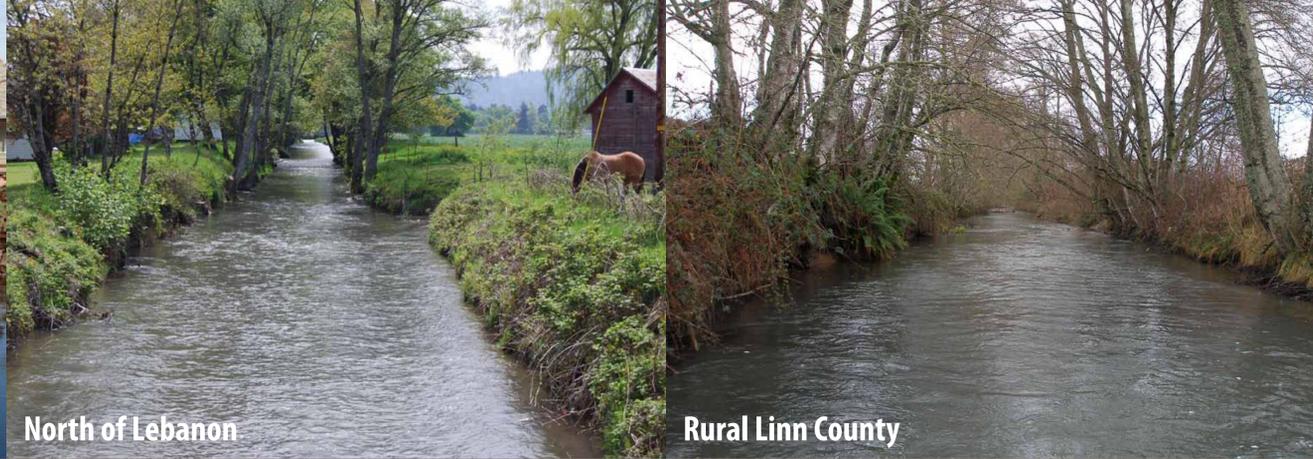




Lebanon



North of Lebanon



Downtown Albany

the Historic SANTIAM-ALBANY CANAL

19TH CENTURY ENGINEERING MARVEL

The Santiam-Albany Canal is an amazing example of the history of Linn County. The canal reflects 19th Century engineering in which gravity, water, and turbines powered industry. It was also used for both cities' first electrical power and water works. The City of Albany has taken its drinking water from the canal since 1884.

"No institution has ever done so much for Albany as the Santiam Ditch...Not only has it been in the past a monument to our city, but it is now, and will be in the future..." — ALBANY DEMOCRAT, 1884

1860

ALBANY CANAL
Reach 12 miles

1860 Thomas Monroath organizes Santiam Ditch & Canal Co.

1866 Survey performed

1872-1873 Canal constructed by 150 Chinese laborers and local teams to old South Santiam River intake

1880 Albany Water Works installs first public water (untreated)

1888 First electric power generated

1903 New powerhouse built

1906 Water treatment added

1910 Vine Street filtration plant constructed

1922 South Santiam River intake washed out

1871

LEBANON CANAL
Reach 6 miles



1891-1892 Canals dug by several ditch companies

1893-1894 Hydroelectric plant and water pumping station built (untreated public water system)

1908 Hydroelectric plant and water pumping station rebuilt

1920 New hydroelectric plant & water pumping station

SANTIAM-ALBANY CANAL
Reach 18 miles

1923

Albany and Lebanon canals merge; single canal, single owner

1923 New powerhouse built at Albany location

1946 Current water treatment plant constructed in Lebanon

1954 PacifiCorp acquires canal system

1968 Lebanon power plant razed

1985 City of Albany acquires system and Vine Street Water Treatment Plant; City of Lebanon acquires Lebanon Water Treatment Plant

1992 Albany hydropower discontinued

1998 FERC hydropower license issued

2005 South Santiam River diversion dam, fish ladder, and fish screen improvements

2008 New 500 kW hydropower generator commissioned in Albany

BUILDING A NETWORK OF CANALS

The Eighth Avenue Canal is the only continuously-flowing side canal that remains from the original network of canals that fed Albany businesses along the Willamette River.

