

ESTABLISHED TO REPORT  
CITY OF PORTLAND  
OREGON

---

# MAYOR'S MESSAGE

AND

## ANNUAL REPORTS

---

FOR THE FISCAL YEAR ENDING  
NOVEMBER 30, 1915





## TABLE OF CONTENTS

Elective Officers .....	3
Members of Civil Service Board .....	3
Members of Commission of Public Docks .....	3
Mayors of Portland from 1851 to 1915 .....	4
Mayor's Annual Message .....	5
Department of Public Safety .....	7
Bureau of Fire .....	9
Bureau of Police .....	23
Bureau of Health .....	31
Municipal Court .....	50
Harbor Patrol .....	51
Civil Service Board .....	59
Department of Public Works .....	69
Main Office .....	76
Bureau of Standards .....	78
Bureau of Buildings .....	83
Board of Appeal .....	92
Bureau of Grade Separation .....	94
Bureau of Highways and Bridges .....	96
Bureau of Sewers .....	104
Bureau of Surveys and Drafting .....	117
Department of Public Affairs .....	127
Auditorium .....	129
Office of City Attorney .....	131
Bureau of City Hall .....	132
Free Museum .....	132
Bureau of Free Employment .....	133
Bureau of Parks .....	136
Bureau of Weights and Measures .....	166
Department of Public Utilities .....	167
Municipal Lighting .....	169
Bureau of Water Works .....	172
Bureau of Street Cleaning .....	230
Bureau of Garbage Disposal .....	235
Utility Pole Construction .....	238
Motor Bus Inspection .....	239
Department of Finance .....	241
Bureau of Purchases and Stores .....	243
Office of City Treasurer .....	245
Office of the City Auditor .....	259
Commission of Public Docks:	
Report not included herein. Copies may be obtained from the Commission of Public Docks, Municipal Dock No. 1, Foot of Stark Street.	

## ELECTIVE OFFICERS

		Time expires
Commissioner of Public Safety	Mayor H. R. Albee	July 1, 1917
Commissioner of Public Utilities	Will H. Daly	July 1, 1917
Commissioner of Public Works	R. G. Dieck	July 1, 1917
Commissioner of Finance	C. A. Bigelow	July 1, 1919
Commissioner of Public Affairs	Wm. L. Brewster	July 1, 1915
	George L. Baker	July 1, 1919
Auditor	A. L. Barbur	July 1, 1919

Meetings of Council are held Wednesday of each week at 10 A. M.

## CIVIL SERVICE BOARD

George W. Caldwell, Chairman.  
John F. Logan  
A. E. Clark

## COMMISSION OF PUBLIC DOCKS

F. W. Mulkey, Chairman  
C. B. Moores  
Ben Selling  
Dan Kellaher  
John H. Burgard



## MAYORS OF PORTLAND FROM 1851 TO 1915

Name.	Elected.
Hugh D. O'Bryant.....	April 7, 1851
A. C. Bonnell.....	April 5, 1852
Simon B. Marye.....	November 13, 1852
Josiah Failing.....	April 4, 1853
W. S. Ladd.....	March 15, 1854
George W. Vaughn.....	April 2, 1855
James O'Neill.....	April 7, 1856
James O'Neill.....	April 6, 1857
W. S. Ladd.....	November 4, 1857
A. M. Starr.....	April 5, 1858
S. J. McCormick.....	April 4, 1859
G. Collier Robbins.....	April 2, 1860
J. M. Breck.....	April 1, 1861
W. H. Farrar.....	April 7, 1862
David Logan.....	April 6, 1863
Henry Failing.....	April 4, 1864
Henry Failing.....	June 19, 1865
T. J. Holmes.....	November 26, 1866
T. J. Holmes.....	June 18, 1867
Aaron E. Wait.....	July 24, 1867
J. A. Chapman.....	July 31, 1867
Hamilton Boyd.....	June 16, 1868
B. Goldsmith.....	June 21, 1869
P. Wasserman.....	June 20, 1871
Henry Failing.....	June 16, 1873
J. A. Chapman.....	June 21, 1875
W. S. Newbury.....	June 18, 1877
D. P. Thompson.....	June 16, 1879
D. P. Thompson.....	June 20, 1881
J. A. Chapman.....	June 19, 1882
John Gates.....	June 15, 1885
Van B. DeLashmutt.....	May 2, 1888
Van B. DeLashmutt.....	June 18, 1888
W. S. Mason.....	June 15, 1891
George P. Frank.....	June 4, 1894
Sylvester Pennoyer.....	June 1, 1896
W. S. Mason.....	June 6, 1898
W. A. Storey.....	May 16, 1899
Henry S. Rowe.....	June 4, 1900
George H. Williams.....	June 2, 1902
Harry Lane.....	June 5, 1905
Harry Lane.....	June 3, 1907
Joseph Simon.....	June 7, 1909
A. G. Rushlight.....	June 5, 1911
H. R. Albee.....	June 2, 1913

## MAYOR'S MESSAGE

To the Honorable Members of the City Council:

In accordance with the provisions of the Charter, herewith is submitted for your information and consideration, my third annual message, reports of the various bureaus in the Department of Public Safety and a copy of the annual budget for 1916.

During the year closed, the city has been remarkably free from disease. There have been no epidemics, the public health situation retaining its high standard unimpaired.

Financially, the city is in good condition and general business has been equal to that of the average American municipality at this time. The outlook seems much brighter and indications point to betterment for the ensuing twelve months.

During the year, action was taken by the Council, following my recommendation contained in the second annual message, looking toward the simplifying of the Efficiency Code. A new ordinance was passed which, I believe, will prove to be much better than the old one.

Owing to the unusual conditions prevailing, and it being necessary for the Council to exercise great economy, I find that my recommendation of last year as to an official publication for disseminating municipal news was not adopted for the 1916 budget, and the city, therefore, has no publication of its own. As the press does not, of necessity, carry many items of interest because of lack of space, it occurs to me that the Council should keep in mind the proposition of establishing an agency of this kind. It was my idea to enlarge the present bulletin issued by the Bureau of Health and make of it a paper of general city information.

It is very unfortunate that in making up the 1916 budget, it was deemed necessary by the Council to drop out the appropriation of \$25,000 for the detention home for women—a feature vitally needed in this community if we are ever to make progress along the line of helpfulness to those down-fallen creatures of our city. Having provided funds for a site, and the site having been purchased and the plans for the home completed, I cannot but feel that we have missed an excellent opportunity for real service in thus discontinuing the program. This is a subject which merits earnest consideration at the hands of the Council and should receive the assistance it deserves at the earliest possible time.

There have been some changes in the various boards and commissions under my appointment during the year. Owing to the fact that Hon. F. W. Mulkey declined to accept reappointment as a member of the Commission of Public Docks, I appointed in his stead Mr. F. C. Knapp. On the Civil Service Board, Mr. R. H. Thomas took the place of A. E. Clark, who felt that he could not well afford to serve the city another term.

It was deemed by the Council to be advisable to have an official Board of Motion Picture Censors and, consequently, an ordinance was passed creating the same, including a salary of not to exceed \$100 for a



## MAYOR'S MESSAGE

Secretary and expense for the work. The Board consists of Mrs. A. C. Newill, chairman; Mrs. E. B. Colwell, secretary; Mrs. A. M. Gray, Mrs. H. L. Vorse, F. T. Richards, Sol Baum and W. S. Wessling.

Viewers are appointed, who see all films, simply reporting thereon, and where there are no objections, reels are passed without delay. Where there is a question, the Board acts as a Court of Appeal and, as shown by the records, has considered all cases in a fair and impartial manner.

Yours very truly,

H. R. ALBEE,  
Mayor and Commissioner of Public Safety.

## ANNUAL REPORT

OF

THE DEPARTMENT OF  
PUBLIC SAFETY

---

FOR THE FISCAL YEAR ENDING  
NOVEMBER 30, 1915



DEPARTMENT OF PUBLIC SAFETY

H. R. ALBEE  
COMMISSIONER

BUREAU OF FIRE—

B. F. DOWELL, Chief  
JAY W. STEVENS, Fire Marshal

BUREAU OF POLICE—

JOHN CLARK, Chief

BUREAU OF HEALTH—

M. D. MARCELLUS, M. D., Health Officer

MUNICIPAL COURT—

JOHN H. STEVENSON, Judge

POUND BUREAU—

BOYD R. WELCH, Poundmaster

HARBOR PATROL—

JACOB SPEIER, Harbormaster

BOARD OF MOTION PICTURE CENSORS—

MRS. E. B. COLWELL, Secretary

BUREAU OF FIRE

Hon. H. R. Albee, Mayor and Commissioner:

I respectfully submit the following report of the operation and expenditures of the Bureau of Fire for the year ending November 30, 1915, with such suggestions and recommendations as I deem necessary at this time, with other matters appertaining thereto of public interest.

The appropriation for the year, as per attached financial statement, was \$708,282.62 and the expenditures \$606,860.12, which include new equipment as follows: One American LaFrance aerial hook and ladder truck, one White auto tender for Fireboat Williams, one White auto Chemical engine, one Seagrave six-cylinder City service hook and ladder truck and one American LaFrance tractor, also 2,050 feet of 3½-inch hose, 6,250 feet of 2¾-inch hose, 4,750 feet of 2½-inch hose and 2,900 feet of 1½-inch hose.

General repairs to apparatus and houses have been made as necessity required and the personal property of the Bureau is in good condition with the exception of the houses of Engine and Truck Company No. 1 and Engine Companies 5, 6, and 20. In addition to what the Budget provides for in 1916 I recommend that provision be made in the near future for new buildings for the Companies above enumerated, also auto aerial hook and ladder trucks for Truck Company No. 5 and Engine Company No. 9.

The trend at this time in all large cities is toward eliminating horse-drawn apparatus entirely and replacing the same with auto equipment and earnest consideration should be given this matter when conditions will warrant the change.

A very interesting feature of this report is the progress made along the lines of fire prevention, and what has been accomplished under the supervision of Fire Marshal Jay W. Stevens and his corps of assistants, and too much credit cannot be given this branch of your department, as is attested by the high commendation of the general public.

I have endeavored to keep the expenses of the Bureau as low as possible without destroying its efficiency or causing complaint. I wish to thank you for your able and generous support at all times and hope I have deserved your confidence.

Very respectfully,

B. F. DOWELL,  
Chief Engineer.



OFFICERS BUREAU OF FIRE

- B. F. DOWELL, Chief Engineer.
- M. LAUDENKLOS, First Assistant Chief Engineer.  
(Fourth District, North of East Ankeny Street.)
- JAY W. STEVENS, Second Assistant Chief Engineer and Fire Marshal.  
(Third District, South of East Ankeny Street.)
- LEE G. HOLDEN, Battalion Chief.  
(First District, South of Morrison Street.)
- JOHN E. YOUNG, Battalion Chief.  
(Second District, North of Morrison Street.)
- CHARLES A. SAVARIAU, Superintendent Fire Alarm Telegraph.
- W. J. PHILLIPS, Master Mechanic.

ORGANIZATION OF BUREAU OF FIRE FOR YEAR ENDING NOVEMBER 30, 1915

Chief Engineer .....	1	Hydrantmen .....	2
Assistant Chief Engineers.....	2	Machinist .....	1
Battalion Chiefs .....	2	Instrument Maker .....	1
Chief Clerk .....	1	Blacksmith .....	1
Clerks .....	2	Plumber .....	1
Stenographer .....	1	Supply Driver .....	1
Auto Mechanician .....	1	Fire Boat Masters .....	2
Fire Escape Inspector.....	1	Fire Boat Engineers.....	6
Relief Engineers .....	2	Captains .....	36
Superintendent of Fire Alarm Telegraph .....	1	Lieutenants .....	44
Chief Operator .....	1	Steamer Engineers .....	19
Operators .....	6	Stokers, Truckmen, Hosemen and Pipemen .....	275
Linemen .....	4		
Master Mechanic.....	1	Total.....	417

APPROPRIATIONS, EXPENDITURES AND BALANCE FOR YEAR 1915

	Total Appropriations Including Transfers, Credits, Etc.	Total Incumbrance	Unincumbered Balance.
Personal Service .....	\$501,694.75	\$488,429.55	\$ 13,265.20
Supplies .....	35,475.00	34,053.48	1,421.52
Material .....	8,669.50	5,081.64	3,587.86
Equipment .....	69,226.50	47,920.51	21,305.99
Construction and Extension	50,500.00	28.00	50,472.00
Repairs .....	23,554.94	22,085.10	1,469.84
Light, Heat and Power....	100.00	52.00	48.00
Janitorial Service .....	1,140.00	975.00	165.00
Transportation and Com- munication .....	6,270.00	5,628.96	641.04
Contingencies.....	3,852.34	1,042.53	2,809.81
Fixed Charges:			
Rent .....	280.00	588.00	868.00
Advertising .....	25.00		25.00
Contributions .....	1,680.00	1,230.00	450.00
Real Estate .....	4,500.00		4,500.00
Rent Fire Hydrants, St. Johns .....	1,200.00	806.76	393.24
	<b>\$708,168.03</b>	<b>\$606,745.53</b>	<b>\$101,422.50</b>
Fire Marshal's Traveling Expense .....	100.00	100.00	
Miscellaneous .....	14.59	14.59	
	<b>\$708,282.62</b>	<b>\$606,860.12</b>	<b>\$101,422.50</b>

DISTRIBUTION OF EXPENSES.

ENGINE COMPANIES, FIRE BOATS AND MISCELLANEOUS	Personal Service	Office Supplies	Fuel Oil	Heating Fuel	Forage Supplies	Veterinary Supplies	Cleaning Supplies
David Campbell.....	\$ 26,176.85	.42	4,473.97				59.79
Geo. H. Williams.....	21,241.95	.88	1,800.19	81.45			120.34
Eng. Co. 1.....	13,574.95	.46		289.59			32.80
" " 2.....	13,740.60	.55		198.38	671.80		57.56
" " 3.....	14,782.95	.46		155.08	675.67		42.18
" " 4.....	11,269.45	.42		215.75	664.43		23.16
" " 5.....	11,835.55	.94		230.67	570.31	1.00	47.80
" " 6.....	10,150.25	.42		211.55	643.94		36.86
" " 7.....	12,140.25	.04		212.00	676.82		29.06
" " 8.....	12,188.85	.20		331.05	684.47	1.00	35.32
" " 9.....	11,534.65	.46		188.50	47.23		41.25
" " 10.....	10,895.10	.42		251.60	704.10		44.26
" " 11.....	12,006.45	.42		199.00	539.17		33.84
" " 12.....	11,826.85	.46		164.43	527.84		34.32
" " 13.....	12,759.40	.42		126.50			33.76
" " 14.....	12,086.10	.58		273.13	516.07		24.17
" " 15.....	9,515.25	.88		116.25			19.56
" " 16.....	12,283.10	.84		185.00	535.16		29.58
" " 17.....	10,654.95	.04		258.57			44.85
" " 18.....	8,253.30	.46		206.93			27.43
" " 19.....	10,320.55	.84		293.65	723.31		50.53
" " 20.....	10,695.45	.46		298.00	699.91	3.00	42.22
" " 21.....	8,216.20	.46					28.21
" " 22.....	10,038.85	.42		122.55			32.42
" " 23.....	9,867.70	1.42		169.46			34.73
" " 24.....	11,574.70	.42		340.00	703.67		40.33
" " 25.....	8,176.15	.42		187.50	497.81		29.33
" " 26.....	8,477.40	.42		120.25	364.03		23.62
" " 27.....	8,094.98	.50		265.60	355.40		26.97
" " 28.....	8,275.50	.46		345.89	282.06		15.98
" " 29.....	8,586.85	.46		254.36	242.91		18.37
" " 30.....	8,401.30	.42		256.14	288.90		36.99
" " 31.....	8,399.10			102.25	329.58		29.53
" " 32.....	3,154.85	.46					16.14
" " 33.....	4,755.40	.42		47.65	248.21		12.15
Truck 1.....	13,212.05	.42			177.74		27.31
Truck 2.....	11,304.20	.12		50.11	244.39		23.02
Truck 3.....	12,777.00	.46		187.12	380.55		36.56
Truck 4.....	1,1168.00	.46		6.00	349.29		25.24
Truck 5.....	10,299.65	.42			444.08		23.25
Chemical 1.....	3,897.10						5.22
Supply House.....				213.00			
Reserve Engine.....							
Gray's Crossing Vol. Hose Co							
Lents Vol. Hose Co.....							
Office and Staff.....	19,207.54	614.69					
Fire Alarm Tel.....	16,055.38	27.18					5.80
Fire Marshal's Office.....	4,658.08	78.24					
Hydrants and Cisterns Hose.....							
Chief Dowell's Auto.....							.40
Chief Laudenklos' auto.....							
Chief Stevens' auto.....							
Chief Holden's auto.....							
Chief Young's auto.....							
Fire Alarm T.....							
Fire Alarm Truck.....							
Supply Truck.....							
Auto recharging outfit.....							
Store Account.....							
Rental Hydrants, St. Johns.....							
Fire Marshal, travel exp.....							
Credits.....	191.23	2.82		16.20	7.50		1.73
Totals.....	\$ 488,429.55	736.52	6,274.16	7,118.76	13,781.35	5.00	1,400.48



DISTRIBUTION OF EXPENSES — Continued.

ENGINE COMPANIES FIRE BOATS AND MISCELLANEOUS	Auto Supplies	Agriclt. Supplies	Gen. Plant Supplies	Building Material	Coal Oil	Gen. Plant Material	Office Equip.	Household Equip.
David Campbell	6.51		214.66	88.35	17.00	244.51		35.10
Geo. H. Williams	17.38		173.07	252.79	19.55	73.88		613.95
Engine Co. No. 1	35.61		41.59	15.33	20.40			
" " No. 2			25.63	2.76	10.20	.05		
" " No. 3			25.60	95.29	17.85			4.26
" " No. 4			21.20	2.76	11.05			
" " No. 5			27.75	24.61	10.20	10.34		
" " No. 6			19.86	86.48	12.75			
" " No. 7			20.23	791.07	10.20	2.25		11.76
" " No. 8			23.52	18.28	9.35	.02		
" " No. 9	76.94		41.99	2.76	10.20			
" " No. 10			25.92	33.10	10.20			58.50
" " No. 11			19.80	.64	10.20			4.00
" " No. 12			19.32	3.49	11.05	1.08		
" " No. 13	397.00	1.32	19.72	9.46	7.65			
" " No. 14			22.16	17.42	10.20	1.04		
" " No. 15	16.61		12.58	10.64	3.40	6.15		
" " No. 16			19.83	23.88	9.35			
" " No. 17	69.98		12.28	2.46	10.20			
" " No. 18	60.02	5.00	24.33	93.91	9.35	15.35		
" " No. 19		.73	41.71	34.78	10.20	1.04		1.37
" " No. 20			29.59	35.50	9.35	2.66		32.52
" " No. 21	230.82		24.70	2.16	1.70			.75
" " No. 22	23.94		48.35	13.78	5.95			7.35
" " No. 23	18.00		41.84	48.18	7.65			
" " No. 24		2.25	48.94	137.27	10.20			
" " No. 25		3.50	37.88	14.76	9.35	.22		
" " No. 26	18.27		26.03	12.39	7.65			9.50
" " No. 27			20.17	13.82	8.50			
" " No. 28			39.62	.60	6.80			3.00
" " No. 29			7.14	13.78	5.10			
" " No. 30		.70	7.74	2.85	7.65			
" " No. 31			20.86	26.17	10.20			83.45
" " No. 32	3.06		6.26	5.06	3.40			81.68
" " No. 33			25.65	165.40	5.95			
Truck 1	17.46		38.70	.63	9.35	.25		
Truck 2			23.88		10.20			
Truck 3	.93		23.55		7.65			
Truck 4	21.58		34.55	5.32	8.50	10.00		23.52
Truck 5			15.57		9.35			
Chemical 1	6.22		38.66					
Supply House						1.08		
Reserve Engine			.12					
Gray's Cross'g. Vol. Hose								
Lents Vol. Hose Co.				20.12			42.35	
Office and Staff							35.20	
Fire Alarm Tel.			193.70			2,479.00		
Fire Marshal's Office	80.62		15.06	2.29				
Hydrants and cisterns			3.84			102.30		
Hose								
Chief Dowell's auto	157.62							
Chief Laudenklos' auto	160.14							
Chief Stevens' auto	377.55							
Chief Holden's auto	283.93		1.67					
Chief Young's auto	124.15							
Fire Alarm T.	132.01							
Fire Alarm Truck	183.33					12.48		
Supply Truck	195.52							
Auto recharging outfit								
Store account	1,275.51							
Rental Hydrants, St. John								
Fire Marshal, trav. exp.								
Credits	1280.27		3.60	12.40			20.00	
Totals	2,710.44	13.50	1,628.22	2,117.94	385.05	2,963.70	57.55	970.71

DISTRIBUTION OF EXPENSES — Continued.

ENGINE COMPANIES FIRE BOATS AND MISCELLANEOUS	Motorless Vehicles and Equipment	Auto Accessories	Motor Vehicles	Tools	Hose	General Plant Equip- ment	Construc- tion and Extension	House Repairs
David Campbell				7.40		392.09		142.96
Geo. H. Williams		217.91		58.65		162.31	28.00	296.95
Engine Co. No. 1		4.00				10.96		80.63
" " No. 2				6.33		25.42		11.80
" " No. 3				2.38		5.56		52.37
" " No. 4	1.00			.63		3.28		112.61
" " No. 5	2.00					13.38		438.17
" " No. 6				.79		1.50		272.34
" " No. 7	1.00			1.63		117.68		346.55
" " No. 8						17.51		229.25
" " No. 9				.63		8.17		116.33
" " No. 10	2.00			2.99		7.03		41.74
" " No. 11	1.00					13.82		83.97
" " No. 12				.40		5.18		84.55
" " No. 13				2.92		13.65		22.18
" " No. 14	3.00			1.64		20.09		24.16
" " No. 15		4.00				.99		141.13
" " No. 16	2.00			1.75		10.24		70.18
" " No. 17						6.51		57.57
" " No. 18				5.17		9.67		41.98
" " No. 19				2.62		30.65		376.35
" " No. 20						35.92		40.68
" " No. 21						2.50		9.86
" " No. 22				2.22		23.95		23.95
" " No. 23				2.54		7.36		98.02
" " No. 24				3.88		42.31		74.80
" " No. 25				1.60		8.02		97.19
" " No. 26				6.25		6.25		28.14
" " No. 27				2.94		9.00		46.80
" " No. 28	4.41			7.14		7.14		72.38
" " No. 29				.42		10.77		85.46
" " No. 30						13.67		201.03
" " No. 31	5.95					13.11		
" " No. 32	4.05	3.46		4.87		94.96		1.50
" " No. 33				1.07		28.06		44.10
Truck 1						15.64		11.29
Truck 2						1.00		53.34
Truck 3				1.37		7.36		67.99
Truck 4						7.00		3.09
Truck 5						1.82		3.29
Chemical 1								
Supply House								74.45
Reserve Engine								
Gray's Cross. Vol. Hose Co								
Lents Vol. Hose Co.						16.00		
Office and Staff			31668.00			16.80		21.10
Fire Alarm Tel.				67.45		32.07		
Fire Marshal's Office						2.70		
Hydrants and cisterns								
Hose					13338.00			
Chief Dowell's auto		36.68						
Chief Laudenklos' auto		14.70						
Chief Stevens' auto		100.00						
Chief Holden's auto		6.86						
Chief Young's auto		3.54						
Fire Alarm T.								
Fire Alarm Truck								
Supply Truck		14.60						
Auto recharging outfit		14.65						
Store account								
Rental Hydrants, St. Johns								
Fire Marshal, trav. exp.								
Credits								
Totals	26.41	420.40	31668.00	182.07	13338.00	1,257.37	28.00	4,102.23



DEPARTMENT OF PUBLIC SAFETY

DISTRIBUTION OF EXPENSES — Continued.

ENGINE COMPANIES FIRE BOATS AND MISCELLANEOUS	Apparatus Repairs	Harness Repairs	Hose Repairs	Dock Repairs	Hydrant and Cistern Repairs	F. A. T. Repairs	Auto Repairs	Light, Heat and Power
David Campbell.....	1,531.25			217.43			9.63	
Geo. H. Williams.....	102.08							
Engine Co. No. 1.....	16.88						241.57	
"    "    No. 2.....	194.36	8.15						
"    "    No. 3.....	143.51	7.38						
"    "    No. 4.....	312.72	10.87						
"    "    No. 5.....	414.70	8.60						
"    "    No. 6.....	90.55	4.40						
"    "    No. 7.....	170.38	7.26						
"    "    No. 8.....	301.16	7.75						
"    "    No. 9.....	155.04						153.57	
"    "    No. 10.....	155.35							
"    "    No. 11.....	141.63	1.80						
"    "    No. 12.....	93.45	4.53						
"    "    No. 13.....	20.09						232.82	
"    "    No. 14.....	217.96	3.45						
"    "    No. 15.....	2.96						28.75	
"    "    No. 16.....	155.53	9.56						
"    "    No. 17.....	35.47						189.23	
"    "    No. 18.....	24.01						6.00	
"    "    No. 19.....	208.23	22.70						
"    "    No. 20.....	18.96	1.40						
"    "    No. 21.....	6.87						11.08	
"    "    No. 22.....	13.83	.35					41.82	
"    "    No. 23.....	5.67						15.16	
"    "    No. 24.....	201.34	12.01						
"    "    No. 25.....	15.11	6.40						
"    "    No. 26.....	12.00						117.78	
"    "    No. 27.....	172.94							
"    "    No. 28.....	10.04	3.25						
"    "    No. 29.....	.09							
"    "    No. 30.....	21.94							
"    "    No. 31.....	7.54	2.90						
"    "    No. 32.....	4.43	.50					23.57	
"    "    No. 33.....	44.97	.75						
Truck 1.....							41.85	
Truck 2.....	1.46	4.20						
Truck 3.....	955.97	5.75					371.80	
Truck 4.....	23.93	1.25					18.13	
Truck 5.....	128.14	.90						
Chemical 1.....							4.18	
Supply House.....								
Reserve Engine.....	120.96							
Gray's Cross. Vol. Hose Co.....	6.76							
Lents Vol. Hose Co.....								
Office and Staff.....						654.66		
Fire Alarm Tel.....								52.00
Fire Marshal's Office.....							68.67	
Hydrants and cisterns.....			756.00		4,376.51			
Hose.....								
Chief Dowell's auto.....							773.43	
Chief Laudenklos' auto.....							525.75	
Chief Stevens' auto.....							1,146.38	
Chief Holden's auto.....							646.19	
Chief Young's auto.....							75.83	
Fire Alarm T.....							449.36	
Fire Alarm Truck.....							332.06	
Supply Truck.....							97.29	
Auto recharging outfit.....							33.57	
Store account.....								
Rental Hydrants, St. Johns.....								
Fire Marshal, trav. exp.....								
Credits.....					17.45			
Totals.....	6,153.31	136.11	756.00	217.43	4,359.06	654.66	5,655.47	52.00

BUREAU OF FIRE

DISTRIBUTION OF EXPENSES — Continued.

ENGINE COMPANIES FIRE BOATS AND MISCELLANEOUS	Janitorial Service	Horse Shoeing	Veterinary Service	Boarding Horses	Carfare	Miscel. Hauling	Tel. and Tel. Service	Contin- gences
David Campbell.....								
Geo. H. Williams.....								
Engine Co. No. 1.....								
"    "    No. 2.....	36.81	208.38	28.26					
"    "    No. 3.....	34.50	294.33	25.92					
"    "    No. 4.....	34.50	209.13	25.92					
"    "    No. 5.....	34.50	189.90	25.92					
"    "    No. 6.....	34.50	175.86	25.92					
"    "    No. 7.....	34.50	218.05	25.92					
"    "    No. 8.....	34.50	220.57	25.92					
"    "    No. 9.....	22.89	12.99	12.36					
"    "    No. 10.....	34.50	175.80	25.92					
"    "    No. 11.....	34.50	124.11	25.92					
"    "    No. 12.....	34.50	144.72	25.92					
"    "    No. 13.....								
"    "    No. 14.....	34.50	153.99	25.92					
"    "    No. 15.....								
"    "    No. 16.....	34.50	170.56	25.92					
"    "    No. 17.....								
"    "    No. 18.....								
"    "    No. 19.....	34.50	209.61	25.92					
"    "    No. 20.....	34.50	208.24	25.92					
"    "    No. 21.....								
"    "    No. 22.....								
"    "    No. 23.....								
"    "    No. 24.....	34.50	183.76	25.92					
"    "    No. 25.....	34.50	81.66	25.92					
"    "    No. 26.....	34.50	12.60	25.92					
"    "    No. 27.....	34.50	59.14	25.92					
"    "    No. 28.....	34.50	95.18	25.92					
"    "    No. 29.....	34.50	69.37	25.92					
"    "    No. 30.....	34.50	76.28	25.92					
"    "    No. 31.....	34.50	40.40	25.92					
"    "    No. 32.....								
"    "    No. 33.....	34.50	93.43	25.92					
Truck 1.....	22.89	4.46	12.36					
Truck 2.....	34.50	90.61	25.92					
Truck 3.....	34.50	129.63	25.92					
Truck 4.....	29.91	93.72	19.02					
Truck 5.....	34.50	107.53	25.92					
Chemical 1.....								
Supply House.....								
Reserve Engine.....								
Gray's Cross. Vol. Hose Co.....								
Lents Vol. Hose Co.....								
Office and Staff.....				80.25		880.60		168.95
Fire Alarm Tel.....								
Fire Marshal's Office.....					2.00		91.60	67.10
Hydrants and cisterns.....								
Hose.....								
Chief Dowell's auto.....								
Chief Laudenklos' auto.....								
Chief Stevens' auto.....								
Chief Holden's auto.....								
Chief Young's auto.....								
Fire Alarm Tel.....								
Fire Alarm Truck.....								
Supply Truck.....								
Auto recharging outfit.....								
Store account.....								
Rental Hydrants, St. Johns.....								
Fire Marshal, trav. exp.....								
Credits.....								14.44
Totals.....	975.00	3,854.51	720.00	80.25	2.00	880.60	91.60	218.61



DEPARTMENT OF PUBLIC SAFETY

DISTRIBUTION OF EXPENSES - Continued.

