Preface

This book started out as a history of the EWEB Water Department, but as my research progressed, I found that all of the departments consistently intermixed with each other and that there was no way to not include everyone. That made me re-think how I was going to proceed with my research and how I would determine what should be included.

The following is the result of my decision to call this book "EWEB, The First 100 Years." I have done my best, with the help of EWEB, the Lane County Historical Museum, the Springfield Museum, and the many employees and retirees who provided many of the pictures and information contained within this book. I have also done my best to include everything and anyone I could.

EWEB started out as the Eugene Water Board and later, in 1949, changed its name to Eugene Water & Electric Board. For this reason and only this reason, water is mentioned first in parts of this book, however EWEB was always one big family.

This book became a labor of love with many memories, which is exactly what I hope will happen to you, the reader. Most of the pictures in this book are from the EWEB files, others from the Lane County Historical Museum (LCHM), EWEB retirees, postcards, and some of my own pictures.

This book is in no way intended to replace or repeat Norm Stone's excellent book, "Bountiful McKenzie," the story of the Eugene Water & Electric Board (EWEB), published in 1986. "Bountiful McKenzie" delves mostly into the political and human resources history of EWEB, whereas this book is more concerned with how EWEB came into being and how it developed over the past 100 years. It also takes a look at the people of EWEB and how they helped to develop EWEB over the past 100 years and how EWEB developed them to accomplish EWEB's success through those years, and hopefully into the next century.

George C. Mason
EWEB Retiree

ACKNOWLEDGMENTS

The author benefitted from the knowledge and experiences of many individuals in the process of completing this book, especially the following:

Ken Rinard - Operations & Engineering Director
Vern England - McClain & Hayden Bridge Operator
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Dale W. Hagey, Jr. - EWEB Fish Biologist
Denise Wolting - EWEB Records
Vicki Maxon - Word Processing Specialist

Denise Wolting

The author owes a large debt to Rosemary Edwards for her continued reading and re-reading of the many versions of the book. Her patience and fortitude along with her editorial comments were greatly appreciated.

The author also benefitted from the information and photographs made available for use in this book from:

EWEB (files, annual reports etc.)
Lane County Historical Society - Cheryl Roffe, Collections Manager (LCHM)
Springfield Museum - Jan McKee
Bill Eaton Collection
Bobbi Miller - Retiree Function Photos
Sheri Lewis Collection
Frank Moore (son of Harry Moore, Leaburg Operator)
Doug Caven - Pictures of old intake on Camp Creek Road, taken from the McKenzie River

Vicki Maxon (1977)

(2011)

Vicki started at EWEB in a high school work experience program in her senior year (1974), ultimately being hired permanently after graduation as a clerk/typist, being promoted to Secretary in the Engineering Department, then a Word Processing Specialist, and eventually became an administrative assistant in Public Affairs, until she resigned in 1996 to start her own business doing medical transcription.

In April 1988 she won a national typing championship, typing 150 wpm (words per minute). In 2011 she began editing and proofreading this book and preparing it for printing, for which I am greatly appreciative.

VIEWS OF EUGENE AT THE TIME OF EWEB's INCEPTION (1910)

Figure 0-1

Depot Park - 1910

Figure 0-2

Millrace - 1910

Figure 0-3

Willamette Street looking north - 1910

Figure 0-4

Eugene - 1910

Photos Courtesy of Lane County Historical Museum

Figure 0-5

City Hall (w/Tower) & Skinner Butte - 1910

Figure 0-6

Eugene High School later to be City Hall c. 1910
Opened in 1903 at the corner of 11th & Willamette
Sold to the city in 1915, used as City Hall until 1960.

Figure 0-7

Eugene Mill & Elevator Co. East end of 5th c. 1910

Figure 0-8

Eugene Fire Dept., NE corner 8th & Park c. 1910

Figure 0-9

Eugene General Hospital - 1910

Figure 0-10

Stairway on Willamette that went to the Hospital, about 2100 Willamette Street.

Figure 0-11

Built in 1890, the first large school in Eugene. It closed in 1933. Opened again in 1938 as the “Eugene Vocational School” and served in that capacity until 1960.

Figure 0-12

Eugene Post Office - 1910

Figure 0-13

From EWEB Annual Report for 1911

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[1]American Water Works Association

[2]Oregon Environmental Services Advisory Council

Chapter One

EWEB: THE BEGINNING (Pre-1910)

EUGENE'S MILLRACE

In about 1851, Hilyard Shaw saw an opportunity to put part of the Willamette River's energies within control of the pioneer settlers of Eugene City. Utilizing the natural line of a slough extending into the little town from the river near Judkin's Point, Shaw directed the digging of a canal which would carry water from the slough back into the Willamette River further downstream. In this manner, Eugene's famed millrace was born, and the power of flowing water was the first power made available to Eugene. The first to use this power on the millrace was a sawmill[1], then a grist mill, next a furniture factory, a woolen mill, and recreation (Figures 1-1, 1-2 and 1-3).

Figure 1-1

Figure 1-2

Figure 1-3

Eugene's millrace in the early 1900's (courtesy of Lane County Historical Museum)

[1]Millrace was dug to furnish power to operate Hilyard Shaw's sawmill.

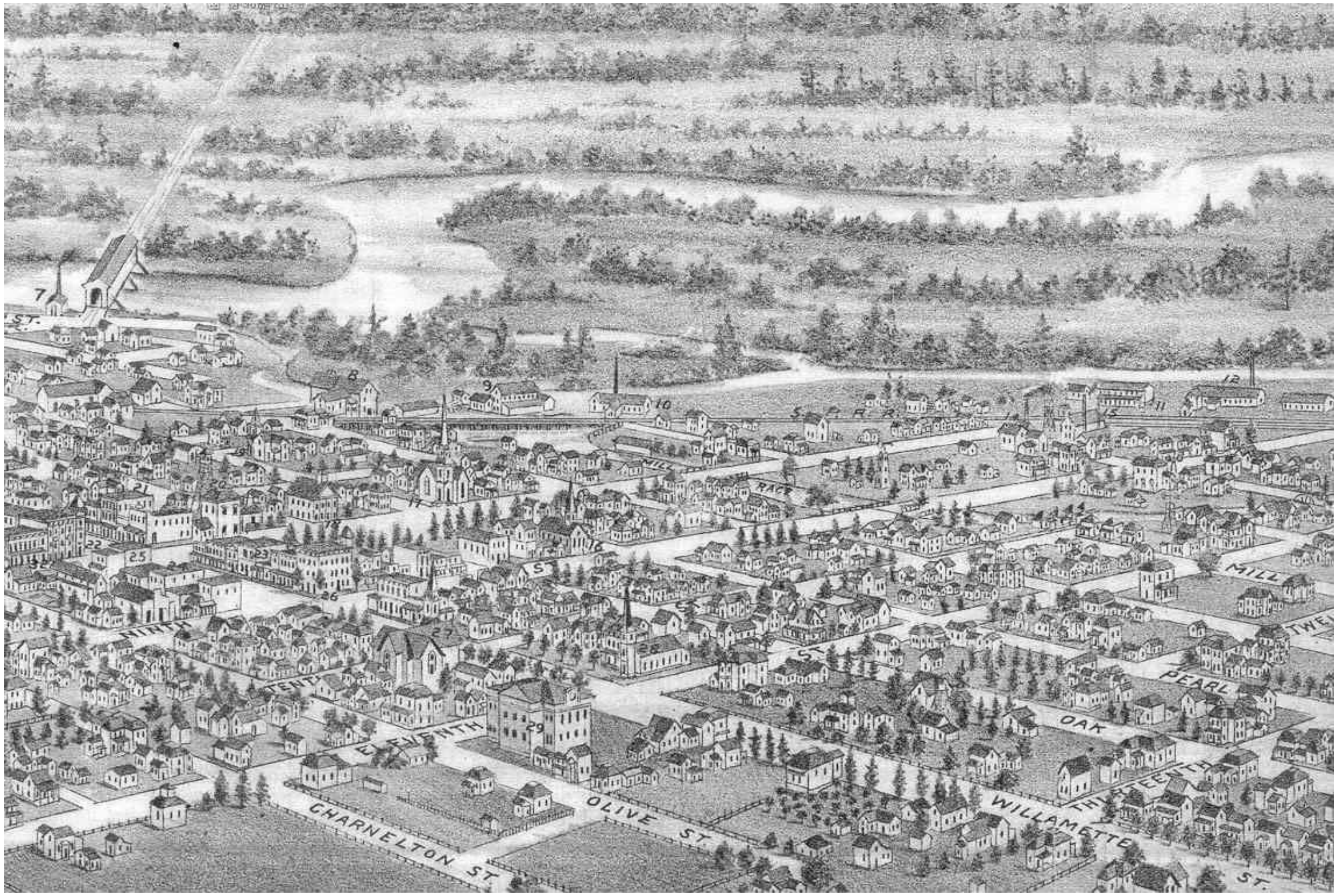


Figure 1-4

Lithograph Map of Eugene - 1890 (courtesy of Lane County Historical Museum)

Eugene City was incorporated in 1862. Two years later, in 1864, the community adopted a charter and a new name - the "City of Eugene." The first election for a City Council was held in 1865. The Council, or Board of Trustees, as they were then called, consisted of a President, Recorder, Treasurer, Street Commissioner, Marshal, and six Trustees.

Transportation took a great leap forward in 1871. The Oregon-California Railway (later the Southern Pacific and currently the Union Pacific) was completed to Eugene and the whole town turned out to celebrate.

The earliest settlers in Eugene built their homes along the Willamette River for easy access to water. In the beginning they carried their water from the river and then later from wells. In 1886, some local residents organized a privately owned water company and secured a franchise from the City. The first source of water for this system came from wells which were near the University of Oregon by the Willamette River[2].

On February 10, 1886, the City Council granted its first water franchise to some local residents (T. W. Shelton and Charles Lauer and Associates, including T. G. Hendricks, S. H. Friendly, J. C. Church, S. B. Eakin, and J. F. Robinson). On November 18, 1905, the Eugene Water Company, as it was called, was sold to the same syndicate (Rhodes, Sinkler and Butcher) that had purchased the city's electric system in 1887. The Oregon manager for the syndicate announced that the syndicate had purchased, a 60-acre tract of land in the north section of the city for $15,000, which included "Skinner's Butte" for a reservoir site.

On February 14, 1887[3], only seven years after the nation's first commercial electric installation on the East Coast by the Thomas Edison Company, the first franchise for a lighting system for the City of Eugene was approved by the City Council. This franchise was issued to a private firm called the Eugene Electric Company, whose generating plant, a 100-horsepower direct-current type, was located near what would become East 7th Avenue and Ferry Street, location #10 on the old 1890 map of Eugene (Figure 1-4). The first franchise for a lighting system was approved by the Common Council on that date. The franchise was issued to H. C. Humphrey, James F. Robinson, William Edris and A. Klein and Associates, including F. B. Dunn and J. C. Church.

In 1893 the "Eugene Electric Company" changed its name to the "Lane County Electric Company" because their customers were in both Eugene and Springfield. About 1897, the generating plant was increased to 240 horsepower. It then replaced its Eugene plant with a larger one in Springfield, where wood fuel was more readily available. The Springfield plant r served customers in both cities until 1915 (Figure 1-5).

[2] Ken Rinard, March 2006

[3] Eugene Register Guard, July 23, 1956 - "Power Arrives in Eugene"

Figure 1-5

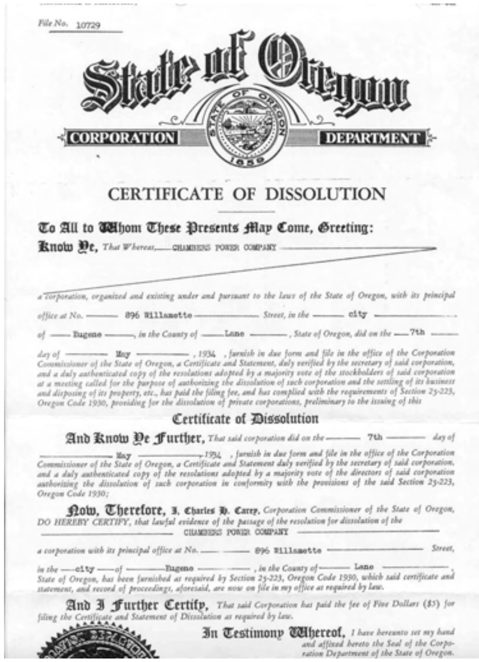
Figure 1-6

Figure 1-7

Mountain States plant and office in Springfield, OR
Office now Springfield Museum (2007)
(courtesy of Lane County Historical Museum)

Remains of the old Chambers Dam on
the Willamette River - 2006
(author's photo)

On February 16, 1902, the "Chambers Power Company," an early power company in Eugene, founded by F. L. Chambers, George Midgley and Darwin Bristow, was incorporated to "erect, operate and maintain plants for the production of electricity for lighting, power and other uses." The company built a low-head dam on the Willamette River just upstream from the current overpass (2007) for "Interstate 5" over the Willamette River (Figure 1-7). The remains of the dam are still visible and were associated with the Eugene Millrace. Its customers were the "Eugene Woolen Mill" and "Eugene Excelsior Plant". The Chambers Power Company was later dissolved on May 7, 1934 (Figure 1-8). Prior to 1916, there was considerable litigation concerning the millrace, which culminated in three lawsuits which were decided by the Supreme Court of Oregon: Eugene vs. Chambers Power Co. (81 OR.352); Mathews vs. Chambers Power Co. (81 OR.251); and Patterson vs. Chambers Power Co. (81 OR.328). The latter of these cases was a suit brought by Ida Patterson and 19 other Eugene residents to enjoin the Chambers Power Company from widening the millrace, and thereby cutting away and destroying the plaintiff's property.



File No. 10729

State of Oregon

CORPORATION DEPARTMENT

CERTIFICATE OF DISSOLUTION

To All to Whom These Presents May Come, Greeting:

Know Ye, That Whereas, CHAMBERS POWER COMPANY a corporation, organized and existing under and pursuant to the laws of the State of Oregon, with its principal office at No. 896 Willamette Street, in the city of Eugene, in the County of Lane, State of Oregon, did on the 7th day of May, 1934, furnish in due form and file in the office of the Corporation Commissioner of the State of Oregon, a Certificate and Statement, duly verified by the secretary of said corporation, and a duly authenticated copy of the resolutions adopted by a majority vote of the stockholders of said corporation at a meeting called for the purpose of authorizing the dissolution of such corporation and the settling of its business and disposing of its property, etc., has paid the filing fee, and has complied with the requirements of Section 25-223, Oregon Code 1930, providing for the dissolution of private corporations, preliminary to the issuing of this

Certificate of Dissolution

And Know Ye Further, That said corporation did on the 7th day of May, 1934, furnish in due form and file in the office of the Corporation Commissioner of the State of Oregon, a Certificate and Statement duly verified by the secretary of said corporation, and a duly authenticated copy of the resolutions adopted by a majority vote of the directors of said corporation authorizing the dissolution of such corporation in conformity with the provisions of the said Section 25-223, Oregon Code 1930;

Now, Therefore, I, Charles H. Carey, Corporation Commissioner of the State of Oregon, DO HEREBY CERTIFY, that lawful evidence of the passage of the resolution for dissolution of the CHAMBERS POWER COMPANY a corporation with its principal office at No. 896 Willamette Street, in the city of Eugene, in the County of Lane, State of Oregon, has been furnished as required by Section 25-223, Oregon Code 1930, which said certificate and statement, and record of proceedings, aforesaid, are now on file in my office as required by law.

And I Further Certify, That said Corporation has paid the fee of Five Dollars ($5) for filing the Certificate and Statement of Dissolution as required by law.

In Testimony Whereof, I have hereunto set my hand and affixed hereto the Seal of the Corporation Department of the State of Oregon.

Figure 1-8

In 1903, a new plant was started in Springfield at a point near where the Booth-Kelly Lumber Company Mill was located (in 1946).

The electric system at that time included the power plant in Springfield and a substation in Eugene. Fuel was available from the Booth-Kelly Mill and the name of the utility was changed to “Lane County Electric Company.” On August 1, 1902, the electric system and plants were sold to the “Willamette Valley Company”, an Oregon subsidiary of the Eastern syndicate known as Rhodes, Sinkler and Butcher. At this time, stockholders in the Lane County Electric Company included D. A. Paine, James F. Robinson, F. W. Osburn, W.E. Brown, Dr. O. E. Smith, P. D. Paine, Booth-Kelly Lumber Company, Mrs. Abbie Smith, S. H. Friendly, Mrs. Sarah Lauer, S. S. Spencer, J. E. Yarnell, James Magladry, Mrs. Theresa Jackson, and Ralph D. Robinson. When the Willamette Valley Company took over the system, they announced that plans were being made to increase generating capacity to 1,000 horsepower.

Here is a partial transcript of the City Council Meeting on 28 August 1905:

“Present: Mayor Wilkins, Councilmen Calkins, Garrett, Beckwist, Henderson, Bristow, Horn, Matlock and Spencer. After discussion on sending 26 delegates from the Eugene Fire Dept. to the ‘Pacific Coast Association of Fire Chiefs’ Mr. Calkins moved the Council now proceed to consider the reports of the committee on Fire and Water and preliminary report and estimates of cost for Water Works System and Electric Light and Power Plant for Eugene of Engineer Frank C. Kelsey and no other business be transacted this evening. Motion carried.”

> *“Mr. Matlock. Renewed his motion to adopt the Reports of the Committee and Engineer Frank C. Kelsey, motion carried, reports adopted. Mr. Matlock offered the following Preamble of Eugene on the 4th day of April 1904, the question of Municipal ownership of Electric Light and Water was submitted to the voters of the City of Eugene, and whereas, a large majority of the electors of said City, voting on said question voted for the municipal ownership thereof, and whereas, the Committee on Fire and Water of the Common Council of the City of Eugene, having fully investigated the question of the municipal ownership of such public utilities, the cost of construction of an Electric Light and Power*

Plant and Water System for the City of Eugene and said committee having failed its report thereon, which said report favors the municipal ownership of such public utilities, and was heretofore adopted and approved by the Common Council."

"Report of the Fire and Water Committee of the City of Eugene, on the Public Ownership of its Electric Light Plant was referred to your committee, we have examined into the matter thoroughly."

"We, the undersigned, your Fire and Water Committee, make the following report: Since the matter of the Public Ownership of a Water System - and - an Electric Light Plant was referred to your committee, we have examined into the matter thoroughly. We first wrote to a large number of Cities, including most of the principal Cities on the Pacific Coast, in regard to whether or not they owned these public utilities, and also as to the cost to the Cities, and to individuals of Water and Lights; and we also asked the party answering to state his opinion in regard to the public ownership of Water and Light Systems. We have received answers to about fifty - of our letters. Where the Cities own these utilities, or either of them, the reports have almost invariably been that it is a success. The writers of the answers to our letters were almost unanimously in favor of municipal ownership of both these utilities. We found that the City of Eugene and the citizens of Eugene are paying more for lights than any other City on the Coast, from which we received an answer. After obtaining what information we could on the subject - and - discussing the matter thoroughly, we have concluded it to be nice for the City to own both these public utilities. The question of power was the next that we considered; And a thorough investigation of the matter convinces your committee that the most economical and satisfactory power in the long run, is a water power there for the City". Your committee next investigated the question of a water supply for the City. It was the opinion of your committee on the start, that a gravity system would be the best, but after carefully canvassing the subject we found that such a system would necessitate going so far to secure pure water, and the requisite head, that the cost would be prohibitive. We have therefore decided upon water from wells located on the north side of the Willamette River. Our examination of the territory on the north side of the river has been quite exhaustive and we are satisfied that pure, cool water is sufficient quantities for all purposes can be obtained there. The pumping station can be located on the south side of the river, and the water taken from the wells on the north side, under the bed of the river to the pumping stations, and from there forced into a reservoir on Skinner Butte, to be distributed from there by gravity over the City.

The power for this would be furnished from the water power on the McKenzie River." "Your committee have also obtained an option on one of the hills in Fairmount for a reservoir site, which can be used in extending the system in the future."

Dated Eugene, August 28th, 1905
Joseph D. Matlock
Robert B. Henderson
Winsor W. Calkins, Committee

The following is a report by Frank C. Kelsey as written in the Council Minutes August 28th, 1905*:*

*"The pump station for the waterworks system will be located on the south bank of the Willamette River about 600 feet above the wagon bridge (*location #7 on Figure 1-4, on what was then known as Water Street*). There is a rock ledge crossing the river at this point which makes a good crossing for the supply pipe from the well. The pump pit will be excavated in solid rock and the concrete walls carried up above high water. This is a good location for the pump house, and there is little danger of injury to the plant during high water.*

The water supply will be taken from a well located on the north side of the river about 1200 feet from the pump house. The well will be near to a high bank which will be a protection of the well during high water. The well will be sunk below the bed of the river and will obtain its supply from water percolating through the gravel. There are several springs coming out along the bank and there is every indication that a sufficient supply of good water can be obtained by this method.

If necessary to increase the supply to the well, a vitrified clay pipe connecting with the well will be laid in a deep trench along the foot of the bank for a distance of about 500 feet - This will intercept several springs and will cut off the underflow in the gravel and convey it to the pump well. The joints in the pipe will be left open and the pipe covered with gravel to allow the water to percolate into the pipe.

The well will be lined with concrete masonry carried up above high water mark and the well covered with a frame building. A pipe will be laid from the well under the bed of the river to the pump station.

*The pumping plant will consist of **two** compound centrifugal pumps direct connected to 125 Hp electric motors. Each pump will have a capacity of 1500 gallons per day. It will not be necessary to run both pumps all of the time, but it is better to have **two** pumps instead of one and of a larger capacity than necessary so that if one of the pumps gets out of order, the supply will not be cut off while making repairs. The force main from the pump station to the distributing reservoir will be cast iron pipe about 2500 feet in length.*

The distributing reservoir will be a double concrete lined reservoir, each basin having a capacity of 500,000 gallons, and will be covered with a frame building to keep the water cool and pure. It will be provided with washout pipes, overflow pipes, regulating valves, etc. and will be arranged so that the pipe system will draw from both basins except when one is shut off for cleaning. This arrangement is better than a single large reservoir as there will be one basin full at all times to equalize the flow in the distributing system and to draw from in case of fire.

The estimated maximum amount of water required for a City of 10,000 people is 2,500,000 (2.5 MG) gallons per day, which includes domestic use, lawn and street sprinkling, sewer flushing, etc. The pumping plant, distributing reservoir and main pipes will be large enough to supply that amount of water in addition to necessary supply for fire protection and the mains will be large enough to supply the laterals when the system is extended over the entire city.

The fire hydrants in the present system will be used, except on main street, where larger ones will be put in.

*The estimate for the distributing system is for cast iron water pipe and also for wire wound wooden stave pipe made of good Oregon Fir (*Figure 2-13*). If properly designed and made of good material the wooden pipe is a durable pipe and has* *been used extensively in the Western States. The estimate for the distributing system including the necessary valve, hydrants and special castings and cover that part of the City supplied by the present system with provisions for future extensions.*

*The distributing reservoir will be located on Skinners Butte opposite Willamette Street. This point is near the center of the City (*in 1905*) and is a very desirable location for the reservoir. The water level of the reservoir will be 250 feet in elevation above the pump station and 229 feet above the intersection of Willamette and Eighth Streets. The static pressure at the latter point (Eighth St.) will be about 100 pounds and the effective pressure will be ample for fire protection.*

The main supply pipe from the reservoir will be an 18 inch pipe running south on Willamette Street to the University grounds, which will be extended later to supply the eastern part of the City. All dead ends will be connected to provide a circulation of water in the system and increase the capacity of the laterals. The pipes will be laid about four feet deep to keep the water cool."

The years 1905 and 1906 brought the beginning of the struggle for municipal ownership of the utilities. Prime movers for municipal ownership of Eugene's utilities were all members of the City Council's Fire and Water Committee, F. M. Wilkins, G. W. Griffith and W. W. Calkins[4], who all felt that the existing services were inadequate, too expensive, and that the fire protection was not sufficient due to the low pressure and insufficient water mains. Both Eugene newspapers, the Eugene Morning Register and the Eugene Daily Guard, carried many articles of pro and con. Editorially, the Register opposed public ownership, while the Guard was in favor. One of the main reasons for the municipal ownership was the typhoid epidemic from the Company's contaminated wells next to hog pens[5].

In 1905, the Legislature approved a charter amendment giving the Council the power to construct and maintain waterworks, electric lights, gas plants and other public utilities (Figure 1-9) or empowering them to purchase those already established. From the end of 1905 until municipal ownership, Eugene's three major utilities (water, electric and gas) were in the hands of a single company, managed by a large syndicate and financed by eastern capital. This syndicate was also interested in establishing an electric railway (trolley) system in Eugene (Figure 1-10).

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[4]Winsor Whipple Calkins (no "d" in Winsor), Uncle of Windsor Dean Calkins, EWEB's former attorney.

[5]Ken Rinard, March 2006

Figure 1-9

Figure 1-10

Central Heating Company of Eugene (courtesy of Lane County Historical Museum)

Trolley car on 8th & Willamette heading south on Willamette St. (courtesy of Lane County Historical Museum)

In 1906,[6] Eugene experienced a terrible typhoid fever epidemic, and many deaths occurred. The well located at 6th & Mill was the worst, being very near the millrace. The 6th street well was abandoned, and large sand filters were installed. The system was drained and mains were flushed to eliminate the bacteria. Later, this well site was sold to the “Eugene Fruit Growers Association.” In 1924, the Twin Oaks Lumber Company obtained the property and the well was found to be a menace, so they started filling it in.

Eugene is believed to be the first city west of Chicago to chlorinate its water, a step public opinion demanded in 1911, several years after the outbreak of what the “Oregon State Board of Health” termed as the “***worst typhoid epidemic***” in Oregon’s history. The epidemic erupted in January of 1906, and indirectly led to a movement which brought about city ownership of the water system. The syndicate of “Rhodes, Sinker and Baucher,” backed by eastern capital, owned the water system when the typhoid cases broke out. During February of 1906, an estimated 400 Eugene residents were placed in quarantine for the disease. revealed the source of the epidemic to be from contamination of the water supply, and especially through the well situated at the

[6]1947 EWEB Annual Report, page 17

Figure 1-11 1974

Leonard Kearney at old EWEB well site found during new construction

The epidemic became so widespread that the State Board of Health conducted an extensive investigation. On March 19, 1906 they revealed the source of the epidemic to be from contamination of the water supply, and especially through a well situated at the powerhouse near a main sewer (between 6th & 7th Avenues near High Street). The Board of Health felt that ***"contamination was caused by seepage from sewers."*** Their report also asserted that the millrace was in a ***"filthy condition"*** and was also a probable source of contamination. Newspapers in 1906 reported that the University of Oregon's sewage was routed into the millrace and that their pig pens, cow stables and "***piles of filth***" lined the millrace banks. The Board of Health also pointed out that typhoid cases in Springfield and Cottage Grove could contaminate river water before it entered the millrace at Eugene. During the investigation, a University of Oregon professor, A. R. Sweetser, injected a sample of city water directly into the bloodstream of a guinea pig, which immediately died[7].

On November 18, 1908, the City Council acquired the water properties of the "Willamette Valley Company" for $140,000. This money had been previously approved by the voters, and the remainder of the $300,000 approved bond issue was sold. Part of the proceeds went to obtaining a site for a power plant and to secure right-of-way for a four-mile long canal (Figures 1-12,1-13 and 1-14) to bring water from the McKenzie River with sufficient head (*height*) for power generation and also for the construction of electrical transmission lines to Eugene, and the power plant was to be constructed near Walterville, a town named for Walter Millican, son of George Millican, pioneer, stockman and early settler on the McKenzie River. The Council then hired Engineer Frank C. Kelsey to superintend the construction of the Walterville Power Plant.

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[7]Probably more a result from water in the bloodstream which would cause a clot, which would then cause a stroke when the clot reached the heart.

Figure 1-12

Figure 1-13

Figure 1-14

Views along the proposed Walterville Power Canal - about 1908

WALTERVILLE CANAL AND PLANT

Figure 1-15

Leaburg Canal, similar construction with horses as used at Walterville Canal

In 1909, the City Council had decided to build a hydroelectric plant at Walterville to provide power for pumping water. The plan was to use any surplus power first for street lighting and then, if any was left, to sell it for residential use. In 1909, the City was still purchasing power from the “Willamette Valley Company” for street lighting and the pumping of water into the mains and to the two reservoirs on Skinner’s Butte, and the aim of the City Council was to place the “Walterville Power Plant” in operation as soon as possible to reduce the City’s cost for those services.

Samuel Manerud of Eugene was given the contract to excavate the Walterville Canal using mule and horsepower (Figure 1-15 on page 11; a photo of the construction of Leaburg canal, which was dug much the same way). He later faulted on the contract in 1910, then on April 18, 1910, the City Council hired Alvin Meyers, an engineer to superintend the electric utility and supervise the construction work on the Walterville Canal.

On May 16, 1910, after voter approval for additional bonds to complete the filtration plant and other water system improvements, T. H. Ellis was awarded a contract for concrete work at the filtration plant and for the head gates on the Walterville Power Canal.

Figure 1-16

Figure 1-17

Eugene in 1908

Eugene in 1910

Figure 1-18

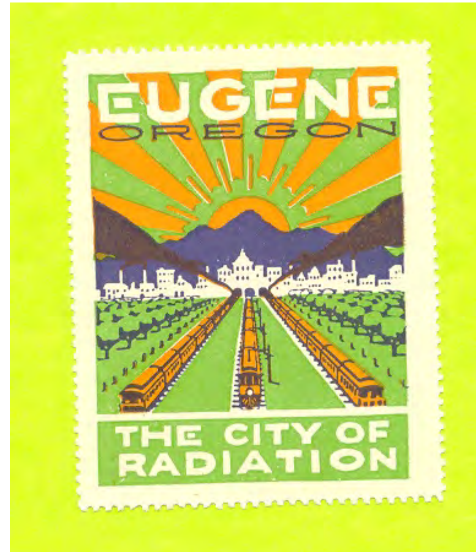

Figure 1-19

Early in the 20th Century, Eugene chose "City of Radiation" for its motto. It was not in any way in reference to any nuclear energy, but was from the radiating rays of the sun at sunrise showing the railroad radiating from Eugene. The official symbol for the motto was used in at least one place on City of Eugene official postal envelopes (Figures 1-18 and 1-19). The envelopes were 4" x 9-1/4" in size.

On June 3, 1956, Blanche M. Thurston[8] reminisced in the Register-Guard about the early days of Eugene's water systems. In the 1946 Eugene Water & Electric Board annual report, it stated "***The first source of the Eugene Water Supply was located at the northeast end of Skinner's Butte on the Willamette River***." Blanche stated that sounded more rather like a legend. Joe McArthur, a long-time superintendent of the Eugene Water Board, had also questioned the fact that it had ever been located there.

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[8]Eugene Register Guard - June 3, 1956

Reminiscing about her past and younger years, Blanche stated that in 1890 there was issued a notarized record of the Board of Directors of the privately owned water company: G. R. Chrisman, S. H. Friendly, T. G. Hendricks, S. B. Eakin and F. I. Chambers. In that same year her father, S. W. Taylor, located his family in a white cottage behind the east end of Skinner's Butte, to be near the pump station, which he operated with the aid of George Derby. They took turns running the steam engine which provided power for the pump. Her father alone looked after the pipes, their maintenance, and the laying of new pipes as needed. She had (in 1956) in her possession her father's field book with a record of all the pipes.

She stated there were always rows of cord wood near the pump house. She recalled the roaring heat of the furnace and she could remember feeling the hot blast in her face as she watched sticks of cord wood being shoved into the furnace. The throbbing sound of the pumps was with them night and day. She remembered the big black pipe (Figure 1-20) which protruded from the bank of the river where the water was drawn up for the city's use.

She said that her father "***knew the city's layout of water pipes as a truck farmer knows his garden***." His field book was filled with charts, diagrams and notes on where the pipes were laid, the sizes of them, and the location of all the hydrants, etc. At her family's meal table there was much talk of suction, friction and horsepower.

As the equipment was being outgrown, in about 1892, a well approximately 30 feet in diameter was dug at the corner of 6th & High Street, near the millrace. Two more wells were dug: one to the east of the flour mill near 4th & Ferry Streets and another across the river from that location. The well across the river was 100 feet long, 26 feet wide and 23 feet deep. It was thought that water filtering through the sand and gravel would be clean and pure. In spite of the fact that the walls were supported by 10" braces, the weight of the gravel constantly encroached on the well. Not being a success, the well was abandoned in a few years.

There was a large frame building at 6th & Mill to cover the well there, with pumps and a furnace room. By this time there were three pumps: two large pumps and a small powerful pump. In the yard to the south were the rows of cord wood to feed the furnace.

In 1905 the Eugene Water System was sold to the same syndicate that had purchased the city electric system. The first reservoir on Skinner's Butte was built in about 1905. Blanche would hear talk of shooting the water into the air to aerate it, and she believed that was the way the water entered the reservoir (Figure 1-21).

Figure 1-20 1912

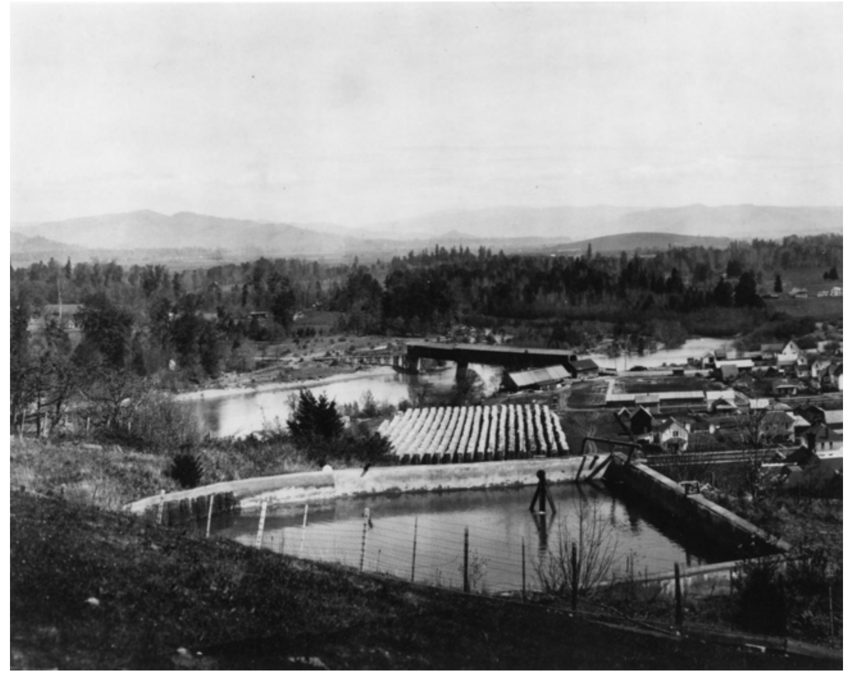

Figure 1-21

Old black pipe (old intake on the Willamette River)

Skinner Butte Reservoir #1 (courtesy of Lane County Historical Museum)

Chapter Two

EWEB: THE EARLY YEARS (1910-1930)

EWEB'S FIRST BOARD

In 1911, with the Walterville Power Plant generators humming, and the city's first filtration plant nearing completion, the City Council (long overworked with burdensome details of putting the system into operation) decided it was time, as had been provided in the City Charter, to turn over operation of the plants to an independent board. So, on February 20, 1911 the City Council passed an ordinance creating the "Eugene Water Board." It was signed by Mayor Joseph DeWitt Matlock (Figure 2-1) on February 27, 1911, and the first Board meeting was held on March 11. The first Board was appointed by the Council and was made up of Ernest U. Lee, Martin Svarverud, Clement S. Frank, Robert M. Day and B. B. McKinney (Figure 2-3). All future Boards would be elected by the voters of Eugene. The second photo (Figure 2-2) is of Elizabeth R. and Joseph D. Matlock about the time of their wedding (photos courtesy of the Lane County Historical Museum). Joseph served as Mayor of Eugene from 1895 to 1897 and again from 1907-1916.

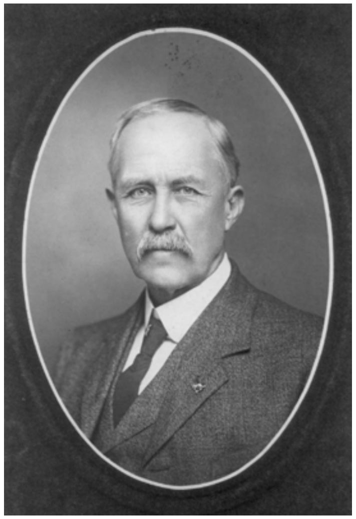

Figure 2-1

Figure 2-2

Figure 2-3

From left to right: ***Clement S. Frank, Burwell B. McKinney, Robert M. Day, Ernest U. Lee and Martin Svarverud. Ernest U. Lee acted as the first secretary to the Board until a full-time paid secretary was employed. He outlived all the original Board members. Lots were drawn as provided by the ordinance, to assign officers of the Board and terms of service, so that ensuing years would have elections. The results of the drawing were: R. M. Day, President for a one-year term; E. U. Lee, Secretary for a three-year term; Martin Svarverud, Vice President for a two-year term; C. S. Frank, for a four-year term; and B. B. McKinney, for a five-year term.***

Figure 2-4

Old City Hall where the first Board (Figure 2-3) met on March 11, 1911

EUGENE WATER WORKS

There were two reservoirs on Skinner's Butte, the larger of the two being located on the west end of the Butte. I refer to it as Skinner's Butte Reservoir #2. It was built by a private utility in 1906. It had a capacity of 2,000,000 gallons and its elevation, when full, was 681.65 feet (Figure 2-5). In present-day reservoir naming, it would be called "Skinner 682." The current reservoir, which I refer to as Skinner Butte Reservoir #3, is called "Skinner 603." Skinner Butte Reservoir #1 was built in 1905 on the east end of the Butte where the current reservoir is situated, and had a capacity of 225,000 gallons. Skinner Butte Park, which sits below the reservoirs, was originally called "Riverview Park."

Due to the higher elevation of the larger Skinner Butte Reservoir #2, it resulted in too much water pressure at the city level below the reservoir, so it was only used for emergency storage and fire protection. It was constructed of concrete, with the walls extending 20 feet above ground level (Figure 2-7). There was only one outlet, a 12" main which joined an 8" main coming out of the smaller reservoir on the east end of the butte, therefore the larger reservoir could only be filled by shutting off the smaller reservoir and raising the pressure to about 150 psi at the pump station.

After the typhoid epidemic of 1906, Professor A. R. Sweetser and O. F. Stafford of the University of Oregon Chemistry Department were especially active in a subsequent move toward water purification. It was their suggestion to use chlorine, which placed Eugene among the pioneers in the use of chlorine in a public water supply. There were some complaints regarding the ***"peculiar taste"*** of the city water. Professor Stafford stated that the pipe system was in a ***"deplorable"*** condition and that one of his tests had a higher number of bacteria in water taken from a faucet in east Eugene then was found in unfiltered river water. He added that effort was being made to use ***"chloride of lime"*** up to the endurable limit for a few days.

The first known use of chlorine in a water system in the entire United States occurred in 1908, only three years before it was used in Eugene, according to the American Water Works Association. Eugene was one of the first in the country, and the first in the Pacific Northwest, to sterilize water with chlorine.

The "Eugene Water Works" operated the first water system in Eugene. EWEB's first filtration plant was located near the southeast end of the current EWEB Steam Plant near Willamette Substation (Sub "A"). In 1910 the City Council decided to purchase two "jewel filters" (patented sand filtration units). The filtration plant was known as the "Jewell Subsidence Gravity Filter Plant" (Figure 2-10) and was located on the west side of the main pumping plant in a separate building, which was 84 feet long and 50 feet wide. The floor and side walls were about 14 feet high and served as a wall for the clear well, and also to act as a foundation for the building, which was constructed of timber with fireproof paper on the outside. Eight hundred square feet of floor space in the south end of the building was utilized by electrical equipment.

Water from the Willamette River was pumped to the settling tanks (Figure 2-9), or subsidence basins as they were then called, by the river pump. There were four of these tanks in use (see Chapter 6, Figure 6-11), each 20 feet in diameter and 20 feet high on concrete foundations. Before the river water was discharged into the tanks, it was mixed with "sulfate of alumina" (aluminum sulfate). The chemical was weighed and dumped into dissolving tanks, from whence the solution was delivered through lead pipes into the river pump inlet pipe. The quantity of chemical used was regulated by the condition of the river water and, in addition, tests were made on three days of each week. After remaining in the settling tanks for five to eight hours, the water flowed by gravity from the settling tanks to the filters (Figure 2-10) and then into a clear well, after which it was pumped into the city mains.

A quarter-million gallon reservoir (Skinner's Butte Reservoir #1) at the north side of the city on Skinner's Butte served the purpose of a storage and pressure equalizer. The intake was situated on the south bank of the Willamette River about 300 feet east of the pumping plant. It was of timber construction, consisting of piling driven closely together and protected from freshets (i.e., flood of a stream) by rock boulders. The pipe leading from it to the river pump in the plant was a 12" steel pipe. During high river stages, its capacity at the intake was about 3,000,000 gallons per day (GPD). When the river was at its low stage, the capacity of the intake was decreased somewhat, due to the fact that the difference in elevation in feet of the river surface and the pump was such that the pump was not able to lift its full rated capacity. This pump was a "Gould horizontal centrifugal pump," belted to a 50 hp electric motor (Figure 2-10). Its rating was 3,000,000 GPD at a lift not greater than 20 feet. The new city filtration plant went into operation in 1912. The operation of the filtration plant proved to be highly successful in providing pure water to the users in Eugene. Not a single case of typhoid fever was ever found in the city's filtered water from then on.

In 1912, a pump was installed at the foot of Skinner's Butte for filling the reservoir. It was connected to both an 8" and 12" main and was run by a 20 hp electric motor. The larger reservoir could then be filled without raising the pressure in the city system. Water for cleaning the larger reservoir was the only reservoir charge to the City Fire Department, because the reservoir was kept full in the summer months for fire protection purposes only. During the winter, the reservoir was kept empty after being drained in the fall. In 1913, discharge waste from the city gas plant operated by the "Oregon Power Company" was entering the Willamette River near the city intake. This caused the water to have a bad taste, so the Board requested the City Council to "abate this nuisance."

At this time, the water system consisted of the pumping plant (Figure 2-11) drawing water from the south bank of the Willamette River at the east end of 8th Avenue, the filtration plant, settling tanks, two reservoirs (one for fire only) on Skinner's Butte with a joint capacity of 2,500,000 gallons of water; and 30 miles of water mains, of which many were wooden (Figure 2-13). On November 11, 1914, a new well at the edge of the north bank of the Willamette River across the river from about the junction of 8th Avenue & Franklin Blvd. was completed, and pumping directly from the Willamette River was discontinued. Figure 2-7 shows the southwest corner of the old Reservoir #2 in 1970 (author's photo). The Oregon State Board of Health did not like the possibility of cross-contamination of stagnant water into the City mains, so the larger reservoir and ensuing property were later transferred to the City of Eugene in 1914. There is currently a marker indicating the site of the old reservoir (Figure 2-8). Figure 2-6 shows Skinner Butte Reservoir #2 in the upper right corner of a postcard of the Italian Rose Garden at the Eugene Southern Pacific depot (Figures 2-7 and 2-8, author's photos).

Figure 2-5 LCHM

Figure 2-6

Figure 2-7 1970's

Figure 2-8 2006

EUGENE'S FIRST FILTRATION PLANT (1910-1932)

Figure 2-9

Settling Tank

Figure 2-10

Filters

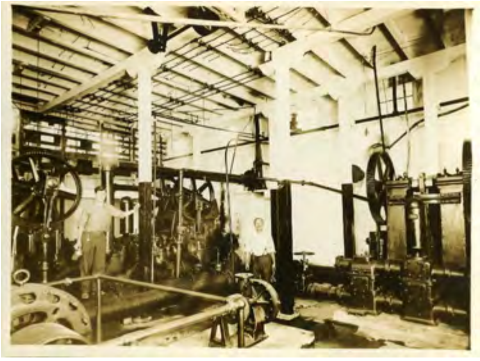

Figure 2-11

Pumps for Filters

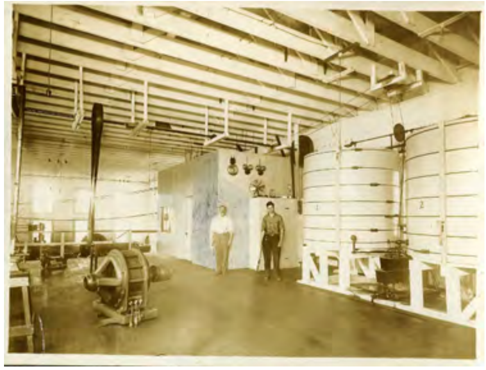

Figure 2-12

Charles E. Russell (in white shirt) father of Ralph Russell, Chief Operator of the Steam Plant

Figure 2-13

Wooden Main

About 50 Years in Time (1950-2006)

Original plant was built by T. H. Ellis. Construction started in December 1908 and finished in the Spring of 1911.

Figure 2-14

Figure 2-15

Figure 2-16

Figure 2-17

MATLOCK STATION

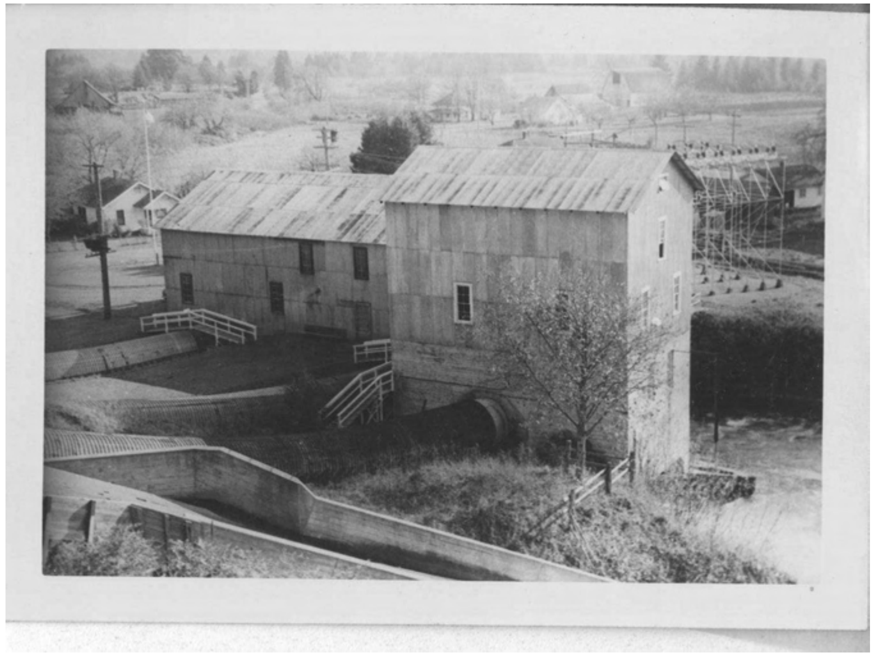

Figure 2-17

On the electric side, the excavation for Walterville Canal was started in 1906 and the five-mile-long canal was completed in 1910. In February 1911, the Matlock Station (Walterville) began operation with a capacity of 1880 hp. On March 24, 1911, the new Eugene Water Board notified the Oregon Power Company (successor to the Willamette Valley Company) that the contract with the City for power to operate their water pumps *"would not be required after 90 days from this date."*

The Walterville Power Plant (Figure 2-17) was completed on February 17, 1911 and went on line March 11, 1911 with two 600 kw generators. A third generator was added in 1924. The Walterville Power Plant (previously called Matlock Station[1]) has been a magnificent investment for Eugene. Joseph DeWitt Matlock[2] was mayor of Eugene from 1895-1897 and again from 1907 to 1916. He was also an early Eugene Dry Goods merchant and the principal champion of municipal ownership of the City's water and electric utility. On February 17, 1911 the "open house" celebration at the plant was a gathering of city officials and citizens. Among those present was Mayor Matlock, for whom the plant was named in recognition of his efforts.

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[1]Matlock Station was renamed Walterville Power Plant in 1928.

[2]J. D. Matlock came to Oregon with the "Lost Wagon Train of 1858" and settled in Pleasant Hill, Oregon.

In January 1911, the City Council decided to install a system of Tungsten lights for the City streets. A rate reduction in 1914 put the cost for the first 20 kwh at 8¢ instead of the previous 9¢ charge, and it was decidedly lower than the Oregon Power Company's equivalent rate of 15¢. By December 1915 the Oregon Power Company saw the futility of further competition with the Board and agreed to sell its distribution system for $150,000.

The Board and the City Council operated at "arms-length" in their business dealings. The City paid for installation of street lights, for public use of water for fire protection, and for its other services performed by the Water Board. Several people outside the city were served by electricity by the Board because t hey lived near the power plant, and a short time later it was agreed to extend commercial service to prospective customers in the town of Walterville, Oregon.

On October 7, 1915 the Water Board completed negotiations for the purchase of the Oregon Power Company's electrical system in Eugene. The purchase price was set at $150,000, of which $50,000 was to be in cash. Early in 1922, the City entered into a contract with Mountain States Power Company for additional standby service. By 1918, the electric utility was serving almost 2,600 customers and the water system was serving 2,149.

On EWEB's 10th anniversary (1921), the Board members were (in order of when they were elected) Elmer K. Wheeler (1916-1923), J. S. Drew (1917-1923), Alex T. Cockerline (1919-1931), Harry O. Bowen (1920-1924), and Lewis D. Pierce (1921-1923).

Figure 2-18 Hugh Currin

ARTICLE BY C. W. GELLER IN THE AMERICAN CITY MAGAZINE (January 1918)

Pages from the American City Magazine - January 1918

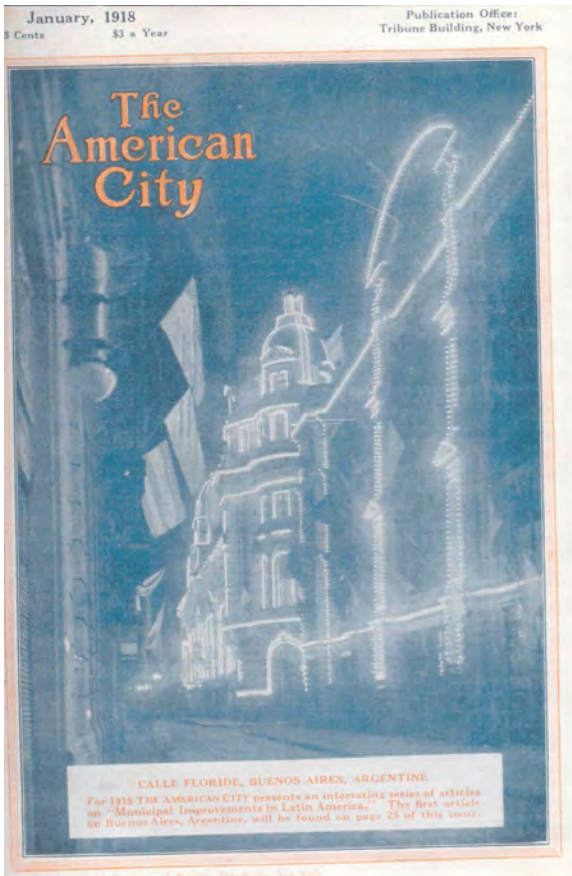


Figure 2-19

49

The Municipal Electric Lighting System of Eugene, Oregon*

By C. W. Geller

General Superintendent-Secretary, Eugene Water Board

THE building up of a business from nothing to the complete control of the electrical field, in the face of the most strenuous opposition from the time the first shovel of earth was turned at the power plant until the last wire was strung in the city, is something that any city may well be proud of.

