

THE PORT OF LONGVIEW | BERTH 4

CONTINENTAL GRAIN FACILITY

1928 - 1989

A Letter from the Port



View of the Continental Grain facility. Picture taken July 2022.

The Port of Longview has been making history since it first debuted as the Port of Kelso over 100 years ago. Despite hard times, the Port has consistently lived up to its promise of community benefit by improving the lives of generations of local families and driving the area economy.

The Continental Grain complex was one of the first facilities built at the Port of Longview in 1928. The grain complex housed two different businesses, hundreds of hard-working individuals and generated tons of cargo handling activity during its 60-year life span. Nearly 30 years after the facility closed its doors, it is time to demolish the complex and open the Port's Berth 4 to redevelopment. After all, all good things must come to an end.

For many years, the Port has been working on the redevelopment of the site and saving up funds for the demolition of the Continental Grain complex. In 2022, the Port received the last of the required permits necessary to begin demolition. The Port plans to demolish the complex and its adjacent facilities in 2023.

This book aims to commemorate the rich history of the facility and the role it played to the Port, the City of Longview and to the lower Columbia River region. One-hundred years later, the Port continues to rely on grain as a leading export and the Columbia River continues to be the number one export gateway for wheat and barley.

We are excited for the future of the Port's Berth 4 and the possibilities a new facility will bring for our community.



The Port of Longview: Established 1921

The Port of Longview is the first full-service operating port on the 43-foot deep-draft shipping channel on the Columbia River located 66 miles from the Pacific Ocean. Spanning 989 acres, the Port has eight marine terminals, a roll-on/roll-off (RoRo) dock and industrial park property. The Port also manages a public park and boat launch along with an advanced wetland mitigation site.

For over 100 years, the Port has been a driver of economic development for the community. Operating as a working port, the Port retains control over its docks and is able to handle many types of cargo. The Port handles fertilizers, grain, bulk commodities, breakbulk, heavy-lift cargo, minerals, pulp, steel, wind energy and project cargo.

The Port is dual served by BNSF and Union Pacific (UP) Class I railroads and operates and maintains a two-mile industrial rail corridor (IRC) in addition to 16 miles of internal rail infrastructure.

The Port is also a non-federal sponsor of the Columbia River Navigation Channel and coordinates with other ports in Southwest Washington, Port of Portland (OR), and the US Army Corps of Engineers to maintain the deep-draft navigation channel to ensure economic opportunity continues for Washington State and the local region.



Pictured above: The Port of Kelso's new facilities on the Columbia River were officially dedicated at a large community celebration on April 15, 1925. Here, local attorney and driving force behind the Port's creation, TP Frisk, addresses the community at the grand ceremony.

A VOTE OF THE PEOPLE

The arrival of the transcontinental railroads in the 1870's opened Washington territory for development like never before. However, it came at a steep price as civic leaders gave waterfront real estate to the railroads in the name of growth. Although the state Constitution in 1889 preserved tidelands for public ownership, many of the port facilities belonged to the private industry.

In the early 1900s, people were advocating for public ownership of transportation and waterfront property. On March 14, 1911, the Port District Act was signed, ending the private control of harbors and establishing public port districts.

Shortly after the creation of the Port District Act, Cowlitz County area civic leaders held an election to approve a new port district. In 1921,

the Port of Kelso was established on the banks of the Cowlitz River.

Two years later, in 1923, Longview became an official city, and after much controversy, voters approved moving the Port of Kelso to the more accessible Columbia River in 1925. Port officials would soon put forth two other critical votes: one to expand the boundaries of the Port's district to include the entire developing city of Longview, and another in 1929 to rename the Port of Kelso to the Port of Longview. Both votes passed.

In its first nine months of operation, the Port demonstrated its cargo handling by moving 72,000 tons of mixed freight. Lumber was an important first commodity as was sugar, steel and grain.



The Port of Longview celebrates its opening day on the Columbia River in 1925.

Grain Comes to Longview

After the 1926 election, the Port issued its first bonds to purchase a 44-acre property and construct a grain elevator with a 500,000-bushel capacity. The total bond issue approved by voters for these projects was for \$416,000 (McClary 2008; Seattle Daily Times, 19 October 1926:27 and 4 November 1926: 13).

