 1950 shows the expansion UVM saw in the first half of the 20th century. It looks quite similar to how it looks today. The central campus dorms are discernable, as is the Waterman Building in the foreground.

Redstone Campus (1956)

Post-WWII, the decision to turn UVM into more of a Midwestern University than an Ivy League school was made. With the rise in student enrollment, more housing was needed. As a result, the dorms at Redstone campus were made. This is a photo from 1956 that depicts their construction.

LS10572_000

Continued Expansion (Early 1960s)

LS09765_000

LS10405_000

The expansion of UVM in the early 1960s was carried out by President John Fey. Fey had the Bailey Howe Library, new dorms, a new gymnasium and several other buildings built. He also converted the old gym into the Royall Tyler theater, as it is today.

Aerial Photos of Redstone and Main Campuses

(Early 1970s)

LS10597_000

(Late 1960s)

LS09968_000

These aerial photos, the first of Redstone Campus, and the second of Central Campus show a UVM that is similar (minus Cook and the hospital changes) to what it is today. Additional dorms have been built on Redstone Campus and Bailey Howe Library is clearly visible on Central Campus.

Modern View of Burlington

This aerial photo is a follow-up from the original picture of Burlington from slide number 2. The photo was taken around 1970. It shows a fully developed downtown Burlington.

LS10065_000

Additional Dormitories (1960s – 2006)

These are three photos of dormitories that were built to accommodate the increase in enrollment seen in the 2nd half of the 20th century. To the left is the Marsh-Austin-Tupper dorm complex. M.A.T. is a collection of three connected dormitories. In the left, behind M.A.T., the construction of University Heights is visible. The photo below it is of Living and Learning which includes housing, offices, classrooms, and dining facilities.

M.A.T. Photo: LS10652_001
Living Learning Photo: LS10302_000

Aerial View of Main Campus (2007)

A modern picture of the University of Vermont. The Dudley H. Davis Center can be seen in the middle right hand portion of the picture Also, the Fletcher Allen Hospital can be seen in the middle left of the photo. Although Athletic and Redstone campuses are not clear in this picture, University place is finished. It can be seen with slight difficulty on the far right of the picture.

LS09978

References

- A chronological history of the University of Vermont and State Agricultural College, 1777-1922. Burlington, 1922.
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- Marshall, Jeffery. Universitas Viridis Montis, 1791-1991 : an exhibition of documents and artifacts telling the story of the University of Vermont. Burlington, VT. University of Vermont, 1991.
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- www.uvm.edu

The University of Vermont: The Landscape and Humans… Together!

Brad Campbell

GEOL 196

Overview

- History of several important buildings that shape the UVM campus.
- Covers mainly academic and student dormitories.
- Two new buildings to come in the future.

Old Mill

→

The original College Building, sitting on the same place where Old Mill is, was built in 1802.

Burned to the ground in 1824.

The Old Mill building was built in three sections, seen above.

The sections were built for fire protection, but were joined in 1846.

http://www.uvm.edu/campus/oldmill/oldmillhistory.html

LS09923

Old Mill, cont'd

→

Renovated to its current 'Victorian Gothic' Style in 1882.

Funded by John Purple Howard.

The final renovation occurred in 1997, when Old Mill was given its original colors while updating technology.

Pomeroy Hall

Originally known as the Medical College Building, it was built in 1828.

→

The cupola was removed in 1925 because of insufficient funds to renovate the leaky tower.

LS10669

LS10667

Pomeroy Hall, cont'd

The building's name was changed to Pomeroy Hall in 1950.

→

The tower was replaced in a 1997 renovation and maintains the same look today.

http://www.uvm.edu/campus/pomeroy/pomeroy.html

Torrey Hall

Originally built in 1863 on the spot where Williams Hall now sits.

The building was moved to its current location, between Billings and Votey, in 1895.

→

↘

LS10764

LS10778

LS10778

Billings Student Center

→

Billings was built to serve as a library when it was completed in 1885.

After the Howe Library was built in 1961, Billings served as the UVM Student Center.

http://www.uvm.edu/about_uvm/online_tours/walkingtour/?Page=tour2.html

Perkins Hall

Built in 1891, Perkins served as the home of the Geology Department until 2005.

The Geology Department now resides in Delahanty Hall, on Trinity campus.

→

http://www.uvm.edu/about_uvm/history/?Page=tour.php&building=198

Williams Hall

Finished in 1896, it was designed to be a fireproof building, due to its brick construction.

About 1896

1975

2005

LS10821 LS10626 LS09643

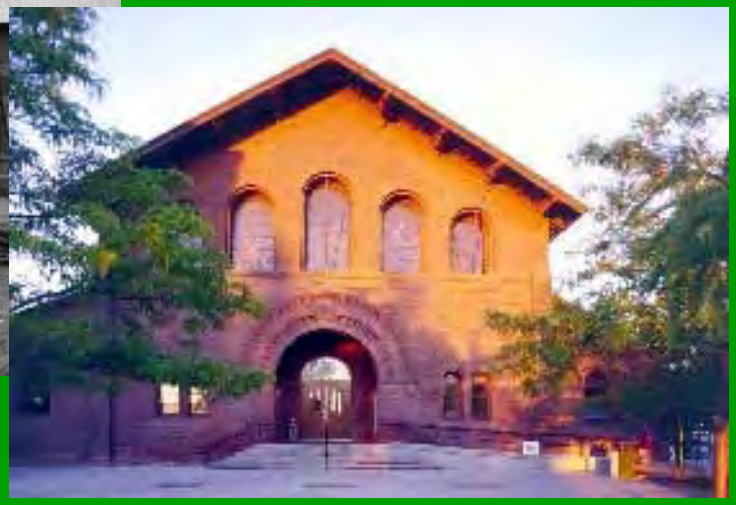
Royall Tyler Theater

Originally named ‘Old Gym’, it was finished in 1901.

The building was badly damaged in a 1950 storm, classified as a hurricane.

→

→



http://www.uvm.edu/~campus/royalltyler/royalltyler.html

Other Buildings On Campus

Morrill Hall, on Main Street was built in 1907, College of Agriculture and Life Sciences home.

Dewey Hall, on Colchester Avenue, was finished in 1905. Current home of the Psychology Department.

Other Buildings On Campus

Votey Building is the Math and Engineering Department's home, completed in 1962.

Stafford Hall was built in 1991 to house the Microbiology and Molecular Genetics Department.

Kalkin Building, the Business School's home, was built in 1987.

LS10815 LS10229 LS10678

Dormitories

Converse Hall was the first building on campus constructed solely to house students, built in 1895.

LS10164 LS09711 LS09710 LS09710

Other Dormitories On Campus

Redstone Hall, completed in 1889
(LS09784)

Coolidge Hall, built in 1947
(LS09931)

Marsh Austin Tupper, the first dormitory on Athletic Campus, was built in 1960
(LS10653)

Other Dormitories On Campus

Christie Wright Patterson, built in 1962
(LS10592)

The Harris Millis complex was completed in 1967.
(LS10203)

The land just before Christie Hall was built, taken in 1960
(LS10592)

Things To Come…

Dudley H. Davis Student Center is projected to be finished in the Fall of 2007.

