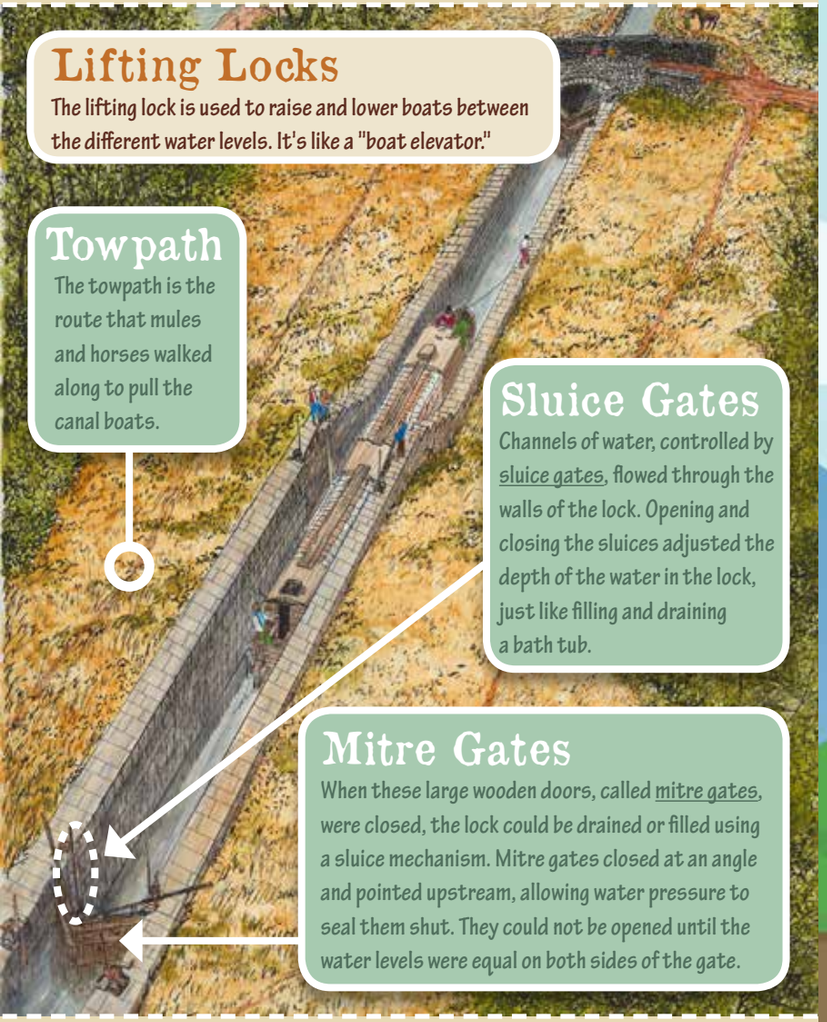
Anatomy of Locks and Canals



Lifting Locks

The lifting lock is used to raise and lower boats between the different water levels. It's like a "boat elevator."

Towpath

The towpath is the route that mules and horses walked along to pull the canal boats.

Sluice Gates

Channels of water, controlled by sluice gates, flowed through the walls of the lock. Opening and closing the sluices adjusted the depth of the water in the lock, just like filling and draining a bath tub.

Mitre Gates

When these large wooden doors, called mitre gates, were closed, the lock could be drained or filled using a sluice mechanism. Mitre gates closed at an angle and pointed upstream, allowing water pressure to seal them shut. They could not be opened until the water levels were equal on both sides of the gate.

The Canal's Shape

Not much is known of the shape of the canal except that it had a flat bottom and sloping sides. Often called a prism, this shallow ditch was wider than it was deep, usually allowing space for two boats to pass each other. While the numbers vary, Landsford Canal, on average, was about 12 feet wide and 3 feet deep.

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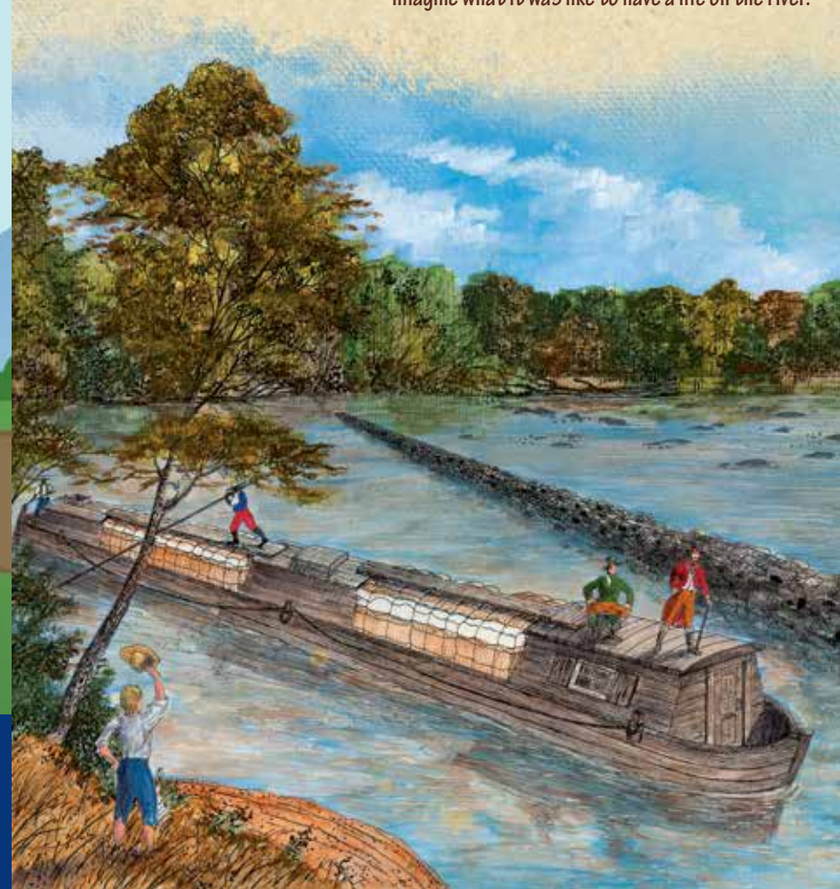
Journey along the Landsford Canal