The McKenzie River, which supplies power for the Eugene municipal hydroelectric plant, has its origin in Clear Lake, a snow-fed body of water situated in the Cascade range, about 70 miles east of Eugene. At its upper end the stream is deep and swift. It gradually becomes broader and more shallow, however, and for the final 30 miles it runs thru a low farming country until it joins the Willamette at Coburg.

The intake for the city power canal is located on the north bank of the river, 18 miles east of Eugene. From the intake, water is conducted to the plant thru 19,400 foot of canal and 650 of wood flume. The water available is more than sufficient to run the plant at its maximum capacity every day in the year, the minimum flow of the river being approximately 1,500 second-feet.

The power plant is located 2 miles west of Waterville, 14 miles east of Eugene, and 1 mile north of the McKenzie River. It contains two units, having a joint normal rating of 1,880 horse-power. Only half of this output is available at Eugene, however, until another bank of three step-up transformers is added to the station equipment. Energy at 23,000 volts is transmitted over 15.5 miles of single line to the city's substation at Eighth Street and the Southern Pacific Railway.

Approximately 80 acres comprised the total city property holdings for the plant and canal purposes until March, 1912, at

POWER CANAL OF EUGENE HYDROELECTRIC PLANT
The canal grade is 2.11 feet per mile and the embankment slope is 1½ to 1

* Copyright, 1917, Oregon Society of Engineers. Reprinted by permission.

Figure 2-20

ELECTRIC OPERATING REVENUE—COMMERCIAL LIGHT AND POWER

	1912	1913	1914	1915	1916
January	$1,326.92	$3,951.28	$5,211.51	$5,189.53	$5,274.18
February	1,562.25	3,691.39	4,912.22	4,819.96	5,176.36
March	1,772.68	3,612.46	4,272.18	4,194.01	7,402.41
April	2,259.97	3,750.68	4,155.17	4,204.96	6,141.32
May	2,727.86	3,175.34	4,071.76	4,101.23	6,537.52
June	2,988.40	3,372.02	3,960.28	3,897.22	6,369.65
July	3,159.02	3,382.11	3,718.57	3,883.46	6,231.44
August	3,539.14	3,744.40	3,698.49	3,822.31	6,191.37
September	3,410.79	4,028.84	3,890.18	4,086.79	7,181.33
October	4,445.93	4,665.82	4,311.85	4,631.71	7,906.48
November	3,451.48	5,107.03	4,712.71	5,165.68	8,965.22
December	3,654.91	5,056.79	4,990.98	5,269.63	8,868.04

which time an additional acre was purchased as a building site for two five-room bungalows.

Equipment is now on hand and in process of installation for a complete set of step-up transformers. With the completion of these, the plant will be fully equipped in this respect.

Waterville is now being served with electric service from the plant direct by means of a pole line up the canal. This pole line also carries an emergency telephone line which in case of special need can be connected thru to Eugene over the Government Forest Service telephone line. Switching equipment for this purpose is installed in the Waterville store.

Commercial activity began December 1, 1911, and as block after block of wires were strung customers were added.

This healthy growth continued until the spring of 1915, when a careful check indicated that 66 per cent of the total available electrical business has been secured.

The Board then considered the advisability of installing a standby or emergency plant to protect its service. Extensive studies and investigations were conducted. One of the organization, while on a trip in the eastern states in the fall of 1915, devoted considerable time to this subject there, and when everything was in readiness to act, a final effort was made to open up negotiations with the competing company for the purchase of its electrical distribution system.

Practically an ultimatum was delivered to the corporation, to the effect that this would be its last opportunity to dispose of its holdings in the city; that if a purchase could not be agreed upon and a contract entered into for emergency service, the city would construct its own electrical auxiliary.

Conferences and sessions were then held, and about nine months later final purchase contract was signed for the purchase by the city of the corporation's electrical distributing system in the city. Likewise a contract was entered into wherein the corporation agreed to furnish the city with emergency or standby service, at a rate cheaper than the city could maintain its own auxiliary service. The total purchase was

ELECTRIC OPERATING REVENUE—MUNICIPAL PUMPING PLANT

	1913	1914	1915	1916
January	$631.75	$777.68	$726.31	$522.90
February	579.93	746.70	646.00	568.58
March	525.70	685.74	526.40	504.00
April	670.25	774.93	588.18	506.45
May	589.84	797.74	577.66	589.05
June	695.63	891.24	631.26	521.64
July	661.50	1,079.13	650.35	693.22
August	1,001.00	905.11	658.35	987.21
September	778.49	715.63	569.70	855.22
October	1,062.15	652.38	393.75	817.43
November	750.66	754.90	469.35	978.05
December	726.45	655.77	504.00	778.05

ELECTRIC CUSTOMERS

	1912	1913	1914	1915	1916
January	63	1,131	1,555	1,692	1,764
February	125	1,180	1,554	1,696	1,745
March	165	1,224	1,551	1,706	2,681
April	195	1,262	1,551	1,708	2,678
May	335	1,289	1,507	1,698	2,623
June	450	1,383	1,507	1,673	2,565
July	578	1,348	1,480	1,654	2,428
August	625	1,364	1,502	1,628	2,407
September	707	1,402	1,523	1,626	2,519
October	767	1,480	1,602	1,694	2,618
November	895	1,492	1,661	1,742	2,657
December	1,001	1,532	1,671	1,745	2,670

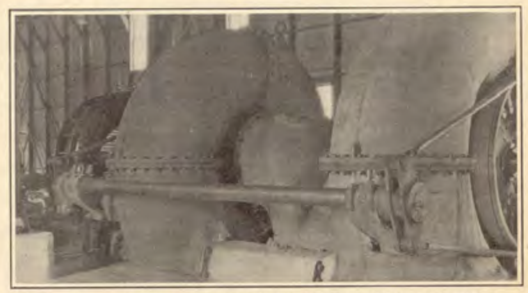
Figure 2-21

EIGHT-FOOT DIAMETER WOOD-STAVE PIPE PENSTOCKS BANDED WITH ¾-INCH STEEL; EUGENE, ORE., HYDROELECTRIC PLANT

$150,000, with an initial payment of $50,000, which was paid out of surplus electrical earnings, the balance of $100,000 to be paid for at the rate of $1,250 per month, or more if the Board so desired, and interest on the balance due to be computed on a deferred basis at 5 per cent. The interest, however, is not to become due until the principal is paid. The interest item, when due, is to be paid at the same monthly rate as the principal—i. e., $1,250 per month.

The gross annual revenue of the business purchased represents a total of over $30,000. As the operating expenses of conducting the combined systems is not much greater than the original unit, it can readily be seen that the business purchased is actually buying itself.

It has been the endeavor of the Board



FRANCIS-PELTON TURBINES IN GENERATING STATION, EUGENE WATER-WORKS

Figure 2-22

and the organization to give the best possible service in all departments of the business. The basic principle is that the utility belongs to the citizens; that all consumers should receive the same equitable treatment at a rate consistent with good business upon a substantial basis. Considerable time and trouble is constantly taken to keep in touch with consumers, advise them in their installations, test meters without additional expense to such consumers, and in numerous ways to work towards the customers' benefit.

During the years of competition, prior to the purchase of the competing system, clean lines of procedure were strictly adhered to in each and every case. No small tribute was paid to the organization by one of the officials of the competing corporation, before a gathering of public utility men, when in speaking of his experience with our competing municipal plant, his words were, in effect that "while the competition encountered was keen, yet it was of the cleanest kind possible."

The municipal plant has been responsible for the reduction of rates for lighting service from a maximum of 15 cents per kilowatt hour, to 8 cents per kilowatt hour, and a similar proportionate reduction in power service, thus saving the citizens thousands of dollars annually.

Not a dollar of taxes is required for the operation of the plants, both systems being absolutely self-supporting.

The public or the taxpayer pays for the public use of light and water out of general funds, the same as any other consumer, but on a net cost basis. A strictly separate accounting system is maintained for each department and is conducted as tho they were two foreign departments.

It is surprising how municipal ownership is growing thruout the country. Nearly every issue of journals and publications pertaining to municipal utilities and other municipal interests has some note of how this or that town or city is considering the installation of a municipally owned utility, or is about to let contracts; also in a few instances where some municipality has abandoned municipal ownership.

Instances of abandonment and reverting to corporate ownership are becoming fewer each year, largely because of improvements in administrative methods. Communities have learned by the experience of others, and in a great many cases by their own, that politics is the bane of municipal utility success. They have learned that the public as well as the private consumer should pay to the utility its equitable proportion in rates for service; that diversion of funds to other municipal purposes cannot be tolerated; that administrative heads should be chosen and organization should be built upon merit and ability alone; that a municipal utility should, and can be, operated more efficiently and economically than one of corporate ownership.

The control, operation and management should be entirely independent of any source

SEVEN-PANEL VERMONT MARBLE SWITCHBOARD, EUGENE HYDROELECTRIC STATION

Figure 2-23

that has its inception in politics. A commission, consisting of not less than five members, should be elected by the people on a strictly non-partisan basis, and the term of each member should be at least five years, for it requires a year or two for a conscientious commissioner to become thoroughly conversant with public utility management. Such a commission should be responsible only to the people, and by no means to any other portion of the city government. Under such an arrangement good, substantial and intelligent citizens will consent to serve and take an active interest. We are not aware of a single case of municipal ownership failure under such an organization and management.

An infinite amount of tact and patience is required on the part of the managing officer in dealing with the public, for at times it seems as tho the impossible is expected of a municipally owned utility. On account of each citizen's being a shareholder, as it were, in such an enterprise, there are some who seem to think that they individually have the absolute right to dictate the policy.

A utility investment of from two or three hundred thousand to a half-million dollars requires the best possible organization along technical and business lines, and municipal ownership is handicapped in many cases in not being able to build up such an organization. More or less criticism is encountered on account of the expense necessary to maintain an efficient force. The fact that such an organization may save its own cost many times over each year is very seldom given credit. A corporation may maintain an organization at twice the necessary cost, but no objection is raised on the part of the consumer.

One of the last, but not least, of the important items of successful municipal utility ownership management is the adoption of a principle such as was put into effect by the Eugene Water Board, that the general superintendent or executive head is held personally responsible for the entire management of the utility, and that no interference of any kind is practiced or tolerated by any influence whatsoever towards the appointment of technical assistants and other help. The superintendent is given a free hand to hire and arrange his organization as may be necessary, tho it is understood that the matter of salaries and wages is subject to the approval of the Board. Such a policy places the executive on his own responsibility as to the efficiency and effectiveness of the organization at his command. It has been proved in practice that under this arrangement the most efficient results are obtained, as no excuse for failure or lack of efficiency can prevail.

Figure 2-24

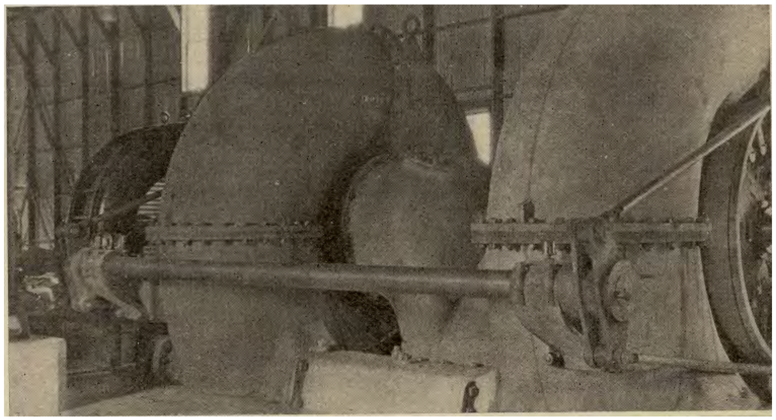


Figure 2-25

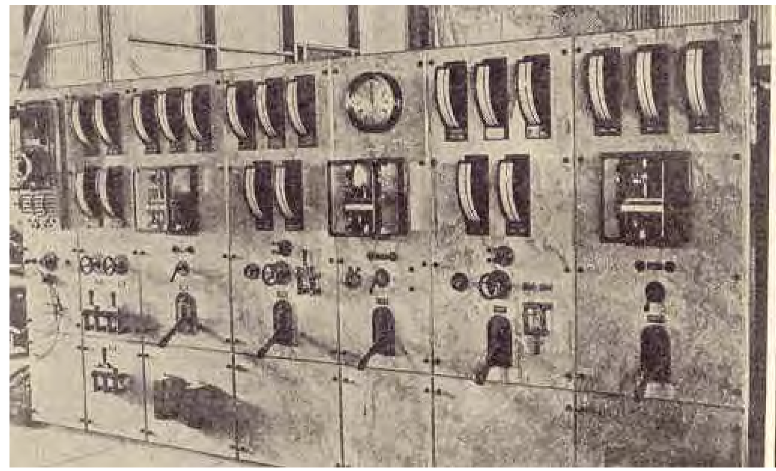


Figure 2-26

Francis-Pelton Turbines - 1918

Seven-Panel Vermont Marble Switchboard

Necessitated by growth in the electric utility's customer list, it was decided to enter into a standby agreement with "Mountain States Power Company" effective January 1, 1923. Not wanting this to be a long-range solution, the Board authorized additional generating equipment for Walterville, which was in operation by March of 1924.

In 1923, Hugh P. Currin, the Board's chief engineer, was hired by the Board to prepare for the Walterville Plant enlargement by designing substation equipment at Eugene (Figure 2-18) to handle the increased generation capacity. So these two men, Joseph W. McArthur doing the Civil Engineering work, and Hugh P. Currin doing the electrical work, served as the engineering team on the third Walterville generating unit.

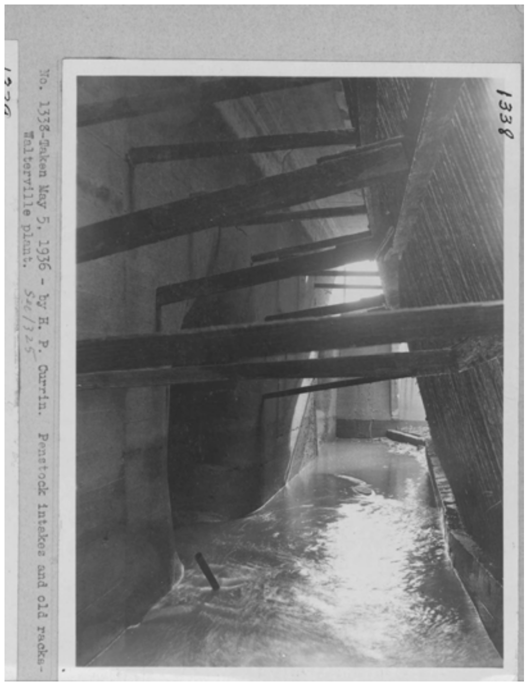


Figure 2-27

Penstock Intakes & Old Racks - May 5, 1936

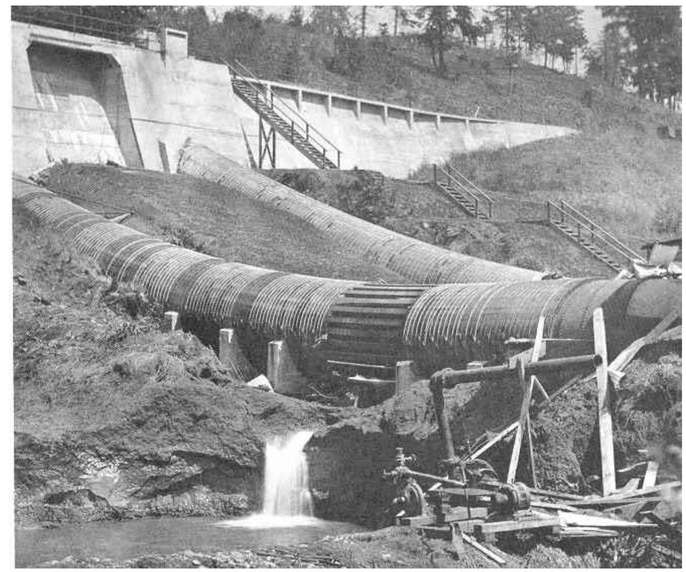


Figure 2-28

Leak in Penstock No. 2 - August 23, 1923

WALTERVILLE POWER PLANT

Figure 2-29

Figure 2-30

Operator Residences - 1936

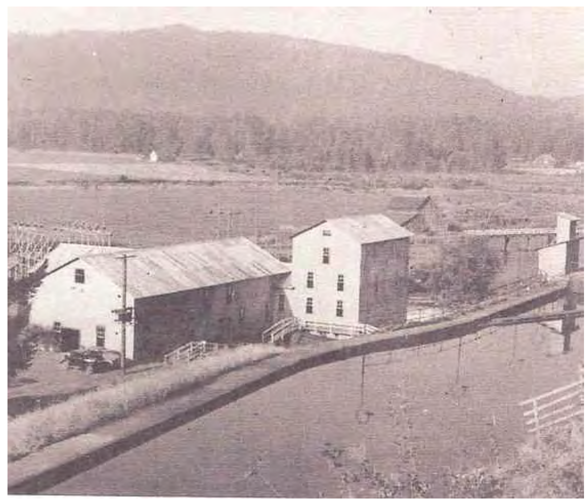


Figure 2-31

Matlock Station 1946

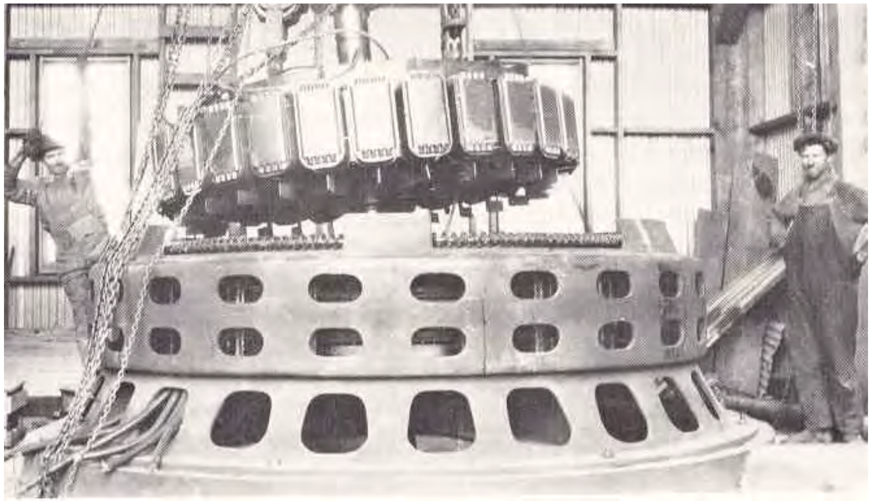


Figure 2-32

Assembling Unit No. 3 at Power House - March 1924


Figure 2-33

Walterville Generator - April 25, 1960

WALTERVILLE POND

Walterville Pond on the Walterville Canal is 65 acres in size (Figure 2-36). Along with electric generation, the pond was also used to raise Chinook salmon until they were 5-7", when they were then allowed to leave and swim the canal into the McKenzie River and out to sea. During the release, the Walterville Power Plant turbine was switched off to let the fish swim by without danger. The pond accommodated up to 350,000 young Chinook annually. In comparison, the Carmen-Smith spawning channel produced about 70,000 Chinook fry a year. EWEB started stocking salmon fry in the pond about 1972 and stopped in 1976, as the Fish & Game Department of the State of Oregon was concerned about fish loss going through the siphon. For one year after stopping salmon stocking, the pond was stocked with black bass. Currently (2007) there is no stocking being done, but the pond still has a good number of bass and other warm water fish residing in it.

Figure 2-34 2007

Figure 2-35 2007

Figure 2-36 2006

Start of Walterville Canal ***Looking southwest from McKenzie Highway*** ***One of the many viewing areas***

(Author's Photos)

Figure 2-37 EWEB

Figure 2-38 Author's Photo

Dam area during construction in 1953 and again in 2007

Figure 2-39 Author's Photo

Figure 2-40 EWEB

Pond Outlet & Aerial View

Walterville Pond is also a great place for bird watchers. Once a rarity for the area, a European Widgeon was seen there in 1973. Many Purple Martin boxes were erected around the pond (Figure 2-41). The following pictures were taken in 2007 by the author.

Figure 2-41

Figure 2-42 Coots

Figure 2-43 Ducks

Figure 2-44

Figure 2-45 Towhee

Note from Dale Hagey (retired EWEB biologist): Dale observed bald eagles at the Walterville Pond each winter for the past 40-50 years. Once there was an active eagle nest near the river at the end of Kickbush Lane, just south of the plant.

Walterville was constructed in 1909/1910 and, as originally built, the plant had a capacity of 1350 kw or 1800 hp. It was enlarged in 1923 and 1924 to produce approximately 3050 kw. The turbines operate under a 50-foot head of water from a four-mile-long canal, which takes its water from the McKenzie River.

Figure 2-46 EWEB

Above: EWEB Truck #1 at Walterville - Federal model 15 dump truck, body built by Steam Plant Crew

Right: Aerial View of Walterville Project

Figure 2-47 EWEB

In about 1920, Ernest Hotaling was superintendent of the Walterville Plant, after being transferred there by EWEB. He served in that position until the mid-20's, when he was succeeded by Edward Howell, who served in that position until 1928, when he took over operation of the then new Leaburg Plant. The town of Leaburg was named for Leander Cruzan (the post office was established in 1877).

WATER INTAKE, CAMP CREEK ROAD

In 1925, Stevens and Koon, Portland consulting engineers, were hired by the Board to draw plans and specifications for a new water supply that would take water from the McKenzie River at a point near Hayden Bridge (this location is the old intake on Camp Creek Road, now owned by Lane County). A 30" steel supply line to Eugene was decided upon. This line was referred to as the "McKenzie River Supply Line." This was a gravity-fed line that could supply a maximum of nine million gallons of water a day, and on average carried about 8,500,000 gallons of water per day to supply to Eugene. This intake was completed in 1926 (Figure 2-48). After the Hayden Bridge Plant was built, the flow was increased between Hayden Bridge and McClain to 16 million gallons per day (MGD). During high demand in the summer of 1950, both Hayden Bridge and McClain were able to provide water to Eugene. By the fall of 1950, the McClain Plant was totally shut down.

In an emergency, even though it was fed by the Willamette River, the steam plant could also get water from the 30" main that supplied the McClain Plant. In very cold or freezing weather, the intake water from the 30" main could be routed through #1 boiler[3] before entering the McClain Plant. During these times, the warm water thawed the ground above the pipes and they could be traced by where melting took place. The old intake on Camp Creek Road was a concrete structure for screening out the more coarse material[4]. The water flowed from the river by gravity through gates into three chambers and up through horizontal screens into a collecting flume (Figure 2-51), and thence into the 30" welded steel pipe line to Eugene. A trash pump was occasionally needed to remove the sediment from the bottom of the screening chambers.

Since 1911, EWEB has had four water intakes. The first intake took water directly from the Willamette River and the second took from wells along the river. This second source ended the taking of water directly from the river. The third source or intake was what was called Hayden Bridge Intake (which I refer to as Camp Creek Road Intake). This intake was completed in 1926 and supplied a gravity flow 30" steel pipeline (with surge stack) to Eugene, which was completed in 1927 (Figures 2-60). Then on August 14, 1944, the Board applied for priority rights from the "War Production Board" for a booster pump to increase the flow from the intake to Eugene.

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[3]Vernon England, McClain Plant Operator

[4]From "Operation of the Carl A. McClain Plant" article, May 11, 1934, AWWA Journal

This pump was located more adjacent to Hayden Bridge itself, and in 1950 became known as Hayden Bridge Intake #2 (Figure 2-63). A small emergence type pump was installed early in August 1945, which relieved the water shortage problem at the time. This pump (Figures 2-61 and 2-62) was installed on Dr. Bogan's property on the McKenzie River near the current Hayden Bridge Intake.

CAMP CREEK INTAKE - 2005 (Author's photos)

Figure 2-48

Figure 2-49

Figure 2-50

Figure 2-51

Camp Creek Intake - 2005

Intake lower level looking downriver - 2005

CAMP CREEK INTAKE FROM McKENZIE RIVER SIDE - April 1, 2007
(Photos by Doug Caven)

Figure 2- 52

Figure 2- 53

Figure 2- 54

Figure 2 - 55

30" GRAVITY FLOW LINE

Construction of the gravity flow line from the Camp Creek Intake to the McClain Filtration Plant in Eugene. This line was used to supply McKenzie River water by gravity with no pumps.

Figure 2-57

Willamette River Crossing - September 1925, ready to be lowered under river with manhole and blow-off riser visible.

RIGHT: Pipe ready to be lowered into the ditch - March 1927

Figure 2-58

Ditch Excavation - October 1926

Figure 2-59

30" SURGE CHAMBER

As the 30" feed line from the Camp Creek Road intake was solely a gravity-fed line, a means of discharging any excess pressures during high water and low demand periods was needed, so a surge chamber was installed on the south side of the Willamette River just prior to entering the steam plant or the McClain Filtration Plant. The surge chamber would dump water and lower pressure when needed during high water periods (Figure 2-61).

Figure 2-60

Surge chamber at Willamette River crossing, on north end of "surplus raw water line" (see Figure 3-5, Chapter 3, page 69)

"surplus

Figure 2-61

HAYDEN BRIDGE BOOSTER PUMPS

As demand for water increased over time, it became necessary to provide temporary emergency pumping facilities (Figures 2-62 and 2-63) until a booster pump station could be built to meet the high demand periods.

Figure 2-62

Figure 2-63

Emergency Pump Unit on Dr. Bogan's property - 1945

Figure 2-64

Pipeline connecting to 30" gravity line - December 30, 1945

Figure 2-65

Pipeline tie to 30" gravity line - July 1945

Figure 2-66

Hayden Bridge Booster Pumps #1 & #2

Figure 2-67

Intake Pumps #1 and #2 - 2007 (author's photo)

Figure 2-68

Hayden Bridge Booster Pump Station under construction - November 1945

LEABURG PROJECT

Early in 1927, the Board decided that another power source was needed. As the McKenzie River proved to be an ideal source, a study was begun to locate another site above Walterville. In March of 1927 (Figure 2-69), exploratory drilling was conducted near Leaburg by Stevens & Koon of Portland, Oregon, consulting engineers for the plan and designers of a new power source for EWEB.

Figure 2-69

Figure 2-70

Exploratory drilling near Leaburg - 1927 (EWEB files) ***Hatchery sign - 2006 (author's photo)***

After much study, it was decided to construct a diversion dam above the town of Leaburg and divert the water into a five-mile canal, and construct a power plant to be located just below the town of Leaburg. The Leaburg Project, as it was called, was approved by the Eugene voters on June 28, 1927, and construction began in late 1928. In 1927, EWEB brought electricity to Leaburg to supply power for the construction of the new plant. The Leaburg Project went into service on January 6, 1930 with a rated capacity of 7,500 kva. The preliminary design included a dam about 20 feet high. The Leaburg generator supplied more than 2-1/2 times the output of the Walterville Plant, which had a combined rating in the three generating units of approximately 3,000 kva. Leaburg Lake (40 acres) behind the dam was completed in 1929. Next to Leaburg Dam is the Leaburg Fish Hatchery (Figure 2-70), managed by the Oregon Department of Fish & Wildlife. The hatchery raises about 750,000 trout a year.

LEABURG CONSTRUCTION MANAGERS

Figure 2-71

J. W. McArthur, Supervising Engineer

Figure 2-72

A.L. Alin - July 1931

Figure 2-73

Byron K. Taylor, assisting Mr. Alin

Figure 2-74

Richard "Dick" Hart, EWEB Maint.

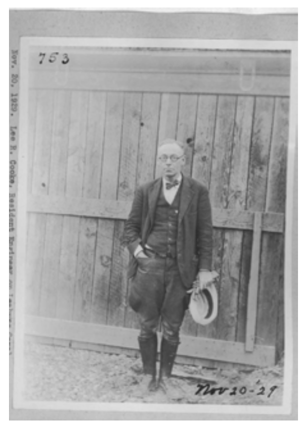


Figure 2-75

Jesse C. Ayers, Field Engineer

Figure 2-76

Lee R. Cooke, Resident Engineer

LEABURG CANAL

Figure 2-77

Canal with 50B excavator in rock - May 21, 1929

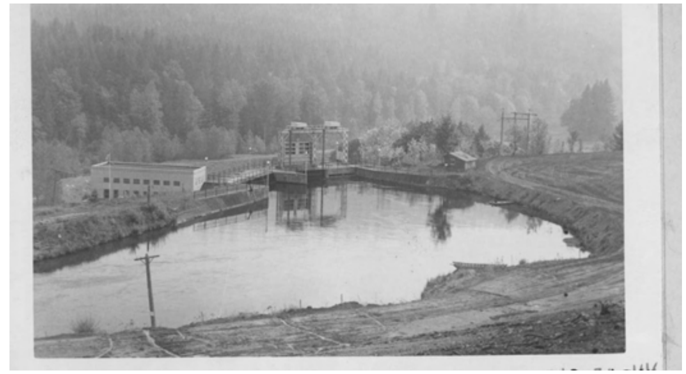


Figure 2-78

End of canal before entering powerhouse - October 20, 1944

Figure 2-79

Making repairs to canal - June 15, 1962

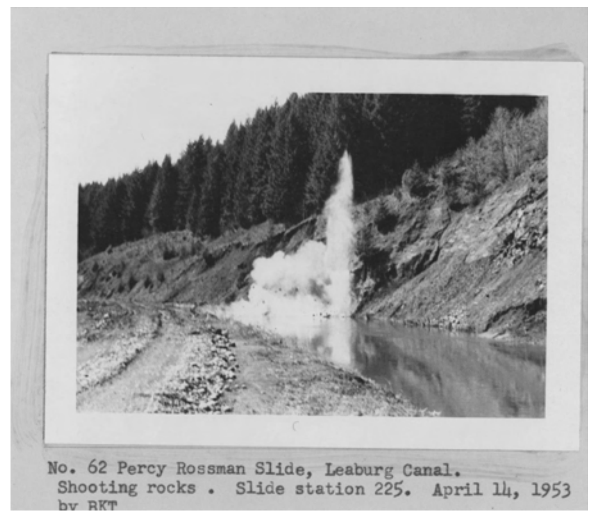


Figure 2-80

LEABURG POWERHOUSE

Figure 2-81

Figure 2-82

Powerhouse foundation and excavating under penstock August 1928

Walter Darr, C.J. "Jack" Keiser and George Bokevitch, concrete workers - November 20, 1929

Figure 2-83

Figure 2-84

Currin's crew - November 25, 1929

Powerhouse under construction - November 25, 1929

Figure 2-85

Powerhouse with transformers and switch yard - November 27, 1929

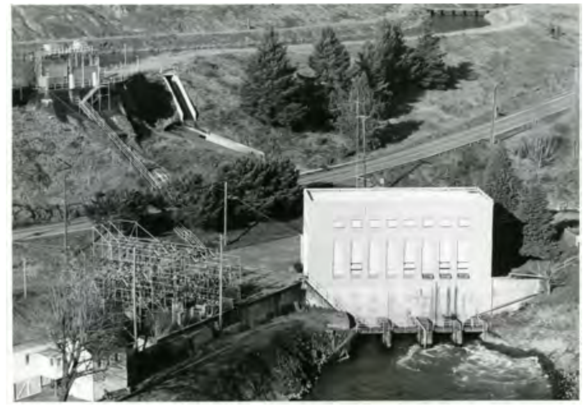


Figure 2-86

Aerial view of powerhouse and canal

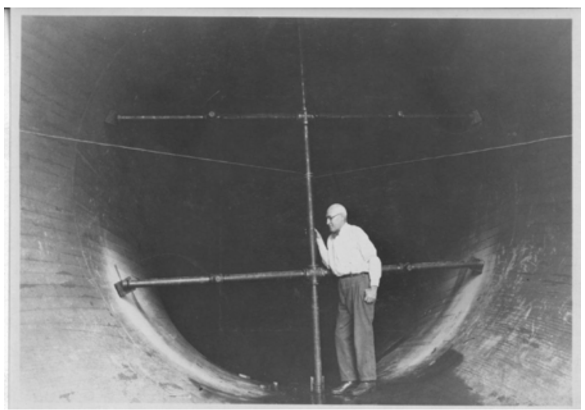


Figure 2-87

Carl A. McClain testing penstock at forebay - June 17, 1931

Figure 2-88

Leaburg in Winter - 1970s

Hiram 'Tom' Perry (Figure 2-90), father of retiree Bud Perry, worked at the Leaburg Plant. His main duty was a ditch walker, where he walked daily from the Leaburg Plant to the Leaburg Dam and back checking for known and unknown canal leaks. He helped surveyors clear the way for the Carmen-Smith project and, during the years of the McKenzie Boat Parades, he was assigned to watch the Reiney Bridge and keep people off of it for safety reasons. He worked in various jobs while at EWEB until he passed away from cancer in 1959 at the age of 59. This photo was taken about 1950-51 at the old Reiney swinging bridge on the McKenzie.

Note: Bud Perry also had an uncle, Eldon Pepiot, and a cousin Bert Schluckebier, who worked at EWEB.

Figure 2-89 Author's Photo

Leaburg Canal with Geese - 2006

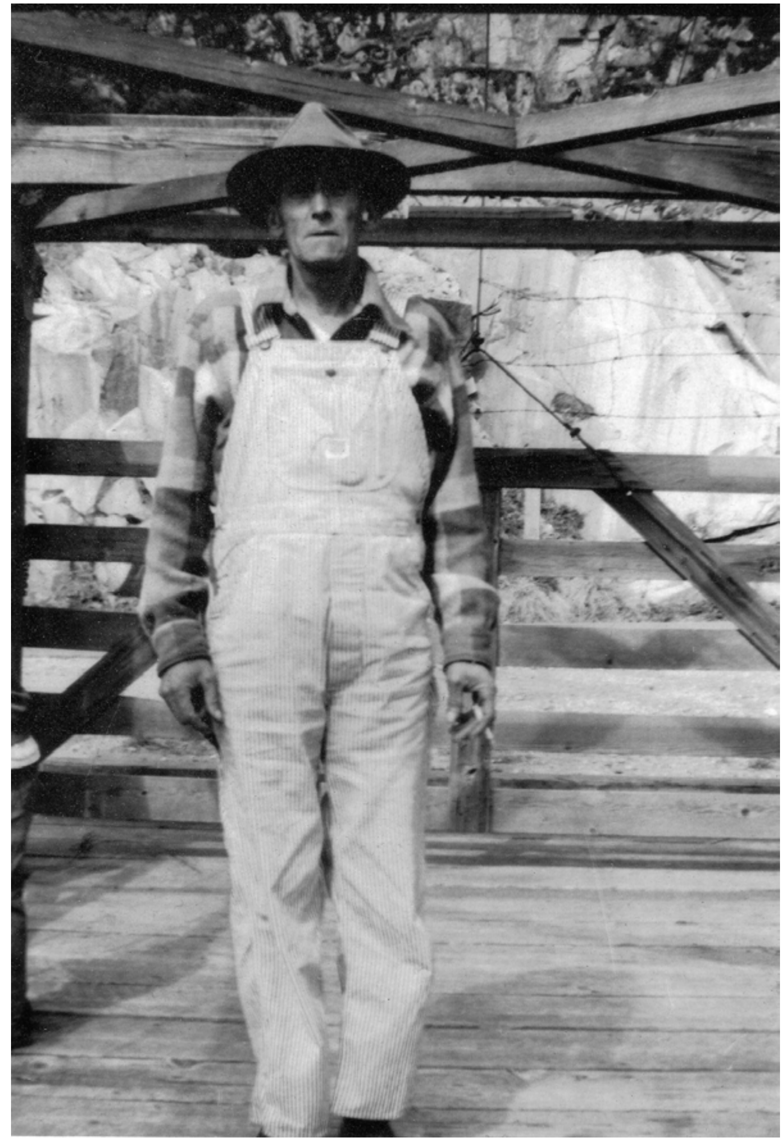


Figure 2-90 Bud Perry Photo

LEABURG DAM

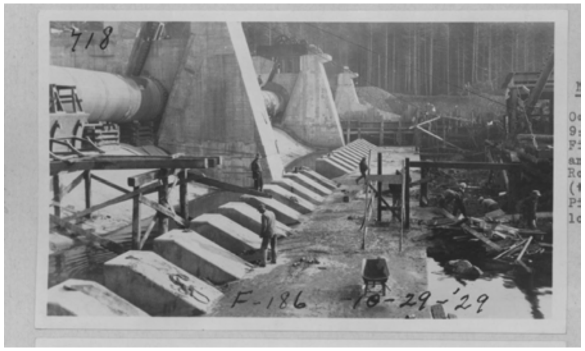


Figure 2-91

Dam with finished apron and baffles, rollergate #3 on left, and piers 5, 6 & 7 - October 1929

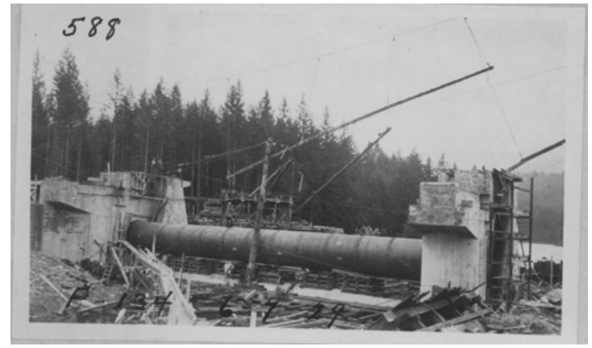


Figure 2-92

Dam piers 6 & 7 and rollergate - June 1929

Figure 2-93

Dam Pier 7 & Rollergate #1 - August 1929

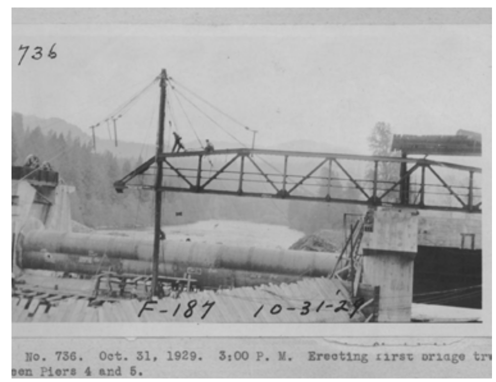


Figure 2-94

Erecting first bridge truss, piers 4 & 5 - October 1929

Figure 2-95

Water flowing over roller gates - July 7, 1930

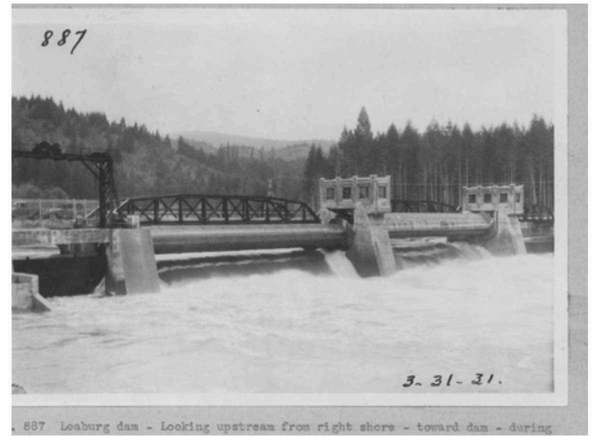


Figure 2-96

Looking upstream during flood - March 31, 1931

Figure 2-97

Flood - November 29, 1942

Figure 2-98

Fender at dam during flood - January 22, 1953 with a flow of 52,000 cfs through dam

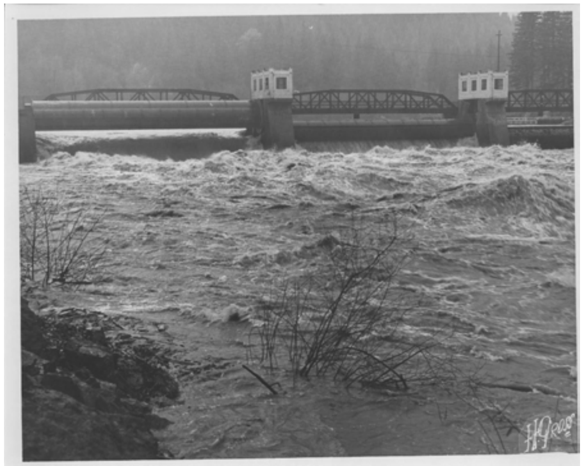
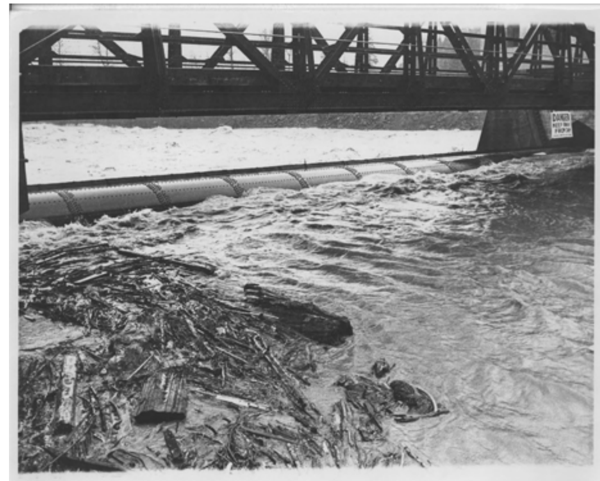


Figure 2-99

Flood - January 24, 1960



Looking downstream with trash - February 10, 1961

Figure 2-101

Looking downstream - February 10, 1961

Figure 2-102 Author's Photo

Dam during high water - January 2006

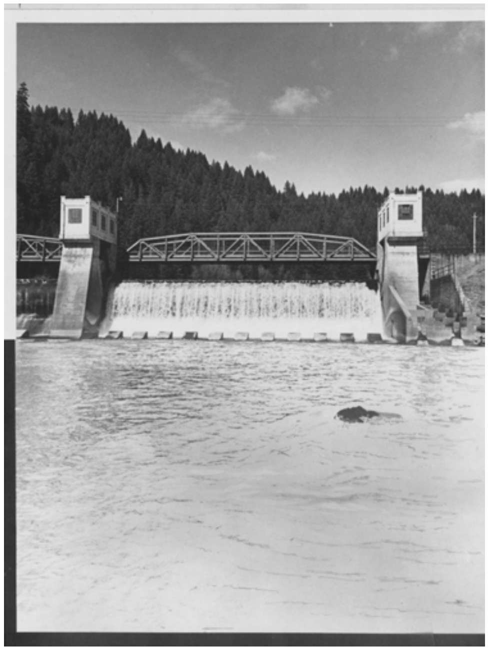


Figure 2-103

Figure 2-104


Figure 2-105

Water over Rollergate - 1968

Leaburg Dam & Hatchery

Rennie gauge house. Note drift accumulation on lower platform toward river. Used by USGS for river level monitoring - 1942.

Edward Howell, who had succeeded Ernest Hotaling as superintendent of Walterville until the Leaburg Plant was completed in 1928, took over operations at Leaburg until his death in 1971. His wife Eva later married George Easton of EWEB in 1974. After the completion of the Leaburg project in 1930, many of the homes in the area were supplied with electricity.

EWEB STEAM PLANT

Even with all the generating capabilities, the Board still had to obtain emergency standby service from Mountain State Power Company, and negotiations in 1930 produced a service that was too high, so in April of 1930 the design of a steam (or diesel) standby generating unit was authorized, and Stevens & Koon were again hired to prepare plans and specifications. Early in July 1930, the Board accepted bids for the construction of a 6,000-kw steam-generating plant to be installed in Eugene on the property at the east end of 8th Avenue, to be used primarily for standby service. The Walterville Plant was truly the proverbial "goose that laid the golden egg" for Eugene. It laid the foundation for good service and low rates. By 1931, when Leaburg hydro and the first steam standby unit had been put in service, the earnings from the Walterville Plant had paid more than half their total costs, or approximately $1,400,000 (1.4 million).

During the summer of 1931, the steam plant went into service. EWEB was then in a position to provide its own energy needs. The first of the steam/electric units installed in 1931 had a capacity of 6,700 kw. The second unit, which was placed in service in 1942, had a capacity of 9,300 kw.

On January 1, 1943, the Willamette River flooded and caused a few problems for the plant (Figure 2-118). Then, in June of 1949, Unit #3 (Figure 2-116) was installed, after arriving on a railroad flat car, to the then-siding at EWEB.

For many years, the steam plant used mostly hog fuel, which was easily obtained from the many local sawmills that were in the area. As the lumber industry declined in the Eugene/Springfield area, the hog fuel became very costly and harder to get. The hog fuel was delivered by large wood chip trucks and stored on-site. EWEB's steam plant had three boilers. Boiler #1 was built in 1931 and used as a back-up boiler in emergencies and real high demand periods, because it burned only Bunker "C" oil. No. 2 boiler, built in 1942, was wood-fired with oil backup. No. 3 boiler, built in 1950, was wood-fired with coal backup.[5] For many years, there was a coal pile behind the Steam Plant (Figure 2-106).

The Steam Department supervisors were: Ralph Martin, Mechanical Engineer, who was also the liaison with the #3 boiler contractor; Ken Rinard, a mechanical engineer; Owen Brown, a mechanical engineer; Clark "Bill" Lynch; Maynard Cotten; and Everett Jordan, in that order. In 1951, the Chief Operator for the plant was Ralph D. Russell. EWEB took over the Central Heat Company on June 1, 1962.[6]

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[5] Per Maynard Cotten - February 2007

[6] Byron Taylor Diaries - 1962

Figure 2-106 Bill Eaton

Coal pile in lower right of photo. Immediate left is the old McClain Plant. Steam Plant is in the background.

Figure 2-107

View of front boiler - December 16, 1930

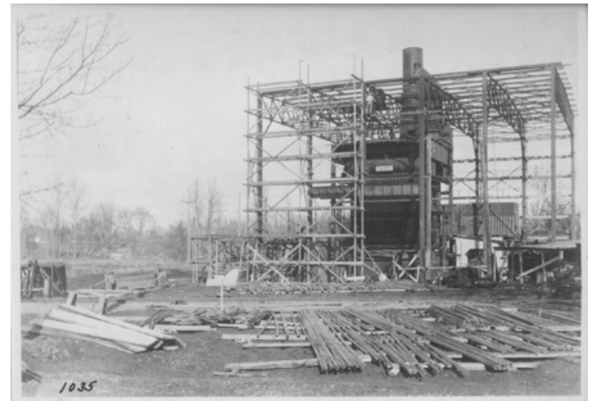

Figure 2-108

Plant from railroad short spur - January 13, 1931

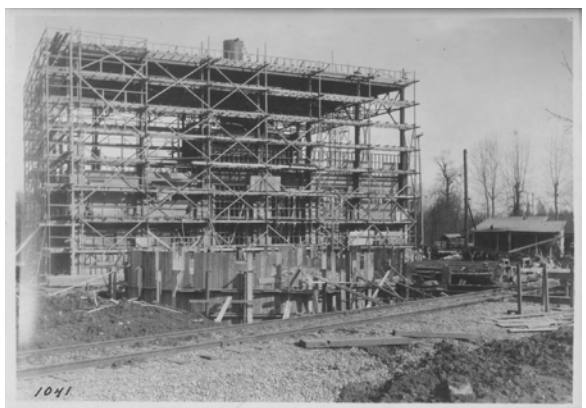

Figure 2-109

View from railroad main line - January 21, 1931

Figure 2-110

March 17, 1931

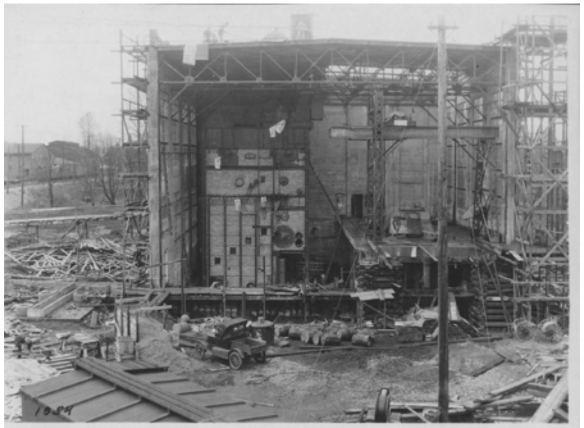

Figure 2-111

March 17, 1931

Figure 2-112

Installing large doors, east end of plant

Figure 2-113

April 7, 1931

Figure 2-114

#1 unit with Mr. Fairbanks, inside plant - 1931

Figure 2-115

#3 unit on 60-ton flat car ready to unload - June 1949

Figure 2-116

#3 unit as it arrived

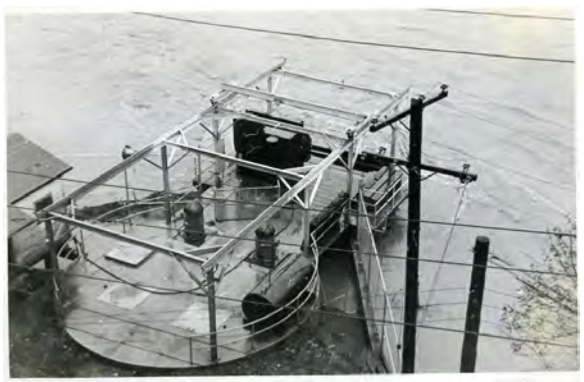

Figure 2-117

Steam Plant intake from roof of steam plant during high water - January 1, 1943

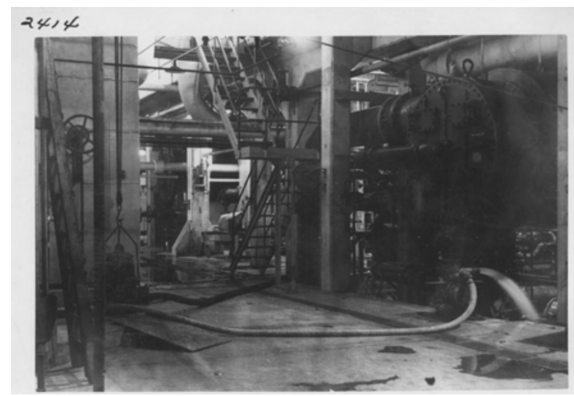

Figure 2-118

Pumping out Steam Plant during flood on January 1, 1943

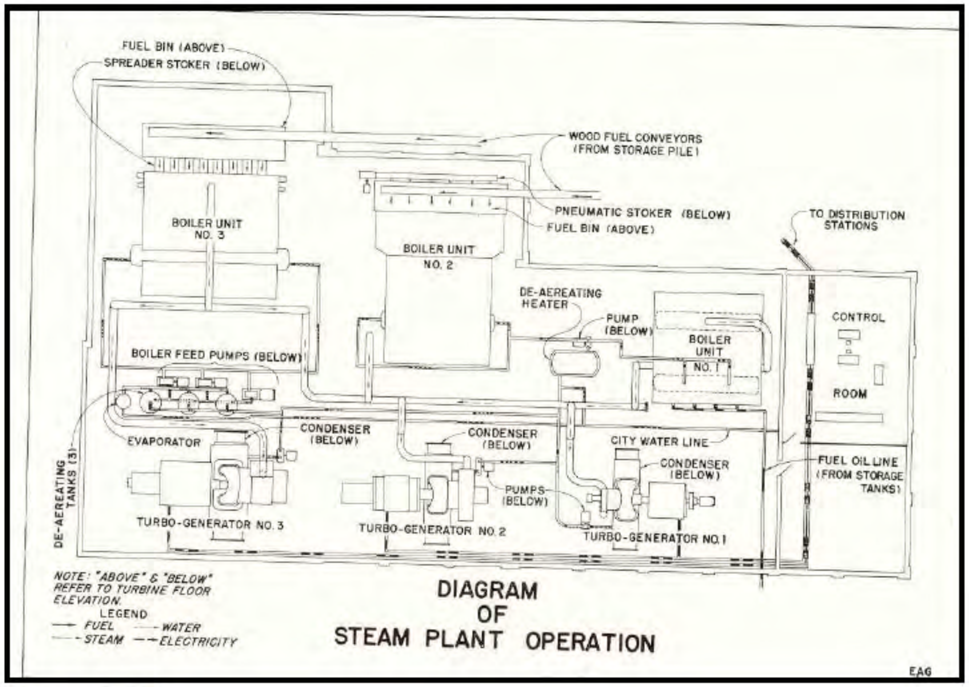

Figure 2-119

Steam Plant operating diagram

Figure 2-120

Steam Plant from Alton Baker Park - 2005 (author's photo)

STEAM PLANT FUEL PILE

Figure 2-121

Old Fuel Shed (north of Substation "A")

Figure 2-122

Fuel pile, about 1946

Figure 2-123

Reed's Fuel truck delivering hog fuel

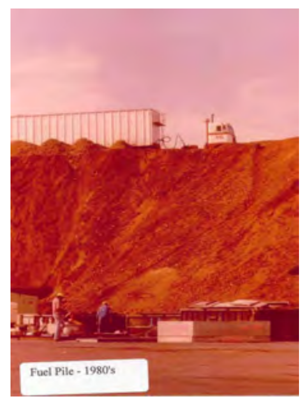

Figure 2-124

Reed's Fuel truck on fuel pile (author's photo)

STEAM PLANT OPERATION

Figure 2-125

George Partridge and fuel pile cat (blade made by shop)

Figure 2-126 Author's Photo

Sunrise over steam plant - February 1980

Figure 2-127

Steam Plant Turbines (red) - 1985

Figure 2-128

Plant in 1960 before roadway was paved

STEAM PLANT WORKERS - 1953

Figure 2-129

Back Row: ***Darwin Spicer, (unknown), (unknown), Floyd McCalister, Claude Bradway, (unknown), (unknown), Pat Mulloy, (unknown).***

Middle Row: ***Ralph Russell, Aldon Smyth, Ray Woods, Jack Bruns, (unknown), (unknown), Wally Kragenbrink, George Foard, Vern Reinmuth.***

Front Row: ***Ed Sorensen, (unknown), Clarence Rutherford, Gordon Oare, Maynard Cotten, Faye Brown, (unknown), Burt Wyckoff, (unknown), Clark "Bill" Lynch.***

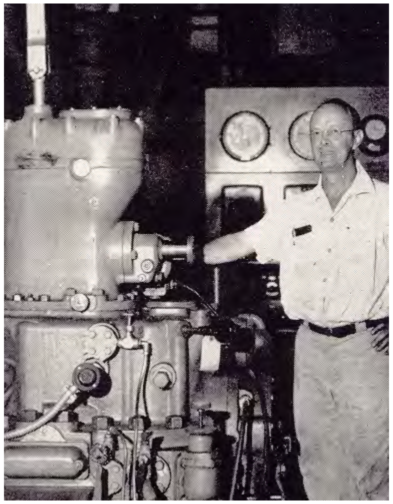

Figure 2-130

Ralph D. Russell, Chief Operator - 1951

Figure 2-131

Maynard Cotten, Superintendent - 1980

Figure 2-132

Virgil Nelson, Plant Mechanic - 1980

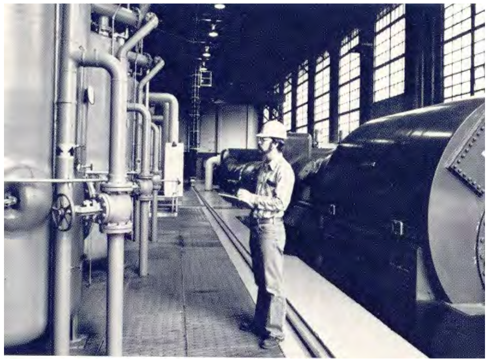

Figure 2-133

Everett Jordan, Operator, taking daily readings - 1979

BOILER TUBE CLEANING

Cleaning the tubes is a job that has to be done occasionally, and also checking the tubes for any that may require replacement. After the work is done, the boiler has to be inspected by a State inspector so it can be passed for operation.