ENGINE COMPANIES, FIRE BOATS AND MISCELLANEOUS	Street Assess'm'ts	Repairs to Property Damaged by Equip.	Rent	Allowances to Volun- teer Hose Cos.	Rental Hydrants at St. Johns	Miscellan- eous	Totals
David Campbell, Geo. H. Williams, Engine Co. No. 1		353.34	132.00			2.50	33,970.26
No. 2							25,305.83
No. 3							14,364.77
No. 4							15,227.04
No. 5							16,365.26
No. 6			180.00				12,918.88
No. 7							13,886.34
No. 8							11,947.97
No. 9							14,825.65
No. 10							14,128.72
No. 11							12,306.96
No. 12							12,468.53
No. 13							13,240.27
No. 14							12,962.09
No. 15							13,646.89
No. 16							13,435.58
No. 17							9,879.15
No. 18							13,547.03
No. 19							11,345.11
No. 20						1.00	8,783.91
No. 21							12,389.29
No. 22							12,214.28
No. 23							8,535.31
No. 24							10,375.78
No. 25							10,317.73
No. 26							13,436.30
No. 27							9,227.32
No. 28							9,296.72
No. 29							9,137.68
No. 30							9,222.73
No. 31							9,355.50
No. 32							9,456.03
No. 33							9,048.01
Truck 1							3,410.02
Truck 2							5,615.31
Truck 3							13,592.40
Truck 4							11,866.95
Truck 5							15,019.11
Chemical 1							11,848.51
Supply House							11,094.42
Reserve Engine							3,951.38
Tray's Crossing Vol. Hose Co.							287.45
Office Vol. Hose Co.							122.16
Hydrants and fixtures							6.76
Fire Alarm Tel.							18.00
Fire Marshal's Office							54,437.17
Hydrants and fixtures							19,567.24
Hose							5,101.56
Chief Dowell's auto.							4,529.38
Chief Laudonklos' auto.							14,094.00
Chief Stevens' auto.							968.13
Chief Holden's auto.							700.59
Chief Young's auto.							1,623.93
Fire Alarm Tel.							931.79
Supply Truck							208.54
Auto recharging outfit							584.91
Store account							515.36
Rental Hydrants, St. Johns							319.89
Fire Marshal, trav. exp.							48.29
Credits							1,275.51
Totals	357.73	466.19	900.00	1,230.00	806.76	165.42	606,860.12

\*Credits

AUTOMOBILES AND AUTO APPARATUS IN THE BUREAU OF FIRE

MAKE	Description.	Number.	Date of Purchase.	Price.
Pierce-Arrow	6-Cylinder 4 Passenger Roadster	30038	Feb., 1909	\$3,500.00
Cadillac	4-Cylinder 5-Passenger Touring Car	2916	May, 1911	2,000.00
Overland	4-Cylinder 4-Passenger Touring Car	611889	July, 1912	2,119.00
Mitchell	6-Cylinder 2-Passenger Roadster	23445	April, 1912	2,065.00
Pope-Hartford	4-Cylinder 2-Passenger Roadster	2591	August, 1912	3,000.00
Velie	Runabout	30208	July, 1913	1,575.00
White	3-Ton Truck	20786	October, 1914	4,600.00
Federal	1-Ton Truck	921	April, 1913	1,965.00
American-LaFrance	Combination Hose and Chemical Engine	13	June, 1911	5,380.00
American-LaFrance	Combination Hose and Chemical Engine	14	June, 1911	5,380.00
American-LaFrance	Type 10 Combination Hose and Chemical Engine	269	June, 1913	
American-LaFrance	Type 10 Combination Hose and Chemical Engine	261	June, 1913	
American-LaFrance	Type 10 Combination Hose and Chemical Engine	265	June, 1913	
American-LaFrance	Type 10 Combination Hose and Chemical Engine	267	June, 1913	
American-LaFrance	Type 10 Combination Hose and Chemical Engine	264	June, 1913	
American-LaFrance	Type 10 Combination Hose and Chemical Engine	268	June, 1913	52,264.00
American-LaFrance	Type 12 Pumper	271	June, 1913	
American-LaFrance	85-Foot Aerial Truck	270	June, 1913	
Pope-Hartford	Type M Combination Hose and Chemical Engine	100	April, 1913	6,000.00
Pope-Hartford	Type M Combination Hose and Chemical Engine	101	April, 1913	6,000.00
Velie	2-Ton Truck	2084	Dec., 1913	3,000.00
American-LaFrance	Type 12 Pumper	409	Nov. 21, 1913	9,000.00
White	Ton and One-Half Chassis	20529	Feb., 1915	3,000.00
Christie	Tractor		March, 1914	5,656.00
White	Auto Chemical Engine	23990GTF	June, 1915	5,900.00
Seagrave	6-Cylinder Motor City Service Truck and Ladder Truck		August, 1915	6,468.00
Selden	Combination Hose and Chemical	23290	May, 1914	2,860.00

BUREAU OF FIRE



BUREAU OF FIRE AUTO APPARATUS  
Expense Distribution for 1915

NAME	Gasoline	Grease	Oil	Distillate	Soap	Supplies	Tires	Accessories	Repairs	Total	Mileage
Chief B. F. Dowell's Auto	\$ 68.34	\$ 4.50	\$ 5.80	\$ 2.87	\$ .12	\$ .40	\$ 75.99	\$ 36.68	\$ 773.43	\$ 963.13	6110 (1 mo.)
Asst. Chief M. Leauder's	51.78	3.38	2.55	1.61	.17	6.94	93.41	14.70	525.75	700.59	4479 (2 mo.)
Second Asst. Chief W. Stevens	129.95	4.87	35.58	1.61	.08	13.97	193.18	100.00	1146.38	1623.03	7536 (5 mo.)
Battalion Chief L. G. Holden	99.82	6.38	26.01	1.61	.08	9.52	142.20	6.86	646.19	931.79	5987
Battalion Chief John Young	32.95	1.20	8.66	.98	.29	6.60	73.74	3.54	75.83	206.64	3400 (12 mo.)
Fire Alarm Telegraph	45.76	1.87	8.65	.98	.29	4.32	70.43	3.54	440.36	584.91	3090 (6 mo.)
Fire Alarm Telegraph Truck	94.98	9.30	14.85	2.43	.29	3.89	60.02	14.66	332.06	515.39	4570 (12 mo.)
Supply Truck	158.94	13.50	21.43	14.13	.29	14.13	60.02	14.66	97.29	319.89	7840
Auto Recharging Outfit						2.07	20.14		33.57	48.22	
Fire Marshal's Inspecting Autos	54.57		3.84			1.47			68.67	149.29	8370
Fire Boat, "David Campbell"	5.04		1.90			2.80			9.63	16.14	110
Fire Boat, "Geo. H. Williams"	15.12		5.71			2.22			37.88	65.80	163
Engine Co. 1 Tractor	19.41		4.85			4.00			203.69	223.89	144
" " No. 9 Combination	9.13		3.00			2.22			163.57	230.81	482
" " No. 13 Combination	22.68		6.56			44.70			119.80	476.57	270
" " No. 13 Pumper	9.08		4.50			53.10	282.87		113.02	153.95	314
" " No. 15	22.66		5.25			5.54			98.75	149.56	282
" " No. 17 Combination	13.78		8.94						184.12	157.82	343
" " No. 17 Pumper	30.94		1.50						55.11	99.10	334
" " No. 18	7.40		11.55						6.00	66.02	181
" " No. 21	14.50		3.90			1.33	47.30		11.08	263.83	179
" " No. 22	13.63		1.91			4.08	230.82		41.82	65.76	265
" " No. 23	10.12		3.00			1.51			15.16	33.16	209
" " No. 25	10.12		1.28			.70			117.78	136.05	273
" " No. 28	9.08		6.75			1.90			23.57	26.63	
" " No. 32	1.40		1.28			1.66			371.80	59.31	139
Truck 1	11.93		4.00						18.13	39.71	303 in serv. Aug.
Truck 3	83								4.18	10.40	69 in serv. Jul.
Truck 4	13.01		1.90			5.63					
Chemical 1	6.22										
Totals	\$ 985.18	\$ 74.41	\$ 215.36	\$ 7.07	\$ 1.74	\$ 184.04	\$ 1290.10	\$ 416.94	\$ 5655.47	\$ 8830.31	

\*Number of months mileage estimated.

HOSE ON HAND

COMPANY	3½-inch. Feet.	2¾-inch. Feet.	2½-inch. Feet.	1½-inch. Feet.	1-inch Chemical Feet.	¾-inch Chemical Feet.
Fireboat "David Campbell"....	1,900	3,700	.....	300	300	.....
Fireboat "Geo. H. Williams"....	1,800	2,250	.....	400	.....	.....
Engine Co. 1....	.....	.....	2,000	300	250	.....
Engine Co. 2....	.....	.....	1,700	300	.....	.....
Engine Co. 3....	.....	1,950	.....	300	.....	.....
Engine Co. 4....	.....	.....	1,970	300	.....	.....
Engine Co. 5....	.....	.....	2,000	250	.....	.....
Engine Co. 6....	.....	.....	2,000	200	.....	.....
Engine Co. 7....	.....	.....	2,000	300	.....	.....
Engine Co. 8....	.....	.....	1,850	300	.....	.....
Engine Co. 9....	.....	.....	1,850	200	.....	.....
Engine Co. 10....	.....	.....	2,000	300	.....	250
Engine Co. 11....	.....	.....	2,000	300	.....	.....
Engine Co. 12....	.....	.....	2,000	300	.....	.....
Engine Co. 13....	.....	.....	1,650	300	.....	200
Engine Co. 14....	.....	.....	1,900	200	200	.....
Engine Co. 15....	.....	.....	1,900	300	.....	250
Engine Co. 16....	.....	.....	2,000	200	.....	.....
Engine Co. 17....	.....	.....	1,950	300	.....	250
Engine Co. 18....	.....	.....	2,000	200	.....	250
Engine Co. 19....	.....	.....	1,850	.....	150	.....
Engine Co. 20....	.....	.....	1,618	300	.....	.....
Engine Co. 21....	.....	.....	1,825	.....	250	250
Engine Co. 22....	.....	.....	1,900	250	.....	250
Engine Co. 23....	.....	.....	1,700	300	.....	250
Engine Co. 24....	.....	.....	1,550	200	200	.....
Engine Co. 25....	.....	.....	1,900	300	.....	.....
Engine Co. 26....	.....	.....	1,985	300	.....	250
Engine Co. 27....	.....	.....	2,000	200	.....	230
Engine Co. 28....	.....	.....	2,000	200	.....	250
Engine Co. 29....	.....	.....	2,000	300	.....	.....
Engine Co. 30....	.....	.....	2,000	300	.....	.....
Engine Co. 31....	.....	.....	2,000	450	.....	.....
Engine Co. 32....	.....	.....	3,100	150	.....	200
Engine Co. 33....	.....	.....	2,000	200	.....	.....
Truck Co. 1....	.....	.....	.....	.....	.....	.....
Truck Co. 2....	.....	.....	.....	.....	.....	.....
Truck Co. 3....	.....	.....	.....	.....	.....	.....
Truck Co. 4....	.....	.....	.....	.....	250	.....
Truck Co. 5....	.....	.....	.....	.....	400	.....
Chemical 1....	.....	.....	.....	.....	.....	.....
Totals.....	3,700	7,900	62,198	9,000	1,750	3,130

AUXILIARY VOLUNTEER HOSE COMPANY

	2½-inch. Feet.	1½-inch. Feet.	1-inch Chemical Feet.
Linnton Volunteer Hose Co.....	1,250	1,300	100
Woodstock Volunteer Hose Co.....	600	.....	.....
Tremont Volunteer Hose Co.....	800	.....	.....
Arbor Lodge Volunteer Hose Co....	1,000	.....	.....
Midway Volunteer Hose Co.....	1,000	.....	.....
Portsmouth Volunteer Hose Co.....	1,000	.....	.....
Lents Volunteer Hose Co.....	600	.....	.....
Grays Crossing Volunteer Hose Co...	600	.....	.....
Totals.....	6,850	1,300	100



## DEPARTMENT OF PUBLIC SAFETY

## EQUIPMENT

	Pieces.		Pieces.
Fire Boats .....	2	Hydrants .....	4,945
Auto Apparatus .....	27	Cisterns .....	81
Horse-Drawn Apparatus .....	42	Alarm Boxes .....	332
Horse-Drawn Apparatus in Reserve .....	6	Eight Auxiliary Fire Companies with 7 reels, 2 village trucks, 1 40-gallon chemical and 8,250 feet of hose.	
Horses .....	100		
Hose, feet .....	92,678		

## VALUATION OF REAL ESTATE, IMPROVEMENTS AND APPARATUS AT VARIOUS FIRE STATIONS

	Real Estate.	Improvements.	Apparatus.
Fire Boat "David Campbell".....	\$ 12,000.00	\$ 12,000.00	\$128,000.00
Fire Boat "Geo. H. Williams".....	Lease	500.00	78,917.91
Engine Co. 1 and Truck 1.....	87,000.00	8,000.00	28,675.00
Engine Co. 2 .....	15,000.00	14,000.00	7,700.00
Engine Co. 3 .....	26,000.00	2,800.00	5,900.00
Engine Co. 4 and Truck 2.....	6,150.00	15,000.00	6,100.00
Engine Co. 5 .....	1,600.00	2,500.00	5,150.00
Engine Co. 6 .....	Lease	1,500.00	5,400.00
Engine Co. 7 and Truck 4.....	6,000.00	8,000.00	11,868.00
Engine Co. 8 and Truck 5.....	4,400.00	15,000.00	5,650.00
Engine Co. 9 .....	2,600.00	15,000.00	4,500.00
Engine Co. 10 .....	600.00	3,000.00	4,850.00
Engine Co. 11 .....	700.00	3,000.00	5,150.00
Engine Co. 12 .....	1,400.00	3,000.00	5,150.00
Engine Co. 13 .....	3,500.00	7,200.00	13,000.00
Engine Co. 14 .....	1,700.00	1,000.00	5,250.00
Engine Co. 15 .....	2,200.00	7,000.00	5,800.00
Engine Co. 16 .....	8,500.00	15,000.00	5,150.00
Engine Co. 17 .....	5,200.00	12,000.00	14,000.00
Engine Co. 18 .....	3,000.00	7,000.00	5,800.00
Engine Co. 19 .....	1,700.00	9,000.00	5,250.00
Engine Co. 20 .....	3,100.00	1,000.00	5,150.00
Engine Co. 21 and Chemical 1.....	13,100.00	16,000.00	11,700.00
Engine Co. 22 .....	10,500.00	15,000.00	5,800.00
Engine Co. 23 .....	950.00	7,000.00	5,800.00
Engine Co. 24 .....	7,000.00	15,000.00	5,250.00
Engine Co. 25 .....	1,200.00	16,000.00	900.00
Engine Co. 26 .....	4,200.00	2,400.00	5,800.00
Engine Co. 27 .....	650.00	8,400.00	1,000.00
Engine Co. 28 .....	1,600.00	8,000.00	1,000.00
Engine Co. 29 .....	Lease	8,000.00	900.00
Engine Co. 30 .....	900.00	8,000.00	900.00
Engine Co. 31 .....	800.00	2,880.00	900.00
Engine Co. 32 .....	8,000.00	20,000.00	3,000.00
Engine Co. 33 .....	2,400.00	800.00	600.00
Truck Co. 3 .....	10,500.00	12,500.00	3,000.00
Supply House .....	2,500.00	1,800.00	3,700.00
Fire Alarm Truck.....			1,200.00
In Reserve .....			9,200.00
Officers' Automobiles .....			6,900.00
Totals.....	\$256,650.00	\$304,280.00	\$429,960.91

## BUREAU OF FIRE

## LOCATIONS OF HOUSES OCCUPIED AS FIRE STATIONS

Fire Boat No. 1, "David Campbell".....	Foot of East Washington Street
Fire Boat No. 2, "Geo. H. Williams".....	Foot of Hoyt Street
Engine Co. No. 1.....	168-170 Fourth Street
Engine Co. No. 2.....	126 North Third Street
Engine Co. No. 3.....	510 Washington Street
Engine Co. No. 4.....	370 Fourth Street
Engine Co. No. 5.....	811 Front Street
Engine Co. No. 6.....	Twenty-second and Nicolai Streets
Engine Co. No. 7.....	40 East Third Street
Engine Co. No. 8.....	303 Russell Street
Engine Co. No. 9.....	162 East Thirty-fifth Street
Engine Co. No. 10.....	1250 Macadam Street
Engine Co. No. 11.....	545 Powell Street
Engine Co. No. 12.....	63 East Twenty-eighth Street North
Engine Co. No. 13.....	261 Grand Avenue North
Engine Co. No. 14.....	1027 Union Avenue North
Engine Co. No. 15.....	590 Spring Street
Engine Co. No. 16.....	494 Montgomery Street
Engine Co. No. 17.....	188 North Twenty-fourth Street
Engine Co. No. 18.....	448 East Twenty-fourth Street North
Engine Co. No. 19.....	1597 East Stark Street
Engine Co. No. 20.....	1660 East Thirteenth Street
Engine Co. No. 21.....	69 Second Street
Engine Co. No. 22.....	273 First Street
Engine Co. No. 23.....	367 East Seventh Street
Engine Co. No. 24.....	1126 Patton Avenue
Engine Co. No. 25.....	1000 Francis Avenue
Engine Co. No. 26.....	329 North Twentieth Street
Engine Co. No. 27.....	30 East Eighty-second Street North
Engine Co. No. 28.....	1494 Sandy Boulevard
Engine Co. No. 29.....	426 Durham Avenue
Engine Co. No. 30.....	1711 Brandon Street
Engine Co. No. 31.....	4536 Sixty-seventh Street Southeast
Engine Co. No. 32.....	St. Johns
Engine Co. No. 33.....	859 Mississippi Avenue
Truck 1 .....	168-170 Fourth Street
Truck 2 .....	370 Fourth Street
Truck 3 .....	511 Glisan Street
Truck 4 .....	40 East Third Street
Truck 5 .....	303 Russell Street
Chemical 1 .....	69 Second Street
Supply House .....	227 Union Avenue North

## LOCATIONS OF VOLUNTEER HOSE COMPANIES

Portsmouth.....	Stanford, between Portsmouth and Boudoin Streets
Midway.....	118 <sup>th</sup> Milwaukie Street
Lents.....	Fifty-eighth Ave. and Ninety-third St., Odd Fellows Bldg.
Tremont.....	Fifty-ninth and Seventy-second Street
Linnton.....	First and D Streets
Woodstock.....	4228 Sixtieth Avenue, S. W. Corner Forty-third Avenue
Arbor Lodge.....	287 West Portland Blvd., N. W. Corner Greely and Blvd.

Portland, Oregon, July 8, 1916.

Mr. B. F. Dowell, Chief Engineer, Bureau of Fire, Portland, Oregon.

Dear Sir: The following report is a summary of the maintenance, installation of new equipment and operation of the Fire Alarm Telegraph for the year ending November 30, 1915.

During the year the equipment operated perfectly with the exception of a few minor cases of line trouble due to crosses with electric light wires and the blowing out of fuses. The overhead lines stood up very satisfactory. Considerable work was done on these lines, which now are extending over a very large area of the City to keep them clear from contact with other foreign wires, as the multiplicity of wires now overhead is increasing wonderfully.



A sub-station containing storage battery and the necessary equipment for charging same has been installed at Engine 8 house, Russell Street between Williams Avenue and Rodney Avenue. This battery furnishes current for operating the circuits north of Sullivan's Gulch, independent of the supply at the City Hall, and would show its usefulness in case the river cables connecting the East Side with the West Side were put out of service.

The amount of overhead wire being put up is increasing so that attention should be given to attempting to put such of our wires as we are able to do so underground. The remarkable success we have had with our present underground installation leads me to the conclusion that the placing of more of our wires underground, particularly the trunk lines to different sections of the City from the City Hall, should be taken up for consideration.

The fifty fire alarm boxes of the older type, for which provision has been made for new parts to modernize same, have been remodeled and are in every respect as good as any of the latest types purchased.

This list of new boxes were installed at the following locations:

Box 144—Northeast Corner Twenty-first and Quimby Streets.  
 Box 155—Southwest Corner Twentieth and Northrup Street.  
 Box 163—Northwest Corner Tenth and Montgomery Streets.  
 Box 177—Southwest Corner Twenty-first and York Streets.  
 Box 188—Southwest Corner Twenty-fifth and Wilson Streets.  
 Box 285—Southeast Corner Seventh and East Ash Streets.  
 Box 295—Ladd Avenue and Central Park.  
 Box 367—Southeast Corner Seventeenth and Wasco Streets.  
 Box 368—Northwest corner Eighth and Hancock Streets.  
 Box 378—Southwest Corner Fourteenth and Brazee Streets.  
 Box 391—Northwest Corner Beech Street and Mallory Avenue.  
 Box 392—Northeast Corner Union Avenue and Constance Street.  
 Box 393—Southeast Corner Union Avenue and Alberta Street.  
 Box 394—Southwest corner Albina Avenue and Alberta Street.  
 Box 395—Northeast Corner Kerby and Emerson Streets.  
 Box 396—Southeast Corner Vancouver Avenue and Going Street.  
 Box 414—Northwest Corner Thirty-seventh and Division Streets.  
 Box 429—Southeast Corner Fifty-second and Hassalo Streets.  
 Box 437—Southeast Corner Eighty-fifth and East Pine Streets.  
 Box 442—Southeast Corner Sixtieth and East Glisan Streets.  
 Box 443—Northeast Corner Seventy-seventh and East Market Streets.  
 Box 445—Thirty-ninth and East Glisan Streets.  
 Box 446—Northeast Corner Twentieth Street and Sandy Road.  
 Box 447—Southwest Corner Sixtieth and East Ash Streets.  
 Box 448—Southwest Corner Seventy-sixth and East Ash Streets.  
 Box 449—Northwest Corner Fiftieth and Division Streets.  
 Box 473—Northeast Corner Eighteenth and Main Streets.  
 Box 474—Northwest Corner Fifty-seventh and Thompson Streets.  
 Box 475—Southwest Corner Thirty-eighth and Lincoln Streets.  
 Box 476—Southeast Corner Thirty-fourth and Harrison Streets.  
 Box 478—Southwest corner Fourteenth Street and Henry Avenue.  
 Box 479—Southeast Corner Milwaukie and Bybee.  
 Box 483—Northeast Corner Fifty-fifth Street and Hawthorne Avenue.  
 Box 486—Southeast Corner Fifteenth and Umatilla Streets.  
 Box 487—Southeast Corner Union and Spokane Avenues.  
 Box 489—Southwest Corner Ninth Street and Spokane Avenue.  
 Box 491—Northeast Corner Milwaukie and Insley Avenues.  
 Box 512—Northeast Corner Twenty-first and Schuyler Streets.  
 Box 514—Southwest Corner Seventeenth and Tillamook Streets.

Respectfully submitted,

CHAS. A. SAVARIAU,  
 Superintendent Fire Alarm and Police Telegraph.

BUREAU OF POLICE

Portland, Oregon, January 1, 1916.

Hon. H. R. Albee, Mayor, and Commissioner of Public Safety, Portland, Oregon.

Dear Sir: I have the honor to submit herewith my Third Annual Report of the Bureau of Police of the Department of Public Safety for the fiscal year ending November 30, 1915.

Statistical reports showing the various activities of the Bureau, including special reports from the Detective Division, under command of Captain C. E. Baty, and the Women's Protective Division, Mrs. Lola G. Baldwin, Superintendent, are hereto attached. Both these Divisions have done good work during the past year and are to be complimented upon the showing they have made.

The Bureau of Police has rendered excellent service and I can conscientiously say that no finer working force of men is to be found anywhere. While there has been occasion to dismiss or reprimand a number of officers for various violations of the Rules and Regulations, yet, as a whole, the conduct and discipline of the force has been very good.

I wish to express to the Honorable Mayor, the Commissioners and the various members of the Administration my appreciation of their hearty co-operation.

Respectfully submitted,

JOHN CLARK,  
 Chief of Police.



IN MEMORIAM

---

**SERGEANT OF POLICE R. H. STAHL**

Appointed May 13th, 1907.

Appointed Sergeant September 1, 1911.

Accidentally killed while on duty

January 27, 1915.

**PATROLMAN J. C. GILL**

Appointed February 19, 1908.

Accidentally killed while on duty

November 30, 1915.

NUMERICAL STRENGTH OF THE FORCE

Total Number of Employees.....	299
Appointed .....	16
Reinstated .....	1— 17
Discharged .....	10
Resigned .....	7
Died .....	2
Removed .....	1
Transferred .....	2— 22— 5

Total Number of Employees November 30, 1914..... 304

Chief of Police.....	1	Patrolmen .....	224
Captain of Detectives.....	1	Stenographers .....	2
Captains of Police.....	3	Matrons .....	3
Superintendent, Women's Protective Division .....	1	Grappier .....	1
First Assistant, Women's Protective Division .....	1	Harbor Engineers .....	3
License Inspector .....	1	Plant Engineers (Headquarters) .....	4
Harbor Master .....	1	Janitors .....	3
Detective Sergeants .....	6	Elevatormen .....	2
Detectives .....	23	Temporary Employees—	
Lieutenant of Police.....	1	Chief Clerk .....	1
Sergeants of Police.....	15	Second Assistant, Women's Protective Division .....	1
		Elevatorman .....	1

From the above mentioned number of Detectives and Patrolmen the following are detailed:

DETECTIVES

- 1 Detective Sergeant as Bertillon Expert.
- 1 Detective as Bertillon Operator.
- 1 Detective as Dance Hall Inspector.
- 1 Detective as Parole Officer, Municipal Court.

PATROLMEN

- 1 City Attorney's Office.
- 1 District Attorney's Office.
- 1 Municipal Court, as Bailiff.
- 3 Detective Division.
- 5 Harbor Patrol.

THE MOTOR EQUIPMENT IN THE BUREAU CONSISTS OF

- 1 Pope-Hartford, 1912 Model Patrol Car.
- 1 Federal, 1½-ton 1914 Model Patrol Car.
- 1 Pope-Hartford, 1913 Model seven-passenger Touring Car.
- 1 White, 1913 Model seven-passenger Touring Car.
- 3 Indian, 1913 Model Motorcycles.
- 3 Indian, 1915 Model Motorcycles.
- 2 Harley-Davidson, 1914 Model Motorcycles.
- 1 Ford, 1914 Model five-passenger Touring Car for use in the Women's Protective Division.
- 12 Head of Horses used by the Mounted Squad.



	1915 Appropriation.	1915 Expended.	1916 Appropriation.
Personal Service .....	\$388,620.00	\$363,985.17	\$367,520.00
Supplies .....	19,085.00	10,951.67	14,000.00
Material .....	588.00	580.88	525.00
Equipment .....	2,866.00	1,512.45	3,375.00
Construction and Extension .....	25,000.00	802.75	.....
Repairs .....	2,430.00	2,028.69	2,200.00
Light, Heat and Power.....	850.00	.....	.....
Janitorial Service .....	250.00	215.69	200.00
Transportation and Communication .....	5,276.00	4,889.19	1,525.00
General Plant Service.....	26.00	26.00	50.00
Contingencies .....	2,416.67	1,970.77	2,482.06
Fixed Charges .....			200.00
Totals.....	\$447,407.67	\$386,963.26	\$392,077.06

## WOMEN'S PROTECTIVE DIVISION, POLICE BUREAU

Portland, Oregon, December 1, 1915.

John Clark, Chief of Police, Portland, Oregon.

Dear Sir: The Women's Protective Division respectfully submits the following report:

This Division carries two separate and distinct lines of work. First, the Protective and Preventive branch, for which the service was organized; second, the Municipal Court Probation and Parole Department. The girls coming to us in our Protective and Preventive work are not in any way associated with the court cases. We have our own special detention room connected with our offices, so that the girl does not see the jail nor any of its inmates. The records are confidential and are kept in separate files.

This department has handled the cases of 619 new girls during the year. The number has been somewhat smaller than the previous year, which is due, in our judgment, to the approaching enforcement of prohibitory liquor laws. We have noted that greater care has been taken by men dispensing liquor in grills than ever before. We are expecting to see a still greater improvement in local conditions in 1916, as the statistics in this office show that almost without exception where girls have been allured into immoral lives, liquor has played a very important part.

We have made 509 special investigations, which do not include a vast amount of work not recorded. After-care has been given to 128 girls, many of whom have needed attention covering a long period. Owing to the lack of employment, many of our people have had to accept aid who were willing and able to work, and the hardship has fallen largely upon the women and children, so that it has been necessary as never before for this department to give assistance. We do not agree with those who maintain that economic conditions have nothing to do with immorality. We have worked in all instances with the Associated Charities, the County Board of Relief and the Muts, and have found a kindly spirit of co-operation in all these organizations. We have furnished 389 meals and 116 lodgings. We have handled the cases of 88 sick or insane girls and have sent 72 to institutions, which include hospitals, rescue homes, and state and county institutions. Seventy-three girls have been reported runaway

or missing. Many of these are from outside towns and have been located and returned to their homes.

In our Probation and Parole Department we have had 163 cases in court and 23 have been placed on parole to us. The Morals Court, to which practically all our girls are taken, has worked a revolution in hearings where women are involved, and this department is frequently called upon to make investigations in other cases where the Municipal Judge desires further information.

In the case of first offenders, probation or parole has borne excellent results, but we find that little can be done for those who have transgressed a number of times; and it is a great pity that the Detention Home for the latter cases has been deferred, as there is no adequate provision for such women at present. Jail sentences are wholly ineffective. Experience has taught that employment under favorable conditions is absolutely necessary for moral recovery.

Special attention has been given to cases of venereal disease, wherein we have been assisted by the Emergency Hospital.

We have held 2,233 personal interviews, and our incidental expenses for the year were \$517.94.

The automobile which was added to our equipment last year has been of the greatest service by day and by night.

Respectfully submitted,

LOLA G. BALDWIN,  
Superintendent Women's Protective Division.

PORTLAND POLICE, DETECTIVE DIVISION

December 1, 1915.

John Clark, Esq., Chief of Police, Portland, Oregon.

Dear Sir: I have the honor to submit herewith, the annual report of the Detective Division for the year ending November 30, 1915. In this report is given a summary of the more important cases handled and cleared up during the fiscal year, including the yearly report of the Bertillon and finger-print branch of the Division, the amount of lost and stolen property recovered and the number of missing persons located.

The past year has been a very busy one but, as the attached report will show, we have been successful in keeping crime down to such an extent that a comparison of the total figures of last year's with those of 1915 will show a material decrease.

We have caught a great many burglars and hold-up men who have operated here, as well as in other cities on the Coast, and have also apprehended several very clever forgers.

As the following summary will show, we believe we have made a very satisfactory record for the year just ended.

We extend to His Honor, the Mayor and the members of the Commission, a cordial invitation to visit our Division any time and will always welcome any suggestions or recommendations that may be made toward the improvement and benefit of same.