The Landsford Canal opened in 1823 allowing for efficient transport between settlements along the Catawba River. As roads were often muddy and difficult to travel in this region, travelling by river was preferred and remained so until railways expanded their reach inland. Use this brochure to explore what remains of the Landsford Canal and imagine what it was like to have a life on the river.



What can you find on the Landsford Canal?

Each stop on the trail has something to discover!
Mark the circle for each stop you visit.

Culp Island

Catawba River

1 2 3 4 5 6 7 8 9 10

Spider Lily Overlook

2. Diversion Dam (pictured on cover)

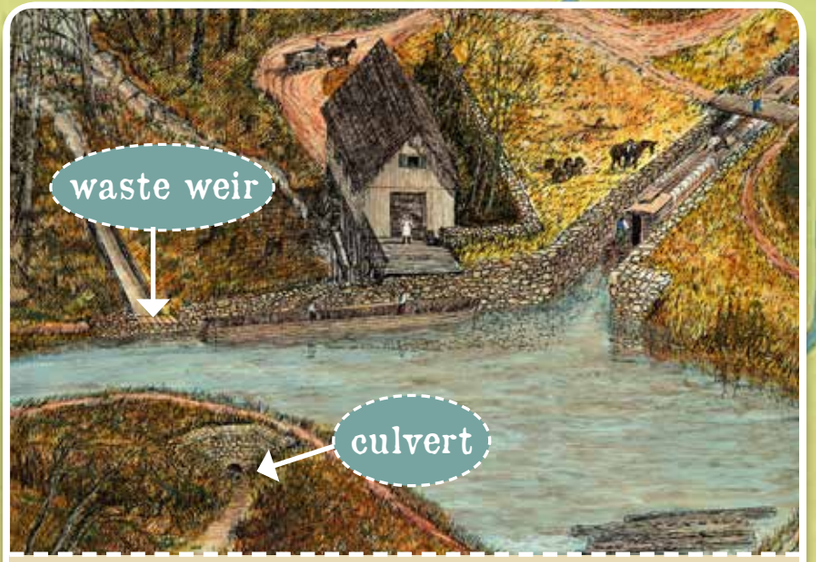
The dam kept water flowing through the canal when the river was low. Constructed of piles of loose stone, the dam projected from the bank at roughly forty degrees and did not completely cross the river. During flooding the dam helped prevent boats from being swept into the shoals.

Culverts

Another method of controlling the water level of the canal was by constructing culverts. Culverts are channels that direct streams beneath the canal to keep extra water from flowing into the canal. There are three culverts along the trail. Can you find them all?

- 5. Small Culvert
- 6. Culvert
- 8. Culvert

- 4 — Stone Bridge Foundation
- 1 — Rocky Mount Lock Keeper's House



3. Guard Lock

As this region flooded often, this lock was used to safely lower boats into the canal when the river was high. During periods of normal water levels the gates were often left open.

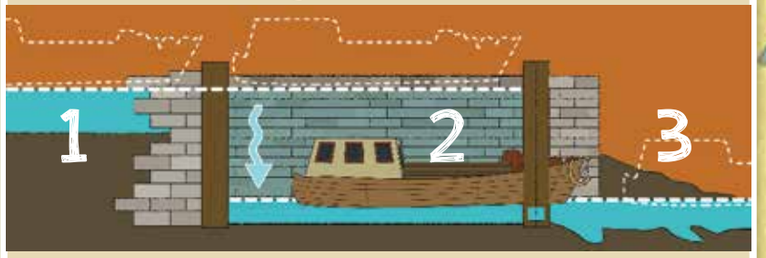
9. Davies Mill

By directing water from the canal through a flume to a mill wheel, the mill used water power to grind grain and saw lumber. The canal itself passed between a pair of retaining walls that protected the mill's foundation. Flooding around the mill was prevented with a waste weir, where excess water would flow over a spillway and toward the river. A culvert also was constructed near the mill.

10. Upper Lifting Locks

The Upper Lifting Lock had two lifts, meaning boats had to pass through two chambers to be raised or lowered to the level of the next section of canal. This pair of lifts had a change in elevation of 14 feet. Another pair of locks existed a mile south, and raised or lowered the boats another 18 feet. Overall, three stretches of canal bed, along with the two pairs of lifting locks, moved boats a gradient of 32 feet in order to bypass 2 miles of shoals on the river.

How the lifting lock worked:



1. A boat travelling the canal enters the lock.
2. The mitre gates close behind it and a sluice gate opens to drain or raise the water until it is level with the next section of canal the boat has to travel.
3. Once the water is level, the mitre gates can open and the boat exits.