

REPORT ON WATER WORKS SYSTEM

Estimated Cost of Improvement as Made by Consulting Engineer J. W. Roberts.

Consulting Engineer J. W. Roberts has completed an estimate of the cost of the proposed gravity water system, and the document will be presented to the city council at its regular monthly session next Monday night. The estimated cost of the system, including a 10,000 gallon reservoir, is \$103,319, but it is believed that with fair competition bidding on its construction it may be had within the \$100,000 voted for the purpose. Mr. Roberts' report is very complete in every detail, and is as follows, only the formal remarks to the council being omitted:

Supply—In June of this year you made an appropriation of six cubic feet per second of the waters of Layng creek, which appropriation was perfected under the State law governing water rights, and Permit No. 30 was issued by the State Engineer to cover its application. This amount of water equivalent to 3,888,000 gallons per 24 hours, and is sufficient for a population of 2,500, allowing the generous estimate of 150 gallons per capita per day. It is a gauging of this stream at the proposed point of diversion September 19, 1909, at the low water stage, and the flow 13 second feet, or a little more than twice the amount appropriated. That the full amount of the appropriation will be assured in seasons of extreme drouth is confirmed by all reports of those familiar with the flow of Layng creek. The drainage area tributary to the creek at the proposed intake is 63 square miles, much of it having an elevation of more than 4,000 feet, and all of it within the National Forest Reserve and heavily timbered. Quality—A water supply from Layng creek is ideal. No purer water flows any stream in the State. Indeed, when it is known that not a farm, mill, or settler of any kind is established within the water shed contributing your supply, its absolute freedom from pollution is assured. Like similar streams of the Cascades, the waters of Layng creek are soft and clear. A supply from such a source will contribute greatly to the health of the community and do much to make your city attractive.

Distance—The first thought of an installer in city bonds on learning that it is proposed by a city of 3,000 to pipe water 20 miles from the mountains sufficient quantity for a city of 12,000, would be, that it could not be done without straining the credit of the city. At Cottage Grove is most fortunate in the following: The water supply 6 feet, having a valuation of \$12,000, has been acquired gratis by your foresight. The second place, the city owns its present water system, paying a nice profit on investment and operating expenses, with very moderate water rates. The total city indebtedness is only \$45,000. Another factor making a 20-mile line easier than might at first appear is that the proposed pipe line can be located for 18 of the 20 miles in close proximity to the O. & S. E. railroad, now operating up Row River valley, saving considerable expense in laying. With a railroad, wagon road, telephone line parallel to the pipe line, transportation and communication between construction camps is made easy.

There are many causes contributing to a line of minimum cost, while the item in the entire line calling for unusual expenditure is the one crossing of Row River. Eighty per cent of the entire distance can be excavated with a trenching machine.

Preliminary survey—I have made the preliminary surveys with the assistance Messrs. Taylor and Kurtz, and attached hereto a map showing proposed right-of-way, and have prepared a profile from which is calculated the amount of 14-inch pipe will deliver.

Elevations and fall—The surveys covering the line, and checked in duplicate, are the following elevations: Main intake, corner Spray's, 18.66 above datum; proposed reservoir, Land-hill, 215.00; proposed intake, Wil-lette Meridian, 565.00. To reduce to level add 650.50.

Calculated Gradient—The distance between the intake and reservoir is 99,000 feet. The fall is 350 feet. The rate of gradient is 3,514 per 1,000.

Flow—The calculated discharge of a 14-inch pipe line with the above gradient is 2.6 second feet, or 1,680,000 gallons in 24 hours. A 13-inch pipe would carry 2,052,000 gallons in 24 hours; 14-inch pipe would carry 2,550,000 gallons in 24 hours.

Reservoir—The advantages of a reservoir consists in the storage of the

night flow for use in the day time, and the supply for a short time of an amount greater than the average flow. It will afford a supply for a short time should any accident occur on the pipe line. Underwriters place a high estimate on its value for fire service, and reduce insurance rates according to its capacity and the size of the main connecting it with the distributing system. The proposed location is ideal, giving you 85 pounds pressure per square inch on Main street. You may safely estimate its cost at \$10.00 per thousand gallons capacity—the larger the better. For purposes of the present estimate I have considered one having a capacity of 300,000 gallons. This would supply five efficient fire streams of 200 gallons each per minute for five hours, independent of the main line.