Figure 2-134

Figure 2-135

Above: Virgil Nelson, far left.

Right: Pile of material is from the ash.

Figure 2-136

Figure 2-137

Steam Plant - 2005 (author's photo)

Chapter Three

EWEB's FORMATIVE YEARS (1930 - 1960)

EWEB BOARDS, 1931-1960

On EWEB's *10th anniversary,* the Board members were (in order of their election): Joseph W. McArthur (1914 - 1924); Elmer K. Wheeler (1916 - 1922); J. S. Drew (1917 - 1922); Alex T. Cockerline (1919 - 1923) and Lewis D. Pierce (1921 - 1922). On EWEB's *20th anniversary,* the Board members were: Walter P. Fell (1922 - 1934); Percy W. Brown (1923 - 1940); Marion Veatch (1925 - 1932) and Vern D. Scobert (1929 - 1931). On the 30th anniversary, the Board members were: Orlando John Hollis (1931 - 1941); William R. Robertson (1934 - 1954); Alexander L. Williamson (1936 - 1944); Albert J. Gillette (1941 - 1943); and Paul D. Green (1941 - 1951). The *40th anniversary* Board (Figure 3-3) was made up of William R. Robertson (1934 - 1954); Lionel W. Trommlitz (1944 - 1964); Howard R. Taylor (1945 - 1951); Stanley R. Darling (1949 - 1954); and Oluf A. Houglum (1951 - 1962).

Figure 3-1

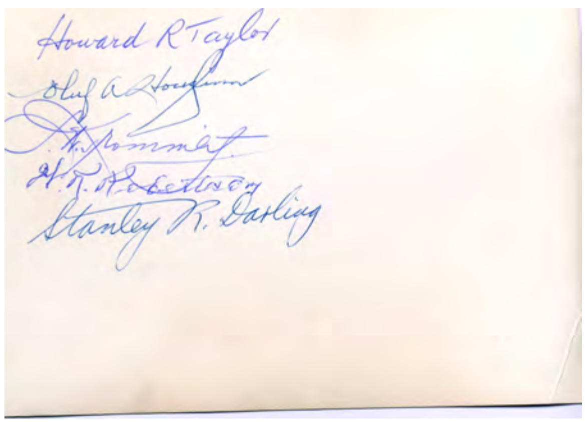

Figure 3-2

Left to Right: Stanley R. Darling, W. R. Robertson, Oluf A. Houglum, Howard R. Taylor & Lionel W. Trommlitz

Figure 3-3 1951

EWEB Board members cutting the 40th birthday cake; Ray Boals, General Manager, on far left.

EWEB's first Board members (as mentioned in Chapter Two, page 18 (Figure 2-3) were all appointed by the City Council. From then on, all members were elected by the people of Eugene unless a vacancy occurred, at which time the Board would appoint a replacement until the next City election. Following is a list of the next 22 Board members, through and including 1951, with their terms of office and occupations.

Joseph W. McArthur	1914 - 1924	First Board member elected
Elmer K. Wheeler	1916 - 1922	Vice President of a Savings and Loan
J. S. Drew	1917 - 1922	Construction Business
Alex T. Cockerline	1919 - 1931	Dry Goods Business
Harry O. Bowen	1919 - 1921	Wholesale Grocer

Lewis D. Pierce	1921 - 1922	Delicatessen Operator
(2nd term)	1931 - 1949	
Walter P. Fell	1922 - 1934	Wholesale Grocer
Bruce D. Brundage	1923 - 1925	Cashier for Bank of Commerce
E. M. Drew	1923 - 1928	Construction Business
Percy W. Brown	1923 - 1940	CPA
Marion Veatch	1925 - 1932	Undertaker
Vern D. Scobert	1929 - 1931	Building Material Business
Orlando John Hollis	1931 - 1941	Dean at the U of O
Cyrus J. Fulton	1933 - 1936	Men's Clothing Business
William R. "Will" Robertson	1934 - 1954	Insurance Business
Alexander L. Williamson	1934 - 1944	Plumbing and Heating Business
Albert J. Gillette	1941 - 1943	Southern Pacific Railroad Agent
Paul D. Green	1941 - 1952	Men's Clothing Business
Lionel W. "Tromm" Trommlitz	1944 - 1964	Radio Station Manager
Howard R. Taylor	1945 - 1954	U of O Psychology Professor
Stanley R. Darling	1949 - 1954	Attorney
Oluf A. Houglum	1951 - 1962	Banker

EWEB AND THE DEPRESSION

In the latter part of 1932, the Board faced many problems incidental to the depression. For example, the "Zion-McPherson Bill," which was a move to transfer the University of Oregon to Corvallis--a threat to the Board's ability to meet its obligations (due to lower revenues). After consultation with the City attorney and other attorneys in the Eugene area, the Board voted to contribute a substantial amount to the "University Defense Fund." The bill was ultimately defeated and Eugene remained the seat of the University of Oregon. Also at this time, the City of Eugene was experiencing difficulty in meeting many of its bond obligations for strictly municipal expenditures. As a cooperative move, the Board voted to give City government a 25% discount on water and electricity used for municipal purposes. This continued until July 1, 1944, after which the Oregon State Legislature passed a law requiring municipally owned electric systems of Oregon to pay a tax of not less than 3% of gross sales of electric energy.

In 1946, Eugene Water Board (EWB) was ranked among the most successful water and electric utilities in the United States from the standpoint of low rates, dependable service, and sound, economical business practices.

CARL A. McCLAIN FILTRATION PLANT (1932 - 1949)

Just after completion of the Steam Plant in 1931, the Water Board authorized construction of a new 12 MGD[1] Water Filtration Plant to be located just west of the Steam Plant, near where the old plant was located at the east end of 8th Avenue. It went into service on August 5, 1932, the same day that EWEB's Superintendent-Secretary, Carl A. McClain, died after suffering a stroke. In his honor, the plant was named the "Carl A. McClain Filtration Plant." Joseph W. McArthur replaced Carl as Superintendent-Secretary until 1946. The plant was of the Rapid-Sand filter type with a capacity of 15,000,000 MGD. The plant stored its alum (aluminum sulfate[2]) and lime[3] in the Steam Plant, where the alum feeder was located. The normal maximum daily output for the plant was 14-15 MGD. On "one day only," in the history of its operation, it reached 16 MGD. This ultimately led to the need for and construction of the present "Hayden Bridge Water Treatment Plant" in 1949.

In 1949, the McClain Plant supervisor was Ernest Hotaling, and the operators were Ben Barnts, Vern England, Clarence Fairbanks and Russ McCanihan. After moving to Hayden Bridge in 1950, the operators were Ed Armstrong, 1st Supervisor; Winston "Win" Berkeley, 2nd Supervisor; Ben Barnts, 3rd Supervisor, Arnold Baden, Vern England, Claire Fairbanks, Andrew "Andy" Journey, Jimmy Sumner, and an operator named "Ordunio" (sp). In 1950, EWEB pumped 3 billion gallons of water.

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[1]MGD = million gallons a day

[2]Used for coagulation

[3]Used for adjusting water pH, as chlorine gives water a low pH

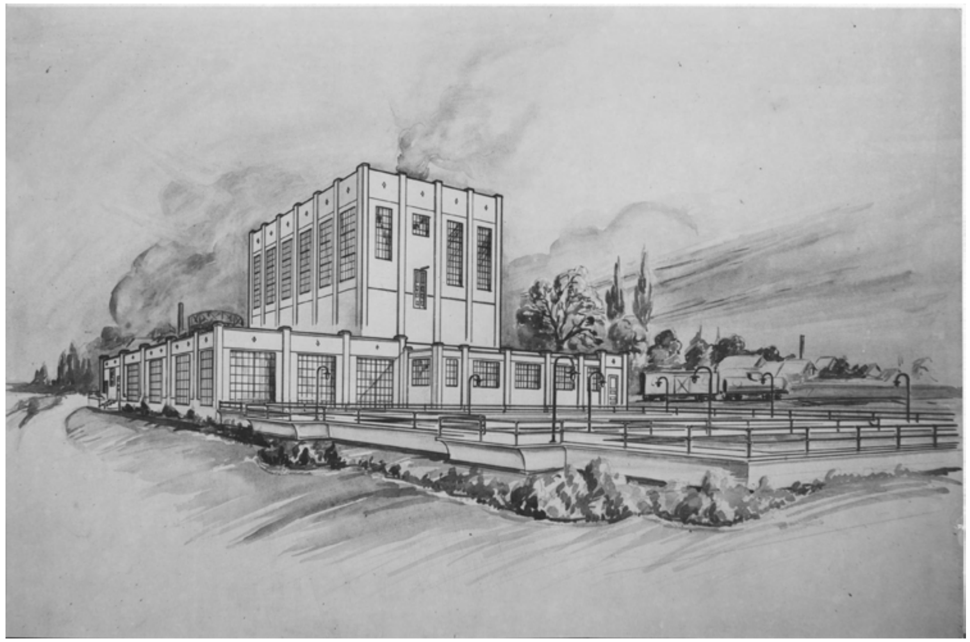


Figure 3-4

Artist sketch of McClain Plant and Steam Plant (from EWEB Files)

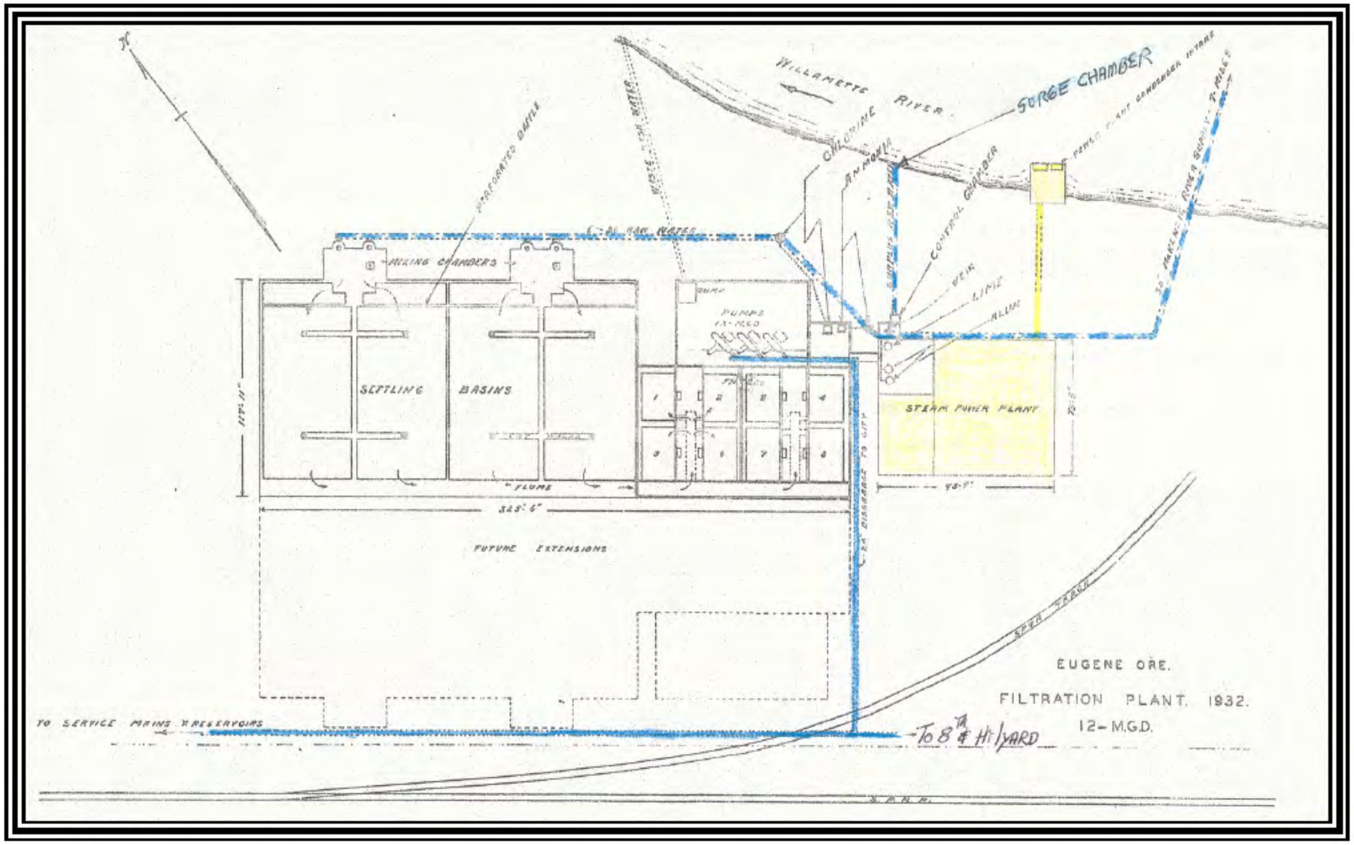


Figure 3-5

Schematic of the Flow Operation of the McClain Plant (from EWEB Files)

McCLAIN PLANT CONSTRUCTION (1931 - 1932)

Figure 3-6

Plant site, view from dyke - Nov 21, 1931

Figure 3-7

Start of Construction - Dec 19, 1931

Figure 3-8

General view of work area - Jan 9, 1932

Figure 3-9

Wall footings poured and pre-cast trough curing under canvas - 1932

Figure 3-10

Figure 3-11

Placing concrete on wall footings -Jan 9, 1932

West mixing chamber ready to pour - Jan 9, 1932

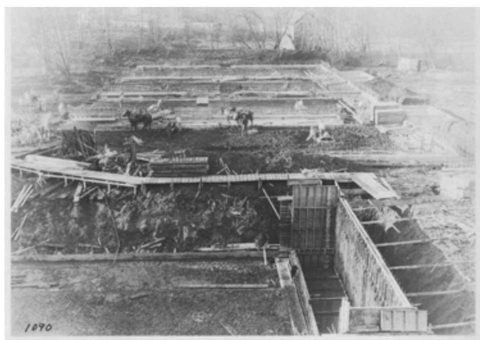


Figure 3-12 Jan 1932

Figure 3-13 Jan 1932

Suction sump poured and clearwell excavated

Clearwell bottom, # 1 basin floor poured

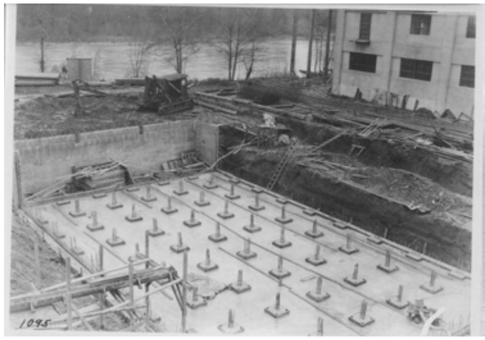


Figure 3-14

Figure 3-15

Clearwell bottom and suction pump storage area ***Forms in clearwell and construction of settling basins***

February 6, 1932

Figure 3-16

Figure 3-17

Showing high water and efforts to hold water ***Mixing chamber showing high water***

March 19, 1932

Figure 3-18

Figure 3-19

Settling basins - 1932

SE corner of filter building showing door down to rifle range

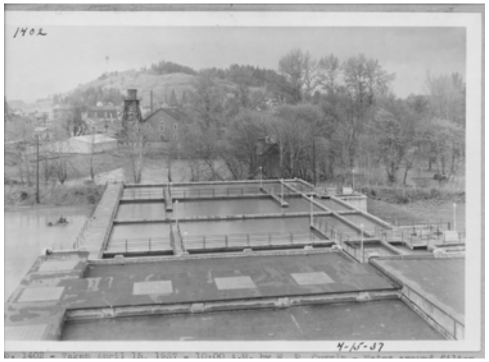


Figure 3-20

Figure 3-21

View of basins and woolen mill in background - Aug 15, 1932

General overview of plant - Aug 27, 1932

Figure 3-22 1937

View from the top of the Steam Plant looking downriver along the McClain Filter Building roof, showing the flood of April 15, 1937. At 10:00 a.m. the river level at the Steam Plant was 417.0 feet. Elevation of the river at flood crest was 417.4 feet at 4:00 p.m.

Figure 3-23

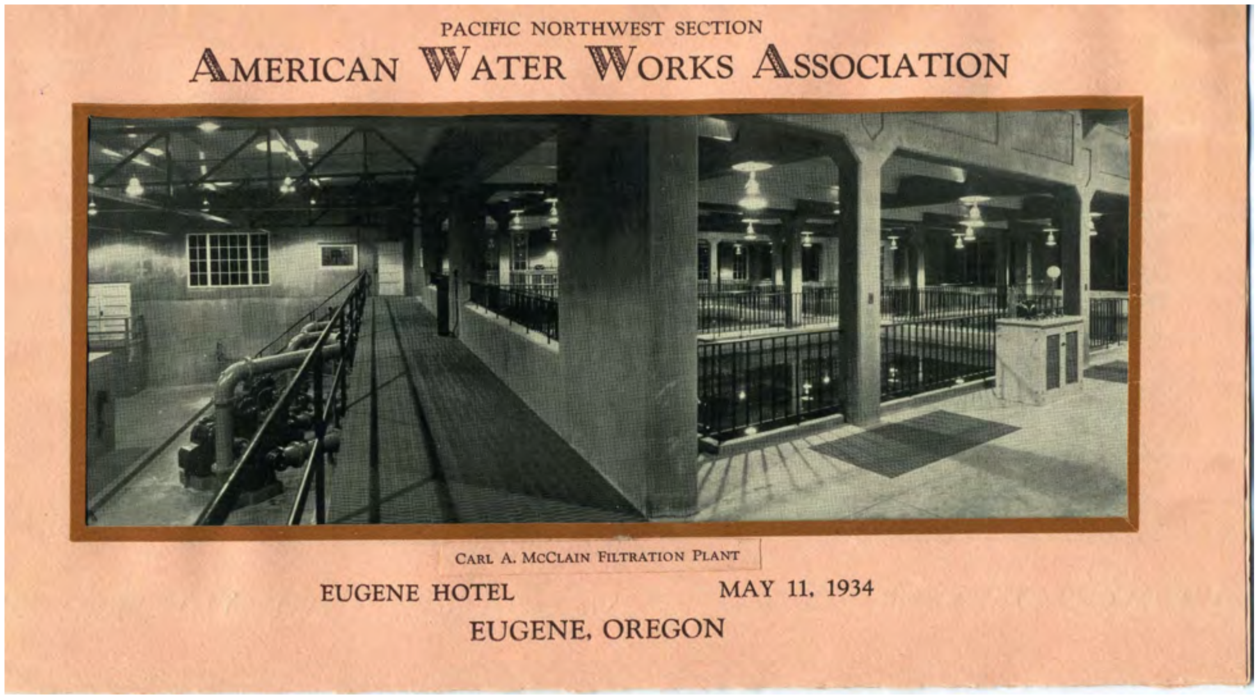
Figure 3-24

McClain Plant looking west - Feb 21, 1949

Basin and filters full of water for testing - June 25, 1932

Figure 3-25

Filter House. Note: Control tables used at Hayden Bridge Plant - 1932



PACIFIC NORTHWEST SECTION

AMERICAN WATER WORKS ASSOCIATION

CARL A. MCCLAIN FILTRATION PLANT

EUGENE HOTEL MAY 11, 1934

EUGENE, OREGON

Figure 3-26

McClain Plant panorama photo taken for AWWA Pacific Northwest Section Conference being held at the Eugene Hotel - May 11, 1934.

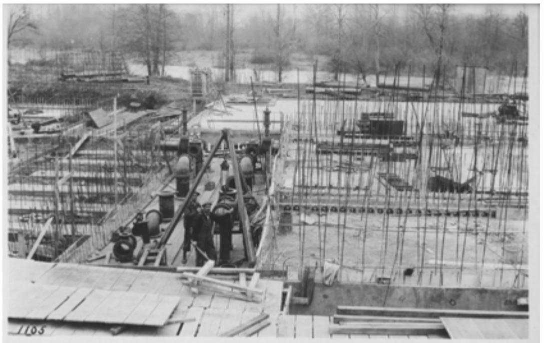


Figure 3-27

From roof of saw shed, showing installation of piping, west galley well and pump room floor - March 3, 1932

Figure 3-28

Pump and filter room - Jan 10, 1953

Figure 3-29

Pump Room - January 10, 1953

McCLAIN PLANT DESTRUCTION - 1963

Filter 3-30

Figure 3-31

June 28, 1963 ***July 9, 1963***

Demolition of part of the McClain Plant (filter building remaining in background) for construction of the new electric transformer shop

THE MOVE FROM CITY HALL

EWEB held a public open house for its first new office building and shop on June 21 and 22, 1952. The new building's lighting system, which consisted of three-phase power so that illumination was steady and constant, but without glare, was designed by EWEB's electrical engineer, Francis Whitney.

Figure 3-32

Figure 3-33

Warehouse upper level under construction - 1951

Construction of vehicle repair shop - 1951

Figure 3-34 1952

Figure 3-35 1952

Figure 3-36

Figure 3-37

Office and Parking Lot

Front of Office Building

Figure 3-38

Figure 3-39

Electric & Water Ops section with managers' cars - 1960s

EWEB's First Security Gate - Feb. 1971

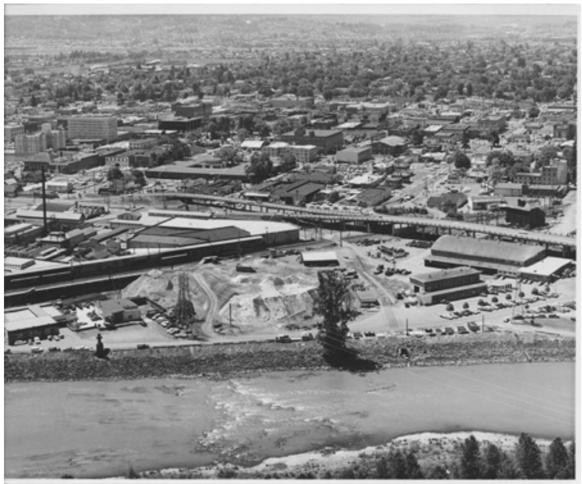


Figure 3-40

Figure 3-41

Aerial View of EWEB

EWEB Office at Christmastime with lights

Figure 3-42

Figure 3-43

Operations Office Building in 2005 (author's photos)

BEAVER MARSH AND CARMEN-SMITH

In 1950, with electric load growing, the Board started examining the possibility of building yet another hydro plant on the upper McKenzie River. The Board made a decision that Beaver Marsh would be the best location (this site was above the current Carmen-Smith location) for a new generating facility. Studies had narrowed the field to two locations, one at Carmen Creek and the other at Beaver Marsh. Beaver Marsh was proposed to produce 30 megawatts of electricity.

Figure 3-44

Beaver Marsh Project proposed site - Dean Hodges and Ford Northrop
June 15, 1955

The Beaver Marsh proposal met with voter failure in March 1956, and the Board decided not to submit the proposal to voters again. The Board then attempted to find some other means of developing hydroelectric power on the upper McKenzie. Byron Price felt that other alternatives should be investigated, and in September 1957 he reported that there would be no apparent objection to the building of the Carmen-Smith project. On September 22, 1958 the Board received word that the State Water Resources Board and the State Engineer had both approved the Carmen-Smith proposal, and on January 8, 1959 the FPC[4] granted EWEB a license to construct the project. The bond issue for the project was approved by Eugene voters in the May 11, 1959 election.

In 1960, the planning, engineering, financing and contracting for the construction of the Carmen-Smith hydroelectric project took place. The project was expected to produce 90,000 kilowatts (KW) of new power, developing approximately 230 million kilowatt hours of energy annually. Construction on the project began in the summer of 1960. Preliminary work and construction work on all phases of the project were under budget as scheduled at the end of the year. One of the more unusual features of the Carmen-Smith hydroelectric project (Figures 3-58 and 3-59) was a facility completed in 1960 which provided for the protection and propagation of Chinook salmon. This was an artificial spawning channel constructed in a pattern similar to projects operating successfully in Canada.

Carmen Diversion Dam and Reservoir are located one-quarter mile downstream from Koosah Falls and about 71 miles East of Eugene. The Carmen Diversion Reservoir is filled by the McKenzie River flowing out of Clear Lake. Capacity of the reservoir covers 30 acres at a depth of 25 feet. Its elevation above sea level reaches 2,625 feet. The reservoir then diverts the water flow to Smith Reservoir through a circular tunnel which is 11,381 feet long with a concrete-lined diameter of 9.5 feet. Smith River Dam and Reservoir are the storage centers for the Carmen Power Plant. Smith Reservoir covers 170 acres with a total water storage capability of 15,050 acre feet. Smith Reservoir then delivers the water in a 7,325-foot-long power tunnel and pipe-like penstock[5] to the Carmen Power Plant. The horseshoe-shaped, curved invert is concrete-lined and 13 feet, 10 inches in diameter. The underground penstock is steel-lined, 1,160 feet long and 12 foot in diameter. The entire penstock is embedded in concrete. An underground surge chamber which is 31 feet in diameter rises 260 feet above the penstock. The above-ground portion is 40 feet in diameter.

The Trail Bridge Re-Regulating Reservoir (Figure 3-79) covers 73.4 acres when full. The usable storage is 2,263 acre feet. The Trail Bridge Power Plant contributes 10,000 kilowatts to the Carmen-Smith Project. The Carmen Power Plant, combined with the smaller single generator at Trail Bridge Power Plant produces a maximum power of 120,000 KW. This power is transmitted over a 115 kv, 19-mile line from Carmen Substation to the Cougar Dam area. Carmen-Smith's power is "wheeled" 42 miles to the EWEB system over a line that was constructed by the Bonneville Power Administration.

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[4]Federal Power Commission

[5]A closed conduit of pipe for conducting water, as to a water wheel.

EXCERPTS FROM BYRON TAYLOR DIARIES (1954 - 1968):

Regarding EWEB's Upper McKenzie Hydro Projects:


Figure 3-45

Byron Taylor
(Civil Engineer)


Figure 3-46

Ray Boals
(Superintendent/Secretary)


Figure 3-47

Byron Price
(Consultant)

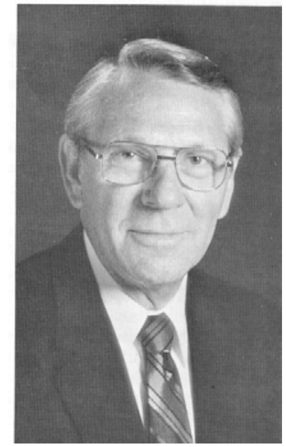
Figure 3-48

Robert H. Short
(Assistant to Boals)

This author was very fortunate to be able to obtain access to "Byron Taylor's Diaries," courtesy of Dale Hagey, retired EWEB biologist. Following is a chronological summary of Byron's notes regarding EWEB's interest and proposals relating to Cougar Reservoir, Beaver Marsh and Carmen-Smith. Apparently this interest in EWEB's involvement started around 1951or earlier. All words in *italics* are as written by Byron Taylor (Figure 3-45). Those in brackets and non-italics are my notes, plus all pictures are mine. Taylor's diaries started on Monday, January 4, 1954.

1954

January 4: (**Mon***) Talked to Price* [Figure 3-47] *& Short* [Robert H. Short (Figure 3-48), Asst. to Boals] *on a publication of some sort to tell EWEB power story to all interested parties. We rather favor a brief general pamphlet or "brochure" which might be used for general distribution. This to be basic, with supplement for Congress, et al. And a different supplement for financing.*

January 5: (**Tues**) *Worked up an outline of jobs to be done in writing various applications, Priority:*

1- Cougar application or proposal to Congress
2- Application to F.P.C. [Federal Power Commission] *for permit on Cougar.*
3- Application to F.P.C. for license on Beaver [Beaver Marsh Project].
4- Bond Prospective.

January 6: (**Wed**) *Confer with Boals* [Figure 3-46], *Price & Short on various applications to be written and on pamphlet on Cougar. Boals of opinion that a general information pamphlet prepared by EWEB staff will serve as a bond prospective. Price, Short & I differ. Got his* [Boals] *OK to go ahead with draft.*

January 11: (**Mon**) *At Board meeting we presented story on diesel being more expensive than steam and steam more expensive than either Beaver or Cougar. Also that Hydro can be financed. Also results of our discussion with Army* [Corps of Army Engineers] *& their figures and operating plan on Cougar* [Figure 3-49]. *Board voted to ask Congress for participation on that basis. Also authorized travel for as many persons as necessary to present it to Congress.*

Figure 3-49 2010

Cougar Power House (author's photo)

January 20: (**Wed**) *Price wrote draft of Cougar operating agreement last night. At 4:00 PM meeting, presented Cougar story to C of C* [Chamber of Commerce] *committees. They are for it & will get resolution from the Directors.*

January 29: (**Fri**) *Saw Ellsworth briefly, told him to talk with Parkman & Condon (he had wanted to be in on it, but OK). Mr & Mrs Truman chose in his office. Not ready to meet & talk to rest of Ore. Delegation. No hearing on Priest Rapids* (Figure 3-50) *yet for few days. C of E, need Congressional authority to build Cougar high enough for power.*

Figure 3-50

Priest Rapids Dam (Photo from Wikipedia)

February 2: (**Tues**) *Price to Hell's Canyon leaving Boals and I to FPC Mr R. W. Cushing on details of application for license on Beaver. Got little more information than I already knew. Our drawings & data are probably adequate, probably better apply for Carmen & Smith at same time. They would not extend our permit.*

February 18: (**Thur**) *Wrote letter to S. M. Smith & Baldwin on Cougar turbines, giving more data - economical penstock size: curve showing regulated flow duration and head duration curve.*

March 8: (**Mon**) *Board meeting: On upper river, at mention of Carmen-Smith, Dr. Fogles & Darling both blew up and gave us HELL for talking about it, not authorized & against their wishes. Stick to Beaver & Cougar only. We have not presented the story to them properly and made no attempt to do so tonight.*

April 6: (**Tues**) *Price & Boals talked to Ellsworth, he says everything is fine for us on Cougar. Will get schedule for hearing soon. Does not expect big fight. In evening Price, Scofield & I to Walterville Grange and gave them the full story of our plans for power. They want Cougar and do not seem opposed to Beaver.*

May 5: (**Wed**) *Boals asked that I prepare to bring the Board up to date on changes to Beaver Marsh costs and Carmen possibilities. Have letter from Regional Office of Forest Service asking if Beaver prices aren't high and if Cougar won't take care of us for years. It is a chance to get our story to them.*

May10: (**Mon**) *Price has decided to resign as of July 1st.*

May 19: (**Wed**) *House* [Congress] *opened at noon. Took up Priest Rapids at 12:30 and passed by 1:00. Then took up Cougar and passed at 1:30. To talk to Parkman about what next. Decided might as well face opposition in Senate & get it over. Condon will try for quick hearing.*

May 20: (**Thur**) *In Parkman office at 8:30. He added very little to speech written by Short & edited by Price & I. At 9:30 Senate Committee took up Priest Rapids. Heard testimony but took no action. Senator Morse wants grass roots hearings. Price summarized briefly for record. I spoke on one point. Alleged high price of Cougar power. Ivan Oakes told Morse & the record that in his travels he had found no opposition. Morse didn't ask questions & wouldn't talk. Mad. Wants to drag his feet and postpone action, thus defeating it. Hearing recessed, not closed. Morse wants us to go home. Parkman told us to wait around.*

May 26: (**Wed**) *Morse is in West all of this week speaking for moneys and politicking. He wrote long letter asking that they do no action in his absence. Expects that on Friday they will set a hearing for late next week. Parkman advises us to stay. Price told A. Robt. Smith the story on Morse & his promise of questions but failure to produce: lack of information after having House Comm. Report a week, etc. Story on Price's BPA job broke today. Leaked out before it was supposed to.*

May 27: (**Thur**) *Nothing much doing. Price & Short visited a Col. at Pentagon & then to Interior & BPA. Price's tentative appointment definitely announced today.*

June 7: (**Mon**) *Mr. Davis of B.P.R. in for maps & info on upper part of Clear Lake Road. They think that they can go up Kink Creek to good advantage. Will not try to run the main road* [Figure 3-51] *past the falls, but run side spur. Junction with Santiam still not settled. Linn Co. People apparently want it to turn West along North side of Fish lake.*

Figure 3-51

August 14: **(Sat*)*** *measured river at Leaburg. Read gage & made measurements came out 526 cfs*[6] *subject to checking the computations. This checks our curve very closely.*

Sept 30: **(Thur)** *Have permits from State Eng'r for Walterville Pumped Storage* [Figure 2-36] *and additional water for Walterville, including new schedule of flows to be left in the river.*

1955

Jan 12: **(Wed)** *Byron Price & Ray Kell here for luncheon meeting with Board on Cougar. Board meeting lasted until 2:00 and session with rest of us until quitting time. Board Ok'd resubmitting a bill for Cougar partnership. Will have administration backing. It was suggested that we & P.P.&L. go together on a joint bill for Cougar and Green Peter. At least work with them. Should get support of NWPPA* [Northwest Public Power Association] *& probably NPPA* [National Public Power Association].

Jan 24: **(Mon)** *Board OK partnership policy to include private Company but we want Cougar alone. Feel that we better stay out of John Day* [Figure 3-52].

Figure 3-52

John Day Dam (Photo by Wikipedia)

[6]cps stands for cubic feet per second. To convert to gpm (gallons per minute), multiply cfs x 7.48 (number of gallons in each cubic foot), which gives you 3935 gps, then multiply by 60 to change seconds to minutes, and you get 236,069 gpm.

Mar 31: **(Thur)** *Bob Short has taken a job with Portland General Elect. At $100 month more money & what appears to be better prospects. To work on John Day partnership and after that on their Public Relations staff.*

Apr 18: **(Mon)** *Board meeting at noon. Park at dam (Leaburg) will be "Water Board" Park* [Figure 8-32].

Apr 21: **(Thur)** *John Day bill introduced. News release said EWEB was to be a partner along with PGE, PP&L, WWP.*

Jun 13: **(Mon)** *Board meeting in evening at which Chas. O. Porter* [Eugene Attorney] *appeared against Cougar.*

July 22: **(Fri)** *To BPA at 2:00, conference with C of E, BPA, REA & EWEB on construction power to & transmission out of both Cougar & Hills Creek. No problem on the latter.*

Army *- More planning on Cougar before construction first contract on road construction which would not need power. First power at site in summer or fall of 56. Max. Use not over 3500 KW. 3-1/2 year schedule on dam.*
REA *- Need supply near Rainbow soon as possible. If we build they will buy off us at 69 KV, transformer down & retail to contractor.*
BPA *- Don't like to wheel Federal Power over private lines due to budget troubles. They are not in shape to start construction for some time & would have trouble building from Leaburg to Rainbow by next Fall. Are asking for money in budget to do it.*
EWEB *Consider partnership still live issue. Want line by there to Beaver. We want to build all the line & wheel Cougar if it is Federal. Looks like we would get fixed charges on line to Cougar from somebody during construction.*

Aug 25: ***(Thur)*** *Mrs & I to Sisters in personal car to Hwy meeting. I represented Eugene C of C, called by Springfield Chamber of Commerce. Guy Wright presided. Linn County Court & Eng'r there. Others: Albany, Sisters, Bend, Redmond, McKenzie people. After Leide spoke on Clear Lake Road* [Figure 3-51]. *All agreed to ask State Hwy Dept. to put it on their secondary system. All will support. Judge Arnold said to go ahead and cut timber that was ready in lower part. All was harmonious.*

Sept 8: ***(Thur)*** *Stanley, State Engineer called telling me that he had signed permission for Beaver & was putting it in the mail this morning. Some stipulations which all sound OK except that he limits the maximum draw down of Clear Lake to 8 ft. Thinks that 18 ft. will damage the submerged trees beyond the value of the power gained.*

Sept 21: ***(Wed)*** *To Clear lake with Boals, Beistel, Gorbel & Bob Frazier of Register Guard. He & Baker spent considerable time here yesterday getting data on Beaver. Today Frazier hunted up "Ghost Forest". We sounded for submergence. Found 40 trees. Many are only 2-3 ft* [Figure 10-10] *below present water surface of 3017.1. Upper part of Lake is clear & cold readily see bottom at 42' depth. Lower part is murky, getting thicker toward lower end. Near fishing raft could scarcely see bottom at 30'. Thinks "Forest" is not the right word to describe the trees. But "Ghost" may be because they are so hard to find.*

Nov 30: ***(Wed)****Talked alone to BPA on us wheeling Cougar if all Federal. They agree on no duplication of facilities. Compare costs of us wheeling or they doing it. Will get figures within a week and make decision. They very agreeable but decision must be based on figures showing economy to Gov't.*

Dec3: ***(Sat)*** *Hodges report on line inspection around Belknap last Wed. With State Highway maintenance men & Forest Service. Forest Service wants line back from Hwy. Hwy people want it on the R/W or back to leave 500' undisturbed.*

Dec 18: ***(Sun)*** *Mrs. And I to Portland in personal car in PM.*
Cold fog in Eugene
Frost and fog at Harrisburg
Ice on trees at Albany
Snow on shoulder of Hwy at Salem
Solid snow cover with ice topping and freezing rain in Portland by 8:00 PM

1956

Feb 29: ***(Wed)*** *Talked to Line Crews on Beaver Marsh. They met at 4:00 and instead of leaving at 4:30 as usual they stayed until 5:30. Much interest. We haven't informed our employees enough. In evening at home wrote a new outline of presentation for Beaver.*

Mar 5: ***(Mon)*** *Board meeting, discussed Beaver Marsh election. I told them indications were that we stood a good chance of losing it.*

Mar 12: ***(Mon)*** *Board meeting at noon. Approved bills & went to Eugene Hotel for lunch with C of C & City leaders on Beaver. They are finally getting steamed up a little on it. In evening had meeting for employees & wives. Told them of Beaver. Furnished cake, ice cream & coffee.*

Mar 25: **(Sun)** *Letter from Boals with check. Also saying Register Guard is coming out against us. Called Bob Short re: Register guard coming out against us. Very surprised. Thinks best chance to modify it is by business men talking to Baker.*

Mar 27: **(Tues)** *Election day. Called Margaret* [wife] *before polls closed. Heavy election. Much waiting. Looks bad for us. She called back at 5:00 AM. We have lost. She hadn't been able to get hold of Boals all evening.*

Mar 28: **(Wed)** *Finally called Beistel at 11:30 (EST) to get election results. They are 22++ against & 18++ for. Everyone very sympathetic on election. McKee says throw it back to them at earliest possible date. Short says to hit Cougar hard using those who spoke for it in place of Beaver. Frank Warren & I caught 11:30 PM UAL* [United Air Lines] *out for home. Slept pretty well. Told Warren I sometimes thought of making change. Who to talk to in PGE ? He named Walsh. They have much engineering to do. Can't get younger men. With my experience I should be valuable.*

Apr 4: **(Wed)** *Letter to Stanley explaining that Beaver is held in abeyance, not dead.*

Nov 23: **(Fri)** *Price is very apt to be next Sup't of EWEB if agreement can be reached on money.*

Dec2: **(Sun)** *At home all day. Read, slept & made 2nd draft of letter to Board applying for Sup't job if & when open.*

Dec 28: **(Fri)** *Saw Price. Talked job - he brought it up. Board asked him to come down for interview. He thought it went pretty well but they apparently balk at his request for $15,000, at least until Houglum is back. They called him recently and told him their present thinking was to keep Boals. He told them that postponing decision only made it worse. He says he told them he wants me as 2nd man, and nobody else. Told him I was looking for another job. He doesn't want to see me leave.*

1957

Jan 22: **(Tues)** *Trommlitz asked me up to talk. Swore me to secrecy. Price will replace Boals on July 1st. Which both know. Don't want an announcement yet.*

Jan 30: **(Wed)** *Word via Register-Guard that FPC extended Beaver Marsh license until July 1958.*

Mar 10: ***(Sun)*** *Up early and drove to The Dalles to watch the first stage of filling reservoir back of the dam. Beautiful day. From noon to 2:30 watched Celilo Falls turn into a riffle.*

Apr 25: ***(Thur)*** *Saw Price, He does not appear to be in favor of pushing Beaver Marsh. Apparently doesn't want to get into arguments. Suggests trading it for Carmen-Smith. Still thinks it possible to buy Cougar at site, especially if Congress does not appropriate for line from Leaburg to Blue River this session.*

Jul 31: ***(Wed)*** *Discussion with CH_2M results of power studies. Beaver Marsh doesn't look so good as before, or in comparison with BPA. Carmen cost is up very materially from previous estimates: around 17 million, but cost per KWH is better than Beaver. Both have good-\$15- cost per KW year. Beaver energy about 5 mills, Carmen about 4 mills. Price wants some further & better figures quick on Beaver and Carmen, with & without Priest Rapids & Wanapum* [Figure 3-53]. *He feels that a decision must be made within the next month or so as to Beaver. He keeps talking about trading it off for Carmen.*

Figure 3-53

Wanapum Dam (photo from Wikipedia)

Aug 9: ***(Fri)*** *Price, Martin & I to Clear Lake starting @ 7:00A. Met Ted Watson of State H_2O Board. Looked along Beaver & Carmen sites. Went into Beaver plant site; Beaver spillways & Carmen tunnel intake site. Drove up road clearing to opposite Carmen plant site. Went into mouth of Smith River. Price & Watson wanted to see the canyon from Beaver Marsh to lower falls* [Tamolitch] *I told them it was an awfully rough trip but it took McCornack to talk them out of the full trip. Instead we went into the canyon where our transmission survey came up about ½ mile by road from point over the falls, and came out at the falls. They had had enough for now. 300 cfs at Clear Lake. McCornack measured today about 490 out of Beaver Marsh. River bed is dry below lookout point above lower falls. Bed is dry for some distance below, but small flow picks up above mouth of West channel. West channel is running a good stream. Estimated falls to have about 100 cfs.*

Oct 2: ***(Wed)*** *Had meeting right after lunch on plans for film of upper McKenzie. Price has hired a Mr. Gross* [Harry] *to take ground movies, edit aerials & make a film. Use some animated charts for load growth.*

Oct 8: ***(Tues)*** *Hayes & Walters here most of the day on Carmen report. Looks OK as originally sketched. Also looks OK with a 100' dam below Browder Creek, would give 2,000 plus or minus acre feet pondage. Dam below Bunchgrass Creek* [Figure 3-54] *on Smith River would be good but expensive. 280' dam, storage 7 to 12,000 acre feet. Price doesn't seem to want anything on Smith River, and didn't even want to talk about 280' dam* [Figure 3-66]*. I requested that it be looked at more considering benefits from Leaburg, Walterville & Priest Rapids. Price OK establishing recorder on Smith & at outlet of Beaver Marsh. Also better elevations & rough topog for reservoir on Smith.*

Dec 19: ***(Thur)*** *Could amend Beaver license to build Carmen, but better not. Have enough info to apply for licenses on Carmen, except need to make a definite location for Smith storage dam and get geologists statement that dam can be built. Want to know amount of storage and its effect on power & energy. Can't expect to get a license before Sept. +/- Commission might not hold a hearing, but also might, depending on opposition. Probably better try to get an extension for another six months on Beaver. Could actually start construction at Beaver Marsh under Beaver license for use on Carmen project. Economical atomic power doesn't seem in the picture before 1975 or so. Hydro never obsolete.*

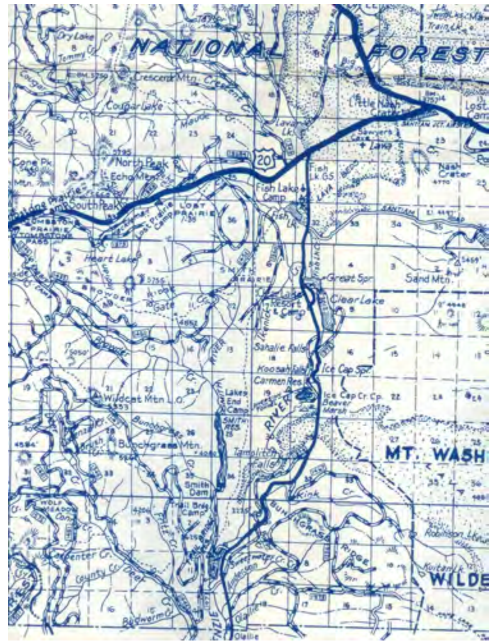

Figure 3-54

Willamette National Forest - 1958

Jan 17: **(Fri)** [in Washington DC] *Saw Gotchell & Hayden of FPC. Told story on Carmen OK. In application for license make offer to rescind or give up Beaver. Probably no hearings. Get license by July. Saw Forley, Colpitts & Sunderland. OK to apply directly for license. Give an actual location for the dam on Smith River, then OK to change it a few hundred feet after exploration.*

Mar 31: **(Mon)** *Discussion of Game Com. Announcement that they opposed Carmen project, as reported in paper [Oregonian]. Looked up their letter of July 1951. In it they did not object to dam near mouth of Smith River.*

1959

Jan 8: **(Thur)** *Register Guard tells us Carmen license granted. Later Clarence Davis called saying both applications granted (return Beaver license).*

Apr 29: **(Wed)** *Carmen election vote 3012 for, 1004 against.*

Apr 30: **(Thur)** *Both engineers groups have arrived independently at conclusion that dam across the lava between Beaver Marsh & Lower Falls [Carmen Diversion] will cost less and develop more than our project as licensed. Called Price on another matter and he brought this dam up. Says absolutely no holes in that area at least until first of June when he returns. OK we will go ahead with Smith River access and drilling.*

Jun 23: **(Tues)** *Went to Middle Falls [Koosah] Bruchart (Forest Service) thinks OK to raise Carmen Diversion pool level so long as it can't be seen from the falls area. Too late to try to pin down on elevation.*

Jun 25: **(Thur)** *Went to Koosah Falls & located old traverse on right bank & from it roughly located the pile of drift that can be seen from the falls. From this it appears that pool elevation of 2635 is amply safe from being seen from falls & that 2640 would probably be OK. Tried fishing a little but no good.*

Aug 19: **(Wed)** *Price & I up river in afternoon. Looked at elevations of river below middle falls. To see what pool elevations could be tolerated. Elev. 2640 is well out of site of any point around the falls and developed trails. Price says it is OK and he will argue for it.*

Aug 31: **(Mon)** *Patrick called, very discouraged about job. Every hole is worse than the last. Has given up hopes of big storage in Beaver [Diversion]. Now thinking of minimum pond there for diversion only, along with Smith Dam at Bunchgrass Creek. May be able to build it higher because of value of head. He was happy to know that I was thinking along same lines. Told price of it. He OK elimination of recreation pond there.*

Sep 9: **(Wed)** *Left early & back late. Spent morning at Carmen diversion looking at soil & for a dam site. Upstream site proposed by Bechtel is no good account previous gravel on top. Now thinking of a low dam level intake & dike of minimum height running across the middle of the marsh to pick up Ice Cap water [Figure 3-55]. No point in building it high because economics don't allow Smith Dam to go high.*

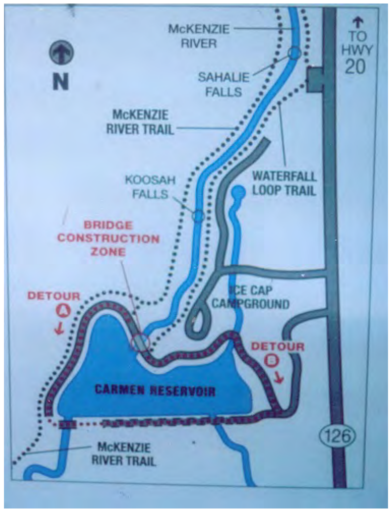

Figure 3-55 2010

Sep 16: ***(Wed)*** *Patrick provided the following estimate info by phone:*

Smith normal full pool Elev.	*2600'*
Smith normal drawdown to Elev.	*2570' or so*
Smith may drawdown to Elev.	*2525' = 9,000 acre feet*
Carmen diversion about Elev.	*2615'*

Carmen Turbine 100% gate 56,000 Hp @ 359' net head
Carmen Generator 42,100 KVA 95 PF
Carmen Transformer 2- 48,500 KVA + 1 - 12,100 KVA FOA
Trail Bridge Gen. 10,500 KVA 95PF
If one Carmen unit postponed, the first should be 44,200 KVA 95 PF
Max. Gross head 520'
Normal operating net head 445'
Best efficiency @ 445' - 450'

1960

Apr 18: ***(Mon)*** *OK to put transmission anywhere we want but recommend outside of 75' line account permit from OSHD some day might require us to move. Sounds like we better accept Bechtel recommend to line diversion tunnel. Watters will complete fish channel plans. We will then offer them as final.*

1961

Feb 10: ***(Fri)*** *Heavy rain continued. This morning the 24 hour fall was 4.2" at Carmen, 4.4" at Leaburg and 3+" at Steam Plant. Went to Leaburg. River came up to about 40,000 cfs and hung there all day. Heavy rain continued, no particular trouble at dam, opened sluice gate and flushed it. River finally started down very slowly at about 6:30 or 7:00.*

Jun 23: ***(Fri)*** *Rec'd from fish com signed copies of memos of understanding & contract on Carmen Spawning Channel [Figure 3-56, 3-58, & 3-59]. Federal people not included. Called Marriage & Rubifson. They report Federal are happy with it but don't want to sign. Will give a letter, Calkins approved contract.*

Figure 3-56 2010

Carmen Spawning Channel (author's photo)

Oct 17: ***(Tues)*** *To Carmen. Met Rulifson and 18 fisheries men at the Spawning Channel. Spent most of the day with them there and showing them the job. They seem to think well of the channel. Were pleased with the trip. Some mentioned how we were leading & setting example in cooperation.*

1962

Feb 28: ***(Wed)*** *Miller Evans called PP&L and sold Priest Rapids as of tomorrow morning instead of next fall as planned. This saves us about $17,000 per month. This was the 10 year transfer of Priest Rapids that was previously agreed to.*

Apr 13: ***(Fri)*** *For Carmen to Trail Bridge transmission decided to use concrete poles except for the angle dead end on Trail Bridge butte.*

Aug 15: *(Wed) Trail bridge in morning had both core & shell covering the whole bottom except seal near cofferdam*[7] *and they were cleaning on it. Not placing material because of some wet stuff last night. Were placing blanket at West end along old Smith. Hauling core from Deer Creek (Figure 3-56A) loading with shovel.*

Figure 3-56A 2010

Deer Creek Quarry (author's photo)

Jun 4: ***(Mon)*** *At office for an hour then to Carmen. Salmon - 50,000 counted out and still lots more.*

1963

Feb 19: ***(Tues)*** *At U. S. C of E with BPA to discuss Cougar effects on Leaburg & Walterville, both during filling and normal operation. Filling will start in Sept this year, will last from 2 to 4 months. BPA will not penalize us for capacity, but*

[7]A water-tight enclosure from which the water is pumped.

don't want to release energy. Corp. Gave us rule curve & info on operation. We will talk further with BPA. Normally Cougar will neither store nor release in January so no change. Release in Sept to Nov will increase energy, but we may not be able to use it without coordination. May or may not help in Dec depending on conditions on Columbia.