The Port commission's requirements for the new facility included a total construction budget of \$380,000 and for the project to be completed in nine to ten months (Seattle Daily Times, 16 January 1927: 12). The original plans for the grain facility included the construction of a workhouse, railway tracks, track shed, ten storage bins, a storage warehouse, a 400-foot wharf and dock, a sack shed and covered passageways for shipping (Sanborn 1927; Seattle Daily Times, 31 January 1927:9, 16 March 1927: 13 and 10 April 1927: 22)..

Meanwhile, Robert A. Long, president of the Long-Bell Lumber Company and founder of the City of Longview, worked with investors to find a company to utilize the new grain facility. After an extensive search, the Longview Elevator Company negotiated an agreement with the Port to lease and operate the grain elevator, ensuring a great return on the investments made by the Port and the community.

Once everything was approved, the Port commission authorized the engineering firm to move forward with the final plans to solicit bids. The Port engaged Edwin F. Carter (1884-1977), consulting engineer and vice president of the John S. Metcalf Company, Ltd.,

of Vancouver, British Columbia, and Seattle, Washington to prepare a preliminary survey and cost estimate for the grain elevator's construction. Carter is known for work on engineering projects throughout North America and in Australia, Shanghai, China, between 1910 and 1958. He specialized in the design of grain elevators and at one time was head of the Metcalf Company's grain elevator designs for the entire Pacific coast in Canada and the United States. Carter is credited with the design of large number of grain elevator projects in Washington, Oregon, and California, including Seattle, Portland, Vancouver, Tacoma, among many others.

The John S. Metcalf Company was established by John Sanborn Metcalf (1847-1912) in 1894.

Metcalf was a prolific architect and engineer in North America and was highly sought after as an expert in the design and construction of reinforced concrete elevators. He is known for his early steel grain elevator prototypes in the midwest and for patenting the 'slip form' method of concrete construction. Following his unexpected death in 1912, Metcalf's firm remained in business until after 1950 (Hill



2022).

The lease called for the grain elevator to be completed by July 1, just in time for the 1928 crop and stated that if construction bids exceeded \$380,000, the project would be abandoned. Final plans for the project were issued on August 12, 1927, and the opening of bids took



Top: The 1927 grain complex completed. Bottom: Additional silos added in 1945 and a barge loading grain, date unknown.

place on August 29, 1927. The project called for the grain elevator to be of concrete construction with a capacity of 370,000 bushels at a total cost of \$375,000.

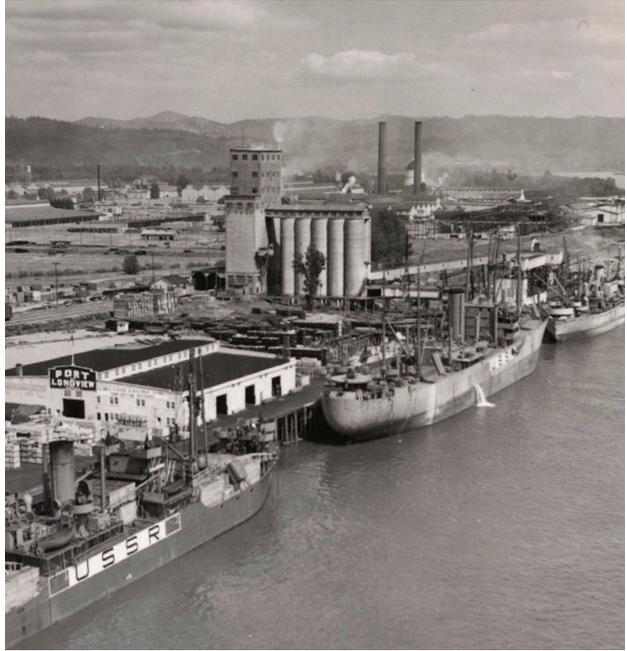
Construction of the facility involved 113 men, working day and night shifts. The contractors completed the excavation and pile driving for the foundation by November 19, 1927 and began pouring concrete the following Monday. Over 6,000 yards of concrete were poured for the foundation alone, using 40,000 feet of one-inch pipe for the jack rods (Seattle Daily Times, 20 November 1927: 42 and 26 February 1928: 25).