The Albany Canal

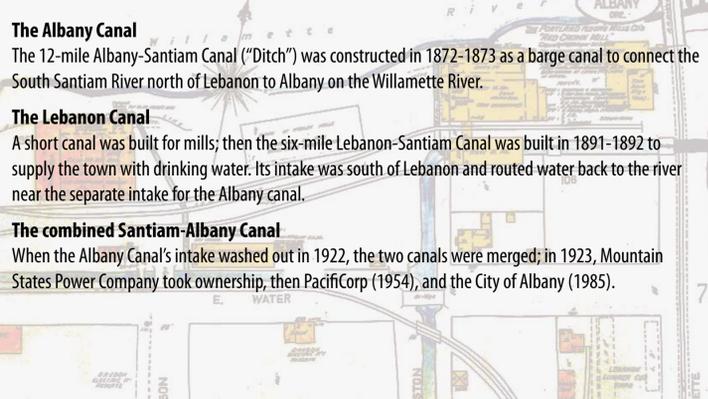
The 12-mile Albany-Santiam Canal ("Ditch") was constructed in 1872-1873 as a barge canal to connect the South Santiam River north of Lebanon to Albany on the Willamette River.

The Lebanon Canal

A short canal was built for mills; then the six-mile Lebanon-Santiam Canal was built in 1891-1892 to supply the town with drinking water. Its intake was south of Lebanon and routed water back to the river near the separate intake for the Albany canal.

The combined Santiam-Albany Canal

When the Albany Canal's intake washed out in 1922, the two canals were merged; in 1923, Mountain States Power Company took ownership, then PacifiCorp (1954), and the City of Albany (1985).



1946 The Talmon (Tallman) Covered Bridge over the canal; removed in the 1950s. (SALEM PUBLIC LIBRARY, PHOTOGRAPHER BEN MAXWELL)

21ST CENTURY IMPROVEMENTS ENSURE RELIABILITY WHILE PROTECTING NATURAL RESOURCES



2005 Original South Santiam River diversion dam rebuilt



2005 New fish ladder constructed on the South Santiam River

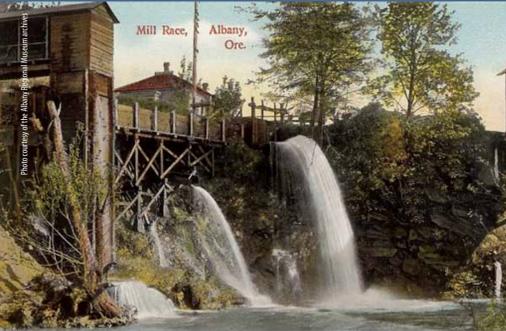


2005 Fish screen at the canal inlet keeps migrating fish out of the canal

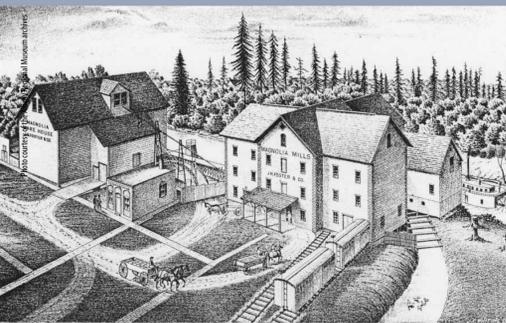




Impact of the Canal on WATER, POWER, AND INDUSTRY IN ALBANY



Above and below: Magnolia Mills (at Calapooia Street and Third Avenue) and many others were run by the canal.