Sep 9 ***(Mon)*** *Carmen dedication ceremony [Figure 3-75] today. Had about 1800 visitors. Program went very well. Not so hot today (98^0 yesterday). Rain, wind & lightning on road home. Some damage from lightning in town. Had a strike near Sub 'L'.*

1964

Jan 9: ***(Tues)*** *Informal Board meeting in afternoon. Mention of need for Nuclear plant about 1975 in addition. Talked of 10% of Canadian entitlement.*

Jan 16: ***(Thur)*** *At about 7:30 AM Gadsen called saying Carmen Powerhouse was flooded. Got to office & find all communications, controls, etc. out. Hoor (sp) called in on mobile radio confirming that water was running out of door. Anderson closing intake. Tunnel drained out and water went down so we got in to operating floor in late afternoon. Windows broken from water. It stood almost to the top of metal-clad cabinets in control room [Figure 3-69]. In turbine room almost to the generator lower guide spider. Oil floated out & covered everything. Valve pit not draining out very well. Getting pumps organized. Poindexter fixed temporary power from Trail Bridge.*

Jan 17: ***(Fri)*** *Storming, snow at job. Poindexter got pumps going last night. Water going down. Source is through bearing for #2 butterfly trunnion which has come out. Got divers to open drains, etc., cut butterfly controls loose and opened it with air. Drain penstock thru #1 machine OK. Find the trunnion shaft was pushed out by water pressure that sheared at 2" pin. Gate moved about 5" and jammed there. Inspected tunnel OK.*

Jan 18: ***(Sat)*** *G.E. will care for their equipment on time and material basis, and anything else we assign to them. Allis-Chalmers will look after their own, maybe with our labor help. Westinghouse will care for regulators. Everything is a hurry to protect it and to determine schedule.*

Jan 19: ***(Sun)*** *Snowed at Carmen YET. Gabrielson can't keep up. 15" more last night and about 4' total. Got Partridge lined out to get equipment & help on the way.*

Jan 25: ***(Sat)*** *Allis-Chalmers top representative arrived. Big meeting in office with them, their insurance (Aetna) & lawyer, our insurance adjuster, G.E. G.E. gave estimate of $85,000 to repair or replace their equipment plus about $11,000 for other electrical repairs. Complete for manual operation by Feb 23. Remote operation a month later. Allis indicated that they would repair own equipment for no charge. Insurance men would not commit anything.*

Feb 10: ***(Mon)*** *Back to WISCO [Willamette Iron & Steel Co. Portland] and saw valve body go into annealing oven. Brung up temp at 80^o/hr, held at 1150^o for 5 hours (1 hr per inch of thickness) and cool at 80^o/hr. Session in room afterwards on it. Insurance men seem satisfied so far.*

Dec 22: ***(Tues)*** *Find there is a fair sized flood at Leaburg and still rising. About 40,000 cfs at Leaburg in morning. Worst trashy drift I have ever seen. Big old logs but not much green timber. Flood peaked at Leaburg at midnight at about 60,000 cfs. No word from Carmen all day until late evening radio reports that:*

1- Could not get Trail bridge unit started
2- Without power could not get spill gate open soon or fast enough, water ran 2-1/2" over concrete.
3- Carmen Power House flooded higher than before.
4- Smith Dam OK, but road washed out & covered with slides.

Dec 23: ***(Wed)*** *Price feels that drift in Trail Bridge is critical so I asked Partridge to get equipment lined up on that, which he did quick. We have a lot of material and equipment loaded ready to roll to Carmen as soon as we have access. South Santiam closed, North Santiam closed for a long time, Willamette closed for a long time.*

Dec 26: ***(Sat)*** *Price, Insurance Company is going to investigate before they pay us anything on Carmen. Think it may be our own human error. Chronological story being prepared.*

Dec 27: ***(Sun)*** *I don't have much criticism of how things were handled except lack of communication on part of operators and dispatchers. Basic trouble is that there is not enough freeboard at Carmen Plant. Water will be above normal again many times during life of the plant. The freeboard can be increased to any desired point at reasonable cost.*

1965

Jan 7: ***(Thur)*** *Most of morning talking & listening to Price & staff on Carmen - causes of flooding, details of what happened, what to do about it.*

Jan 11: ***(Mon)*** *Appears to have been well over a record flood at Clear Lake and McKenzie Bridge but under 1945 Rennie, Leaburg & Walterville. Our guess shows that Cougar held back about 30,000 cfs.*

Jan 12: ***(Tues)*** *Fuller working on Trail Bridge hydro graphs - not enough record of reservoirs to do much good, but we did store while flow was increasing and released from storage on or near peak.*

Jan 18: ***(Mon)*** *Fuller working on Trail Bridge and McKenzie Bridge hydro graphs. Record not good enough to really tell what happened to flows on natural peak but we know that we stored before peak and spilled on peak and after.*

Jan 19: ***(Tues)*** *From 2:00 to 6:00 with Price, Poindexter, Spicer, Anderson [Harry], Gadsen, Fuller on Carmen flooding. I went through telling them of importance: cost, public confidence, interest rates, damage insurance, liability insurance, Board questioning. Ed Peterson [house was damaged] today filed a claim with us for $60,000 damages. Then went into mistakes everyone had made. I got pretty mean and pointed on some. Everyone to blame, human errors flooded the plant instead of mechanical & electrical failures. Breakdown of communications & supervision. Price took over, confirmed & strengthened everything I said. Gave me good support. Then stated that Carmen Chief job is to be upgraded and Anderson taken out as poor supervisor but left there as senior operator or similar title. Spicer relieved of his job and put in as Chief at Carmen. Anderson considers himself as "fall guy" which I denied. He will quit. Spicer not happy. I told Anderson he was not "fall guy," I had criticized others more than him. But he couldn't get along with too many people.*

Jan 20: ***(Wed)*** *Spicer in & talk to Price. Doesn't want to go to Carmen on account of wife's diabetes.*
Jan 22: ***(Fri)*** *Talked to Anderson some. He feels that he must leave. Feels that he is justified in all his actions and that someone else is to blame in all cases where we criticize him.*

Jan 25: ***(Mon)*** *Price talked to Harry Anderson. He claims not to know whether Kennison released brake on gate before trying to raise it (Trail Bridge Spillway). Price called Kennison who finally admitted it was not released and he never knew about it.*

Jan 26: ***(Tues)*** *Price spent all morning telling Poindexter, Scofield & I about Anderson & Kennison and the fact that Kennison had not released the brake when trying to raise Trail Bridge Spillway gate during the flood. Went through both of their reports again. They were not honest in that both not only omitted the fact of the brake, but actually concealed it. Price will talk to all concerned again Friday. As I think about it later I get madder, there was collusion between the two of them to deceive us.*

Jan 28: **(Thur)** *Price showed up. Talked to Anderson & Spicer with Scofield & I. Nothing much new except Anderson admitted conspiracy with Kennison to withhold fact that brake was not released when Kennison trying to raise Trail Bridge gate 12-22-64. I told him there was conspiracy to deceive his employer. Later told the others that I could forgive any mistake in operation but not this, and I was through with it.*

1968

May 28: **(Tues)** *At Carmen, Hagey [Figure 3-57] is still getting fish. Has over 70,000 and has more -maybe 10,000. This is over 50% return. He opened two 8" rainbow and found 13 & 29 salmon in them. Will start seining soon.*

Figure 3-57

Figure 3-58

Figure 3-59

Carmen-Smith Spawning Channel, Winter 1973
(photos by Bill Eaton)

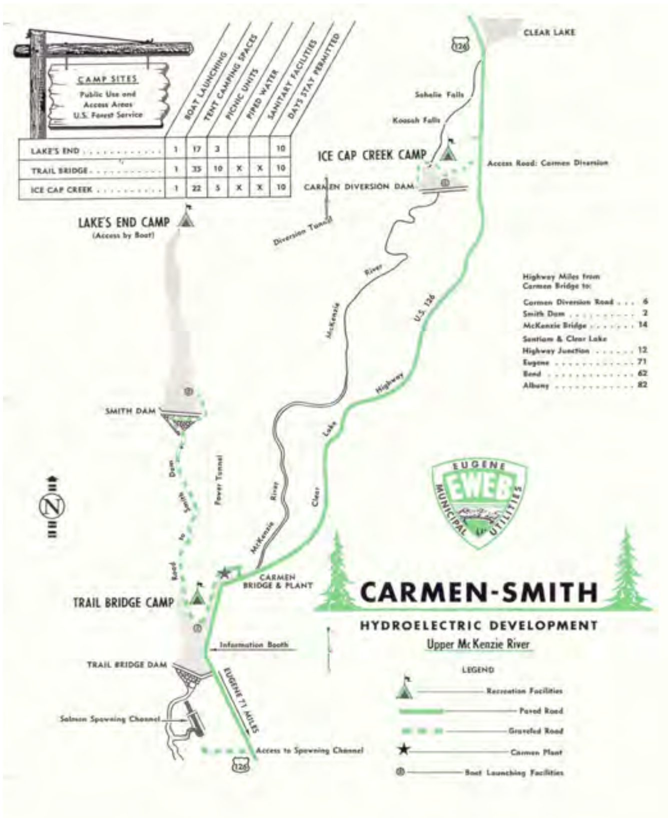

Figure 3-60

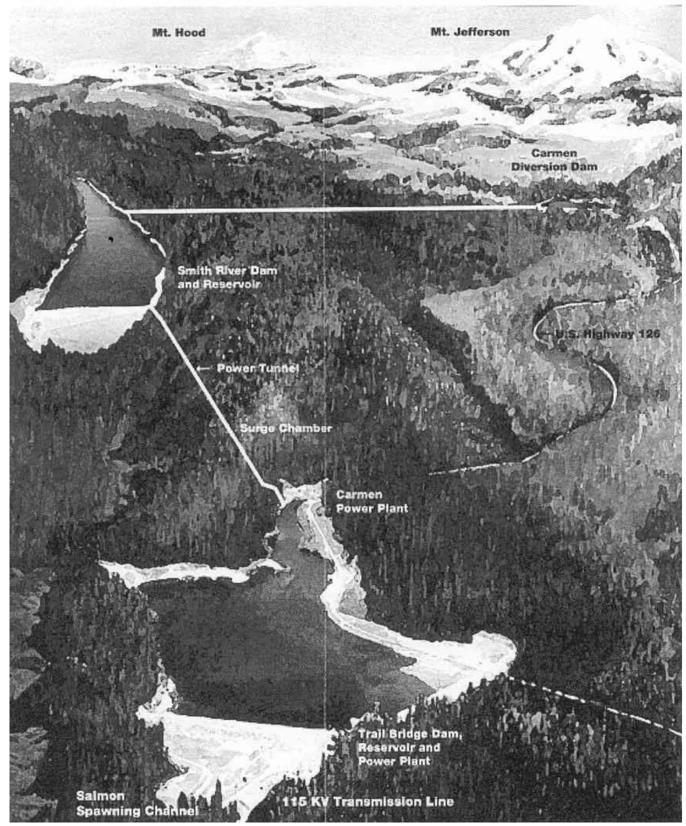

Figure 3-61


Figure 3-62


Figure 3-63

Carmen-Smith Project Overviews - 1960

CARMEN CONSTRUCTION PHOTOS

Figure 3-65

McKenzie River & Smith River confluence
October 1, 1960

Figure 3-66

Smith Dam Construction - July 7, 1961

Right: Carmen-Smith Construction Office
1960

Figure 3-64

CARMEN-SMITH PROJECT

Figure 3-65
Smith Reservoir with inlet to penstock - July 22, 2006

Figure 3-66
Smith Dam - July 22, 2006

Figure 3-67

Figure 3-68

Carmen Power House - 22 July 2006

Carmen Power House - 28 December 2006

(Author's photos)

Figure 3-69

Figure 3-70

John Scofield (left) and Jack Clark at Carmen Power House - January 8, 1965

Carmen rotor out for inspection - 1973

CARMEN-SMITH FLOOD - 1964

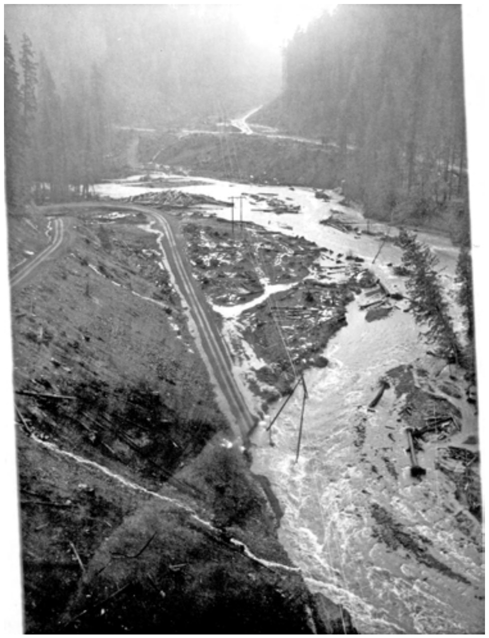

Figure 3-71

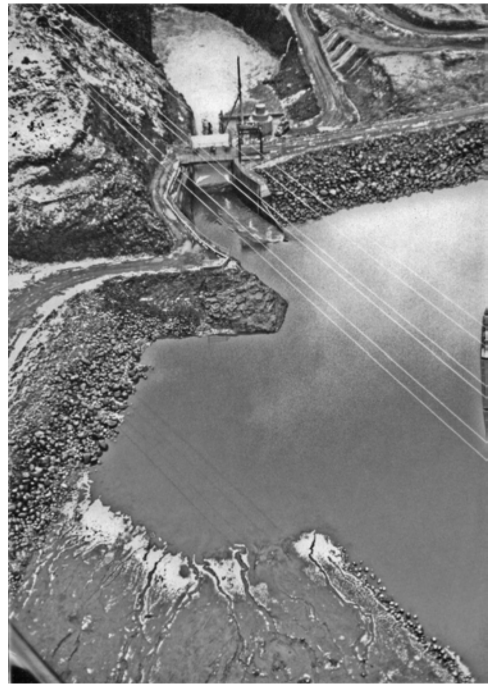

Figure 3-72

Figure 3-73

Flood at Carmen-Smith, McKenzie River at Trail Bridge

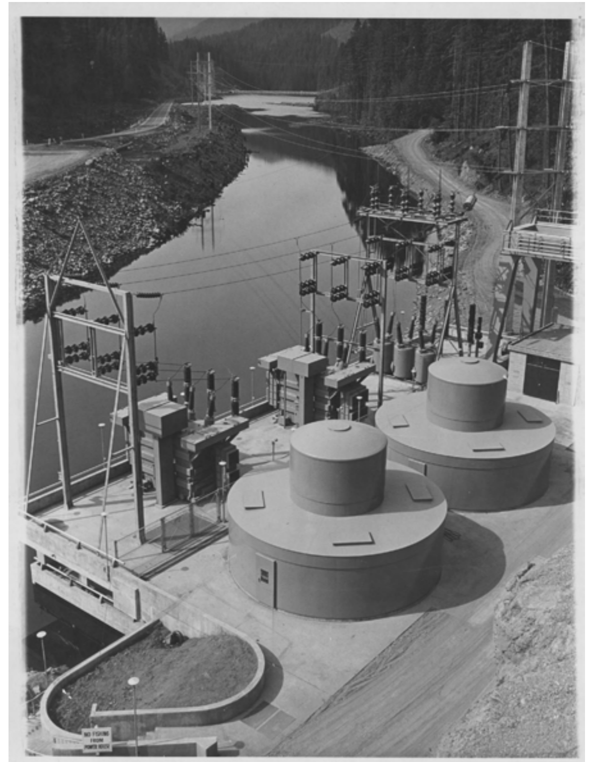
Figure 3-74

The Oregon Department of Fish and Wildlife stocks all three of the EWEB reservoirs with trout between April and August. More than 30,000 Rainbow Trout have been released in Trail Bridge alone. The Carmen-Smith Hydroelectric Project was dedicated by Gov. Mark O. Hatfield in September 1963 (Figure 3-76). Carmen-Smith went into operation at midnight August 27, 1963. Carmen consists of three dams and reservoirs, two large water tunnels, and a pair of power plants about 70 miles upriver from Eugene. The project produced 120 megawatts of power, coupled with the 23 megawatts produced downstream at Leaburg- Walterville. The river's dams accounted for about 11% of EWEB's power supply.

CARMEN-SMITH DEDICATION - September 9, 1963

Figure 3-75

Gov. Mark O. Hatfield & Byron Price with dignitaries at dedication

Figure 3-76

Governor Hatfield throwing the switch

TRAIL BRIDGE

Figure 3-77

Winter at Trail Bridge - 1959/1960

Figure 3-78

Trail Bridge under construction - 1963

Figure 3-79

Trail Bridge, Aerial View - 1973

TRAIL BRIDGE SPILLWAY - 1973

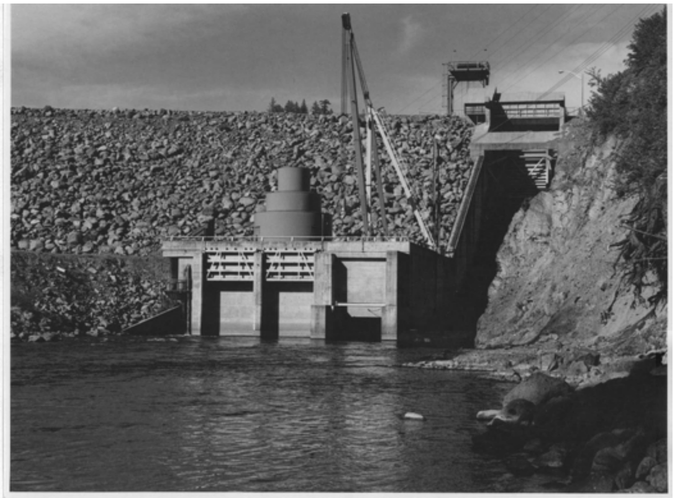

Figure 3-80

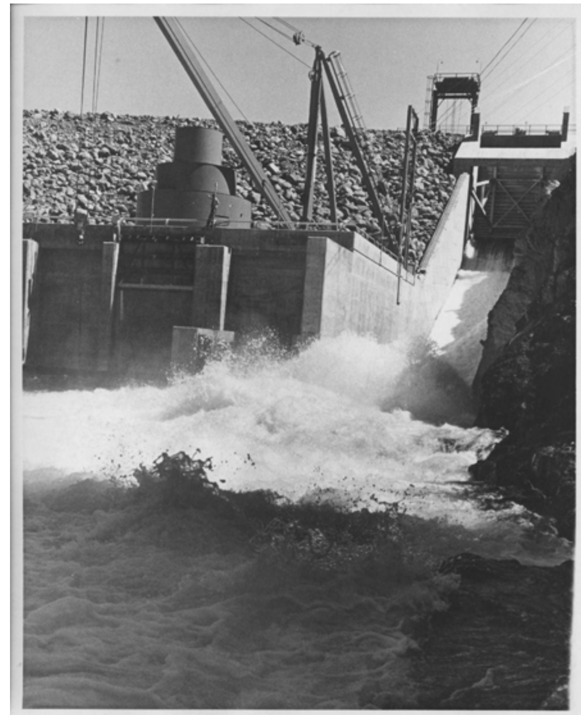

Figure 3-81

Figure 3-82

Trail Bridge Reservoir - 1973

Figure 3-83

Trash Boom on Trail Bridge Reservoir - 1973

Right: Rick Junker in Trail Bridge Power House - 1996 (photo by Bobbi Miller)

Figure 3-84

Chapter Four

EWEB: THE LATER YEARS (1961 - Present)

EWEB BOARDS 1961 TO PRESENT

The **50th anniversary (1961)** Board members were: Lionel W. Trommlitz, President (1944 - 1964); Oluf A. Houglum, V.P. (1951 - 1962); Earl L. McNutt (1954 - 1965); Calvin R. Smith (1954 - 1967); and J. Orville Lindstrom (1959 - 1964).

Figure 4-1

Large decal for the 50th anniversary in 1961 (about 12" in diameter)
(Author's photo)

The ***60th anniversary (1971)*** Board members were: John A. Tiffany, President (1962 - 1984); Trygve S. Vik, V. P. (1964 - 1972); Ehrman V. Guistina (1965 - 1972); Richard F. Olson (1968 - 1973); and Richard F. Freeman (1971 - 1980). The ***70th anniversary (1981)*** Board members were: John A. Tiffany, President (1962 - 1984), Camilla P. Pratt (the first female commissioner) (1977 - 1988); John R. Bartels (1979 - 1982); Jack J. Craig (1979 - 1988); Dr. Sarah S. Hendrickson (1981 - 1995), and Thomas L. Teutsch (appointed in 1978). ***The 80th anniversary (1991)*** Board members were: Dr. Sarah S. Hendrickson (1981 - 1995), Michael Dyer (1990 - 2000), Susan Smith (1990 - 2002), Dorothy Anderson (1990 - 2004) and Jack Delay (1990 - 1991). The ***90th anniversary (2001)*** Board members were: Dorothy Anderson, President (1990 - 2004), Peter Bartel, Vice President (1999 - 2002), Sandra Bishop (1997 - 2006), Patrick Lanning (2000 - 2008), and Susan Smith (1990 - 2002).

Figure 4-2 1946

Figure 4-3 1979

Figure 4-4 1985

Figure 4-5 2006

Sandra Bishop & George C. Mason
(author's photo)

On December 8, 1910 (pre-EWEB) City Councilman R. B. Henderson resigned as councilman and assumed the Superintendency of the Water Company, upon the resignation of S. W. Taylor, who had been engineer and superintendent of the Water Company since about 1890.

In conducting its business, the Board saw the need for a full-time manager to oversee all operations. Alvin Meyer (Figure 4-7), an engineer, took charge of electric operations, and R. B. Henderson, who assumed the position of Superintendent when the Walterville Plant was completed, continued as Water Superintendent. Alvin C. Meyers, first superintendent, resigned and Cyrus Avery Whipple of Portland took his place on June 18, 1913. Whipple resigned in June 1914 and was replaced by C. W. Geller, Secretary of the Board, and was appointed Acting General Superintendent on July 14, 1914. In 1915 the Board adopted a motion that Mr. Geller be appointed General Superintendent in addition to his duties as Secretary, and that the title would henceforth be known as General Superintendent-Secretary. Geller resigned in April 1918 and was replaced on April 22, 1918 by Carl A. McClain, who held the position until his death in 1932.

During Carl McClain's term as General Manager, the Leaburg Power Project, the McKenzie River water supply line (Camp Creek Intake to EWEB), a steam-electric power plant, the Eugene Water Filtration Plant (McClain Plant), and enlargement of the water reservoir system were all completed. Carl suffered a stroke on the same day the new Filter Plant went into service on August 5, 1932. Joseph W. McArthur replaced Carl in 1932 and served until 1946. Joseph was replaced by Ray B. Boals, who served until 1957, when Byron L. Price assumed the position until he resigned in 1973. In 1974 the acting General Superintendent A. Keith Parks was appointed by the Board. Parks served until his retirement in 1984. Keith was replaced by Jean Reeder in 1985. She was fired by the Board in early 1990. Randy Berggren assumed the reins temporarily until appointed by the Board in August 1990, retiring in April 2010. Roger Gray assumed the reins in April 2010, and will lead EWEB into the next 100 years.

GENERAL MANAGERS 1911 TO DATE

1911 - 1912	Fred M. Blackburn *(Fred's name appears in some records, indicating he held the first position).*		
1912 - 1913	Alvin Myers (Figure 4-7)	1946 - 1957	Ray B. Boals (Figure 4-11)
1913 - 1914	Cyrus Avery Whipple	1957 - 1973	Byron L. Price (Figure 4-12 & 4-13)
1914 - 1918	C. W. Geller (Figure 4-8)	1973 - 1984	A. Keith Parks (appointed 1974) (Figure 4-15)
1918 - 1932	Carl A. McClain (Figure 4-9)	1984 - 1990	Jean Reeder (fired February 1990) (Figure 4-22)
1932 - 1946	Joseph W. McArthur (Figure 4-10)	1990 - 2010	Randy Berggren (Figure 4-23)
		2010 - present	Roger Gray (Figure 4-24)

Figure 4-6

EWEB Office Personnel in 1912

Left to right, Back: (oval) E. W. Rand, Superintendent, Power Plant; W. S. Lyons, inspector, Water Department; Alvin Meyers, General Manager; O. M. Douglas, Superintendent, Electric Distribution; Charles E. Russell (oval), Superintendent, Pumping Plant.
Left to right, Front: C. W. Geller, Secretary; Miss Vena Clubb, Chief Accountant; Miss Violet Peart, Cashier; and F. W. Dietrich, Assistant Engineer.

EWEB's GENERAL MANAGERS (1911 to Present)

Figure 4-7

Alvin Meyers

Figure 4-8

C.W. Geller

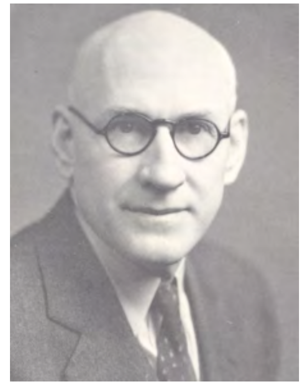

Figure 4-9

Carl A. McClain

Figure 4-10

Joseph A. McArthur

Figure 4-11

Ray B. Boals

Figure 4-12

Byron L. Price

Figure 4-13 1960

Byron L. Price

Figure 4-14 1960

Byron Price & Vern Poindexter
EWEB Picnic

Figure 4-15

A. Keith Parks

Figure 4-16 1979

Keith Parks & Donald Duck at the
EWEB Picnic (photo by Chuck Root)


Figure 4-17

Keith Parks at Hayden Bridge Plant


Figure 4-18 1984

Keith at his retirement dinner - Eugene Hilton


Figure 4-19 2004

Polly Parks (L) and Rosemary Edwards at Credit Union Annual Dinner (Photo by Bobbi Miller)


Figure 4-20 1984

Jean Reeder and Keith Parks at his retirement dinner

Figure 4-21 1983

Jean Reeder, Dick Neet, Carley Lewis and Lloyd Lindley at dedication of new EWEB headquarters building


Figure 4-22

Jean Reeder


Figure 4-23

Randy Berggren - 2007 (author's photo)


Figure 4-24

Roger Gray - 2010 (author's photo)

SECRETARIES TO THE GENERAL MANAGER

Figure 4-25

Figure 4-26

Figure 4-27

Lucille Norton
(1927 - 1963)

Rosemary Edwards
(1963 - 1988)

Krista Hince
(1988 - 2010)

Figure 4-27a GMason

Krista Hince on mural at
Eugene Airport - 2009

Figure 4-28
Taryn Johnson (2011 - present)

HAYDEN BRIDGE TREATMENT PLANT

In 1946, because the existing plant could barely meet the demand during extremely hot weather when irrigation and lawn watering were at a maximum, the demand for water continued to grow, and in March it was announced that Mr. Koon of the Portland firm of Stevens and Koon would look over sites for a new water supply. Ray Boals, in his 10-year municipal light and water expansion program, proposed a new water filtration and treatment plant at Hayden Bridge along with a new 45" and 42" supply line from Hayden Bridge to Eugene. In July the Board voted to hire Stevens and Koon, consulting engineers, to design the Hayden Bridge Filtration Plant. The 51-acre A. W. Johnson tract near Hayden Bridge was recommended for the site.

The new filtration and purification plant with an output of 25,000,000 GPD (designed for an ultimate capacity of 74,000,000 GPD) went into service in 1950. It was the largest plant in the Pacific Northwest with its filtration capacity. Water consumption in the EWEB system since 1932 had increased 350% by 1950.

Figure 4-29 Artist Model 1946

In the 1950s, EWEB used to decorate the three tall windows (Figure 4-44) on the second floor of the head house at Christmas time. In December of 1964, during what has been commonly called the Christmas Day Floods of 1964 (Figures 4-61 and 4-62), the McKenzie River rose so high around the Water Intake and Hayden Bridge (the bridge over the McKenzie) that the only pump that was able to pump water to the plant from the river was the 200 hp raw water pump #1 due to the other pumps' motors being partially submerged.

Hayden Bridge Plant through the years has had a "Certificate of Approval" from the Oregon State Board of Health for EWEB's Lab at Hayden Bridge for Laboratory Service for Bacteriological Examination of Water Supplies (Figure 4-117).

In 1978 three filters were added to Hayden Bridge to increase output to keep up with the increased demand for water. Those were south 4, 5 & 6, and they went into service in May of 1978, after which EWEB hosted an Open House with tours for the public to see the additions to the plant and learn how the plant operates (see Figures 4-75, 4-76 and 4-77)..

PLANT CONSTRUCTION (Walt Rupple, Project Engineer)

Figure 4-30

Storage Area & Contractor's Office - 1948

Figure 4-31

Forms for pre-cast filter wash troughs - 1949

Figure 4-32

Crane bringing in one of the troughs for filter #1 March 22, 1949

Figure 4-33

Head House - Pouring 12-foot sidewall - Apr 20 1949

Figure 4-34

Looking west toward filters from south basin - May 18 1949

Figure 4-35

South clear well connection - June 18 1949

Figure 4-36

Pumping concrete into forms - August 1949

Figure 4-37

Figure 4-38

Tool & Light pavement breaker removing filler strips and pouring joint with "Careylastic" in South Basin - Aug 5 1949

Figure 4-39

North Settling Basin - August 9 1949

Figure 4-40

Construction of Settling Basins - August 9 1949

Figure 4-41

Plant nearing completion - 1949

Figure 4-42

Plant completed looking NE - 1950

Figure 4-43

Plant Completed looking NW - 1950

Figure 4-44

Completed Head House - 1950

Figure 4-45

Figure 4-46

Installing new 48" raw water line under Weyerhaeuser railroad tracks. Left to Right: Lee Jeans, Jimmy Harrison, welder; Bill (Red) Lindley, and Clark Parrot - Oct 9 1957

First raw water line (36") from Intake to Plant Looking east - May 12 1949

Figure 4-47

Pete Durette, EWEB Foreman, at 48" raw water line by welder - November 1957

Figure 4-48

Ray Boals at filter console from old McClain Plant - 1949

Figure 4-49

Ed Armstrong in filter building (looking south) on upper deck of pump galley - 1950

Figure 4-50

Pump Galley - looking south

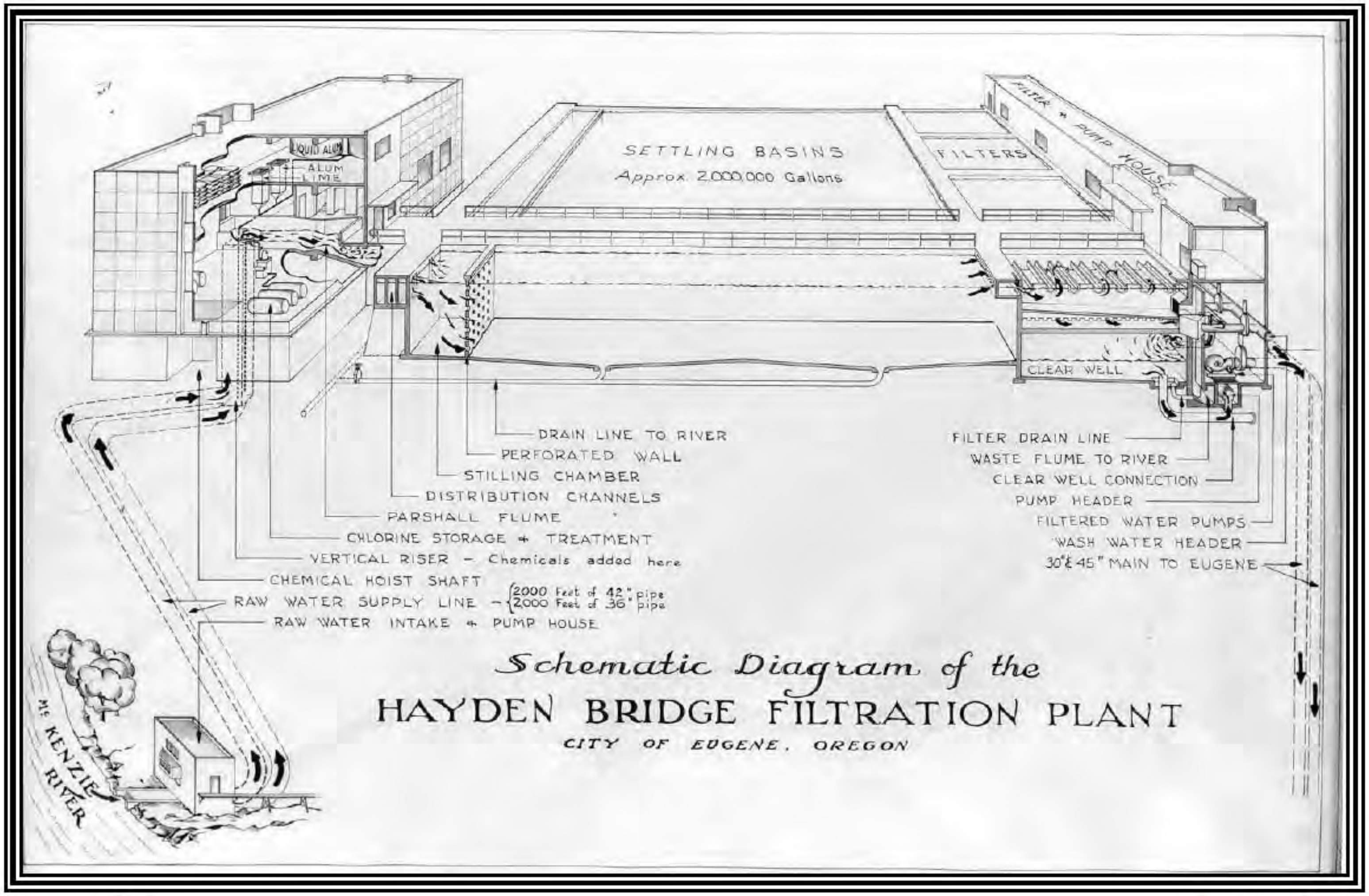

Figure 4-51 Looking South

HAYDEN BRIDGE INTAKE # 2

The Hayden Bridge Booster Pump Station, Hayden Bridge Intake #2, was enlarged and a deep pit excavated for the new intake for the new Hayden Bridge Water Treatment Plant in 1949. The new plant supplied water to Eugene through the old original 30" steel line as well as the new 45" line. The old 30" line from Camp Creek Road Intake was disconnected by Marcola Road and a new line from the plant was connected to it in late 1950 (Figure 2-64, page 43). Raw water pumps #1 and #2 were the only pumps that were able to feed the 30", before being disconnected, to the McClain Plant.

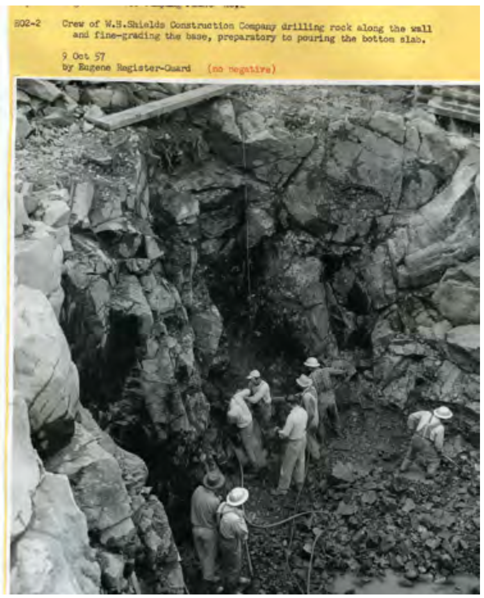

Figure 4-52


Figure 4-53

Wayne H. Shields Construction Company drilling rock along the wall and fine grading the base - October 9 1957

Fine grading to pour the base October 9 1957

Figure 4-54

Overview of Pumping Plant #2 pit excavation - October 9 1957, with Hayden Bridge Intake #1 in background

Figure 4-55

Figure 4-56

Figure 4-57

Raw Water Pump # 6 being lowered into position and getting ready to reconnect after repairs - April 1958
(600 hp Jacuzzi)

HIGH WATER AT INTAKE #1

Figure 4-58

February 26 1957

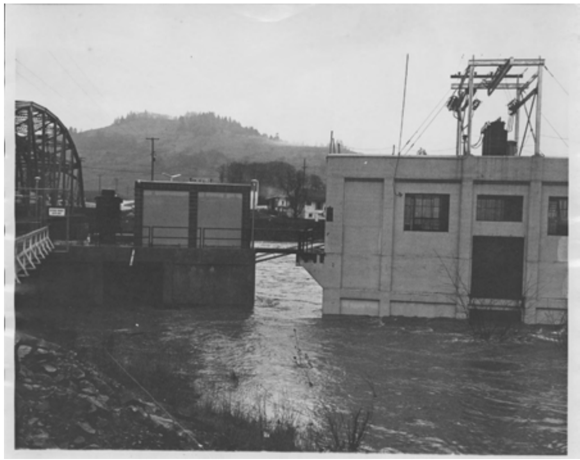

Figure 4-59

1960 Flood

Figure 4-60

November 24 1960

INTAKE AT CHRISTMAS DAY FLOOD IN 1964

Figure 4-61


Figure 4-62

Figure 4-63

Harvey Hansen checking traveling screen - Intake #2

Figure 4-64

Clearing sheet of ice away from Intake #1 - December 1972

Figure 4-65

October 2005

Figure 4-66

January 15 2006

Figure 4-67

October 2005

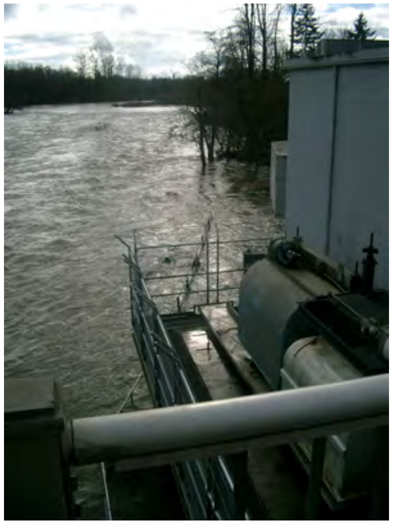

Figure 4-68

January 15 2006

(Author's photos)

Figure 4-69

Figure 4-70

Figure 4-71

Figure 4-69: Gratings over intakes, looking upriver - February 2007

Figure 4-70: Traveling screen #1 inside intake building - February 2007

Figure 4-71: Traveling screen being washed into trash bin - February 2007

(Author's photos)

HAYDEN BRIDGE TREATMENT PLANT TOURS

Figure 4-72

Plant Dedication - 1950

Figure 4-73

Win Berkeley with Korean visitors - July 18 1960

Figure 4-74

EWEB Board Tour, 1964 - L to R: Trygve Vik, Earl McNutt, Ken Kohen, John Tiffany, Win Berkeley and Calvin Smith

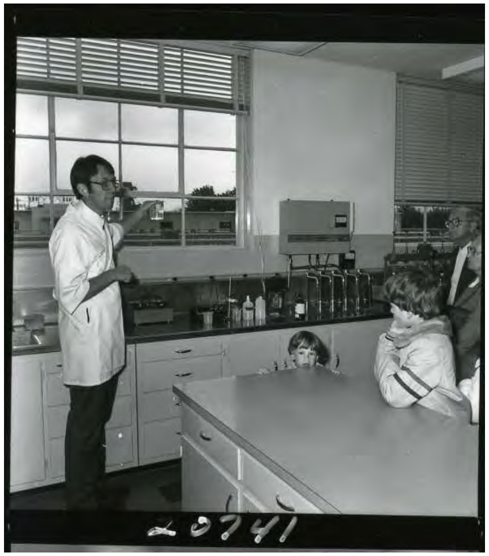

Figure 4-75

Figure 4-76

Figure 4-77

Figure 4-75: Doug Wise conducting tour in lab

Figure 4-76: Vern England conducting tour

Figure 4-77: Mitch Postle conducting tour in filter building

Open House Tour After Plant Remodeling - May 1978

HAYDEN BRIDGE WATER TREATMENT PLANT OPERATION

The Hayden Bridge Water Treatment Plant was commissioned on July 12, 1950--a modern, high-tech facility with the latest in testing and treatment processes. The treatment process begins by adding chlorine to the raw water as it is pumped up to the head house for disinfection. After the water has been disinfected, the water moves slowly through the two settling basins, which hold about 1,000,000 gallons each, which allows sediment and any other suspended matter to settle to the bottom of the settling basins to be removed later. After moving through the settling basins, the water is then filtered through any one of the 12 filters. At the end of this process, the pH of the water is adjusted to reduce corrosion in EWEB's water system as well as the customers' plumbing systems. The final product is crystal clear, safe drinking water, one of the best (if not the best) in the country.

Figure 4-78

Figure 4-79

Plant in 1950 right after construction

Plant in 1985

Growth in local population increased the demand on water, resulting in an outgrowing of the Hayden Bridge Treatment Plant, only a decade old (1960), so a method to improve the plant's capacity and still maintain high water quality at a minimal cost was looked into. What was found was the PitCon[1] process, which permitted a filtration rate of two to five times quicker than the currently used method of rapid-sand filtration. This process ultimately enabled Hayden Bridge to filter approximately an additional 27,000,000 GPD[2] of water. Basically the PitCon filters replaced much of the top layer of fine sand with anthracite coal in the upper 16 inches. This change in filter design, having the water first pass through the coal, then a layer of coarse sand, and finally through the fine sand, lengthened the time required between filter back-washing and allowed more water to pass through the filters in a given time, increasing the plant's output and still maintaining EWEB's standard for a high degree of water quality. In 1961 EWEB completed conversions of several of their filters to the highly innovated and efficient "Micro-Floc" (formerly PitCon) process.

This was achieved through the efforts of Winston "Win" Berkeley (Figure 4-112), then Assistant Water Operations Superintendent. Win was also instrumental in EWEB changing to "super-chlorination," which eliminated hepatitis and polio viruses that the conventional chlorination process at that time could not. Super-chlorination also improved the swampy water taste which would occur during certain times of the year .

Reflections in the water in the north settling basin (photo by Harry Gross)

Figure 4-80

[1]Named for Ray Pitman and Walter Conley.

[2]Gallons per day.

Figure 4-81

Figure 4-82

Upper intertie constructed in 1978, where chemicals are added to the raw water prior to entering the plant

Figure 4-83

Figure 4-84 Author's Photo

Figure 4-85

Winter at the Hayden Bridge Plant
December 8 1972

Figure 4-86

On July 26, 1957, the day after EWEB first started using the Walterville pumped storage pond for energy, taste and odor problems resulted from the release of water in the storage pond. Berkeley believed it was from mold that had developed on dead algae. The customers were told that the water was safe and the condition was temporary. Crews were out flushing the mains to rid them of the bad-tasting water[3].

[3]Byron Taylor Diaries - 1957

Figure 4-87

Figure 4-88

Water entering the plant at the original location (Figure 4-87) prior to 1978. The flow as shown is entering the "Parshall Flume," where chemicals and raw water become thoroughly mixed prior to entering the mixing channel, where the floc becomes visible (Figure 4-89), and then the water enters the settling basins before going to the filters. Figure 4-88 shows the pilot filters used to monitor filter efficiencies for the filter media being used for necessary changes in dosage (author's photos).

Figure 4-89

Figure 4-90

Mixing channel on left in use showing the formation of floc, on the right mixing channel is empty for cleaning - March 2006 (Author's photos)

Figure 4-91

Washing North Settling Basin - March 2006

Figure 4-92

North Filters and Settling Basin

Figure 4-93

Tunnel between settling basins, which leads from the head house to the filter building - 2006

(Author's photos)

Figure 4-94

Looking north from south #3 filter - 1963

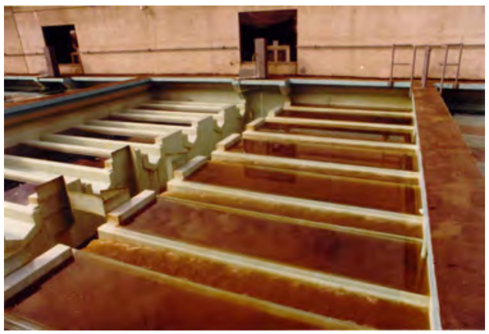

Figure 4-95

Backwashing a filter (author's photo)

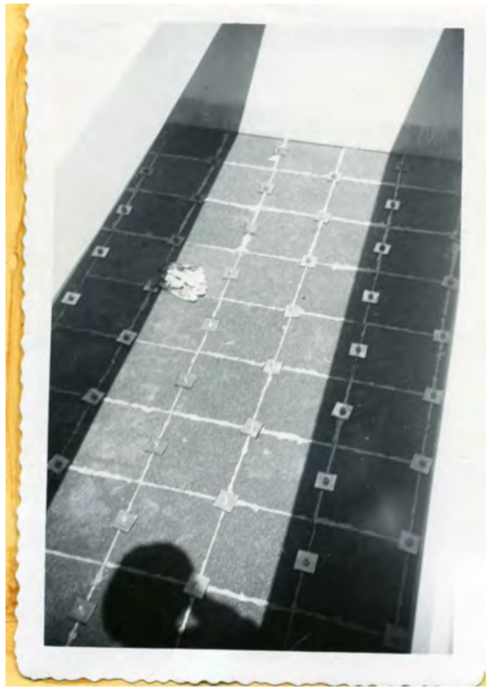

Figure 4-96

"Aloxite" filter bottom blocks showing edge of wall not yet sealed, used under filter media. Photo taken after initial installation. First filter converted to Aloxite was North 1, installed by Ken Lowery and George Mason.