Respectfully submitted,

C. E. BATY,  
Captain of Detectives.



**SUMMARY OF CASES REPORTED, INVESTIGATED AND CLEARED UP  
DURING THE YEAR ENDING NOVEMBER 30, 1915**

TITLE	Reported.	Cleared Up.
Larceny	2,568	1,083
Larceny by Bailee	33	29
Larceny from Person	78	53
Larceny by Embezzlement	11	10
Forgery	52	51
Burglary	284	232
Hold-up	69	27
Bunco	18	13
Bad Check	114	92
Carrying Concealed Weapons	7	7
Threatening to Kill	15	15
Assault with Dangerous Weapons	17	16
Murder	3	2
Manslaughter	1	1
Obtaining Money by False Pretenses	12	12
Pickpocket	18	18
White Slavery	3	3
Violating Pawnshop Ordinances	7	7
Rape	7	6
Kidnapping	1	1
Safe Burglary	3	2
Counterfeiting	1	1
Smuggling	1	1
Arson	4	4
Fugitives Returned (Portland)	25	25
Fugitives Captured (Other Cities)	73	73
Miscellaneous Cases	28	27
<b>Totals</b>	<b>3,454</b>	<b>1,811</b>

Total Arrests Made by Detective Division	2,175
Missing Persons Located	241
Criminal Circulars Indexed and Filed	3,000
Estimated Value of Lost and Stolen Property Recovered (Automobiles Excluded)	\$49,519.70

**REPORT OF BERTILLON AND FINGER-PRINT BRANCH FOR THE  
YEAR ENDING NOVEMBER 30, 1915**

Bertillon Record Received	7,235
Finger-Print Records Received	4,830
Identifications Made	285
Persons Photographed	441
Photographs Printed for Exchange	6,036
Photographs Copied for Local Use	38
Photographs Printed from Copies	482
Penitentiaries exchanged with	1

**EXTRA**

Photographs Made for San Francisco on Account of Fair	210
Cards Made for San Francisco on Account of Fair	35
Cards Made for Southern Pacific Special Agents	37
Photographs Made for Southern Pacific Special Agents	37
Photographs Printed for Government Agents	105
Cities Exchanged With	10
Photographs Printed for Customs Officers	18

**ANNUAL REPORT OF CHIEF OF POLICE**

Number of officers belonging to station November 30, 1915	299	Number of foreigners	3,090
Number of officers absent from duty	572	Number of females	1,368
Days including vacations	6,276	Number of minors (males)	1,180
Number of arrests	20,559	Number of minors (females)	106
Number of males	19,191	Males provided with lodgings	2,068
		Females provided with lodgings	15

**NATURE OF CRIME**

Accepting earnings of prostitute	10	Gambling and visiting gambling house	147
Automobile no light	95	Held as witness	165
Automobile muffler open	99	Held for investigation	640
Automobile exceeding speed limit	806	Highway robbery	20
Automobile no license	36	Druggist sell liquor not require signature	1
Automobile on sidewalk	4	Indecent and immoral act	198
Allow minor in saloon	5	Indecent exposure	19
Attempt to obtain goods false pretense	1	Insane	1
Allow minor in poolroom	15	Arson	3
Allow chickens to run at large	24	Impersonate an officer	5
Allow stock to run at large	10	Interfere with an officer	9
Lodger	8	Inmate of a bawdy house	1
Attempt suicide	16	Junk dealer no license	3
Attempt to commit robbery	4	Keep dog no license	291
Attempt to commit rape	5	Knowingly utter a forged check	8
After hours	156	Leave team untied	18
Adultery	21	Lottery ticket in possession	51
Assault and battery	339	Larceny	527
Assault with a dangerous weapon	39	Larceny in a store	7
Assault with intent to kill	5	Larceny from the person	14
Assault armed with dangerous weapon	12	Larceny in a dwelling	56
Assault and rob, armed with dangerous weapon	24	Larceny by bailee	43
Burglary	76	Larceny by embezzlement	22
Burglar tools in possession	2	Lewd cohabitation	28
Bench warrant	2	Lost children brought to the station	89
Violate game laws	2	Injured persons assisted	165
Surrendered by bondsmen	1	Murder	3
Contempt of court	6	Manslaughter	4
Cruelty to animals	38	Motorcycle speeding	185
Carrying concealed weapon	62	Motorcycle no light	8
Cocaine in possession	2	Minor in a pool room	25
Conduct business no license	40	Morphine in possession	5
Conduct bawdy house	77	False fire alarms	2
Conduct disorderly house	7	Parole violators	2
Conduct disorderly saloon	1	Non-support	3
Conduct lottery game	70	Overload teams	1
Conduct opium joint	20	Obscene pictures in possession	5
Conduct gambling game	70	Lost persons	3
Contributing to delinquency of minor	18	Obstruct street car traffic	5
Maintain nuisance	1	Obstruct sidewalk	9
Chauffeur no license	36	Obstruct street	19
Kidnapping	2	Obstruct street no red light	1
Drunkenness	6,655	Obtaining money false pretense	49
Drunk and disorderly	401	Obtaining goods false pretense	3
Disorderly conduct	870	Opium in possession	16
Disorderly by fighting	151	Pass counterfeit coin	2
Destruction of personal property	7	Peddling no license	57
Disturb religious meeting	1	Allow wife in house of prostitution	1
Defrauding an innkeeper	42	Prisoners en route	41
Discharging firearms in city limits	12	Polygamy	2
Inciting riot	18	Perjury	3
Dangerous assault	1	Poolroom no license	1
Demented	103	Point gun at another	2
Deserter	1	Reckless driving	201
Eng she in possession	11	Ride bicycle on sidewalk	1
Employ female unlawfully	2	Ride motorcycle on sidewalk	10
Fugitive from justice	86	Maintain gambling device	1
Frequenting opium joint	18	Resisting an officer	5
Forgery	34	Rape	7
Give liquor to a minor	1	Runaway children	51



Refuse to move on.....	4	Violate vehicle ordinance...	83
Sell short weight and measure .....	6	Violate bill posters ordinance .....	12
Sell liquor no license.....	39	Violate traffic ordinance...	853
Sell impure foods.....	22	Violate building ordinance.	38
Sell liquor on Sunday.....	22	Assault .....	1
Sell cigarettes to a minor..	21	Hypodermic needle in possession .....	2
Sell liquor to a minor.....	17	White slavery .....	6
Sell liquor to an Indian....	1	Minor tobacco in possession .....	10
Sell liquor person already intoxicated .....	12	Driving auto while intoxicated .....	22
Sell lottery tickets.....	1	Held for U. S.....	25
Sell liquor to women.....	1	Conducting marriage brokerage .....	1
Smoke opium .....	6	Delinquent juvenile .....	3
Sell opium .....	1	Failing to procure employment .....	1
Attempt to purchase morphine no prescription....	1		
Sick and destitute.....	184		
Scavenger wagon no license	11		
Scavenger wagon leaking..	5		
Safe keeping .....	2	MISCELLANEOUS	485
Sodomy .....	3	Auto reported stolen.....	485
Soliciting on street.....	2	Auto reported stolen and found .....	374
Soliciting for prostitution..	43	Ambulance calls .....	155
Motorcycle muffler open...	23	Accidents .....	728
Seduction .....	2	Missing persons .....	154
Saloon open on Sunday....	1	Dead bodies .....	140
Stolen goods in possession.	17	Dead animals .....	696
Sturdy beggars .....	79	Defective lamps, arc.....	1,865
Threat to commit murder.	2	Fire alarms given.....	367
Trespass .....	88	Injured persons assisted...	755
Threaten to kill.....	58	Lost children reported....	1,018
Throw rubbish in street....	7	Nuisance notices served .....	691
Use profane language.....	85	Sidewalks reported for repair .....	407
Vagrancy .....	3,314	Street obstruction reported .....	735
Violate city ordinance.....	354	Stray teams put up.....	170
Violate pawn brokers ordinance .....	46	Suicides reported .....	56
Vicious dog at large.....	14	Water running to waste....	650
Visit bawdy house.....	2	Motorcycle calls .....	2,343
Visit house of prostitution.	1	Wagon calls .....	9,519
Visit lottery game.....	92	Municipal Court receipts...\$28,085.20	
Visit gambling game.....	948	Board of prisoners, City	
Violate mashers ordinance.	20	Jail .....	\$ 4,027.52

Respectfully submitted,

J. S. THOMPSON, Record Clerk.

## BUREAU OF HEALTH

Hon. H. R. Albee, Mayor and Commissioner of the Department of Public Safety, Portland, Oregon.

Dear Sir: The year ending November 30, 1915, is replete with many things denoting progress by the Bureau of Health in your Department of Public Safety. Most notable among these is the low mortality rate, which includes the remarkably low infant mortality rate. Also, the wonderful showing made in the milk contest at the Panama-Pacific International Exposition at San Francisco, California, which will be mentioned more in detail in the body of the following report:

## MORTALITY RATE

The crude death rate from all causes as estimated by the Division of Vital Statistics, Bureau of Census, Department of Commerce, of the United States Government at Washington, D. C., is 9.1 per one thousand, while for 1913 it was 9.5 per one thousand, thus showing a decrease of .4 of one per one thousand for 1914. The death rate from all the communicable diseases was much lower than in the preceding year. In 1914 it was 11.3 per thousand, while in 1915 it was only 6.5 per thousand, showing a decrease of 4.8 per thousand. In making a comparison in the infant death rate from diarrhea and enteritis under one year of age it is found that there is a reduction from 15 in 1914 to 14 in 1915.

MAIN OFFICE DIVISION  
CLERICAL SUB-DIVISION

The work of the clerical force has been increased very materially during the past year by the passage of the State Registration Act. Under this new law approximately 150 supplemental birth reports have to be mailed each month to parents whose children were not named when the birth certificates were filed by the attending physician. When these are returned the given name must be entered both on the original certificate and in the birth record book. The supplemental certificate is then properly filed. Four hundred and one physicians, midwives and undertakers were registered with the Bureau of Health under this same law during the year. The burial permits, which contain more data than previously, are now returned to the Bureau for checking up and filing.

The filing has increased during the past year. This is shown by the fact that during the year 1914, 980 communications were received and 835 sent out, while during 1915, 2,597 communications were received and 4,076 mailed out.

The sum of \$139.95 was received for certified copies of births and deaths and deposited with the City Treasurer; \$140.05 received for antitoxin given diphtheria patients was also deposited with the Treasurer.

Again, I would urge the advisability of installing a switchboard in the Health Bureau with a "central," who would also act as a complaint clerk. I believe this would do away with the annoyance of transfers. Under statistical reports will be found a complete tabulation of births, deaths and contagious diseases.



## MEDICAL DIVISION

## MEDICAL INSPECTION OF SCHOOLS

The objects of medical inspection in the schools are the detection and prevention of communicable diseases and the determination of all abnormal physical findings in the child that may interfere with health and mental progress.

With a school enrollment of about 30,000, distributed among 59 schools, it is possible to inspect each school only about once a month. At the first inspection each year the child is gone over as thoroughly as conditions will permit, and an advice card to the parents is given where needed. These cards are advisory only and, while a reply is urged, nothing in the way of treatment is required. Many abnormal conditions are reported to the parents. Thereafter inspectors and nurses are concerned chiefly with contagious conditions. The good derived from these advice cards is enormous, and it is a pity that more thorough examination and a closer following up of the results of such advice and treatment is impossible owing to the small force of inspectors.

It can readily be seen that one inspection a month cannot prevent all communicable diseases from spreading in the schools, as a child may break out with measles, for instance, the day after the inspector has been at that school and remain there infecting others for several weeks. In such cases the inspector gives his entire time to that school, and in this way serious epidemics are often avoided. Such epidemics are always avoidable if inspections could be made oftener.

Looked at solely from an economic point of view, it is certain that the increased expense for additional medical inspectors and nurses could be offset each year by the saving to those afflicted from sickness as well as the cost of supply to the city for those held in quarantine, to say nothing of the school attendance.

Each year for the past three years an additional appropriation for an increase in the number of school inspectors and nurses has been disallowed, although it has been earnestly requested. The statistical reports of the School Inspection Subdivision will be found at the conclusion of the report.

## DENTAL CLINIC

You will note in this department an increase in the work of nearly 50 per cent over last year. Even with this increase only a small number of deserving cases could be cared for. An improvement in this work would be the devotion of at least a half day every day of the week, instead of the present arrangement of one whole day each week. The statistical report of this division will follow.

## COMMUNICABLE DISEASES

There have been no particular changes made in the handling of these cases during the past year.

Were it only possible to impress upon the parent or guardian more emphatically the importance to themselves and the community of an early correct diagnosis of all eruptive diseases, the problem of their diminution would soon be easily accomplished. It often happens that only by the most diligent and laborious efforts on the part of the Health Bureau is the City able to trace and quarantine contagious cases that apparently are well known to the neighbors, but who feel that they are "informers" if they report the case to this office, and

these people are the very first to offer criticism for the spread of contagion.

One such case occurred in one of the suburbs. A boy was delivering papers during the peeling stage of scarlet fever. His father was extremely indignant when we located and quarantined him. Two of his neighbors were discovered in the peeling stage and quarantined the same day. Many other cases soon developed. Had it not been for this one portion of the City, there would have been exceptionally few cases of scarlet fever this winter.

## CULTURES FOR DIPHTHERIA

Three thousand seven hundred and thirty cultures have been taken by this Bureau for diagnosis and release of diphtheria.

## EXAMINATIONS—PHYSICAL

One thousand and two physical examinations for entrance into Civil Service and other reasons have been made by the physicians of this Bureau during the last year.

## DETENTION HOSPITAL

The City is sadly in need of a suitable place for a temporary detention hospital where we could isolate a suspicious contagious case for 24 to 48 hours.

## QUARANTINE NURSE

It is suggested that a trained nurse be employed whose sole duty would be to visit quarantined families. The small force of the Medical Division does not afford any opportunity to visit a family except to quarantine and inspect for release, while if there was a nurse for this purpose she could instruct them in many professional ways, giving them a great deal of assistance and good advice. Quarantine would be observed more strictly, a more kindly feeling would prevail and the Bureau would be kept in closer touch with these cases.

## LEPROSY

A case of leprosy was isolated at the Smallpox Hospital grounds during the year. As far as is known this is the only case of its kind ever handled by the authorities of the City of Portland.

## TRANSPORTATION OF PATIENTS

One hundred and fifty-one patients have been transported by the privately owned machines of several of the physicians in the Medical Division. Many of these were sent to the Smallpox Hospital, when the charges would have been from \$12 to \$14. At an average rate of \$8 per patient the saving to the City has been \$906.00, for which it has only paid out the cost of the upkeep and absolutely nothing for deterioration of the automobile.

## MUNICIPAL HOSPITALS

The following is a report of the number of patients cared for by the Bureau of Health during the year beginning December 1, 1914, and ending December 1, 1915:

At the Emergency Hospital, 1,387 cases were treated for a total of 2,227 days, or an average of about two days for each patient.

St. Vincent's Hospital, 55 cases treated for a total of 798 days, making an average of 14½ days for each patient.



At Good Samaritan Hospital, 79 cases were treated for a total of 746 days, making an average of about 9½ days for each patient.

The rule that all men in the Fire Bureau who are off duty either through illness or injury must be visited by the City Physician has been in effect this year. This rule requires a visit to be made in person and a report to be submitted to the Fire Bureau as to the condition of the patient, nature of illness or injury, and if injury, cause thereof.

There were 110 of the foregoing cases reported for first visit, besides many who were off two weeks or more required additional reports, or the reports of other physicians had to be corroborated.

It is the custom among some of the foremen of the various City Departments to send their men, who are ill or injured while working for the City, to the City Physician for treatment as City cases, and sometimes it is more difficult to explain to them that the City does not maintain a physician for its employees, than it is to treat them, so that they are taken care of either in the private office of the City Physician or the Emergency Hospital.

There seems to be a growing demand upon the City Physician, whose duties should only be those of Police Surgeon, to care for people who come into Portland from surrounding counties. They are mostly people who have no regular place of residence, but have been living outside of Portland. When ill, they come here for treatment because they have no money, rather than remain where they were living.

Attached hereto find a monthly report covering the various hospitals.

#### TUBERCULOSIS SUBDIVISION

The report of the Tuberculosis Nurse is attached herewith and is indicative of more assistance in this very important branch of Public Health Work.

#### BACTERIOLOGICAL LABORATORY

The laboratory work has increased markedly and it is largely due to this fairly well equipped institution and the excellent ability of Prof. E. F. Pernot, and his assistant, Miss A. C. Trenchard, that contagion is very low. The bacteriologist's statistical report will be attached hereto.

A wide field is covered by the Sanitary Division which aims, not only to protect the community from the carelessness and indifference of the individual, but also endeavors to assemble all those forces and influences which will contribute to ideal health conditions and a lower death rate, such as: clean and pure food, the proper disposal of waste and garbage, good ventilation, and the numerous other things coming within the range of sanitation.

To do this satisfactorily and adequately with the small force of inspectors has been a physical impossibility, particularly with very insufficient transportation facilities.

In the interest of economy, but at a disproportionate expense to the service at a season when the work was a little slack, the chief Sanitary Inspector was laid off. Contrary to expectations, this endeavor to save a little money temporarily resulted in the office being abolished when the budget was allowed for 1916. It also cut out two inspectors, much to the detriment and crippling of the service.

The reduced force gives to the entire East Side, from Sellwood to St. Johns, a distance of approximately twelve miles, and from the

river to the extreme eastern limits of the city, but three inspectors who have time for little else than the answering of complaints. The same condition exists on the West Side with but two inspectors to cover the territory extending from Fulton Park to Linnton, a distance of approximately fourteen miles, and from the river to the extreme western limits of the city, while the inspector of bakeries and food factories covers the entire city on both sides of the river. This force includes both sanitary and market inspectors, who have to depend entirely upon street cars for transportation.

The Health Officer, with all his other duties, has been compelled to act as director and supervisor of all this work.

A trained, up-to-date Chief Sanitary Inspector is an absolute necessity for a town the size of Portland. He should be one with peculiar qualifications for the work, and specialized training, which not only includes a general knowledge of sanitation and all conditions contributing to health, but must have a fair knowledge of construction, engineering and economy.

#### FOOD INSPECTION

##### MEATS

Never has the need for meat inspection been so much in evidence as within the past year. With meat of all kinds at a premium, the temptation to market the diseased and unfit has brought into our markets quantities of unwholesome and dangerous meat. Proper inspection would have perhaps saved the four victims of trichinosis, and certainly have prevented hundreds of pounds of Cholera infected pork from getting into the shops of the city.

Steadily, through session after session of the Council, was the proposed ordinance argued, finally resulting in its passage. An appeal was taken to the Circuit Court and the ordinance was sustained. It was then appealed to the Supreme Court where it has slumbered for nearly a year.

##### MARKETS

The Public Market has injected many new problems into market conditions. Adjusting the open stall to the ordinance requiring foods to be covered has required great tact and an exercise of exact justice.

##### RESTAURANTS

Much of the time of our inspectors has been given to making a thorough survey of the restaurants, and the improved conditions give evidence of the efficient work. Scoring the restaurants has materially improved the condition of these places and brought about a better understanding between proprietors and inspectors.

The small amount of capital required for opening the cheaper class of restaurants, and the so-called Candy Kitchens, emphasizes the importance of an ordinance requiring places where food is sold, or prepared for sale, to be inspected and approved before they are occupied for such purpose.

##### BAKERIES

Bakeries are showing a constant improvement by enlarging their plants, introducing more machinery and exercising more care in the matters of sanitation and hygiene. They have been particularly active in the campaign against flies and have complied generally with the request for health certificates from their employees.



#### FLY CAMPAIGN

To exterminate the house fly is a large and very important factor in all sanitary work. Spasmodic campaigns not having proved an entire success, an "all-the-year-around" campaign was inaugurated last summer. A constant and persistent effort was made to destroy the breeding places, such as manure piles, open garbage cans, and obnoxious dumping grounds.

With few exceptions every grocery store, meat market, bakery, restaurant and every place where food was kept was screened. Hundreds of fly-traps were set, and every known device used to get rid of them.

#### RATS

As Portland, like all other Pacific Coast cities, faces the constant menace of Bubonic Plague and other Oriental diseases, it was thought advisable to make a thorough test of the carriers. Two inspectors were detailed to the work of trapping rats in different parts of the city, and within a few weeks 862 had been secured and brought in for bacteriological examination, all of which proved negative.

#### VENTILATION

Special attention has been given to this phase of sanitation. Theaters, public halls and schools, office buildings, factories and sleeping apartments have been scientifically tested and conditions much improved.

#### MILK AND DAIRYING SUBDIVISION TUBERCULIN TESTING OF COWS

During the past year two inspectors have confined their work to the tuberculin testing of dairy cows whose milk is consumed in the raw state. They are finding less reactors each year, and since the state and county reimburse the dairyman to the extent of \$25.00 for each reactor the work has gone along with little opposition from the owners. Two inspectors are not able to test the herds once a year as required by ordinance, but where they find a number and fear the spread of the disease a retest is made in six months.

As tuberculin is provided by the Federal Government free of cost, it now insists that post-mortems be made on all reactors when slaughtered. This takes a great deal of time, as many of the reactors are slaughtered on the farms. Reactors are slaughtered almost as soon as found to prevent the possibility of infected milk being sold.

#### CLEAN MILK

The problem of securing clean milk, is the problem the inspector has to contend with. He is expected to instruct the dairymen how to reduce contamination to the least possible factor, and teach them that only by scrupulously clean cows, clean, well ventilated stables, sterilized utensils, milk properly cooled and handled in a sanitary manner, can a minimum of contamination be obtained. New dairy barns and milk houses are being constructed according to plans furnished from the Health Office, and many improvements are being inaugurated for the betterment of the milk supply.

The service is greatly crippled for the want of better transportation for the inspectors. Long distances have to be covered beyond the reach of car service, and the time consumed in covering these distances on foot is an expensive proposition for the City.

#### MILK ANALYSIS

Portland consumes about 20,000 gallons of milk per day. Approximately two-thirds is delivered by the retailer in bottles to the homes, and the remaining one-third is sold at wholesale in cans. More than 85 per cent of the milk consumed in the City is produced within a radius of 15 miles of Portland, and reaches the consumer comparatively fresh. About \$2,290,000 is paid by the consumers of milk per year. From nearly 5,000 samples collected promiscuously from the different wagons and restaurants, very few adulterations are found.

All samples brought in by the city collectors are taken to the milk laboratory where a duplicate plate is run on each and every sample, and from this are determined the methods which the producer uses in producing and handling his milk. When the producer has a high count an inspector is sent to investigate conditions at the dairy and to try to ascertain the cause, and invariably succeeds in locating the source of contamination.

#### MILK CONTESTS

During the year the Bureau of Health has held two contests under the supervision of Mr. F. H. Bothell, Western Investigation, United States Department of Agriculture. These milk contests for the past two years have been beneficial both to the dairymen and milk dealers, as well as to the public. From the producers and dealers standpoint the contest system has proved a success. Through it they have received the reward, in dollars and cents, that the quality of their goods merited.

The competition is so great that every dairyman is an inspector without pay, and all dealers refer to their rating in the City Milk Division when soliciting business.

#### INTERNATIONAL MILK CONTEST

At the International Milk Contest, held at San Francisco in June, Portland carried off more medals and diplomas than had ever been done by any city or state previously. It being Portland's first entry into a contest of such magnitude, the largest ever held, and the second it had ever entered, the results were marvelous, and the entire state is to be congratulated upon the showing made. It has advertised Portland, possibly more than anything that has ever been accomplished by its citizens. The detailed results of the contest are as follows:

A gold medal and \$100.00 in gold for first place in the Board of Health class; that is, the highest average score for ten regular samples, regardless of class. Portland's score was 95.7 out of a possible 100 points.

A gold medal for the largest number of samples; there being 136 entries.

A gold medal to the Portland Pure Milk & Cream Company for the highest average score of 10 regular samples in Milk Dealers Class.

A silver medal for second place to the Damascus Creamery for pasteurized milk.

A bronze medal for third place to the Hygiea Creamery for pasteurized milk.

A bronze medal for third place to the Willamette Creamery for pasteurized cream.

Sixty-six diplomas of merit for a score of 90 points or over.

Twenty-six entries secured scores of 94 or over, and the statement



of the judges was "that the milk from Portland was the best ever produced."

#### INFANT MORTALITY

It is a significant fact, that as the milk supply of the City has improved the infant mortality has been proportionately decreased each year, as mentioned hereinbefore, and as shown by the tabulated statement accompanying this report.

#### SUMMARY

To accomplish all these results has been a slow process of evolution, accompanied by diligent effort, requiring both the dairymen and the public to adjust themselves to a new order of things. Our methods have been those of co-operation rather than of coercion, and the results with the producers have proven the wisdom of the method, while averaging over 300 telephone calls for information from housewives every month evidences the value of this subdivision of the work, to the public. During the year we have issued permits for licenses to the amount of \$1,874.00. One more machine should be added to the department for the economic reasons stated above.

#### CONFERENCES

A series of conferences which have been held once a week with the various departments, where topics relating to their several departments have been discussed, has resulted in increasing the efficiency of the forces, and a much more intelligent execution of the work.

#### EXHIBITS

A very successful exhibit of the life cycle of the fly in one of the down town show windows was conducted during the fly campaign by this Bureau and it had a decidedly good effect from an educational standpoint. It was estimated that several thousand people saw the exhibit during the 18 waking hours of the day. The fly was literally hatched out while you waited.

The exhibit of Portland's entries of milk at San Francisco following the International contest was arranged by the City Health Officer, who accompanied the same to San Francisco, in the building for Dairying and Livestock, where it remained for a few days when the Oregon Building Commission decided it should be in their building with other exhibits, which had taken prominent prizes. It was then moved to the Oregon Building, where it remained on exhibition for many weeks. This was possible because of the addition of preservatives.

#### SUGGESTIONS AND RECOMMENDATIONS

**A Sanitary Code**—The Health Officer and every member of the Bureau has felt an urgent need for the revision and codification of the ordinances pertaining to public health, which has been done, and it is respectfully recommended that the Council pass the same as soon as possible.

Many of the ordinances under which the Bureau is working have been in effect for 25 years; they were enacted before many of the offices and departments were created, and must now be stretched out of all recognition to cover the present day needs.

Our market ordinance has been in effect ten years and is wholly

out-grown. The detached condition of these ordinances, as they have been enacted separately from time to time, results in much confusion and waste of time, and their codification is an absolute necessity in the interests of efficiency and economy.

It is also recommended:

That additional school inspectors and nurses be appointed before the expiration of another school year, the present force being inadequate to properly supervise communicable diseases alone among a rapidly growing school population like that in Portland;

That additional dentists for the Dental Clinic be appointed as soon as possible to meet the increasing demand for this valuable work;

That additional automobiles be purchased for the use of the sanitary, market and bakery inspectors. The most efficient inspection work can only be done when proper transportation facilities are provided;

That the Council should exert every effort to have the Meat Inspection Ordinance released by the Supreme Court in order that better and more wholesome meat might be provided for Portland consumers;

That more physicians should be appointed to assist in the Medical Division, either in the capacity of District Medical Inspectors or otherwise. The issuance of permits to school children should be done only by physicians, upon whom the responsibility for the same has been placed by the Council. If the force was adequate more thorough quarantine for whooping cough, measles, chickenpox and mumps could be maintained and this is coming to be of more importance than is generally realized; and

That the Emergency Hospital and the staff for the conduct of the same be transferred to the Police Bureau, where it rightfully belongs, and that the appellation of "City Physician" be changed to that of Police Surgeon.

I wish to most heartily express my appreciation of the co-operation of the Mayor and the other members of the Council, individually and collectively, in the important public health matters that the Health Bureau has referred to them.

Respectfully submitted,

M. B. MARCELLUS,  
City Health Officer.

#### BIRTHS

	Male	Female	White	Brown	Black	Yellow
December, 1914.....	161	167	322	4	2	0
January, 1915.....	180	189	361	7	0	1
February.....	147	164	305	4	0	2
March.....	192	195	376	5	2	4
April.....	136	146	273	4	1	4
May.....	185	175	355	4	1	0
June.....	182	163	340	4	0	1
July.....	187	168	347	6	0	2
August.....	208	166	365	5	0	4
September.....	179	168	338	8	1	0
October.....	215	181	386	7	1	2
November.....	151	130	274	6	0	1



## INFANT MORTALITY

December 1, 1914, to December 1, 1915

PRINCIPAL CAUSES OF DEATH	No. Deaths Under 1 Yr.
Congenital debility (marasmus, inanition).....	50
Prematurity .....	42
Bronchial pneumonia .....	26
Cerebral hemorrhage .....	20
Diarrhea and enteritis.....	12
Congenital malformation of the heart.....	12
Meningitis .....	11
Pneumonia .....	10
Convulsions .....	6
Intestinal obstruction .....	3
Acute bronchitis .....	2
Diphtheria .....	2
Other causes .....	42
<b>Total deaths .....</b>	<b>238</b>

## AGE AT TIME OF DEATH

Under one day.....	46 or 19.3% of deaths under 1 year
1-2 days .....	29
2-3 days .....	12
3-7 days .....	19
Under one week.....	106 or 44.5% of deaths under 1 year
1-2 weeks .....	24
2-3 weeks .....	14
3-4 weeks .....	12
Under one month.....	156 or 65.5% of deaths under 1 year
1-2 months .....	23
2-3 months .....	10
3-6 months .....	21
6-9 months .....	10
9-12 months .....	18

The following is a tabulation of deaths under one year of age per one thousand births since 1909:

	Number Deaths.	Rate Per 1000 Births.
1909 .....	288	94
1910 .....	324	95.4
1911 .....	329	88.2
1912 .....	319	78.4
1913 .....	276	74.1
1914 .....	266	63.4
1915 .....	238	57.7

The following is the tabulation of deaths from diarrhea and enteritis under two years of age since 1909:

	Number Deaths.	Rate Per 1000 Births.
1909 .....	100	32.6
1910 .....	73	21.5
1911 .....	57	15.2
1912 .....	38	9.3
1913 .....	29	7.7
1914 .....	15	3.6
1915* .....	14	3.4

\*On a basis of 4,122 births for the year.