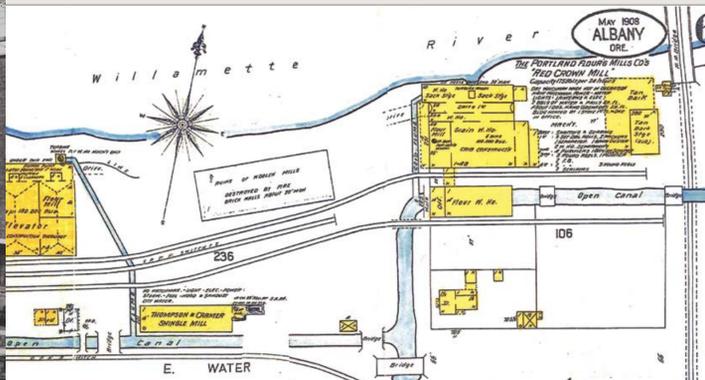


Above: The water filtration plant was built in 1910.

Below: The Raw Water Pump Station was constructed in 1948. The plant underwent a seismic upgrade in 2009-2011. Approximately 75% of project costs were funded from a FEMA seismic-mitigation grant.



The historic canal system that connects Albany with Lebanon was integral to the 19th century industrial development of both cities. The original Albany Canal (1872) was conceived as a transportation route but was more important as a source of municipal and irrigation water, water power to run mills and machinery, and in 1888, to generate hydroelectric power.



Albany Water Supply and Treatment

- 1880** Albany Water Works were constructed on First Avenue, providing cisterns, mains, and hydrants for fire protection and pumping untreated water from the Calapooia River.
- 1884** Untreated water from the Santiam-Albany Canal used for municipal water supply; the canal became the sole supply shortly thereafter.
- 1903** Hydroelectric generation consolidated at the power plant adjacent water facility.
- 1906** Pumping station moved to a new powerhouse on Vine Street and Third Avenue and treatment filters added.
- 1911-1912** Vine Street Treatment facility expanded. The original structure housed settling basins and filters; since then, a flocculator, settling tank, additional filters, and backwash ponds have been added.
- 1918-1923** Mountain States Power acquired the entire system—canal, water treatment, and power generation. Continued under Pacific Power & Light Company.
- 1985** The City of Albany purchased the canal, water and hydrogeneration facilities.
- 1990** Plant upgraded and expanded.

The present Vine Street Water Treatment Plant can produce 15 million gallons per day (57 million liters per day) of finished water. Along with the new Albany-Millersburg Water Treatment Plant, commissioned in 2005, the water distribution system serves both the cities of Albany and Millersburg.

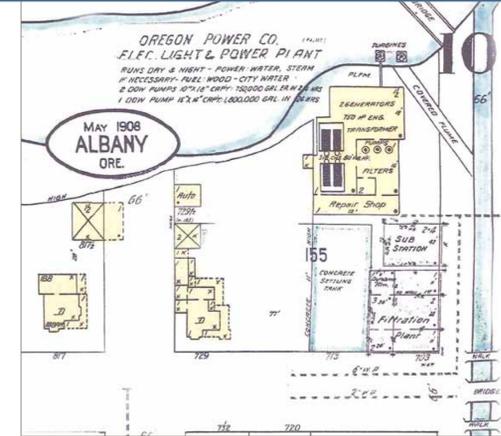
In the 1863 the toll road from Albany through the Santiam Pass, the Willamette Valley and Cascade Mountain Wagon Road opened up an Eastern Oregon market for Willamette Valley products. This augmented shipment of farm products by boat on the Willamette River. By 1870, the railroad had been built. In 1872, Thomas Monteith, from the Albany, New York, area, decided to build a canal from Lebanon to Albany, perhaps emulating the highly successful Erie Canal. The Santiam-Albany Ditch quickly became more important for municipal water supply and hydropower for industry than for transport of raw materials or finished goods.

Impact on Albany

The first industries in Albany were started in the early 1850s and were powered by water wheels on the Calapooia River but the canal allowed direct hydropower for businesses in downtown Albany. A network of side canals fed by the Eighth Avenue canal distributed flow along the waterfront, allowing the town to expand. Hydropower supported grain elevators, sawmills, flour mills, furniture factories, machine shops, a foundry, a woolen mill, and a twine mill. Today, Eighth Avenue and Thurston Ditches are all that remain.