Chemical Feeders (as they were in the 1960s)

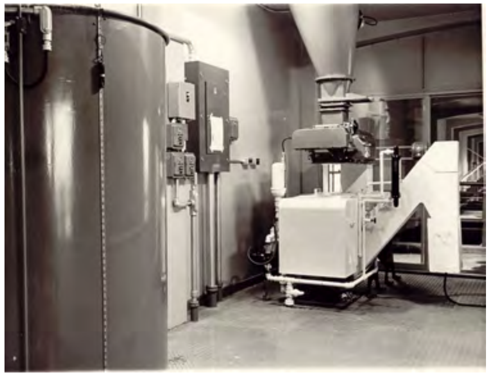

Figure 4-97

Old lime slaker room in filter building

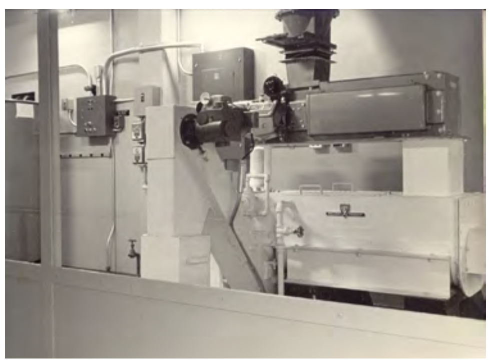

Figure 4-98

Old Lime Slaker

Figure 4-99

Old Lime Chute

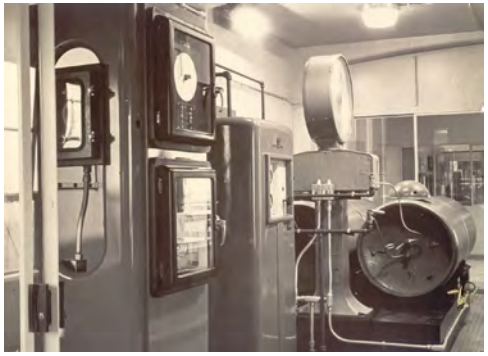

Figure 4-100

Figure 4-101

SO_2 (Sulphur Dioxide) tank and feeder to remove chlorine

SO_2 tanks under heat lamps

Figure 4-102

Figure 4-103

Tank for polymer in attic of head house

Sodium hydroxide tanks where old 600 hp pump was located

(Color photos by the author)

Figure 4-104

Figure 4-105

Lab with faucets of flowing water from different sources

Lab with jar test for testing turbidity for dosage

Figure 4-106

Figure 4-107

Aquarium with Trout for testing

Elizabeth Kahle next to tank for size comparison

(Author's photos - 2006)

Figure 4-108

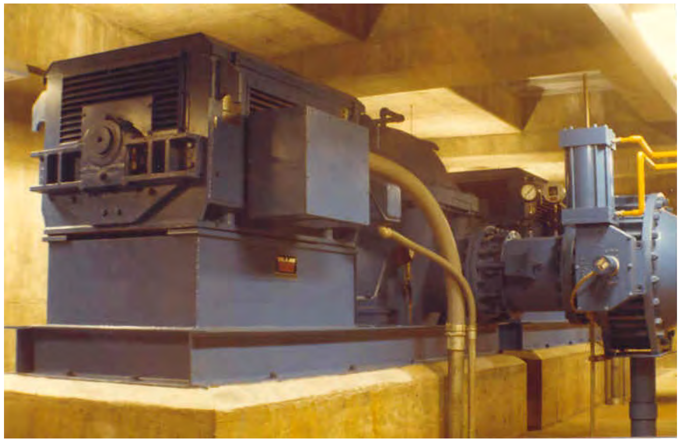

Figure 4-109

Figure 4-110

Figure 4-108: Original finished water pumps

Figure 4-109: The two old 600 hp pumps that pumped finished water to town

Figure 4-110: Small yellow pump is house system pump - 2006

(Author's photos)

HAYDEN BRIDGE PLANT SUPERVISORS

The last supervisor at the McClain Filtration Plant was Ernest H. Hotaling. He worked for EWEB for 32 years, retiring when operations moved to Hayden Bridge in July of 1950. One of the operators at the McClain Plant, Ross S. McClanahan, had 19 years' service before retiring, also without moving to Hayden Bridge.

Figure 4-111

Ed Armstrong (1950-1951) (1951 photo)

Figure 4-112

"Win" Berkeley (1951-1954) (November 1956 photo)

Figure 4-113

Ben Barnts (1954-1979) (1978 photo)

Figure 4-114

Floyd Farstad (1979-1985) (1979 photo)

Figure 4-115 B. Miller

Doug Wise (1985-2008) at Filter Console in Filter Building

Figure 4-116 Author's photo

Randy Prock (2008 - present)

HAYDEN BRIDGE OPERATORS

When the Hayden Bridge Plant first went into operation in 1950, the operators were: Ed Armstrong (first supervisor); Win Berkeley (who replaced Ed Armstrong); Ben Barnts (who replaced Win Berkeley); Vern England and Ray McFarland (who both came from the McClain Plant); Arnold Baden, Claire Fairbanks, Jimmy Sumner, and a Mr. Orbunio (sp), who later quit. He was a good operator who had learned from his father, who was an operator in California. For a number of years Hayden Bridge was part of a "Cooperative Work Experience Program" in conjunction with Lane Community College to provide training for students in bacteriology and water treatment (Figure 4-117).

Since 1968, Hayden Bridge has continually received a Certificate of Approval (Figure 4-118) from the Oregon State Health Division for the lab at the plant to perform "Bacteriological Examinations of Water Supplies."

Figure 4-117

Figure 4-118

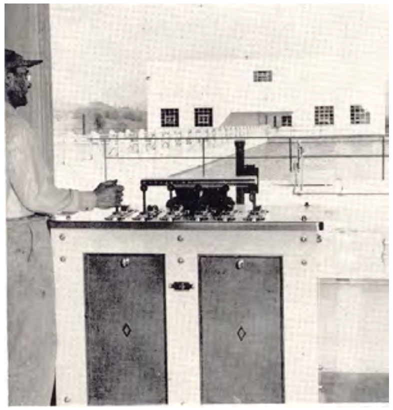

Figure 4-119

Figure 4-120

Ray McFarland backwashing a filter (South 1)

Vern England backwashing a filter - 1950s

Figure 4-121

Bruce Griffith backwashing a filter - 1984

Figure 4-122

Ben with operators by settling basin - Nov 1956

Figure 4-123

L to R, Back: Vern England, Ben Barnts, Ray McFarland, Al Taylor. L to R, Front: Andrew Tourney, Harvey Hansen - 1957

Figure 4-124

New Uniforms, L to R: Bob Harris, Floyd Farstad, Ben Barnts and Harvey Hansen - 1962

Figure 4-125

Figure 4-126

Figure 4-127

Figure 4-125: Harvey Hansen and Ben Barnts running weekly samples - November 1956

Figure 4-126: Harvey Hansen putting samples in incubator for incubation - November 1956

Figure 4-127: Vern England running hourly water tests on raw water

Fluoride[4]: The first mention of using fluoride in Eugene's water was in 1958, when Byron Price held an information session on fluoridation–chemicals, equipment, capital and annual costs, safety, testing, etc. Win Berkeley was to draft a brief factual report for the Board. On Friday, April 9, 1965, sodium silicofluoride (a powder) was finally calibrated in good shape, and the first chemical was added to the water at 1:20 a.m. on Saturday, April 10, at 0.8 ppm front of plant, 1/4 ppm in clear well.

[4]From Byron Taylor Diaries.

Figure 4-128

Floyd Farstad checking raw water chlorine residual

Figure 4-129

Doug Wise performing a coliform membrane filtration test

Figure 4-130

Harvey Hansen and Steve Blair replacing coal in a filter - 1970s

Figure 4-131

Washing North Settling Basin - 2006 (Author's photo)

Figure 4-132

Floyd Farstad operating the Pilot Filter

Figure 4-133

Floyd taking readings in control room in filter building

Figure 4-134

Doug Wise & Mitch Postle - 2006
(Author's photo)

Figure 4-135

Mitch Postle, Water Quality Supervisor
February 2007 (Author's photo)

Figure 4-136

Doug Wise & George Mason in Lab - 2006

Figure 4-137

Ralph LaMar, Plant Operator - 2006

Figure 4-138

Randy Prock, Operator - 2006

Figure 4-139

Mark McGuire, Operator - 2006

Figure 4-140

Left to Right: Ray Leiton, Steve Hawley, Robert King, Steve Blair and Brenden Hardy
February 27, 2007 (Author's Photo)

Figure 4-141

Figure 4-142

Hayden Bridge Welcoming Committee
(Author's Photos)

Ed Armstrong (First Hayden Bridge Supervisor)

In 1950:

Figure 4-143

Figure 4-144

In 2009:

Figure 4-145 2009

Figure 4-146 2009

Ed Armstrong during a visit to the Treatment Plant

Steve Blair, Ed Armstrong and WallyMcCullough

DOUG WISE RESERVOIR AT HAYDEN BRIDGE

The new 15 mg reservoir at Hayden Bridge, which operates much like the old clear wells with variable speed pumps at the south end of the reservoir, was named after Doug Wise, the Treatment Plant Supervisor from 1985 to 2008.

Figure 4-147

Figure 4-148

Figure 4-149

HAYDEN BRIDGE UPGRADE 2008 - 2010

In 2008, the Hayden Bridge Plant, with a filtered water rated capacity of about 68 MGD, was not sufficient capacity for future growth. So a third "settling basin" was constructed on the north side of the existing North Basin. Construction was started in 2008 (Figure 4-150 and 4-151) by the Wildish Company of Eugene, along with a new chemical feed building (Figure 4-152) which will contain all the existing and the new chemical feed systems, and two new filters to be started in 2009, which is planned to increase the filtered water capacity from 68 MGD to 80.5 MGD.

Figure 4-150

Figure 4-151

Construction of new (2009) settling basin to the north of the existing basins. Figure 4-152 shows the start of the new chemical feed building. (Author's photos, January 9, 2009)

Figure 4-152

Figure 4-153

Figure 4-154

Two views of the new North Settling Basin - November 10 2010 (Author's photo)

Figure 4-155 2010

Figure 4-156 2010

New North Filters #7 and #8

New Chemical Feed Building

4200 ROOSEVELT BOULEVARD - ROOSEVELT OPERATIONS CENTER (ROC)

Very early in 2004, EWEB was looking for a new site location with the ultimate goal for all of its operations to be at one location. At that same time, Triad Hospitals out of Texas, the major owner of McKenzie-Willamette Medical Center, was looking to possibly purchase EWEB's current property along the Willamette River. In its search, EWEB had narrowed its possible new location to five different locations in or around the City of Eugene. The five prospective sites were: the southwest corner of Randy Pape' Beltline and Roosevelt Blvd; a site just west of Greenhill Technology Park off West 11th Avenue in West Eugene; the former Eugene Speedway location at West 11th & Beltline, a location at Highway 99N and Awbrey Lane east of Mahlon Sweet Airport and, lastly, a site near West 2nd Avenue & Chambers Street.

The final selection was, of course, the location at Beltline and Roosevelt Blvd. (Figure 4-161). This site became known as the ROC, or Roosevelt Operations Center, where construction and ground breaking ceremonies took place on August 8, 2008.

Figure 4-157 2008

Artist Rendition of the Roosevelt Operations Center

Ground Breaking Ceremony - August 8, 2008

Figure 4-158

John Mitchell, Public Affairs

Figure 4-159

John Simpson, Board President

Figure 4-160

Ground Breaking Ceremony

This author took his first tour of the site and construction progress on November 20, 2009 with a tour conducted by Ken Beeson, EWEB's Project Manager (Figure 4-162) for the ROC.   Following are a selection of photos by the author showing progress of the facility construction over time.

Figure 4-161 2007

Site prior to any construction - August 19, 2007

Figure 4-162 2009

Ken Beeson, Project Manager - Nov 30, 2009

Photos taken November 30, 2009:

Figure 4-163

Beam with signatures for Operations building

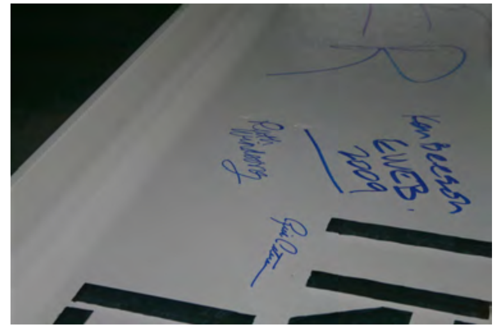

Figure 4-164

Beam Signatures

Figure 4-165

Non-native trees on site

Figure 4-166

Operations building looking west

Figure 4-167

Waterway and Employee Parking

Figure 4-168

Rear of Operations building looking east

Figure 4-169

Warehouse, west side

Figure 4-170

Water Operations area in Operations building

Figure 4-171

Central Entrance Area for Operations Building Looking East

Figure 4-172 2009

Aerial View of ROC
(Photo courtesy of Ken Beeson)

August 6, 2010:


Figure 4-173

Rear of Operations building from Warehouse Note solar panels on roof

Figure 4-174

SE section of warehouse. East portion for water and west portion for Electric.


Figure 4-175

Interior of Vehicle Repair Shop, 10:15 a.m. and only light is all natural


Figure 4-176

10-ton overhead crane on south end of shop

October 16, 2010 - Open House Ceremony:

Figure 4-177

Front entrance of the ROC
October 2010

Figure 4-178

Figure 4-179

Figure 4-180

Alder trees ready for the tree planting ceremony

Lance Robertson (Public Affairs) introducing the guest speakers

Figure 4-181

Roger Gray (General Manager)

Figure 4-182

Rich Cunningham (Board Vice President)

Figure 4-183

Figure 4-184

Chris Pryor (City Councilor, Ward 8)

Ken Beeson (EWEB Project Manager)

Figure 4-184

ROC Opening Ceremony

Chapter Five

EWEB's WATER UTILITY

WATER SYSTEM OVERVIEW

All water utilities need a source of supply, means of treatment (to meet water quality requirements), a means of delivery (pipe, appurtenances, etc.) and storage facilities to meet high demand periods and for fire protection. And, most important of all, highly qualified, State-certified and dedicated people to make it all happen, by bringing it all together for the customers. EWEB's standards meet and exceed all of those requirements.

WATER RESERVOIRS

One of the most important parts of any water distribution system is its water storage facilities, known as reservoirs. Reservoirs are used to provide adequate head (pressure by elevation) for the distribution system. Reservoirs also provide needed capacity to meet the ***maximum daily demand*** **(MDD)** as well as excess storage for ***fire protection***. EWEB's reservoirs are designed to provide uninterrupted water service during power outages at all times. During periods of low demand (use), water is pumped into the reservoirs, then during high demand periods the stored water is available to meet the system needs.

Although reservoirs may often be considered unsightly, EWEB goes to great lengths to blend the reservoirs within their communities with low maintenance landscaping, thus creating a good neighbor (Figures 5-1 & 5-2). The basic storage requirements for reservoirs are: Daily Operational Storage (DOS) and Fire and Emergency Storage. DOS is the ability to supply water when demand temporarily exceeds supply, and most utilities design around the maximum daily demand (MDD). Fire storage is to store the volume of water required to meet the largest fire flow estimated in the system. Emergency storage is to provide a reserve in case of supply failure (mechanical or power). This can range from two hours of MDD up to 12 hours of MDD. Other considerations used are, as in EWEB's system, cross-feed capabilities from other reservoir systems within the same pressure elevations. EWEB's reservoirs are named for the system they serve and their overflow elevation above sea level. For example, Willamette 800 serves the Willamette System, and its overflow elevation is 800 feet above sea level.

Figure 5-1 GMason

College Hill #1 Reservoir

Figure 5-2 GMason

City View 800 Reservoir - 1992

The first reservoir used by EWEB was on Skinner Butte. This reservoir (Skinner Reservoir #1) was covered in Chapter Two (page 20). In 1914, construction started on College Hill 603 (#1) (see Figure 5-3) and it was put in service in September of 1915 (Figure 5-4). This was EWEB's second reservoir system site.

Figure 5-3 1914

College Hill #1 under construction

Figure 5-4 1931

College Hill # 1 before being covered

Figure 5-5 GMason

College Hill #1 Covered

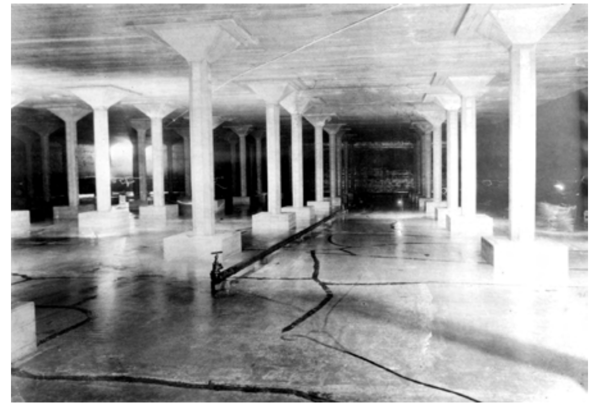

Figure 5-6 1933

Interior view of College Hill #1 Reservoir

Then in October of 1925, Walter (Walt) J. Moore and Carl A. McClain designed the current reservoir on Skinner Butte (Skinner Reservoir #3). This reservoir was unique in that it was blasted out of the Butte's rock formation. The blasted out rock was used for exterior reinforcement of the reservoir walls (Figure 5-10) and some of the rock formation was left in place and actually became part of some of the reservoir's actual walls (Figure 5-9). The Skinner Reservoir # 3 (Figure 5-11) was completed in 1926, with a capacity of 3,000,000 gallons (3 MG).

Figure 5-7

Figure 5-8

Skinner Butte rock formation being removed

Figure 5-9

Figure 5-10

How the rock formation was used in and around the reservoir

Figure 5-11

Figure 5-12

Interior view during construction and when completed

Upon completion of the reservoir, EWEB placed a bronze plaque on the “valve house” and installed a drinking fountain outside the door (left of the door) and a large glass viewing window in the front so people could see inside. Unfortunately, vandals kept destroying the plaque and drinking fountain along with breaking the glass in the window. In order to protect the quality of the water in the reservoir, EWEB removed the plaque, drinking fountain and the glass window, and all that remains on the outside of the “valve house” today is a sealed-up window and large locked steel door(Figure 5-13).

Right: Valve house as it appears today (2006)

Figure 5-13

On January 25, 1928, a reservoir site was purchased for the first addition to Fairmount Heights. This became the location for the “Chula Vista Reservoir,” now called Fairmount 850 #1 or Fairmount Hi-Level. As the demand grew in the 800 level system, two new reservoirs were built and put into service in 1951 (Figure 5-29). The two reservoirs were Fairmount 603 Low Level (Figure 5-14 & 5-15) and Storey 800 reservoir on Storey Boulevard. Later, in about 1990, it was re-named College Crest 800 Reservoir (Figure 5-28).

Two views of Fairmount Low Level Reservoir (Figures 5-14 & 5-15) (photos by George C. Mason) - 2005
(this reservoir was decommissioned in June 2006)


Figure 5-14


Figure 5-15


Figure 5-16

In 1939, as part of the WPA[1], College Hill #2 Reservoir was constructed and put in service in 1940 with a capacity of 15,000,000 gallons (Figure 5-18). As the College Hill area (named after “Columbia College,” Figure 5-16) was developed and homes were built on top of the hill, and thus above the two College Hill Reservoirs, the Elevated Tank (Figure 5-19) was built in 1939, to serve those customers with water. This tank was called College Hill Elevated Tank 700. Then in 1961, Dillard 800 Reservoir was added to the system. In 1962, the 607 system level needed more storage in the West Eugene area, so Hawkins 607 Reservoir was built in 1963 (Figure 5-31) with a 20,000,000 gallon capacity. Also in 1963, with the rapid growth in South Eugene, more 800 level reservoirs were needed, so Willamette 800 #1 was built (#2 was added in 1975).

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[1]Works Progress Administration

COLLEGE HILL RESERVOIRS

Figure 5-17

L-R: (unknown), Ray Boals, Walt Moore and Byron Taylor

Figure 5-18

College Hill #2 and elevated tank when completed

Figure 5-19

College Hill 700 Elevated Tank (photo by George C. Mason)

SANTA CLARA 398 RESERVOIR: (Hypalon Material, see Figure 5-20)

Figure 5-20

Santa Clara 398 Hypalon Reservoir - 1978

Figure 5-21

Pump/Generator Units
(George C. Mason photo)

Figure 5-22

The only way to walk on the reservoir
L-R: Don Walker, Jim Brown and (unknown)

Figure 5-23

Original Top Siphoning System
(George C. Mason photo)

WOODEN RESERVOIRS

(George C. Mason photos)

Figure 5-24

College Crest 1150 Reservoir

Figure 5-25

Willamette 1150 Reservoir showing red top hydrant

Figure 5-26

Old view of Willamette 1150 Reservoir

Figure 5-27

Hillcrest 1250 glass-lined tank that replaces the old wooden tank that leaked badly in 1985

Figure 5-28 2006

Storey 800, now College Crest 800

Figure 5-29

Fairmount Hi-Level - 850

Figure 5-30 1992

Shasta 975 Steel Tank

Figure 5-31 1962

Hawkins 607 under construction

Figure 5-32 2008

EWEB's Newest Reservoir - City View 1150 and City View 1325 Pump Station

Following are the EWEB reservoirs showing the year they went into service and their capacity:

Reservoir	Year in Service	Capacity (gallons)
Bloomberg 700	1968	1,750,000
City View 800 #1 (East)	1960	1,000,000
City View 800 #2 (West)	2001	1,000,000
City View 975	1967	1,750,000
City View 1150 (Actually 1163)	1995	400,000
College Hill #1 (603)	1915	2,500,000
College Hill # 2 (607)	1940	15,000,000
College Hill 700 Elevated Tank	1939	100,000
College Crest 800 (originally called Storey 800)	1951	700,000
College Crest 975	1973	1,000,000
Dillard 800	1951	1,500,000
Fairmount 603 Low Level (Decommissioned August 2006)	1951	450,000
Fairmount 850 #1 (Hi-Level)	1924	150,000
Fairmount 850 # 2 (Hi-Level)	1951	700,000
Hayden Bridge	2003	15,000,000
Hawkins 607	1963	20,000,000
Hillcrest 1250 (Decommissioned in August 2007)	1985	6,000
Santa Clara 398	1978	20,000,000
Shasta 800	1963	1,250,000
Shasta 975 (feeds Bloomberg 700 through a Clay Valve)	1967	1,750,000
Skinner Butte 603	1926	3,000,000
Willamette 800 # 1 (West)	1963	1,250,000
Willamette 800 # 2 (East)	1975	1,250,000
Willamette 975	1966	1,250,000
Willamette 1150	1994	300,000
Willamette 1325	1995	50,000

EWEB still retains property on Oak Hill for a future Oak Hill 607 Reservoir to serve West Eugene when that area develops more.

EWEB PUMPS AND PUMP STATIONS

EWEB's pump stations serve many purposes, primarily to fill reservoirs and provide back-up for fire protection. The small pumps in the system that run continuously maintain pressure and service to real small areas not directly served by an existing reservoir or are above the highest reservoir within that system. The larger pump stations are equipped with two identically matched pumps which operate alternately (Figure 5-34) when filling the reservoir, thus allowing each pump sufficient rest time to reduce excessive wear. If a very high demand should occur as a result of multiple or large fires, then both pumps will automatically run at the same time until the demand lowers, when the second pump will automatically shut down. Another important use of the EWEB pumps is to continuously provide service to adjoining systems when their reservoirs may be down or empty for maintenance.

Figure 5-33

Figure 5-34

Bloomberg altitude/pressure reducing valve

Typical matched pump arrangement used by EWEB

All of the EWEB reservoirs and pump stations are controlled automatically on a "SCADA" (System Control And Data Acquisition) system (Figure 5-35), so when a reservoir drops to a pre-determined set level, the pump or pumps will come on to fill the reservoir, then when the reservoir reaches another pre-determined level (generally about 1.5 feet below overflow level of the reservoir), the pumps will shut off. The SCADA system also monitors all reservoirs and pump stations (Figure 5-36) showing current status of each facility for 24 hours per day, seven days a week, with alarm systems set so that an operator can respond to any potential serious or otherwise problem, in order to maintain service to all EWEB customers.

SCADA System Installed

A new automated system for controlling EWEB's water pumps and reservoirs is just about ready to roll, says Water Distribution Supervisor George Mason.

The new SCADA (System Control And Data Acquisition) system gathers data on pumps and reservoirs while operating the entire system 24 hours a day. The SCADA system monitors water levels in each of EWEB's 23 reservoirs, then automatically kicks on the pumps to fill reservoirs as needed. Those operations used to be carried out manually.

George says the work of the SCADA team is drawing to a close as it resolves a few "minor glitches" and prepares to formally "accept" the system.

"It has been a very rewarding project, which brought us the best computerized system EWEB has ever purchased. I think that was possible because of the efforts of those on the SCADA team," George said.

Team members included software engineer Kim Larson who input data and set up the software system for operation; Communications Technician Gordon Galbraith, who verified that we received the hardware components we needed and that they all worked correctly; Lead Water Service Mechanic Harold Summers, who entered all EWEB screen displays and report forms for operating the system; Treatment Plant Operator Robert King, who ensured that the new system met the needs of the Filtration Plant; and project manager George Mason.

George also thanks Information Services supervisor Tom Lindly for being "very supportive" throughout the process. "Without (Information Services') commitment, the project would never have come off as well as it did," George said.

Figure 5-35

Figure 5-36

Article that appeared in the EWEB Intercom

Sample computer screen of a reservoir and pump station

Startouch 1325 (continuous running) Pump Station was completed in 1977 (Figure 5-37). It was built by George C. Mason (foreman), Leroy Leuck, John Wullschleger, John Kirkpatrick, Will Gowing and Gary Willison.

Figure 5-37 GMason

Figure 5-38

Startouch 1325 Pump Station, exterior and interior

Most all of the EWEB reservoirs are filled using pump stations. Skinner Butte is fed directly from Hayden Bridge Treatment Plant through an Altitude Valve. College Hill # 2, Hawkins and Santa Clara are also fed directly from Hayden Bridge. Bloomberg 700 is fed directly from Shasta 975 Reservoir through a control valve (Figure 5-33) which acts as an altitude valve and a pressure reducing valve. Bloomberg is in the 700 foot elevation and Shasta is in the 975 foot elevation, thus the need for a pressure reducing valve, otherwise the difference in elevation alone from the 975 to the 700 level would create a static pressure of about 119 psi. College Hill # 1 is filled either manually or through a float valve from College Hill # 2, similar in operation to that used in filling toilet tanks (Figure 5-39).

Figure 5-39

George C. Mason manually operating the float valve at College Hill #1 after cleaning the reservoir (float temporarily removed, thus arm had to be lowered manually)

Pump Station Construction

Figure 5-40

Figure 5-41

Storey 800 (College Crest 800) Pump Station under construction and completed - 1960

Figure 5-42

Construction of Willamette 800 Pump Station (40th & Donald) in May 1957
(below sidewalk level)

WATER DISTRICTS

The Board entered into the wholesale water business in the 1930's, supplying water to local Water Districts. Extensions to Water Districts would only be made to the City limits, a decision made in 1935, and its policy would be to not construct or own water mains outside the City.

In early 1947 there was a proposed “Bailey Hill Water District” next to the west boundary line of the Eugene city limits. The district would have included a three-square-mile area. In the election on May 9 of that year, the vote was favorable by a small majority, but soon after the election, a group of citizens in the area filed a suit to restrain the directors from any action. As there was no response filed by the directors, the Circuit Court issued an order preventing the directors from formal organization of the district. So the “Bailey Hill Water District” never came to be.

In the post war years, “Mountain States Power Company” wanted to purchase water from the proposed Hayden Bridge Filtration Plant to retail to the City of Springfield, where it already provided electric service at that time. This was also never approved.

Water Districts Formed

College Crest Water District was the first district formed. It was formed in September 1934. South Willamette Street Water District was formed in 1937. Bethel/Danebo Water District was formed in 1939, and two years later River Road Water District was formed in 1941, followed in 1943 by the Glenwood Water District (Glenwood District now part of Springfield (2009) [SUB]).

In January 1950 the Rainbow Water District was formed and was served by a meter located at Laura Street off the 45" main (see Figure 5-82) for EWEB in Springfield. Then on October 24, 1951, the McKenzie Highway Water District was formed and served from a meter off the 45" main at 31st Street in Springfield. This district became SUB[2] on January 2, 1961. SUB went off EWEB water in 1963. Also in March of 1951, the Oakway Water District was formed (Figure 5-44).

Other districts formed were Hillcrest Water District and Santa Clara Water District, which were formed before 1956.

[2] Springfield Utility Board

Figure 5-43

Bethel Water District job with safety signs

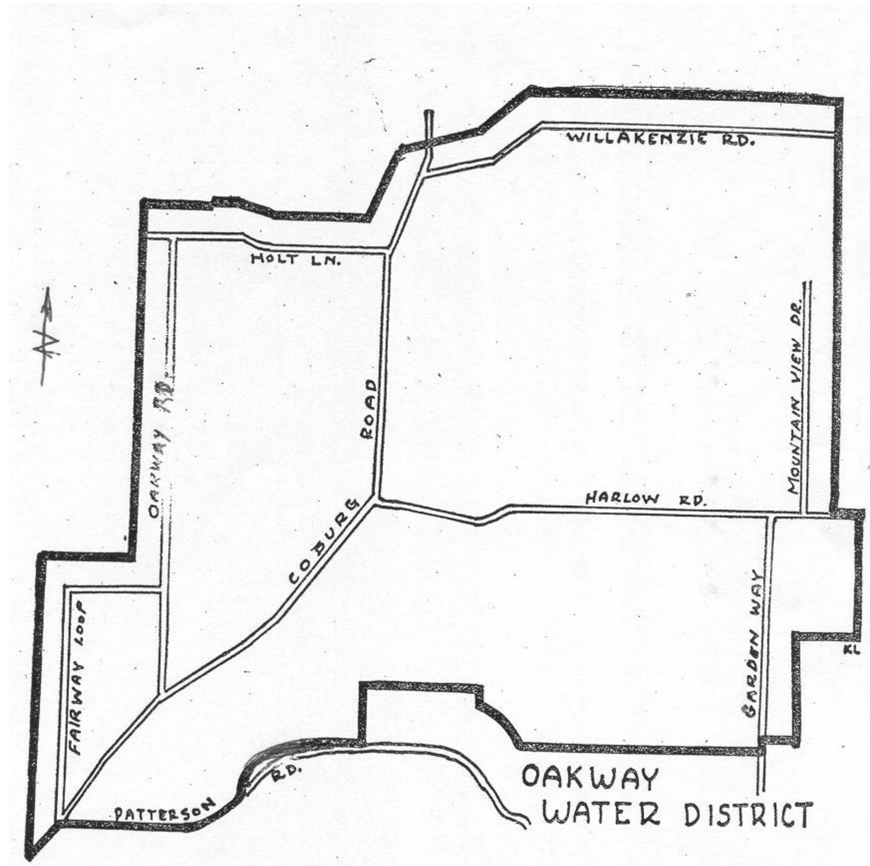


Figure 5-44

The Proposed Oakway Water District Boundary

College Crest Water District

Figure 5-45 Bill Eaton

Figure 5-46

Wooden Tank and Pump House (Figure 5-45) used by College Crest Water District and used by EWEB until 1973, when the concrete College Crest 975 reservoir was built and put into service (Figure 5-46)

WATER STATIONS

In the 1970's EWEB decided to try and find a way for customers who resided outside of the EWEB service areas to have access to EWEB's good quality water for a fee.

The decision was to try some type of coin-operated system. After much experimenting it was decided to use a wishing well design. The first of these wishing well coin-operated water dispensers was installed on West 1st (Figure 5-47), way out West Eugene (west of Seneca), to accommodate those residents from the Fern Ridge and Veneta area.

Figure 5-47 1974

Jack Smutz and Kimber Johnson

Figure 5-48 1974

Kimber Johnson

There were two others made and installed at Willagillespie School by Valley River, and the other on East 31st just west of Hilyard Street. Today (2008) only one remains, a re-designed dispenser that replaced the old original wishing well style at the West 1st location (Figure 5-49).

Figure 5-49

PIPES AND APPURTENANCES

EWEB over the years has used various types of pipes for its water lines including Wood Stave (Chapter 2, page 23, Figure 2-13), Black Iron Pipe (Chapter 1, page 16, Figure 1-20), Cast Iron, Ductile Iron Pipe, Concrete Cylinder Pipe (Figure 5-50), Tar Coated Steel Pipe (Figure 5-51), and PVC Pipe. In the past, as EWEB absorbed Water Districts, they inherited old Steel lines and AC (asbestos cement) known as Transite Pipe, which has since all been removed and replaced with either cast iron or ductile iron pipe.

Figure 5-50 1977

Photo of 36" pipe by George C. Mason

Figure 5-51 1977

Photo of 60" pipe by Larry Swancutt

EWEB water lines are classified by use. Transmission mains are those pipes ranging in size from 30" to 60". These pipes are used for the transmission of water from the treatment plant to town, reservoirs or high use areas--the U of O, for example. There are no service connections on these lines, as they are subject to down times for inspection or maintenance. The next classification is distribution mains. These range in size from 2" for low use areas to 24" for high use areas. These are lines that individual customer service lines are tapped from. Water service lines range in size from 3/4" (standard residential size) to 10" for large commercial customers. Service lines are made of copper or PVC plastic up to 3" and cast Iron or ductile iron for those 4" and over.

Pipes are coated for corrosion protection such as with concrete or tar, or made of corrosion-resistant material like copper or plastic. Invariably, due to either acidic soil conditions or damages resulting from construction work, the pipes will spring a leak (Figure 5-52) or break, and a water crew is required to make repairs. Another cause of pipe failure is water hammer. Water hammer is caused when a large flow of water is brought to a sudden abrupt stop, which causes high pressure waves to oscillate back and forth in the pipe very rapidly. When you hear a bang in the pipes in your house when closing a faucet, that's water hammer on a small scale--generally the result of pipes under the house not being secured properly. These high pressure waves can exceed the pressure rating of the pipe, resulting in major damage to the pipe. In the EWEB system, these can be caused by closing a hydrant flowing full too fast, especially in high pressure areas like near the airport. In high pressure areas, the hydrants are painted with a black top (Figure 5-54) to warn anyone using that hydrant to shut it off very slowly. You can open any hydrant as fast as one wants, especially during a fire, without causing any water hammer. Hydrants with red tops (Figure 5-55) are in low pressure areas, where using them except for fire protection only would pull water away from customers, like in the upper levels in the South Hills area.

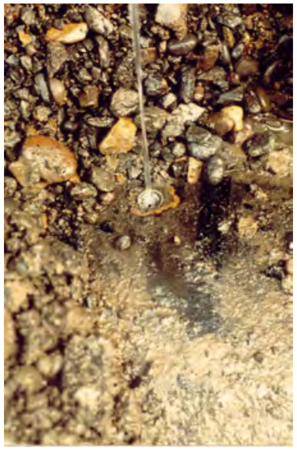


Figure 5-52

Figure 5-53   1976

Figure 5-54

Figure 5-55

HYDRANTS

One of the most important reasons for, and use of, a water system is fire protection. Reservoirs and pump stations are designed to include fire protection needs. In the earliest systems like those back on the East Coast, they utilized holes in the water pipes with a removable plug (Figure 5-56), and these locations were known as fire plugs (today some people still refer to hydrants as fire plugs).

One of the earliest types of fire trucks that used hydrants were the horse-drawn steam-operated type (Figures 5-57 and 5-58). Today, after many years of improvements, we have the snorkel type (Figure 5-62), which uses high amounts of water very rapidly.

Through the years, hydrants have changed as well. In Eugene, one of the earliest was made by the Eugene Foundry (Figure 5-59).

Figure 5-56

New York's Brooklyn Bridge


Figure 5-57 GMason

Junction City, Oregon Engine


Figure 5-58 GMason

Reading, Mass., at actual fire

Current hydrants in the EWEB system are of many makes. EWEB's standard installation (Figure 5-60) is shown with a valve which enables the hydrant to be shut off without interrupting service to customers when the hydrant needs to be out of service for repairs. The main purpose for fire hydrants is of course fire protection (Figure 5-61), but sometimes contractors require large amounts of water for street washing, trucks etc., so when approved by the local fire department, EWEB will install a hydrant meter (Figure 5-63) on the requested hydrant. In most instances, hydrants are painted with the local school colors. In 1976 during the Bicentennial, the U of O Art Department received permission to paint the hydrants in the downtown area in honor of America's 200th birthday (Figures 5-64 thru 5-70).

Figure 5-59 GMason

Figure 5-60 GMason

Figure 5-61

Figure 5-62

Author's Photos

Figure 5-63 GMason

Figure 5-64

Figure 5-65

Figure 5-66

Figure 5-67

Figure 5-68

Figure 5-69

Figure 5-70

Hydrant photos by the author

Hydrants also serve a purpose to EWEB's water utility. They allow for flushing water lines during valve checking and the flushing of the water mains after repairs (see Figure 5-73).

Figure 5-71 2006

Veltum Hydrant <u>opened</u> clockwise

Figure 5-72

Airport Style Hydrant

Figure 5-73

Flushing a main with hydrant

VALVES

Figure 5-74 1948

Figure 5-75 1985

Figure 5-76

Standard Valve Group 12" Valve on 20" Cross

Mueller Gate Valve with built in bypass and 90^{0} operating nut for shallow installations

Gear-assisted operator

Figure 5-77 1977

Concrete Cylinder Water Main with blow-off valve for emptying main (by using a de-watering pump) of water for repairs

WATER METERS

Water meters are the utility's way of measuring the water consumed by the customer. Measuring the water that went through the meter is done by meters with registers, and not by using rulers, etc. (Figure 5-78). Registers are of two different types--the round reader (as electric) and the straight reader (Figure 5-79). The registers are moved by way of a gear train inside the meter (Figure 5-80).

Figure 5-78

Figure 5-79

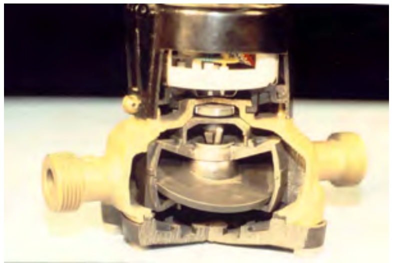


Figure 5-80

Figure 5-81

Typical fire meter with three registers to register different flows capable of registering low (A), medium (B) and high (C) flows

Figure 5-82 1950

Fire meter installed with bypass to service customers while testing meter


Figure 5-83 1980

Curt Mattison checking meter numbers


Figure 5-84

Sofie Steward, custodian of the EWEB Museum, with EWEB's oldest water meter # 8, made by Trident Meter Company

Water Meter Testing

Figure 5-85

Figure 5-86

EWEB maintained a continuous meter testing program, repairing and testing every water meter that came into the water meter shop, as shown above. Figure 5-85 shows Faye Brown testing two standard 3/4" water meters in the test bench after repairing, and Figure 5-86 shows Faye Brown testing a large meter in the lower floor of the old meter shop. The lower floor could accommodate 4" thru 8" size meters. The upper floor test bench could test 3/4" thru 2" meters. The standard margin of error in meter registrations was about a 1% error factor. Generally meters in the field erred invariably over time, and the errors were mostly in the customer’s favor due to surfaces wearing from constant moving.

WATER SUPERINTENDENTS

Figure 5-87

Standing (left to right): Ralph Patterson, James Howell, Ralph Martin Jr., Don Robinson, Vern Poindexter & Norman (Norm) Johnson.

Sitting (left to right): Hugh Currin, Ford Northrop, Ray Boals & Walter J. (Walt) Moore.

Figure 5-88 2005

Figure 5-89

The first recorded Water Superintendent (1912) was Charles E. Russell (see Chapter 4, Figure 4-6). Others that came in later years were: Walt Moore (1932 - 1952) (Figure 5-87); Norm Johnson (1952 - 1955) (Figure 5-87); Ken W. Rinard (1955 - 1971) (Figure 5-88) and Kimber G. Johnson (1971 - 1991) (Figure 5-89).

Figure 5-90 1978

Figure 5-91 1988

Main Crew, Left to Right: John Wullschleger, Gary Willison, Frank Rutledge III, John Kirkpatrick, Leroy Leuck, Willard Gowing, & George Mason - Foreman.

George Mason's office and old crew room off old back dock by warehouse.

Figure 5-92 November 1956

Left to Right: Winston "Win" Berkeley (Asst. Superintendent), Ken Rinard (Water Superintendent), Tom Ritchey (Pipe Caulker), Ted Wayne (Main Crew Foreman), Hobart "Hope" Campbell (Leadman), Faye Brown (Meter Repairman), Bob Harris (Serviceman), Claude "Jug" Downes (Pipe Layer), Charles Pierce (Serviceman), George Jones (Main Laying), Bevery "Bud" Barnts (Troubleshooter), Jack Davis (Leadman), Vern Kaiser (Main Laying), Tom "Tex" Jennings (Main Laying), Harold Buell (Main Crew Foreman).

Figure 5-93 1956

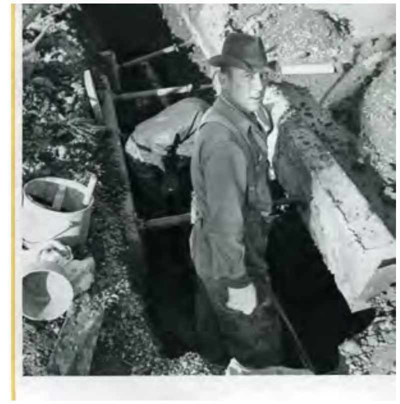


Figure 5-94 1956

Near to Far: Ted Wayne, Tom Ritchey(?)

Tom Ritchey, Pipe Caulker

Figure 5-95

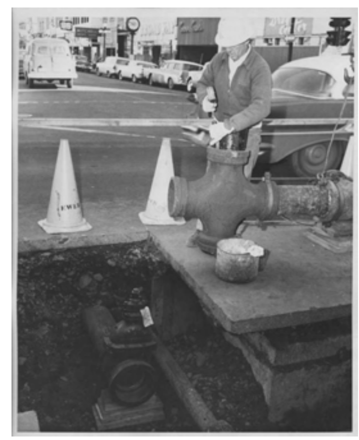


Figure 5-96 1956

Claude "Jug" C. Downes - Backfilling Pipe

Tools used by Pipe Caulkers, Old Lead Pipes and Wooden Main Fittings:

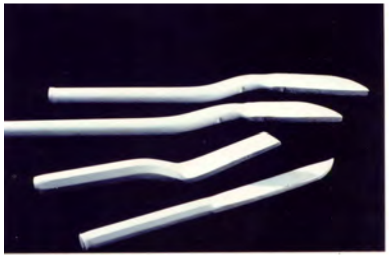


Figure 5-97

Caulk removal tools

Figure 5-98

Pouring rope and clamp

Figure 5-99

Lead gooseneck to connect corp stop to service line

Figure 5-100

Self-Tapping Corp Stop Wood Stave Pipe

Figure 5-101

Self-Tapping Corp Stop for Wooden Mains

Figure 5-102 1956

Jack Davis and Hobart (Hope) Campbell

Figure 5-103 1956

Jack Davis & Hobart Campbell with W54 Truck

Figure 5-104 1956

Bevery (Bud) Barnts and his service truck

Figure 5-105

Figure 5-106 1973

Jack Davis

Right: Jack Davis on backhoe on W. 28th Ave east of Friendly and Monroe Streets moving services back for street widening project by the City of Eugene. (Note: Monroe Substation in background.)

Figure 5-107

Figure 5-108 1948

Laying 20" cast iron water main on Hilyard Street at Broadway (Note: Northwest Natural Gas Company tank, etc. in background (picture taken January 8, 1948).

Figure 5-109

Figure 5-110

Setting 30" pipe with cable backhoe

Lowering water pipe into ditch with shoring

File 5-111

Figure 5-112

Mike McNutt & Bud Barnts installing water line on bridge

Flushing main while valve checking (George E. Misner)


Figure 5-113 1972

Ted Henke removing frozen air release valve on N. Garden Way


Figure 5-114 1977

George Mason removing broken valve off 45" main


Figure 5-115 1982

Matt Meier


Figure 5-116

Installing new hydrant, Bud Nadeau crew, Don Walker in back


Figure 5-117

Rick Wilson flushing main after repair

Figure 5-118

Larry Lauderdale, Jim Brown, Owen Brown, Jim Wagnon at Santa Clara Reservoir construction

Figure 5-119 1978

George Mason inspecting 36" main on Beltline with contractor

Figure 5-120 1993

Debbie Pfaller, Sandy Dixon, George Mason & Jenean Rigney

Chapter Six

EWEB's ELECTRIC UTILITY

ELECTRIC SYSTEM OVERVIEW

All electric utilities depend on some form of generation, either by purchasing power or generating their own. Power can be generated in many ways. It can be generated by using flowing water similar to the old water wheels (Figure 6-1) as used in the 1700's and 1800's, or by using hydro-generated power from dams and reservoirs (Figure 6-2). Hydroelectric power plants use a power source (reservoirs), then utilize gravity to cause water to flow through a penstock to turn a turbine[1] which then turns a metal shaft in an electric generator, which in effect is the motor that produces the electricity. Examples of this form of

Figure 6-1

Water Wheel and Dam

Figure 6-2 2006

Leaburg Dam

[1]A rotary motor actuated by the reaction of a current of water or steam, usually on a series of curved vanes on a central shaft.

Walterville, Leaburg and Carmen-Smith. Another method of producing electricity used by EWEB, is using fuels such as Hog fuel[2], Coal, Bunker "C" Oil[3], or natural gas to produce steam under pressure, which then also turns turbine blades, the result being the same as using hydro power, except utilizing steam under pressure.

Other forms used to generate power are solar energy, wind power, inter-tidal estuaries (such as in France), geothermal (basically the same as fuel produced steam, but produced naturally) and nuclear power.

After electricity is produced, it then must be transmitted to customer locations. This is most generally done by "high-voltage transmission lines." These lines transport electrical power from generators at power plants through switching stations, then to substations, and ultimately to the customer. High-voltage transmission lines transport large amounts of electrical power over long distances (such as BPA[4] lines from the Columbia River Power Plants; see Figure 6-3).

Figure 6-3

[2]Waste wood products, such as wood chips, sawdust, etc.

[3]A No. 6 fuel oil, a dense viscous oil produced by blending heavy residual oil with lighter oil (No. 2 fuel oil)

[4]Bonneville Power Administration

Starting at the generating plant, the voltage is increased for transmission purposes. This increase in voltage results in reducing the current. The word substation comes from earlier days when the first substation was connected to only one power station where the generator was located and were ***"subsidiaries"*** of that power station.

EWEB's first concrete transmission poles ran from Willakenzie Sub about half way along Beltline Road to Cal Young Sub. EWEB's second set of concrete transmission line poles ran from Danebo Sub to Bonneville Power Station (Lane Sub) and it was a double circuit line.

As you can see, the electric utility requires many of the same tasks as the water utility with exception of the treatment process. EWEB is consistently maintaining a tree trimming program as well as a replacement program for old poles and transformers to minimize power outages as much as possible, but sometimes Mother Nature has other plans. When that occurs, the highly dedicated and qualified electric workers go into action to restore everything back to normal as safely and quickly as possible.

From the BPA substations the power is routed to local EWEB substations and switching stations. There are two types of substations, Transmission and Distribution. EWEB gets some of its power from BPA through three different transmission substations belonging to BPA: Eugene Sub (Figure 6-4), Lane Sub (Figure 6-5), dedicated October 21, 1966 and J. P. Alvey Sub (Figure 6-6).

Figure 6-4 2006

Figure 6-5 2006

Figure 6-6 2006

J.P. Alvey Substation (BPA)
(Author's Photo)

The power from these substations flows directly to EWEB's Distribution Substations. Substations generally contain one or more transformers, switching, control and protection equipment. Substations do not (usually) have generators, although a power plant like Carmen-Smith (Figure 6-7) will have a substation nearby.

A substation is where voltage is transformed from high to low or low to high, and they can contain one or more transformers. In large substations circuit breakers are used to interrupt any short-circuits or overload currents that may occur. A typical substation will contain line termination structures, high-voltage switchgear, one or more power transformers, low voltage switchgear, surge protection, controls and metering**.** Substations that have a fence around them must be properly grounded to protect people from high voltage that may occur during a fault in the transmission system.

EWEB's substations were originally named by the letters of the alphabet as they were built. The first substation, Sub "A", was located just west of the current Willamette Sub. Following is a list of the original substations named by letters (these were all 2400-volt stations). They received location names when they were converted to 12,000 volts (such as "Willamette Sub," which was originally the old Sub "A").

Sub "A"	located as stated above (but on both sides of Southern Pacific tracks) (See Figures 6-8 & 6-9)
Sub "B"	was located at the Southern Pacific yard off Bethel Drive (1927)
Sub "C"	was located at 10th & Charnelton (1927)
Sub "D"	was near 20th & Agate (1927)
Sub "E"	was South off Roosevelt Blvd on Foch Street
Sub "F"	was located on east side of River Road, north of Park Avenue
Sub "G"	was located at 17th & Oak
Sub "H"	was located at 29th & Monroe (now called Monroe Sub) (See Figure 6-10)
Sub "I"	was on Bethel Drive, now called Bethel Sub (See Figure 6-11)
Sub "J"	was located at East 8th and High Street, by current parking lot, by the Ferry Street off ramp.
Sub "K"	was located at U of O Steam Plant (built by the University of Oregon in 1949)
Sub "L"	was located at Adams & 3rd (See Figure 6-12)
Sub "M"	was located on Elmira Road (See Figure 6-13)
Sub "N"	was located at West 1st & Seneca (See Figure 6-14)
Sub "O"	was located on Laurel St. (fed directly from Alvey Sub [BPA])
Sub "P"	was located at Garden Way (road now called Laura Street in Springfield) & Q Street

There was also a Sub "T". Alvey Sub and Cougar were to come into Sub "P"[5].

[5] Byron Taylor Diaries, 1956

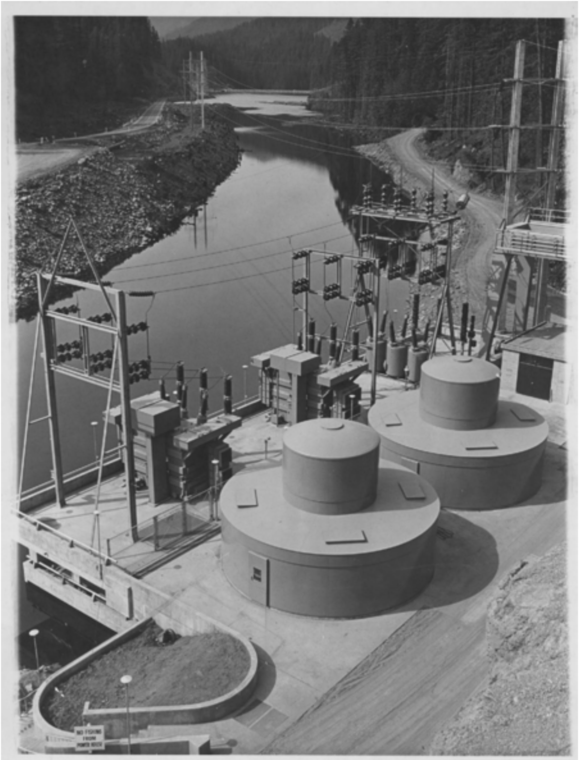


Figure 6-7 1963

Carmen-Smith

A transmission switching station's main purpose is to connect and route together various transmission lines. On the other hand, a distribution substation's main purpose is to transfer power from a transmission system to a distribution system. The feeders from these substations can run overhead or underground and eventually power the distribution transformers on poles or underground vaults at or near the customer's location.

EWEB's Old 2400-Volt Substations

Figure 6-8 1915

Sub "A" with three 1908 model Westinghouse Transformers

Figure 6-9 1952

Sub "A" when located near the Railroad tracks at E. 8th & Hilyard

Figure 6-10 1929

Figure 6-11 1929

Unloading Transformers with SPRR Steam Crane, Unloaded Transformers in front of First Water treatment Plant Settling Tanks. The transformers are for Sub "A", now known as Willamette Sub. April 6, 1929.

