

2023 South River Walk and Watershed Tour

Meet at Conway Town Hall

View short presentation introducing some of the sites we will be visiting on the tour.

Walk up Academy Hill Road to Stop 1.

Stop 1: Lower Pumpkin Hollow Brook

Lat/Long (42.507441, -72.697605) Parking lot on Academy Hill Rd. Conway.

View straightened channelized reach of Pumpkin Hollow Brook from road. Note low forested floodplain that is location of previous South River stream channel and is now blocked by a boulder berm. Note athletic fields and residential development on floodplain. This area was inundated in the July 2023 floods with water flowing down Academy Hill Road and in front of the library, which gives us clues to the likely historic path of Pumpkin Hollow Brook. Optional - Walk down onto the forested floodplain and see the old swales of the historic South River and the boulder berm.

Walk down Main St to Stop 2 - the Main St Bridge.

Stop 2: Main St Bridge

Lat/Long (42.509020, -72.698025)

View confluence of Pumpkin Hollow Brook and South River from Main St. bridge. The Main St bridge recently underwent minor repairs and concrete work meant to extend its lifespan, which is likely nearing its end. Note boulder berm blocking floodplain and former mill channel locations. The riprap retaining wall just upstream of the bridge is at least the fourth wall to stand here. It was most-recently replaced following Tropical Storm Irene in 2011. Note the artificially straightened channel downstream of the bridge and the many houses in the stream corridor at risk of fluvial erosion.

Walk down Shelburne Falls Rd. to Stop 3.

Stop 3: South River Meadow

Lat/Long (42.511191, -72.695187) Gravel ramp from Shelburne Falls Rd.

The town-owned South River Meadow is the site of a river restoration project completed in September 2016. The project was a collaborative effort between the Town of Conway, Franklin Regional Council of Governments, Field Geology Services, New England Environmental, and Weston and Sampson. A portion of the floodplain was lowered to re-connect the channel to its floodplain and provide flood storage and a site for sediment deposition. Note the recently deposited sand sheets and rafted debris; the river inundated this floodplain three times in July 2023, and at least 14 times since the project was completed in 2016 (Friends of the South River). A series of boulder deflectors along the right bank deflect flow from a home along the previously eroding bank. Note the sediment deposition along the right bank between the structures. Large wood and boulders used in the restoration provide many habitat benefits including carving and maintaining pools, providing cover, increasing flow complexity, sorting and storing sediment and narrowing the stream channel. Friends of the South River planted native trees and shrubs in the re-connected floodplain area in 2022, and nearly all the 70-plus trees and shrubs are growing well.

A bus will pick us up at South River Meadow and bring us to Stop 4.

Stop 4: Former Site of Tucker and Cook's Upper Mill

Lat/Long (42.507965, -72.703085) 131 River St.

This is the site of Tucker and Cook's Upper Mill, established in 1857. The mill prospered into the 1890s, but ended in foreclosure in 1911. It was one of two large cotton mills operated by Tucker and Cook along the South River at this time. In 1866, in an effort to control the water supply they built a dam and reservoir upstream (near Eldridge Rd). From the edge of the terrace view the ruined foundations of several mill buildings and a portion of the penstock used to bring water from the impoundments into the

mill to power water turbines. Also note the active mass failure on the steep glacial slope across the river. This mass failure has been actively eroding off and on since at least 1890, when it can be seen on a historic photograph. Mass failures such as this represent a significant sediment source in the South River watershed.

Drive up Rt. 116 and turn at Orchard Equipment Supply onto Delabarre Ave. Take a left and continue down Delabarre Ave to Stop 5.

Stop 5: Delabarre Mill Race and Dam Site

Lat/Long (42.507924, -72.709810) 169 Delabarre Ave.

From the parking lot at St. Mark's Church walk down the hill to view the mill race that once carried water to the Delabarre Woolen Mill, where Orchard Equipment Supply (OESCO) stands today. Across Rt. 116 a channel-spanning log is all that can be seen of the historic mill dam that once fed this canal. Take note of the historic Burkeville covered bridge, built in 1869.