Supply Main—For purposes of a preliminary estimate we ran two lines from the reservoir to town—one by way of Main street, and the other down Maple avenue. The latter is much shorter and more direct, and the classifications of trenching much easier; 3-1/4 feet will connect with the present main on Mill street. Should this line be laid, allowance should be made for hydrants at block corners within the city limits and for cross connections at street intersections.

Construction—The amount of money available for the construction of the proposed system requires that unusual types be rejected. The works proposed cover a low concrete dam for diverting the water into a small settling basin, screens and sluice gates are provided. Five stand pipes, one stop gate, 28 blow-offs, and 79 air valves are provided for regulation. The trench is estimated 24 inches wide, 36 inches deep in soil, and 3 feet wide in both solid and loose rock. The figures for pipe are based upon machine banded wood pipe, which is giving satisfactory service in many cities of the Northwest. For the crossing of Row River, which can be accomplished in low water, I would provide 550 feet cast iron pipe. This is included in the estimate. Clearing should be for the full right-of-way, and grubbing only for the width of trench. The estimates of solid and loose rock were made station by station, and are conservative.

ESTIMATES OF COST.

Intake—excavation, concrete, gates, screens, \$1,350; settling basin, \$500.

Clearing and grubbing right-of-way 30 feet \$1,150.

Trenching—11,500 feet solid rock, at 90 cents, \$10,350; 23,000 feet loose rock at 25 cents, \$5,750; 68,258 feet earth at 14 cents, \$9,556—\$25,658.

Pipe—13,912 feet 50 feet head at 45 cents, \$6,260; 8,200 feet 75 feet head at 47 cents, \$3,854; 7,100 feet 100 feet head at 49 cents, \$3,479; 4,600 feet 125 feet head at 52 cents, \$2,392; 23,700 feet 150 feet head at 55 cents \$13,035; 18,150 feet 175 feet head at 58 cents, \$10,527; 22,096 feet 200 feet head at 61 cents, \$13,479; 4,450 feet 225 feet head at 65 cents, \$2,892; 550 feet cast iron at \$2.00, \$1,100—\$57,016.

Eleven hundred tons freight, hauling and distributing at \$1.80, \$1,980; laying pipe 2 cents per foot, \$2,055; back fill 2 cents per foot, \$2,055; air valves and stand pipes, \$875; blow offs, \$840; extra depths up to 10 feet, 22 stations 40 cents per foot, \$880; Row river crossing, extra trenching 800 feet 50 cents, \$400; wing dams and pumping, \$300; right-of-way, 19.43 miles, \$2,500; railroad crossing, \$100; reservoir site, \$500; 300,000 gal. reservoir, \$3,000; engineering and superintendence, \$5,000; total, \$106,159.

Less possible freight rebate 12 cents per 100 on 1100 tons, \$2,640—\$103,519.

A 13-inch pipe would add to the cost of the system, \$8,000; a 14-inch pipe would add to the cost of the system \$17,000.

I have been over the line three times and am satisfied that nothing has been omitted that should be included in the estimate.

While the total itemized estimate amounts to \$103,519, prudent advertising and fair competition should make the total cost of the proposed works not to exceed the amount available, i. e., \$100,000.

It may interest you to know that a reasonable bonded indebtedness for cities of this class in Oregon, Washington and Idaho, on account of a municipal water system, runs from \$40 to \$50 per capita. Lower than \$40 is sometimes reached with a small pumping plant and an indifferent quality of water, and \$70 is about the upper limit where the supply is remote and the distributing system is of cast iron.

Considering these facts, the proposed

bonding of the city of Cottage Grove for \$100,000 to secure a pure and ample gravity water supply is good business, and I recommend the proposed system as both feasible and practical.

The annual expense incurred by this new construction would be about as follows: Interest at five per cent, \$5,000; depreciation, a sum which paid annually for 20 years with interest at five per cent amounts \$100,000, \$2,880; one pipe line rider at \$75 per month \$900; total, \$8,780.

This expense must be met by increased revenues from the sale of water, but the records in other cities of this class have shown that the introduction of a first class supply under efficient management will double the revenues within two years.