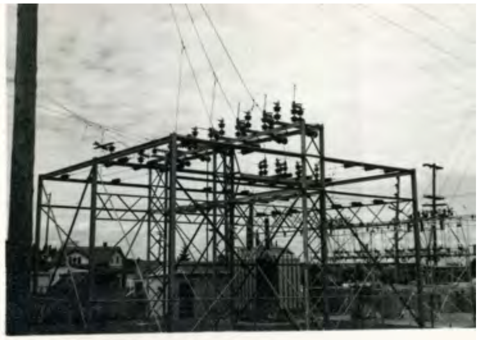


Figure 6-12 1952

Sub "H" at Kreatz Road and Monroe St.

Figure 6-13 1952

Sub "I" located at W. 3rd & Adams later called Adams Sub

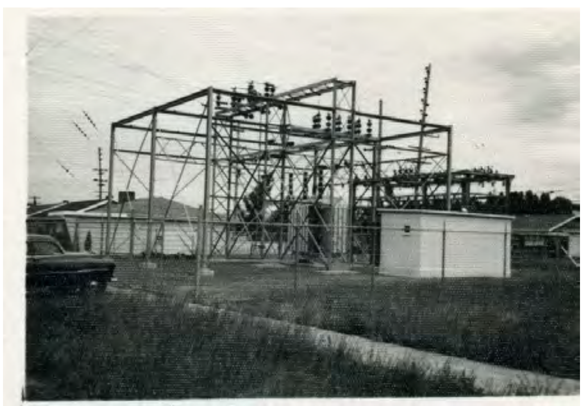


Figure 6-14 1952

Sub "L" located at E. 29th & Hilyard

Figure 6-15 1952

Sub "M" located on Bethel Drive

Figure 6-16

Sub "N" located at W. 1st & Seneca, later called Seneca Sub

EWEB's Current 12,000-Volt Substations

EWEB currently (2007) has 28 Distribution Substations and one large substation/switching station named McKenzie Substation, which can be seen along the east side of I-5 north of Beltline Road (Figure 6-17). EWEB has four main switching stations located at Carmen, Hayden Bridge, Leaburg and Walterville.

Right: McKenzie Substation (Author's photo)

Figure 6-17 2006

EWEB's current 12000-volt substations are:

Adams Sub
Bertelson Sub(See Figure 6-20)
Bethel Sub
Cal Young Sub
Coburg Sub
Currin Sub (See Figure 6-21)
Danebo Sub
Delta Sub
Dillard Sub
Hilyard Sub (See Figure 6-19)
Hawkins Sub
Hayden Bridge Sub
Jefferson Sub
Jessen Sub
Laurel Sub
McKenzie Sub (See Figure 6-17)
Monroe Sub (See Figure 6-18)
Oakway Sub
Prairie Sub (1972)
River Road Sub
Santa Clara Sub
Seneca Sub
Spring Creek Sub
Thurston Sub
Westmoreland Sub
Willakenzie Sub
Willamette Sub
Willow Creek Sub

Figure 6-18 2006

Monroe Sub (Old Sub "H")

Figure 6-19 2006

Hilyard Sub (old Sub "L")

Author's Photos

Figure 6-20 2007

Bertelsen Substation

Figure 6-21 2006

Currin Substation

Figure 6-22

Hugh Currin at his namesake substation

Figure 6-23

OVERHEAD LINES (TRANSMISSION & DISTRIBUTION)

Figure 6-24

"Listening to the World Series" on the cover of the October 4, 1952 Saturday Evening Post Magazine

Figure 6-25

115 kv Transmission line from Carmen to Cougar Reservoir during construction (90' poles buried 10' to 12' deep)

Figure 6-26 2006

Typical transmission line that runs between EWEB substations showing bell insulators (10"). Each individual bell reduces voltage between line and pole by 12,000 volts (8 bells) at Delta Sub.

Figure 6-27 2006

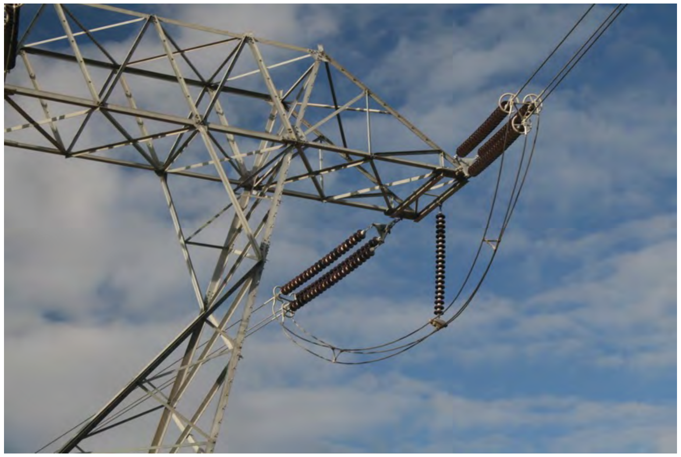


Figure 6-28

Alton Baker Park (Steel Tower)

***20 bell insulators for* 240 kv line**

(Author's Photos)

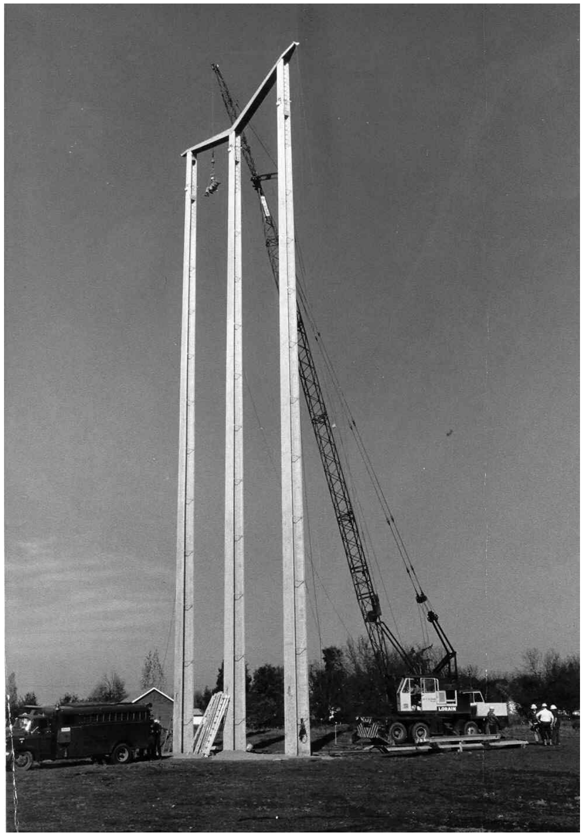


Figure 6-29

Erecting a tall concrete pole for crossing SPRR yards (now UPRR) from BPA's Eugene Substation to the East

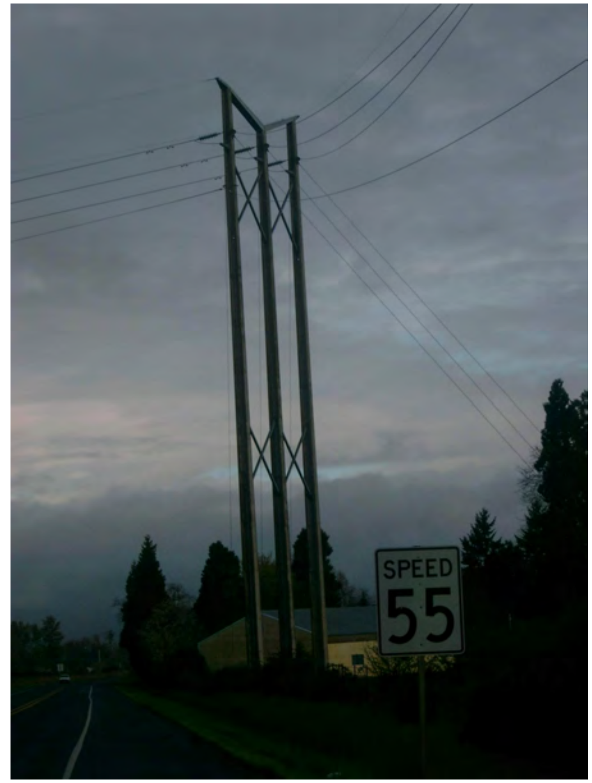


Figure 6-30 2006

Same pole in use years later

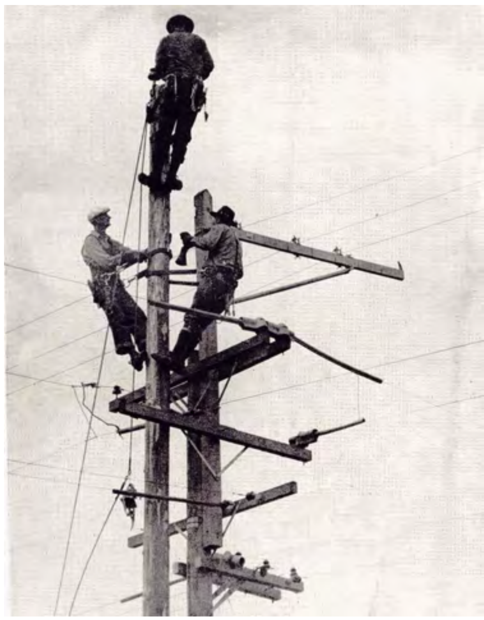


Figure 6-31

Figure 6-32

Figure 6-33

Far left: lineman changing out old electric pole in the days before the use of bucket trucks

Changing out a transformer in the days before bucket trucks

EFFECTS OF WINTER WEATHER ON OVERHEAD LINES

Figure 6-34 1942

Figure 6-35 1942

Power poles down due to ice on the lines. Both these photos taken at 8th and Franklin Blvd on January 7 1942

STREET LIGHTING

Figure 6-36 1960

Old style street lights - note how light is attached to telephone pole (Series Type)

Figure 6-37 1960

Replacing old street lights with new light and pole combination

Figure 6-38

Looking south on Willamette St. at new lights

Figure 6-39

City Hall when new lights were turned on (1120 Willamette Street).

POWER POLES

The main purpose of power poles, or as they are commonly called, telephone poles, is to support the overhead lines which carry the electricity (power) from its source to the customers. They are high in the air for safety reasons to keep them out of reach of people, etc.

Power poles are used for two main purposes. One, for transmission and distribution lines (primary and secondary) which carry the electricity to the customer. These poles are pretty much made of treated wood (Figure 6-40).

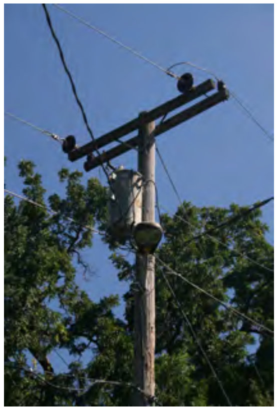


Figure 6-40

Figure 6-41

Figure 6-42

Figure 6-43

Figure 6-44

The other purpose is for what many call high-tension lines, which are higher and are actually called high power lines, which carry the higher voltage lines from sources (like Carmen-Smith) to substations or switching stations (like Hayden Bridge). They also carry power lines from substation to substation. These poles can be made from wood (Carmen line, Figure 6-41), concrete (Figure 6-42), metal (Figure 6-43) or steel framework, like those used by BPA (Figure 6-44). In some areas it is more convenient and cost-effective to have high power lines as well as transmission lines on the same poles (Figure 6-45).

On all power poles are insulators which insulate the pole from the power so no one gets shocked if they touch a power pole. Insulators are made of glass and/or porcelain (Figure-46). These insulators were used on the transmission lines (larger insulators) and distribution lines (the smaller ones). The real small glass insulators occasionally seen in antique stores were used by the railroads along their track right of ways (Figures 6-49 & 6-50). The high power lines also used insulators, as they are carrying much higher voltage. Much larger insulators are required, called bell style glass insulators, which can be stacked one upon another. The number used depends on the voltage that the lines carry. Each bell insulator can handle up to 12,000 volts each. A stack of, say, 20 individual bell insulators (Figure 6-48) would be used for a 240,000 volt line (12,000 volts time 20 = 240,000 volts) or what would be referred to as a 240 KV line.


Figure 6-45

Roosevelt Blvd


Figure 6-46

Note: wooden threaded area


Figure 6-47

Pole cross arm with insulators


Figure 6-48

20 Bell Insulators

Figure 6-49 2009

Along NW Expressway

Figure 6-50

Railroad / Communication Insulator

As with anything else used by man, power poles are subjected to many problems, not just by damage resulting from vehicle accidents, but ice built up in the lines from ice storms, and overgrowth from surrounding trees which in wind storms can cause power outages. The ice built up on the lines from ice storms just keeps building and making the lines heavier and heavier until they pull the poles down or break the wires. EWEB has a very progressive tree trimming program to handle the problems from the trees, but ice storms are another matter (Figure 6-50). Another problem for lines at the poles are from osprey that want to build their nests as high as possible in clear areas around their nest site. Power poles make perfect locations for them, especially in areas near waterways, which is the main source of their food supply. The nests themselves don't usually damage the poles, but being across the wires or transformer connections can cause power outages. Osprey are not easily discouraged, so utilities like EWEB construct a nesting platform above the top of the pole, moving the nest higher away from the lines, etc., which suit the osprey just fine, because for them, the higher the better (Figure 6-51). [See also Chapter 9, the Intermountain Gun Club].

Figure 6-50

By EWEB's back gate

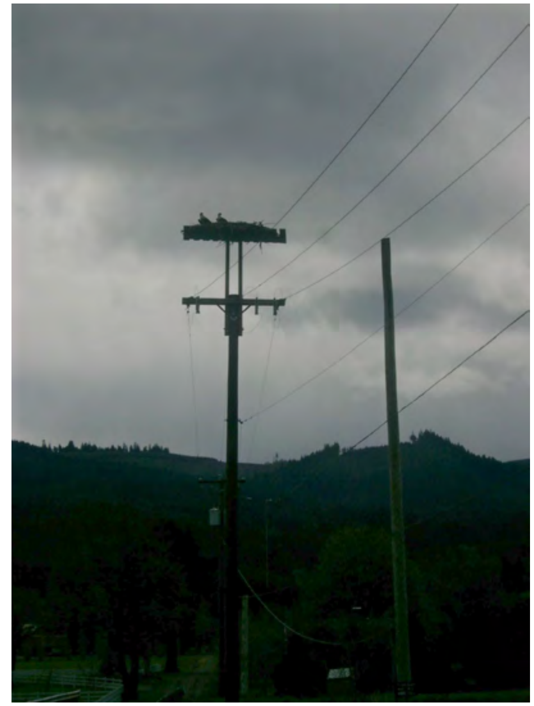


Figure 6-51

Osprey nest above lines up the McKenzie

TRANSFORMERS & METERS

A transformer is a device in a substation that changes the voltage (Figure 6-52). The transformer on the line feeding your house takes the 12,000 volts (12 kva) and makes it 120 and 240 volts for home use (Figure 6-40).

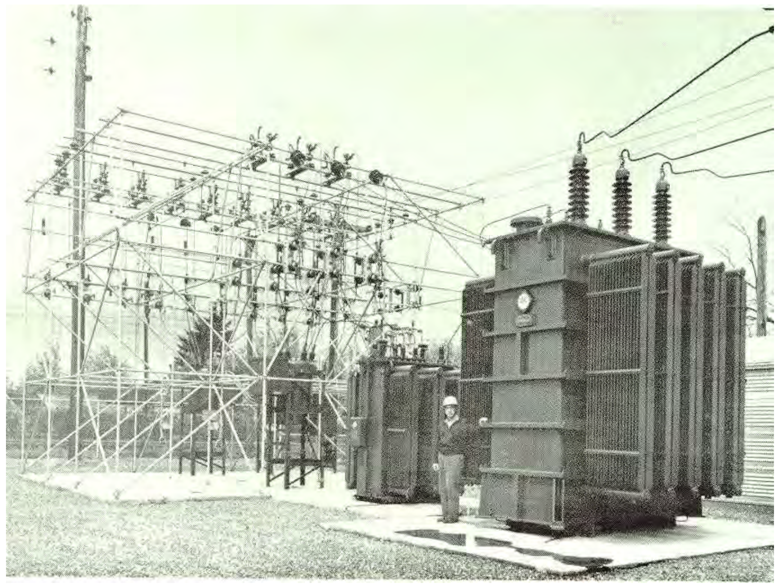


Figure 6-52

Large transformer in an EWEB Substation

The following two photos (Figures 6-53 & 6-54) show the rebuilding of a 1250 kva transformer for Sub 'A'. The photos were taken by Hugh Currin.

Figure 6-53 1936

Stacking Laminations

Figure 6-54 1936

Making connections on terminal board

Figure 6-55

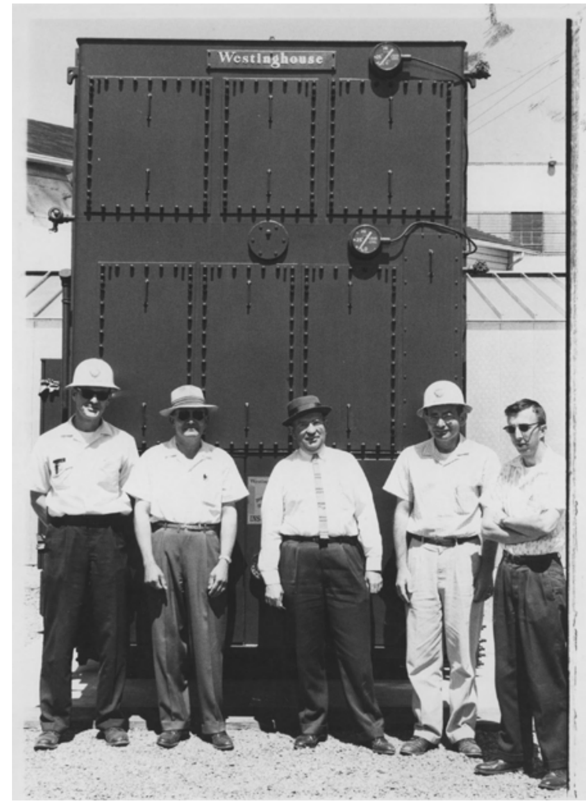


Figure 6-56 1960

John Scofield, Verne Poindexter and Howard Stenshoel

Left to Right: Jack Clark, Francis Whitney, Ralph Martin, J. Hoake, and Dean Axtell (by a new Sub 'A' Transformer)

Figure 6-59 1978

Howard McFadgen testing rubber gloves

Figure 6-60 1980

Lavonne Landers rebuilding a transformer

Figure 6-61 1963

McClain Plant conversion to Relay/Meter Shop

Figure 6-62 1987

Old Transformer Shop

ELECTRIC METERS

Figure 6-63 1980

Figure 6-64 1978

Loretta Coon and Sally (Simpson) Brown calibrating an electric meter

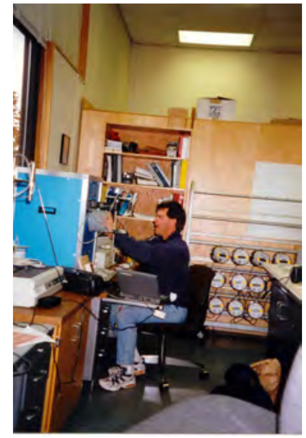


Figure 6-65

Kim Pfaller testing an electric meter

Figure 6-66

Typical Electric Meter

Figure 6-67

Relay Shop Crew (photo by Bobbi Miller)

Left to right: Clay Baxter, George Zaczek (back to camera), Mark Fosnaugh, Walde (Wally) Olhauser & Doug Glass

UNDERGROUND ELECTRIC

EWEB started doing underground electric service in the business district only in the early 1950's. But in the mid to late 60's EWEB was becoming heavily involved with going underground with its electrical lines in new subdivisions. There were many advantages of putting electric installations underground, such as neighborhoods being more aesthetic without the unsightly overhead lines and power poles, and also, being underground, they were not subjected to the high winds and ice storm damage that could result in power outages.

With electric lines being installed underground, the down side of that issue is the lines being more susceptible to damage from excavations by others. This led to EWEB being one of the leaders in developing the Oregon Volunteer "One Call" system which would in later years become a national law. This led to the formation of the LUCC (Lane Utility Coordinating Council).

Figure 6-68

The Council, with EWEB, set up teletype machines in all the local utilities and the City of Eugene, so locate requests could be teletyped between all the utilities as locate requests came in from contractors. Bud Frye in the Electric Operations office was EWEB's locating coordinator (Figure 6-68). The author served as President of the Council for a 1-1/2 years, having to finish out the term of Dick Smith of the phone company, who had to resign as result of a heart attack, and then serve a year as well. Now with all the utilities going underground, it was causing problems for developers who had to wait for each individual utility to get their facilities buried and the other utilities waiting for their turn to move into a subdivision. So once again EWEB was instrumental in developing the joint trench concept with EWEB installing all the utility/communication ducts, vaults and pedestals along with its water lines.

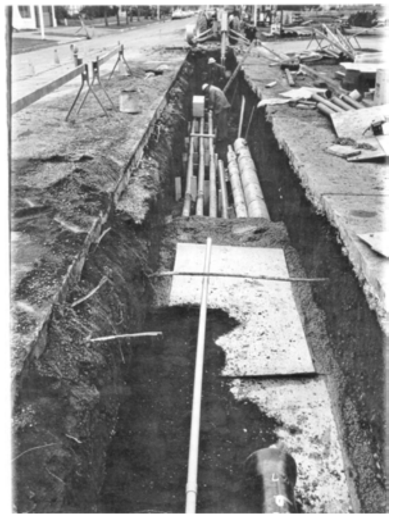


Figure 6-69 1967

Utility Joint Trench by EWEB

Figure 6-70

Joint Trench with steam line on far right.
Note welder (bottom of photo) welding steam line

This had many advantages. There was one basic utility installer, installing all the underground facilities as needed for the subdivision, thus freeing up more time for the developer, and the utilities were all installed correctly and not interfering with each other. The trench was just excavated a little deeper with the electric and communications lines installed on the bottom with the electric ducts on the right and the communication (phone and TV) ducts on the left, then a foot of 3/4 minus gravel was placed over those ducts for a foot, then the water line was laid on top of all that, maintaining a 30" cover. Then later the other utilities would come in and pull their respective cables through their duct and make the necessary connections (See Figures 6-71 and 6-72).

In the early days of EWEB installing its underground lines prior to joint trench installations, the crews doing that work were known as the “Mule Gang,” and they worked out of their shop, which was referred to as the “Mule Barn,” and all the installations at that time were direct bury (Figure 6-73). One of the early foremen on those crews was Ink Smith.

Figure 6-71

Pulling cable through ducts

Figure 6-72

Glen Chitwood installing a heat shield

Figure 6-73

Installing direct bury cable

Some of the early supervisors for the Underground Section were Tom Davis (brother to Jack Davis in the Water department) (Figures 6-74 & 6-75), Lou Polley (Figure 6-76) and Dick Mihulke (Figure 6-77). All of the underground lines needed to start from a pole dip (Figures 6-78 & 6-79).

Figure 6-74

Hagan Millsap & Tom Davis

Figure 6-75

Tom Davis

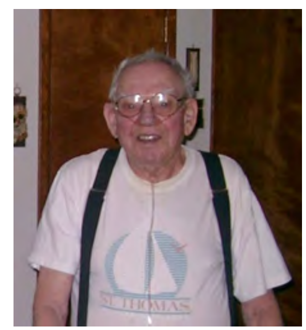


Figure 6-76

Lou Polley

Figure 6-77

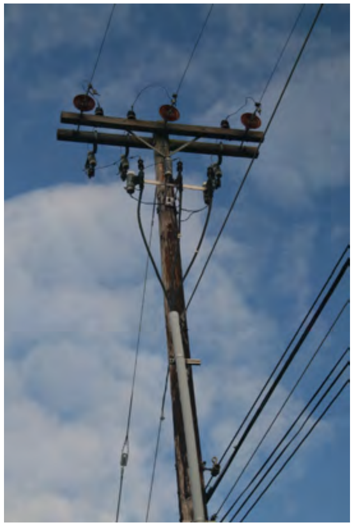


Figure 6-78

Figure 6-79

Dick Mihulke

Pole dip for primary

Pole dip for secondary

The transformers for underground installations are installed in underground vaults (Figure 6-80) and are of two general types, submersible (Figure 6-81), which are completely below ground level, or the pad mount style (Figure 6-82) which sit on top of the vault lid, each having their own individual advantages and disadvantages.

Figure 6-80

Figure 6-81

Figure 6-82

DISPATCHING

Figure 6-82 1967

John Scofield, Dick Gall & ?

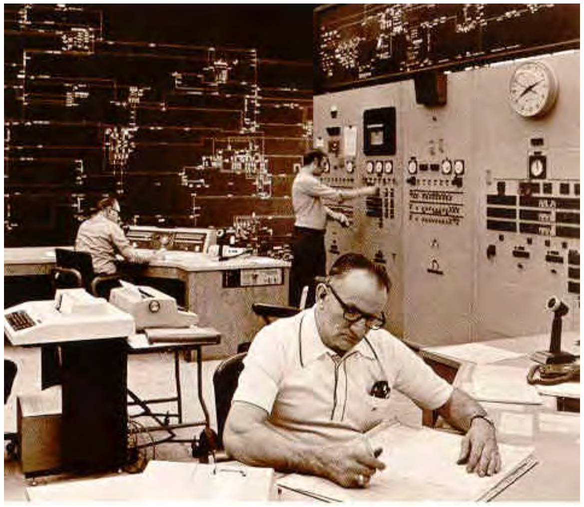


Figure 6-83 1975

Background: Harvey Chapman and Vaughn Scales
Front: Harold Graham, Chief Dispatcher

Figure 6-84 1971

Mike Henry

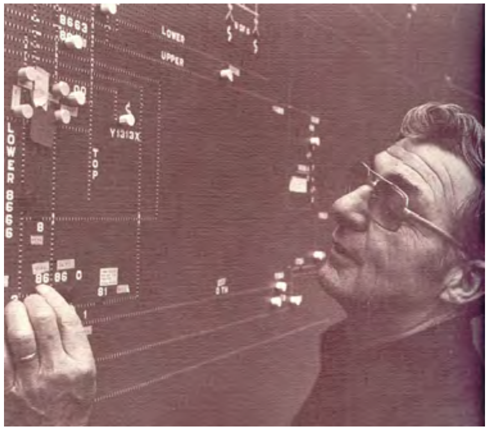


Figure 6-85 1978

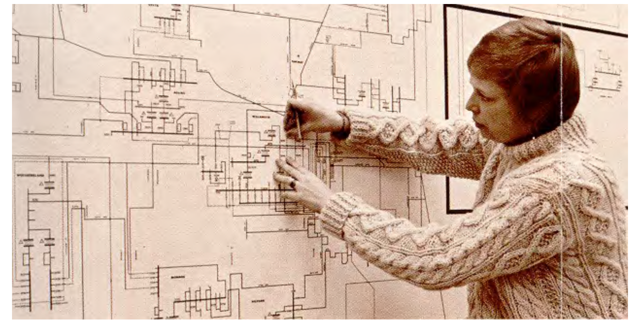


Figure 6-86 1975

Clarence Reding

Anne Mace, Drafting - Updating main Board

Figure 6-87

Jim Groat

Figure 6-88

Tom MacKenzie and Chuck Ruiz

Figure 6-89

Tom Green

ELECTRIC SUPERINTENDENTS

Figure 6-90 1946

Verne Poindexter
(Unknown - 1968)

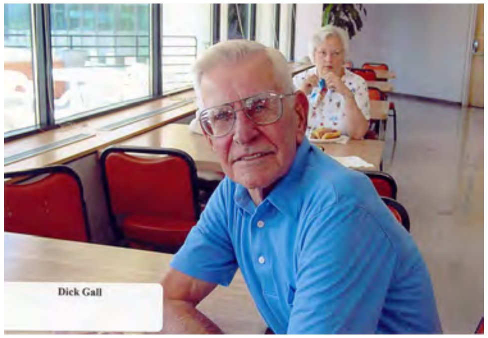


Figure 6-91

Dick Gall
(1968 - 1984)

Figure 6-92

Bob Carter
(1984-1993)

HOW EWEB's ELECTRICITY IS PRODUCED

The first power plants in Eugene were run on wood, while today EWEB uses natural gas, hydroelectric and wind generation. Smaller generation projects like EWEB vs. BPA can help protect from blackouts caused by emergency shutdowns and reduce large scale pollution.

Rotating turbines attached to electrical generators produce most of the commercially available electricity. Turbines may be driven by using water, steam or wind. The most common usage in this country is by steam in fossil fuel power plants (like coal), and by water in hydroelectric dams (like EWEB's Leaburg and Carmen-Smith Projects). Alternately, turbines can be driven directly by the burning of natural gas, like EWEB's steam plant.

Wind turbines generate electricity by using wind. These turbines can be used to generate electricity in areas with strong, steady winds. Most all of the modern turbines being produced today use the Dutch Three-Bladed, up wind design. These turbines produce power cheaper and more reliably, so it takes less turbines to produce the same amount of power and the blades are able to turn much slower, which is less distracting visually.

Bio-Gas (like methane) is often used where it is produced, such as Eugene's Metropolitan Wastewater Plant on River Avenue, using basically a small gas turbine which currently only produces enough electricity for some of their own use within the plant.

Cogeneration (combined heat and power) plants like EWEB's Weyerhaeuser Power Plant (now IP, International Paper Co.) in Springfield combine the generation of electricity and heat using any number of fuel sources.

Pumped storage hydroelectric power plants are similar to EWEB's Walterville Power Plant with Walterville Pond. Water is pumped into the pond during low demand. During hours of peak demand when the price of electricity is high, the stored water can be released to produce electric power when needed. Another source of power is nuclear, which is a form of steam generation, such as the now-closed Trojan Nuclear Plant in Rainier, Oregon.

EWEB's NUCLEAR ENERGY PROJECTS

The first nuclear energy exposure for EWEB came in 1956, when Ray E. Crews of San Francisco, representing the atomic energy division of the American-Standard Corporation, told the EWEB Board (made up of Earl McNutt, Calvin R. Smith, Julio Silva and Egbert S. Wengert) that the Federal Government would pay four-fifth (4/5) of the cost of developing an atomic plant. Mr. Crews told the Board the cost of power from the plant would be comparable to that of EWEB's Steam Plant, which provided peaking power and as a stand-by reserve. The American-Standard Corporation would agree to act as consultant in drawing up a proposal to put before the Federal Atomic Energy Commission. Members of the EWEB Board took no action on the proposal, but said they would accept more information when Mr. Crews returned from San Francisco. Board member Earl McNutt was reluctant to have EWEB take part in an experimental development program. McNutt also said, "It's been our experience that there's no point in rushing in to get in on the ground floor before a thing has been developed and proved itself".

Mr. Crews later said, "but atomic power doesn't have to compete with hydro to be useful at that time" (1956). "Right here in the midst of the greatest power-generating area in the United States you suddenly had to put your Steam Plant to work." This referred to the fact that the Steam Plant went into full-time operation in December to provide power for Oregon industries, which had been threatened with a shutdown because of temporary shortage of Bonneville power.

The next time nuclear energy was proposed with EWEB was in 1969, when EWEB was looking at the possibility of building twin dams near Noti, Oregon. Dams on Poodle Creek and the Long Tom River (Figure 6-40) would be the key part of EWEB's proposed plan for a $225 million nuclear power plant, which would be called "Poodle Creek Nuclear Plant" site. The dams would be built to provide a cooling reservoir system for the nuclear plant. Byron Price, EWEB's General Manager, felt that the reservoirs could serve double duty, also as a source of water for Fern Ridge Reservoir. He claimed that sufficient storage in the two reservoirs would allow a summer drawdown of 20,000 to 40,000 acre feet of water from them. The released water would flow to Fern Ridge Reservoir, where irrigation demands were clashing with recreationists. The two dams would create twin reservoirs covering a total of about 2,500 acres, backing up the water to a point where they merge at a "saddle" between the two valleys. At this point is where the plant would be located.

The plan was for cooling water to be pumped from the Long Tom side, pass through the plant where it would be used for cooling, then discharged as warm water into the Poodle Creek side. A diversion tunnel through the ridge separating the two streams would return water from the Poodle Creek Reservoir to the Long Tom Reservoir after it was cooled. The tunnel intake would be of sufficient depth to draw cooler water from the bottom of the reservoir so the Long Tom side of the system would always be free of warm water from the plant. Releases for Fern Ridge Reservoir would be from the Long Tom Reservoir.

Figure 6-93

Subsurface explorations were also being conducted on potential sites on High Prairie near Oakridge, Oregon, and a third potential site near Lorane was also looked into. None of these sites were found to be satisfactory. One of the reasons cited was the amount of potential fog during the fall and winter months, which would have been during high demand for power.

The next and final chapter in EWEB's nuclear energy programs was the Trojan Nuclear Plant in Rainier, Oregon on the Columbia River (Figure 6-94). Construction of the Trojan plant began on February 1, 1970 and commercial operation began May 20, 1976. In 1978 the plant was closed for nine months while modifications were made to improve its resistance to earthquakes. Trojan was a pressurized water reactor (PWR) nuclear power plant. The plant went into operation in 1974. It was said to be equivalent to two Bonneville Dams in size. EWEB paid for 30% of the plant and engineer

John Scofield was EWEB's "resident engineer" on the job during construction. John told this writer that while they were pouring concrete, I believe for the cooling tower, he reached into his pocket, pulled out a quarter, and threw it into the concrete as it was being poured--that way he could always say he had money in Trojan.

PGE (Portland General Electric) and EWEB went into a contractual arrangement for EWEB's 30% ownership of the plant and it was approved by EWEB's Board March 12, 1970. On January 7, 1980 EWEB sold its 30% share of Trojan to BPA. This proved to be a very smart move for EWEB.

While operating, Trojan represented more than 12% of the electricity generation capacity of Oregon. In January of 1993, PGE stated that it would not restart the plant. The 499-foot-tall cooling tower was demolished by an implosion at 7:00 a.m. on May 21, 2006. This was the first implosion of a nuclear cooling tower in the U. S. After only 16 years in service, it was closed by PGE, almost 20 years before its design lifetime.

During the end of construction, if one could climb the tower al the way to the top, they would receive a certificate and become a member of what was called "Trojan Tower Trekkers." EWEB's George Partridge, Shop Construction Supervisor, earned such a certificate (Figure 6-95) and membership. EWEB purchases approximately 40% of its power from BPA, generates about 25% with its own resources, and obtains the remainder from long-term contracts with other utilities and agencies. As I write this, EWEB operates three hydroelectric projects on the McKenzie River, a hydroelectric plant on the Clackamas River, a hydroelectric project in Northern Idaho, a cogeneration plant at the International Paper mill, and a generation facility at EWEB's steam plant.

Figure 6-94

Figure 6-95

Figure 6-96 1979


Figure 6-97

It took 2,500 tons of dynamite to implode the tower (Figure 6-97) and it took only eight seconds to come down, spelling the end of Trojan that was shut down 20 years early, after a cracked steam tube released radioactive gas into the plant in 1992, and the plant never restarted. The dome structure was slated to be removed some time later.

BEFORE AND AFTER VIEWS OF THE TROJAN COOLING TOWER
(Author's photos)

Figure 6-98 2005

Figure 6-99 2006

EWEB's WIND GENERATION EFFORTS

Figure 6-100

Figure 6-101

EWEB's 10-story-tall wind turbine nicknamed "The Eggbeater"came to an end in March 1989 after experimenting for three years. It had been on a hilltop overlooking Yaquina Head north of Newport since 1980. EWEB, along with 19 other public utilities, was involved with the experiment, and bore 36% of the project cost. The turbine was designed and built by the Aluminum Company of America (ALCOA). The 500-kilowatt turbine was originally intended for research and demonstration that would have supplied power for 60 all-electric homes in Central Lincoln PUD's power grid (Figures 6-47 and 6-48).

Ken Rinard, EWEB's Director of Operations & Engineering at the time, said the biggest problem with the turbine was its design. The design was built on the idea of a Frenchman named Georges Jean Marie Darrieus, an aeronautical engineer who received a patent on his wind turbine in 1931. The Darrieus wind generator rotated around a vertical axis with only two aerofoils (EWEB's had three, Figure 6-101). The vertical arrangement had one advantage--that the heavy generator was placed at ground level for easy servicing. The aerofoils or wings as they were called were constructed by curving the wings in an "egg-beater" shape which was called a "Troposkein" shape, a word derived from the Greek for "the shape of a spun rope".

Currently (2006) EWEB gets its wind power from three wind energy farms. The "Foote Creek Rim" project is Wyoming's first wind farm facility to generate electricity, located near Arlington, which is between Laramie and Rawlins in a flat rim rock area, one of the windiest areas in the U. S. It began operation on April 22, 1999. The original project had an output of more than 85 megawatt (MW) of electricity, enough for about 27,000 average Northwest homes. The turbines can generate power at wind speeds of 8 to 65 mph. At higher wind speeds, the turbines automatically shut down, which allows them to withstand Wyoming's 125 mph gusts. The turbines are also able to operate in extremely cold conditions. The "Klondike Wind Farm" (Figure 6-102) in northeast Oregon, five miles east of Wasco, Oregon, is one of five wind projects in the State of Oregon. It produces 24 MW of electricity with 16 variable speed/variable pitch General Electric turbines, each with a capacity of 1.5 MW, providing energy for over 6,100 Northwest homes. They are located in Sherman County, Oregon, bordering the Columbia River. "Vansycle Ridge Wind Farm" is Oregon's first commercial facility to generate electricity using wind power. It began operation in November of 1998. The average wind speed at Vansycle Ridge (crest of land above Vansycle Canyon) is 16 to 18 mph. Vansycle Ridge Wind Farm uses 38 Vestas wind turbines which produce a maximum output of 24.9 MW of electricity, enough power for more than 5,000 average Northwest homes. These turbines can generate power at wind speeds of 7 to 56 mph. Like "Klondike," at higher wind speeds, they automatically shut down. A steady wind of 16 to 18 miles mph is considered excellent for wind farm development.

Figure 6-102

Klondike Wind Farm

How A Wind Turbine Works

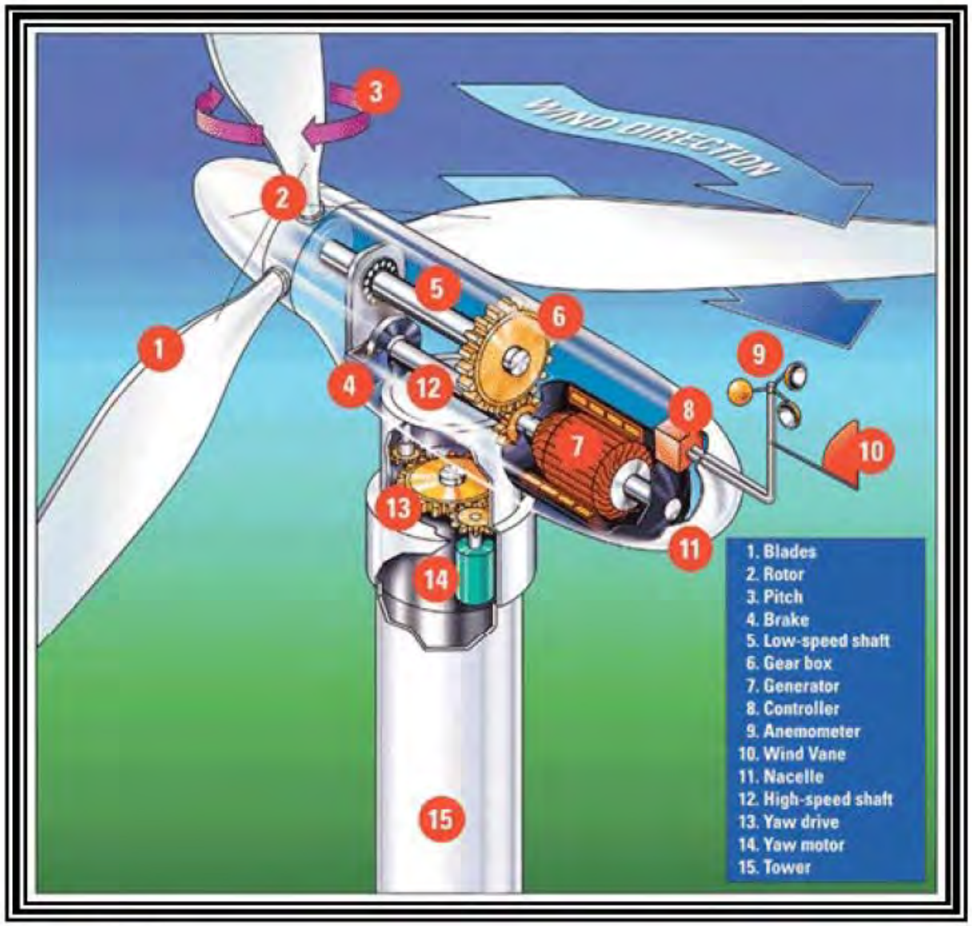


Figure 6-103

EWEB-Weyerhaeuser Utility/Industrial Energy Center

In late 1975, construction started on the "EWEB-Weyerhaeuser Utility/Industrial Energy Center" (we'll call it Weyco) in Springfield, Oregon. Weyerhaeuser purchases about 60 MW (megawatts) of power (enough to run about 35,000 Northwest homes) from EWEB to run its mill. With the Energy Center, Weyerhaeuser generates about 12 to 18 MW through the cogeneration turbines. But, instead of using that power, Weyerhaeuser sells the power on the market to BPA.

EWEB's contract with Weyerhaeuser (now International Paper [IP]) allows them to make money from the cogeneration energy center. EWEB sells the power for Weyerhaeuser on the market in exchange for 5% of the proceeds. EWEB paid to build one of the two cogenerating units in 1975 in exchange for 50% of the power generated by the mill. Weyerhaeuser's income comes from their half of the power generated. See Figures 6-104 to 6-108.

Figure 6-104

Figure 6-105

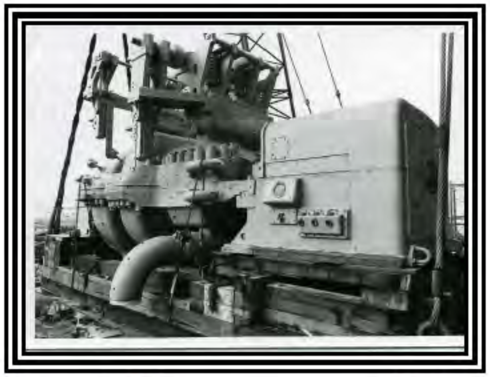


Figure 6-106 1975

Generator as Delivered

Figure 6-107 1975

Unloading and Installing Generators

Figure 6-108 1975

Preparing to install generator (John Scofield, EWEB's Project Manager)

ELECTRIC PEOPLE AT WORK

Figure 6-109 1962

Bill Fulps - Lineman

Figure 6-110

John Scofield & Herschel (Dean) Axtell, Electrical Engineers

Figure 6-111

Figure 6-112

New EWEB line truck, north of Springfield, OR (Photo compliments of Mahlon Sweet) Oxen plowing a field.

L-R: Bill Stansfield, John (Jack) Brassard, Les Churchill, Alfred (Al) Sorg, Bob Royer, Sam Packolak (foreman), Ambrose McLaughlin.
In background on right, Laudie Kralicek. Truck is W-51 driven by Bob Royer. (Photo compliments of Bob Royer)

Figure 6-113

Figure 6-114

L-R: Les Samuelson, Vern Kaiser, Gordon Goepferd and Howard Ruland.

Standing: Jim Deskins, Jeff Gilfillan and Bob Solander Sitting on shoulders, Fred Dellinger. Photo taken in Portland, OR when crews were loaned to Portland during a severe freeze in 1977.

Figure 6-115

Figure 6-116

Hagan Millsap at a substation

Bud Frye, Electric Operations Coordinator, on the radio with an electric crew

Figure 6-117

Figure 6-118

Figures 6-117 and 6-118 both show crews making electrical connections. Photo on left shows using a hot stick to place line on insulator, and photo on right shows closing a fuse with a hot stick. In both photos, note arc between hot stick and fuse or line.

Figure 6-119

1- Bob Hardin
2- Sam Mosley
3- John Lay
4- Pat Maxwell
5- Joe Ray
6- Ron Bell
7- Cliff Gowing
8- Bob (Pappy) Erwin
9- Frank Moso

10- Jim Miller
11- Mick Sanders
12- Boyd Hazel
13- Rick Turtura
14- Dennis Hough
15- Wayne Vanderhoff
16- Bob Solander
17- Ken Lowery

18- Howard Ruland
19- Terry Rodakowski
20- Colin Farrell
21- Dave Humphreys
22- Howard Anderson
23- Jim Deskins
24- Jim Jones
25- Duane Radloff

Figure 6-120

Jim Jones and Darrell F. DeLong
Connecting underground cables

Figure 6-121 1975

Photo taken in old Electric Office

Chapter Seven

EWEB's SUPPORT GROUPS

The Eugene Water & Electric Board, as the name implies, is charged with the duty of providing water and electricity to the citizens of Eugene. To meet these duties, the Board requires the services of many other internal groups to facilitate the smooth inter-relationships between departments and perform all the necessary functions which enables the organization as a whole to exist. Even though these support groups, as they are called, never produce or deliver a single drop of water or a single spark of electricity they do perform much valuable assistance in the areas of finance, maintaining EWEB's vehicles and equipment, taking care of customer needs, and maintaining records essential to the operations of the Water and Electric Departments. Following are some of the various groups that provide these services and thus make for the smooth and efficient operation of EWEB as a whole.

ADMINISTRATIVE GROUP

The Administrative Group is made up of the EMT (Executive Management Team, such as Figure 7-2 from 1985) which is responsible for the organization and operation of EWEB as a whole. The team consisted of the General Manager (Figure 7-1), Division Directors, Treasurer, Chief Engineer (Figure 7-9), EWEB attorney (Figure 7-3), etc. This group also consisted of the Human Resource Department, responsible for job postings, personnel policies (Figure 7-12) and benefits (Figure 7-13) for the organization.

L-R: Byron Taylor, Byron Price and Henry F. Beistel

Figure 7-1

Figure 7-2

Left to Right: Garry Kunkel, Rosemary Edwards,
Don Vanderzanden, Jean Reeder, Jim Brown - 1985

Figure 7-3 Photo by GMason

Win Calkins, Attorney, and wife Judy - 2008

Figure 7-4

Norm Stone - 1968
Personnel Manager

Figure 7-5

James P. Howell - 1968
Electrical Engineering Manager

Figure 7-6

Bill Rau
Insurance

Figure 7-7

Bill Rau
Insurance Training

Figure 7-8

Jack Smutz
Public Affairs

Figure 7-9

Owen Brown, Chief Engineer/
Engineering Manager

Figure 7-10

Edie Warner
Records

Figure 7-11

Dick Anderson & Owen Brown - 1979

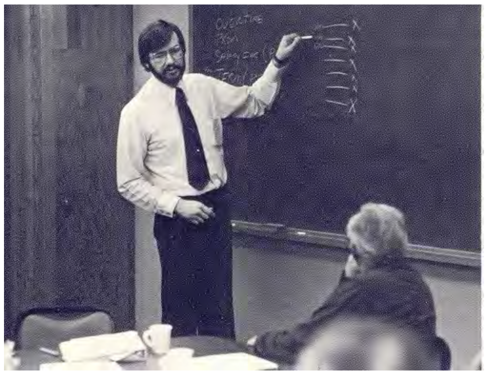


Figure 7-12

Dick Anderson, Personnel Manager - 1980

Figure 7-13

Ethelyn Brown - Benefits

Figure 7-14

Carol Kimsey - Claims

CUSTOMER REPRESENTATIVES GROUP

This group included the receptionist, who was always located near the main entrance to be readily available whenever customers entered the building. The receptionist was also the telephone operator (Figures 7-15, 7-16 and 7-17) that handled all incoming calls as well as all calls between departments and sections within EWEB.

This group also took care of all the customer needs, as to connect and disconnects of services, and handling all the customer accounts from creation of new accounts to closing accounts as needed.

These groups represented the connection with all customers and EWEB, to provide excellent customer service. Because if there were no customers, there would be no EWEB.

Figure 7-15

Jan Gross - Receptionist

Figure 7-16 Molly Agerter Photo

Figure 7-17 GMason Photo

Molly Agerter, receptionist in old building, dressed for Halloween - October 1989

Molly Agerter, receptionist in new building - January 2006


Figure 7-18


Figure 7-19


Figure 7-20

Bobbi Miller - 1977

Juanita Paslay - 1982

Thomas Reske


Figure 7-21


Figure 7-22

Jean Cunningham

Iona Mosley

Figure 7-23

Juanita (Prigan) Thorsted at the old customer record books in the old operations building vault. This was in the days before personal computers - 1980

Public Affairs Office

Figure 7-24

Jack Smutz

Figure 7-25

Tom Santee

ENGINEERING GROUP

The Engineering Group consists of the Civil, Mechanical and Electrical Engineers, who design all the new and replacement water lines, reservoirs and all the electric lines, substations etc., to be sure these facilities are adequate for the current needs as well as the foreseeable future to meet the needs of all our customers, whether they be residential or commercial. This group also consisted of the Drafting Department, which did all the required drawings and maintained the water, electric and steam mapping systems.

Figure 7-26

Chuck Strong, Chief Engineer, and Herb Hunt, O&E Director - 1972

Figure 7-27

Mel Damewood - 1980
New Building Project Manager

Figure 7-28

Chuck Strong, Dean Wentworth, James Howell and Dean Hodges

L-R: ***Gary Jackson, Contractor, (unknown), and Larry Swancutt, inspector, checking fitting before installation - 1977***
(36" CC Main along Beltline)

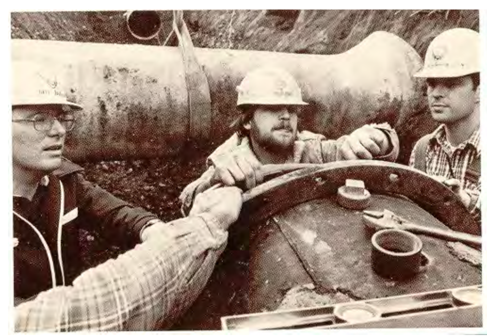


Figure 7-29

ENGINEERS


Figure 7-30

Elton Stephens


Figure 7-31

Hal Worcester


Figure 7-32

The Worcester Booster


Figure 7-33

Ron L. Wilson


Figure 7-34

Gary Jackson


Figure 7-35

Carolyn Sprague - Secretary

DRAFTING

Figure 7-36

Dan McCornack, Surveyor - 1979

Figure 7-37

Hallway to Drafting Room

Figure 7-38

Drafting Room

Figure 7-39

Dean Wentworth, Drafting Supervisor 1968

Figure 7-40 Gmason Photo

L to R: Sherry Acton, Nick Nevins, and Dennis Harbour, Drafting - 2008


Figure 7-41

Anne Mace


Figure 7-42

Cheryl Sluder & Chuck Root


Figure 7-43

Water Department Maps


Figure 7-44

Esther Barrell - Purchasing


Figure 7-45

Paul Appling - Drafting

CONSTRUCTION/SHOP GROUPS

The Construction/Shop Group was comprised of the large construction section which did the larger construction projects for the water, electric and steam departments. In the very early 1980s, the construction section moved and came under the direction of the Water Department. Those pictured in this section were in the original construction group which was under the direction of Nate Chaffee, who also supervised the shop.