Drive across the Burkeville Covered Bridge and up Main Poland Rd to Stop 6.

Stop 6: Adams Road Crossing

Lat/Long (42.501085, -72.717576) Park along Main Poland Road or Adams Road

The Adams Road culvert washed out during the July 2023 floods. The failed culvert can still be seen in sections, downstream of the repaired crossing. One culvert was replaced by two smaller culverts as funding has not been made available to upsize this crossing with a more appropriate culvert or bridge. The undersized culverts are not geomorphically or hydraulically compatible with the water and sediment load of Johnny Bean Brook and represent a fluvial erosion hazard. There are two crossings along Johnny Bean Brook, the other is located downstream on Main Poland Rd, and is also significantly undersized.

Drive back down Main Poland Rd to Stop 7.

Stop 7: Former Conway Reservoir

Lat/Long (42.514343, -72.719619) Park along end of Eldridge Rd.

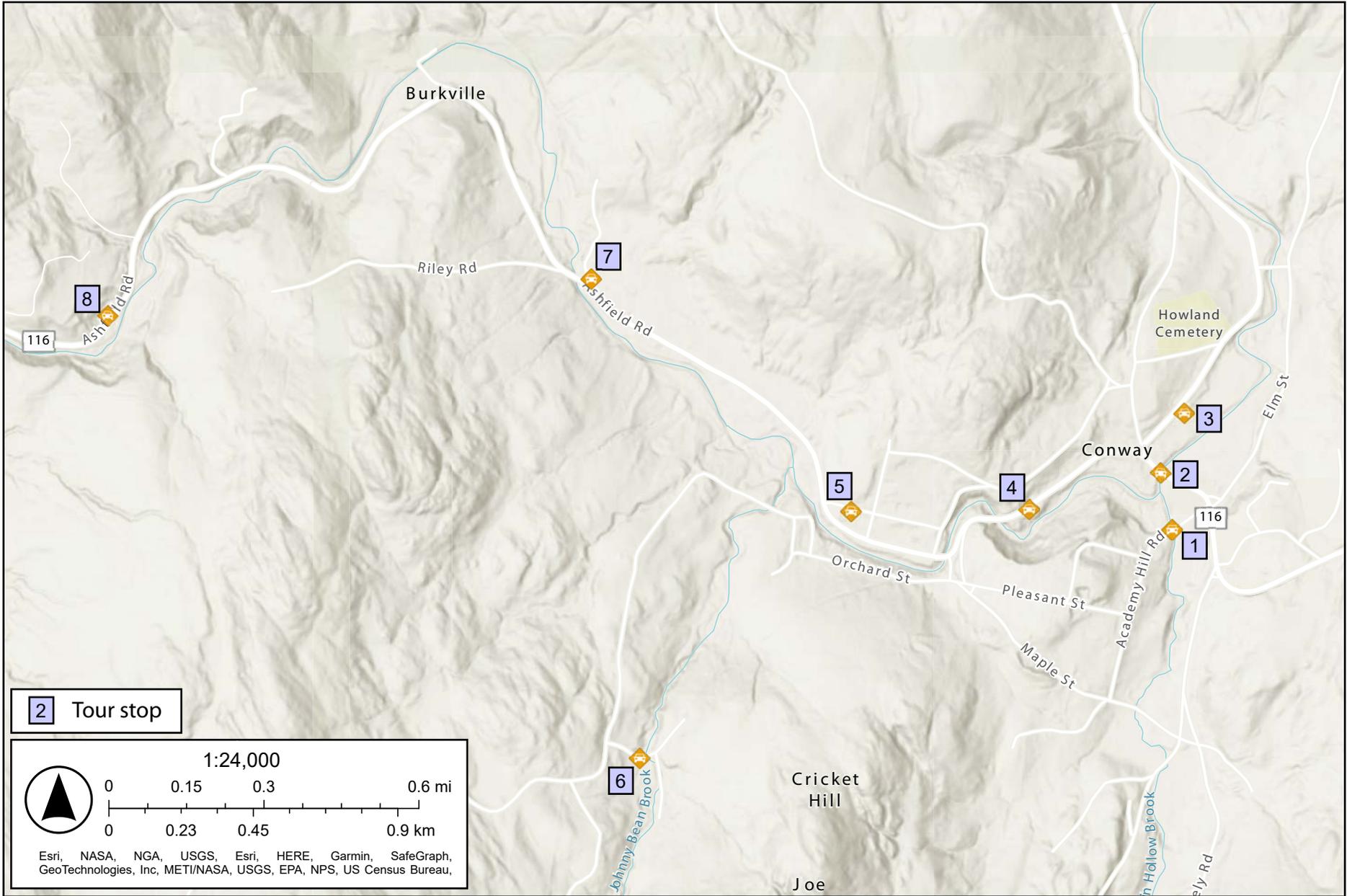
This dam was originally constructed by Tucker and Cook in 1866 to power downstream mills. Sediment sources and storage are a major story in the South River watershed, and this historic dam site continues to store a large volume of legacy sediments in its former impoundment. Readily erodible stream banks up to 10 feet high are composed of fine-grained silt and clay. The dam is gone, but its ruins and these deposits continue to influence the stream's morphology, habitat, and water quality.