The outlook is promising for a substantial increase in population for Cottage Grove, and the proposed bond issue is, in my estimation, conservative.

In conclusion, I would add that if constructed, as proposed, Cottage Grove would have a water system second to none in the state in the three essential requisites of a water system, quality, quantity, and cost—for the quality is exceptional for purity, quantity is sufficient for 12,000 people, cost is within your means.

Respectfully submitted,
W. J. ROBERTS,
Consulting Engineer.

CELEBRATE ANNIVERSARY.

Pioneer Residents of Cottage Grove Married Fifty-Six Years.

Mr. and Mrs. H. C. Veatch, aged 81 and 78 respectively, celebrated the fifty-sixth anniversary of their wedding last Friday in a quiet and unpretentious way at their home in this city. In former years this anniversary day has brought together their children and grandchildren in commemoration of the event, but owing to the fact that these offsprings are now widely separated the usual meeting was not considered feasible. This aged couple have resided in Oregon since 1853, coming hither in what is known as the Knox-Oglesby train of ox-teams in that year. Mrs. Veatch, nee Knox, rode horseback from Missouri to Oregon and assisted in driving her father's cattle.

Mr. Veatch and Miss Knox were united in marriage at Pleasant Hill, Judge John T. Gilfrey performing the ceremony. Immediately after the tying of the nuptial knot they settled on a donation claim on the banks of the Willamette river one and one-half miles north of this place where they resided until a few years ago. They raised a large family. The children are: Sam P. Veatch, of Portland, Oliver O. Veatch, of this place; Mrs. C. G. Miller, of Walla Walla; Mrs. W. V. McGee, of

FRIVOLITY WILL HAVE AN INNING

Merry Makers Given Unrestrained Freedom for One-Night Stand Honoring New Year.

There will be something out of the ordinary doing in this pretentious burg tonight—New Year's Eve—and everybody, regardless of color, kind, sex or religious belief are invited by Chairman of the Big Noise Committee Lawson to come out into the highways and byways and participate in the festivities of the occasion. Young and old, high and low, great and small, male and female, Jew and Gentile are expected to respond to this call, wearing grotesque costumes, or a blanket, or a bedquilt—anything except common, ordinary everyday clothes—and get into the game. Each individual must be armed with at least one musical instrument, such as horns, harmonicas, accordions, tom-toms, sereechers, and tin-pans. The crowd will assemble in front of Hotel Oregon—or in the lobby—at 10:30 p. m.

Chairman of the Big Noise Committee B. K. Lawson and Big Little Noise Parker, by the consent of Peacemaker Snodgrass, will deliver addresses to the multitude, and William C. Johnson will present the keys of the city to the gathering with the admonition to leave everything possible in town. The procession, led by Chief Noyes Cornet Albert Washington Eastbrook, alias B. R. Westbrook, will form at the corner of Main and Fourth under the marshaling of Subdued Noise Beaulieu and take up the line of march, going west on Main to River, thence on Wall to No-Noise-at-All Metcalf's chicken house; countermarching to Main, thence to Fourth, on Fourth to the Doughnut King's, where an intermission of one hour will be had while the feast is being prepared, under the direction of Gumshoe Adams.

Sheriff Bown having been apprised of the proposed demonstration, has consulted with Governor Benson relative to ordering Company E under arms

Creswell; Mrs. Robert Mosby and Mrs. E. S. Hoderman, of this place, and R. E. Veatch, of Roseburg. It is said they have over two hundred relatives in this valley.

DEATH OF MRS. WALLACE.

Former Resident of Cottage Grove Passes Away at Salem.

The funeral of the late Mrs. Harvey M. Wallace, who departed this life at Salem on Christmas day, took place from the home of Mr. and Mrs. Delure Hemenway Tuesday forenoon at 10 o'clock, the Rev. Selden C. Adams conducting the services, which were largely attended by relatives and sympathizing friends.

Elizabeth Ellen Medley was born in Scotland county, Missouri, July 16, 1862, and consequently was aged 47 years. She was married to Harvey D. Wallace in this city on July 31, 1881, and to this union four children, Mrs. Samuel Darling, Leslie, Emory and Vera, all of whom, together with the bereaved husband, survive her. During her residence in Cottage Grove she made many warm and lasting friends, all of whom will learn of her demise with profound regret. Deceased was a sister of Mr. J. S. Medley of Cottage Grove, and Mesdames D. Bristow and C. F. Littlefield of Eugene.