University Heights Student Residential Learning Complex, Final phase expected to open in the summer of 2006.

http://www.uvm.edu/~arch/?Page=projects/commons.html

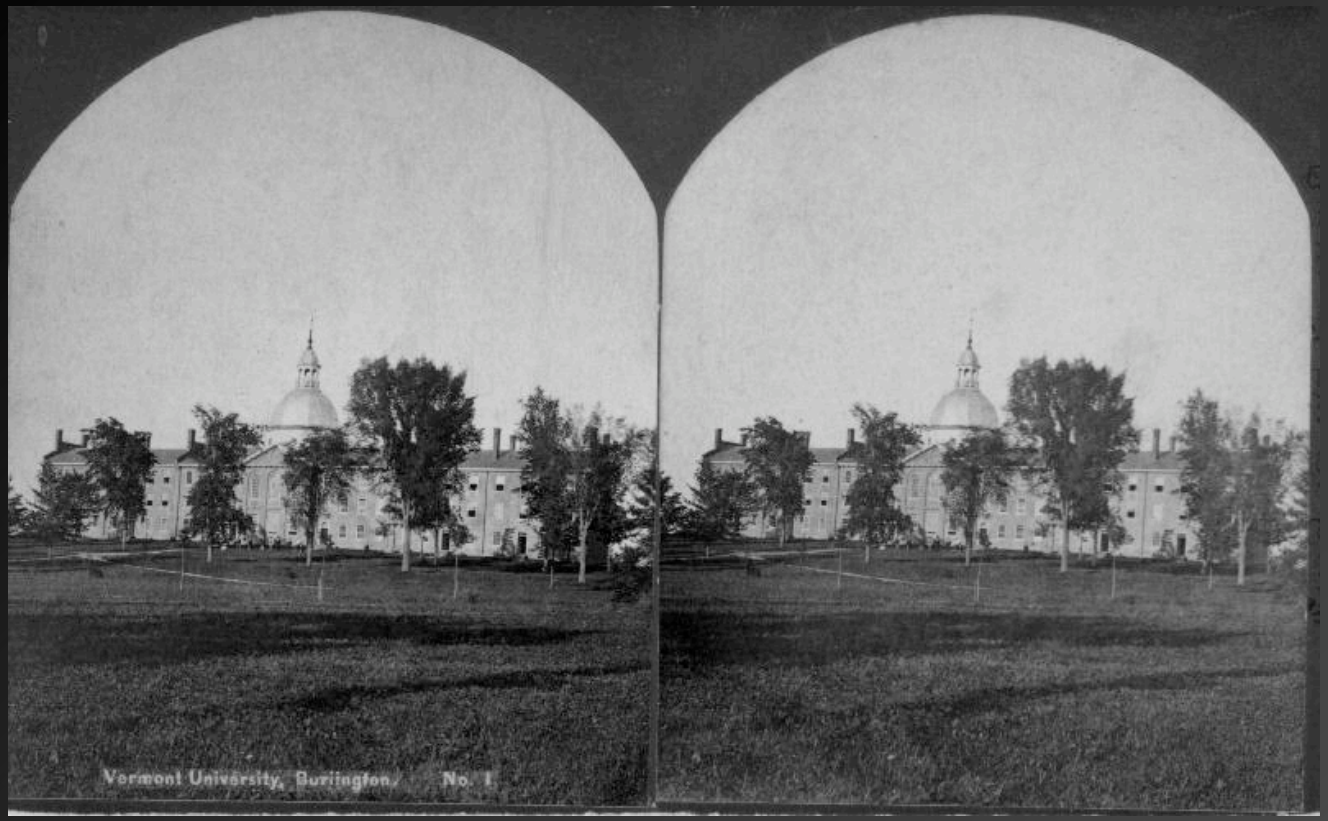
http://www.uvm.edu/~arch/?Page=projects/learningcomplex.html&SM=currentprojectmenu.html

Conclusion

- Over its 215-year history, the University of Vermont has had to constantly change and evolve to keep up with student demand and technology.
- When some of the buildings on campus become outdated, they are retrofitted to accommodate, or they are replaced by more advanced buildings.
- UVM has made a concerted effort not to impede on the campus green space, and has been able to maintain its image as a very environmentally-friendly university.

The History of Trees on the UVM Campus

What can we learn by looking? *By Loona Brogan*



Old Mill between 1870-1881 LS02854_000.jpg

Today's view of Old Mill from the same corner, Main and Prospect Streets.

LS02854_001.jpg

All quotes are from text on the Landscape Change Program web site.

When, where, what, who, how…

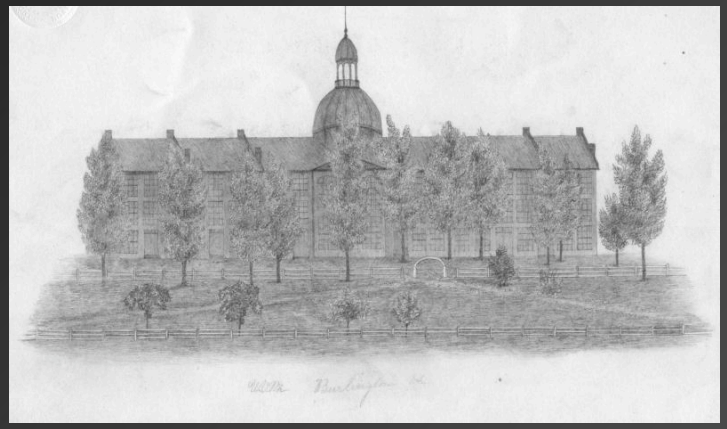
We can ask these questions about the trees on the UVM campus: who planted it, when and why then, why that tree, where: why there?

Historic pictures record elements of a society's abilities, style and beliefs by showing the architecture, clothing and technology at a specific moment in time and place. Many pictures show plants– especially the large, woody plants we commonly call trees– and can also tell us about the people who preceded us here. Every tree embodies many stories. Let's look at what they can show us.

Artistic and actual renderings

"Esther Munroe Swift writes 2005-4-17: Abby Maria Hemenway's Vermont Historical Magazine for Chittenden County has an engraving of UVM's Old Mill that is very similar to the one shown here... the main difference being that her's has a tree which partially obstructs the view of the steeple on top of the building."

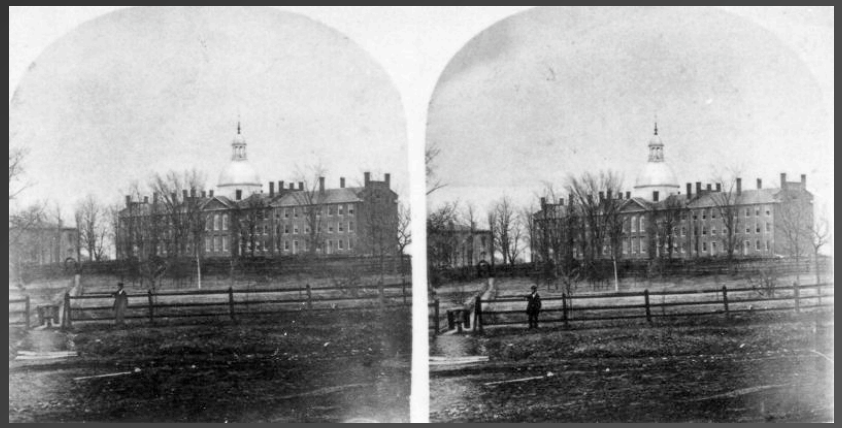
Illustration of Old Mill Building at UVM (1849)
LS00914_000.jpg



Old Mill building at the University of Vermont

(No Date)

LS02903_000.jpg



Look closely at the far left of the stereoscope, and at the paths

Trees have their own history

Notice the big tree left of center: is that the tree Esther Munroe Swift says Abby Hemingway had in her engraving? It looks to be growing about where the Ira Allen statue stands today…

Old Mill has a dome and is not renovated. That would make the picture at least how many years old? If that tree were alive today, it would be at least 75 years older than that.

LS02843_000.jpg This stereoscope is not dated.

Old Mill has had a facelift. Can we tell if that big tree is still alive in 1893? Why or why not?