Drive west along Rt. 116 to Stop 8.

Stop 8: Large Mass Failure

Lat/Long (42.513326, -72.738037) Park in large gravel pull-off along right side of Rt 116

Across Rt. 116 a mass failure in clay-rich glacial till represents a large point source for both coarse and fine sediment, impacting water quality and sediment-loading downstream. This is just one of several large mass failures along the South River, contributing to the erosion hazards that Conway is experiencing.

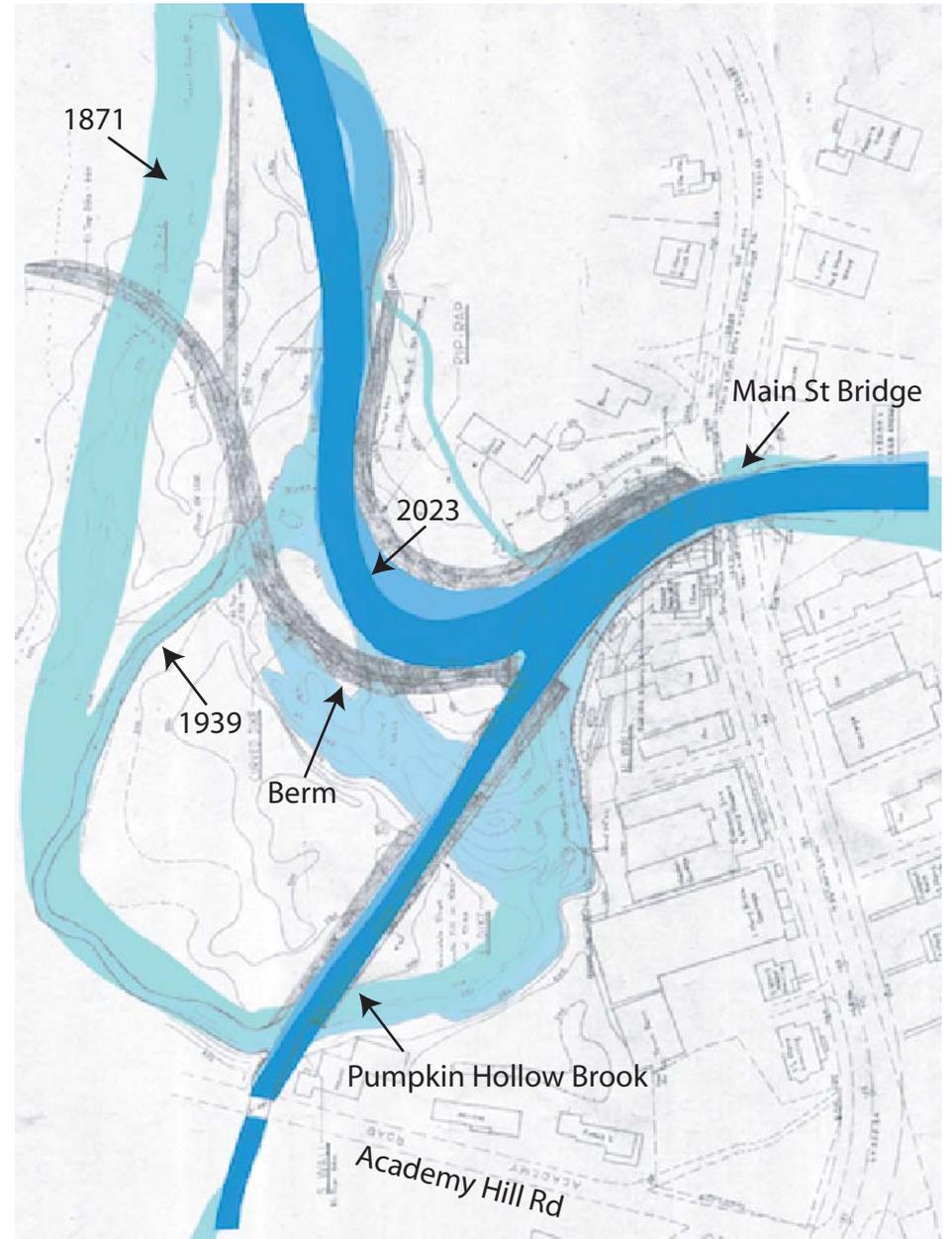


South River Walk and Watershed Tour - Tour map.