By February 25, 1928 the workhouse, storage bins, and unloading pit foundations were complete and pouring of the 10 concrete storage bins was underway at a rate of six- to eight feet daily. At the same time, crews were also busy constructing the new conveyor systems and sacking shed on the 400-foot dock.

On June 30, 1928, construction of the new grain elevator was complete, fully tested and inspected. To celebrate, the City of Longview and the Port officially dedicated the facility with a celebration sponsored by the Chamber of Commerce.



Grain elevator in the 1930s



Busy day at the Port circa the 1940s >

New Opportunities & Room for Expansion

In 1936, Longview Elevator Company closed its doors and Continental Grain obtained the lease to the grain elevator.

Founded in 1813 in France, Continental Grain entered the United States market in 1921 by first establishing a presence in Chicago. Thereafter, it expanded its capacity to export grain from the United States to global markets by acquiring a vast network of grain elevators and terminals (Continental Grain Company 2022).

In the late 1920s, Longview was feeling the impacts of the Great Depression. The economy began to slowly rebound in the mid-1930s, but it was not until the arrival of World War II that the community experienced a revitalization of industry and jobs.

In 1945, a new railcar dump house design was introduced that brought forward an innovative method to mechanically unload grain from railroad

box cars by rotating and tipping them from side to side. This drastically increased the speed of unloading and enabled the use of standard type freight cars for the transport of grain qualities, improving the transfer capabilities of the facility's original track shed.

The dump pit unloaded grain from railcars by tipping and rotating the car so the grain ran into a hopper below. The grain was then transferred from the hopper to a conveyor belt which carried it up above the existing car shed where it was dropped into the 1927 track bins.

Also in 1945, the United States War Production Board authorized plans by the Port of Longview to add on to its grain elevator (Seattle Daily Times, 4 April 1945: 12). The War Production Board was an agency of the United States government that supervised war production during World War II. The Board's authorization led to the immediate construction of a \$225,000 addition to the grain elevator. The plans

included an additional block of 12 concrete grain storage silos increasing the facility's storage capacity by one million bushels. The project was financed through issuing revenue bonds by the Port District.

Construction of the additional silos was completed in 1946. By 1949, the Port's grain elevator complex looked quite different and larger. The complex consisted of a wharf with a sacking shed and incline conveyor, the 1928 workhouse and its 10 storage bins, a track shed, the recently completed 1946 storage bins, and an administrative office (Sanborn 1949).

On August 23, 1951, Harvey B. Hart and S. A. McClean, the Continental Grain Company's plant manager, shared plans for yet another addition to the grain elevator's storage capacity. In 1951, the Port financed construction of a new block of concrete storage silos and a new headhouse through sale of an \$800,000 revenue bond issue. At 850,000 bushels, this expansion nearly doubled the facility's grain storage space (Seattle Daily Times, 23 August 1951 and 24 August 1951: 31).

Then, in April 1954, Continental Grain announced yet another \$300,000 expansion and improvement project to construct a structure for grain storage next to the 1951 storage bins. The Port and Continental Grain shared the \$110,000 cost of the project and construction of the 600,000-bushel grain storage building (known as BinX). BinX was ready for use in August 1955.

In the mid-1950s, Port made several additional updates to the 1945 grain storage bins to accommodate the efficient delivery and transfer of grain to and from the facility by trucks instead of rail

cars. In 1952, the Port built a truck dump shed north of the 1945 grain storage bins, where trucks could drop grain into collection hoppers.



Railcar dump pit in the 1950s.



Grain elevator post 1950s additions.