AUBURN IS A BEAUT.

Automobile Makes Sensational Run From Portland on Christmas.

The Auburn automobile has again demonstrated its ability to run long distances over roads that are considered impassable by other makes of automobiles. On Christmas day Messrs. H. C. Harris and S. G. Brown of Portland surprised Cottage Grove when they splashed into town with mud and water dripping from their machine, after having made a sensational run from Portland in a new forty horsepower 1910 model of the Auburn car. This run has created interest throughout the valley, as no other automobile has ever successfully attempted to make a similar trip at this season of the year. Mr. Harris and Mr. Brown were highly elated over their success, and stated to The Sentinel that no breakdown was experienced, and that they owe their success to the powerful engine, high wheels with big tires, and to the genuinely good construction of the Auburn car throughout.

Mr. Hinds Sells Farm.

Messrs. Wm. Sloan and J. C. Burdge, of Spokane have purchased the Powell place of 120 acres in Powell Valley belonging to Fingal Hinds. Consideration \$4,800. Mr. Sloan has returned to Portland for his family, and will take up their residence in this community immediately.

MEETING OF OLD AND NEW YEARS

Curious Things Concerning Where Tomorrow Will Begin and End.—Its Rapid Flight.

Prior to 1752, in most legal and official matters and in private records, the year commenced on March 25. At this time an act of Parliament was passed which "directed that the legal year which then commenced in some parts of the country in March and in others in January, should universally be deemed to begin on the first day of January." This applied to the British colonies in America.

But it is not New Year everywhere at once. In fact, we shall see presently that some unfortunate individuals never get any New Year at all. As the clocks at Greenwich strike the first note of 12 at noon on December 31 the New Year is born at the opposite side of the earth—that is at all the places on longitude 180 east. But no one greets this first appearance unless it be the sailors of some solitary ship and the Fiji Islanders, for, besides this group, the only land which the magic imaginary line bisects is the inhospitable far East of Siberia, whose inhabitants keep the Julian calendar, and, therefore, hold their New Year celebrations twelve days later. The first landmen to greet 1910 are thus the inhabitants of the Fiji Islands. Traveling west at incredible speed, it arrives at Auckland twenty minutes after its start. In New Zealand the occasion is celebrated pretty much as it is in England, the differences being traceable to the fact that in the Southern Hemisphere the New Year falls at midsummer, and therefore a large part of the festival is held out of doors.

ITS FIRST STEPS.

An hour and ten minutes after the day has dawned at New Zealand, the island continent of Australia welcomes it. The same remark as to the celebrations, of course, applies here also. But a different order of things obtains in Japan, where the Gregorian calendar was adopted in 1872. The Flowery Kingdom gets its New Year at the same time as Australia. It is said that with the change in the calendar some of the picturesqueness vanishes from the Japanese celebrations but even yet, they are quaint and interesting. At the close of the year, all buildings are elaborately decorated with evergreens and rice straw. Great bunches of living pine and feathery bamboo, planted in large vases filled with earth, are placed on each side of the doorways; garlands of rice straw adorned with fir branches and tassels of grass are hung along the walls under the projecting roofs, to prevent evil spirits from passing under and entering the house, and scarlet lobsters, seaweeds, ferns, rice cakes and mandarin oranges, each having an auspicious meaning for the New Year, are fastened about the door-posts and lintels. In addition to these each doorway has its crossed flags—a red sun on a white ground—in honor of the emperor. For interior decoration the famous dwarf trees so skillfully produced by Japanese florists by allowing them a minimum of water, light and soil are in great demand, the favorites being the dwarf peach with its double pink blossoms and the much-prized plum.

IN THE FAR EAST.

The Japanese have compelled their Korean neighbors to adopt the same calendar, and here, as in all the Yellow Kingdoms, the New Year is held to be a very solemn festival. During the last three days of the year all work ceases except the necessary preparations for the coming holiday. Absentees return to their homes, the courts close, no arrests are made, and prisoners with slight offenses are allowed to go free for a time. On New Year's Eve all doors are closed to keep out Angwangi, a sort of evil-minded Korean Santa Claus, who makes the rounds distributing fevers, leprosy, pestilence and other undesirable New Year's gifts, leaving them in the shoes, which, according to Oriental custom, are kept on the shoemat outside the door. Some protection is afforded by placing a flour-sieve beside the shoes. Seeing this, Angwangi stops to count its meshes—his favorite occupation—and continues to count until the day dawns and he is obliged to return to the upper air with his evil work unaccomplished.