1871 Map of South River



Overlay of Historic Channel Positions (1871, 1939, present)





Tropical Storm Irene - View north up Elm St



Tropical Storm Irene -
View southwest up Academy Hill Rd



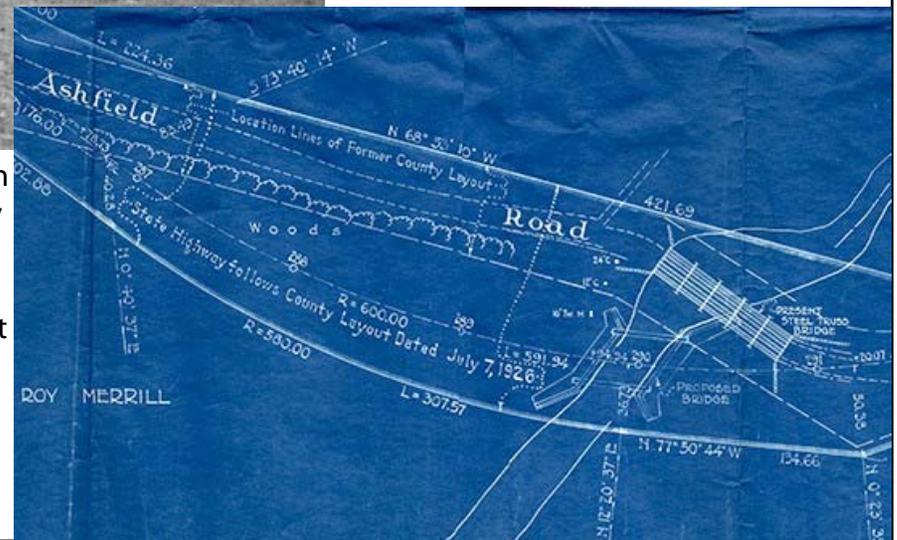
South River Walk and Watershed Tour - Stop 1. Conway center flooding. Water depth and flow paths modeled for 10-year recurrence interval event.



South River Walk and Watershed Tour - Stop 1. Berm constructed of large granite blocks cuts off the channel's floodplain access immediately upstream of the Main Street bridge in Conway.