"The man stands between two large trees but there are many smaller trees filling the whole of the green. There are also smaller bushes and conifer trees dispersed throughout the green. "

University Pl. from southwest of green

(1893 exactly)

LS09637_000.jpg

LS00061_000.jpg
View of University Place on the UVM campus looking south, No Date

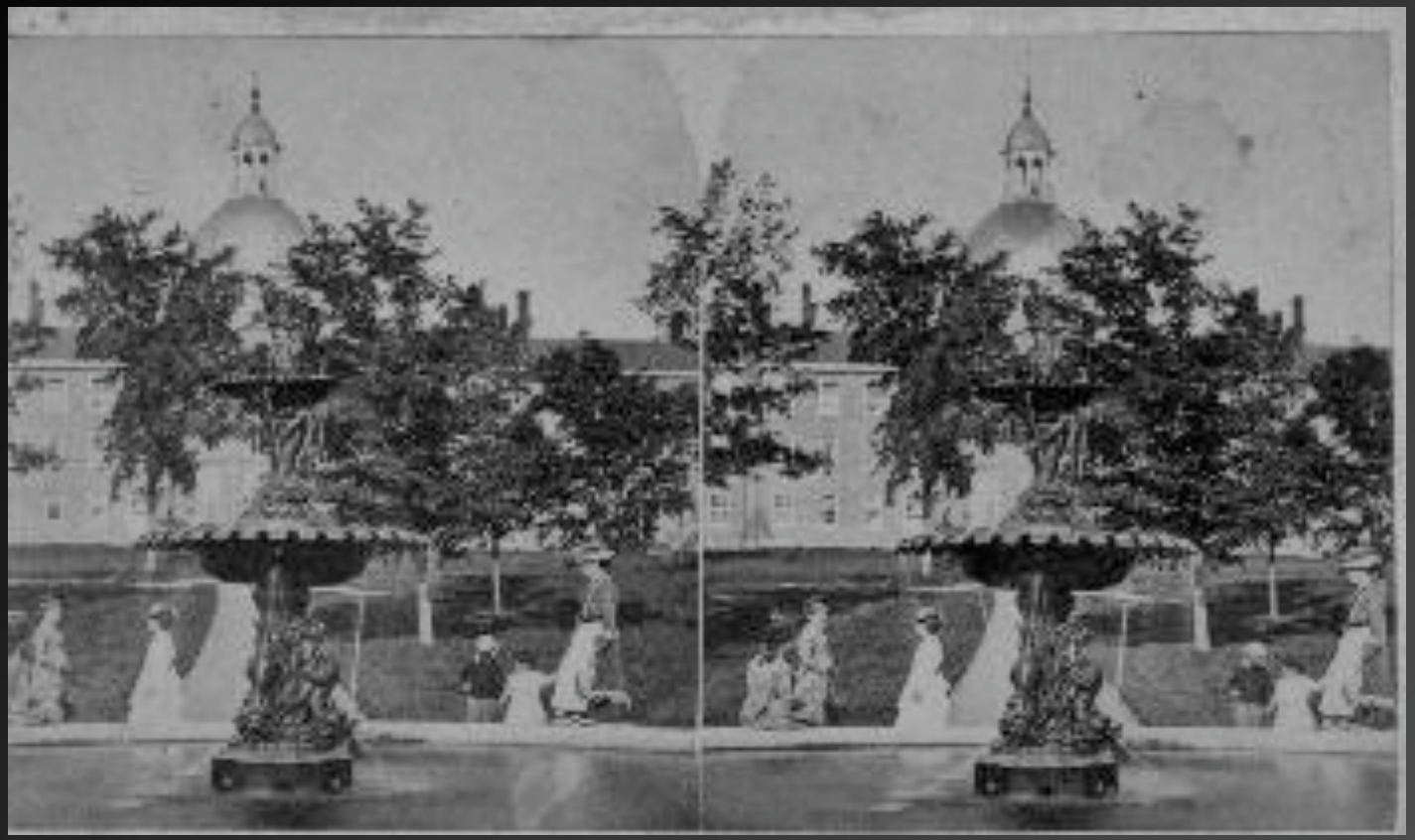
Before and after the great American Elm

6/14/2000

LS00061_001.jpg

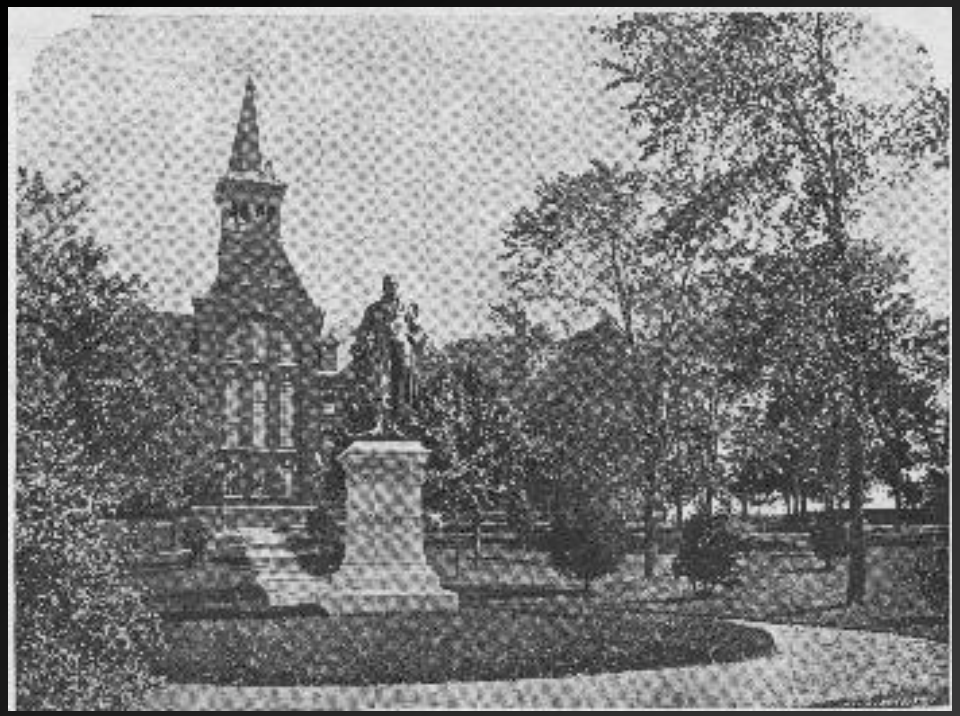
The American Elm is a native tree long present in Eastern North American settlements and villages. It became the street tree of New England and beyond starting in the mid 1800s, when communities began to plant trees. They once towered over many village and town streets, parks and yards. In the 1930s, a fungus spread by a beetle began to wipe out the arching canopies for which they were was once famous. UVM's campus had over 1000 American Elms before they began to succumb to Dutch Elm Disease. Most UVM American Elm were felled in the 1960s and 70s, when communities across the continent were having to accept that efforts to save their Elm trees had not succeeded.

Elms Dominated the Landscape



This stereoscope image, “Fountain on the University of Vermont Green (1880 exactly)” LS02863_000.jpg, shows the classic funneling crown of American Elms lining University Place. The image was taken in 1880, and clearly people besides UVM students are enjoying the UVM Green. They were towering trees, which was part of the problem when they began to die in the 1940s and 1950s.