CROSSING ASIA.

As Greenwich time travels westward, the next people to observe our New Year's Day are the European settlers in the Malay Peninsula and Further India. Rather less than two hours after the happy day has begun at Perth, in West Australia, the European population of Calcutta signalize its arrival. Just sixty-minutes more and it has reached

Bombay. Two hours later the non-Russians of Moscow are exchanging congratulations, and half an hour afterwards their brethren at St. Petersburg are following their example. Another four minutes, and the New Year is greeted in the European quarter at Constantinople, and every succeeding minute brings under its sway more and more those nations who acknowledge it.

The Europeans in Egypt welcome the New Year at the same time as those in Constantinople, and a little later—exactly ten hours and forty-three minutes after it was first greeted in Fiji—Cape-town sends up her shouts of acclamation. Ten minutes after Capetown Vienna has acknowledged that another year has rolled away; in seven more minutes the garrisons at Malta are aware of the same fact; and in another eight minutes the bells of St. Peter's make it known at the Vatican, and Rome greets the New Year. Stockholm by this time has enjoyed twenty minutes in which to make and break good resolutions, and Berlin has had four minutes. It takes three-quarters of an hour for the magic wave of time to travel from Berlin to Paris, at which city it is surely the more welcome because, like the Scotch, the French make it the occasion of the exchange of presents. Fifty-one more minutes and Big Ben, if he is in working order, announces at Westminster that the power of the old year has vanished from England. Fifteen minutes after being greeted by a wildly-cheering crowd outside St. Paul's Cathedral, the New Year makes its appearance in Madrid. Glasgow gives it a boisterous welcome two minutes later.

IN AMERICA.

Across the Atlantic it travels un-greeted save by the roar of the waters, and by an occasional ship. Respectable Britons will have gone to bed when the New Year dawns on St. Johns, Newfoundland, for by Greenwich time it will be 3:30 a. m. It is 5 a. m. in England when New York's clocks strike 12, and another three hours elapse before Cottage Grove is able to bid good-bye to the old year. Breakfast is being served and presents examined in New England when Vancouver greets the New Year, and still later the miners of Klondyke shake hands and drink whisky in celebration of the event. Then, sweeping over the Pacific, New Year's Day dies at its birthplace, after a journey of 25,000 miles in less than as many hours.

There are several curious things to relate about the line where this day, and all others, begin and end. In a few hours a ship going east would cross it, and sail right out of the early morning of January 2 into the midnight of December 31, and thus greet the New Year a second time. By sailing in the contrary direction she could avoid meeting the New Year at all.

MAN AND DEER FIGHT.

Henry Small and His Pet Buck Came Together in Open Combat.

There was considerable excitement on the ranch of Henry Small, near London, last Lord's day, in which that gentle man took a prominent part, and since which time his stock of pets has diminished by half. Mr. Small was leading a four-year-old buck and a yearling out to grass, when the eldest of the two attacked him in a ferocious manner. Both man and deer put up a good fight, and for a time it was difficult to tell in whose favor the decision would be rendered. Together they fought their way toward a fence, to which Mr. Small succeeded in fastening the rope, and thus securing the animal he went to the house for his gun and dispatched his antagonist.

The Next Attraction.

The Clare Vaughn Wales Comedy & Concert Company is the next attraction in the Lyceum Course, the date being January 26. This excellent company fulfills the expectations of audiences everywhere, and is highly recommended by the press of the country. The program ends with a one-act comedy, "A Pair of Lunatics" which is very pleasing.

Gamey at Seventy Years.

Captain C. J. Dodd, a veteran of the Civil War who lives at Springfield and who passed his 70th birthday last Wednesday, has offered a challenge to any man within 20 years of his age to run a foot race for a side bet of \$100. The race is to be on New Year's day.

The Masonic lodge installed its newly-elected officers on Monday night.