## PORTLAND PUBLIC SCHOOLS, 1915

Enrollment day school.....	31,478
School buildings .....	63
High schools .....	5
Trade schools .....	2
Backward schools .....	1
Detention schools .....	1
Deaf and blind school.....	1
Number of teachers employed:	
1908 .....	584
1910 .....	702
1912 .....	878
1915 .....	1,108
Number of inspectors employed.....	4
School nurse .....	1

MEDICAL DIVISION  
REPORT OF SCHOOL NURSE

Number of pupils examined.....	12,886
Visits to homes of pupils.....	794
Number of pupils referred to specialists.....	261
Number of cases referred to Charity Association.....	84
Pupils taken to dispensary.....	23
Number of visits to schools.....	291
Miscellaneous calls .....	164
Diphtheria .....	2
Scarlet fever .....	6

## REPORT OF SCHOOL INSPECTORS

Examined .....	145,031	Anemia .....	3
Impetigo .....	227	Paralysis, infantile .....	12
Scabies .....	55	Hemophilia .....	1
Chickenpox .....	84	Ichthyosis .....	5
Pediculosis .....	514	Keloid .....	1
Ringworm .....	114	Smallpox .....	8
Tonsils and adenoids.....	3,856	Contagious conjunctivitis.....	44
Defective nasal breathing...	27	Whooping cough .....	6
Defective eyes .....	319	Miscellaneous skin diseases..	99
Defective ears .....	81	House calls .....	640
Skin, non-contagious .....	63	Measles .....	5
Throat cultures .....	1,580	Cleft palate .....	4
Goitre .....	48	Cataract .....	2
Defective teeth .....	10,452	Scarlet fever .....	9
Malnutrition .....	16	Diphtheria .....	9
Orthopedic defects .....	25	Vaccinations .....	76
Eczema .....	28		

## REPORT OF FREE DENTAL CLINIC

Year Beginning September, 1913, to June 30, 1914, Inclusive	
Number of sittings.....	377
Number of fillings.....	585
Number of treatments.....	110
Number of extractions.....	198
Number of teeth cleaned.....	200
Year Beginning September, 1914, to June 26, 1915, Inclusive	
Number of sittings.....	670
Number of applicants worked on.....	350
Number of amalgam fillings.....	503
Number of cement fillings.....	371
Number of root canals.....	72
Number of treatments.....	156
Number of extractions.....	447
Number of cleanings.....	184
Number of pulps capped.....	5

## COST OF OPERATING CLINIC ONE DAY A WEEK FOR ONE YEAR ..

Dental supplies .....	\$112.80
Laundry .....	5.00
Salary of operator.....	400.00
Salary of assistant.....	100.00
Value of equipment.....	550.00



**REPORT OF TUBERCULOSIS WORK FOR YEAR ENDING NOVEMBER 30, 1915**

Number patients under observation December 1, 1914.....	60
Number new patients admitted during year.....	228
Number old patients readmitted during year.....	13
<b>Total number of patients under observation.....</b>	<b>301</b>
Number of nursing and advisory visits.....	1,383
Number of co-operative and miscellaneous visits.....	358
<b>Total number visits for year.....</b>	<b>1,742</b>
Disposition of patients:	
Improved .....	12
Sanatoria .....	97
State Sanatorium .....	48
Troutdale .....	45
Open Air .....	4
Hospitals .....	8
Not tuberculous .....	32
Other care .....	24
Left city .....	19
Died .....	25
Untraced .....	12
Discharged self .....	14
Total number patients discharged during year.....	243
Remaining under observation December 1, 1915.....	58
Number quarts milk to patients.....	1,533
Number dozen eggs to patients.....	173

**REPORT OF TUBERCULOSIS DIVISION, PORTLAND FREE DISPENSARY, ENDING NOVEMBER 30, 1915**

Number patients under observation December 1, 1914.....	61
Number new patients admitted during year.....	195
Number old patients readmitted during year.....	21
<b>Total number patients under observation.....</b>	<b>277</b>
Total number visits to clinic by all patients during year.....	1,501
Total number serum treatments by patients during year.....	1,056
Disposition of patients:	
Improved .....	8
Sanatoria .....	47
State Sanatorium .....	26
Troutdale .....	21
Hospitals .....	12
Other care .....	16
Not tuberculous .....	64
Non-attendance .....	41
Left city .....	15
Died .....	2
Untraced .....	17
Discharged self .....	4
Total number patients discharged during year.....	226
Total number patients remaining under care December 1, 1915.....	51
Number quarts of milk to patients.....	1,043
Number dozen eggs to patients.....	122

**EMERGENCY HOSPITAL**

	Number Treated.	Number of Days.
December, 1914.....	69	122
January, 1915.....	77	102
February, 1915.....	152	309
March, 1915.....	173	245
April, 1915.....	74	191
May, 1915.....	98	180
June, 1915.....	139	229
July, 1915.....	135	214
August, 1915.....	120	161
September, 1915.....	133	183
October, 1915.....	124	153
November, 1915.....	93	138
<b>Totals .....</b>	<b>1,387</b>	<b>2,227</b>

**ST. VINCENTS HOSPITAL**

	Number Treated.	Number of Days.
December, 1914.....	10	157
January, 1915.....	10	187
February, 1915.....	3	57
March, 1915.....	4	59
April, 1915.....	3	22
May, 1915.....	3	39
June, 1915.....	2	14
July, 1915.....	2	18
August, 1915.....	5	65
September, 1915.....	5	38
October, 1915.....	2	28
November, 1915.....	6	114
<b>Totals .....</b>	<b>55</b>	<b>798</b>

**GOOD SAMARITAN HOSPITAL**

	Number Treated.	Number of Days.
December, 1914.....	5	12
January, 1915.....	9	58
February, 1915.....	7	96
March, 1915.....	5	57
April, 1915.....	5	39
May, 1915.....	11	70
June, 1915.....	6	61
July, 1915.....	4	54
August, 1915.....	3	11
September, 1915.....	11	84
October, 1915.....	7	125
November, 1915.....	6	69
<b>Totals .....</b>	<b>79</b>	<b>736</b>



**BACTERIOLOGICAL LABORATORY**  
**BACTERIOLOGICAL WORK**

The major work has been of a routine character, consisting of:

Diphtheria cultures .....	5,782
Sputum examinations for tubercle bacilli.....	225
Widals for typhoid fever .....	105
Analysis of water.....	89
Analysis of milk, bacterial count.....	3,574
Analysis of laundry napkins.....	37
Analysis of rats for bubonic plague.....	862
Analysis of urine .....	445
Examinations of meat for trichina.....	14
Miscellaneous examinations .....	413
<b>Total .....</b>	<b>11,546</b>
Klebs Loeffler blood serum tubes prepared.....	5,911

Quite a large number of specimens have been mounted and preserved for museum and educational purposes.

**MARKET INSPECTION**

Inspections made .....	29,183
Complaints by citizens .....	1,277
Notices served, written and verbal.....	6,355
Condemned:	
Fish, pounds .....	95,656
Meats, pounds .....	23,816
Poultry, pounds .....	3,587
Vegetables, pounds .....	163,566
Eggs, dozen .....	120
Fruits, pounds .....	308,900
Potatoes, pounds .....	13,080
Flour and meal, pounds.....	197,000
Money refunded on purchases.....	\$370.80

**SANITARY INSPECTION**

Inspections made .....	16,658
Complaints by citizens.....	2,942
Complaints by inspectors.....	3,357
Notices served, written and verbal.....	7,435
Inspections for ventilation.....	348
Nuisances abated .....	4,744
Loads of rubbish destroyed.....	1,426
Loads of manure removed.....	1,877
Basements ordered cleaned.....	433
Garbage signs put up.....	1,225
Old toilets filled or moved.....	105
Buildings closed .....	19
Buildings condemned .....	13
Rats trapped .....	970
Laundry samples .....	36
Groceries, delicatessens, etc., inspected.....	1,763
Restaurants inspected .....	1,270

**DAIRY AND MILK SUBDIVISION**

**DAIRY INSPECTION**

Number of dairy herds tested for tuberculosis.....	264
Number of dairy animals tested for tuberculosis.....	4,355
Number of dairy animals reacting .....	473
Number of dairy animals suspicious.....	42
Number of dairy animals slaughtered.....	483
Number of carcasses passed for food.....	405
Number of dairy carcasses condemned.....	78
Number of inspections and scoring of dairies.....	1,938
Number of inspections of creameries and milk depots.....	123

**CHEMICAL ANALYSIS OF MILK**

Number of samples of milk and cream analyzed.....	4,861
Per cent of samples below standard.....	8%
Average butter fat in milk.....	4.15
Average solids—not fat—in milk.....	9.10
Average per cent of butter fat in cream.....	23.0%

**BACTERIOLOGICAL ANALYSIS OF MILK**

<b>(Certified Milk)</b>		<b>(Pasteurized Milk)</b>	
Under 10,000 .....	90.00%	Under 10,000 .....	68.24%
Under 20,000 .....	100.00%	Under 20,000 .....	73.95%
<b>(Raw Dairy Milk Delivered by Producers)</b>		Under 50,000 .....	86.91%
Under 10,000 .....	57.80%	Under 100,000 .....	93.28%
Under 20,000 .....	75.55%	Under 200,000 .....	97.18%
Under 50,000 .....	91.71%	<b>(Average of All Samples)</b>	
Under 100,000 .....	94.60%	Under 10,000 .....	65.07%
Under 200,000 .....	98.00%	Under 20,000 .....	79.11%
<b>(Raw Dairy Milk Delivered from Creameries and Milk Depots)</b>		Under 50,000 .....	92.60%
Under 10,000 .....	44.26%	Under 100,000 .....	95.46%
Under 20,000 .....	66.96%	Under 200,000 .....	98.67%
Under 50,000 .....	85.10%		
Under 100,000 .....	93.96%		
Under 200,000 .....	99.53%		

CONTAGIOUS DISEASES	Dec. 1914	Jan., 1915	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Total
	Diphtheria.....	46	22	20	36	27	21	19	14	12	15	27	41
Typhoid fever.....	1	3	3	5	2	5	4	0	1	13	2	9	48
Small pox.....	6	3	15	30	6	20	30	21	6	5	7	3	152
Scarlet fever.....	7	11	13	22	11	17	10	4	1	7	36	33	172
Measles.....	6	8	2	17	25	42	57	24	8	2	3	3	197
Whooping cough.....	1	2	1	3	11	5	5	6	2	6	6	3	51
Chickenpox.....	27	57	83	153	59	29	28	10	4	5	22	31	508
Mumps.....	1	12	2	23	10	3	0	0	0	1	1	1	54
Poliomyelitis.....	0	0	0	0	0	0	0	0	0	0	0	1	1
Erysipelas.....	5	5	4	3	1	2	1	3	0	0	3	1	28
Tuberculosis.....	18	17	21	22	29	23	19	30	20	20	32	27	278
Meningitis.....	0	0	1	0	0	0	0	0	0	0	1	1	3
Leprosy.....	0	0	0	0	0	0	0	0	0	1	0	0	1
Enteric fever.....	0	0	0	0	1	0	0	1	0	0	0	0	2
<b>Totals.....</b>	<b>118</b>	<b>140</b>	<b>165</b>	<b>314</b>	<b>182</b>	<b>167</b>	<b>173</b>	<b>113</b>	<b>54</b>	<b>75</b>	<b>140</b>	<b>154</b>	<b>1795</b>
<b>DEATHS</b>													
Males.....	128	121	109	98	112	116	117	89	110	111	119	103	1333
Females.....	98	100	84	82	71	96	71	73	67	72	65	80	959
<b>Totals.....</b>	<b>226</b>	<b>221</b>	<b>193</b>	<b>180</b>	<b>183</b>	<b>212</b>	<b>188</b>	<b>162</b>	<b>177</b>	<b>183</b>	<b>184</b>	<b>183</b>	<b>2292</b>
Oregon.....	49	56	44	30	30	51	47	37	46	39	38	39	506
United States.....	98	99	86	92	75	89	73	72	75	87	72	84	1002
Foreign.....	72	61	53	55	66	68	60	48	45	53	64	54	699
Unknown.....	7	5	10	3	12	4	8	5	11	4	10	6	85
<b>Totals.....</b>	<b>226</b>	<b>221</b>	<b>193</b>	<b>180</b>	<b>183</b>	<b>212</b>	<b>188</b>	<b>162</b>	<b>177</b>	<b>183</b>	<b>184</b>	<b>183</b>	<b>2292</b>
White.....	216	213	188	175	178	208	180	155	171	176	175	177	2212
Yellow.....	7	4	3	4	1	3	4	5	3	2	5	3	44
Black.....	2	1	1	1	3	1	3	1	2	0	3	2	20
Brown.....	1	3	1	0	1	0	1	1	1	5	1	1	16
<b>Totals.....</b>	<b>226</b>	<b>221</b>	<b>193</b>	<b>180</b>	<b>183</b>	<b>212</b>	<b>188</b>	<b>162</b>	<b>177</b>	<b>183</b>	<b>184</b>	<b>183</b>	<b>2292</b>
Still-births.....	14	11	13	15	16	17	11	13	12	15	12	11	160



GENERAL DISEASES	Dec., 1914	Jan., 1915	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Total
Typhoid fever	2	1	3	1	1	1				1	2	2	14
Malaria								1	1	1	1		4
Smallpox													1
Measles				1	1	1				1			4
Scarlet fever					1	1							1
Whooping cough					1								5
Diphtheria					1			2	1		1		5
Influenza	6	2		3	1	2			3	2	2	2	23
Dysentery	2	1	2	2		1	2				1		11
Erysipelas	1	1				1				2			4
Other epidemic diseases			1										2
Purulent infection and septi- cemia					2	1		1					4
Pellagra						1							1
Tuberculosis of lungs													1
Acute military tuberculosis	16	17	14	10	11	21	17	14	8	22	12	19	181
Tuberculous meningitis	1	1	1	1	1	1	1	1	1	1	1	1	5
Abdominal tuberculosis	1	3	1	1	2	2	1	2	1	3	1		18
Pott's disease	1	1	3	2	2		1		1	3			14
Tuberculosis of other organs				2	1		1		2		1	1	7
Disseminated tuberculosis					1	1			1				3
Syphilis	1							1			1	2	5
Cancer of buccal cavity	2	1	1	3	1					1			10
Cancer of stomach, liver	6	6	9	6	5	9	7	3	8	7	4	6	76
Cancer of peritoneum, intest- ines, rectum	7	8	3	4	4	3	1	2	3	4	4	4	47
Cancer of female genital organs	2		3	4	1	9	5	5	3		1	4	37
Cancer of breast	3	1	3	2	1	1	1		2		1	1	16
Cancer of skin				1	1					2	1		5
Cancer of other organs	3	5	2	3	3	5	5	4	1	1	1	3	36
Other tumors				1						1			2
Acute articular rheumatism		1	1	1		1	1	2	1				9
Chronic rheumatism and gout										1			1
Diabetes	3	5	2	2	5	3	5	7	3	8	6	3	52
Exophthalmic goiter	1		1		2			1					6
Addison's disease											1	1	2
Leukemia											1	1	2
Anemia chlorosis	2	3	2		1	1		2	1		1	1	7
Other general diseases		1		1		1	1	1	3	2			15
Alcoholism		2					1	2		1	2		6
Other chronic poisoning					1			1	2				7
	60	60	51	51	48	65	50	50	44	60	52	54	645
<b>NERVOUS SYSTEM</b>													
Encephalitis			1	1						2		1	5
Meningitis:													
Simple	3	3	1	1	1	1		1	2				13
Cerebrospinal	1	1	1			1	2		1		1	2	9
Locomotor ataxia	1	1				1	1		1				4
Other diseases of spinal cord	1	2	1	1	1				1	1		2	10
Cerebral hemorrhage	9	16	12	5	13	18	13	10	14	9	19	14	152
Softening of brain										2	1		3
Paralysis without specified cause	2	1	1	1	1	3	2	1		4	2	3	21
General paralysis of insane	1		1			1	1		1				6
Other forms of mental alienat'n		1		1			1	1			1		5
Epilepsy	1	1	1						1		1		6
Convulsions of infants				2		1			1		1		6
Neuralgia and neritis													1
Other diseases of nerv. system	1	1	1		1		2	1	1				9
Diseases of ears						2		1					3
	19	27	20	10	18	28	23	15	22	19	25	27	253

CIRCULATORY SYSTEM	Dec., 1914	Jan., 1915	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Total
Pericarditis			1	1			1		1				4
Acute endocarditis	1			2					1				4
Organic diseases of the heart	27	25	19	20	18	21	21	19	12	16	18	14	227
Angina pectoris	4	3	4	1	2	3	3	1	1	2	1	1	30
Diseases of arteries	2	1	3	2	6	3	3		4	4	1		36
Embolism and thrombosis	4	3	2	1	1	2	2	3					21
Diseases of veins					1	1							3
Diseases of lymphatic system								1	1				2
Hemorrhage			2					1					3
	38	29	31	27	30	33	31	25	20	23	22	26	335
<b>RESPIRATORY SYSTEM</b>													
Diseases of larynx	1												1
Diseases of thyroid body		1									1	1	2
Acute bronchitis	1	2			1		2			1		1	7
Chronic bronchitis		1					2						3
Broncho pneumonia	10	9	11	2	4	1	2	4	3	2		7	53
Lobar pneumonia	18	16	13	14	6	6	11	4	1	7	5	6	107
Pleurisy						2							3
Pulmonary congestion	1	1	1	1	5			2					11
Gangrene of lung			1										1
Other diseases of respiratory system	1	1				1	4				2		9
	32	31	26	18	16	10	19	10	5	10	8	15	200
<b>DIGESTIVE SYSTEM</b>													
Diseases of mouth and annexa	1		1										2
Diseases of pharynx				1	1					1			3
Ulcer of stomach	2	6	2	1	2	2	1		1	3	1	1	22
Other diseases of stomach	2			1	1	2					1	3	12
Diarrhea and enteritis (under 2 years)	3	2	2		1	1	1	1	1	4	2		18
Diarrhea and enteritis (over 2 years)		1	1	1	2		1		2		7	2	17
Appendicitis	4		2	6	2	3	3		5	2	1		28
Hernia, intestinal obstruction	2	4	4	4	2	1		3	1	3	2		26
Other diseases of intestines						2		2	1	1	1	1	8
Cirrhosis of liver	5	2		1	1	1	1	2	1		2		16
Biliary calculi					1	1	1		2		1		6
Other diseases of liver			2	1	1	1	2	1	2	2			12
Simple peritonitis	1	1		2	1	1						3	9
Other diseases of digestive sys- tem				1				1		1			3
	20	16	14	19	15	14	10	10	18	17	18	11	182



GENITO-URINARY SYSTEM	Dec., 1914	Jan., 1915	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Total
Acute nephritis.....	12	15	12	15	11	11	1	1	1	1	1	1	5
Bright's disease.....	2	1			3		5	12	20	7	17	9	146
Other diseases of kidneys.....									3	3			12
Calculi urinary passages.....							1		1		1		3
Diseases of bladder.....	1	1	2								1		5
Diseases of prostate.....	1	1	1	2	1	1			3				8
Uterine tumor.....									1				1
Other diseases of uterus.....					2			1					3
Cysts and other tumors.....						1						1	2
Salpingitis.....			1	3			1	1				1	6
	15	18	14	22	16	14	8	14	27	11	19	13	191
<b>THE PUERPERAL STATEM</b>													
Accidents of pregnancy.....					1		1	1		2	1		6
Puerperal hemorrhage.....					1	1							2
Other accidents of labor.....					1	1			1	2	1		6
Puerperal septicemia.....	1		1	1	2				2	1			8
Puerperal albuminuria.....						2	1						4
Puerperal phlegmasia.....	1			1							1		3
	2		1	3	5	4	2	1	3	5	3		29
<b>DISEASES OF SKIN AND CELLULAR TISSUE</b>													
Gangrene.....	2	1		2	2	1	1			1	1		11
Furuncle.....										2			2
Acute abscess.....					1								1
	2	1		2	3	1	1			3	1		14
<b>DISEASES OF BONES AND ORGANS OF LOCOMOTION</b>													
Diseases of bones.....			1				2	2					5
Diseases of joints.....			1										1
Other diseases of organs of locomotion.....									1	1			2
			2				2	2	1	1			8
<b>MALFORMATIONS</b>													
Congenital malformations:													
1—Hydrocephalus.....			1	1							1		3
2—Congenital malformations of heart.....	2	1			1	1	1	3		1		2	12
3—Other congenital malformations.....					1								1
	2	1	1	1	2	1	1	3		1	1	2	16

EARLY INFANCY	Dec., 1914	Jan., 1915	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Total
Congenital debility:													
1—Premature.....	1	6	6	4	2	8	8	4	1	4	6	5	55
2—Congenital debility.....	5	2	1	2	1	4	2	4	5	3	2	2	35
Other causes peculiar to early infancy:													
1—Injuries at birth.....			2		1		1	1	2	1	3		11
2—Other causes peculiar to early infancy.....	2	1		3	2	4	2		1	1	1	4	21
Lack of care.....													
	8	9	9	9	6	16	14	9	9	9	13	11	122
<b>OLD AGE</b>													
Senility.....	10	8	8	6	8	3	8	6	3	5	3	6	74
	10	8	8	6	8	3	8	6	3	5	3	6	74
<b>ILL-DEFINED DISEASES</b>													
Ill-defined organic diseases.....	1												1
	1												1
<b>EXTERNAL CAUSES</b>													
Suicide by poison.....	3	2	2	3	4	1	2	1	2			2	22
Suicide by asphyxia.....			1			1			1		1	1	5
Suicide by hanging.....				2					2	1	2		7
Suicide by drowning.....			1		1	1							3
Suicide by firearms.....	2				1	2	3	1	1	2	3	3	18
Suicide by cutting.....				1		2							3
Suicide by jumping.....	1		1		1								3
Poisoning by food.....												1	1
Other acute poisoning.....		1									1		2
Burns.....	1	1			1	2		2	1	2			10
Absorption of deleterious gases.....	1	2								1			4
Accidental drowning.....	1	1	1	1	5		5	5	9	2	1	1	31
Accidental firearms.....	2				1								4
Accidental fall.....	2	8	4	2	1	1	2	4	5	6	3	3	41
Accident by machines.....			1	1	1	3			1				7
Accidental other crushing.....	3	2					3	2			1		13
Accidental, railroad.....			2			1	1	1		1	1		7
Accidental, street car.....				1						1		1	3
Accidental, automobile.....	2					7	1	1	1		3	3	18
Accidental, motorcycle.....										2			2
Electricity.....							1						1
Homicide by firearms.....	1	2								1	1		5
Homicide by other means.....			1	1			1					1	4
Other external violence.....							2				1		3
	16	21	16	12	16	21	21	17	23	19	18	17	217



## MUNICIPAL COURT FOR YEAR 1915

Report to the Mayor of the City of Portland, Oregon, from the Department of Public Safety, Bureau of the Municipal Court, for the fiscal year ending November 30, 1915:

## ACTIONS

Number of complaints filed..... 9,666  
 Number of warrants issued..... 9,662  
 Number of cases tried..... 15,048

## MAINTENANCE

	Total Appropriation.	Total Incumbrance.	Total Balance.
Personal service .....	\$7,608.00	\$6,696.50	\$911.50
Supplies .....	185.00	178.15	6.85
Equipment .....	140.00	125.58	14.42
Janitorial service .....	24.00	24.00	.....
Oregon Humane Society....	175.00	175.00	.....
<b>Totals .....</b>	<b>\$8,132.00</b>	<b>\$7,199.23</b>	<b>\$932.77</b>

## RECEIPTS

Fines collected .....\$26,101.70  
 Forfeitures ..... 1,739.00  
 Costs ..... 244.50  
**Total .....** **\$28,085.20**

Respectfully submitted,  
 N. D. BEUTGEN,  
 Clerk of the Municipal Court.

## HARBOR PATROL FOR YEAR 1915

Portland, Oregon, January 1, 1916.

Hon. H. R. Albee, Mayor, Portland, Oregon.

Dear Sir: I have the honor to submit herewith my report for the year 1915.

All ordinances governing the harbor of the City of Portland have been enforced whenever and wherever practicable. Incoming vessels have been boarded, their masters informed as to harbor regulations and a watch kept over same to see that these regulations were enforced. Particular attention has been given to the ordinance governing the placing of safety nets beneath the gangways of all ships, and I am pleased to state that we have not had one accident during the past year. Prior to the strict enforcement of this ordinance, from five to six persons met their death by falling from poorly equipped gangways.

Seven calls were received for the use of the lung motor, but owing to the length of time the patients were in the water it was impossible for any chance of resuscitation.

Thirty-nine people were drowned and their bodies brought to the patrol boat station, where they were turned over to the Coroner.

Forty-three snags, all of which were a menace to navigation, were removed from the river.

The patrol boat responded to 38 fire alarms on the river front.

Particular attention has been given to the keeping clear of the channel and not allowing refuse to be deposited on the banks of the river where high water would cause the same to be carried into the channel, thereby causing unnecessary shoaling.

Incoming and outgoing passenger steamers were met at the docks by officers of this Bureau, and the traveling public given assistance and information whenever required. Supervision was kept over the drivers of hotel runners, express wagons and taxicabs when meeting the incoming vessels.

The patrol boat made 755 trips and traveled 4,826 miles, and 127 items of assistance were rendered during the year. A daily inspection of the harbor has been maintained and a patrol of the same (both by night and day) by officers of this Bureau has been made. On the 13th day of July, 1915, Albert Toothill, who was intoxicated, was pulled from the river, at the foot of Alder Street, by Harbor Patrolman Tilton and Engineer Jaeckel of the patrol boat. On the 14th day of August, 1915, two small boys, who were thrown in the river by the capsizing of their boat, were picked up by the patrol boat.

Unclaimed articles recovered from the river, after being advertised in the daily newspapers, were sold at public auction and the money turned over to the City Treasurer. Cargo and other material lost overboard from ships were recovered by the City Grappler and returned to the owners. The sum of \$131.75 has been taken in by this Bureau and turned over to the City Treasurer. The commander of the British Prison Ship "Success" sent \$20.00 to this office, which amount also has been turned over to the City Treasurer. This Bureau has furnished 1,105,573 gallons of Bull Run water to vessels making this port and the money collected for same has been turned over to the Water Bureau.



## DEPARTMENT OF PUBLIC SAFETY

Strict watch has been kept to prohibit the storing, on the docks, of dynamite, gunpowder and other explosives.

## FIRE BOAT CALLS RESPONDED TO BY PATROL BOAT

Date.	Time.	Place.
12- 1-14...	1:30 A. M. to 1:45 A. M.	Taylor Street
12- 1-14...	6:00 A. M. to 6:56 A. M.	Portland Ship Yards
12- 7-14...	9:00 P. M. to 9:45 P. M.	Launch Eola, Ft. Belmont Street
12-13-14...	8:10 P. M. to 8:20 P. M.	Alder Street
12-19-14...	7:15 A. M. to 7:45 A. M.	Mersey Dock
12-20-14...	9:00 P. M. to 11:15 P. M.	Jones Mill
1- 9-15...	8:30 P. M. to 8:45 P. M.	Portland Lumber Co.
1-17-15...	7:45 P. M. to 7:50 P. M.	Couch Street
2- 8-15...	4:05 P. M. to 4:30 P. M.	Albina Ferry Mason
2-23-15...	11:45 P. M. to 12:05 P. M.	Alder Street
3- 8-15...	3:30 A. M. to 3:45 A. M.	Foot of Salmon Street
3- 8-15...	7:00 P. M. to 7:35 P. M.	Foot of Wilson Street
3- 8-15...	10:30 P. M. to 1:30 P. M.	Jones Cash Store, Ft. Oak Street
3-12-15...	7:20 P. M. to 7:45 P. M.	Foot of Ankeny Street
4-17-15...	7:15 A. M. to 8:00 A. M.	Foot of Couch Street
4-25-15...	4:50 A. M. to 6:00 A. M.	Albers Bros. Milling Co.
4-26-15...	4:00 P. M. to 4:25 P. M.	Foot of Northrup Street
4-27-15...	3:40 P. M. to 4:10 P. M.	West approach Hawthorne Bridge
5-21-15...	8:20 A. M. to 8:40 A. M.	Foot of Salmon Street
5-22-15...	10:20 A. M. to 10:40 A. M.	Foot of Washington Street
5-24-15...	10:40 A. M. to 10:55 A. M.	Foot of Taylor Street
5-25-15...	2:30 A. M. to 4:00 A. M.	Enterprise Planing Mill, Foot of Yamhill Street
6- 9-15...	1:00 A. M. to 4:00 A. M.	Standard Box Co.
7- 4-15...	12:30 A. M. to 12:45 A. M.	Foot of Pine Street
7-11-15...	7:30 P. M. to 7:55 P. M.	Foot of Main Street
7-19-15...	7:50 P. M. to 8:45 P. M.	N. P. Mill
7-20-15...	1:45 A. M. to 1:55 A. M.	Foot of Hawthorne Avenue
8-13-15...	12:30 P. M. to 1:50 P. M.	Fish Ville
9-13-15...	1:05 P. M. to 1:25 P. M.	Portland Ship Yards
9-11-15...	5:30 P. M. to 5:45 P. M.	Foot of Couch Street
9-11-15...	7:20 P. M. to 7:45 P. M.	Foot of Taylor Street
9-25-15...	7:50 P. M. to 9:20 P. M.	Foot of Ellsworth Street
10- 1-15...	2:30 A. M. to 3:30 A. M.	Willamette Moorings
10-11-15...	4:45 A. M. to 5:25 A. M.	Foot of Spokane Avenue
10-11-15...	2:25 P. M. to 4:45 P. M.	O. Y. C.
11- 2-15...	5:10 A. M. to 5:30 A. M.	East Morrison Street
11-11-15...	7:00 P. M. to 7:20 P. M.	Foot of Alder Street
11-12-15...	11:55 P. M. to 12:45 A. M.	P. M. B. C.