Photo of steel truss bridge, which replaced the wood trestle bridge, which was destroyed in flood of 1869 (from Picturesque Franklin, 1891, courtesy of the Conway Historical Society). The current bridge was built slightly upstream when the State Highway came through in 1926, as can be seen in the blueprints to the right. The bridge span was reduced by 31 percent from 57.1 to 39.7 feet (based on blueprints). The bridge constricts the flow during high flow events leading to increased erosion hazards.



South River Walk and Watershed Tour - Stop 2. Main Street Bridge.

a)



b)



c)



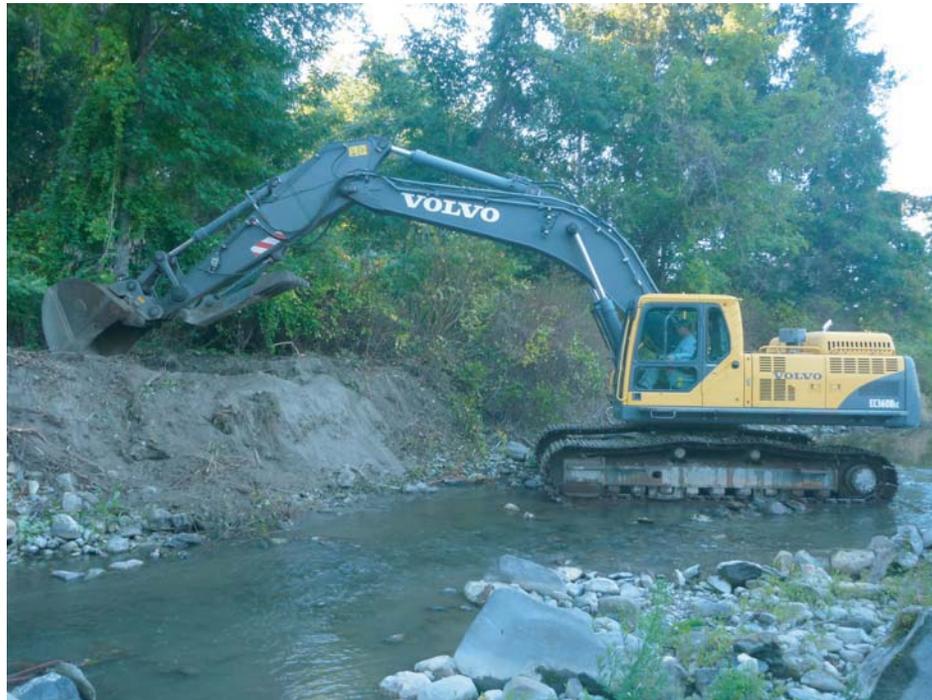
South River Walk and Watershed Tour - Stop 2. Main Street Bridge; a) geocell retaining wall completed in early August 2011 was, washed away by flooding on August 28, 2011 with c) post-flood installed riprap further constricting the channel (photo "c" courtesy of Michele Turre). The riprap wall is the fourth at the site since the mid-1980s. A concrete retaining wall washed out in 1987 to be replaced by one constructed of gabion baskets.



Emergency work - bank armoring following Tropical Storm Irene (courtesy of M. Turre)



Floodplain lowering involved trucking loam off-site



Excavation for deflector bank key



Constructing a boulder deflector

a)