Besides the Elm



LS00064_000.jpg

LS00064_001.jpg

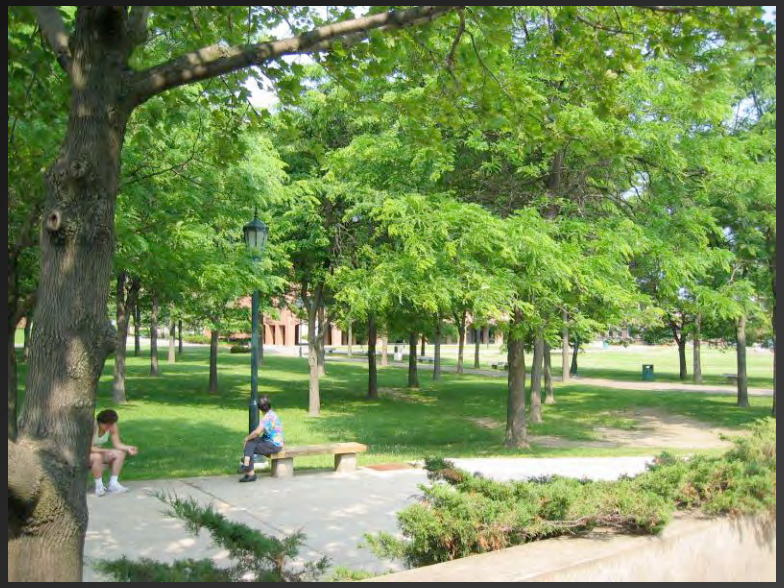
These then-and-now photos show that a variety or trees were planted around campus even before the Elms were decimated, though the visually dominant ones in the old image are young Elms. The people who took care of the UVM grounds chose trees that would survive well– species that can take the abuse of careless passersby, times of drought, & soil compaction from foot traffic… however, species were also brought to UVM for their exotic origins, including a Dawn Redwood planted on the green in 1972 (not shown). Note the old photo shows not the current-day Ira Allen statue but that of Lafayette, which has since been relocated to face north on the green along Colchester Avenue. Since Ira Allen had deemed (and deeded) the green to always be an open place that would be open to the community, it is fitting that the centerpiece of the green would eventually be a tribute to him.

Dan Kiley Honeylocust Grove

Dan Kiley was a pioneering Landscape Architect (1912-2004) whose work can also be visited in Burlington at the Cathedral of the Immaculate Conception, 20 Pine Street (and Pearl).

Campus green space near Votey (1974 exactly)

LS09696_000.jpg



Main Campus Green (2005-06-28 exactly)

East of Cook Science Building

LS09696_001.jpg

(1975 exactly)

LS09707_000.jpg

Where *weren't* they?

Notice (right) the elms lining the north side of Main Street… yes, that's East Avenue on the right, where "the jug handle" now crosses over to Spear Street. *LS00031_000.jpg*

Main Street Looking West (1935 (Nov. 27))

A view looking South instead of West; the eastern end of campus was once a farm: lots of open field for crops.

LS00701_000.jpg Town with Camel's Hump (1902)

LS06585_000.jpg Aerial Photograph of Main Street in Burlington before major development 1959-5-26. Notice: the Elms still line the road west of East Ave.

Use Morrill Hall (upper right corner) to get your bearings.

Main Street Looking West

(6/19/2001)

LS00031_001.jpg

…and today

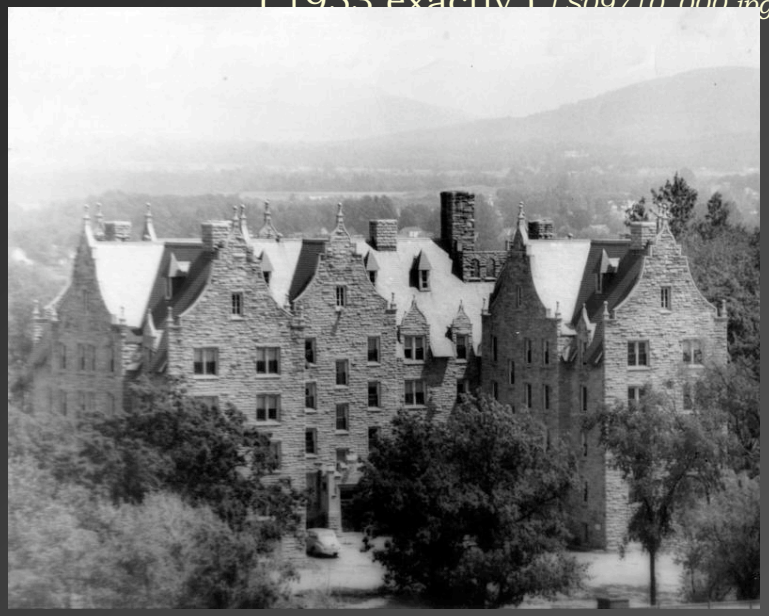
“The new photograph shows the same road after city development. The old two-lane road is now six lanes. There are sidewalks along the new road. Traffic lights have been added to direct the automobiles and trucks on the road. Trees have grown up to obscure the view of buildings in the background of the photograph. The farm from the historic image is gone and replaced by a parking lot. A water tower is visible above the trees. The hill to the left in the old photo now has University of Vermont dormitories built upon it. All of the elm trees from the old photograph are gone. “

What was here before?

There are apparently no records of the vegetation that was removed from this hilltop to create the University of Vermont, but it is likely that white pine and red and white oak were the dominant species on this slope.

Converse Hall from Buckham Hall

(1953 exactly) *LS09710_000.jpg*



LS09711_000.jpg Converse Hall and Old Farm (Postcard) (1909-02-15 before)

What is here now?

LS09710_001.jpg

Converse Hall from Cook Physical Science

(2005-06-27)

This is a very (recently) changed landscape.

Changes in the what, why, where…

Some buildings, such as Morrill Hall have more trees now than then.

Two elms are shown in front of the undated postcard view. With their leaves gone, it appears to be late fall or early spring.

6/11/2004: crabapples, maples, and even some exotic species such as Gingko grow around the building. *LS00595_001.jpg*

No Date, LS00595_000.jpg

Arborists began to discourage monocultures– the practice of relying on the success of one species– after we lost our Elms. Shorter trees became popular with the people responsible for their care and safety, including the municipal and facilities budget managers.

Old construction, new plans underway

Bailey Howe Library Winter Construction

(1960) *LS09769_000.jpg*

Notice the trees growing between the new library and Converse Hall. Some of these trees still live there.

Several of the oaks that lived in front of the library until 2004 were sacrificed to the construction of a new campus center. They were apparently planted after 1960, as they do not appear in the photo above.

LS09769_001.jpg

NE view of Bailey-Howe Library

(2005-06-07 exactly)

This building will soon pass into history as it and several others are demolished to make way for the Davis Student Center. Some of the trees between Marsh-Life Sciences and the library are being protected during construction. (not shown)

Before and after the Bailey-Howe Library, Terrill, and Aiken

Looking North on Main Campus from Main Street

(1960-07-07 exactly) *LS09704_000.jpg*

How many of the trees visible in the image below are the same young trees we can see in the image to the left from July of 1960?

Notice in the above image the bare field between Hills and the Royall Tyler Theater. Young trees have been planted in the foreground.

Looking North on Main Campus from Main Street
(2005-06-28 exactly)
LS09704_001.jpg

Future Campus Plans

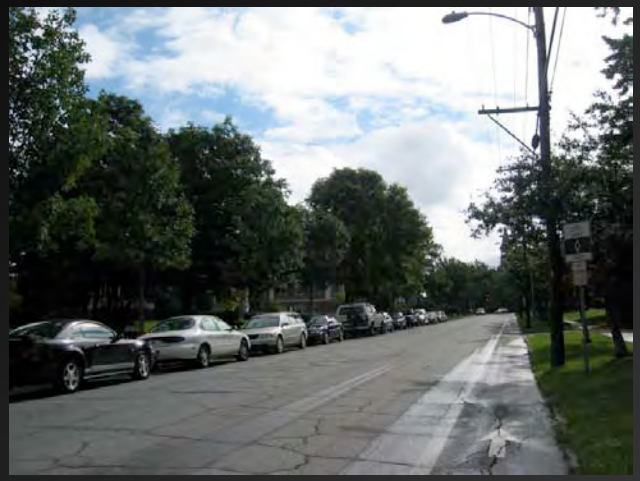
As we look at these pictures of the campus's past, we are compelled to think of its future, and of the people who will look back at what we did, or didn't do… where we planted trees, what kind we planted and why…

One day you may seek out your favorite old tree and find an old image of it on the Landscape Change Program's web site, perhaps when it was just a sapling… and wouldn't that be preferable to finding images of great trees that have we have lost? One way to minimize this is for the Master Plan for campus to include an Urban Forestry Plan.