## LUNG MOTOR CALLS

Date.	Plate.	Used or Not.	Subjects.
12- 5-14 ...	O. C. Dock	No	Boys buried in sand
6-14-15 ...	Jennings Lodge	No	Will Schaeffer
7-19-15 ...	Ross Island	No	Ray Nevelle
8- 6-15 ...	Golf Links	Yes	John Haas
8- 8-15 ...	Guttons Slough	Yes	Glenn Pattillo
8-30-15 ...	Quarters	Yes	Alvin Hawkins
10-18-15 ...	Western Cooperage Co.	No	Mr. Dunsdalle

## SNAGS REMOVED

Date.		
1-21-15.....	O-W. R. & N. Dock	To Quarters
1-26-15.....	O-W. R. & N. Dock	N. P. Mill
2- 9-15.....	Ferry Mason	Victoria Dolphins
2-12-15.....	Stark Street	N. P. Mill
2-16-15.....	I. P. Mill	N. P. Mill
2-25-15.....	Victoria Dolphins	N. P. Mill
2-25-15.....	Columbia No. 1	N. P. Mill
2-27-15.....	O-W. R. & N. Dock	Steamer Pronto
3-30-15.....	Burnside Bridge	Quarters
4- 9-15.....	Ferry Mason	N. P. Mill
4-20-15.....	Foot of Hamilton Avenue	North End of Ross Island
4-20-15.....	Jones Mill	North End of Ross Island
4-21-15.....	Jones Mill	North End of Ross Island
4-22-15.....	Ferry Mason	N. P. Mill
4-23-15.....	Cruiser Boston	Victoria Dolphins
5- 7-15.....	Municipal No. 1	N. P. Mill
5- 8-15.....	Broadway Bridge	Albers Dock
5- 7-15.....	Stark Street	Victoria Dolphins
5-18-15.....	Portland Flour Mills	N. P. Mill
7-15-15.....	Rowing Club	P. of P. Boat House
7-19-15.....	Oak Street	N. P. Mill
7-19-15.....	Swan Island	Willbridge Dock
7-19-15.....	Swan Island	Willbridge Dock
7-23-15.....	Oak Street	N. P. Mill
7-24-15.....	S. P. & S. Bridge	P. of P. Dry Dock
7-28-15.....	Hardtack Island	P. of P. Boat House
8- 3-15.....	Hardtack Island	N. P. Mill
8- 3-15.....	Swan Island	P. of P. Dry Dock
8- 3-15.....	Swan Island	N. P. Mill
8- 4-15.....	Portland Ship Yards	P. of P. Boat House
8- 4-15.....	Hardtack Island	P. of P. Boat House
8- 4-15.....	Stark Street	P. of P. Boat House
8- 6-15.....	Swan Island	P. of P. Dry Dock
8-10-15.....	Willamette Moorings	P. of P. Boat House
8-22-15.....	Standard Oil Dock	P. of P. Dry Dock
9- 1-15.....	Swan Island	P. of P. Dry Dock
9-10-15.....	Swan Island	P. of P. Dry Dock
10- 8-15.....	P. M. B. C.	P. of P. Boat House
10-16-15.....	Albina Dock	Steamer McCracken
10-21-15.....	Government Moorings	P. of P. Dry Dock
11- 8-15.....	Portland Flour Mills	P. of P. Launch Marie
11-15-15.....	Powder Dock	P. of P. Dry Dock
11-26-15.....	Swan Island	N. P. Mill

Total ..... 43



## DROWNINGS AND BODIES

Date.	Name of Person.	Drowning or Recovery.	Date Recovery.	By.
2-17-15	Emma Buhre	Foot of Hamilton Avenue	2-18-15	Brady
3-2-15	John Donavan	Montgomery No. 2	3-4-15	Boat
4-8-15	Unidentified man	I. P. Mill	Floater	Boat
4-10-15	Bertrand Reed	Mocks Bottom	4-11-15	Brady
4-15-15	Wm. Ernst	Fort of Portland Dry Dock	Floater	Boat
4-18-15	Ole Thompson	Portland Lumber Co.	Floater	Boat
4-21-15	Unidentified man	McKenzie Boat House	4-26-15	Brady
4-25-15	Chas. Eaupre	Foot of Hamilton Avenue	4-30-15	Brady
4-28-15	Mr. Erickson	Burnside Bridge	5-19-15	Brady
5-19-15	Eddie McNew	Mt. Tabor Reservoir	6-1-15	Brady
6-1-15	Mrs. Martin	Back of Swan Island	6-2-15	Brady
6-1-15	Doris Shannon	Back of Swan Island	6-2-15	Brady
6-1-15	Amos Weise	Back of Swan Island	6-2-15	Brady
6-1-15	Clyde Davidson	Back of Swan Island	6-2-15	Brady
6-14-15	Will Schaeffer	Jennings Lodge	6-2-15	Brady
6-15-15	Miss Dickey	Favorite Boat House	Floater	Boat
6-17-15	Arthur Finn	Off from Linnton	6-23-15	Coroner
6-24-15	James Stevenson	Oaks	Floater	Boat
6-27-15	Two-year-old boy	Hayden Island	Floater	Boat
6-28-15	Unidentified man	Foot of Washington Street	Floater	Boat
6-29-15	Unidentified man	Fire Boat Williams	7-2-15	Brady
7-2-15	Frank Maley	S. S. Beaver, Crown Mills	7-11-15	Boat
7-5-15	Mr. Kuhn	Oregon Slough	7-6-15	Coroner
7-5-15	Unidentified man	Rock Island	7-19-15	Brady
7-19-15	Ray Nevelle	Above P. M. B. C.	7-19-15	Brady
7-19-15	Albert Foster	Vancouver Ferry	7-21-15	Others
7-20-15	Godfried Olson	Bridgeton	7-21-15	Others
8-6-15	John Haas	Waverley Club	8-6-15	Brady
8-8-15	Glenn Pattello	Cuttons Slough	8-8-15	Others
8-9-15	Peter Georgesen	Montgomery No. 1	Floater	Boat
8-9-15	Chas. Ritter	Foot of Salmon Street	8-10-15	Brady
8-14-15	Unidentified man	Foot of Curry Street	8-15-15	Brady
8-20-15	Unidentified man	University Shingle Mill	Boat	Boat
8-20-15	Mrs. Rebbine	Below Flour Mills	Floater	Boat
8-20-15	Harry Dixon	E. & W. Mill	8-20-15	Clarence
8-20-15	Walter Nelson	O-W. R. & N. Dock	8-21-15	Brady
8-30-15	Alvin Hawkins	O-W. R. & N. Dock	8-30-15	Brady
9-7-15	Price	Globe Mills	8-30-15	Floater
11-12-15	Ed Swanson	West End Broadway Bridge	9-11-15	Floater
				Boat

## ASSISTANCE RENDERED

Date.	To Whom Rendered.	Nature of Assistance
6-15-15	Mr. Generrah	Towed scow from Boston to moorings
6-17-15	Willamette Iron Works	Ordered Strs. to slow down
6-20-15	Miss Grace Henderson	Camera Recovered
6-30-15	Von de Werth	Boys driven away
6-30-15	Detective Department	Put Dect. Craddock ab'rd S.S. Colon
6-30-15	Mr. Beech	Investigated scow at Powder Dock
7-7-15	Multnomah Box Co.	Ordered dredge out of channel
7-13-15	Albert Toothill	Hauled from River at Ft. of Alder St.
7-13-15	Portland Flour Mills	Put out fire under their dock
7-17-15	L. V. Woodard	Boys not paying for use of Baths
7-18-15	General Public	Log raft moved from channel
7-22-15	General Public	Ord. small launch to get proper lights
7-24-15	N. B. Dock	Had stolen float returned
7-24-15	Captain Groves	Note taken to Str. Pronto
7-25-15	U. S. S. Albany	Helped move
7-25-15	Police Department	Officers put on Swan Island
7-26-15	Police Department	Officers put on Swan Island
8-2-15	Woman	Found two boys in launch Minerva— had been out all night
8-4-15	Launch Beliner	Towed to P. M. B. C.
8-5-15	Multnomah Box Co.	Ordered dredge moved out of channel
8-6-15	L. V. Woodard	Recovered bathing suits
8-9-15	U. S. S. Albany	Helped moor—brought sick man to quarters
8-11-15	Fire Boat Campbell	Log raft moved from front of berth
8-12-15	Launch Annie	Towed to quarters—engine trouble
8-12-15	Mr. Moore	Investigated robbery at his houseboat
8-14-15	Multnomah Club	Attended Marathon swim
8-14-15	Merrill's Boat House	Boat turned over with two boys at Portland Lumber Co.
8-14-15	Two swimmers	Hauled from water exhausted
8-15-15	U. S. S. Albany	Turned her around
8-16-15	Dock Commission	Towed skiff from Dock No. 2 to No. 3
8-15-15	Detective Department	Goods recovered at H. Hansen's
8-16-15	Detective Department	Goods recovered at H. Hansen's
8-19-15	Detective Department	Goods recovered at H. Hansen's
8-20-15	Irving Dock	Ordered fire put out at S end of dock
8-24-15	Launch	Towed in
8-24-15	Launch La Frida	Stuck in mud on Ross Island—towed to P. M. B. C.
8-26-15	S. S. Highbary	Turned around
8-26-15	Mr. Moore	Ordered swimmers off his boathouse
8-27-15	City of Portland	Inspection of swimming sites
8-28-15	Mr. McClure	Canoe from Lanberson & Reids on search warrant
9-4-15	Associated Oil Co.	Had P. of P. move barge from dock
9-7-15	Detective Department	Went to Willm. Moorings for woman
9-11-15	Alixis Contract Co.	Investigated line from N. & K. barge to their dolphin
9-14-15	Drunk	Asleep on pile driver—sent to station
9-14-15	Chief Clark	Investigated piling driven in beach near hog ranch
9-15-15	to	Went to St. Johns ferry—took offi- cers across river
9-22-15	Police Department	Inspection of harbor
9-15-15	Lieut. Smith, U. S. N.	Towed canoe to Lanberson & Reids
9-19-15	Mr. Bain	Towed to quarters
9-19-15	Launch Minnie	Inspection of harbor
9-21-15	Mr. Hegardt	Arrested drunken sailor he could not handle
9-22-15	Capt. of Fr. Bk. Dupliex	Used our Babcock in houseboat fire
9-25-15	Fire Department	Towed float up from below Fl. Mills
10-2-15	Dock Commission	Towed to quarters
10-4-15	Disabled Launch	Investigated boathouse fire
10-7-15	Fire Mshl & Dist. Atty.	Picked up their float—towed to them
10-7-15	Morrison Bridge	Towed horse from Wash. St. to Oak
10-8-15	Str. La Center	



## DEPARTMENT OF PUBLIC SAFETY

## ASSISTANCE RENDERED—Continued

Date.	To Whom Rendered.	Nature of Assistance
10-11-15..	Dr. Ross	Towed burning houseboat to fireboat
10-14-15..	Fire Marshal	Investigated houseboat fire.
10-17-15..	Dep. Sheriff Col. County	Went to Willamette Slough — looked for stolen launch
10-26-15..	S. S. Tampeco	Took soundings off Flour Mills
10-26-15..	Mr. Sherrill of Blue Taxi Co.	Took him to Str. Klamath to collect his fare
10-27-15..	Man	Helped tow 3 houseboats
11- 2-15..	Fr. Ship Andre Theodore	Helped move ballast logs
11- 5-15..	Jap. S.S. Hokoku Maru	Shoved away from dock
11- 9-15..	Dock Commission	Took Mr. Neuman on insp. of harbor
11-13-15..	Fire Marshal	Investigated boathouse fire
11-13-15..	Mrs. L. G. Baldwin	Taken to U. S. S. Boston
11-15-15..	Fr. Ship Andre Theodore	Helped move in channel and get out anchor
11-15-15..	Detective Department	Dect. taken to U. S. E. Dr. Chinook
11-17-15..	Mrs. Merrill	Looked for her son Dewey
11-18-15..	Standard Boathouse	Helped get float back and tied up
11-20-15..	Capt. J. A. Roberts	Patrolled lower harbor for ballast logs
11-21-15..	Cash Wier	Barge Squaw caught adrift—tied up
11-24-15..	Chf. Stew'rd SS Yucatan	Third cook arrested
11-26-15..	W. Gunderson	F. Klender ordered to let him have his logs and get them in river
11-26-15..	Detective Department	Taken on inspection of upper harbor
11-27-15..	City Eng. Bureau	Photographer taken to powder dock

## SNAGS REMOVED

11-15-15—Powder Dock to Port of Portland Drydock.  
11-26-15—Swan Island to N. P. Mill.

## FIRE BOAT CALLS

11-17-15—Foot of Main Street, 6:05 P. M. to 6:15 P. M.

## BODIES

11-19-15—John Linnd, found in trunk at foot of Flanders Street.

## MISCELLANEOUS

11-23-15—More lines ordered made fast to log rafts, scows and houseboats in upper harbor.  
11-23-15—Had U. S. E. Str. Matholma make one of the old drydock wings fast at S. P. & S. Bridge, as it had broken loose.

## ARTICLES RECOVERED

11-15-15—H. Oleen's Launch found under O. & W. Dock.

## ARTICLES RECOVERED

Date	Found By	Articles Found
12-18-15....	Launch Olympic	Launch Doc Yak
4 -1 -15....	Floating past quarters	Rowboat
4 -11-15....	Harry Ollinger	Rowboat
5 -3 -15....	Patrol Boat	Rowboat Swallow
5 -8 -15....	Patrol Boat	Rowboat stolen from C. Gruely
6 -29-15....	Patrol Boat	Rowboat stolen from Geo. Petterson
7 -10-15....	Patrol Boat	Canoe at Ankeny Street
7 -14-15....	Patrol Boat	Canoe F 4 under Municipal No. 1
7 -28-15....	Patrol Boat	Canoe
8 -1 -15....	Patrol Boat	Canoe of Levi Moyer
8 -4 -15....	Patrol Boat	Merrill's Boat No. 28
8 -9 -15....	Patrol Boat	Lifeboat off Wallula
8 -19-15....	Patrol Boat	Launch Mariuch
8 -23-15....	Officer Hansen	Rowboat B. Baldwin
8 -26-15....	Frank Racy	Launch recovered
9 -6 -15....	Patrol Boat	Rowboat
9 -17-15....	Patrol Boat	Rowboat
9 -17-15....	Patrol Boat	Rowboat
9 -27-15....	Patrol Boat	Launch Jeff
10-8 -15....	Patrol Boat	Canoe
10-25-15....	Patrol Boat	Dock Fender Float
11-6 -15....	Mitchell's Boathouse	Rowboat
11-12-15....	Patrol Boat	Green houseboat

## MISCELLANEOUS

2 -12-15.. Oil coming from under E. & W. Mill  
2 -14-15.. Boys caught stealing walnuts at Ainsworth Dock  
2 -17-15.. Woman's clothes found on houseboat in South Portland  
4 -9 -15.. Trash dumping at Am. Bk. Berlin at American Canning Co.  
4 -10-15.. S. S. Geo. W. Elder pumping oil in river  
4 -13-15.. Oil coming from Brooklyn sewer  
4 -15-15.. Man sweeping trash in the river at Albers' Dock  
7 -30-15.. Looked for snag hit by Launch Constitution  
7 -31-15.. Swept channel for snag off Portland Ship Yards  
8 -11-15.. Launch Gracie; more passengers than life preservers  
8 -17-15.. Mrs. Lavey, 961 Kerby, found in dazed condition at O. Y. C.  
8 -22-15.. R. Hart brought to quarters with dislocated shoulder  
8 -24-15.. Jas. J. Green, operating launch while drunk  
8 -29-15.. Investigated brush fire below Portland Flour Mills  
8 -29-15.. No light in boat off French Bark La Piller at 9:20 P. M.  
9 -9 -15.. Alixis Cont. Co. notified about dumping dirt near water edge  
9 -19-15.. Barby Fish Co. ordered to move barge and clean up under dock  
10-4 -15.. Sand falling in river from Col. Con. Digger, ordered stopped  
10-15-15.. S. Schooner Daisy Freeman ordered to fix net under gangway  
10-19-15.. Swept channel off Swan Island for snag  
10-20-15.. Swept channel off Swan Island for snag with Pilot Smith  
11-4 -15.. S. S. Rose City dumping sweepings in river  
11-5 -15.. Chute at E. & W. Mill was spilling sawdust in river  
11-10-15.. S. S. J. A. Chancellor ordered to place net under gangway  
11-23-15.. Notified plants on river to put out extra moorings on account of expected current and gale  
11-23-15.. Found portion of wrecked pontoon of P. of P. Drydock adrift in river—assistance of Str. Matholma made same fast above P. Drydock



## DEPARTMENT OF PUBLIC SAFETY

## RUNNING TIME AND MILES PER HOUR

Date	Miles Covered by Boat	Hours Engine Was Turning Over
December, 1914....	176 miles—43 trips	48 hours, 45 minutes
January, 1915....	233 miles—47 trips	55 hours, 10 minutes
February, 1915....	253 miles—52 trips	63 hours, 40 minutes
March, 1915....	299 miles—64 trips	68 hours, 45 minutes
April, 1915....	408 miles—65 trips	74 hours, 40 minutes
May, 1915....	295 miles—63 trips	57 hours, 35 minutes
June, 1915....	473 miles—78 trips	86 hours, 25 minutes
July, 1915....	603 miles—85 trips	100 hours, 45 minutes
August, 1915....	731 miles—97 trips	120 hours, 25 minutes
September, 1915....	427 miles—56 trips	75 hours, 40 minutes
October, 1915....	436 miles—46 trips	66 hours, 45 minutes
November, 1915....	430 miles—50 trips	65 hours, 50 minutes

## OILS FOR 1915

Date	Kind	Amount	Date	Kind	Amount
12-11-14..	Distillate	50 Gallons	8 -11-15..	Gasoline	50 Gallons
12-26-14..	Distillate	150 Gallons	8 - -15..	Distillate	35 Gallons
1 -25-15..	Gasoline	60 Gallons	8 -26-15..	Distillate	50 Gallons
1 -28-15..	Gasoline	50 Gallons	8 -30-15..	Distillate	25 Gallons
1 -28-15..	Valvoline	52 Gallons	9 -4 -15..	Distillate	130 Gallons
1 -29-15..	Distillate	100 Gallons	9 -6 -15..	Distillate	145 Gallons
3 -22-15..	Gasoline	50 Gallons	9 -10-15..	Distillate	20 Gallons
4 -28-15..	Distillate	200 Gallons	9 -30-15..	Distillate	35 Gallons
6 - 3-15..	Gasoline	100 Gallons	10-9 -15..	Distillate	100 Gallons
6 -10-15..	Distillate	100 Gallons	10-13-15..	Distillate	75 Gallons
6 -22-15..	Valvoline	52 Gallons	10-14-15..	Distillate	25 Gallons
7 -3 -15..	Distillate	200 Gallons	10-14-15..	Gasoline	10 Gallons
7 -21-15..	Distillate	100 Gallons	11-11-15..	Distillate	100 Gallons
7 -28-15..	Distillate	200 Gallons	11-11-15..	Gasoline	10 Gallons
8 -3 -15..	Distillate	100 Gallons	11-12-15..	Distillate	100 Gallons
8 -5 -15..	Distillate	125 Gallons			

## TOTALS

2270 Gallons of Distillate  
 310 Gallons of Gasoline  
 52 Gallons of Valvoline Lubricating Oil  
 5 Gallons of Zeroline Lubricating Oil  
 5 Gallons of Motoreze Lubricating Oil  
 5 Gallons of Havoline Lubricating Oil

Respectfully,

J. SPEIER,  
 Harbor Master.

# ANNUAL REPORT OF THE CIVIL SERVICE BOARD

FOR THE FISCAL YEAR ENDING

NOVEMBER 30, 1915



## CIVIL SERVICE BOARD FOR YEAR 1915

Portland, Oregon, December 31, 1915.

To the Honorable Mayor and Commissioners of the City of Portland.  
Gentlemen:

### PRINCIPLES OF THE SERVICE

The true principle of civil service is the securing of competent help for the City's work and getting a dollar's return for the dollar spent by the application of tests which, when satisfactory, will secure efficient service from the appointee. Having accomplished this the appointee is secured in the service and defended against every change in administration or politics but not against personal acts which are detrimental to good service. Merit and that alone secures him a place on the eligible list and superior ability is the basis for promotion. The employe should be as anxious and willing that the system succeed as the Board, and harmony in action is the true basis for success.

The Board is an independent co-operating body whose every effort is to assist the city officials and the body politic in matters relating to city employment.

### CHARTER PROVISIONS

While the people passed one desirable amendment to the Charter last June, which now allows the employe protection as to his seniority in service, it is found that there are several changes which should be made. A method should be added which would care for the employe who has faithfully served the City for a number of years and who by reason of age has become incapacitated.

### SERVICES OF THE BOARD

The labors of the members of the Board have been arduous owing to the large amount of work which they have reviewed, but they feel that while the work has taken a great deal of their time that there has been constructive progression in the application of and the working out of civil service principles during the past year.

### RULES

In the application of rules it has been observed that times have changed conditions and that the rules which have been in effect for some time are being revised to meet progressive ideas of true civil service. With this end in view the present rules are being carefully revised so as to better meet changed conditions and also to provide, as far as possible, for future development.

### EXAMINATIONS

The Board has aimed to provide a better class of employes for the City service. Examinations have been carefully graded and prerequisites added. Oral tests have been added to every examination and have proven to be of inestimable value. Many undesirable applicants have been rejected through the application of this test who otherwise might have secured a passing grade. No effort has been spared to make the examinations as applicable as possible to the requirements, from every standpoint, of the position for which the applicant has filed. Practical tests, wherever possible, are given and



the scope of the examination is carefully considered. Experience has shown that these efforts have been rewarded by a much more desirable class of applicants and a better eligible list. As progress has been made toward a higher standardization of examinations and the opportunities of bettering a condition, however good it may seem for the present, always exists, therefore, it has not been deemed best to publish a hard and fast rule for scopes, as was formerly done. Our reports and exchanges with other civil service boards show a marked difference in methods of examination and we trust to be found in the van of progress, unhampered to adopt any efficient and progressive idea which may be presented.

#### EFFICIENCY RECORDS

In May the Board asked the Council to abolish the efficiency system installed in 1913—it being cumbersome and not constructed so as to secure results. Action we are pleased to say has been taken and the former system replaced by a simple method of merit and demerit, the burden of marking same being placed with the Civil Service Board. This method we feel will work out for the best interests of all concerned, as it will provide for an impartial disposition of complaints and provide for a record of merits—the value of which will be known to the Board and, therefore, they will be better able to use such information in the promotion examinations. And further it is expected that this system will encourage the employe to use his best efforts for efficient and faithful performance of duty.

#### HEARINGS

A number of hearings have been disposed of during the year and in cases of discharge the appointing authority's order has been upheld with one exception, in which case the punishment fixed by the head of the Bureau was considered to be very severe. The Board has taken the stand that findings of discharge can only be properly judged by the evidence presented before it, and, therefore, while strongly endeavoring to make decisions which are for the best interests of the service, it must be governed by the facts presented at the hearings for its consideration.

#### PHYSICAL EXAMINATIONS

The Board feels that the physical condition of eligibles should have more attention, as particularly in the Fire and Police Departments it is necessary to provide strong, healthy eligibles, who will not too soon become a charge on the pension funds. They have changed some restrictions on age limit in these departments and consider that it is for the best interests of the city that physical condition should be part of the scope of examinations wherever possible.

#### CLASSIFICATIONS

At the request of the Civil Service Board, the heads of departments have appointed a committee, who, with the Secretary of the Board, are preparing a revision of the classification of the places and employments in the city's service. The committee have about completed their labors and have endeavored to present a scope which will simplify the examination requirements and provide for a simpler method of promotion.

#### TEMPORARY APPOINTMENTS

The Board feels that the appointing authorities now realize the

necessity of the use rather than the abuse of this privilege in the Charter and that the percentage of temporary appointments about which any question could be raised is ample evidence that this matter is receiving the careful attention and co-operation which is desired. We hope during the present fiscal year that we will have an absolutely clean record in this respect.

#### SPECIAL EXAMINERS

The Board takes this opportunity to publicly extend their sincere thanks to the many public spirited citizens of the City of Portland, who have spared neither time nor effort in the making up, judging and marking of the various examination papers submitted to them during the year. These gentlemen have been guided in their duties by a high sense of honor, and the care and effort they have exercised has been plainly apparent.

#### SERVICE IN DEPARTMENTS

The Board feels that the efficiency of Departments has been impaired by the system which has heretofore been in effect, of allowing an employe the privilege of claiming general priority of service. There is no Charter provision to this effect. The rights imposed upon the Board in the Charter to make rules and regulations for the purpose of carrying out its Civil Service provisions clearly put it within their province to rule that an employe's right of seniority is within the department into which he takes appointment. When an employe is laid off in a department his rights are preserved by his being placed at the head of the eligible list in the class, rank and grade of his standing when laid off, and is eligible for the first vacancy in such class, rank and grade occurring in any department, but from no standpoint is it within reason that he has any claim on the position of any other employe of the same class, rank and grade in any department. This plan will work out for better efficiency as a whole and the preservation of the employe's rights in the position he holds by right of appointment under examination as provided by the Charter.

In conclusion the Board is always ready and anxious to be advised of anything for the good of the service and welcomes information whereby the general good and welfare may be improved and trusts that not only the civil service employe but also the taxpayer and interested citizen of the City will take advantage of the opportunity to present their views, all of which will have careful consideration.

Respectfully submitted,

Civil Service Board.

GEO. W. CALDWELL,  
Chairman.

H. W. MACLEAN,  
Secretary.



## NUMBER OF EMPLOYES UNDER CLASSIFIED CIVIL SERVICE

DEPARTMENT OF PUBLIC SAFETY		PUBLIC UTILITIES	
Police Bureau		Street Cleaning Bureau	
Captain .....	4	Superintendent .....	1
Lieutenant of Police .....	1	Chief Clerk .....	1
Detective .....	23	Stenographer .....	1
Sergeant of Police .....	15	Chauffeur .....	3
Patrolman .....	225	Blacksmith .....	1
Detective Sergeant .....	6	Hostler .....	10
Superintendent Women's Protective Division .....	1	Broommaker .....	2
Assistant Women's Protective Division .....	1	Repairman .....	3
Matron .....	3	District Superintendent .....	3
Stenographer .....	1	Laborer .....	203
License Inspector .....	1	Water Bureau	
Harbor Master .....	1	Superintendent .....	1
Engineer Harbor Patrol .....	3	Assistant Superintendent .....	1
City Grappier .....	1	Chief Clerk .....	1
Engineer City Jail .....	3	Clerk .....	27
Janitor .....	3	Cashier .....	1
Elevatorman .....	2	Assistant Cashier .....	1
Municipal Court Clerk .....	2	Stenographer .....	1
	296	Draftsman .....	5
		Computer .....	1
		Engineer .....	1
		Plant Engineer .....	1
		Gateman .....	10
		Pump Engineer .....	10
		Inspector .....	30
		Instrumentman .....	1
		Chainman .....	5
		Chauffeur .....	2
		Carpenter .....	3
		Laborer .....	260
			358
		Incinerator	
		General Foreman .....	1
		Assistant Foreman .....	1
		Chief Engineer .....	1
		Weighman .....	1
		Topman .....	3
		Fireman .....	3
		Dumpman .....	2
		Watchman .....	1
		Teamster .....	1
		Yardman .....	1
		Laborer .....	4
			19
		BUREAU OF FINANCE	
		Treasurer	
		Cashier .....	1
		Clerk .....	7
		Stenographer .....	3
			11
		Public Markets	
		Market Master .....	1
		Assistant Market Master .....	1
			2
		Municipal Shops	
		Shop Clerk .....	1
		Auto Mechanic .....	3
		Blacksmith .....	1
		Horseshoer .....	1
		Blacksmith Helper .....	1
			7
	424		

Garage		Bureau of Sewers	
Auto Mechanic .....	1	Chief of Bureau .....	1
Laborer .....	1	Civil Engineer .....	1
	2	Draftsman .....	3
		Computer .....	1
		Instrumentman .....	6
		Chainman .....	5
		Inspector of Streets and Sewers .....	15
		Laborer .....	25
			57
		Purchases and Stores	
Chief Clerk .....	1	Highways and Bridges	
Stenographer .....	1	Chief of Bureau .....	1
Stationery Clerk .....	1	Engineer .....	2
Material Inspector .....	1	Inspectors .....	39
Bill Clerk .....	1	Chauffeur .....	1
Messenger .....	2	Paver .....	2
	7	Traction Engineer .....	4
		Bridge Carpenter .....	6
		Laborer .....	30
			85
		CIVIL SERVICE BUREAU	
		Stenographic Clerk .....	2
		AUDITOR'S OFFICE	
		Clerks and Deputies .....	21
		Stenographer .....	5
			26
		LEGAL DEPARTMENT	
		Law Stenographers .....	4
		OFFICE COMMISSIONER PUBLIC AFFAIRS	
		Stenographer .....	1
		SEALER WEIGHTS AND MEASURES	
		Superintendent .....	1
		Deputy .....	1
			2
		FREE EMPLOYMENT BUREAU	
		Superintendent .....	1
		Clerk .....	1
			2
		CITY HALL	
		Superintendent .....	1
		Janitor .....	9
		Plant Engineer .....	1
		Telephone Operator .....	2
		Messenger .....	1
			14
		PUBLIC WORKS DEPARTMENT	
		Commissioner's Office	
Private Secretary .....	1		
Stenographer .....	2		
Clerk .....	1		
Chauffeur .....	1		
Office Boy .....	1		
	6		
		Main Office	
Chief Clerk .....	1		
Clerk .....	10		
Plan Clerk .....	1		
Desk Clerk .....	1		
Stenographer .....	3		
	16		
		Bureau of Standards	
Chemist .....	1		
Cement Tester .....	1		
Blue Printer .....	1		
Asphalt Plant Inspector .....	2		
	5		
		Bureau of Buildings	
Chief of Bureau .....	1		
Civil Engineer Building Inspection Bureau .....	1		
Plan Examiner .....	1		
Building Inspector .....	6		
Electrical Inspector .....	4		
Plumbing Inspector .....	5		
	18		
		City Engineer's Office	
Civil Engineer .....	2		
		Bureau of Surveys	
Chief of Bureau .....	1		
Civil Engineer .....	1		
Draftsman .....	9		
Computer .....	8		
Clerk .....	2		
Instrumentman .....	10		
Chainman .....	17		
	48		



CIVIL SERVICE BOARD

PARK BUREAU		COMMISSIONER OF PUBLIC UTILITIES	
Superintendent .....	1	Private Secretary .....	1
Civil Engineer .....	1	Chief Clerk .....	1
Clerk .....	2	Stenographer .....	1
Custodian Forestry Building .....	1		
Animal Keeper .....	1	COMMISSIONER OF FINANCE	3
Superintendent Playgrounds .....	1	Private Secretary .....	1
Senior Playground Director .....	7	MAYOR'S OFFICE	
Playground Director .....	28	Stenographer .....	1
Swimming Director .....	4	COMMISSIONER OF PUBLIC DOCKS	
Gardener .....	5	Clerk .....	1
Attendant Comfort Station .....	12	Wharfinger .....	2
Laborer .....	68	Watchman Docks .....	2
		Stenographer .....	2
	131		11

SUMMARY OF WORK OF CIVIL SERVICE BUREAU

Total Registrations .....	3595
Total Number Applications Filed .....	1312
Appointments in Classified Service .....	193
Discharged for Cause .....	60
Resigned .....	53
Former Employees Reinstated .....	5
Total Examinations Held—Promotion 4; Regular 31 .....	35
Total Number Persons Examined During 1915 (to Nov. 31) .....	1266
Number of Employees in the Classified Service .....	1818

LIST OF EXAMINATIONS HELD

Date	Title	Applications	Participants	Passed	Rejected
Jan. 5, 1915	Lieutenant of Police (Promotion)	6	5	5	0
Jan. 19, 1915	Lineman .....	22	8	2	6
Feb. 2, 1915	Sergeant of Police (Promotion)...	64	56	19	37
Feb. 16, 1915	Capt. of Fire Bureau (Promotion)	26	24	17	7
Jan. 26, 1915	Wharfinger .....	35	34	13	21
Mar. 2, 1915	Park Superintendent .....	8	6	2	4
Mar. 9, 1915	Typewriter—Copyist .....	6	3	2	1
Mar. 9, 1915	Stenographer (Male) .....	11	10	6	4
Mar. 16, 1915	Blacksmith .....	9	8	4	4
Mar. 16, 1915	Blacksmith Helper .....	7	7	4	3
Mar. 16, 1915	Horseshoer .....	17	4	3	1
Mar. 30, 1915	Market Master .....	22	21	4	17
Apr. 6, 1915	Playground Director .....	51	49	25	24
Apr. 27, 1915	Fire Lieutenant (Promotion) .....	58	53	26	27
May 6, 1915	Lineman .....	13	13	6	7
May 11, 1915	Swimming Director .....	13	13	8	5
May 25, 1915	Attendant .....	45	37	10	27
May 27, 1915	Assistant Engineer (Stoker) .....	38	23	6	17
June 1, 1915	Deputy Electrical Inspector .....	17	17	0	0
June 15, 1915	Patrolman .....	226	197	33	164
July 6, 1915	Material Inspector (Water Bureau)	14	11	3	8
July 22, 1915	Stenographer .....	21	16	12	4
Aug. 24, 1915	Pump and Stationary Engineer ...	41	27	9	18
Aug. 31, 1915	Laborer—Incinerator .....	49	39	18	21
Aug. 17, 1915	Bridge Carpenter .....	22	17	3	14
Sept. 14, 1915	Deputy Electrical Inspector .....	22	22	0	22
Sept. 21, 1915	Motor Bus Inspector .....	7	5	4	1
Sept. 28, 1915	Gardener .....	11	9	3	7
Sept. 28, 1915	Asphalt Plant Inspector .....	7	7	3	4
Oct. 12, 1915	Messenger .....	5	5	5	0
Oct. 15, 1915	Carpenter .....	61	36	11	25
Oct. 19, 1915	Laborer .....	814	458	326	132
Nov. 2, 1915	Assistant Engineer Water Bureau.	10	9	*	*
Nov. 30, 1915	Deputy Electrical Inspector .....	17	17	*	*
		3595	1266	591	649

\*Results not ascertained at time of closing report.



## CIVIL SERVICE BOARD

Hearing in re-appeal from order of discharge.....	15
Discharges sustained .....	13
Appeal withdrawn .....	1
Order of discharge not confirmed (6 months suspension).....	1
Leave of absence granted.....	50
Reinstatements granted .....	4
Transfer from one bureau to another granted.....	2

FINANCIAL  
EXPENDITURES 1914-1915

Personal Service .....	\$3,704.52
Office Supplies .....	277.80
Equipment .....	91.90
Contingencies .....	84.48
Fixed Charges (Advertising).....	42.66
	\$4,201.36

COST OF OPERATION

	1915	1914
Cost per registration capita.....	\$1.17	\$1.42
Cost per examination capita.....	3.32	4.08

DEPARTMENT OF PUBLIC WORKS

# ANNUAL REPORT

OF

## THE DEPARTMENT OF PUBLIC WORKS

FOR THE FISCAL YEAR ENDING

NOVEMBER 30, 1915



## DEPARTMENT OF PUBLIC WORKS

ROBERT G. DIECK  
COMMISSIONER

### MAIN OFFICE—

C. J. KRUSE, Chief Clerk

### BUREAU OF STANDARDS—

R. S. DULIN, Chief.

### BUREAU OF BUILDINGS—

H. E. PLUMMER, Chief

#### Building Division—

A. S. LOTSPEICH, Chief Inspector

#### Electrical Division—

E. F. DUNLAP, Chief Inspector

#### Plumbing Division—

WM. HEY, Chief Inspector

### CITY ENGINEER—

P. H. DATER

### Bureau of Highways and Bridges—

R. E. KREMERS

#### Pavement Construction and Maintenance Division—

J. HANNAM

C. W. WANZER } District Engineers

#### Structural Division—

R. B. WRIGHT, Chief Inspector

#### Bridge Maintenance Division—

NELS REED, Superintendent

#### Sidewalk Division—

R. F. HURLBURT, Superintendent

### Bureau of Sewers—

J. C. SHARP, Chief

#### Construction Division—

C. A. ROBINSON, Superintendent

### Bureau of Surveys and Drafting—

W. P. HARDESTY, Chief

#### Drafting and Computing Division—

O. A. KRATZ, Chief Draftsman

#### Survey Division—

I. C. ANDERSON

J. J. BROOKS

A. F. MORRIS

H. G. RICHARDSON

} District Surveyors

#### Street Extension Division—

C. F. FISHER

## DEPARTMENT OF PUBLIC WORKS

### GENERAL OBSERVATIONS

**Control of Departmental Records**—The development of a more stable departmental organization made possible a general improvement in the form and substance of reports. The value of a rigid editing of such papers is becoming evident as reference is made to matters previously treated. The filing system has been bettered in many particulars and the time now employed in retracing matters is gradually being reduced. The mass of correspondence handled through the files has been about the same as in former years, in spite of decreased activities and lessened force.