Hydroelectric power generated by canal flows routed through a generator at Calapooia and First Avenue in 1888 allowed downtown to be lit by arc lights; a power line to Corvallis provided its first electricity. Gravity-fed water power became less important as electric service expanded in the early 1900s; side ditches were abandoned and mills along the canal closed.

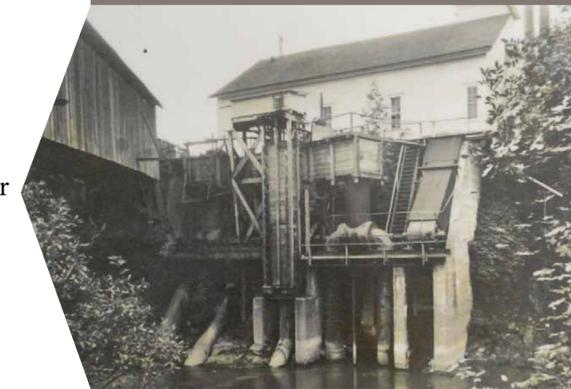
Demand for electricity expanded; the power facility was moved to a new 1906 powerhouse at Vine Street between 3rd and 4th Avenues. In 1925, the present building was constructed. Steam turbines (since removed) also provided additional power to the city's grid.



“Some idea of the magnitude of this water power can be formed when it is known that the water in the canal can invariably be used twice, and, in some cases, three times, before it empties into the river. The completion of this Canal has nearly altogether dispensed with the use of steam, only two engines now being in use in the city. Fourteen turbine wheels are now propelled by water from this canal, and others will be added to the number every year. Small races conduct the water from the main branch down several streets from Eighth to the river front, and, besides furnishing the power to propel machinery, renders the construction of fire cisterns entirely unnecessary in the main business portion of the city.”

— ALBANY CITY DIRECTORY FOR 1878 pp 27-28

ALBANY HYDROPOWER Oregon pioneer in harnessing the power of the Willamette River



View of the powerhouse from the opposite bank of the Calapooia River as seen before the 1920s.



Current canal inlet, Vine Street water plant and hydropower facility.

The canal is on the Oregon Inventory of Historic Properties as a significant example of an engineering accomplishment of the pioneer period.

Albany was a leader in creating electricity—beginning in 1888, months before Oregon City at Willamette Falls.

Early on steam was used; in 1924-1927, Mountain States Power built the current powerhouse and installed two hydroelectric generators.

The plant was decommissioned in 1992 while obtaining a new FERC license (1998).

In 2008, one 1927 generator was replaced and the power system upgraded. Tax credits and grants from the Energy

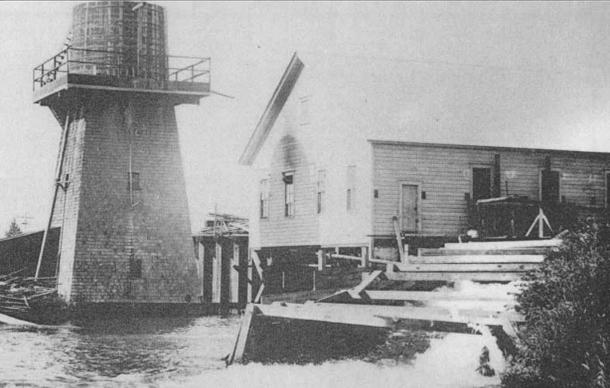
Trust of Oregon and Pacific Power helped

make the upgrade pay for itself quickly.



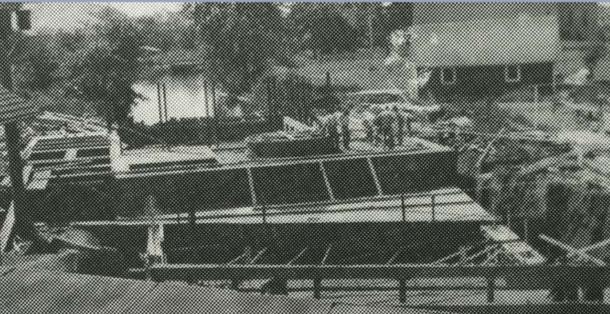
Hydroelectric generator installed in 2008.