The Shop section included the carpenter shop, welders shop, paint shop and the vehicle repair shop. The Vehicle Repair Shop ran two shifts, the day shift and the swing shift. The swing shift was primarily needed to do all the routine maintenance such as oil changes and refueling of all the vehicles, as well as making any necessary repairs so the equipment would be ready for the crews the next day, thus eliminating crew down time as much as possible.

Figure 7-46

EWEB Shop Crew (1964)

From left to right: Ed Jordan, Gene Brown, Hans Skurdal, Nate Chaffee, George Partridge (back), Curt Roush, Bill (Red) Lindley, Jimmy Harrison, George Golden, Lee Aldridge (back), Clark Parrot, Jack Bruns, Wally Kraegenbrink, and C. W. Herman (Sy).

Figure 7-47

Figure 7-48

Figure 7-49

Standing left to right: George Partridge, Red Lindley (Lloyd Lindley's father), Ralph Hill, and ? Smith. On stairs, top to bottom: Burt Wyckoff, Fred Baldwin and Clark Parrot

George Partridge

Left to Right: Unknown, Ralph Collins and George Partridge


Figure 7-50

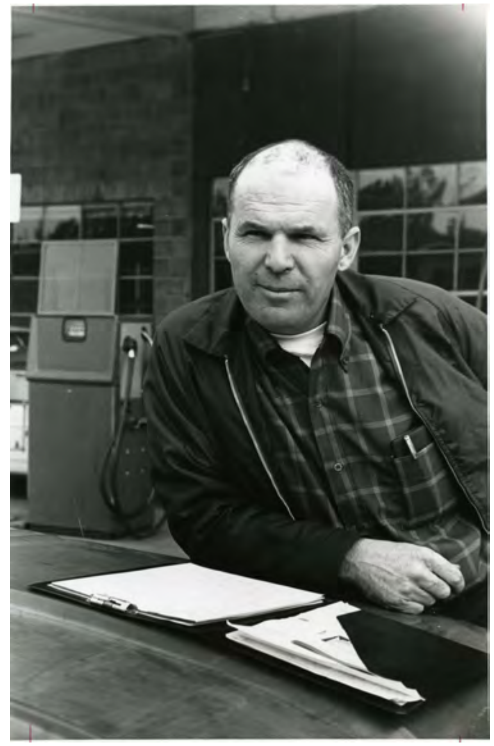


Figure 7-51

George Partridge, Construction / Shop Supervisor

Figure 7-52

Figure 7-53 C. Root Photo

Wayne Franklin, Construction Crew Foreman
1977

Ray Wood, construction crew foreman, and also a pastor. He married the author's daughter in the Alvadore Church - December 1982


Figure 7-55

Hans Skurdal - 1975

Figure 7-56

Gene Brown - January 1973


Figure 7-57

C. Kemp & Gene Brown - 1973


Figure 7-58

Dave Eason - Mechanic


Figure 7-59

Lloyd Smith - Mechanic


Figure 7-60

Bob Roggenbuck - Welder

Figure 7-61

Karl Brown - Painter

Figure 7-62

Daryel Stewart - Carpenter

Figure 7-63

Emmett (Fuzz) Lovell

Figure 7-64

George Landers - Welder

Figure 7-65

Ray Davis - Welder

Figure 7-66

George Foard - Shop Dispatcher

Figure 7-67

Leroy Lueck - Operator

Figure 7-68

Leroy moving his large backhoe

Figure 7-69

Leroy trimming brush on right-of-way

Right: Excavating for the Willamette 975 Reservoir (52nd & Willamette), Ray Wood in background next to bank, Burt Wyckoff operating the cable backhoe

Figure 7-70

Figure 7-71

Pete

Figure 7-72

Willits installing a large elbow for a water line on Bud Nadeau's main crew - 1975

Burt Wyckoff operating the clam shovel upriver (McKenzie River) - February 5, 1961

EWEB designed and built much of the equipment as needed for new or special projects. Here are some examples of equipment that the EWEB shop designed and built.

Figure 7-73

Figure 7-74

George Golden (welder) with special conveyor

George Partridge standing by the fuel pile cat with an extra large blade altered for pushing around the hog fuel for the Steam Plant

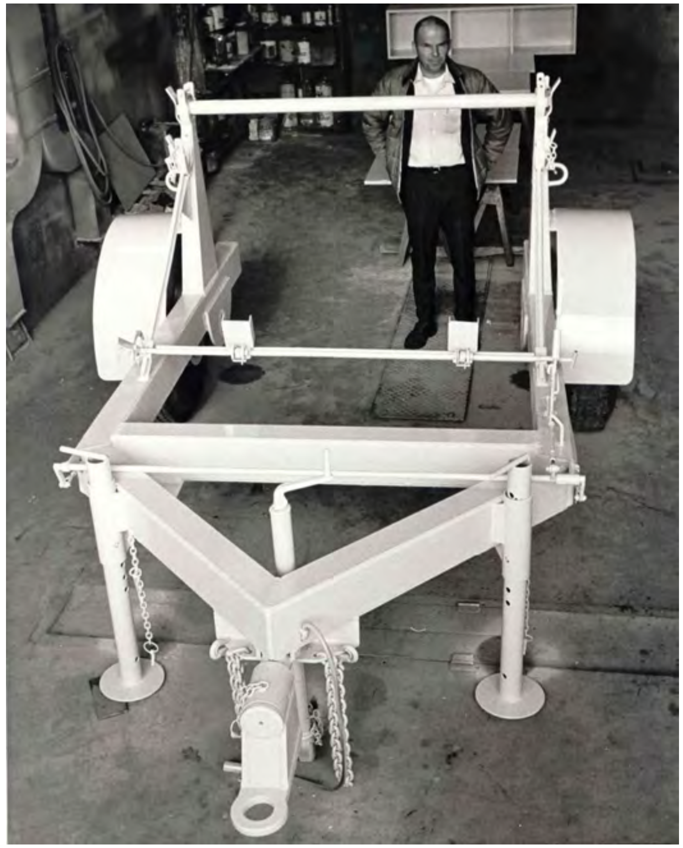


Figure 7-75

George Partridge by new cable trailer made by the shop for transporting and unreeling underground electric cable for underground installations

Figure 7-76

Figure 7-77

Vehicles being maintained in the vehicle repair shop. On the right, vehicles were painted in forest green. On the left, they were painted yellow. Today (2010) they are white.

Figure 7-78 1987

Figure 7-79 2007

Author's Photos

EWEB vehicle yard in winter. Hog fuel pile covered in snow in background.

Vehicle repair shop (looking north) - January

Figure 7-80

Burt Wyckoff

Figure 7-81

Ray Wood

Figure 7-82

Stan Wullbrandt

Figure 7-83

Ralph Collins

(Photos by Bill Eaton)

Figure 7-84

Leo Perry - Mechanic

FINANCIAL GROUP

The Financial Group was charged with all accounting duties. This group also included the Meter Reading Department, which read all the water and electric meters every month. It also included the Purchasing Department and Warehouse, which did all the purchasing for the entire organization and warehousing, with automatic reorder points set on all regular material used on a regular basis so material was always available for the crews whenever needed. The original warehouse at EWEB was set up by Fred Stuhr (Figure 7-109).

In 1924, the electric utility accounting system was changed to conform with practices used by the Federal Power Commission (FERC). This standardized EWEB's accounting so that equitable comparisons could be made with other electric utilities across the United States. Today these numbers are referred to as FERC numbers.

EWEB's Accounting Department in the old City Hall at 11th & Willamette. Left to right: John Cochran, Curt Sprecher, Ralph Patterson (front center), Clarence Craft (far center back), Don Woodward and Charles Warner - 1951

Figure 7-85


Figure 7-86

Miss Vena Clubb - EWEB's first Chief Accountant 1912


Figure 7-87

Miss Violet Peart -EWEB's first cashier - 1912

Figure 7-88

Grace Shaffner with her miniatures collection behind her

Figure 7-89

Accounting Department in EWEB's old office building

Figure 7-90

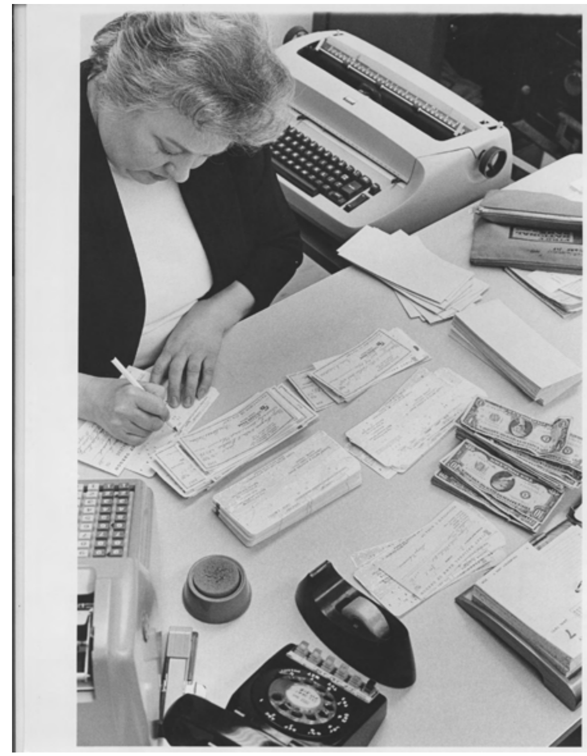


Figure 7-91

Accounting Department upstairs in EWEB's old office building

Dorris Bono

Figure 7-92

Dave Johnson, Assistant Treasurer - 1980

Figure 7-93

Cashiers in old office building. Left to right: Donna Brown (standing), Nila Millsap, Kay Addie, and Marilyn Ballard

Figure 7-94

Cashiers and Customer Reps - March 9, 1960

Figure 7-95 GMason

L-R: Cashiers Mary LeDoux and Cari (Fosnaugh) King - 1987

Figure 7-96

EWEB Pay Station

Figure 7-97

Pam Poitra & Daughter

Figure 7-98

John Brown (Treasurer) and Charles (Chuck) Strong, (Chief Engineer)

Figure 7-99

Ray Barlow

Figure 7-100

1978

Harold King - Comptroller[1]

Figure 7-101

[1]A public officer whose duty it is to examine and certify accounts.

Accounting & Meter Reading

Figure 7-102

Figure 7-103

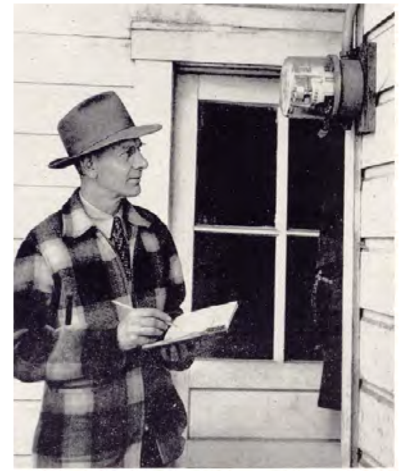


Figure 7-104

John Brown - Treasurer

Carley Lewis - Payroll

Ray Nevers - 1951
Meter Reading Supervisor

Left to right - Ray Nevers, Larry Fox, Jan Hoogstad, Tony Ucbytel, Stan Carter, Harold Graham, Mike Henry, Bob Goldsworth, Don Bell, James (Jim) Wightman - Meter Readers

Figure 7-105 1962


Figure 7-106

Robert Keefe - 1951


Figure 7-107

Jan Hoogstad


Figure 7-108

Unknown Meter Reader - 1977


Figure 7-109

Meter Readers - 1986

Warehouse and Purchasing

Figure 7-110

Figure 7-111

Figure 7-112
1998

Fred Stuhr (with wife Edna)
First Warehouse Supervisor

Hal Marlowe
Warehouse Supervisor

Tom Buckhouse (Division Director) and Hal Marlowe

Figure 7-113 1976

Figure 7-114

Figure 7-115 1977

Hal Marlowe and Mike Whiting

Hal Marlowe

Darrell Collins

Figure 7-116

Bob Lewis

Figure 7-117

Ray Hopson

Figure 7-118

Dub Moen

Figure 7-119

Becky Long - Secretary

Figure 7-120

Barb Marlowe

Figure 7-121

Figure 7-122

Murray Ingle - 2002

Brandy Caster

Photos by Bobbi Miller

Purchasing

Figure 7-123

Figure 7-124

Pat Mulloy (Purchasing Agent) and Bob Ross

T. Pat LaMora, Purchasing Agent

INFORMATION SERVICES GROUP

The Information Services group was responsible for the storing of all the utilities records on computers. They also maintain the utilities computers, computer programs, and provide the training of EWEB personnel in their use. This group was also responsible for the audio-visual equipment used by all the groups.

Figure 7-125

Greg Belshaw

Figure 7-126

Jim Bassett

Figure 7-127

Jim Huergue

Figure 7-128

Lenny Martin

Figure 7-129

Tom Lindly

Figure 7-130

Bob Harrison

Kim Larson —>

Figure 7-131

PLANT SERVICES

The Plant Services group consists of the Cafeteria, Watchman, Mail Room/Courier, Building Maintenance, Communications, Right of Way, Landscaping, and EWEB's museum. This is the group that basically cares for EWEB's internal and external facilities not related directly to water or electric installations.

Figure 7-132

Lou Smith

Figure 7-133

Mildred (Tillie) Blankenship

(Photos by Bill Eaton)

Figure 7-134

Wedding Cake made for Jeff & Kim Kahle by Sherry Fleming, EWEB chef - Feb. 1994 (Photo by Chuck Root)

Figure 7-135

Allison Tarbox - Courier

Figure 7-136

Tony Lum - ROW Agent

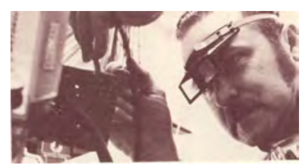


Figure 7-137

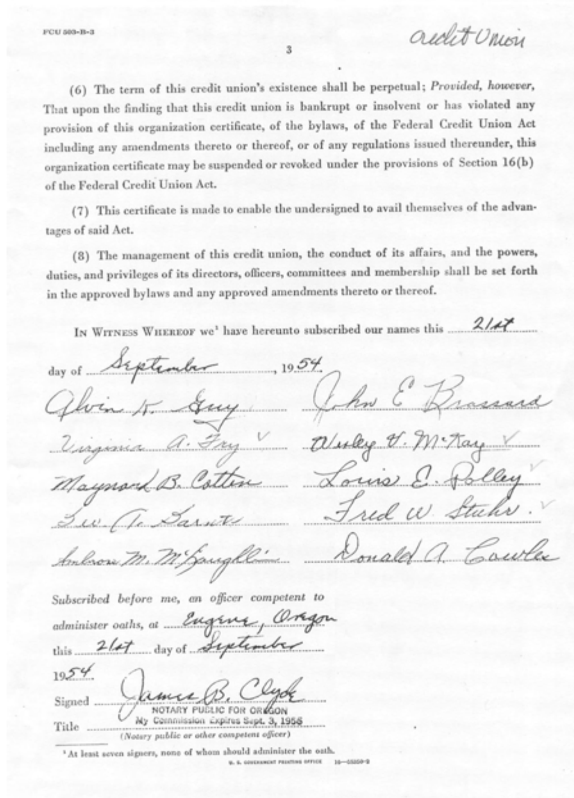
Jimmie Moyer - Radio

Figure 7-138

Jim Barnes - Security

EWEB EMPLOYEES FEDERAL CREDIT UNION

The EWEB Employees Federal Credit Union was formed by EWEB employees on September 21, 1954.



FCU 503-B-3

Credit Union

3

(6) The term of this credit union's existence shall be perpetual; *Provided, however,* That upon the finding that this credit union is bankrupt or insolvent or has violated any provision of this organization certificate, of the bylaws, of the Federal Credit Union Act including any amendments thereto or thereof, or of any regulations issued thereunder, this organization certificate may be suspended or revoked under the provisions of Section 16(b) of the Federal Credit Union Act.

(7) This certificate is made to enable the undersigned to avail themselves of the advantages of said Act.

(8) The management of this credit union, the conduct of its affairs, and the powers, duties, and privileges of its directors, officers, committees and membership shall be set forth in the approved bylaws and any approved amendments thereto or thereof.

IN WITNESS WHEREOF we[1] have hereunto subscribed our names this 21st day of September, 1954.

Alvin K. Guy — John E. Brassard
Virginia A. Fry — Wesley V. McKay
Maynard B. Cotten — Louis E. Polley
Lew A. Garrett — Fred W. Stuhr
Ambrose M. McLaughlin — Donald A. Cowles

Subscribed before me, an officer competent to administer oaths, at Eugene, Oregon this 21st day of September 1954.

Signed James B. Clyde

Title NOTARY PUBLIC FOR OREGON My Commission Expires Sept. 3, 1956
(*Notary public or other competent officer*)

[1] At least seven signers, none of whom should administer the oath.

U. S. GOVERNMENT PRINTING OFFICE 16—55259-2

Figure 7-139

Charter Members' Signatures - 1954

The first Board was made up of Fred Stuhr (Figure 7-140) first chairman of the Board 1954 to 1955, Wesley 'Wes' McKay, Virginia Fry, Ray Barlow and John Scofield. Fred was chairman of the Board again in 1963. The current Chairman of the Board is Charlie Morris (Figure 7-141, 2007 to Present). This author (Figure 7-142) served on the Board, Credit Committee and Supervisory Committee from 1979 to 1985 and served as Board Chairman from 1983 to 1985.

The first manager (CEO) was Claude "Bud" Frye (Figure 7-143), who served in that capacity from 1954 to 1964, when he was replaced by his wife Alice Frye (Figure 7-144) who served from 1965 until she retired in 1985. Alice was replaced by Sandy Ash, who served only one year (1986), as she wanted to be a stay-at-home mom. Jeff Saks became manager in 1987 until 2001, replaced by Earlene Fauntz (Figure 7-145), who served from 2002 and 2003. The current manager is Bob Dempsey (Figure 7-146), 2004 to the present (2011).

The first Credit Committee members were Chairman Louis Polley (Figure 7-147), 1954 & 1955; Dick Gall, and Delbert "Del" Brown who in 1956 became the second President of the Board. In 1996 the Credit Committee was replaced by a Loan Committee made up of staff members with no volunteers.

The original Credit Union Office was located in the old building in back of the cafeteria. The Credit Union Office moved to its present location in 1983 (Figure 7-148), where they celebrated an open house (Figure 7-149).

Figure 7-140

Alice Frye and Fred Stuhr - 2004

Figure 7-141

Charlie Morris and Roberta Nelson - 2004


Figure 7-142

Ken Lowery & George Mason
Service Partners in 1965

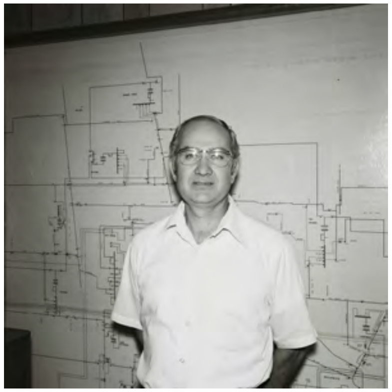


Figure 7-143

Bud Frye, First Credit Union Manager


Figure 7-144

Alice Frye in Credit Union's First Office

Figure 7-145

Earlene Fauntz and Judy Marsh at EWEB Retirees Annual Dinner

Figure 7-146

Bob Dempsey, Credit Union Manager

Figure 7-147

Louis (Lou) Polley - 2005

Figure 7-148

Credit Union Office as it looks today (2011)
Right: Alice Frye (Manager), Gloria Mason (Volunteer), & Rose Eldridge (Staff) - 1983

Figure 7-149

Credit Union Staff

Figure 7-150

Ethelyn Brown, Roberta Nelson, Gloria Mason - 2004

Figure 7-151 2006

Melissa Woods and Melissa Summers

Figure 7-152

George Mason and Pat Cook - 2004

Figure 7-153

Amanda Olson and Pat Cook - 2006

EWEB Credit Union 50th Anniversary Dinner/Meeting - 2004

Figure 7-154

Roberta Nelson & Family - 2004

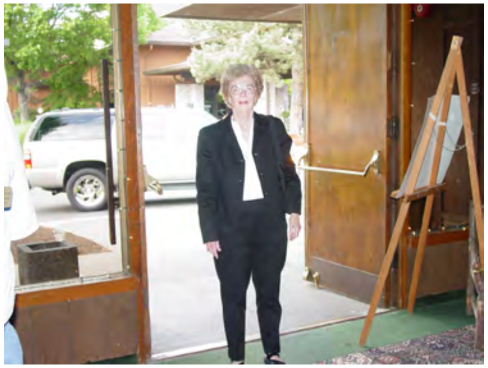


Figure 7-155

Alice Frye - 2004

Figure 7-156

Kevin & Cindy McCormick - 2004

Figure 7-157

Ambrose & Pauline McLaughlin - 2004


Figure 7-158

Bill & Shirley Fulps - 2004


Figure 7-159

Robert, Chris & Shery Lewis - 2004


Figure 7-160

Pat & Nancy Cueto - 2004


Figure 7-161

Jocelyn & Ralph LaMar - 2004


Figure 7-162

Charlie Morris presenting awards to Roberta Nelson

Figure 7-163

Roberta with one of her awards

Figure 7-164

Mike Bigelow & Bob Dempsey

Figure 7-165

Gene Poitras (Pres. of CUAO) & Earlene Fauntz

2006 Credit Union Barbecue and Annual Meeting

Figure 7-166

Gloria Mason & Geneva Holmes

Figure 7-167

Vern Sherrer & Fred Stuhr

Figure 7-168

Annual Election and BBQ hat - 2006

Figure 7-169

Gary Cook & Donna Wullbrandt


Figure 7-170


Figure 7-171

Bob Dempsey with Mark Oberle & Mike Bigelow, cooking the barbecue


Figure 7-172

Credit Union member Dean Dezeeuw signing in

Extra

Figure 7-173

John Miller, Gerry Brown, and the Author

Figure 7-174

Bob Sams & Dave Humphreys

Figure 7-175

Mug Presented to Bob Sams
for EWEB Credit Union Service

Chapter Eight

EWEB AND THE COMMUNITY

Even though the EWEB groups provide the necessary functions for the operation of the utility, EWEB was always very customer-oriented because, after all, if there were no customers, there would be no need for EWEB. EWEB has always been conscious of how the community plays such an important role in the success or failure of the utility. With this in mind, EWEB had always tried over the years to participate in the local community by providing tours and education, being part of the County Fair and participating in the Home Shows, as well as providing recreational opportunities at Water Board Park (now called Lloyd Knox Park) and Walterville Pond, aiding in the protection and raising of trout and salmon whenever feasibly possible, and educating customers on ways to conserve power and water. Some EWEBers became authors, poets, inventors, etc., which benefited EWEB and the community as well.

Figure 8-1 2006

Natron Station east of Springfield (2006) just east of Jasper Road (Author's Photo)

EUGENE "TRAIL TO RAIL" PAGEANT (1926 - 1950):

1926 was a year of prosperity for Eugene. Locally, the lumber industry was booming and the city became a distribution center serving the south and southwestern parts of the State. In addition new industries found EWB's[1] excellent water and power available along with the availability of Southern Pacific Railroad's transportation facilities, which were a result of the "Natron Cut-Off" (Figure 8-1) a colossal feat of railroad engineering with the Southern Pacific's Siskiyou Line being relegated to "Branch" status and through heavier

[1]EWB - EWEB was originally called the Eugene Water Board.

trains, were routed over “the hill” due to tunnels and sharp curves between Riddle, OR and Hilt, CA, where it rejoined the old Siskiyou line to San Francisco.

This was a noteworthy feat in railroad engineering with the boring of 23 tunnels within a 50-mile stretch. This resulted in Eugene becoming a division point for the Southern Pacific Railroad when they purchased land at the northern limits of the city, where the railroad constructed a large yard and repair shops (this site is still in use today [2009] by the Union Pacific Railroad).

As a result of all these advantages and accomplishments, Eugene decided to have a celebration. This celebration was to become the first Eugene Pageant, which was called the “Trail to Rail Celebration”, and was held on August 18, 19 and 20th in 1926. Two parades were planned for the celebration, one a pioneer parade, and the other a colorful presentation of floats called the “Industrial Parade” in which EWB participated (Figure 8-3).

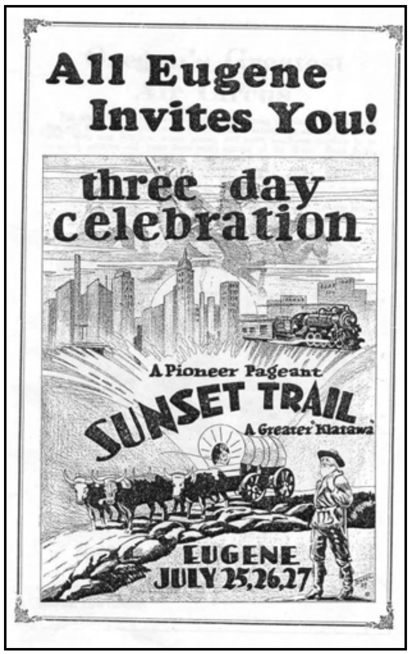


Figure 8-2
1929

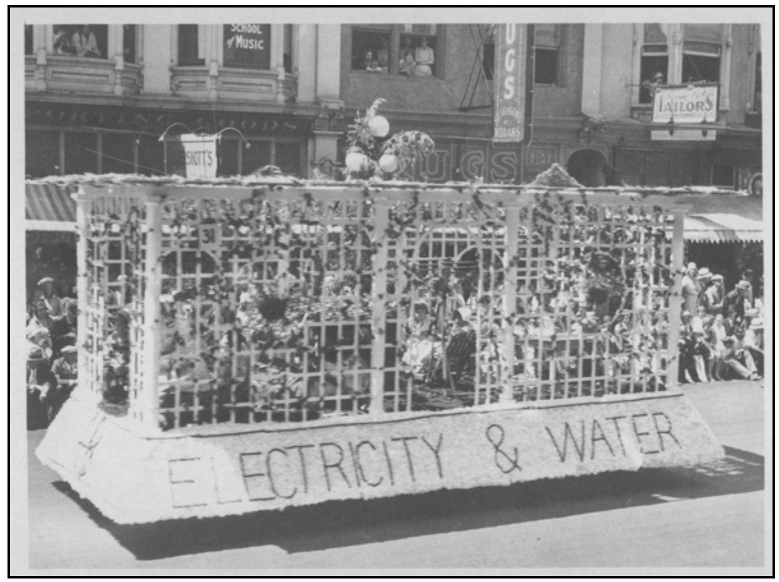


Figure 8-3 1929

EWEB’s Float for the “Trail to Rail” Celebration - 1929

The pageant was such a success that the pageant board decided to continue having celebrations, setting a three-year interval between pageants. In 1929 on July 25, 26 & 27th, Eugene held another pageant the "Sunset Trail Pageant"(Figure 8-2) in which both EWEB and the Southern Pacific Railroad participated. Later pageants were held in 1934 (Figure 8-5), 1937, 1941 (then a delay due to the Second World War), 1947, and finally in 1950 (Figure 8-4). There was no pageant in 1953, thus bringing to a close these pageants in Eugene.

Figure 8-4 1950

EWEB's Float for the 1950 Pageant. On the right is Ray Boals' (EWEB General Manager) daughter Pat (at 11th & Willamette).

Front and back of Pageant Ticket in 1934

TOURS AND EDUCATION

In an effort to educate the public and the young in the local area, EWEB provided speakers to address local organizations and schools. EWEB also hosted tours of its many facilities for groups and schools.

Figure 8-6

Figure 8-7

Bill Eaton (Tour and Education Representative) talking about electricity to a group of school children.

el

Figure 8-8

Evan Gentry conducting a tour of school children at the EWEB Steam Plant.

Figure 8-9 1986

***Evan Gentry demonstrating electric safety to school children using "Zapsville," a demonstration set created by EWEB*.**

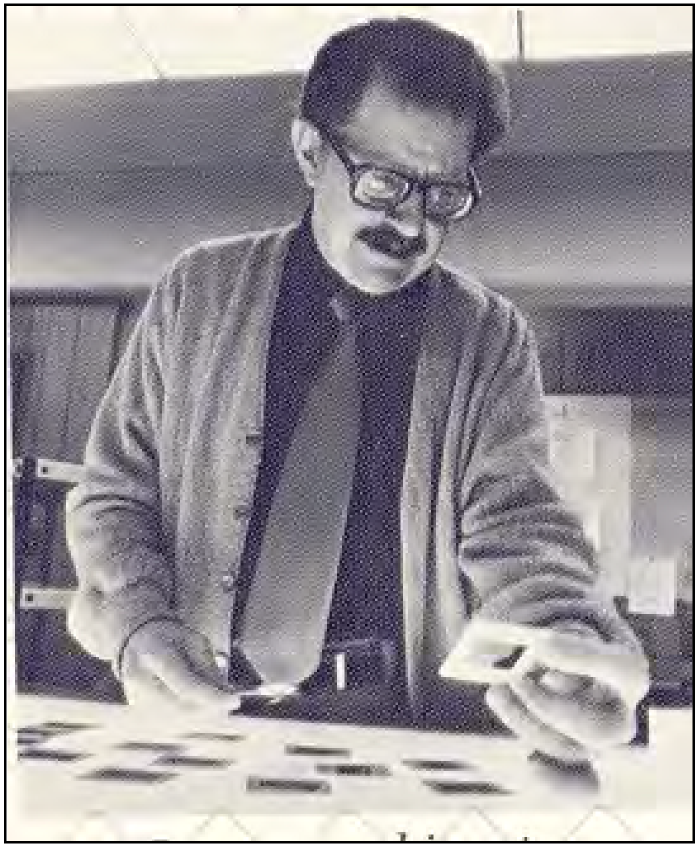


Figure 8-10 1980

Figure 8-11 1971

Evan Gentry (Graphic Arts Technician/Tour Representative) preparing a slide presentation for the EWEB Board.

Kimber Johnson (Water Superintendent) giving a talk on water at Monroe High School.

LANE COUNTY FAIR:

In 1951, EWEB started setting up exhibits annually at the Lane County Fair as a means of supporting the fair. Here are some pictures (Figures 8-12 to 8-23) of those exhibits over the years.

Figure 8-12 1929

Figure 8-13 1954

EWEB's booth at the Lane County Fair August 1929

EWEB's booth at the Lane County Fair. L-R: Norm Johnson, Ken Rinard and H. Maretti - September 16, 1954

Figure 8-14 1960

Figure 8-15 1963

EWEB display at Lane County Fair - Earle Clark in hard hat.

EWEB display at Lane County Fair

Figure 8-16 1964

Figure 8-17 1964

Left half of display ***Right half of display***

EWEB display at the Lane County Fair - Earle Clark talking with a customer.

Figure 8-18 1965

EWEB display at Lane County Fair promoting underground electric service

Figure 8-19 1966

Vern England (treatment plant operator) and the portable treatment plant model

Figure 8-20 1967

EWEB display at Lane County Fair
Bill Rau talking with a customer

Figure 8-21 1968

EWEB display at Lane County Fair with
the "Hanford Nuclear Display".

Figure 8-22 1969

Figure 8-23 1972

EWEB display at Lane County Fair

***EWEB display at Lane County Fair
"Do It Safely"***

EUGENE HOME SHOWS

Figure 8-24 1960

Figure 8-25 1960

Figure 8-26 1963

Figure 8-27 1967

Figure 8-28 1968

Figure 8-29

SPECIAL SHOWS

Figure 8-30

Commercial Lighting Show - 1964

Figure 8-31

Wally Quall demonstrating pole climbing to a young boy at the fairgrounds - 1972

WATER BOARD PARK

A 55-acre day use park (Figure 8-33) opened to the public, located at Leaburg Dam, named “Water Board Park” by the Board on April 18, 1955 (Figure 8-32). The park has some features not found in other similar parks, such as use of electric stoves (Figures 8-34 and 8-35) which are available for free use in covered picnic areas (Figure 8-36), as well as those features that can be found in other “day use” parks. The park has an “Organization Picnic Area” (Figure 8-37) (see EWEB Picnics in Chapter 9), a restroom (Figure 8-38), handicapped fishing facilities (Figure 8-39), open recreation area for ball games (Figure 8-40), etc., a boat dock (Figure 8-41), and fishing on Leaburg Lake (figure 8-43).

Figure 8-32 1956

Original Sign in 1956

Figure 8-33 2006

Sign in 2006 - Author’s Photo

Darwin Spicer and his crew from the Steam Plant did the new wiring at Leaburg Park. They installed the electric stoves (Figure 8-34 & 8-35) and lighting for the then new rest rooms in August of 1956 (Figure 8-42). In 2000 the park's name was changed to Lloyd Knox Water Board Park, in honor of the long time park caretaker who died of cancer (Figures 8-44, 8-45 & 8-46).


Figure 8-34


Figure 8-35

Two- and Four-Burner Electric Stoves in Picnic Shelters


Figure 8-36 2006

Figure 8-37

Covered Picnic Area

Sign for Organization Picnic Area

Figure 8-38

Restroom

Figure 8-39

New Handicapped Fishing Dock near Boat Dock

Figure 8-40

Handicapped Boat Dock in Winter Storage

Figure 8-41

Boat Dock

Figure 8-42 1956

Original Restroom Photo

Figure 8-43

Ball Field Area

Figure 8-44

Recreation Area Sign

Figure 8-45

Volleyball Net

Figure 8-46

Figure 8-47

Swings

Figure 8-48

Figure 8-49

Lloyd Knox Water Board Park Memorial

Leaburg Lake Visitor's Shelter:

FISHING AT EWEB FACILITIES

Leaburg Fish Hatchery:

Figure 8-50

Hatchery Sign - Author's Photo

Figure 8-51

Hatchery when first built

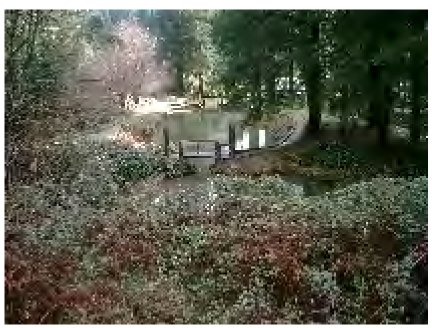


Figure 8-52

Hatchery Inlet

Figure 8-53

Hatchery water entrance at river


Figure 8-54


Figure 8-55

Fish Viewing Pond - 2011


Figure 8-56


Figure 8-57

Rearing Ponds

Fish in Rearing Pond


Figure 8-58


Figure 8-59

Automatic Feeders

Hatchery Water returning to River

LEABURG DAM FISH LADDER

Figure 8-60

Figure 8-61

Figure 8-62

Figure 8-63

Above pictures show the Leaburg fish ladder from below the dam, up past the dam to Leaburg Lake in January 2011

LEABURG FISH VIEWING STATION

Figure 8-64

Figure 8-65

This camera/viewing system was developed by Lynn Baxter to track salmon going up river

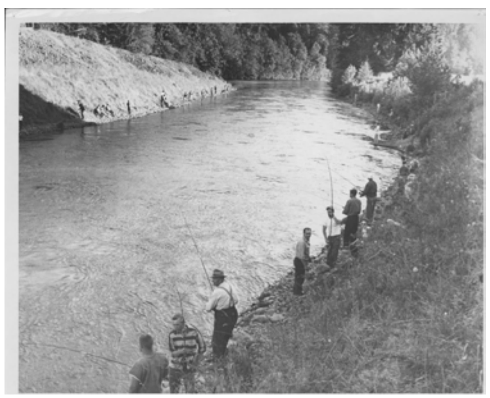


Figure 8-66

Figure 8-67

Fishing in the Leaburg Tailrace, same day, before and after the salmon were caught
June 25, 1959

Figure 8-68

Figure 8-69

Fishing Below Leaburg Dam

Note salmon jumping

Figure 8-70

Fishing on Leaburg Lake (from an old postcard)

Figure 8-71

Fishing in Carmen Diversion

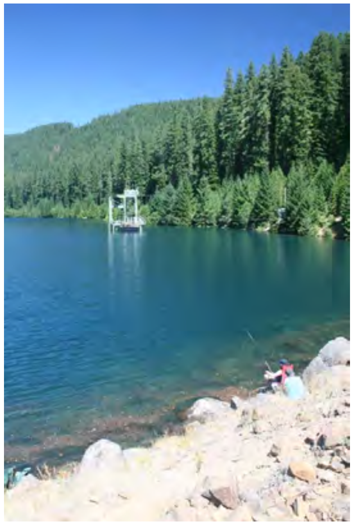


Figure 8-72

Figure 8-73

***Fishing in Smith Reservoir and by Lakes End Campground* (1963)**

Figure 8-74

Fishing in Trail Bridge Reservoir

CHRISTMAS AND EWEB

During Christmas of 1960, the Board authorized the use of EWEB equipment and operators for the installation and removal of street decorations (Figure 8-75) after a "Chamber of Commerce Committee" made the request.

Figure 8-75

Installing Eugene's tree lights on street lights - Kenny Seaver on ladder, December 1972

Figure 8-76

Santa in the bucket truck. Standing L to R: Frank Moso, Major Elsie Gibson, Glen VandenBos. Santa was Ralph Armstrong of Radio Station KASH.

Figure 8-77

Figure 8-78

Figure 8-79

Christmas at EWEB, December 1971

Old Ladder truck, Standing L to R: Vic Kuhlman, (unknown), and Bob Berry

Right: Tree in Foyer - 2006
(Author's Photo)

Figure 8-80

ADS IN THE EUGENE REGISTER GUARD BY THE EUGENE WATER BOARD IN 1938, PROMOTING COOKING WITH ELECTRICITY

Figure 8-81

Figure 8-82

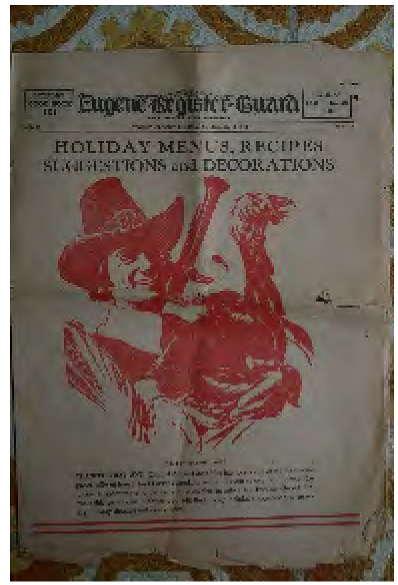


Figure 8-83

Figure 8-84

Newspaper Ads by EWEB in the local paper in the early 1900s

EWEB AUTHORS, POETS & INVENTORS

Louis (Lou) Polley - Area Logging
(Underground Electric Supervisor)

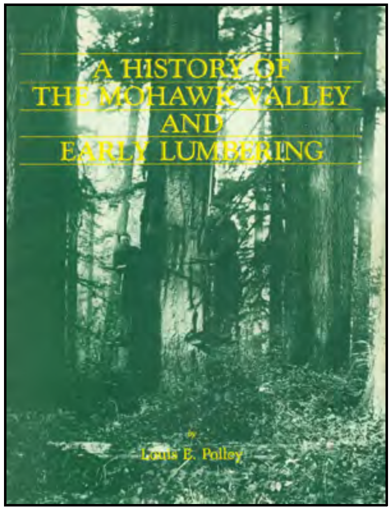


Figure 8-85 1984

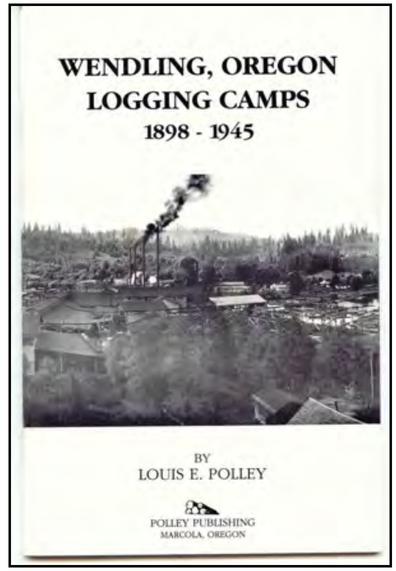


Figure 8-86 1989

Figure 8-87

George C. Mason - Math
(Water Distribution Supervisor)

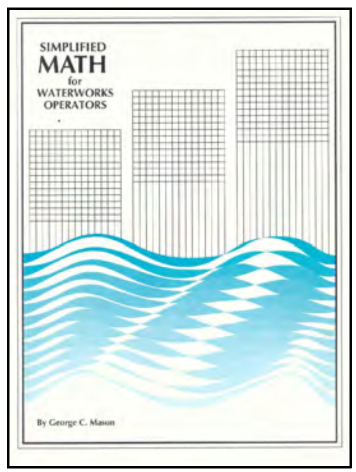


Figure 8-88 1992

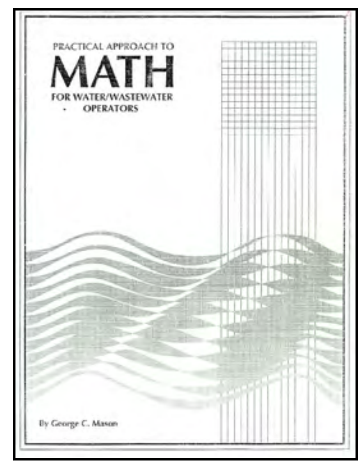


Figure 8-89 1995

Norm Stone (Administrative Services Director) wrote the book "Bountiful McKenzie" in 1986.

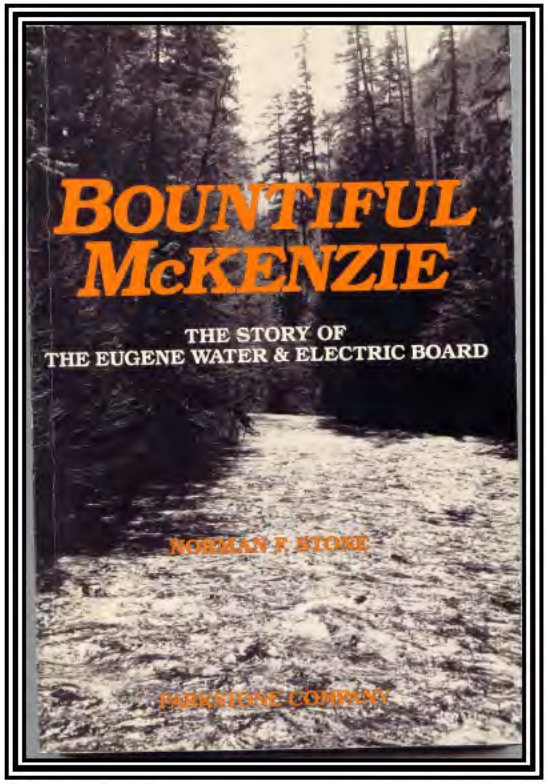
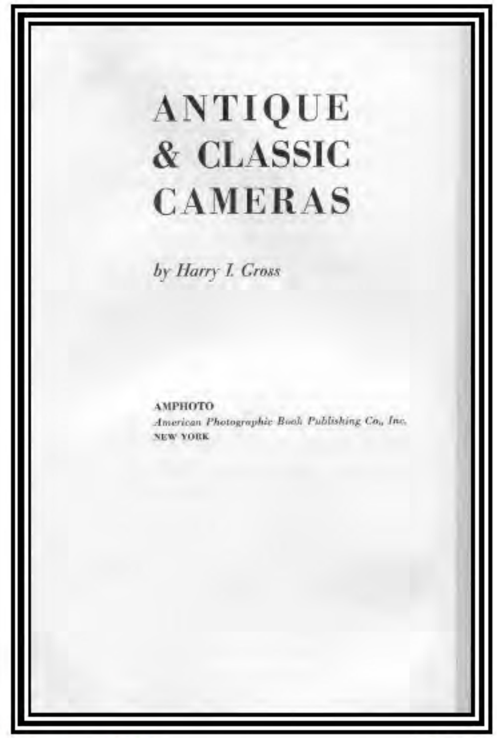


Figure 8-90 1986

Harry I. Gross (EWEB photographer under Byron Price) wrote a book on "Antique & Classic Cameras" in 1964.


ANTIQUE
& CLASSIC
CAMERAS

by Harry I. Gross

AMPHOTO
American Photographic Book Publishing Co., Inc.
NEW YORK

Figure 8-91 1964

Willard (Will) Gowing (Equipment Operator) wrote a book on "Straw Hydroponics" (1992)

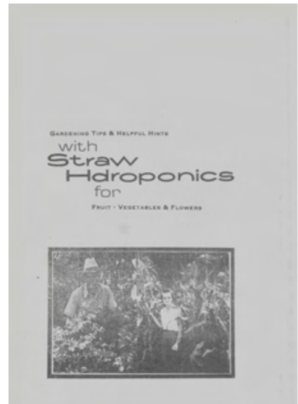


Figure 8-92

EWEB Poets:

Debbie Lueck (daughter of equipment operator Leroy Lueck):

OREGON

Oregon is beautiful, with its majestic hills,
With every little flower, every crevice, rock and rill.
Oregon is beautiful with unpolluted air.
Oregon is beautiful, almost everywhere.
With all its lovely fir trees,
And every fruit tree too.
Oregon's a perfect place,
Don't you think so too?

Oregon is beautiful, we want to make it last,
So when you see a garbage can, THAT'S
Where to put your trash.
Oregon is beautiful, I'm sure you will agree,
And so far as I'm concerned, it's the
Place for me!

By: Debbie Lueck
Grade Six
Coburg Elementary

Sharon Brunig (Customer Service Representative):

Sharon's Poem "The River" appears on the first page in Chapter Ten.

Grace England (wife of retired Filter Plant Operator, Vern England): A poem about Vern.

E.W.E.B.

The verse begins when he was all done,
With his six years of Navy life and came home.

We needed a job to support us two,
So he applied and got a job without much ado.

Places to live scarce as hen's teeth,
A one-bedroom place bought fit our needs.

No car to get to work so with Jeanette he rode,
Helping on the gas, but she drove.

Started reading meters and repaired them too, without a frown
Worked up to an operator of filter plant downtown.

He started on days but went to shifts,
When he operated the filter plant downtown he drifts.

Now demands for water, so Hayden Bridge plant was built,
To purify the city's water demands to remove silt.

So we sold the wee house and built our own,
Close to his shift rotating job he did roam.

At age 60 we met for his big company dinner,
Being free to travel was a winner.

He worked for the city 35 years of his life,
To support 2 children and his loyal wife.

So life has been good for us two,
As we soon celebrated 65 years after "I do".

Now we sit back and watch others repeat,
What we have done from a back seat.

The Good Ole days is when you're young,
So it repeats itself as a life we have spun.

Grace England
August 27, 2007

EWEB INVENTORS

Bill Fulps (EWEB Lineman):

Bill invented a "Secondary Cable Spacer" (Figure 8-98) designed for use in making mid-span service taps, pole taps or for spacing transformer secondary leads. Bill and his wife Shirley are pictured in Figure 8-97.

Figure 8-93

Figure 8-94

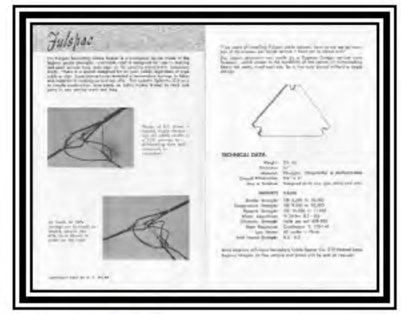


Figure 8-95

1962 **Patent** **Paper Ad**

Figure 8-96

Figure 8-97

Figure 8-98

EWEB SINGERS

Ron Bell (EWEB Lineman)

Figure 8-99

Shara & Ron Bell

Figure 8-100

Ron recorded two songs in Nashville, on the Checkmate Label. The two songs he recorded were (in the 1980s)

"Johnny Was A Casanova" and "I Can't Come To Houston"

EWEB and the AWWA (American Water Works Association)

EWEB started to participate with the "Water Works Operators" short course at Oregon State University in March of 1954. This author taught his first "Math for Water Works Operators" class at OSU in 1978, then continued teaching the class when the short school moved from OSU to LBCC (Linn Benton Community College) (Figure 8-101). In 1985 the short school changed to a conference style session called "AWWA Short School" where I taught my last class after volunteering for 30 years in March of 2008. In all those years EWEB provided speakers every year and continues to do so currently.


Figure 8-101 1981

The author (white shirt) teaching a class at LBCC in 1981


Figure 8-102 2007

Mitch Postle (Water Quality Supervisor) introducing a speaker at the short school - Valley River Inn, Eugene, Oregon

OESAC (Oregon Environmental Services Advisory Council)

The members of this group approve ALL classes and presentations to assure that they are relevant to water utility operations. EWEB has been a leader in supporting this program back before it became a federal requirement when it was an Oregon volunteer program. The author was a member of this Council for several years, starting in about 2003. Mitch Postle was also a member for many years until 2007 (Figure 8-103). Steve Blair from the Hayden Bridge Plant also served on the committee.

Figure 8-103 2007

The Committee reviewing upcoming classes for approval. The committee is made up of people from the Oregon State Board of Health as well as supervisors from the larger water utilities in the State, as well as from DEQ (Department of Environmental Quality) for the State of Oregon. George Mason and Mitch Postle of EWEB can be seen in the back.

Other Community Services By EWEBers

Right: Bill Eaton, as Boy Scout Leader at Scout Camp

Figure 8-104

Figure 8-105

EWEB and World War II

EWEB, as the rest of the nation, did their part in supporting the war effort by promoting water conservation. Small posters were put on display for the customers to see. These posters were made by the AWWA for the use of all water utilities. Here are three examples:

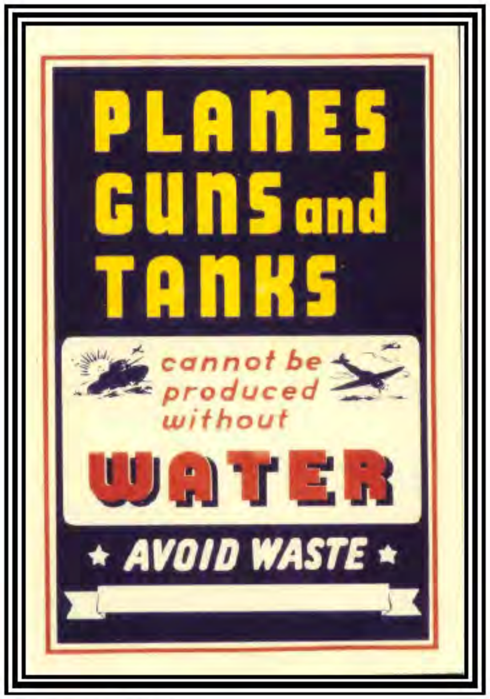


Figure 8-106

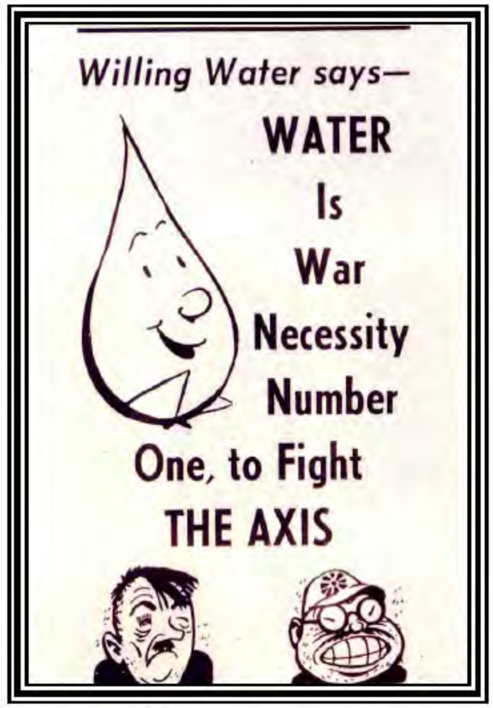


Figure 8-107

Figure 8-108

THE EWEB MUSEUM

The EWEB Museum was the brain child of William E. (Bill) Eaton, who was able to collect almost all of the items currently in the museum. A small display of a few of the museum items is rotated in the display in the North Building on the first floor. Susan J. (Sofe) Steward (Figure 8-109), widow of Bob Steward, former EWEB Engineer, has been the caretaker of the museum since its inception. It is this Author's hope that a permanent home and display area can be found, as it is representative of how electricity has influenced our daily lives and culture.