Attention to Detail



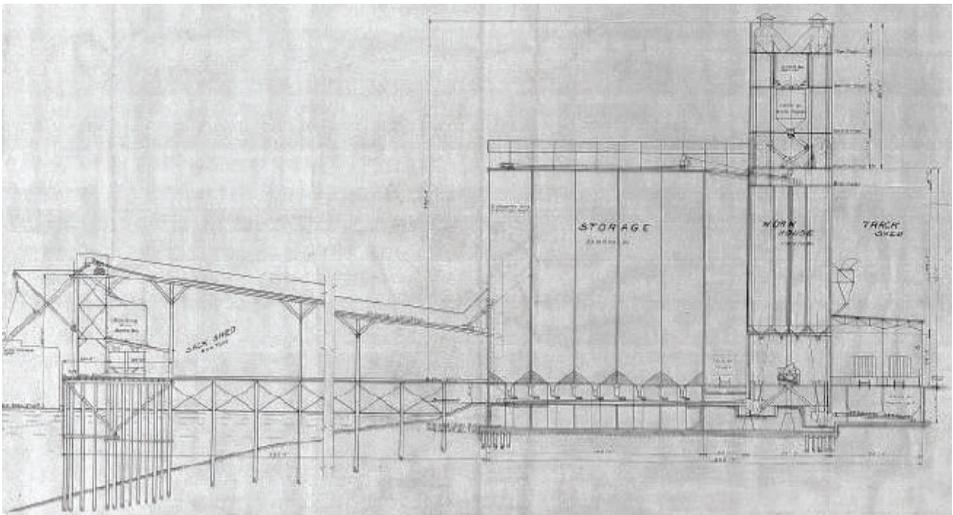
-- 1927 Elevator Complex --

The 1927 Elevator Complex has 10 reinforced storage silos, each is 20 feet in diameter, 102 feet tall made of 7-inch-wide cast in place reinforced concrete. Each silo sits on an octagon shaped cast in place basement which is linked to the workhouse. Although there is a 20-foot gap, between the silos and the workhouse, they are connected to each other at the basement level and the top of the covered bridge walkway.

The gallery that runs on top of the silos is called the cupola. The cupola structure, designed to protect grain and the conveyor belt that feeds the silos, is made of light steel angles and clad corrugated metal sheets. Steel angle trusses, braced to steel channels support the continuous simple gable roof which is clad with

corrugated steel sheets. Each 10-foot bay has a six-foot-by-six-foot steel window fixed with panes and a pivot panel. The operable pivot windows have a semicircular metal grill that protects the space from unwanted birds and animals.

The workhouse performs all the operations for the grain elevator to function. It takes the grain from the railcars, measures, weighs, stores and then loads the grain onto ships. The lower floors of the workhouse connect it to the track shed and storage areas. The workhouse has cast in place concrete walls on the lower half and corrugated steel sheets and windows on the upper half. The workhouse levels can be accessed by a circular metal staircase that connects all levels, as well as the caged paternoster type man lift.



Longitudinal Section Drawing of the 1927 grain elevator complex.



-- 1945 Elevator Complex --

The 1945 Elevator Complex was built to handle increased activity at the Port of Longview during WWII. The complex consists of 12 storage silos, basement areas, a cupola and rooftop and basement connections to the 1927 complex. The elevator silos are located east of the 1927 workhouse and 90 degrees from the original elevators.

The 1945 silos are built on piles spaced 30 inches apart and connected with a 24-inch-deep reinforced concrete pile cap. Each of the new silos is 26-feet, 6-inches outside diameter by 103-feet, 9-inches high measured from the top of the bin slab to the top of the silo roof. The reinforced concrete silos were built with the slip form method which uses a form (typically 4-feet high) that was raised after each pour until it was completed. The silos are connected to the workhouse with 8.5-foot high by 8-foot wide concrete tunnel which contains a 36-inch-wide conveyor.

Each silo has a diameter of about 26-feet and measure approximately 129-feet high, and has a storage capacity of about 41,000 bushels. Additional storage capacity is provided by bins occupying the interior spaces between the circular silos, amounting to five bins with a combined capacity of 50,000 bushels. The total capacity of the 1945 grain storage bins is 542,000 bushels of grain.

The bridge that connects the silos to the workhouse is a steel truss structure that is 9-feet wide by 9-feet high by 50-feet long with a 4-inch-thick concrete floor. The bridge walls and roof are clad with corrugated steel sheets. The bridge has two steel windows on each side of the passage. The center window portion has pivot sections with exterior bird protection cages. The conveyor is supported by concrete blocks. The floor of the cupola has openings for the spouts to fill the silos as well as access points for repair and maintenance.

On the interior, the bottom of each storage bin ends at a discharge spout, which was used to transfer grain to a conveyor gallery in the structure's basement level. The basement gallery contains two conveyors, one under each row of silos. These were used to carry grain westward through a poured concrete tunnel into the 1927 workhouse.