Another way to encourage a future campus with cherished old trees is to give the trees their own historic importance now, by choosing to know their past.

LS10009_001.jpg

July 2004

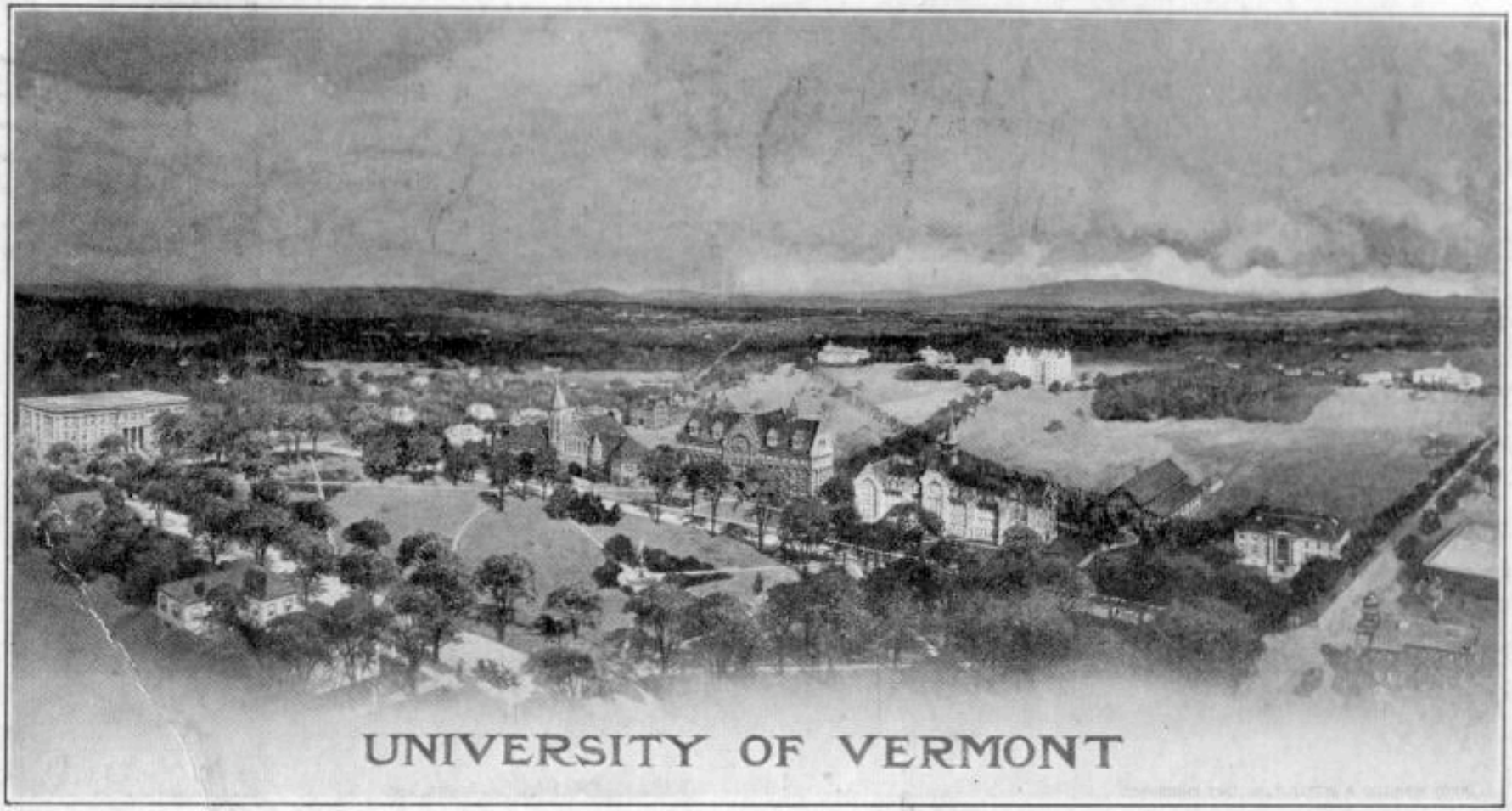


LS10009_000.jpg

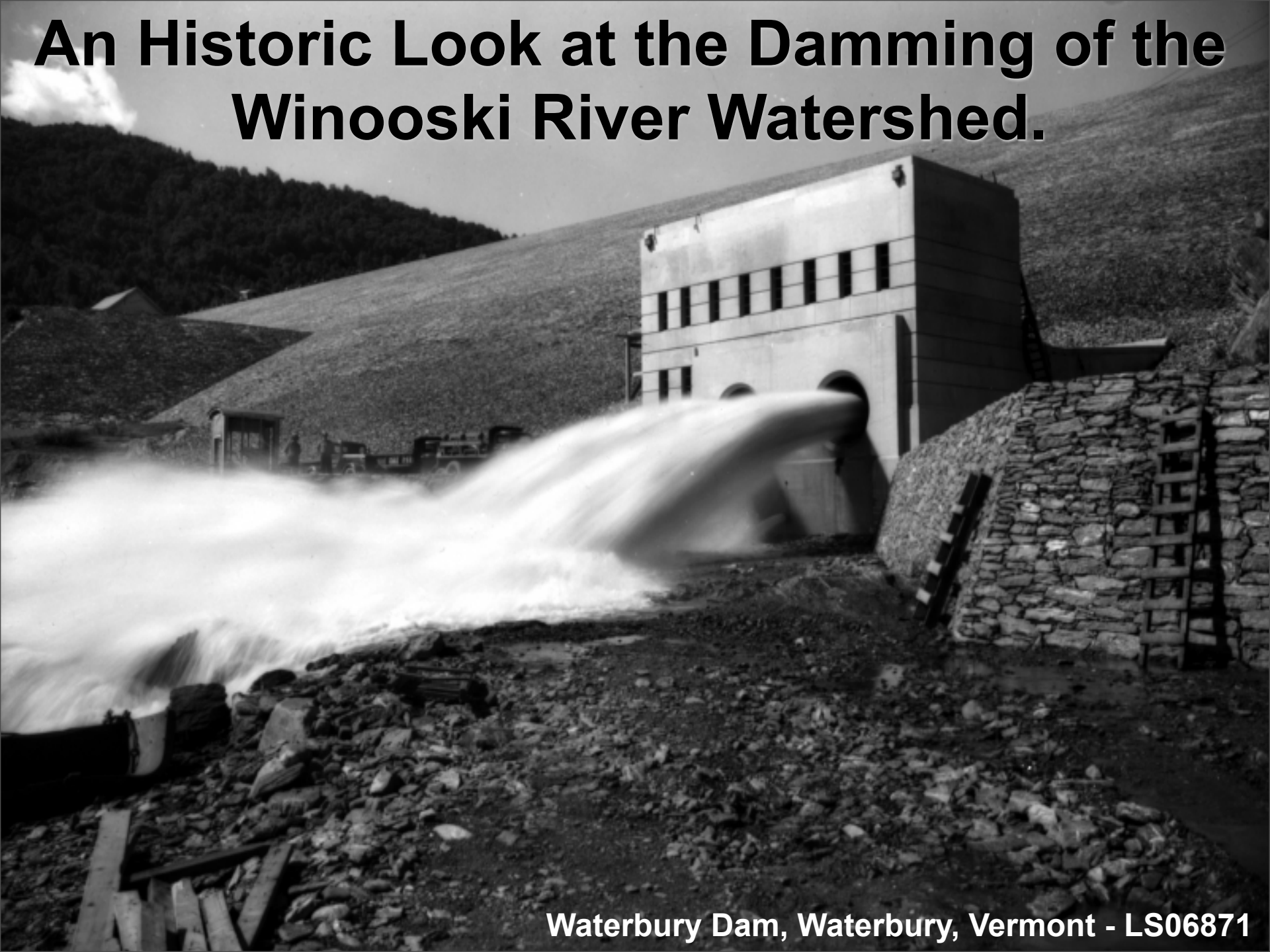
Looking up College Street towards Old Mill

1910 postcard

LS09856_000.jpg



An Historic Look at the Damming of the Winooski River Watershed.