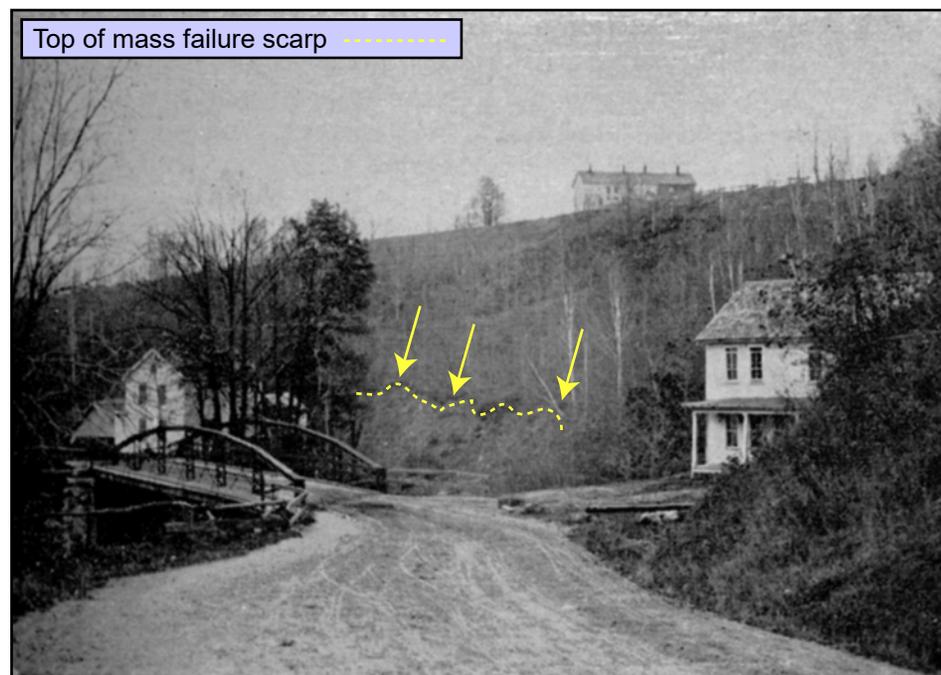
b)



South River Walk and Watershed Tour - Stop 3. South River Meadow Site. Boulder deflector, just constructed on South River could be seen 2) turning water away from the bank at a flow of 60 cfs on September 19, 2016, and b) at base flow the next morning.



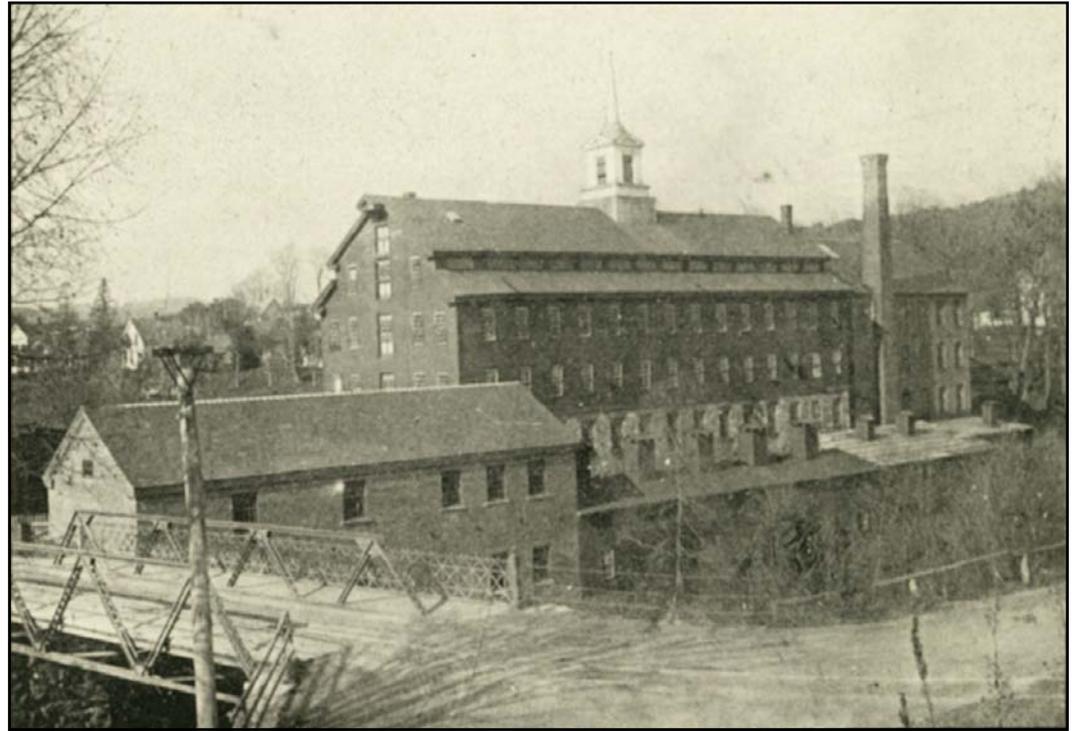
Tucker and Cook Upper Mill (photo from auction flyer, 1912, courtesy of the Conway Historical Society). This large cotton mill was fed by penstocks whose remains can be seen amidst the ruined mill foundation. Note trolley tracks and smokestack at boiler house.