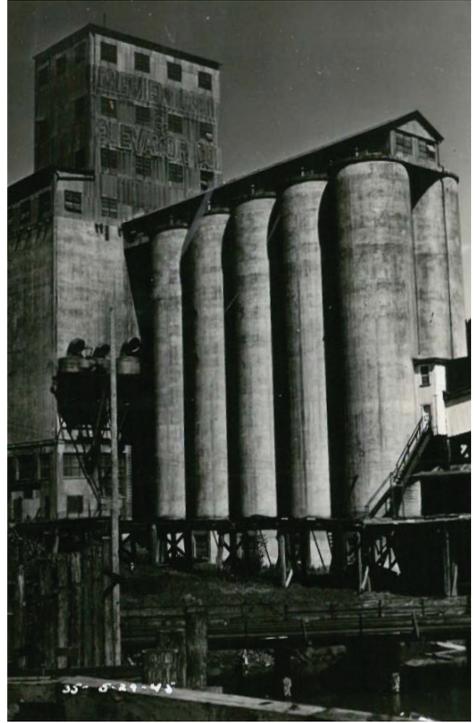
A later addition to the 1945 storage bins was the construction of a single-bay truck dump shed, around 1952, on the structure's north elevation up against the base of the two easternmost silos. The purpose of the shed was to provide shelter for the unloading of grain from trucks into grain hoppers located below ground level underneath the structure. These hoppers then mechanically transferred the grain to conveyors running through the basement level of the storage bins.



Loading a vessel in the 1950s.



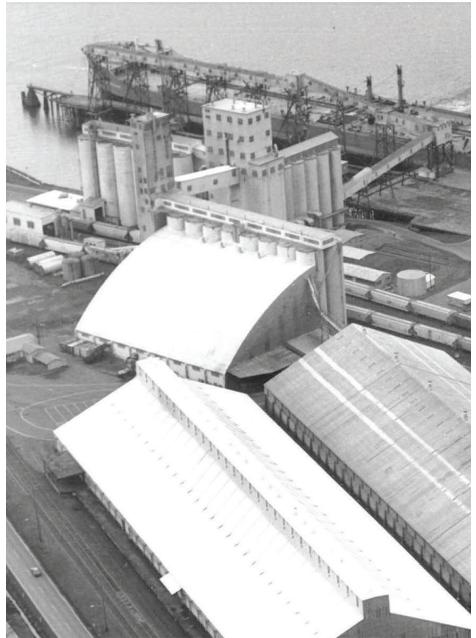
Grain elevator circa 1930.



Early photo of the 1927 grain silos.



Shortly after the last of the 1951 additions (1954).



Grain terminal continues to operate in 1982.



-- 1951 Elevator Complex --

The 1951 grain elevator consists of a headhouse containing a grain elevator and other facilities and a block of 18 circular grain storage bins. The headhouse is located at the east end of the 1951 grain silos. The building contained the equipment necessary to garner, weigh, wash and separate or blend grain by quality prior to storage and/or shipment. Its purpose was to receive and process grain and to transfer it to the complex's other facilities for storage or shipment. The headhouse served this purpose for both the 1951 storage bins and additional warehouse facilities to the west of the grain elevator complex.

Structurally, the headhouse has a reinforced poured concrete slab foundation that rests on timberpiles driven vertically into the dike that forms the underlying area. The structure, floors and exterior walls of the headhouse consist of board-formed, reinforced poured concrete construction.

On the interior, the headhouse is demarcated by seven principal levels or floors. From top to bottom, these include: the head floor, garner floor, scale floor, conveyor floor, bin floor the

ground floor, and a basement level. Access between floors, from the ground floor upward, is provided by 23 flights of a dog-legged steel staircase and a freight elevator located in the northeast corner that extend the structure's full height.

Within the facility, there are two grain legs (or elevators) for the transfer of grain to and/or from four individual, poured concrete storage bins. Forming the primary structure of the headhouse between the second and sixth levels, these bins functioned as storage bins for the facility. Two were specifically used for storage and two were dedicated for use by the grain washer.