**Efficiency System**—Persistent attacks upon the efficiency system, formulated by the Bureau of Municipal Research, have caused its failure, and have produced among the employees a feeling that meritorious work will be neither recognized nor rewarded. Continued agitation in the Council and elsewhere has operated to belittle the value of this system, and to magnify minor defects which soon became evident after the establishment of the system. A device of this sort under constant attack cannot possibly be said to have had a fair trial and, as noted in the previous report, it is felt that with minor changes to eliminate avoidable and burdensome clerical work, the system was both operative and distinctly progressive. The efficiency system was designed to point out, through the medium of work reports, the meritorious or defective work of employees and, while the establishment of an inflexible system of promotions or demotions would be generally unwise and was not in the mind of the Council, the full benefits flowing from such a system may not accrue if promotions or demotions do not reasonably follow.

In the former report, it was urged that steps be taken to establish a system of pensions for employees who had out-lived their usefulness in order that there might be attracted to the service men of more than usual ability and that the force might be provided with new recruits to maintain its effectiveness at the highest point. Until such a system be established, and until the rules of civil service be radically changed as to removals for cause, a considerable part of the force will be composed of employees who, through age, physical defects or indifference, are a burden rather than an aid to administration. A system of pensions is as essential to good government as is the honesty and intelligence of employees.

**Changes in Organization**—During the year, the major change in the organization of the department has been the creation of an independent bureau charged with the conduct of proceedings for the separation of grades at railway crossings, as it was felt that construction work in this direction might best be controlled through an organization distinct in its functions from those of the Bureau of Highways and Bridges. As established, this unit will be in charge, under the City Engineer, of all work upon the separation of grades. In minor particulars, the Bureau of Highways and Bridges has been reorganized to meet altered conditions resulting from reduced appropriations and to centralize work not before adequately covered.

To overcome a growing difficulty through illegal occupancy of street area, and to prevent encroachment upon public property, the



Street Encroachment Division was formed in the Bureau of Highways and Bridges, to which all matters touching the installation of poles, lamps, filling stations and other obstructions within the street area might be referred. In addition, this unit is charged with the investigation of illegal encroachment upon streets by permanent structures and with the supervision of temporary occupancy of streets by structures permitted under ordinance of the Council.

**Replacement of Hard-Surface Pavements**—In the report of last year, it was called to attention that unless a fixed and unvarying policy with reference to the replacement of hard-surface pavements be declared, the City would soon be in a serious predicament. The reconstruction of the worn-out pavement on Washington Street, westward from Twentieth Street, may perhaps be regarded as a declaration of policy, but on this particular street property values are such that the precedent created is not generally applicable in all districts of the City. The disgraceful condition of Alder Street, westward from Sixth Street, remains, and from time to time the department is placed in the embarrassing situation of opposing wasteful and ineffective expenditures by property owners for repairs to a pavement no longer capable of bearing the traffic or of being repaired even in a passable manner. The outlay for repairs made in other years have accomplished nothing of moment. Within the next two or three years, when large areas of paving in all sections of the City, and particularly in the business section, will pass beyond the specified maintenance period, the situation will become tenuous, with neither a paving repair plant available nor adequate authority vested in the department to enforce resurfacing under regular procedure. It is certain that the department will be grossly criticised for a condition beyond its power to correct. Immediate provision for the establishment of a paving repair plant is again urged upon the Council.

**Establishment of a General Plan for Public Improvements**—With continuing agitation for economy in the administration of public works, it is an impossibility to formulate a scheme for public improvements which will bear the simplest test for sufficiency. The heavy reductions in the department have made imperative ceaseless attempts at reorganization and readjustments, productive of much wasted effort and of confusion throughout the organization. The necessarily rapid change in both scope and extent of work authorized, have brought serious misunderstandings of orders with the inevitable consequence that it has been impossible to prosecute work in an economical or orderly fashion. In had times the first activity to feel the demand for reduction of expenditure is that of public works and therefore it is of interest to inquire what the ultimate effect of such alleged economy may be.

In part, the present stringency in finance may be laid to a certain hyper-sympathy with the citizens and to a mistaken policy of delay in the demand for payment of obligations. The rule of the Council permitting postponement of payment of installments on improvement bonds and in exercising leniency in the collection of interest and other exactions, has, in many quarters, encouraged a marked indifference to the common interest, bringing the general fund to a point of depletion through repeated drafts upon it to avoid default in interest payments. The shortage in this fund has been made the excuse for sweeping reductions in allowances to the several departments and has not operated as a stimulant to collection of the City's just claims,

or as an impulse either to seek other items of possible revenue or to review the whole financial policy. Protest against the danger of such general reductions in allotments to this department has been of no avail, yet the public, unappreciative of the growing demands for maintenance of existing construction, continues insistent upon attention to its demands. The insufficiency of the allotments to the department affords no relief from its responsibility in the proper care of public property; the public judges solely from visible things and admits no excuses. In the mind of the public the lack of funds and men constitutes no valid reason for neglect to repair defects in pavements or sewers and when signs of deterioration appear, it is easier to believe that the department is guilty of indifference and incompetency than to seek the real reason in the dry matter of appropriations. The burden of calmly bearing complaints and unfair criticism, in addition to the realization of the incompleteness of its efforts, becomes most irksome to the department. In spite of this, however, the spirit developed in the department within the past two years and a certain professional pride in the better execution of its work, are notable. That the force has not been utterly discouraged, speaks well for the stability of the organization. Undoubtedly the feeling is present that, in the final court, careful methods will receive public justification. The ruthless and sweeping restrictions in allowances for the fiscal year 1916 will be a supreme test of the organization. Not only must every proposed expenditure in the coming year be subjected to a severe scrutiny, but work not perhaps of immediate concern, yet of far-reaching ultimate service, must be unhesitatingly eliminated from the program. It was just such unwise curtailment of preliminary expense as brought upon the City the avoidable expenditure of \$25,000 for the replacement of wrecked Vista Avenue wall and of \$45,000 to satisfy an illegal assessment for the Hall Street improvement, when, for an outlay of less than \$1000 in preliminary exploration and design, and in proper inspection service, the department might have been freed from unmerited condemnation which has injured its professional standing and stimulated a widespread distrust of its opinions. It is not claimed that every error in design or construction might have been overcome by allowances, however liberal, but it is to the point to say that the very persons who, through the unfortunate outcome of the work cited, have most suffered from unjust criticism, vigorously protested against the precipitate action of the City in commencing work without sufficient data on local conditions and urged unsuccessfully an allowance for more inspection. The City's costly experience in these well-aired cases, has been repeated in many others not generally known and, to any technically-trained person, deficiencies in design and construction, speaking of gross waste of funds and of hurried decision, are everywhere apparent. The discovery and proper adjustment of serious errors in supposedly authoritative elevations of benchmarks along the line of the Oregon-Washington Railroad & Navigation Company regrade project, made possible through the fortunate development of the "bench level survey," certainly places beyond all question of doubt the judgment of the department in urging the modest expenditure of only \$8,000, inasmuch as this project, whose cost will exceed one million dollars, and, in bridge construction alone, will approximate \$600,000, was, in its inception, saved from sure disaster. When it is realized that for this small sum the entire city has now been covered by a



reliable system of permanent points of reference, adjusted by the established methods of the Geological Survey, and that the first test of the system was a complete success, there must come a feeling that the expense of the survey had amplest justification. The retracing of street lines, the adjustment of field errors so numerous in the old land surveys, the construction of maps of underground structures, the examination and revision of the City's "quarter-section sheets," must certainly impress everyone as activities of unquestionable importance, but, with the limited funds allotted for the year, progress in these directions has been negligible. For the coming fiscal year, the checking of official maps and plans, upon which the whole organization finally depends, must be completely abandoned; maps of the St. Johns and Linnton areas cannot be prepared, and suspected inaccuracies in recorded data cannot be investigated. This is a most serious situation and, remembering the experience of former years, there will be a fine harvest of expensive litigation and of wasteful construction from the use of incomplete and erroneous data. It is common knowledge that a revival of business brings a marked increase in public improvements and if the department be not ready to expand its work promptly, the public will be impatient and innocently will bring about another era of blundering work, which, under a wise policy of preparation, may be avoided.

**Improvement Code**—The difficulty of undertaking large sewerage projects, like that in the Peninsula, referred to in the last report, still confronts the City. The designs for the Peninsula system are well advanced, but, until the question of assessment upon benefited areas beyond the arbitrary city limits shall have been clarified, it will not be safe to initiate the improvement. The preliminary draft of a statute to correct this defect is under way and a complete regulation having the approval of the Council should be presented for passage as a statute by the next legislature. The importance of such legislation cannot be too strongly urged upon the Council.

The effect of the declared policy of the Council not to initiate improvement proceedings except on the basis of a petition aggregating 40 per cent of the assessable area, has been most marked. The accompanying table and comparison with conditions holding in the fiscal year 1914 are worthy of examination. By a strict adherence to this policy, not only has the Council prevented the initiation of improvements urged before any real demand or reasonable necessity, and the consequent imposition of avoidable expense upon property now carrying its full burden, but has saved wasteful outlays for plans within the department. Furthermore, it has been the department's constant effort to discourage threatened remonstrances through a series of conferences with those opposed to an improvement proceeding and, in a number of improvements, and notably that of the Union Avenue viaduct, serious remonstrances promising annoying legal difficulties, were thus overcome. It appears certain that in the past a number of remonstrances have been filed partly through misunderstanding of the department's intentions and partly through the determined efforts of persons actuated by questionable motives. The detailed improvement maps now required to be prepared are of great aid in stating the attitude of the department and the general interest in them indicates that it is not impossible to win over an objector if he be given opportunity in advance to discuss the matter with the officials and to air his grievances. In former years, no adequate

improvement maps were available and many suits by owners might possibly have been prevented if, in the beginning, they had been properly advised.

**Improvement Bond Amendment**—As yet, it is too early to determine the precise effect of the charter amendment, adopted in the June election, on the bonding of public improvements. The amendment requires payment of installments and interest semi-annually and admits to bonding assessments in small amount. Not only will payments of semi-annual installments steady the finances of the City and allow the small owner to equalize his burdens, but, greater than all, through the privilege of bonding to as small an amount as \$5.00 per ordinary city lot, an owner need not be forced to pay in cash for his simple needed improvements. The assessment for the Willow Street sewer serving Montavilla will probably be completely bonded, but if the old charter provisions were operative, many owners would have been forced to pay in cash in a time of depression. It is expected, also, that many improvements, particularly sewers, before considered infeasible or inadvisable because of the denial of the bonding privilege, will now be initiated and, in spite of the fact that the overhead cost of collection will be increased, the citizens generally will benefit by the more liberal provisions of the amendment.



## MAIN OFFICE

## RECORDS DIVISION

The needed reindexing of plans and other official documents has been delayed through insufficient help, it being possible to give only occasional attention to this work, as the ordinary current business of the office permits. It is very unfortunate that progress in this direction must be slow, since there are constant calls for filed records which may not easily be traced. The experiment of vertical filing for tracings is being tried and if this should prove successful the system will be generally adopted. The distinct advantages of this method are that valuable vault space is saved and that the tracings themselves are not injured through rolling.

The scheme of issuing stationery supplies on weekly requisition has resulted in much reduced labor in accounting and a more satisfactory control of expenditures. All supplies of this character, except for current weekly uses, are kept at a central point with much economy in their use.

The correspondence handled during the year was slightly in excess of that for 1914, being as follows:

	In	Out	Total
1915 .....	5,188	8,231	14,419
1914 .....	6,863	7,380	14,243

The division also sold to the public blueprints numbering 435 and valued at \$81.30.

## PERMIT DIVISION

The centralization of all permit matters was finally accomplished in the year and all collections, including fees for the use of water during construction, are now collected at the time of issuance of the permit. This method of handling the permit business has produced very satisfactory results and complaints against delays, common in former years, have practically disappeared.

The number of permits issued and fees for same are as follows:

Kind	No. Permits	Valuation	Fees
Building .....	4633	\$6,210,255	\$ 6,916.00
Electrical .....	6496	464,510	5,901.00
Billboards .....	173	4,315	87.00
Street Space .....	1220	.....	.....
Sidewalks .....	498	.....	927.50
Driveways .....	113	.....	113.00
Private Grading .....	6	.....	140.00
Sidewalks, no fee.....	116	.....	.....
<b>Totals .....</b>	<b>13255</b>	<b>\$6,679,080</b>	<b>\$14,084.50</b>

## SUMMARY OF SIDEWALK PERMITS

	Lin. ft. sidewalk	Lin. ft. curb	Drive-ways	Fees
East Side .....	43,314.4	32,285.7	113	\$1,005.00
West Side .....	894.0	90.0	...	35.50
(Issued to City Engineer)				
East Side .....	12,780.6	11,723.6	...	.....
West Side .....	1,329.7	1,153.0	...	.....
	58,318.7	45,252.3	113	\$1,040.50

The lessened force has prevented the transferring of house numbers to the quarter-section sheets, the time of the employees being largely expended in adjusting street numbers in the recently incorporated areas of St. Johns and Linnton. During the year 630 house numbers were issued.

## ACCOUNTING DIVISION

The accounts were placed on a stable basis and are now beginning to furnish the information desired for budget and other work. The accounting room is now called upon constantly by the various bureaus for definite information and has promptly furnished these statements. The method of controlling work undertaken by the allotment of job numbers has not been completely satisfactory during the year since, in spite of distinct orders, it becomes frequently necessary under emergency to proceed with the work without reference of the matter to the Accounting Division. This, in several cases, has caused confusion and delay in the preparation of cost sheets. The control, generally, is good and improvements in accounting methods will probably follow with experience.



## BUREAU OF STANDARDS

The bureau is organized of the chemical and physical laboratories and the Blueprinting and Photography Division. It has acted in an advisory capacity to all the municipal departments, Multnomah County, the Commission of Public Docks, the Port of Portland and School District No. 1. Specifications were prepared by it for various materials of construction. The bureau is in position to make complete tests on most of the ordinary materials of construction and many of the supplies in common use. Through its facilities, many of the purchases of these governing bodies may be systematized and placed on a scientific and economical basis. Inasmuch as these several agencies are supported by practically the same body of property, it would seem advisable that duplication of equipment or activity should be carefully avoided and all possible work directed to the bureau.

## CHEMICAL LABORATORY

This division is equipped to make investigation of a great variety of products and, if used to the fullest extent, economy and efficiency in the purchase of supplies would be ensured. During the year reports on miscellaneous materials have been made as follows:

Classification	No. of Samples
Fire Hose .....	30
Paint .....	19
Oil .....	2
Cement .....	5
Wood Blocks .....	1
Fuel Oil .....	3
Alloys .....	8
Coal .....	7
Timber .....	1
Creosote .....	2
Total .....	78

The bulk of the work of the chemical laboratory has, however, been the testing of materials and mixtures for bituminous pavements laid in the City. The following table covers the field of laboratory control:

Classification	No. of Samples
Asphaltic concrete mixtures.....	150
Bituminous base mixtures.....	125
Binder mixtures .....	26
Bituminous top mixtures.....	91
Sheet asphalt mixtures.....	5
Patching mixtures .....	18
Mineral aggregates .....	13
Cuts from finished pavements.....	71
Asphaltum .....	132
Asphaltic cement .....	240
Total .....	871

It has been the effort of the bureau to maintain at each paving plant during the entire time of operation, an inspector charged with the control of mixtures and although it has not always been possible to so station an inspector, there has been closer approach to this ideal condition than in any previous year.

## PHYSICAL LABORATORY

During 1915 the equipment of the physical laboratory has been improved by purchase of the following apparatus:

1 Castiron foundry tester,
1 Deval abrasion cylinder.
1 Oil centrifuge,
1 Rock crusher,
1 Specimen-cutting apparatus,
1 150,000 lb. Universal Testing Machine,
1 Friction abrasion apparatus

With this and apparatus previously acquired, practically all materials of construction, such as building tile, brick, cast iron chains, concrete, drain tile, mortars, rock, oils, steel, timber, wire, pavements, etc., may be thoroughly tested.

During the past year the physical laboratory has been profitably used by the Bureau of Buildings in the testing of building tile and brick, and is at present being employed by them in an extensive series of tests upon nailed joints. With each year the work of the laboratory should become increasingly valuable and when the regrade operations are under way, there will be much expansion in the laboratory activities.

Several series of tests upon the effect of creosote treatment on the transverse strength of Douglas fir beams, have been completed, these tests being notable as the first of the kind ever undertaken in this section.

All tests noted in the following tables were made under standard methods adopted by the American Society for Testing Materials and are, therefore, comparable with results in other places.



## RECORD OF AVERAGE TESTS ON SEVERAL BRANDS OF PORTLAND CEMENT

BRAND	FINENESS PASSING		TIME OF SET				Accelerated Test, 5 Hrs. Steam, 212 deg. F.	TENSILE STRENGTH						No. of Barrels Tested	
	100 %	200 %	Initial		Final			Neat		1 Cement to 3 Standard Sand		28 Days	7 Days		28 Days
			Hrs.	Min.	Hrs.	Min.		7 Days	28 Days	7 Days	28 Days				
Golden Gate.....	98.6	84.3	4	08	7	09	279	696	782	303	447	43,750			
Mt. Diablo.....	97.4	79.4	3	33	6	02	363	631	712	283	405	26,925			
Olympic.....	98.1	85.6	4	04	6	59	349	715	753	361	508	10,688			
Riverside.....	97.9	82.5	4	15	7	59	227	624	680	271	394	3,920			
Santa Cruz.....	97.7	83.8	3	50	6	07	410	729	741	360	455	36,000			
Standard.....	96.8	80.5	4	04	7	10	337	662	768	255	353	3,000			
Superior.....	98.3	85.0	4	23	7	37	261	632	748	246	377	881			
Washington.....	99.3	87.6	3	30	6	02	359	743	814	273	421	9,455			

\*1,000 bbls. rejected.

## AVERAGE RESULTS OF ABRASION TESTS ON VITRIFIED BRICK

Kind of Brick	Quantity Tested	Average loss on abrasion
Sewer pavers .....	30,300	21.0%
Beveled edge blocks.....	7,500	10.8%
Ordinary pavers.....	38,000	19.9%
Paving blocks .....	719,875	14.7%
Railroad blocks .....	102,250	17.4%

## MISCELLANEOUS TESTS

Classification	No. of Tests
Building tile .....	33
Building brick .....	60
Brass alloy .....	2
Bronze .....	8
Castiron .....	3
Chains .....	4
Concrete .....	54
Douglas fir .....	92
Drain tile .....	30
Gravel .....	32
Holding power of nails.....	78
Holding power of spikes.....	4
Hydrated lime .....	14
Mortar .....	33
Pavements .....	170
Rock .....	18
Sandstone .....	3
Sand .....	60
Steel .....	25
Vitrified brick .....	30
Wire .....	6
Total .....	759

## BLUEPRINTING AND PHOTOGRAPHY

New and more commodious quarters have been provided and an up-to-date photographic darkroom installed. The rectigraph machine acquired has proven its great value in duplicating maps and plans, copying records and reducing drawings and specifications to sizes suited to field use. The blueprint and photographic work for all departments of the City government, some of the work for Multnomah County and School District No. 1 and occasionally special commercial work are handled in the division.



## PRODUCTION

	Blue Paper		White Paper		Blue Cloth		White Cloth		Negatives		Average size Val.	Average size Sq. ft.	Recd-graph Print	Photos	
	No.	Sq. ft.	No.	Sq. ft.	No.	Sq. ft.	No.	Sq. ft.	No.	Sq. ft.				Plate	Print
Dept. of Public Works.....	5774	17814	4448	7201	221	843	1330	4144	664	2320	.....	.....	442	276	1015
Dept. of Public Utilities.....	1360	2421	471	1965	5	41	184	1265	45	102	.....	.....	163	26	210
Dept. of Public Safety.....	112	107	50	150	42	350	2	32	2	6	.....	.....	3	9	78
Dept. of Finance.....	118	54	36	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	46
Dept. of Public Affairs.....	257	1283	15	118	8	80	2	41	2	11	.....	.....	.....	.....	3
Auditor.....	1	8	20	174	17	128	.....	.....	.....	.....	.....	.....	.....	.....	.....
Multnomah County.....	2283	10163	97	1043	44	272	44	272	26	85	.....	.....	.....	.....	.....
O.-W. R. & N. Regrade.....	115	430	93	96	30	61	31	24	26	109	.....	.....	476	21	664
Miscellaneous.....	16	40	73	304	18	75	2	11	1	6	.....	.....	181	11	238
Total.....	9945	32329	5309	11076	340	1587	1604	5789	771	2640	80 098	2.97	1278	343	2263

## EXPENDITURES AND RECEIPTS

<b>Expenses:</b>	
Salaries.....	\$ 1376.70
Supplies and cartage.....	1206.07
Total.....	\$2582.77
<b>Receipts:</b>	
Department of Public Works.....	1429.88
Department of Public Utilities.....	280.34
Department of Public Safety.....	43.68
Department of Finance.....	5.80
Department of Public Affairs.....	41.72
Auditor.....	20.22
Multnomah County.....	282.67
O.-W. R. & N. Regrade.....	146.95
Miscellaneous.....	55.31
Total.....	2306.57
<b>Loss:</b>	
Total.....	278.20

This loss might be considerably reduced or entirely eliminated if all governmental agencies would lend their full support. The uniformly good workmanship and materials used should secure this, apart from the reasonable charges imposed.

## BUREAU OF BUILDINGS

**General Observations**—The revision of the legislation touching the activities of the bureau has progressed steadily during the year, although, due to restricted force, some of the less pressing needs were not considered. In March, the new Electric Code was placed in effect and published in a convenient size for use in the field. The revised Plumbing Code was presented to the Council after a number of modifications made to the draft recommended by the special committee and, with small modifications, should be enacted. When this is placed in effect the City will for the first time have its plumbing regulations collected in one ordinance and the difficult enforcement by rulings will disappear. No work has been done upon the proposed Housing Code, partly because of the lack of public interest, partly because it seems unwise to urge drastic legislation in time of financial stress, but mostly because of the sweeping reductions in force necessary under the limited appropriation. The discussions of the Building Code Revision Committee have been carried on throughout the year and there is hope that during the year 1916 it will have completed its work. It may have seemed to some that this committee has delayed the submission of the code, but, as the present code is under review in all particulars, much work is required to produce a balanced regulation. Anticipating the passage of the revised code, an amendment touching the installation and operation of automatic elevators was submitted to the Council after approval by the Building Code Revision Committee, and passed. This was a much needed regulation and by its enforcement it is hoped to avoid the occurrence of elevator accidents which, in the last three years, had been steadily increasing in number. Legislation touching the smoke nuisance has been favored by some, but it cannot be urged that there is any great smoke nuisance in the city at this time. The rather few instances in which there has been neglect to control the proper combustion of fuel have been quickly noted and attention of the owners has been promptly called to the objectionable conditions by the inspection force. After explanation of the difficulty, compliance with the request of the department to exercise care in combustion has been generally secured. It is proper to state, however, that there does not exist any legislation which carries authority to correct smoke nuisance if the requests of the department be resisted.

Following the enforced reduction in personnel, rigid investigation of accidents, of elevators, signboards and billboards, of ventilation systems and of maintenance of buildings, has not been permissible and, in some degree, the inspection of buildings under construction has decreased in thoroughness. This curtailment of activities is most unfortunate, since there is intimate relation between all such matters, and if some be neglected, there is a lessened protection to the public.

**Building Activities**—There has been a notable decrease in the number and valuation of building operations from the previous year, and particularly so in the better class of buildings. The construction of steel frame buildings has been negligible, while reinforced concrete buildings have increased in number and value. There seems to be a tendency to construct buildings of the mill type. Improvements to the river docks were very small in number and extent. Parallel with



the decrease in building construction came a decrease in both electrical and plumbing operations, though in lesser degree. The more important buildings erected during the year were the Meier & Frank department store building, the Couch and the Shattuck Schools and the Stettler box factory. For 1916 there seems to be an indication toward increased activities in all lines, but more particularly in the construction of public buildings.

#### BUILDING DIVISION

The value of inspection of frame buildings prior to commencement of lath and plaster work has been demonstrated, and fire protection requirements under this arrangement may now be enforced more readily than under the former scheme, thus materially reducing fire hazard in sections where more easily combustible buildings exist. By this procedure the number of inspections made in response to requests, has been much increased. The lengthening of the average distance traveled between inspection points has produced a decrease in the average number of daily inspections per inspector from 19.9 in 1914 to 18.7 in 1915.

The only extension in the division's activities during the year has been in the direction of accident investigation and examination into special complaints. These lines of endeavor have increased the number of inspections by 653 during the year. The desired work of inspection upon foundation walls and chimneys has not been possible of commencement because of reduction of force. In a large sense, this enforced neglect may be regarded as a serious deficiency in administration.

It was considered justifiable to drop the work of examination of dilapidated and decayed buildings within the fire limits because of the general business depression, but as soon as conditions improve the campaign should again be vigorously taken up.

Partly because of reduction in volume of building work, and partly because of a determined effort to secure compliance with the Code through the medium of discussions, the appearance of the department in Municipal Court to prosecute violations under the Code, have been much reduced. It has been demonstrated clearly that most of the difficulties heretofore encountered may be overcome if the parties are willing to treat with each other frankly and settle their contentions.

There was agitation during the year to secure an amendment to the Building Code whereby mill construction buildings one story in height would be permissible within the inner fire limits. The department contended against this amendment in the belief that within the inner fire limits the buildings should be of such substantial nature that they would interpose a solid front to any conflagration. The department, however, conceded that area within the inner fire limits as established was too extensive and compromised to the extent of excluding about 25 city blocks from the inner fire limits. The amendment permitting mill construction buildings was defeated but the inner fire limits were drawn in, in accordance with the recommendation of the department. There is good reason to believe that building operations in the blocks excluded from the inner fire limits will soon be undertaken since it is now permissible to construct buildings of moderate first cost on land of not the highest value.

#### ELECTRICAL DIVISION

The organization of this division has been maintained as in previous years, the city being divided into inspection districts, each of which is again divided into two sub-districts covered on alternate days. This method of inspection has given uniformly good results and has not caused unreasonable delays to persons wishing inspections. The uninspected services installed during the first years of establishment of the Electrical Division were inspected during the year and practically all of these uninspected installations were examined. There has been a decrease in the number of daily inspections per inspector because of a decrease in the volume of electrical work, but more particularly because of the increased area to be covered and the more elaborate requirements of the new Electrical Code. With experience, this latter difficulty should disappear and the efficiency of inspection should be increased to the former standards.

#### PLUMBING DIVISION

The Plumbing Division was seriously handicapped by the defective plumbing regulations in force. The reduction in number of daily inspections per inspector from 10.9 in 1914 to 9.1 in 1915 is attributable almost entirely to the increased area covered by the inspection force. With the passage of the proposed Plumbing Code the difficulties of the division should be much reduced, since there will be a lessened demand for rulings in particular cases and certain well-defined rules may be followed.

#### CLERICAL DIVISION

The improvement in issuance of permits has been quite remarkable, and whereas in former years under the old methods there was constant complaint against delays in issuance, practically all complaint has now disappeared. It is estimated that from one-third to one-half the time formerly taken in securing permits for the construction of buildings has been saved, as all permits for construction, including those for water service during construction, are now issued at one point and all fees collected in one operation.

**Special Permits for Building Construction**—It seems impossible to avoid entirely the granting of special permits for variations from the Building Code and during the year five ordinances granting special privileges were passed:

Ordinance No. 30479 permits School District No. 1 to construct a four-room addition to the Albina Homestead School in violation of Section 570, which provides that school buildings of a height exceeding one story and basement shall not be of frame construction. The ordinance exempted the School District from this provision and permitted the construction of a two-story and basement addition to the existing school. The department resisted this ordinance, feeling that the grant was a serious mistake inasmuch as it increased the fire hazard.

Ordinance No. 30692 permits Marshall-Wells Hardware Company to increase the height of its buildings on Block 141, Couch Addition, to seven stories, although, under the Code, a building of this type exceeding six stories was not permitted. The Department recommended this grant inasmuch as the foundations for the original building of four stories were designed for a height of seven stories and



the designs were checked for this height. Since the original building was constructed of four stories only, and inasmuch as Marshall-Wells Hardware Company had intended originally to construct it to seven stories, it seemed reasonable to permit this deviation from the Code, particularly as amendment to the Code limiting the height of mill-type buildings to six stories had been passed between the time of the original construction and the request for permit to increase the height.

Ordinance No. 30932 grants permission to the Mason-Ehrman Company for the construction of a marquee to their warehouse at Fifteenth and Overton Streets exceeding the limits imposed by Section 697. The department did not feel that this was a serious deviation and, after consultation with the Bureau of Fire, recommended the passage of the ordinance. Later, the Building Code was amended so that marquees of more generous extent might be constructed.

Ordinance No. 30973 permits the Chas. A. Alisky Estate to alter and repair its buildings at the northwest corner of Third and Morrison Streets in violation of Section 522 of the Code. This building has been seriously injured by fire and it was desired to increase the height of the building from three to four stories. Under the Code it was not permissible to secure a demolition of the building, as it had not been damaged to a sufficient extent and to secure a building of less fire hazard, the department felt that special consideration should be given to the case. The concession was made after agreement had been reached whereby certain specified improvement in the interior construction would be made and that a sprinkler system would be installed.

Ordinance No. 31115 permits Ben Trenkman to reconstruct and maintain a one-story frame building at the northeast corner of Fourth and Flanders Streets in violation of Sections 174, 522 and 654 of the Building Code. Under the Code Mr. Trenkman would have been permitted to remodel the building under the old design but, in an effort to secure a lesser fire hazard through an improvement in construction, it was agreed to allow repair and reconstruction of the building to a greater area and height if certain construction changes were made.

With one exception, that of the Mason-Ehrman Company, therefore, the grants were made in the case of buildings in existence which it was desired to repair or reconstruct. The department successfully resisted all attempts to secure modifications of the Code in new construction.