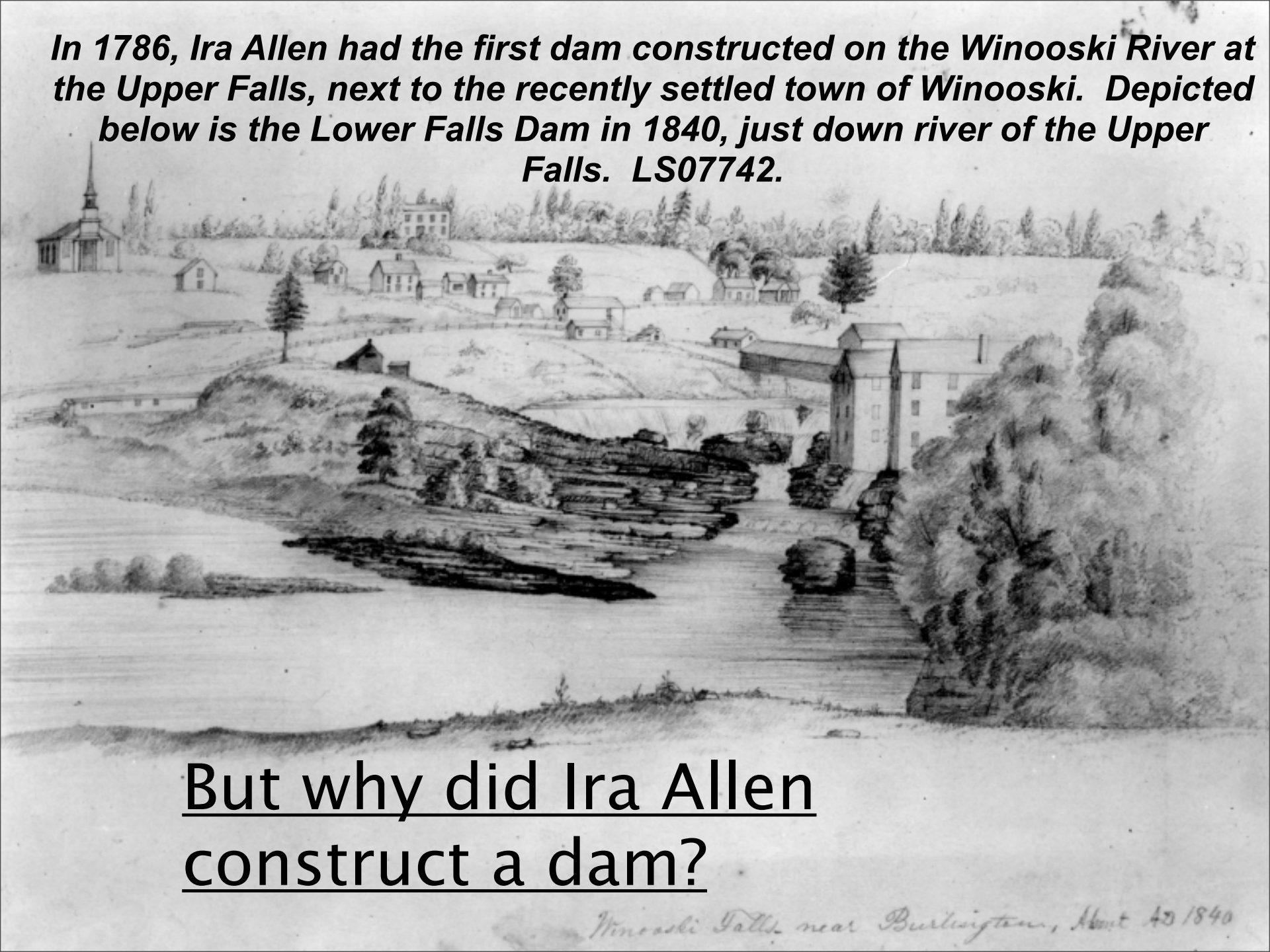


Waterbury Dam, Waterbury, Vermont - LS06871

The Winooski River watershed has been dammed for over 220 years. Today, billions of gallons of water are stored in dam reservoirs, preventing damaging floods and producing hydroelectricity. Agents of tremendous change, dams have forever altered Vermont's landscape. Continue on to learn about the history behind the damming of the Winooski River watershed.

The Winooski River Valley, Burlington, Vermont – LS00691

In 1786, Ira Allen had the first dam constructed on the Winooski River at the Upper Falls, next to the recently settled town of Winooski. Depicted below is the Lower Falls Dam in 1840, just down river of the Upper Falls. LS07742.



<u>But why did Ira Allen construct a dam?</u>

The importance of dams cannot be underestimated. Since the late 1700's, mills run on water-powered machinery produced lumber, iron, food and clothing. Staples upon which young towns were built and relied upon for survival throughout the Winooski River watershed.

The Lower Falls Dam on the Winooski River, Winooski, Vermont – LS02284

Vermont's capital, Montpelier, was built upon the Winooski River. By 1821 the growing town had two dams visible in the picture below. One appears to have been built across the Winooski River, while the other was built across a smaller tributary. A cotton mill in Montpelier had been running off of hydropower since 1810. LS06266.

FIRST KNOWN PICTURE OF MONTPELIER, VERMONT. DATED 1821.

The next big leap in dam building occurred after the introduction of hydroelectricity in the U.S. in 1881. This location at Bolton Falls on the Winooski River was well-suited for producing hydroelectricity because of the natural drop in the river. Construction began on the timber-crib dam in 1898. The painting in the upper left depicts the reservoir that was created after completion. LS00217.