On the interior of the facility's 1951 additions, a series of covered holes in the concrete floor provide access to the grain storage bins below, and ductwork and other equipment at the ceiling provide for dust collection and air circulation. Vertical ventilation ducts regularly spaced across the north wall pass from the storage bins to the rooftop vents. At the rooftop monitor's east elevation, the conveyor gallery passes into the 1951 headhouse.

-- 1978 Addition --

The United States Department of Agriculture and the Washington State Department of Agriculture also maintained a testing and research laboratory at the Port of Longview, as part of the grain elevator complex. In 1978, the Port constructed a new State Grain Laboratory Building. The building contained facilities for the sampling, inspection, testing and study of the grain that passed through the Port.



The research lab was located east of the 1945 silos.

All Good Things Come to an End



The grain terminal operated for over 60 years and helped advance commercial trade and agricultural industries throughout the region. Built before the Longview-Rainier bridge that arches over the Columbia River, the iconic grain terminal played a key role in the growth of the Port.

The grain elevator complex played a critical role in the growth and development of both the Port and the City of Longview throughout the 1900s. The facility was part of a nation wide network of similar operations belonging to Continental Grain at both the regional and national levels and it directly served the commercial trade and agricultural industries of the Pacific Northwest.

The Port continued to operate and regularly make small improvements to the facility until Continental Grain closed its doors to the terminal in 1989. The building gradually began to decay, and although still structurally sound, it is now time for the buildings to be taken down and allow the Port of Longview to continue to serve its respective communities.

Redevelopment on the Horizon



Demolition of the dock structure using the Port's two Liebherr mobile harbor cranes in 2014-2015.

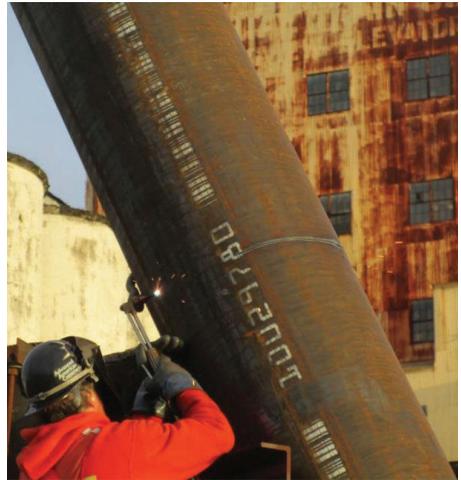
In 2012, the Port began the planning and engineering design work to redevelop this underutilized public asset. The Port knew it would take many years to accomplish but was determined to make use of a prime location for redevelopment on the Columbia River.

Additionally, the Port partnered with state and federal agencies during the permitting process to ensure that the removal of the in-water structure could be used as future habitat mitigation. The agreement was the first of its kind on the Columbia River and in Washington State.

Phase I of the redevelopment of Berth 4 began in 2014 with the removal of the 87-year-old timber dock structure. The removal was

conducted by the Port's own trades union labor and one of the Port's Liebherr cranes. Demolition work included removal of over an acre of overwater decking, over 1,000 creosote pilings and debris from the dock that had fallen in the water after years of being dormant.

Phase II began in 2015 with the construction of a layberth. The layberth consists of a series of dolphins (type of pile structure) with a grated walkway. It serves as a place for ships to "park" while they wait for a berth at the Port or elsewhere in the river. The dock was designed with the intention that future development could be built upon what was already constructed, which reduces the impacts to in-water habitat.



During construction of the new layberth at Berth 4.

In 2017, the Port made progress toward plans to demolish the decommissioned Continental Grain complex, focusing on environmental studies to determine the construction materials used to build the facility. In 2018, the Port was awarded an Integrated Planning Grant from the Department of Ecology for environmental investigation and redevelopment planning. In addition, in 2019, the Port completed a vehicle and rail transportation analysis that informed the future development of Berth 4 as well as the Port's Industrial Rail Corridor expansion project.

In 2022, the Port was granted the final permits to move forward with the demolition of the grain complex and its adjacent facilities.

Demolition of the complex will not be easy due to the proximity of the Columbia River, active rail lines running through the facility, height of the silo structures and the fact that the silo complex was built within the levee itself. Additionally, a primary goal of the demolition is to utilize, recycle or salvage at least 90% of all materials. The concrete from the silos will

be reused as part of the redevelopment of the site. The concrete will be crushed and backfilled into the silo basements, which will not be removed because they are constructed with the levee itself. Other demolition materials will be recycled or salvaged and used in public displays to ensure that the legacy of the historic grain facility is properly remembered.