GENERAL

	Building Division		Electrical Division		Plumbing Division		Total		% Increase or Decrease
	1914	1915	1914	1915	1914	1915	1914	1915	
Total days of inspection.....	1,324½	1,235	1,418½	1,610	1,476½	1,476½	3,978	4,321½	*10.9
Total number of inspections.....	27,911	23,142	27,728	19,532	12,815	12,815	65,730	55,489	15.6
Ordinance violations discovered.....	6,642	3,823	7,281	5,397	1,292	843	15,185	10,063	33.8
Municipal Court prosecutions.....	151	59	21	10	2	2	172	71	58.7
Circuit Court prosecutions.....	4	2	400	270	4	4	1,214	780	50.0
Jobs without permit.....	814	510	5	270	131	48	835	701	35.8
Elevator inspections.....	60	5	5	5	131	48	55	152	91.7
Complaints investigated.....	699	653	5	5	131	48	55	152	*178.4
Billboard inspections.....	55	152	5	5	131	48	55	152	446
Fire reports.....	62	46	53	31	62	31	62	361	482.3
Dangerous buildings and wiring.....	11	11	33	31	62	31	62	361	4.4
Car tickets used by inspectors.....	4,037	3,761	5,914	5,882	4,951	3,909	14,902	13,552	8.1
Radio visits to car tickets.....	6.9	6.1	3.8	3.8	3.1	3.2	14,902	13,552	8.1
Average value of daily permits.....	\$ 25,735.72	\$ 22,298.92	\$ 1,766.30	\$ 1,667.89	\$ 48.9	\$ 27,502.09	\$ 27,502.09	\$ 23,968.81	12.8
Average number permits per day.....	21.5	16.93	27.4	23.32	10.9	9.1	48.9	39.95	18.3
Average daily inspections per man.....	19.9	18.7	16.0	14.3	10.9	9.1	48.9	39.95	18.3
Receipts for fees and permits.....	\$ 8,759.50	\$ 6,916.00	\$ 7,971.25	\$ 5,901.50	.....	.....	\$ 16,730.75	\$ 12,517.50	24.3
Receipts for fees and billboard permits.....	17.00	87.00	.....	.....	.....	.....	17.00	87.00	*411.8
Receipts account rejected appeals.....	150.00	60.00	.....	.....	.....	.....	150.00	60.00	60.0
Total receipts, fees and appeals.....	3,320	2,447	803	503	1,977	1,574	6,100	4,524	25.8
Letters written.....	3	1	5	4	186	46	8	5	37.5
Bulletins sent out.....	3	1	5	4	186	46	8	5	37.5
Sanitary inspection notices sent.....	3	1	5	4	186	46	8	5	75.3

N. B.—\*Increase. †Not taken up before.



## BUILDING PERMITS ISSUED FROM DEC. 1, 1914, TO NOV. 30, 1915.

MONTH	Steel Frame Construction		Reinforced Concrete Construction		Mill Construction	
	No.	Value	No.	Value	No.	Value
December, 1914.....	1	\$1,250,000.00	2	\$ 165,000.00	1	\$ 5,000.00
January, 1915.....	1	8,000.00	2	60,500.00		
February.....						
March.....			1	3,000.00	1	75,000.00
April.....			1	2,000.00	4	44,400.00
May.....			4	1,230.00	4	118,000.00
June.....			5	19,665.00	2	37,000.00
July.....	1	1,500.00	1	2,000.00	3	8,000.00
August.....	1	300,000.00	4	8,450.00	2	51,800.00
September.....			8	9,100.00	3	8,200.00
October.....			2	1,700.00	2	26,000.00
November.....						
Totals.....	4	\$1,559,500.00	30	\$272,645.00	22	\$373,400.00

1 semi-fireproof building, valuation \$1,000.00.

MONTH	Ordinary Construction		Frame Construction		Alterations and Repairs	
	No.	Value	No.	Value	No.	Value
December, 1914.....	6	\$9,730.00	109	\$123,625.00	129	\$45,450.00
January, 1915.....	1	2,500.00	142	251,645.00	177	52,305.00
February.....	5	4,000.00	160	227,690.00	170	77,150.00
March.....	9	22,950.00	242	305,345.00	259	76,360.00
April.....	5	143,050.00	211	278,655.00	239	80,810.00
May.....	5	29,000.00	144	201,355.00	196	66,980.00
June.....	3	1,750.00	171	248,675.00	200	150,195.00
July.....	5	125,050.00	145	186,310.00	165	47,795.00
August.....	3	30,195.00	170	262,265.00	228	74,000.00
September.....	6	36,350.00	193	179,370.00	248	63,190.00
October.....	8	43,340.00	151	157,935.00	223	118,220.00
November.....	3	5,540.00	129	157,960.00	171	45,895.00
Totals.....	59	\$453,455.00	1967	\$2,580,560.00	2405	\$898,410.00

MONTH	Wreck		Move		Excavate	
	No.	Value	No.	Value	No.	Value
December, 1914.....	6	\$625.00	1	\$100.00		
January, 1915.....	9	505.00	3	410.00	2	\$ 1,100.00
February.....	7	1,675.00	2	225.00		
March.....	5	600.00	5	625.00		
April.....	5	5,300.00			3	2,100.00
May.....	8	690.00	6	830.00	3	3,600.00
June.....	6	560.00	1	150.00	1	1,000.00
July.....	4	205.00	2	115.00		
August.....	5	450.00	1	50.00	2	1,700.00
September.....	4	450.00	1	160.00		
October.....	4	285.00	2	250.00	1	350.00
November.....	5	650.00	1	200.00	2	620.00
Totals.....	68	\$11,995.00	25	\$3,115.00	14	\$ 10,470.00

BUILDING PERMITS ISSUED FROM DEC. 1, 1914, TO NOV. 30, 1915—  
Continued.

MONTH	Docks—New		Docks—Alterations and Repairs		Billboards	
	No.	Value	No.	Value	No.	Value
December, 1914.....	2	\$1,600.00	2	\$225.00	4	\$ 220.00
January, 1915.....	1	400.00	4	675.00	4	225.00
February.....			3	1,000.00	2	250.00
March.....	2	18,075.00	3	1,800.00	5	130.00
April.....	2	1,600.00	7	1,500.00	2	85.00
May.....			3	10,380.00	1	450.00
June.....	1	100.00			29	344.00
July.....			2	2,400.00	2	550.00
August.....					58	706.00
September.....			1	3,000.00	59	573.00
October.....			5	2,950.00	5	767.00
November.....					2	15.00
Totals.....	8	\$21,775.00	30	\$23,930.00	173	\$4,315.00

## BUILDINGS GRADED ACCORDING TO OCCUPANCY

MONTH	GRADE I Public Buildings		GRADE II Quasi-Public Bldgs. Hotels, Office Bldgs., Stores, etc		GRADE III Tenements	
	No.	Value	No.	Value	No.	Value
December, 1914.....	4	\$172,200.00	6	\$1,259,300.00	1	\$2,000.00
January, 1915.....	1	60,000.00	10	41,500.00	1	35,000.00
February.....	4	6,600.00	5	3,250.00		
March.....	4	11,000.00	4	95,500.00		
April.....	2	1,000.00	11	68,100.00	2	145,000.00
May.....	1	26,000.00	14	147,860.00		
June.....	3	2,150.00	14	66,050.00		
July.....	3	118,000.00	18	23,780.00		
August.....	2	45,150.00	12	420,945.00		
September.....	2	2,740.00	12	38,200.00	1	10,000.00
October.....	6	13,780.00	11	64,065.00		
November.....			7	9,040.00		
Totals.....	32	\$458,620.00	124	\$2,237,590.00	5	\$ 192,000.00

MONTH	GRADE IV Dwellings and Flats		GRADE V Stables and Sheds		GRADE VI Miscellaneous	
	No.	Value	No.	Value	No.	Value
December, 1914.....	56	\$109,250.00	42	\$5,355.00	10	\$5,250.00
January, 1915.....	80	180,200.00	52	5,245.00	2	700.00
February.....	94	203,725.00	58	7,690.00	4	10,425.00
March.....	128	278,300.00	107	14,615.00	10	6,880.00
April.....	103	240,400.00	99	10,480.00	4	3,125.00
May.....	69	165,570.00	60	8,345.00	13	1,810.00
June.....	77	229,175.00	67	6,020.00	21	4,695.00
July.....	69	170,470.00	60	6,635.00	5	3,975.00
August.....	67	167,475.00	92	10,590.00	7	8,560.00
September.....	67	156,800.00	118	13,920.00	10	11,360.00
October.....	56	127,650.00	87	9,340.00	3	14,140.00
November.....	54	144,850.00	65	6,595.00	6	2,745.00
Totals.....	920	\$2,173,865.00	907	\$104,830.00	95	\$73,655.00



DEPARTMENT OF PUBLIC WORKS

TABLE OF VIOLATIONS BUILDING DIVISION

1. Poor foundations	178
2. Defective construction	882
3. Too close to lot line	40
4. Defective chimney	685
5. Heating apparatus and enclosures	46
6. Elevators and enclosures	67
7. Stair and shaft enclosures	131
8. Roofs and roof drains	37
9. Fire blocks and bridging	1,027
10. Sidewalk and street obstructions	61
11. Light and ventilation	33
12. Fire protection openings	44
13. Defective scaffolds	414
14. Stable regulations	1
15. Miscellaneous	79
16. Fire escapes, exits, stand pipes, etc.	50
17. Frame buildings in fire limits	50
18. Dangerous buildings	50
<b>Total</b>	<b>3,823</b>

BUILDING PERMITS ISSUED DURING THE PAST YEARS

YEARS	Number	Total Valuation	Average Value of Permit
1900	392	\$944,985.00	\$2,410.00
1901	745	1,529,143.00	2,050.00
1902	1,244	2,730,660.00	2,195.00
1903	1,628	4,281,056.00	2,630.00
1904	1,720	4,029,225.00	2,340.00
1905	2,318	4,183,388.00	1,805.00
1906	3,166	6,902,032.00	2,180.00
1907	3,890	9,446,982.00	2,430.00
1908	4,849	10,405,151.00	2,145.00
1909	4,739	13,481,380.00	2,845.00
1910	6,523	20,886,202.00	3,200.00
1911	7,686	19,152,370.00	2,485.00
1912	8,224	14,652,071.00	1,780.00
1913	6,244	*12,316,350.00	1,970.00
1914 (Dec 1, 1913 to Nov. 30, 1914)	6,166	7,373,285.00	1,195.00
1915 (Dec 1, 1914 to Nov. 30, 1915)	4,683	6,210,255.00	1,345.00
<b>Totals</b>	<b>64,167</b>	<b>\$138,524,515.00</b>	<b>2,160.00</b>

\*11 months only covered in report.

ELECTRICAL PERMITS ISSUED

MONTH	1912			1913			1914			1915			TOTALS		
	No.	Total Valuation	Avg. Value per Permit	No.	Total Valuat'n	Avg. Value per Permit	No.	Total Valuat'n	Avg. Value per Permit	No.	Total Valuat'n	Avg. Value per Permit	No.	Total Valuat'n	Avg. Value per Permit
December							615	\$ 47,715.00	\$77.60	486	\$ 76,355.00	157.74	1,101	\$ 124,070.00	112.70
January				583	\$ 44,700.00	\$76.80	632	34,590.00	54.60	442	27,430.00	62.05	1,657	106,720.00	64.41
February				495	34,350.00	69.40	544	36,015.00	66.50	494	24,525.00	49.64	1,533	94,890.00	61.89
March				639	106,070.00	166.60	863	56,275.00	65.20	541	40,405.00	74.68	2,043	202,750.00	99.24
April				709	49,450.00	69.80	769	34,615.00	45.10	579	35,330.00	61.02	2,057	119,395.00	58.04
May				665	41,445.00	62.30	711	37,925.00	53.30	524	53,265.00	101.65	1,900	132,635.00	69.81
June				594	54,280.00	91.50	603	53,150.00	88.00	492	29,015.00	58.97	1,689	136,445.00	80.73
July				646	58,085.00	89.95	580	37,750.00	65.00	509	36,545.00	71.79	1,735	132,380.00	76.30
August	318	\$ 16,191.00	\$50.80	691	67,865.00	98.00	632	50,345.00	19.60	572	46,215.00	80.97	2,213	180,616.00	81.62
September	567	28,360.00	50.00	761	49,940.00	65.50	744	41,925.00	56.40	663	36,155.00	54.53	2,735	156,380.00	57.18
October	708	40,395.00	57.80	864	102,510.00	118.80	635	38,590.00	60.75	638	30,445.00	47.72	2,845	212,440.00	74.67
November	568	42,505.00	75.00	689	44,115.00	64.00	531	37,155.00	69.90	556	28,825.00	51.84	2,344	162,600.00	65.11
<b>Totals</b>	<b>2,161</b>	<b>127,951.00</b>	<b>59.20</b>	<b>7,336</b>	<b>652,810.00</b>	<b>88.98</b>	<b>7,850</b>	<b>506,050.00</b>	<b>64.45</b>	<b>6,496</b>	<b>464,510.00</b>	<b>71.51</b>	<b>23,852</b>	<b>1,751,321.00</b>	<b>\$73.42</b>

BUREAU OF BUILDINGS



## BOARD OF APPEAL

## BUREAU OF BUILDINGS—ELECTRICAL DIVISION

July 1, 1915, to December 1, 1915.

The following is the Report of the Board of Appeal:

Regular meetings held.....	2
Special meetings held.....	5
Appeals considered.....	2
Appeals granted.....	2
Appeals denied.....	0
Appeals withdrawn.....	0
Appeals under consideration.....	0

The following general rulings were made:

October 20, 1915. Section 1, paragraph 3, to read:

"The word 'Owner' wherever used in this ordinance, shall mean the owner of any building in or on which any electrical equipment has been or is about to be placed."

October 20, 1915. Section 1, paragraph 6, to read:

"The word 'approved' wherever it occurs in this ordinance as applying to fittings or materials, shall mean any fitting or material which has been examined and found to comply with the provisions of this ordinance and is suitable for the use intended; and wherever applying to workmanship, it shall mean workmanship that complies in all particulars with the provisions of this ordinance."

October 20, 1915. Section 1, paragraph 8, to read:

"The word 'conduit' wherever used in this ordinance, shall mean approved rigid metal conduit, flexible steel conduit and armored conductors. For the purpose of extensions only to conduit systems, metal moulding may be installed as conduit under the rules governing the installation of metal moulding given in Sections 48 and 51."

October 20, 1915. Section 44, paragraph (c):

The Board interprets that "service" shall constitute the conductors from the point of attachment to the Power Company's lines into the building to the branch cut-outs.

October 20, 1915. Section 44, paragraph (d), to read:

"Service wires for all buildings must be installed in conduit from a point not less than ten (10) inches nor more than twenty (20) inches beyond outside vertical line of the building wall to and entering iron cabinet for main service and cut-out switch."

October 20, 1915. Section 45, paragraph (d2), to read:

The second paragraph of this Section to read as follows: "Floor, baseboard or other flush receptacle outlets are not to be included in computing the wattage capacity for lighting in any of the buildings specified below. These outlets in all classes of buildings must be rated at 100 watts each as a minimum."

October 20, 1916. Section 45-(f):

The limit in this circuit schedule proper shall be raised to six (6) circuits, or more.

October 20, 1915. Section 52, paragraph (g):

"When canopies are used as a substitute for rosettes on drop cords, such canopies must be provided with a metal nipple and socket

bushing. This metal nipple must be at least as long as the bushing and securely attached to the canopy. Canopy drop cords, single light pendants (not rigid), receptacle collar and wall brackets may be supported by wood screws through the edge of canopies, except in conduit systems."

"October 20, 1915. Section 52, paragraph (h), to read:

"All ceiling lights and chandeliers, where lights are suspended from a spinning or pan or similar device at ceiling, said fixtures or chandeliers must be suspended from an insulating joint, tripod or equivalent device."

October 30, 1915. Section 45, paragraph (a):

The Board rules that "readily accessible," as used in this ordinance in regard to cut-outs and switches, shall mean "placed in such a location that they will not, under any ordinary conditions, be concealed by any obstruction, so that they may be readily reached by the average person in case of emergency," which means that they shall not be placed higher than approximately eight (8) feet above the floor. Cut-outs and switches may be mounted on the outside walls of buildings where they are protected from the weather, providing that the switches, cut-outs and meter loop are enclosed in a weather-proof cabinet.

October 30, 1915. Section 53, paragraph (d):

This Section to read: "Metal shell key sockets must not be used within seven (7) feet of basins, sinks, toilets or bathtubs, nor in any room which has a floor which is permanently damp. Where pull chain sockets are used, they must be of the insulated pull chain type. Metal shell pendant switches must not be used for the control of lights covered in this Section."

October 30, 1915. Section 89, paragraph (a):

The Board will permit the use of refillable fuses in buildings where an Electrical Engineer is permanently employed, and who has made application in writing to the Electrical Division for permission to use such fuses. This applies to the Economy and Great Western refillable fuses at present, and all refillable fuses which, like them, meet the requirements of safety which the Board deems necessary, until such time as the Board can be satisfied that this special Decision should be made broader.



## BUREAU OF GRADE SEPARATION.

**Sullivan Gulch Regrade**—During 1915 all field work relating to the preparation of plans and specifications for grade elimination in Sullivan Gulch, was completed. Exhaustive studies of various types of construction were made and the use of rolled girders encased in concrete decided upon. This type of construction is both pleasing in form and reasonable in cost, securing, in addition, shallower depths of section, shorter approaches and less resultant grade changes than other types. The engineers of the Railroad Company were consulted as to the most economic location of the track gradient to produce minimum damage to property adjacent to the line, and still to provide favorable trackage facilities. After fullest discussion, it was agreed to establish the grade line as follows:

1—From a point 200 feet west of Sandy Boulevard to East Sixtieth Street, an ascending 1 per cent compensated grade.

2—From East Sixtieth to East Eighty-second Streets, an ascending 0.42 per cent grade.

3—From East Eighty-second Street, a level grade to an intersection with the present track grade.

This establishment comprehends an average depression of tracks of about eleven feet with a corresponding average elevation of streets, at the viaducts, of fourteen feet, allowing a clearance of twenty-one feet above rails. The deviation from the standard clearance of twenty-two feet was permitted on special order of the Public Service Commission, as a compromise, inasmuch as all negotiations between the City and the railroad company had been on the basis of a twenty-one-foot clearance.

Seven viaducts, finally, are proposed, located at Sandy Boulevard, East Forty-seventh Street, East Fifty-third Street, East Sixtieth Street, Halsey Street (Barr Road), East Seventy-fourth Street and East Eighty-second Street. In the original plans a viaduct was proposed for East Forty-second Street but, after strong representations of the railroad company, the Council agreed not to require a viaduct at this point, feeling that desirable factory sites would, by the construction, be rendered useless.

Proceedings are about completed for the vacation of the existing crossings at East Fifty-second and East Fifty-fifth Streets. Access to these from the East Fifty-third Street viaduct will be provided through a marginal street to be opened along the north line of the railroad property. The railroad company has granted right of way across the tracks at East Seventy-fourth Street near the Jonesmore School in Montavilla.

Under the provisions of the Charter Amendment of June, 1913, it would have been necessary to institute individual proceedings for each crossing, with contract and assessment for each. To avoid such a cumbersome method of handling a project which, essentially, from a railroad standpoint, is a single project, a Charter Amendment was submitted in the June election in 1915 and adopted, providing that all units in a grade elimination may be included under one procedure. The passage of this amendment has materially aided in furthering a rational development of the regrade project and has reduced the legal and assessment difficulties. Unexpected delays of a legal nature,

arising from the novelty of the undertaking, have been encountered at every step, but it is expected that plans and specifications will finally be presented to the Council in the fall of 1916, and actual construction commenced about the first of 1917. The estimated cost of the viaduct construction, exclusive of any outlay for adjustments in the railroad area, is about \$594,500.00. Delays in proceeding to contract will probably increase this amount, since the prices of all materials are on the ascending grade.

**Union Avenue Viaduct**—Plans have been completed for a reinforced concrete viaduct 219.5 feet in length and 58 feet in extreme width on Union Avenue over the tracks of the Oregon-Washington Railroad & Navigation Company's Peninsula Branch. Upon completion, this structure will form a direct connection with the Interstate Bridge now under construction across the Columbia River. The cost of the viaduct, including approaches, will approximate \$51,000, exclusive of paving, which will be undertaken under regular street improvement procedure.

**Miles Street Viaduct**—Proceedings have been initiated providing for the elimination of the Portland, Eugene & Eastern grade crossing at Miles Street in Fulton Park. Numerous conferences have been held with the company's engineers, resulting in the formulation of general plans acceptable both to the Company and to the City. Detailed plans and specifications will be prepared in 1916 and it is possible that construction may be undertaken early in 1917. The cost of this project is approximately \$10,000.00.

The Oregon Electric Railway crossing in the immediate neighborhood offers equal danger to traffic and its elimination is of equal importance. It is the present intention to include this as part of the general improvement of traffic conditions and new proceedings to this end will be initiated.



## BUREAU OF HIGHWAYS AND BRIDGES

## CONSTRUCTION DIVISION

The construction of permanent street improvements is set out in detail in tabulation. In addition, repairs to pavement cuts and to defective pavements were made as follows:

	Number	Sq. Yds.
Utility cuts .....	2307	
Waterworks and sewer cuts.....	948	
Pavements repaired under maintenance.....	....	2042.8
Pavement repairs paid for by City.....	....	981.6
Pavements repaired on account of enlarging curved corners .....	....	898.2
Pavement repairs paid for by abutting owners..	....	1145.2

Comparison of the year's work with that of former years indicates a decided tendency towards the installation of what may be termed "standard" pavements as against the cheaper types, for which latter there was for a few years a strong and insistent demand. This change in attitude appears to have arisen from the conclusion of property owners that low first cost is of lesser moment than durability and serviceability. The change may have been in part a result of the marked reduction in unit prices offered for the standard pavements and the closer approach of these prices to those of the second-class pavements. With the prevailing moderate prices, there is no valid reason for experimentation with untried or less durable types of pavement. This change in attitude also has lessened the difficulty of the department in attaining a higher standard of pavement construction.

The decrease in volume of paving operations has permitted of more attention to the important details of lines, crowns and grades for pavements. The hurried work of the past has much injured the appearance of the streets and has increased the difficulties of traffic and drainage. It has not been possible to overcome entirely the past practice of working out details of pavement construction in the field, but strong effort is now being put forth to develop all essential details of construction before contract is under way. In my opinion, this is one of the most important developments of the year and its effect will be lasting.

Ever since the commencement of the paving program of the city, there has been contention regarding the installation of water service connections. The Bureau of Water Works has objected to the laying of dead services as the deterioration in them is productive of serious leakage in the system, increasing the need for inspection and repair. On the other hand, the Bureau of Highways and Bridges, desiring to prevent the breaking of street surface wherever possible, has contended for the installation of all possible services when permanent pavements are built. These two ideas were more or less antagonistic and there seemed no common ground for operation, until finally the matter was taken up by the Commissioners in charge of the Departments of Utilities and Works, who, after a thorough discussion, decided that the contention of the Bureau of Water Works was of greater moment than the inconvenience of cutting pavements and that, in

future, service connections would be installed only upon written application of owners, with the approval and actual supervision of the Bureau of Water Works. In this way a better quality of workmanship may be secured and undesired connections will be eliminated from the streets. The plan has had insufficient trial to warrant any judgment as to its feasibility.

As improvement work slackens in the rainy weather, the inspection force has been delegated to erect street signs. During the year 2,866 new signs were so erected, 553 signs repaired and 64 obsolete signs removed. The practice of installing enameled signs has been discontinued and all street signs are now made by the Traffic Division at lessened cost and of a type less exposed to injury.

**Asphalt Repair Plant**—The need of a municipal asphalt plant is becoming increasingly evident and, in the next few years, it will be imperative. The antiquated and unsatisfactory method of making repairs to bituminous pavements through general contracts or private arrangements with paving companies, must impress everyone and the inconvenience to traffic occasioned by allowing disturbed areas to remain for long periods without attention, amply justifies the small outlay for a plant. It is not necessary that this plant should be elaborate, but a start should be made in the purchase of a small unit plant. This purchase should not be postponed beyond 1917. The cost of maintenance of pavements on the contract or agreement system will reach such a figure that there will be demand for reduction in expense and the pavements will suffer from the neglect of minor faults. With pavements, as with no other construction, deterioration progresses rapidly and the probable losses through neglect will overtop any reasonable initial outlay for a plant.

## MAINTENANCE DIVISION

This division is charged with the repair of macadam and gravel streets and the replacement of crosswalks and drains. Its detailed activities are set out in table —. A departure from the ordinary work undertaken by the division was made during the summer and early fall in the reshaping of graded dirt streets whose surfaces had become rutted for various reasons. Continued complaint had been filed against the impassability of great lengths of these graded streets and to relieve the condition the department was authorized to purchase three grading outfits which, drawn by the road roller equipment of the department, would rapidly reshape these and make them passable. In this work the regular repair crews were employed and, in all, about 37½ miles of streets were thus treated at a cost of \$5,560.79—approximately \$148.00 per mile, or \$7.40 per ordinary city block. This modest expense has been amply justified by the results, not alone in the decided improvement in local conditions, but in the postponement of the time of undertaking permanent street improvements in districts where land values are small and the burden of prior assessments heavy. The unit costs, above mentioned, are, of course, the maximum to be expected, since subsequent work on these streets will be of minor extent. If the work be prosecuted at regular intervals of, say, one or two years, it is probable that the expense may be reduced one-half and a regular street crown constantly maintained.

## STRUCTURAL DIVISION

The most important structures designed and erected by the division were a reinforced concrete retaining wall located on the west side of



Grand Avenue between Brooklyn and Beacon Streets, in connection with a street improvement. The wall is 185 feet in length and 30 feet in maximum height and of the counterfort type with vertical face placed on the curb line. This design has proven of great economy and has been adopted for sidehill work. In the design, provision was made for future construction of a cantilever sidewalk if traffic conditions warranted. Designs were also prepared for retaining walls and stairways in connection with the improvements on Summit Drive, Talbot Road, East Thirteenth Street, Seventeenth Street at Jackson Street, East Twenty-eighth Street at Clinton Street and Ankeny Street at the harbor line.

The redecking with creosoted wood blocks of the Grand Avenue bridge over Sullivan Gulch, let in 1914, was completed under contract.

Upon complaint of the United States Engineer Office against the existence of obstructions to navigation below the Morrison Street bridge, investigation was made by divers and, following the examination, the remains of piers and false work of the old bridge at this point were removed under contract with the Pacific Bridge Company. The work received the approval of the United States Engineer Officer.

Plans and specifications were prepared for the raising to established grade of portions of the Union Avenue bridge over Sullivan Gulch, whose foundation had settled. Contract for the raising was entered into and the work completed in September, 1915, about one-half the cost being met by the Spokane, Portland & Seattle Railway Company, following its agreement to assume joint responsibility with the City. The bridge is now in line and has given no evidence of additional settlement.

Studies were made of various dangerous street intersections, with a view to their improvement for traffic and as a result of these, the following important intersections were rebuilt from ordinary funds of the department:

- East Thirty-fifth Street at Belmont Street;
- East Thirty-ninth Street at Belmont Street;
- East Twenty-fourth Street at Broadway;
- East Twenty-eighth Street at East Burnside Street.

These changes have resulted in much improved traffic movement.

Comparative tests of bridge paints were inaugurated by the division, portions of the steel work on the Front Street bridge being painted with the several paints. Definite conclusions may, of course, not be reached without observations of at least one or two years, but the results probably will indicate the life and wearing qualities of the paints available in the local market. All the test paints were donated, but the labor expense for painting was met by the City.

#### BRIDGE MAINTENANCE DIVISION

For a long time the decking of the Thurman Street bridge had given much trouble and frequent complaints had been filed. Attempts to make partial repairs were ineffective and finally appropriation was secured to redeck the entire structure. The extent of deterioration could not be determined in advance but, after the deck planking had been removed, practically the entire wooden superstructure was found in serious state of depreciation and the unexposed steel work much rusted. Many of the stringers and subplanking had to be removed so that the final work practically may be called a complete reconstruction of the wood deck. In this work decision was made to use selected vertical-grain lumber for the wearing surface, in spite of an added cost

of about \$4.00 per M. It is believed that the increased life of this material will amply justify the added expense. On this structure the street railway tracks are located within a short distance of the curb lines, allowing the car bodies to extend about to the curb lines and, in some types of cars used, the steps to overhang, so that, to protect pedestrians using the walks, standard gas-pipe railings were installed on each side of the bridge. The cost of the entire operation, part of which fell in 1914, was \$2,818.71.

The steel work of the Grand Avenue bridge was entirely repainted. Most of this material was found to be in a rusted condition and required scraping before application of the paint. Somewhat similar conditions were found at the Union Avenue bridge, work on the repainting of which was commenced but not completed during the year.

Practically all of the iron railings along stairways and retaining walls in the hill sections were repainted and placed in first-class condition.

The Borthwick Street and Macadam Street timber trestles were redecked.

A storage shed was constructed in the materials yard at Kerby and Stanton Streets for the storage of patterns for the Broadway bridge, at a cost of about \$200.00. This expenditure avoids expensive storage charges for the patterns and allows the forms to be collected in a safe place.

A great mass of minor repairs was made to the various bridge structures in the city and barricades erected at dangerous street ends. All necessary carpenter work within the City Hall fell under this division.

#### SIDEWALK DIVISION

**Concrete Walks and Curbs**—Property having a frontage of 14,300 lineal feet, or about 27.15 miles, was posted for defective walks and curbs, while 44,820 lineal feet, or about 8.49 miles of concrete sidewalk and curbing were constructed under permit and inspected. The City crews performed the following work:

- Concrete sidewalk, 81,370 square feet,
- Concrete curbing, 10,688 lineal feet,
- making a total of about 2.02 miles.

**Curved Corners**—In various sections of the city 183 sidewalk corners were built to increased radius for the safety of vehicular traffic, including those mentioned as designed by the Structural Division. The value of this reconstruction work is becoming evident to the public and there are constant demands for work in all parts of the city which the restricted allowances will not permit to be made.

The sidewalk forces performed other concrete work as follows:  
 Manufacture of fifty city boundary monuments;  
 Encasement of steel work of the Front Street and First Street bridges;

Construction of a retaining wall at the East Stark Street fire station;

- Repair of the Montgomery Drive retaining wall;
- Construction of a four-foot toe wall along Vista Avenue directly below the Montgomery Drive retaining wall.

#### TRAFFIC DIVISION

A small amount of work, only, on traffic observation was possible, but certain surveys in connection with proposed jitney-bus regulation.



the re-routing of cars on the West Side loops and for the determination of crossings on the proposed grade elimination in Sullivan Gulch, were made. In the coming year it is purposed to again take up the observations on traffic that former observations may be checked and any marked variations in traffic movement discovered. The division made investigations of certain apparatus and devices for traffic control submitted by manufacturers, and reported on their serviceability.

The painting of street and warning signs and of all signs used by other departments was undertaken under this division, and the following is a summary of this work:

Warning signs lettered.....	690
Warning signs installed.....	230
Street signs lettered.....	2,101
Miscellaneous signs lettered.....	274
Street sign blanks dipped.....	2,796
Warning signs repaired and replaced.....	110

#### GRASS AND WEEDS DIVISION

No appropriation being available for the active removal of weeds and grass from streets and private property, the work of the division was confined solely to the posting of notices for removal and in solicitation of owners to have noxious growth removed. With resident owners the division's efforts were generally successful, but with non-resident owners the difficulties of previous years still remained. Much complaint was filed against the department for its inability to secure removal of weeds from lots in possession of non-resident owners and the statements that no funds existed for removal were not believed. From the experience gained it is clear that the cutting should be vigorously pressed or that the ordinances should be repealed. If there be any lack of uniformity in enforcement of the ordinances, there is bound to be criticism of officials, even though they are not accorded the means to secure removal of noxious growth. It has been proposed that the Bureau of Street Cleaning undertake the cutting of weeds and grass within street area and that, through the police, owners be forced to cut weeds and grass on their own properties. Under this scheme, the difficulty with non-resident owners will remain, but this department would not suffer unfair criticism from its inability to attain definite results. The operations of the division were as follows:

Lots posted for removal of grass and weeds.....	6,592
Lots posted for removal of earth slides.....	521
Complaints received and investigated.....	1,592

In addition to this general work, assistance was rendered in the removal of rubbish from public places and in the campaign to clean up about billboards and the railway entrances to the city.