Figure 8-109

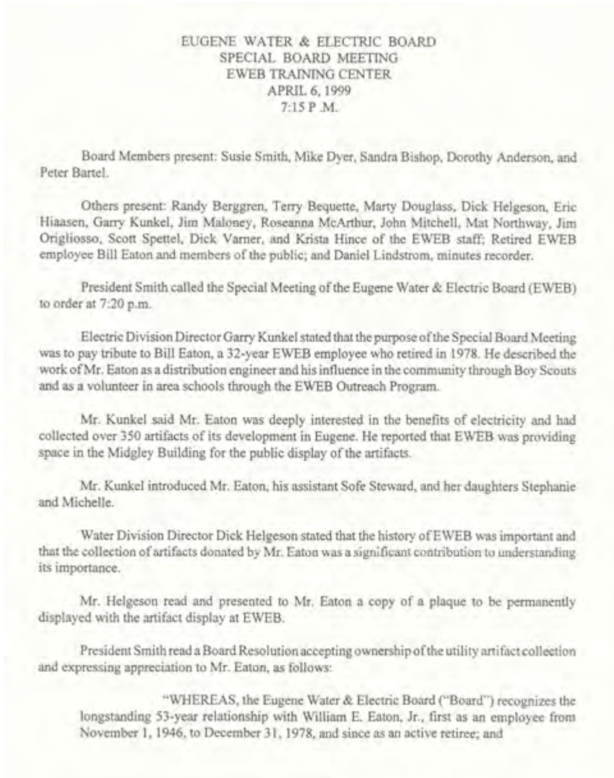
Sofe with water meter #8, the oldest EWEB meter in existence.

Figure 8-110

Old drinking fountain that was located in the McClain Plant in the filter galley.

Figure 8-111

Bronze plaque that was mounted on the SE corner of the old McClain Plant.



EUGENE WATER & ELECTRIC BOARD
SPECIAL BOARD MEETING
EWEB TRAINING CENTER
APRIL 6, 1999
7:15 P .M.

Board Members present: Susie Smith, Mike Dyer, Sandra Bishop, Dorothy Anderson, and Peter Bartel.

Others present: Randy Berggren, Terry Bequette, Marty Douglass, Dick Helgeson, Eric Hiaasen, Garry Kunkel, Jim Maloney, Roseanna McArthur, John Mitchell, Mat Northway, Jim Origliosso, Scott Spettel, Dick Varner, and Krista Hince of the EWEB staff; Retired EWEB employee Bill Eaton and members of the public; and Daniel Lindstrom, minutes recorder.

President Smith called the Special Meeting of the Eugene Water & Electric Board (EWEB) to order at 7:20 p.m.

Electric Division Director Garry Kunkel stated that the purpose of the Special Board Meeting was to pay tribute to Bill Eaton, a 32-year EWEB employee who retired in 1978. He described the work of Mr. Eaton as a distribution engineer and his influence in the community through Boy Scouts and as a volunteer in area schools through the EWEB Outreach Program.

Mr. Kunkel said Mr. Eaton was deeply interested in the benefits of electricity and had collected over 350 artifacts of its development in Eugene. He reported that EWEB was providing space in the Midgley Building for the public display of the artifacts.

Mr. Kunkel introduced Mr. Eaton, his assistant Sofe Steward, and her daughters Stephanie and Michelle.

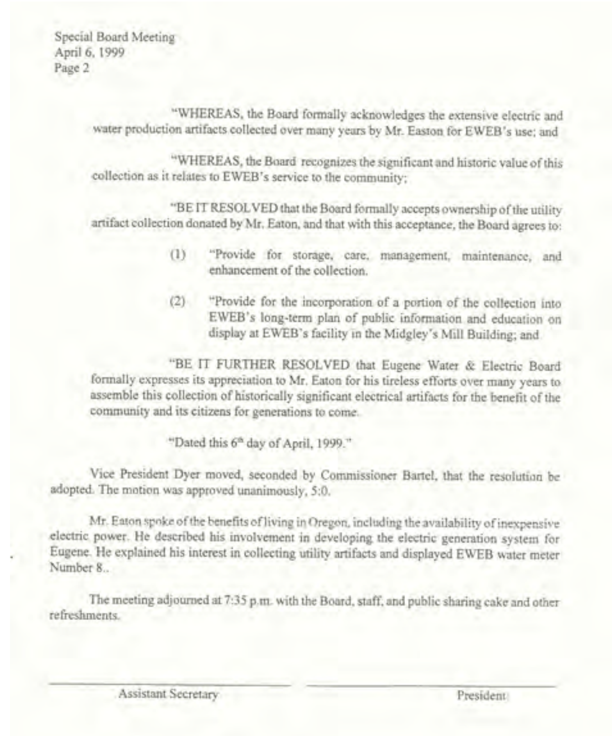
Water Division Director Dick Helgeson stated that the history of EWEB was important and that the collection of artifacts donated by Mr. Eaton was a significant contribution to understanding its importance.

Mr. Helgeson read and presented to Mr. Eaton a copy of a plaque to be permanently displayed with the artifact display at EWEB.

President Smith read a Board Resolution accepting ownership of the utility artifact collection and expressing appreciation to Mr. Eaton, as follows:

"WHEREAS, the Eugene Water & Electric Board ("Board") recognizes the longstanding 53-year relationship with William E. Eaton, Jr., first as an employee from November 1, 1946, to December 31, 1978, and since as an active retiree; and

Figure 8-112



Special Board Meeting
April 6, 1999
Page 2

"WHEREAS, the Board formally acknowledges the extensive electric and water production artifacts collected over many years by Mr. Easton for EWEB's use; and

"WHEREAS, the Board recognizes the significant and historic value of this collection as it relates to EWEB's service to the community;

"BE IT RESOLVED that the Board formally accepts ownership of the utility artifact collection donated by Mr. Eaton, and that with this acceptance, the Board agrees to:

(1) "Provide for storage, care, management, maintenance, and enhancement of the collection.

(2) "Provide for the incorporation of a portion of the collection into EWEB's long-term plan of public information and education on display at EWEB's facility in the Midgley's Mill Building; and

"BE IT FURTHER RESOLVED that Eugene Water & Electric Board formally expresses its appreciation to Mr. Eaton for his tireless efforts over many years to assemble this collection of historically significant electrical artifacts for the benefit of the community and its citizens for generations to come.

"Dated this 6th day of April, 1999."

Vice President Dyer moved, seconded by Commissioner Bartel, that the resolution be adopted. The motion was approved unanimously, 5:0.

Mr. Eaton spoke of the benefits of living in Oregon, including the availability of inexpensive electric power. He described his involvement in developing the electric generation system for Eugene. He explained his interest in collecting utility artifacts and displayed EWEB water meter Number 8..

The meeting adjourned at 7:35 p.m. with the Board, staff, and public sharing cake and other refreshments.

Assistant Secretary　　　　President

Figure 8-113

Board Resolution made at Special Board Meeting, April 6, 1999, where the Board formally accepted ownership of the utility artifact collection donated by Mr. Eaton, and agreed to provide storage, care, management, maintenance and enhancement of the collection. It was moved and seconded, and the motion was approved unanimously, 5-0.

Chapter Nine

THE EWEB FAMILY

The EWEB employees, better known as the "The EWEB Family" were a tight-knit group for many years, who shared social get-togethers, whether they were awards dinners, social groups, holiday celebrations, retirement parties, the annual EWEB picnic, or just helping each other, whether it be on or off the job. This fellowship of EWEB employees continued even after retirement with the Retired EWEB Employees, Inc. group (formerly the Pancake Club) and the EWEB retired women's group, which both still hold regular meetings and social get-togethers (2010).

Harry I. Gross, EWEB Photographer

Harry Gross was hired by Byron Price to document on film the construction of the Carmen-Smith Project as well as Price's accomplishments with EWEB. He took many pictures at the EWEB picnics from 1960 thru 1973. The picnic pictures were hung in the long hallway in the old original office building, and the employees that wanted any of the pictures (all 8x10") could remove them, but not before Friday of that week. He took many pictures at all the EWEB functions as well. All his pictures were pretty much taken on black and white film. I only saw one color photo by Harry, which he did during the Vietnam Era. It was a picture of a draped American flag with a hawk standing on the flag with a dove in its talons. Regardless of the individual's feelings regarding the war, the photo was fantastic. His darkroom was at EWEB on the lower level of the old office building where the cafeteria was located. It was directly across from the EWEB Federal Credit Union office. Following are some of Harry's most memorable pictures. Many of the photos for EWEB picnics, celebrations, etc. are his as well as Ray Boals'. ***The Cascades, EWEB's Water Source:***

Figure 9-1

Figure 9-2

Figure 9-3

EWEB SERVICE AWARDS CELEBRATIONS

Figure 9-4 1978

2-Year Service Awards
Back: Fergus Pilon, Bob Roggenbuck, Ron L. Wilson, Gary Jackson, Jan Tatala, Daryel Collins, Nan Harrison, Paul Appling. Front: Sally Pitchford, Lynne Beemer, Sherry Scales, Debbie Roberts, Sheri Lewis and Sandy Dixon.

Figure 9-5 1979

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10-Year Service Awards

Back: Jim Bassett, Pat Maxwell, Herb Hunt, Malcolm Trupp, Terry Bunce, Hal Worcester, Wayne Vanderhoff, Don Schmidt, Curt Mattison, Sam Mosley and Howard Ruland. Front: Ron Revelle, Donna Henderson, Bobbi Miller, Keith Parks, Evelyn Larson, Loretta Coon, Marv Durham and Gil Rodello.

Figure 9-6 1981

5-Year Service Awards

Back: Darrell Hogue, Dick Anderson, Don Cleveland, Percy Luvert, Rick Pieper, Phil Pauley, Ken Bauerle, Andy Andrews, Jean Reeder, Iona Mosley, (unknown). Front: Judy Marsh, Darby Gilkison, Cindy Nolte, Alene Hufstader, Lu Smith, Sheri Lewis and June Christensen.

Figure 9-7 1985

25-Year Service Awards
Back: Lindsey Smith, Ron Davis, George Mason, Don Walker, Garry Kunkel.
Front: Russ Davis, Kimber Johnson and Ron Hammond.

Figure 9-8 1989

15-Year Service Awards
Back: Wayne Vanderhoff, Malcolm Trupp, Gil Rodello, Jim Phillips, Ron Revelle, Morris Graham.
Front: Duane Radloff, Loretta Coon, Marv Durham, Bobbi Miller, Howard Rulan, and Jim Bassett.

August 11, 1956 Picnic

Figure 9-9

Verne and Minnie Poindexter

Ray Boals Photos - 1956

Figure 9-10

Neil Sleeper cooking hot dogs

1957 EWEB Picnic

Figure 9-11

Grace & Claude Bradway

Figure 9-12

Barbara Lamb & Betty Green clean up

Figure 9-13

Verne Poindexter

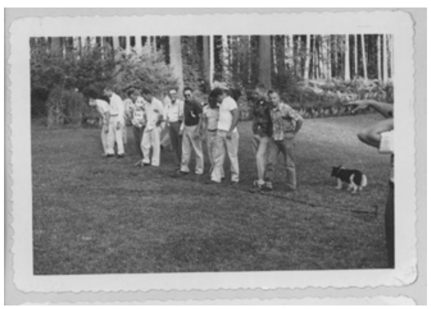


Figure 9-14

Adult Three-Legged Race

Figure 9-15

Leonard & Betty Boylan

Figure 9-16

Polly & Keith Parks

Cooking and Serving Chicken at the EWEB Picnic

Figure 9-17

Chicken Cooker Pits

Figure 9-18

Will Gowing cooking chicken

Figure 9-19

George Mason, Gary Willison, (unknown), Jim Brown, Russell Root and Chuck Root, chicken cookers

Figure 9-20

Tom Buckhouse, Jim Miller and Dick Helgeson - 2004 (the final picnic)


Figure 9-21

Paul Johnson


Figure 9-22

Dick Gall


Figure 9-23

Norman & Sharon Leutschaft - 1975


Figure 9-24

Byron Taylor 1968


Figure 9-25

Bob Logan, George & Scott Partridge


Figure 9-26

Byron Price & Vern Poindexter

Fun at the Picnic


Figure 9-27

Clarke & Eaton Families


Figure 9-28

Kids in Wagon Ride 1967


Figure 9-29

Kids Three-Legged Race 1967


Figure 9-30

Kimber & Diane Johnson 1975


Figure 9-31

Picnic Crowd


Figure 9-32

Donkey Basketball, Geo. Mason w/Ball 1968

Figure 9-33

Boat Rides

Figure 9-34

Capt. Shipwreck & Lee Eaton

Figure 9-35

Greased Pole 1972

Figure 9-36

Gene Brown, Emcee - 1972

Figure 9-37

Softball Game, Emmett (Fuzz) Lovell

Figure 9-38

Bingo for Retirees

Figure 9-39

Kimberly & Gloria Mason

Figure 9-40

Keith Parks & Duck (Bobbi Miller) 1979

Figure 9-41

John Fuller, Fred Stuhr & Floyd Holmes

Holiday Celebrations at EWEB

Figure 9-42

Don Vanderzanden 1986

Figure 9-43

Bob Sams 1991

Figure 9-44

Tom Santee

Figure 9-45

Customer Service Department - 1993

Back, Standing: Nancy Cueto, Judy Chase,, Mary LeDoux, Karen Demmers, Nancy Cook, Bobbi Miller
Middle: (unknown), Sheri Lewis, Cari King, Marti Ashbaugh, Karen Lee
Front: Terri Becker

Figure 9-46

Iona Mosley, Bud Perry, Barb Marlowe, and Carolyn Sprague - 1994

Figure 9-47

Karen Morrow & Bud Perry 1995

Figure 9-48

Bobbi Miller, Carole Barnes, Patty Farhoomand and Carolyn Sprague

Figure 9-49

Linda VanCleave & Patty Farhoomand

Figure 9-50

Bobbi Miller & Carole Barnes

Figure 9-51

Jean Cunningham - 1998

Figure 9-52

Cary & John Miller and Bill Eaton 1976

Figure 9-53

George Mason Jr., Santa & unknown

Figure 9-54

Bill Eaton with Santa & Kids

Figure 9-55

Santa (Papa Johnson) & Cary Miller, 1980

EWEB EMPLOYEE GROUPS

EWEB Bowling League:


Figure 9-56


Figure 9-57


Figure 9-58

Fred & Edna Stuhr, Gordon & Peggy Oare
1972

Paul & Lorraine Johnson, Glen & Irene Oleson

John & Bobbi Miller, Ethelyn & Gene Brown


Figure 9-59


Figure 9-60

Glen & Irene Oleson, Mel & Catherine Thaxton

Gene Brown on Halloween

The Teams Bowled at Emerald Lanes

INTERMOUNTAIN GUN CLUB

The Gun Club was formed in 1968. Ted Henke (Water Department) came up with the name “Intermountain Gun Club” as we sat between the Cascades and the Coast Range. The small-bore rifle team shot their final match in the Willamette Rifle League in the tournament on April 13, 1986 at the McGowan Creek Indoor Range. The club had two ranges: the indoor range in the old clearwell under the old McClain Plant and a shotgun range in the old Eugene Shotgun Range on Greenhill Road. The club became affiliated with the NRA in 1976 and received our charter at that time (Figure 9-61). The small-bore rifle team competed against Emerald Empire Team, Shedd Rifle Team (Figure 9-62), Albany Sharpshooters, OSU Varsity Rifle Team, Army ROTC Team, Junction City Rifle Team, Corvallis Rifle Team, and the Eugene Moose Rifle Team. The club’s first President was Chuck Root (Drafting), Secretary Treasurer Bill Eaton, and the instructor was George Mason (Water Department).

Figure 9-61

NRA 100th Anniversary Charter

Figure 9-62

Shedd Rifle with Intermountain Team
At the Shedd indoor range in the old theatre

Figure 9-63

George Mason and Chuck Root at the Oregon State Championship Small-Bore Outdoor Match, McGowan Creek Range

Figure 9-64

Bobbi Miller & George Mason At the Shotgun Range - 1977

Clubs Non-Game Conservation Projects: (Director, Chuck Root)

The following was written by Chuck Root: ***Osprey Nest Project (1977)*** The Osprey Nest project had its beginning at a gun club meeting. Bert Cleary, Biologist at Oregon Department of Fish and Wildlife, had given a presentation on their plans for improvements to the Fern Ridge Refuge. ODFW had recently sold the Camas Swale Refuge property and were going to use the proceeds to make improvements at the Fern Ridge Refuge. Most of the work would be contracted with some projects available for volunteers.

Jack Clark asked about the volunteer projects. Bert noted several, and the osprey nests sounded good. Raising poles is something we (EWEB) do. Bert showed us a couple of sites on his map. One a small island off the end of Jeans Road (Figure 9-69), the other near the mouth of Coyote Creek. Dan Fenski, a falconer who works for the phone company, suggested the Jeans Road site. PNWB (Pacific Northwest Bell) was replacing some poles in the area and could get some salvaged poles delivered to that site.

The following weekend, Jack Clark, Shel Kaiser, Bill Lynch, George Mason, Bob Lewis, Dan Fenski and Chuck Root all met to look over the site. The site was on a small island which was covered with grass, brush, and no trees. Since there were no trees, Dan suggested two poles, one for the nest platform and one for the exercise pole. The site was accessible over the mud flat by 4x4 vehicles.

A sketch of what we'd planned was made by Jack Clark and sent off to Bert Cleary. Bert said it was a good plan, especially with the exercise pole. Bob Lewis raided the scrap bin for hardware, and Dan Fenski arranged for the poles to be dropped off at the end of the pavement on Jeans Road.

On the day the poles were to be raised in 1978, the crew met at the site. The crew consisted of Bob Lewis, George Mason, Bill Lynch, Jack Clark, Dan Fenski, Shel Kaiser and Chuck Root. Bob Lewis pulled the poles out to the site with his jeep. The pole locations were determined and some dug the holes (Figure 9-66) while others assembled the nesting platform (Figure 9-67 & 9-68). Shel Kaiser showed us how to raise the complete poles using pikes and ropes (Figure 9-65).

The project was completed in March before the lake was filled. The platform was successful, and the osprey occupied it that first year. The site was active for many years.

Photos by Bill Eaton & Chuck Root:

Figure 9-65

Setting pole

Figure 9-66

Using auger to drill pole hole

Figure 9-67

Attaching pole platform
Left to right: Bob Lewis, Jack Clark, George Mason & Bill Lynch

Figure 9-68

Figure 9-69 2009

Figure 9-70 2009

Finishing touches on platform

Site as of 2009, with Chuck Root

Figure 9-71 2009

In the three previous photos (by George Mason), Figures 9-69 to 9-71 are the poles in 2009. Figure 9-69 shows both as set in 1977. Figure 9-70 shows the pole that had the nesting platform on it and Figure 9-71 shows the exercise pole with a single cross arm for the young osprey to fly to in its first flight. Someone decided that the old treated poles were unhealthy for the young birds so the platforms were removed. Strange how ospreys are nesting on newly treated poles all the time with no ill effects--amazing.

A second nest pole was raised a few years later at the Coyote Creek site. This site differed from the Jeans Road site. It was located near the mouth of the creek in a stand of snags. Just a nest platform would be needed, and no exercise pole was needed.

The EWEB electric crews dropped off a scrap pole at the edge of the lake on Royal Avenue, where it would be towed. The pole was then towed out to the site by Chuck Root by boat and tied off to a snag at the site. When the lake was lowered in the fall, it was time to raise the pole.

The warehouse crew assembled the hardware out of the scrap bins using Jack Clark's sketch. We were then ready to raise the pole as before.

The crew that day consisted of Bill Lynch, Hector Quiroz, Dale Hagey and Chuck Root. The nesting platform was assembled, and the hole dug. The pole was then raised using pikes and ropes. On this pole a metal shield was put around the pole to prevent predators from climbing the pole when the water was down.

This nest, like the Jeans Road site, was occupied the first year, and last known was still occupied.

EWEBers OFF THE JOB

Vern & Grace England's Indian Artifact Collection:

Vern and Grace hunted Indian artifacts all over Oregon for years. A couple of their favorite locations were Fern Ridge, Warner Mountain and Steens Mountains. A few years back they sold their collection because of their health, as they were no longer able to go out looking. Following are some pictures of their collection before being sold. Every single item they found was very well-documented as exactly to where and when found.

Figure 9-72

Grace & Vern England

Figure 9-73

Grace & Vern England

Figure 9-74

Arrowheads and knife

Figure 9-75

Typical Arrowhead Display

Figure 9-76

Bowls & Baskets

Mountain Climbers

Figure 9-77

Ron L. Wilson, George E. Misner, Larry Cox
Photo by George Mason - Diamond Peak
May 1978

Figure 9-78

On the top of the Middle Sister
Joe Barry, Hal Marlowe and
Pat LaMora - 1984 (photo by
George E. Misner)

Camping, Hunting & Fishing

Figure 9-79

Peggy & George Partridge

Figure 9-80

Bill & Shirley Fulps

Figure 9-81

Partridges & Fulps on Trip

Figure 9-82

George & Peggy Partridge

Figure 9-83

Bill Fulps

Figure 9-84

Shirley Fulps

Figure 9-85

Dick Evans, McKenzie River 2007

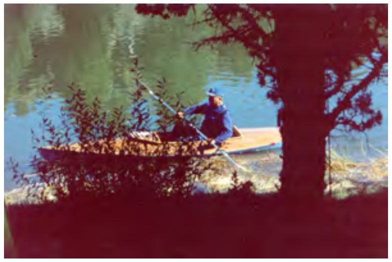


Figure 9-86

Chuck Root in One-Man Boat he built on Silver Creek

Figure 9-87

Gene & Ethelyn Brown Fishing near Waldport

OTHERS

Figure 9-88

Glenn & Lucille Haney
with Rock Jewelry
they make

Figure 9-89

Jim Brown with his Stationary Steam
he restores and runs at Brooks, Oregon

RETIREMENT AT EWEB

EWEB Retirement Celebrations:

Figure 9-90 1956

Figure 9-91 1956

Figure 9-92 1956

Carl M. Johnson Retirement Party - 30 September 1956

Figure 9-94 1966

Figure 9-95 1980

Ralph Russell Retirement - Oct 1956

Faye Brown Retirement

Bevery (Bud) Barnts Retirement

Figure 9-96 1966

Retirement Party:
At Head Table: Norm Stone, Byron Price, Lucille Haney, Glenn H. Haney, Philomina (Minnie) Poindexter, Verne Poindexter, Margaret Taylor, Byron Taylor
Front: (unknown), Ink Smith. The rest are unknown.

Figure 9-97 1975

Back: Don Woodward, Earl Ritter, Bill Fulps, Fred Stuhr, Merle Porter. Front: Willie Dotson, Bevery (Bud) Barnts and Clark (Bill) Lynch.

Figure 9-98 1984

Back: Don Bell, Gil Richman, (unknown), (unknown), Virgil Nelson, Marvin McDonald, Eugene Webber, John Wullschleger. Front: Carl Banks, Bud Frye, Lu Smith, Keith Parks, Ethelyn Brown, Floyd Farstad.

Figure 9-99 1984

The Parks Family at Keith's Retirement Party at the Eugene Hilton
Left to Right: Dennis Parks, Diana Glenn, Jim Glenn, Warren Glenn, Bryan Glenn, Polly Parks and Keith Parks.

Figure 9-100 1994

Back: Dennis Bacon, Lindsey Smith, Lloyd Knox, Tony Lum. Front: Jerry Ahnert, George Mason, Loretta Coon, Kimber Johnson and Jim Brown.

Figure 9-101 1999

Standing: Marv Durham, Norm Hooker, Gary Willison, Bob Solander, Daryel Stewart, Hector Quiroz, Willis (Dub) Moen, Jim Groat, Gerd (Gary) Klein. Sitting: Fred Dellinger, Bobbi Miller and Mary Thompson.

Sandy Dixon's Retirement Party - May 2006*:*

Figure 9-102 2006

George & Gloria Mason with Sandy

Figure 9-103 2006

Kathy Gray & Sandy's Mom

Figure 9-104 2006

Wayne Franklin, Jeff Ankeny, Gary Winters

Figure 9-105 2006

Decorations & Vicki Maxon

Figure 9-106 2006

Kathy Gray, Sandy & Tom Buckhouse

EWEB's RETIRED WOMEN'S GROUP

Started in about 1985-86 by Ethelyn Brown after she retired, as the EWEB women wanted to get together, similar to the old Pancake Club started by EWEB managers and supervisors.

When the Women's Group first started getting together, they met for lunch at the Elks Club on West 11th in Eugene on Thursdays. Eventually the Elks was no longer available on the days they wanted, so they changed and jumped around locations for awhile, settling on the Sizzler on Gateway in Springfield, meeting the third Monday of every month, starting in 2006. In December of that year they had a Christmas get-together at Ethelyn Brown's house.

Figure 9-107

Back: (left to right) Tillie Blankenship, Marilyn Ballard, Ruth Hensley, Alice Frye, Pat Cooley, Idalene Childs and Ethelyn Brown
Front (left to right): Lou Smith, Dorothy Hamilton & Polly Salmon (1994)


Figure 9-108

Tillie Blankenship, June Christensen
Rosemary Edwards, Ethelyn Brown


Figure 9-109

Juanita Paslay, Carole Barnes
Sheri Lewis & Bobbi Miller 2005


Figure 9-110

Pat Cooley & Esther Barrell 2005


Figure 9-111

Sheri Lewis & Delores Neal


Figure 9-112

June Christensen & Sheri Lewis 2005


Figure 9-113

Rosemary Edwards & Marilyn Ballard

EWEB PANCAKE CLUB/RETIRED EWEB EMPLOYEES, INC.

The EWEB Pancake Club, since its origin on October 15, 1958, has become a Wednesday lunch hour tradition. The club was begun by Neil Sleeper, Glenn Haney and Fred Stuhr. They first met at “Warren’s Pancake House” as an alternative to standing in line at the EWEB cafeteria. Warren’s closed in 1973 and Sambo’s was the chosen successor. About 200 had been initiated into the club over the years, with new members paying the bill each week. Retired employees attended regularly, allowing them to maintain contact with current employees, per Fred Stuhr. “The purpose of the Club is to enjoy the fellowship of one another and to become better acquainted with fellow employees and retirees. One important rule was to refrain from discussing job-related problems. Idle discussions and visiting with one another is the rule of the day”. In 1976 the Club moved to Carrow’s Restaurant where it remained until March 2005, when it moved to the Eugene Eagles #275 on Irving Road.

The Club is now known as “EWEB Retired Employees, Inc”. Original members of the Retiree Group were Wes Goodrich (President), Chuck Strong (Secretary), Mel Damewood (Board Member), Ethelyn Brown (Insurance Representative), Lloyd Lindley (Board Member), Ambrose McLaughlin (Treasurer), and Norm Stone (Advisor). When EWEB first made changes to the retiree medical benefits, the group created “PERB” which stood for “Preserve EWEB Retired Benefits.” These changes made at that time were accepted under the understanding that it was a “one-time change”. PERB was later changed to EWEB Retired Employees, Inc.

This new group was comprised of past presidents Lloyd Lindley, Paul Johnson, Jim Brown (first term), Tony Lum, Bob Carter, Bobbi Miller, George Mason (second term), Sharon Brunig, Tommy Johnson (first term and second term) and George Mason (third term).

Figure 9-114 2003

Figure 9-115

Figure 9-116

Retiree Luncheons at Carrow’s Restaurant

Luncheons / Dinners at the Eugene Eagles #275

Figure 9-117

Becky taking weekly orders

Figure 9-118

Lewis & The Royers

Figure 9-119

Royer & Lauderdale

Figure 9-120

Wednesday Group

Figure 9-121

Meier, Betts, Winters & Hale

Figure 9-122

Larry Lauderdale, Melba Stevens & Sheri Lewis

Some of our regulars

Figure 9-123

Chuck Root

Figure 9-124

Howard & Sharon Anderson

Figure 9-125

Tommy Johnson & Vern Reinmuth

Figure 9-126

Dick & Louise Mihulke

Figure 9-127

Dale & Glorietta Hagey

Figure 9-128

Eugene & Shirley Webber

Figure 9-129

Geneva Holmes & Betty Axtell

Figure 9-130

Curtis & Gloria Mattison

Figure 9-131

Marjorie & Vern Kaiser

Figure 9-132

Kathy & Ken Lowery

Figure 9-133

Bob & Sue Lewis

Figure 9-134

Les Pearson, Elliott Lewis, Frank Moso

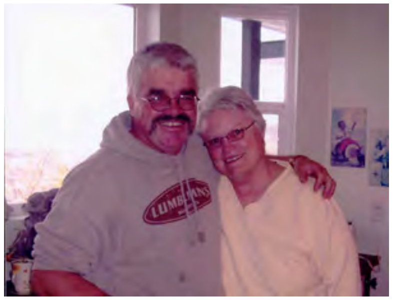


Figure 9-135

Joe & Kathy Barry

Figure 9-136

Tommy & Gail Johnson

Figure 9-137

Alice & Dennis Bacon

Figure 9-138

Marv & Judy Durham

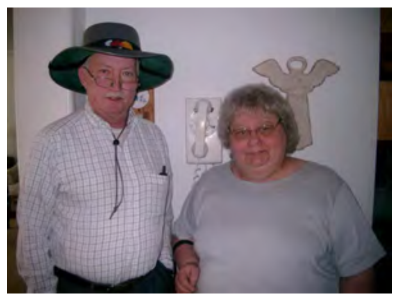


Figure 9-139

Greg & Sharon Brunig

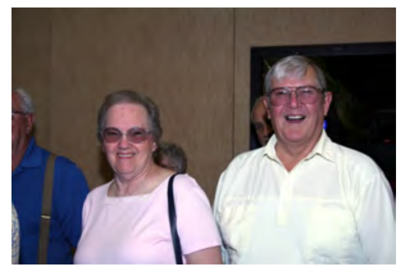


Figure 9-140

Shirley & George Misner


Figure 9-141


Figure 9-142


Figure 9-143

Ken & Darlene Rinard

Dick & Dorothy Neet

Diane & Kimber Johnson


Figure 9-144


Figure 9-145


Figure 9-146

Virgil & Leila Nelson

Gary Willison

Bob Lewis, Cora Polley, Joe Silliman, & Lou Polley

Some Of Our Friends Who Have Passed On

Figure 9-147

Harriet & John Wullschleger

Figure 9-148

Irene & Glenn Oleson

Figure 9-149

Betty & Wes Goodrich

Figure 9-150

Bob Steward

Figure 9-151

Bob & Peggy Ross

Figure 9-152

Mickey Mantle & Charlie Strange


Figure 9-153

Lee & Dorothy ("George") Eaton


Figure 9-154

Fred & Edna Stuhr


Figure 9-155

Eddie & Rebecca Smith


Figure 9-156

Gene & Ethelyn Brown

ADDENDUM:

Lawrence Fox (Meter Reading Supervisor)

Raised and experimented with dahlias, winning many blue ribbons at the Lane County Fair. He raised real large, beautiful dahlias for lots of years.

Russell Wheeler (Landscaping Crew)

Built many rock tables, etc. using cut flat pieces of rock, such as agate, petrified wood, jasper, etc. This author has one of the only two 5' coffee tables that he made, after which he said he would never make another 5' table, as it was too difficult to make real level.

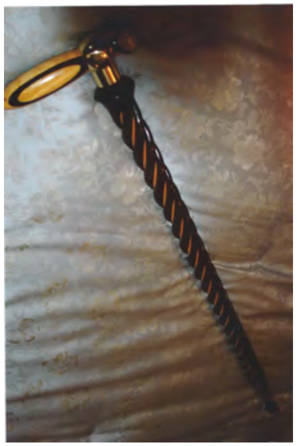
Delbert (Del) Smith (EWEB Carpenter)

Del raised and experimented with orchids in his own greenhouse. He would bring into work various orchids that he developed or raised which weren't what he was trying to create, and these were very beautiful.

Les Reiger (Relay Shop)

Les does outstanding carpentry work, which is very well-known by most of the retirees. This author has a large wooden bowl he made from a sassafras tree the author had removed, and gave some of the wood to Les. He made a special gavel for Martha Walters, the retirees' attorney, who is now (2013) a Supreme Court Justice. Another of his well-known projects was real fancy walking canes.

Mahogany Hope Chest he made for his granddaughter



Wooden Cane

Bowl made from sassafras tree

Chapter Ten

THE McKENZIE RIVER - EWEB's LIFELINE

Sharon Brunig wrote a poem about a river from her experiences along the McKenzie River. Here are her words and the poem:

"I love the drive up the McKenzie. Even from the road you can see the many moods of the river and enjoy them all. The beauty, the peaceful stretches, the rapids that roar and boil and in a few miles or minutes it changes again, and yet there is something so solid and eternal about it. That and our depending on it for water (the life giver), is what inspired this poem."

THE RIVER

The river flows by so swift and silent,
like the passing of time in our lives.
It wanders over rocky shallows,
where the small particles of trouble
wash out and clean and pure it moves
on down the path destiny and time have made.
Wide banks and smooth beds allow calm,
swift passage only to find the boulders that
create rapids and eddies, like the turmoil
and peace we find in our own existence.
The river gives life and nourishment to many,
and yet takes life from others.
It provides calm beauty or rampaging fear.
At the journey's end the river joins the multitude of
rivers and raindrops to start the life cycle again.

Sharon Brunig (retiree), 2002
Customer Service Rep.

Let's take a photographic tour of what Norm Stone named his book, the "Bountiful McKenzie."

Figure 10-1

Figure 10-2

Figure 10-3

Figure 10-4

(Photos by Harry Gross)

Our tour of the river from mountains to ocean begins high in the Cascade's (figures 10-2, 10-3, & 10-4), where melting snow finds its way through the highly porous lava beds and springs to where our journey starts at ***"Clear Lake."***

Clear Lake (Author's Photos)

According to the "Atlas of Oregon Lakes" there are 11 lakes in Oregon which bear the name "***Clear Lake***." Our Clear Lake is three miles south of the junction of Highway 20 and Highway 126, and 18 miles east of the town of McKenzie Bridge, lying within the Willamette National Forest at an elevation of 3,012 feet (or 913 meters) above sea level. A group of men from Lebanon, Sweet Home and the Brownsville area discovered the lake in the 1920s.

Water enters the lake from Great Spring (Figure 10-5), Fish Lake Creek (Figure 10-6), Ikenick[1] Creek (Figure 10-7), along with


Figure10-5 2007

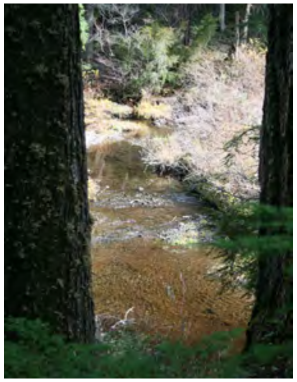


Figure 10-6 2007

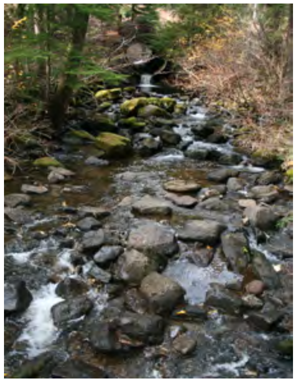


Figure 10-7 2007

melting snow from Mt. Washington and surrounding area which is filtered underground through the fractured lava and submerged lava tubes. Some of the runoff filtered through several lava caverns for more than 20 years before entering Clear Lake (Figure 10-8).


Figure 10-8 2007

[1]Ikenick is named after Isaac Nickerson, who was commonly called Ike Nick. He died near the creek one winter in the 1870s.

Clear Lake (Figure 10-9) is a 1.5-mile-long lake of crystal clear water with a maximum depth of over 200 feet and an average annual temperature of 38^0 F. The lake, which occupies the bed of the ancestral upper *McKenzie River*, lies behind a dam formed by a lava flow from Little Nash Crater about 3,000 years ago. Large preserved Douglas Fir trees, which radio-carbon dating ages at approximately 2,950 years old, are submerged in the 118-acre lake.

This lake is the headwaters of what Norm Stone in his book (Figure 10-1) referred to as the *"Bountiful McKenzie."* The forest which lined the original river's banks became submerged and the remnants of some of those trees are still visible today, some under 120 feet of water (Figure 10-10 & 10-11). The lake is so clear that a diver lying on their back on the bottom on a clear night in about 30 feet of water can actually see the stars in the sky. This was actually experienced by Rod Huddleston (Water Department) and his son.

Figure 10-9 2007

The trees are preserved by the nearly freezing water temperatures (33-41^{0} F) all year long. The extremely clear water is the result of the ground water feeding the lake being filtered through miles of lava.

Figure 10-10
2007

Figure 10-11
2007

The McKenzie River *(named in 1812 after the explorer and fur trapper Donald MacKenzie [1783-1851] who discovered the river)* begins its flow of 86 miles (138 km) out of Clear Lake (Figure 10-12) where it cuts through the lava bed (Figure 10-13) finding its way downriver to the "McKenzie River Falls." The river just above Sahalie Falls is shown in Figure 10-14.

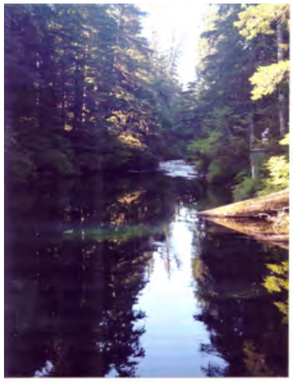


Figure 10-12

Figure 10-13 2007

Figure 10-14

The McKenzie River Falls (Author's Photos)

Both Sahalie and Koosah Falls are at the terminus of the 3,000-year-old flows of basaltic andosite lava that had dammed Clear Lake. Of the two falls, Koosah (Figure 10-16) is the largest with a height of 82 feet. Koosah was originally known as Middle Falls before the development of the Clear Lake recreation area in 1950. In Chinook[2] jargon, Koosah means sky.

Sahalie Falls (Figure 10-15), originally called Upper Falls, is only 68 feet tall, and is the most popular of the three falls on the McKenzie River. It was used in the Disney movie "Homeward Bound." In Chinook jargon, Sahalie means high.

Tamolitch Falls (Figure 10-17) is the third falls on the McKenzie River. Tamolitch Falls is dry most of the year. EWEB's diversion dam may have contributed to the problem time-wise, but the only way to get water over the dam all year would be to pave the bottom of the river to stop the water from seeping through the highly porous river bed. The river actually travels underground through the porous lava rock and enters a pool at the base of the falls from a spring. As much as half of the river follows this route. The water in the pool (Figure 10-18) is extremely clear, deep and blue after traveling several miles through lava rock. Tamolitch is Chinook jargon for tub or bucket, and was originally called Lower Falls.

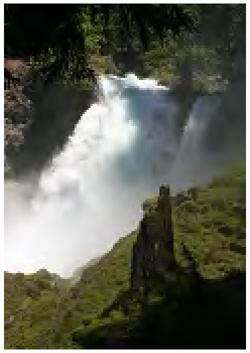


Figure 10-15
2008

Sahalie

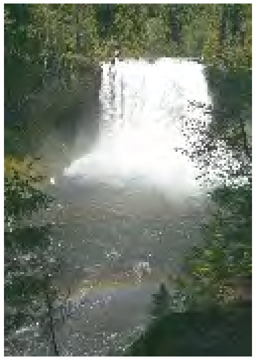


Figure 10-16
2008

Koosah

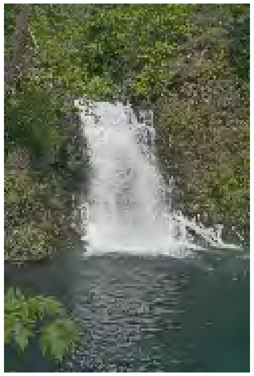


Figure 10-17
2008

Tamolitch

[2]Chinook was the language used by the Calapooya, a local Indian Tribe.

During the summer and fall months when the McKenzie River's flow is low, the river completely disappears into the lava (an occurrence that has gone on for hundreds of years), then reappears again in a large spring at the base of Tamolitch Falls called Big Pool, or Tamolitch Pool (Figure 10-18) after flowing for about 3.5 miles underground. The pool is 30 ' to 40' deep, but is so clear that its depth is not apparent. From the pool the river continues (Figure 10-19) on its normal course. The first use by EWEB on the McKenzie as we travel dow stream is the ***Carmen-Smith Project.***

Figure 10-18 2008

Figure 10-19 2008

Carmen-Smith Project (Author's Photos)

Between Koosah and Tamolitch Falls, the McKenzie River flows into EWEB's Carmen Diversion Dam (Figure 10-20), which dams the river and diverts some of the water four miles to the Smith River Dam (Figure 10-21) for storage, which then supplies water through a power tunnel (Figure 10-22) to the Carmen Power Plant (Figure 10-23), where the river water rejoins the McKenzie River and flows into Trail Bridge Dam (Figure 10-24) and reservoir, where EWEB again uses the McKenzie River to generate power at the Trail Bridge Power Plant (Figures 10-25,10-26 & 10-27), before continuing downstream to Leaburg and Walterville (Figure 10-28).

Figure 10-20 2007

Figure 10-21 2007

Figure 10-22 2007

Figure 10-23 2007

Figure 10-24 2008

Trail Bridge

Figure 10-25 2008

Figure 10-26 2008

Figure 10-27 2008

Figure 10-28 2008

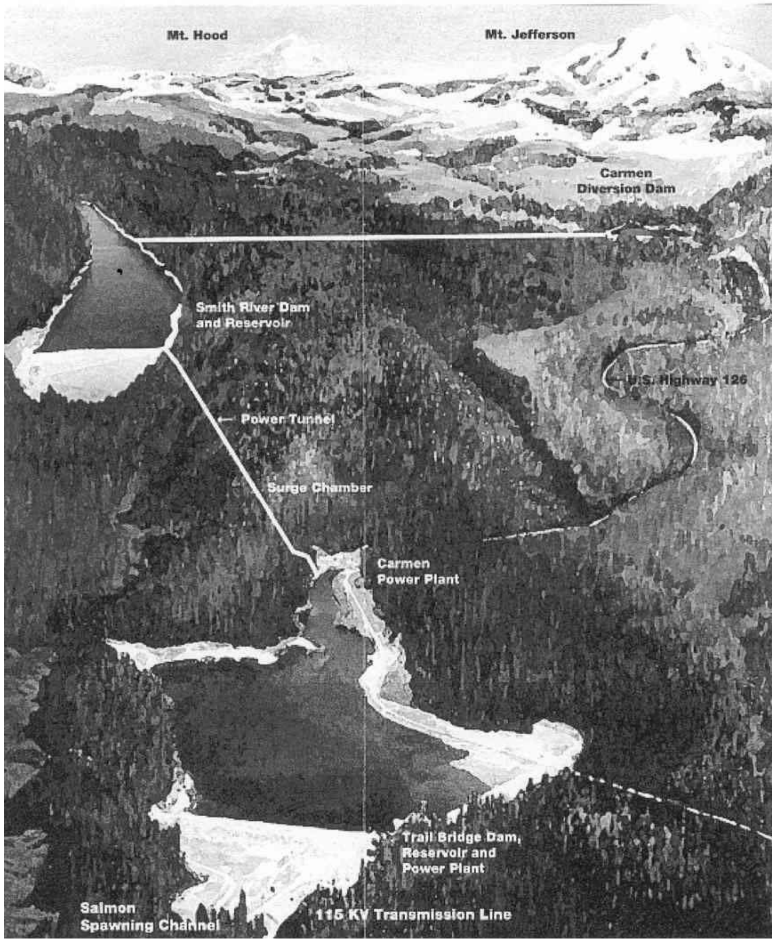


Figure 10-29 EWEB Photo

Diagram of the Carmen-Smith Project

Leaburg and Walterville (Author's Photos)

After leaving the Trail Bridge turbines (Figure 10-26), the river continues its normal flow downstream until it reaches Leaburg Dam (Figure 10-30), which creates Leaburg Lake, a popular recreation site on the McKenzie River. The dam's main purpose is to divert water into the Leaburg Power Canal which flows parallel to the river (Figure 10-31) for about five miles until reaching the Leaburg Power Plant, where it is once again used to generate power for EWEB (Figure 10-32). After the water goes through the Leaburg turbines, it rejoins the river and continues its flow down river until arriving near Walterville, where a channel was dug to divert water into the Walterville Canal (Figure 10-33), which then flows for four miles to the Walterville Power Plant. Along the way some of the water is stored in the Walterville Pond (Figure 10-34), which was used by the plant during low river flows. Currently the pond is kept full for recreational use. The pond is a great sanctuary for bird life (Figure 10-34). After going through the Walterville turbines (Figure 10-35), it returns to the canal and eventually flows into the tail race, where once again the river resumes its normal flow before being used by EWEB to supply drinking water for the Eugene-area residents.


Figure 10-30 EWEB


Figure 10-31 2006


Figure 10-32 EWEB


Figure 10-33 2006


Figure 10-34 2006


Figure 10-35 EWEB

EWEB's Drinking Water (Author's Photos)

As the river continues its flow after leaving the Walterville Power Plant, it comes to EWEB's original old water intake (Figure 10-36) on Camp Creek Road. No longer in use, this intake was used to divert water into a 30" steel pipe which transported the water by gravity flow all the way to the McClain Water Treatment Plant (Figure 10-37) at EWEB's location (2008) on the Willamette River. Water was taken from the McKenzie River and transported to Eugene because of the superior quality of the water in the McKenzie vs. the Willamette River, and the water was then used by the citizens of Eugene for their drinking water.

A little farther down river from the old intake is the current Hayden Bridge Intake (Figure 10-38) where water is pumped up into the Hayden Bridge Treatment Plant (Figure 10-39), and where it is treated to meet (and exceeds) all federal EPA regulations, and is then pumped about 7.5 miles to Eugene. This intake is the final location on the McKenzie River where EWEB uses any of its water. From this point on the river continues its flow until reaching the Willamette River in the Santa Clara area on its way to the Pacific Ocean, where evaporation creates clouds (Figure 10-40) which travel inland to the Cascade Range, which then flow inland over the land to the Cascade Mountains, dropping rain and snow to start the journey all over again (Figure 10-41).

Figure 10-36 DCaven

Figure 10-37 EWEB

Figure 10-38 2006

Figure 10-39 EWEB

Figure 10-40 2009

Figure 10-41 1970s

Epilogue

EWEB PRESENT AND FUTURE

EWEB LOGOs:

Eugene Water Board
MUNICIPAL EWB WATER·LIGHT·POWER
MUNICIPAL ELECTRIC AND WATER UTILITIES

EUGENE EWEB MUNICIPAL UTILITIES

EWEB

EWEB INTERCOM OVER THE YEARS

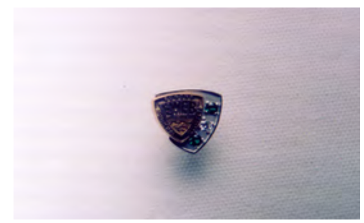
EWEB News Happy Holidays Issues

EWEB Service Awards

2 Years

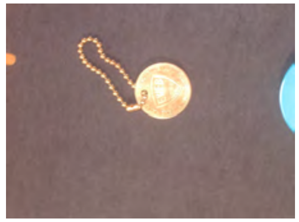
5 Years

15 Years



20 Years

25 Years



EWEB's 50th Birthday

75th Birthday

90th Birthday

Promotional Items

EWEB's bottled water in bulk and single unit


EWEB


EWEB

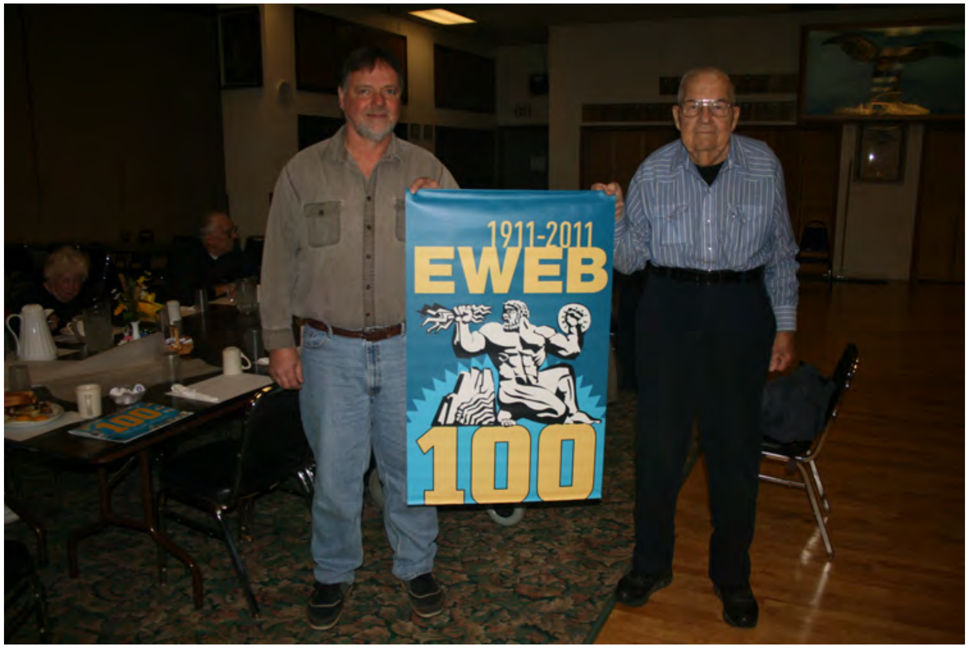

Excellence


Excellent Service at Low Cost
EWEB

50th and 100th Years

Billboard on Beltline by Highway 99N

LTD Bus - June 2011



Bob Roggenbuck and Bob Royer - Retirees

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BIBLIOGRAPHY

Collected clippings - Eugene Register-Guard:

Power arrives early in Eugene (July 23, 1950)

Engineer recalls 1926 reservoir (Ken Rinard) (December 11, 1955)

EWEB Gould Pump (April 18, 1948), page 14, Sunday paper

EWEB Annual Reports (1912 to date)

EWEB Files

EWEB News (Intercom, etc.)

Historical Summary of EWEB by Professor Scott Walton, U of O, February 1961 (mostly financial)

Lane County Historical Museum

Books:

Market Days (Lane Pomona Grange Fraternal Society) by Stan Bettis - An informal history of the Eugene Producers' Public Market.

Chinook Jargon, by George Gibbs - 1863

Beautiful McKenzie, by Leroy B. Inman - 1996

Bountiful McKenzie, by Norm Stone - 1986