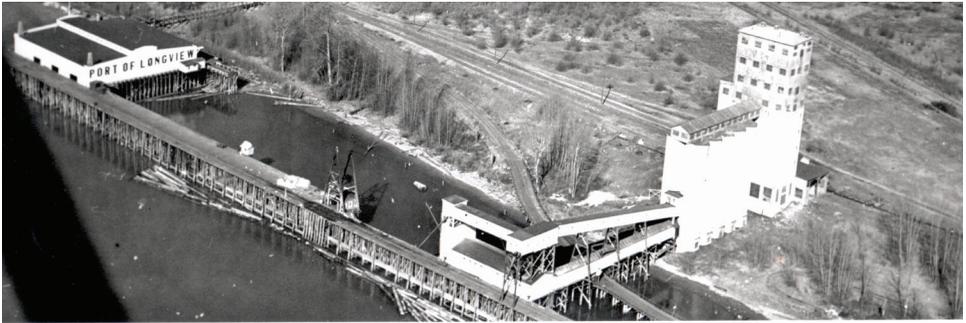
The actual demolition of the silos and redevelopment of the site is planned to begin in 2023. Once the demolition is complete, and the site is ready for a new tenant, the Port will pursue securing a new industry that can uphold the Port's commitment to its community and forge a new future for Berth 4.



Construction of a new layberth at the Port of Longview Berth 4.



Port of Longview Berth 4 in 2019.



Aerial view of the grain elevator circa 1944.

History Worth Preserving

Architecturally, nearly all elements of the grain elevator complex represent the work of Edwin F. Carter, a master engineer, well known for his grain elevator designs around the globe. The complex and its several phases of construction also represent the progression of grain elevator design and engineering by Carter over the course of nearly 50 years.

The 1927 Elevator Complex retains its historical integrity and qualifies for the National Register by being associated with the early

development of the Port of Longview and because it is an intact, early example of slipform concrete construction in the Northwest. Although some changes and modifications were made, the complex retains strong integrity of location, design, materials, workmanship, feeling and association. This is due in large part to the durability of the original materials and the fact it performed the same task in the same way during its period of significance.



The iconic grain complex in 1969.



Continental grain facility, date unknown.



Pictured above: Tugboats race on the Columbia River in front of the Port of Longview circa the 1950s. Photo courtesy of the Columbia River Maritime Museum.

Grain on the Mighty Columbia River

The Columbia River is the nation's number one wheat export gateway and number two for corn and soybean exports. It is the third largest grain export gateway in the world as well as the West Coast leader in dry bulks, mineral bulk, wood exports and auto imports and exports.

As the lifeblood of the Pacific Northwest, the Columbia River supports tens of millions of tons of foreign trade each year and connects the Port of Longview, and the United States, to its trading partners. The Columbia plays a vital role in the strength and resiliency of communities throughout the Pacific Northwest and handles over 50 percent of the world's grain exports.

The grain elevator was one of the first facilities constructed at the Port of Longview. Operating for over 60 years, the grain complex opened Longview to the grain business and connected the Port to farmers across the United States.

GRAIN AT THE PORT 100 YEARS LATER

Although Continental Grain closed its doors decades ago, the Port of Longview is still a major player in the grain export business. The Port is now home to EGT, the state-of-the-art export grain terminal that came on-line in 2012. With the capacity to handle more than 8 million metric tons annually, EGT is the most efficient grain terminal in the United States and plays a key role linking farmers to families around the Pacific Rim.

Grains such as soybeans, corn and wheat are constantly exported through EGT to major trading partners and is essential in maintaining connections with top traders - like China, Korea, Japan and the Philippines.

All told, the Columbia Basin and Columbia River host seven grain export terminals that annually export 26.5 million metric tons of grain. Each

year, these exports increase and connect more and more farmers to the rest of the world.

With the Port's geographic location, transportation connections and a new export

grain terminal, the Port of Longview is a hub for grain exports around the world. R.A. Long would be proud of how far the Port and the City of Longview have come since 1921.



The Continental Grain facility the year it shut its doors in 1989.

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