The City of Lebanon operates this Water Treatment Plant. The 1946 water pumphouse is seen to the left.



Above: Old water plant on canal at Main Street (building may have been used by the Silver Wheel Motor Freight).

Below: 1922 Lebanon hydroelectric plant under construction (removed in 1968).



Below: The Lebanon Flow Control Structure (refurbished 2009) is the site of the former hydroelectric facility. The City of Albany operates the canal, including this structure.



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Impact on Lebanon

Lebanon grew, surrounded by sheep and cattle ranches and by wheatfields. During the 1880s, rapid growth in Lebanon centered on a shorter predecessor to the canal, fostered by the construction of the large O'Neil and Callaghan paper mill. Much of the industrial development in Lebanon occurred along the Lebanon-Santiam Canal, completed in 1892; it supplied water power to run machinery at mills and factories.

By 1894, the canal was used to generate hydroelectric power and provided arc street lights as well as domestic water supply. By 1913, industrial growth was no longer centered on the canal, reflecting the increased use of electricity and the lessened importance of water wheels.

A new hydroelectric facility was built on the present Main Street site in 1922 by Mountain States Power but was razed in 1968.



Above: Lebanon Paper Mill was built in 1883, near the Elkins Flour Mill site. The paper mill was owned by Willamette Pulp & Paper Co in 1906, Crown Willamette Paper Co. in 1914, and Crown Zellerbach Corp. in 1936. It has been torn down.

Lebanon hydroelectric generator site in 1951.



Lebanon hydroelectric generator site in 2008.



LEBANON COMMERCIAL ENTERPRISES

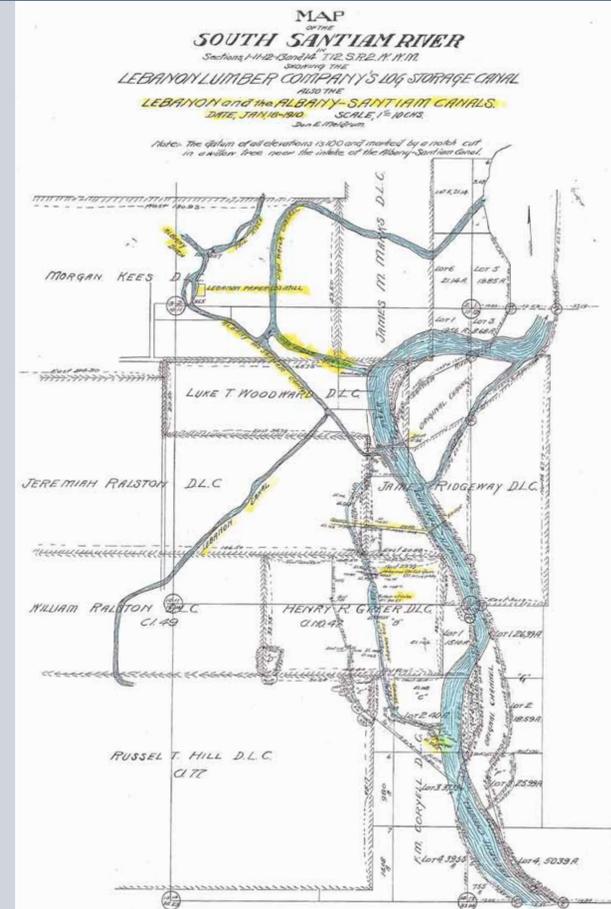
using water or power from the canal

Hydropower Period

- By 1888** S.A. Nickerson's planing mill and sash and door factory, Lebanon Flour Mill (later known as Luther Elkins mill)
- By 1892** New City Roller Mill (Main & B St); Goan's planing mill and Lebanon Machine Shop (Grant St), Lebanon Paper Mill (north of town) (later to be Crown Zellerbach)

Hydroelectric Power Period

- By 1898** O'Neil Bros and Peterson Excelsior Factory, Champion Roller Mills, machine shop, opera house, two planing mills
- By 1913** Lebanon Creamery (Oak & Grove)



Mockup of sign placement



Mockup of sign placement