Top of mass failure scarp
Large mass failure is visible in this photo of the River Street Bridge, from Picturesque Franklin, 1891, courtesy of the Conway Historical Society). This mass failure is currently active and can be seen across the river from the mill ruins at Stop 4. The house on the right was washed out in the hurricane of 1938, the house on the left remains and was part of the Tucker and Cook mill complex. Note the relative lack of trees on the hillside in this photo from 1890.



Mill dam downstream of Burkeville Covered Bridge and Catholic Church, built in 1879, served mill workers (photo from Conway Illustrated, 1900, courtesy of the Conway Historical Society). Mill dam fed canal bringing water to Delabarre Woolen Mill and other mills that operated on the site. Canal is still visible between the church and Rt. 116.



Delabarre Woolen Mill (photo from Conway Illustrated, 1900, courtesy of the Conway Historical Society) once stood on the site now occupied by Orchard Equipment Supply (OESCO). Mills date back to 1845 on this site, when Edmund Burke built a woolen mill.

a)



b)



South River Walk and Watershed Tour - Stop 6. Adams Road crossing. A 2016 Fluvial Geomorphic Assessment and Corridor Planning Report documented the excess sediment deposition upstream of the undersized and incompatible culvert at Adams Rd, highlighting the downstream scour and potential undermining of the crossing.

a)

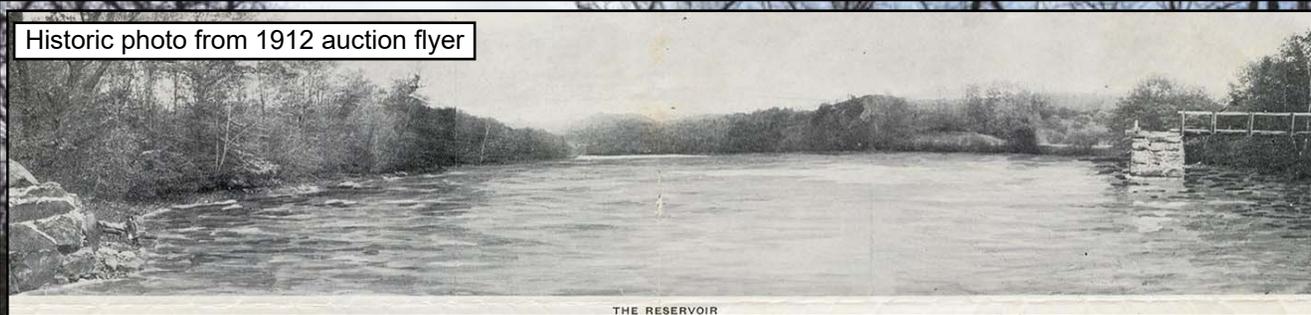


b)



South River Walk and Watershed Tour - Stop 6. Adams Road crossing. The 7-foot diameter steel culvert washed out during the July 2023 floods and a) can be seen downstream; b) this has been replaced by two smaller culverts in the repaired road crossing.

Historic photo from 1912 auction flyer



THE RESERVOIR



South River Walk and Watershed Tour - Stop 7. Former Tucker and Cook Reservoir (photo courtesy Michele Turre).



South River Walk and Watershed Tour - Stop 7. Former Tucker and Cook Reservoir. Impoundment sediments along an eroding bank exposed by channel incision through a former mill pond.

Pre-Irene photo from July 2011



South River Walk and Watershed Tour - Stop 8. Large mass failures often occur where the artificially straightened channel impinges upon high banks of glacial sediment leading to unstable slopes. These failures can remain active for many years, acting as a point source for sediment loading and water quality impairments.