Photo credit of dam building: http://www.electricrailroad.com/Bolton/Bfconst.htm

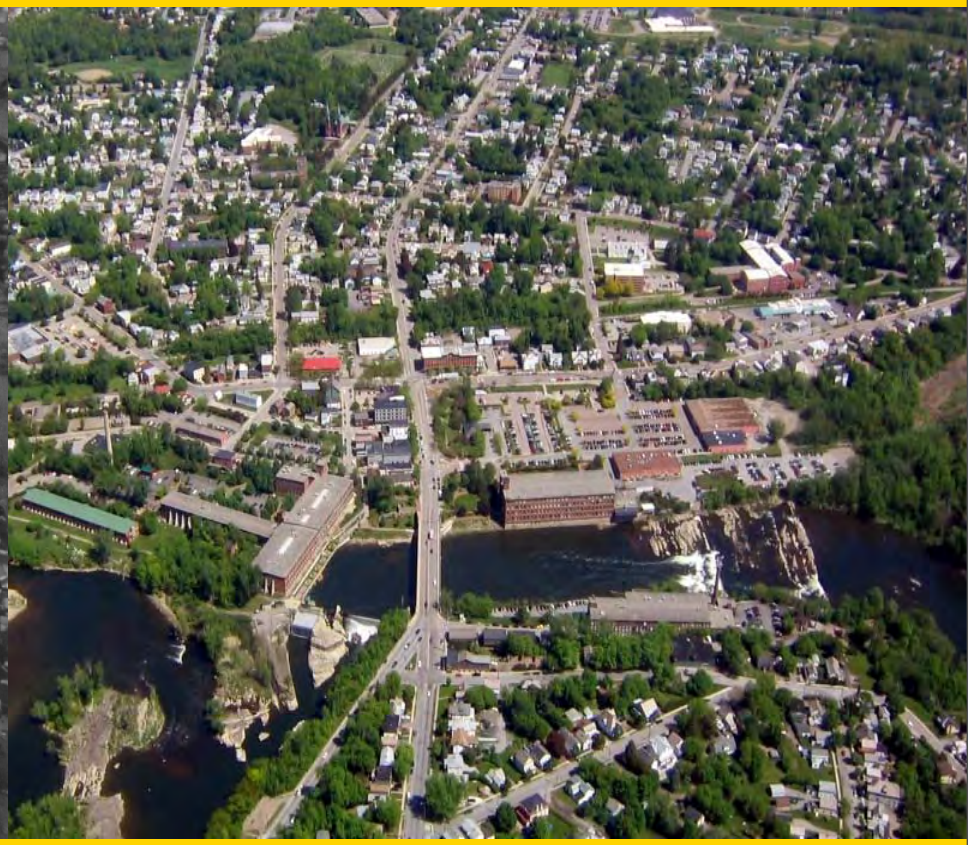
The Flood of 1927 would spur the next round of dam building on the Winooski River watershed. This photo depicts the Winooski River flowing over the Essex Dam in Essex Junction, at an estimated 116,000 cubic feet per second. Average annual cubic feet per second in 2005 was 1,760! LS11334.

Montpelier was hit hard by the Flood of 1927. Three tributaries joining the Winooski River in Montpelier caused flood waters to exceed ten feet within the city, as shown on the trees in the photo below! It became clear the city would have to protect itself from future floods of such high magnitude. LS06039.

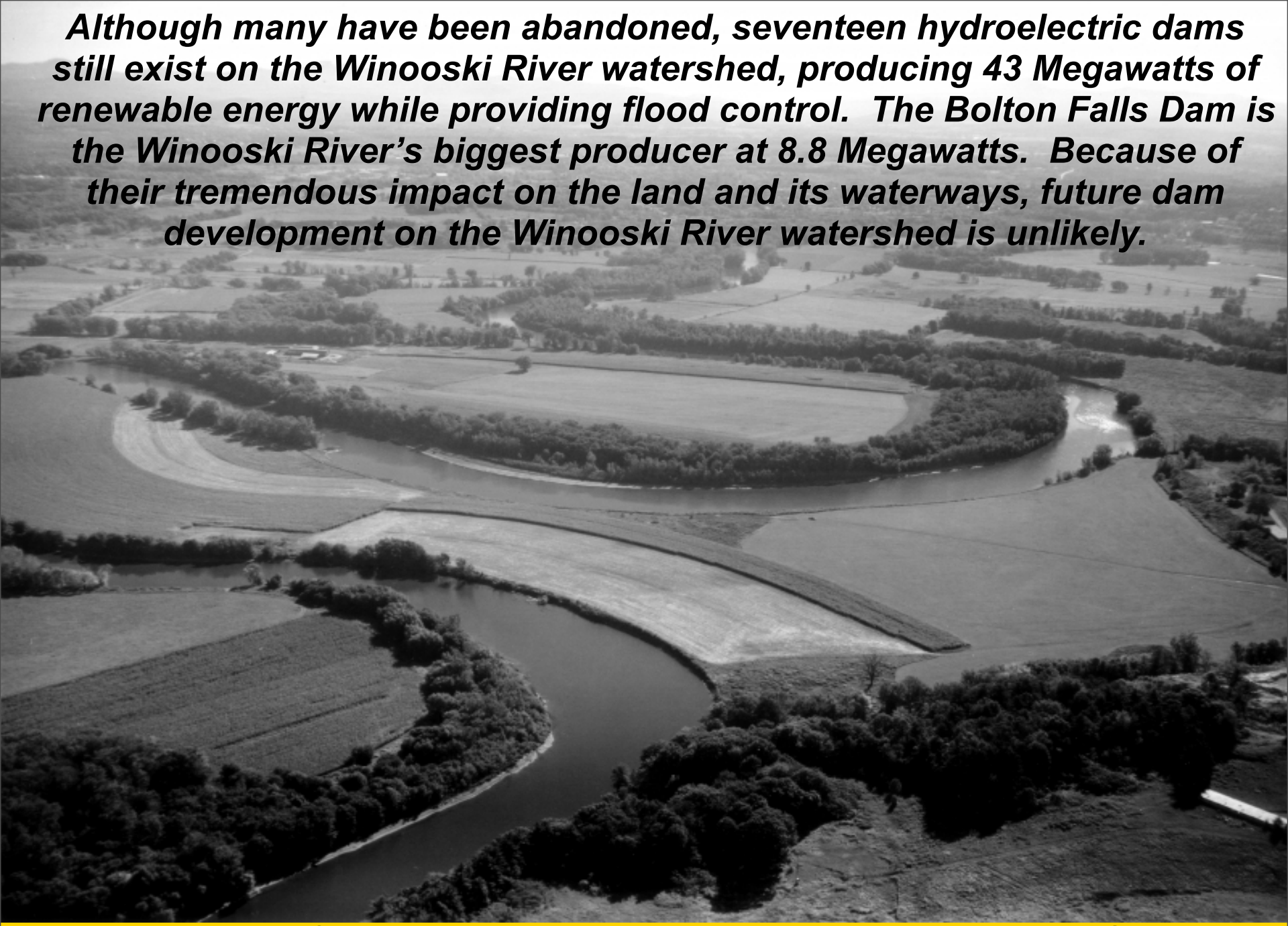
Mill industries along the Winooski River in Winooski, as seen below, were also hit hard by the Flood of 1927. Statewide damage from the hundred-year flood was unprecedented. Flood control dams would

In the 1930's, federal dollars helped build three flood control dams on high risk tributaries of the Winooski River. The Little River's flood potential was eliminated by the Waterbury Dam, seen below. Built in 1938, at the time it was the largest earth-filled dam east of the Mississippi River! LS06878.

Today, abandoned dams can be seen throughout the Winooski River watershed. Floods and time have washed away all but their footings, allowing flooded land to regenerate. The 1927 aerial photograph on the left depicts the Upper and Lower Falls Dams on the Winooski River in



Although many have been abandoned, seventeen hydroelectric dams still exist on the Winooski River watershed, producing 43 Megawatts of renewable energy while providing flood control. The Bolton Falls Dam is the Winooski River's biggest producer at 8.8 Megawatts. Because of their tremendous impact on the land and its waterways, future dam development on the Winooski River watershed is unlikely.



Aerial Photo of Winooski River looking towards Burlington, Vermont. LS06743

I Hope You Enjoyed the Story and Images of the Damming of the Winooski River Watershed!

PowerPoint Presentation Composed for the Landscape Change Program
By Craig Bunten

Sources:

1. http://www.electricrailroad.com/Bolton/Bfconst.htm
2. http://www.winooskieagle.com/article.php?story=20050821111222702
3. http://www.essex.org/vertical/Sites/%7B60B9D552-E088-4553-92E3-EA2E9791E5A5%7D/uploads/%7B576EBFC0-FDEC-44FA-93F8-257DA242EC00%7D.PDF
4. http://www.timesargus.com/apps/pbcs.dll/article?AID=/20060731/NEWS/60731001/-1/winooski
5. http://www.montpelier-vt.org/

Waterbury Dam, Waterbury, Vermont – LS06870

The Nature of a Flood

Chittenden County and the Flood of 1927

By Raleigh Caruso

Introduction

- The flood of 1927 caused an astonishing amount of damage through out Vermont.
- The flood was caused by torrential rains from a warm air mass that contained the remnants of a tropical storm. (http://www.publicaffairs.noaa.gov/pr97/nov97/noaa97-r248.html)
- This rain fell on an already saturated landscape and caused rivers to overflow.
- This slideshow focuses on the damage

- The flood is the most legendary natural disaster in the state's history.
- 85 Vermonters were killed, including the Lt. Governor. The state also suffered over $25 million in damages. (The Story of Vermont: A Natural and Cultural History, pg. 103)
- In addition to the loss of life and property Vermont saw a shift in public policy.
- Towns devastated by the flood looked to the state for assistance. In turn the state reluctantly turned to the federal

This is an aerial view of Winooski that also encompasses Colchester Ave. and Chase St. in the bottom of the image. The bridge that connects the two towns has completely washed away and a small, temporary pontoon bridge can be seen connecting the towns. Both ends of the now demolished bridge show signs of the floods intensity. To the right, on Winooski's side of the river, the remains of several houses can be seen as well as a clearing where houses were totally

LSOTG 35_000

This is another angle of the Winooski River. Burlington can be seen on the left and Winooski on the right. Once again you can see where the river flowed over the riverside into Winooski. The water level is still high, and some remaining floodwater can be seen pooling in open fields north of Winooski.
LS07736_000

Here is one more aerial shot of a bridge washed away by the flood of 1927. Over 1200 bridges were destroyed by the flood. This railroad bridge connected Winooski to Burlington, and the remains of a cement pylon can be dividing the river. Debris is strewn through out the river north of the bridge and the shoreline in Burlington and to the north has been visibly stripped and eroded by raging floodwater.

The torrential downpour that preceded, and was the cause of the flood set records throughout the state.

Burlington: 4.9 inches in 24 hours

Northfield: 7.61 inches in 24 hours

Somerset: 8.77 inches in 24 hours.

Source: http://www.publicaffairs.noaa.gov/pr97/nov97/noaa97-r248.html

Now for a closer look

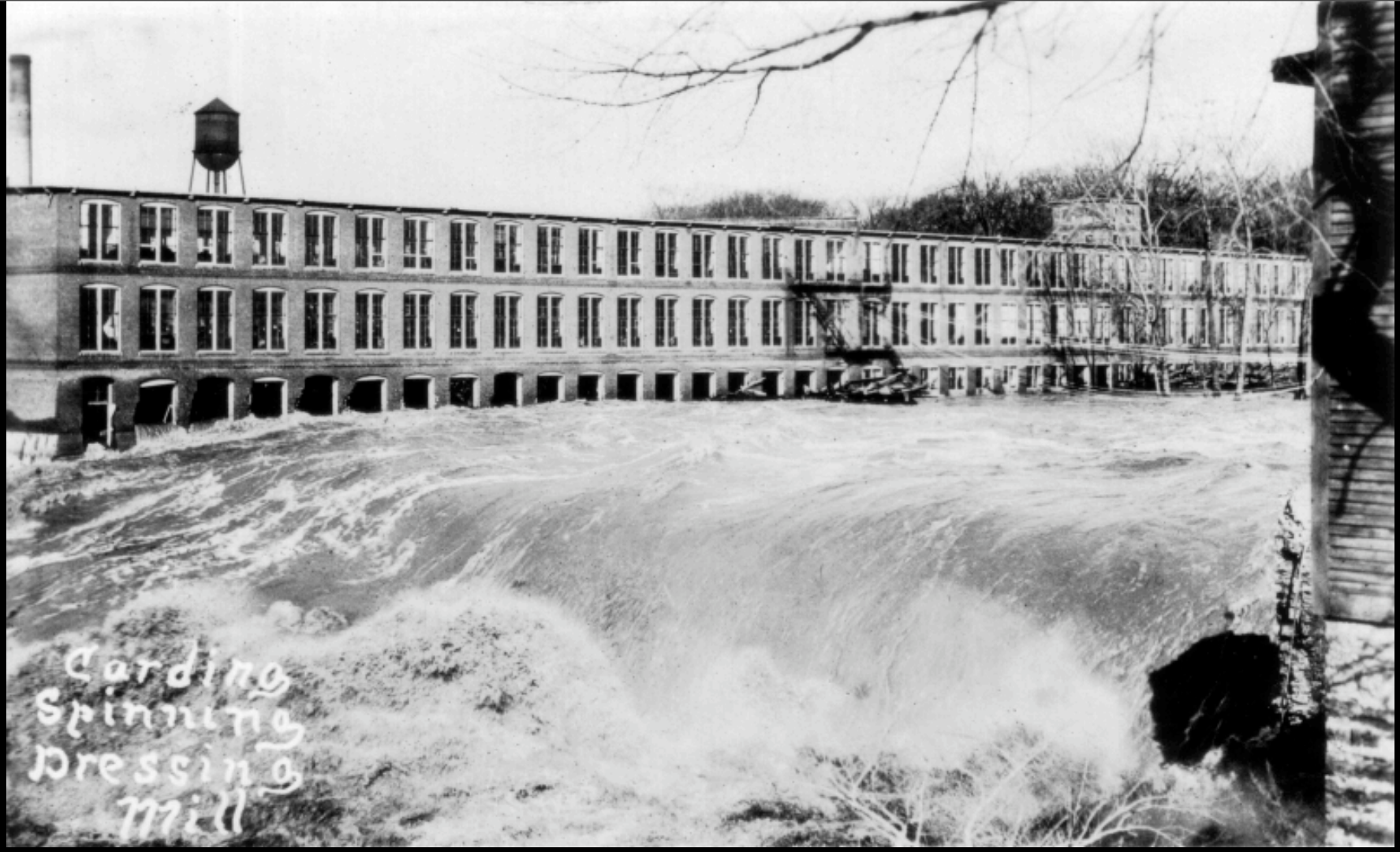
This lanternslide shows Burlington's side of a railroad bridge destroyed by the rushing waters. Huge rocks, a large pipe, mangled railway tracks, and wires are all thrown together into one tremendous mess. A crowd of people can bee seen In the background observing the tangled debris.

LS06098_000

Here is the Burlington/Winooski Bridge before it was washed away. Several men can be seen working to save the bridge; Unloading something from the back of pick up trucks. Floodwater can be seen everywhere in the photo, submerging plants in the foreground and threatening to flow over the

Here is a modern shot taken from the same vantage point. This image is a stark contrast, with almost a 20 foot gap between the bridge's bottom and the river. Floodwaters overran where the car is parked in this shot. The massive amount of water is truly a natural marvel.

LS00924_000



This is another shot of the mills in Winooski. Floodwater can be seen rushing through out the first floor of the building and over the dam. The floodwater is violently churning as it washes over the dam. The windows are also visibly washed out by the raging waters and debris can be seen in the building in the distance.

LS11384_000

This view again shows the damage that the flood inflicted upon Winooski. The modern image should be a familiar image to any one who has ventured into the town. In the image from 1927, the Champlain Mill is submerged up to its first floor. The tip of another house can be seen protruding from the floodwater which is shadowed by two other partially submerged buildings. Several trees can also bee seen poking out of the water to the left as well as some

This image of Winooski River captures the intensity of the flood. Water rapidly washes through the gorge sweeping trees and other debris away with it. The trees to the right are thrown against neighboring trees. The water is blurred, giving the impression of tremendous speed. Floodwaters with this power forever alter the landscape they sweep over.

Conclusion

- The flood did a tremendous amount of damage to the town of Winooski. Its proximity to the river made it an immediate target. The town's infrastructure, industry, and residents were all severely effected by the record setting rainfall seen in early November 1927. The power possessed by nature is never to be underestimated, and this event goes