#### STREET ENCROACHMENT DIVISION

This division was organized July 1, 1915, to supervise investigations of encroachments of various kinds upon street area. Its general functions were to determine the uses of streets, both fixed and transitory, other than traffic, and to make such necessary surveys as would tend to clear the streets of unlawful or undesirable obstructions. The possibilities in this direction are great, since on streets in the congested sections there is an ever-changing and increasing demand for

space. As showing the character of service performed, sixteen buildings and fences established within street lines were investigated and action of ejection taken. In most cases, however, recommendation was made to the Council that owners of structures thus illegally placed be permitted to continue in occupancy of the street area provided they made unqualified statement that no claim for ownership would rest in them through the occupancy, and that they would vacate upon demand of the City without demand for damages. Twenty-seven applications for gasoline filling stations were received and reported upon, and in addition three applications were investigated in advance of filing, the applicants being informed that their applications would not be approved. A survey was also made of the existing filling stations to determine the extent of advertising matter upon them, following which the Council directed that all advertising be removed from the pumps to conform with ordinance.



STREET MAINTENANCE DIVISION

	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Total	Miles
<b>Old Macadam or Gravel Streets Redressed—</b>														
Lin. ft.....	12,405	15,386	18,095	32,331	17,178	18,789	23,359	13,642	3,950	.....	11,914	23,756	190,805	36.1373
Sq. yds.....	48,890	5,679	71,832	96,297	62,484	63,673	87,081	46,473	15,733	.....	34,494	77,144	609,780	.....
Cubic yards, Rock.....	116	299.5	69	452	160	583.5	2	147.5	.....	.....	352	410.5	2,592	.....
Cost.....	\$2317.88	\$184.25	\$2692.83	\$3600.86	\$2866.79	\$3689.42	\$2600.48	\$2141.23	\$1285.20	.....	\$1737.94	\$2659.46	\$28,784.34	.....
Unit cost.....	.0474	.0561	.0375	.0374	.0459	.0579	.0298	.0461	.0081	.....	.0501	.0345	.0472	.....
<b>Block Pavement Repaired—</b>														
Square yards.....	851	373	534	258	386	.....	556	470	741.5	155	685.5	497.5	5507.50	.....
Cost.....	569.34	527.67	381.45	305.31	474.88	.....	690.01	488.59	1078.87	299.00	357.91	302.03	5475.06	.....
Unit Cost.....	.669	1.41	.714	1.184	1.23	.....	1.24	1.04	1.455	1.93	.522	.607	.9941	.....
<b>Earth Grade Roadways Regraded or Redressed—</b>														
Lineal feet.....	.....	.....	.....	.....	.....	.....	.....	12,606	73,922	76,036	34,165	1,535	198,354	37.567
Square yards.....	.....	.....	.....	.....	.....	.....	.....	51,544	327,330	262,283	116,191	3,103	760,451	.....
Cost.....	.....	.....	.....	.....	.....	.....	.....	516.14	2114.95	2057.39	790.45	81.86	5560.79	.....
Unit Cost per square yard.....	.....	.....	.....	.....	.....	.....	.....	.01	.0065	.0079	.0068	.0264	.0073	.....
<b>Crosswalk Constructed—</b>														
Square feet.....	9,085	4,272	615	1,314	1,936	3,108	5,849	6,769	6,026	5,912	3,692	5,416	53,994	.....
Cost.....	810.77	355.32	83.35	168.85	140.40	208.13	373.10	420.44	414.14	385.63	254.74	367.51	3982.38	.....
Unit Cost.....	.0892	.0832	.1355	.1285	.0725	.067	.0638	.0621	.0687	.0652	.074	.0678	.0738	.....

DEPARTMENT OF PUBLIC WORKS

CONSTRUCTION DIVISION—WORK COMPLETED UNDER ORDINANCE

Unit	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Total
Hard Surface Pavement Sq. yds.	8,689	6,586	.....	.....	21,226	20,440	40,421	41,563	52,567	30,289	44,522	8,859	275,162
Concrete Sidewalk..... Sq. ft.	11,422	6,863	12,841	72,167	143,748	80,291	89,696	108,933	54,659	63,698	43,009	29,625	716,883
Concrete Curb..... Lin. ft.	3,248	1,787	2,314	12,492	24,575	13,532	17,399	18,935	9,311	13,172	10,318	6,914	133,967
Wood Sidewalk..... Sq. ft.	.....	.....	.....	.....	177	522	1,371	.....	1,908	.....	729	.....	4,707
Wood Crosswalks..... Sq. ft.	688	176	.....	1,016	7,795	5,360	8,169	1,488	2,136	6,484	696	2,096	36,104
Wood Curbs..... Lin. ft.	.....	.....	.....	.....	47	.....	.....	.....	.....	.....	.....	.....	47
Box Gutters..... Lin. ft.	110	.....	.....	106	819	239	342	.....	189	863	58	230	2,956
Drain Pipe..... Lin. ft.	486	224	.....	1,084	1,669	1,152	1,296	1,411	1,608	785	804	2,100	12,619
Drain Tile..... Lin. ft.	.....	.....	.....	.....	.....	.....	1,860	3,325	4,804	1,406	3,890	1,628	16,913
Catchbasins and Inlets. No. of	10	11	6	10	41	45	27	29	51	31	18	11	290
Drainage Sumps, Depth Lin. ft.	.....	.....	.....	.....	140	28	10	.....	.....	15	.....	28	221
Water Service Pipe..... Lin. ft.	16	.....	120	.....	3,839	1,461	2,125	2,599	811	1,217	2,835	828	15,851.5
Pavement Header..... Lin. ft.	.....	.....	.....	.....	94	526	676	352	1,629	228	1,581	.....	5,086
Water Serv. Connections No. of	.....	.....	.....	.....	.....	.....	37	67	36	.....	14	.....	184
Macadam Roadway..... Sq. yds.	3,708	76	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,784
Stone Block Gutter..... Lin. ft.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	960	960

BUREAU OF HIGHWAYS AND BRIDGES



## BUREAU OF SEWERS

## MAINTENANCE DIVISION

**General Repairs**—Work in this division was of the usual routine nature, the most important jobs being:

1. **The Reconstruction of the Sewer on the Thurman Street Bridge**—This work consisted of the replacement of 12-inch and 8-inch vitrified sewer pipe, supported on shelving below the deck, with wood stave pipe of the same diameter. The vibration of the bridge structure had caused serious leakage throughout the line and the contact of leaking sewage with the steel columns had produced corrosion in the steel. To increase the life of the pipe, the inner and outer surfaces were painted with coal tar. This construction will be of interest as an experiment to determine the durability of wood stave pipe in sewer construction. As an additional experiment, 100 lineal feet of 12-inch vitrified sewer pipe was replaced with smooth, ingot pipe coated with asphaltum, for determination of the durability of this material in sewer construction.

2. **The Construction of the East Grant Street Sewer**—The sewer in East Grant Street between East Forty-eighth and East Fiftieth Streets, laid in 1910 as a part of the north branch of the Brooklyn sewer, had proven unsatisfactory for service because of imperfect grade. Wet soil and indifferent inspection by the City were evidently the contributing causes of failure. Deposits had formed in the sewer and at one point had completely interrupted the flow. The new work is laid in concrete and no further trouble should follow.

The Turbine Sewer Cleaning Machine, purchased early in the year, has been most effective in operation, permitting the removal of roots, sand, reset cement and other foreign materials which reached the sewerage system. The machine is adapted to use with all standard diameters of pipe up to 24 inches, and has produced marked savings in cost of removing obstructions which heretofore had been done by expensive hand methods with considerable injury to permanent pavements and disturbance to traffic. Table — sets forth in detail the operations of the machine.

The outfall of the West Washington Street sewer was extended to the harbor line for the prevention of deposits under the dock. Some improvement has followed this work, but the river current at this point is insufficient to prevent deposit at all stages of the river. It is believed the complete prevention of deposits may be attained by an extension of the sections to the harbor line through submerged, flexible, jointed pipe. The expense of this desired work was not permissible under the restricted appropriations. The outfalls at Madison, Yamhill, Morrison and Alder Streets on the west side were similarly extended to the harbor line and, generally, the results have been satisfactory. The outfall of the Johnson Creek Trunk sewer at Front and Nicolai Streets was extended to the harbor line through a submerged section of creosoted wood stave pipe built at the site and lowered into final position. The experience of the department is that this type of construction is the most economical and feasible for outfalls under local conditions.

## CONSTRUCTION DIVISION

**Reconstruction of Tanner Creek Sewer**—Plans and estimates have been prepared for the reconstruction of the Tanner Creek sewer from

Seventeenth and Taylor Streets to an outfall into the Willamette River. These plans, which probably will need adjustment in detail, comprehend the construction of approximately 6,000 lineal feet of sewer to replace a section known to be in an extremely dangerous condition and of insufficient capacity for even the present needs, and the repair and reinforcement of 1,000 lineal feet of existing sewer. Refilling of the abandoned section of sewer and the reconstruction of house services as needed, are also included in the plans. The total estimated cost is:

New sewer .....	\$243,992.70
Repaired sewer .....	13,060.00
Refilling old sections .....	10,305.00
House connections .....	1,798.50
Removing debris from old sewer .....	550.00
Total .....	\$269,706.20

It is anticipated that much difficulty will be met within the preparation of an assessment for the work, since the system now in place was constructed at various times and, more or less, as local necessity required. The unusual complexity of the case demands that a special scheme of assessment be devised, since no precedent exists.

**Relief Sewer for the East Oak Street System**—For some time the sewers in the vicinity of East Twenty-eighth and East Flanders Streets had been overcharged with showers of little more than average intensity. To remove this condition, a redesign near the upper limits of the system was proposed, comprehending the construction of a relief sewer on East Thirty-first Street from East Flanders to East Irving Streets with outlet into the Sullivan Gulch system, and a relief sewer on East Twenty-eighth Street from East Flanders to East Stark Streets with outlet into the East Stark Street system. The construction of these sewers will provide the necessary relief to the East Oak Street system without appreciable overcharge to either the East Stark Street or the Sullivan Gulch system. As an immediate betterment, the first section of the relief sewer on East Thirty-first Street was constructed from general funds at a cost of \$1,288.40, it being felt that, due to certain errors in design, the City was responsible for this defect. No rain of extreme intensity has occurred since the completion of the sewer and it is not known positively if the construction of the other relief is an immediate necessity. The estimated expenditure of \$20,000 for the other sewers seems, however, not to be required in the present development of the drainage basin.

**Sewerage for the Peninsula District**—Topographical surveys for the Peninsula sewer district, covering approximately 21,000 acres, have been about completed at a total cost of \$16,210.00, or approximately 78 cents per acre. The office maps of about 80 per cent of this area have been platted at an approximate cost of 20 cents per acre. The remaining field work consists largely of current observations in the various water courses of this sections, for the determination of tidal and stream effects. Such observations must, of course, be continued over several complete seasons. Most of the work heretofore done in this direction has been rendered useless by the construction of fills for the approaches to the Interstate Bridge, which have disturbed the normal currents.

In seeking an outlet for this important system, consideration has been given to an outfall into the Columbia Slough or into the Columbia River. The former introduces the question of proper dilution of sewage



and suitable channels have been under discussion for some time. Without extensive dredging, Columbia Slough seems unsuitable for sewage discharge because of the sluggish current at low water stage of the Columbia River. There is little doubt that outfall into this stream would occasion an excessive first cost and heavy maintenance charges in the control of silting action at the upper entrance. The Columbia River seems to afford the rational point of outfall. Considerable attention has been given to the method of disposal and there are under consideration disposals under the combined, separate and mixed systems. No definite conclusion as to this may be reached until the current observations are in good form and comparative estimates of cost under the various methods have been prepared. Before final decision is reached as to the point of outfall and method of disposal, it is strongly recommended that the whole project be reviewed by an acknowledged authority on sewerage construction and by an authority on the hydraulics of the Columbia River. The project is of such magnitude and complexity that the best technical advice should be secured.

Efforts are being put forth by residents in the Peninsula district to organize a drainage district under the provisions of a statute passed in the last session of the legislature to include all land draining directly into the Columbia Slough, regardless of arbitrary boundaries. The idea behind this project is the formation of a channel for shipping, to serve a proposed harbor in North Portland adjacent to a large area suitable for industrial development. The United States Engineer Officer for this district is now making preliminary investigations for the preparation of a report on the project. If the development be made to include a substantial dredging of the upper end of the slough, it may be feasible to discharge sewage into the slough, but, before committing itself to such a plan, the City should be convinced from sufficient data that the entire ship channel may be maintained at all stages of the river without silting or fouling. This department has furnished the United States Engineer Officer with copies of topographic maps of the slough area and all data in its possession.

**Rain and Sewer Gauges**—The rain and sewer gauges in the Holladay Avenue sewer district were maintained during the year. All results have been tabulated, but, as the intensity of rainfall has been below the average, the results secured are not considered of great importance in the determination of run-off. The station will be maintained during the coming year. (See table)

**Inadequacy of the Inlet System**—In the retail business section of the West Side, it has become clear that in ordinary storms the inlets are of insufficient capacity to discharge gutter flow during sharp showers in the fall. Many of the inlet gratings become fouled with fallen leaves and large volumes of water pour into the business section from the adjoining hills, creating a condition which threatens extensive property damage. It is desirable that as much as possible of this flow be kept from the business section by additional catchbasin construction, not alone within the limits of the district, but on the fringes. Within the area bounded by Burnside, Front, Jefferson and Fourteenth Streets, which may be called the danger zone, it is estimated that 678 inlets to cost approximately \$24,500, are needed for adequate drainage. The desirability of the construction is unquestionable, but whether or not the General Fund should bear the burden of cost, is open to ques-

tion. The restricted appropriations for 1916 will, in no event, permit of much work along this line.

**Defective Sewer Construction**—Certain defects in sewer construction have developed in a number of localities, during the year, for the most part, chargeable to imperfect construction of pipe joints through which, after heavy rains, the refilled earth has been permitted to enter the sewer, causing earth settlements over the sewers on both public and private property. It is feared that many other cases will present themselves in coming years and that large expenditures must be made to correct the faults. The difficulty of showing neglect on the part of contractors to execute sound construction may prove too great for recovery of costs against them and, finally, the City will probably be forced to make repairs from general funds. It is quite clear from observations made on these defective sewers that the attempted economy in expenditures for inspection is more than off-set by the ultimate cost for repairs and that the City should demand from contractors an increased time of maintenance in order that less obvious defects may have time to develop.

**Willow and East Eighty-second Street Trunk Sewer**—The largest single operation of sewer construction was the construction of the Willow and East Eighty-second Street trunk sewer, which was commenced and virtually completed for service during the year. This sewer constitutes the fourth and final unit of the trunk sewer system to serve the East Stark Street sewer district, providing main drainage for the district of Montavilla and serving an area of about 700 acres lying eastward from East Sixty-third and Willow Streets to the city limits. Upon construction of small lateral sewers, the drainage for the Montavilla district will have been finally accomplished.

This contract included the construction of the following:

4,278 lineal feet of 60-inch reinforced concrete sewer,  
7,597 lineal feet of 54-inch reinforced concrete sewer,  
1,658 lineal feet of 42-inch reinforced concrete sewer,  
2,311 lineal feet of 36-inch reinforced concrete sewer,  
1,634 lineal feet of 30-inch reinforced concrete sewer,

and several hundred feet of vitrified sewer pipe of diameters up to 24-inch.

The main features of interest on this contract were the manufacture and the laying of the reinforced concrete pipe. There were no exceptional difficulties in the manufacture of the pipe other than at inception of the work, when a lack of uniformity in thickness of the shell and roughness of surface appeared. In a large measure, the varying thickness was overcome by a more rigid spacing of the inner and outer steel forms, which, from their flexibility, permitted slight distortions and eccentricity. At first, considerable trouble was experienced through adhesion of concrete with the steel forms, causing areas of roughness. This defect to no objectionable extent lessened the strength of the sewer, but produced somewhat greater friction. The roughness was either plastered or grouted over, except where large areas were affected, in which case the imperfect sections were condemned and broken up. The difficulty appeared only in construction of the largest sizes of pipe. With the first sections cast, three days after pouring, only, was allowed for removal of the bases and tipping on the side. In some cases this practice resulted in the formation of small cracks due to insufficient hardening of the concrete, and, to avoid recurrence of this, in the sections later made, no tipping



was allowed for a period of two weeks after pouring. This revised method overcame the trouble completely.

All pipe of the largest size was laid on planking to maintain the alignment and to secure a uniform flow line, which, if there be any compression in the soil, may not readily be attained. Along the whole line of the sewer, the material encountered was loose, heavy sand and gravel, requiring close sheeting for the entire depth of trench. This material did not permit the heavy sections of pipe to be laid on a firm foundation and as a result the first sections laid showed slight checks at crown and invert upon the deposit of backfill. These checks were in the nature of hair line checks extending a short distance into the shell of the pipe, but in no way endangered its strength. To avoid the formation of these checks and any damage which might later be occasioned by continuing the backfill where the pipe might not be under complete observation, it was sought to devise an improved method of laying. After various trials and experiments the methods of construction shown as types G and H in the accompanying (Fig.) were followed and checking was almost entirely overcome. These types consisted generally of the laying of two boards lengthwise of the sewer about the quarter points and, to meet soil conditions, the construction of shoulders of concrete up to or somewhat below the springing line. These provisions afforded the solid foundation lacking in the soil. Of the total length of 11,800 lineal feet of 54-inch and 60-inch pipe, 9,200 lineal feet were reinforced by the methods known as types G and H. After the backfill had been in place for a period of from six to twelve months, no additional checks appeared and in some cases the checks entirely disappeared. Inasmuch as the greatest load came upon the pipe during placing of backfill, it is certain that no additional checking may occur from now on and that eventually the load on the pipes will be much reduced by the arching effect of the backfilled earth.

In the smaller diameters of pipe, reinforcement was used only for portions of the 42-inch. Slight checking occurred in some of the 36-inch and 30-inch pipe after backfill, but these checks were not of sufficient extent to warrant any expenditure for side support as for the larger sizes. In all cases where checking occurred, these were filled and painted over with neat cement grout to prevent the passage of moisture to the reinforcement.

The appearance of the checking from hackfill is not new in the construction of cement pipe lines and, from all the evidence in hand, it will appear that what were considered here as defects have in other places been overlooked or treated as mere incidents of construction. The sewer as built is unquestionably of first-class quality and of ample security.

TABLE I  
Amount of Each Contract Completed and Accepted During Fiscal Year 1915

Contractor.	Contract.	Work- ing Days.	Amount of Contract.	Total Amt. Work done by Con- tractor.	Cost of Inspection		% of Total
					For Each Contract	For Each Contractor	
Geo Gordon	E. 74th St. Thorburn Ave. and E. 72nd	45	\$ 6,411.80	\$6,411.80	\$179.50	2.8	2.80
Azar & Co	Base Line Rd. and E. 78th St.	84	6,059.49	328.15	328.15	5.4	
	Tolman Ave. and E. 15th St.	36	3,331.60	174.95	174.95	5.3	
	E. 70th and E. Yamhill Sewer System	196	7,184.12	688.75	688.75	9.3	
	Upper Dr., Montgomery to Alley	38	1,405.04	201.10	201.10	14.3	
	E. Stephen and Clay St. Sewer Sys.	35	4,289.66	150.70	150.70	3.5	
	E. Stephens, E. 29th to 30th.	4	175.15	13.45	13.45	7.7	
	E. Market, E. 29th to 30th.	4	180.19	13.50	13.50	7.5	
	E. 60th and E. Couch St. Sewer Sys	29	2,682.33	119.00	119.00	4.3	
	26th Ave., 27th Ave. and 45th St. S. E.	13	872.54	64.00	64.00	7.3	
	29th and Upshur St. Sewer	63	2,755.70	41.50	41.50	1.5	
	E. 53th, Sandy to Sacramento	37	1,972.03	243.95	243.95	12.4	
E. Sandeberg	Long Ave. and 45th St. Sewer System	55	15,457.09	381.10	381.10	2.5	7.23
	E. Kelly, E. 31st to 35th St.	12	1,234.35	37.03	37.03	3.0	
	Private Property at Roswell	20	1,180.10	63.90	63.90	5.4	
F. Callans	E. 31st, E. Glisan to Irving Sts.	19	1,288.40	19,169.90	87.65	6.8	2.97
K. Y. Azar	Tibbetts St. E. 31st to E. 36th	52	1,950.68	1,950.68	221.05	11.3	11.32
Albert & Kanbolif	Long Ave. Extn. Holgate St. Sewer.	153	17,559.08	17,559.08	986.40	5.6	5.61
	48th St. S. E., 29th to 27th Ave.	27	490.10	49.00	49.00	10.1	
	49th St. S. E., Division to 27th	15	432.69	38.80	38.80	9.0	
	E. 26th, Stephens to Harrison.	14	276.96	46.50	46.50	16.8	
	E. Franklin, 31st to 35th Sts.	29	1,105.57	136.35	136.35	12.3	
Koff & Prior	E. 58th and E. Everett St. Sewer	37	1,097.96	3,403.28	382.15	10.1	11.23
	47th St. S. E., Division to 27th	16	411.82	110.90	110.90	7.3	
	48th St. S. E., Division to 27th	12	332.70	46.30	46.30	13.9	
Chas. Solomon	49th St. S. E., Division to 27th	14	544.35	1,224.96	120.70	9.2	9.85
	Broadway and Wheeler St.	16	544.64	65.40	65.40	12.0	
Solomon & Haddad	47th St. S. E. and 26th Ave. S. E.	11	318.26	862.90	43.90	13.8	12.67
	E. 55th and E. Everett St. Sewer	17	916.43	54.65	54.65	6.0	
	E. Grant, E. 34th to Ernestine Add.	9	246.05	48.10	48.10	19.5	
Solomon & Narren	E. Kelly, Miner's Add. to E. 36th.	27	1,709.16	148.35	148.35	8.7	8.75
Steinfeld & Co.	E. 28th St., Woodward to Clinton.	26	415.90	415.90	92.65	22.3	22.28
	E. 42nd St., 290' S. of Glisan, to E. Glisan.	11	190.50	190.50	57.70	30.3	30.28



TABLE I—Continued  
Amount of Each Contract Completed and Accepted During the Year 1915

Contractor	Contract	Work- ing Days	Amount of Contract	Total Amt. Work done by Con- tractor	Cost of Inspection			% of Total Total for Contractor
					For Each Contract	For Each Contractor	For Contract	
J. P. O'Neill	Thompson, 182 W. of E. 28th to 28th 31st Ave. S. E. and Tibbets St.	8	114.16	24.00	24.00	21.0	21.0	
	E. Frankth and E. 38th St. Sewer	23	1,427.36	67.75	67.75	4.7	4.7	
	Ext'n. of Rhine St. Trunk Sewer	44	3,234.19	169.25	169.25	5.2	5.47	
Wm. Lind.	Insley Ave. and E. 19th St. Sewer	253	102,085.00	2,979.30	2,979.30	2.9	2.91	
Toriff & Callilay	E. Clay St., 29th to 30th Sts.	24	710.38	88.10	88.10	12.4	12.40	
Abraham & Co.	28th Ave. S. E., 41st to 45th Sts.	9	177.52	27.70	27.70	15.6	15.6	
C. B. Randles	System of Sewers in Westover Terraces	36	948.33	137.60	137.60	14.5	14.67	
Navl. Tank & Pipe Co.	Outfall of Johnson Creek Sewer	49	6,618.12	331.55	331.55	3.5	3.50	
		14	665.32	53.90	53.90	8.1	8.10	
			199,761.76	9,000.98	9,000.98		4.51	

TABLE II.  
Cost of Contracts Awarded, Sewers Accepted and Plans Filed During Fiscal Year 1915.

MONTH	Cost of Sewer Work Awarded (Con. Price)	Cost of Sewer Work Accepted (Final)	Est. Cost of Sewer Plans Filed	No. of Sewer Plans Filed
December, 1914	\$1,985.18	\$6,411.80	\$7,331.34	3
January, 1915	150,158.31	21,516.54	145.25	1
February	2,799.90	7,184.12	2,045.25	3
March	6,568.41	25,679.43	5,082.00	2
April	4,408.42	3,649.86	14,312.20	5
May		109,032.30	298.60	1
June	7,391.63	3,254.60	5,602.95	4
July	10,335.77	3,992.33	17,406.51	2
August	22,650.36	872.54		
September	426.50	7,841.95	7,985.45	3
October	4,545.92	5,138.38		
November	18,201.58	5,187.91	16,089.27	4
Total	\$234,471.98	\$199,761.76	\$76,298.82	28
5%		9,890.40		
Total		\$209,652.16		

TABLE III  
Expenditures for Sewers Since 1865.

YEAR	Expended During Year	Total End of Year
1880	\$140,346	\$ 381,790
1890	49,144	430,934
1891	61,510	492,444
1892	249,669	742,113
1893	171,649	913,762
1894	21,198	934,960
1895	16,793	951,753
1896	13,005	964,768
1897	5,488	970,246
1898	7,000	977,246
1899	12,517	989,763
1900	19,391	1,009,154
1901	113,187	1,122,341
1902	57,008	1,179,349
1903	140,137	1,319,486
1904	58,482	1,377,968
1905	69,142	1,447,110
1906	69,706	1,516,816
1907	92,731	1,609,597
1908	77,407	1,687,004
1909	313,426	2,000,430
1910	905,718	2,906,148
1911	556,291	3,462,439
1912 (Dec. 31)	566,973	4,029,412
1913 (Dec. 1)	778,284	4,807,696
1914	367,380	5,175,076
1915	209,652	5,384,728



**TABLE IV**  
Length, Size and Material of Trunk Sewers Laid to December 1, 1915

Size Inches		Monolithic Concrete			Conc. Pipe Total laid Dec. 1, '15	Brick Sewer Total Dec. 1, '15	Wood Pipe			Total All Kinds Dec. 1, '14, to 12-1-'15	Total All Kinds to 12-1-'15
		Laid from 1875 to Dec. 1, 14	Laid Dec. 1 '14, to Dec. 1, '15	Total Laid to Dec. 1, '15			Laid to Dec. 1, '14	Laid from Dec. 1, '14, Dec. 1, '15	Total Dec. 1, '15		
24	Circular	1,722		1,722		4,576					6,298
27	"	2,568	770	3,333	4,319				770		7,652
28	"					750					750
30	"	22,790	1,955	24,745	6,370	3,026				1,955	34,141
32	"	3,575		3,575		2,250					5,834
33	"	4,864	1,426	6,320	2,289					1,426	8,609
34	"					2,397					2,397
36	"	7,280		7,280	3,151	5,017					15,448
38	"					1,105					1,105
39	"				2,182						2,182
40	"					3,469					3,469
42	"	4,470		4,470	6,776	3,402					14,648
43	"	1,300		1,300							1,300
44	"					1,230					1,230
45	"	3,211		3,211							3,211
46	"					2,653					2,653
48	"	6,933		6,933		3,402	100		100		10,435
50	"					359					359
51	"	757		757							757
52	"					1,614					1,614
54	"	2,490	777	3,267	747	1,722			777		5,736
56	"	276		276		2,325					2,601
57	"	1,017		1,017							1,017
58	"					780					780
60	"	3,548	7,983	11,531	561	1,446		70	70	8,053	13,608
62	"	3,877		3,877		2,521					6,398
63	"		2,477	2,477						2,477	2,477
64	"					969					969
66	"	1,318		1,318	2,552	1,921					5,791
68	"					460					460
72	"	2,145		2,145		6,684					8,829
74	"					140					140
76	"					1,600					1,600
78	"	3,385		3,385		162	100		100		3,647
80	"					2,147					2,147
82	"					260					260
84	"	4,208		4,208		1,968					6,107
87	"	3,046		3,046							3,046
90	"					742					742
96	"	723		723							723

112

DEPARTMENT OF PUBLIC WORKS

**TABLE IV—Continued**  
Length, Size and Material of Trunk Sewers Laid to December 1, 1915

Size Inches		Monolithic Concrete			Conc. Pipe Total laid Dec. 1, '15	Brick Sewer Total Dec. 1, '15	Wood Pipe			Total All Kinds Dec. 1, '14, to 12-1-'15	Total All Kinds to 12-1-'15
		Laid from 1875 to Dec. 1, 14	Laid Dec. 1 '14, to Dec. 1, '15	Total Laid to Dec. 1, '15			Laid to Dec. 1, '14	Laid from Dec. 1, '14, Dec. 1, '15	Total Dec. 1, '15		
116	"					833					833
118	"					1,021					1,021
120	"					3,230					3,230
24x36	Egg Shape	6,947		6,947		1,527					8,474
26x39	"	1,320		1,320							1,320
26x39.5	"	556		556							556
28x42	"					1,806					1,806
29x44	"					964					964
30x45	"					2,504					2,504
34x51	"					510					510
39x59	"					698					698
40x60	"					4,298					4,298
44x66	"					3,762					3,762
48x72	"					3,079					3,079
49x73.5	"					3,760					3,760
54x81	"					3,678					3,678
60x84	"					3,984					3,984
59x88	"					1,828					1,828
64x96	"					1,815					1,815
66x96	"					2,147					2,147
30x45	Horse-Shoe	78		78							78
40x40	"	2,767		2,767							2,767
45x42	"	5,689		5,689							5,689
48x43	"	1,212		1,212							1,212
45x50	"	401		401							401
48x59	"	791		791							791
54x60	"	1,487		1,487							1,487
60x62	"	3,776		3,776							3,776
72x67	"	2,082		2,082							2,082
72x69	"	3,321		3,321							3,321
72x71	"	3,719		3,719							3,719
72x73	"	2,285		2,285							2,285
72x66	"	1,512		1,512							1,512
72x71.5	"	3,081		3,081							3,081
90x75 1/2	"	851		851							851
90x80 1/2	"	2,940		2,940							2,940
90x85 1/2	"	3,990		3,990							3,990
Total		134,333	15,338	149,721	28,947	102,550	200	70	270	15,458	281,488

BUREAU OF SEWERS

113



TABLE V  
Length, Size and Material of Pipe Sewers Laid to Dec. 1, 1915.

Size Inches	Shape	VITRIFIED PIPE			CEMENT PIPE			Total Both kind to Dec. 1, 1915
		Laid from 1875 to Dec. 1, '14	Laid Dec. 1, 1914, to Dec. 1, '15	Total laid to Dec. 1, 1915	Laid from 1875 to Dec. 1, '14	Laid Dec. 1, 1914, to Dec. 1, '15	Total laid to Dec. 1, 1915	
6	Circular	480,515	30,706	511,221	127,700	7,023	134,723	645,944
8	"	668,312	33,092	701,404	111,760	10,436	122,196	823,600
9	"	45,034		45,034				45,034
10	"	311,810	8,952	320,762	42,740	4,054	46,794	367,556
12	"	307,258	6,733	313,991	23,437	2,140	25,577	339,568
14	"	122,233	7,119	129,352	14,323	1,332	15,655	145,007
15	"	20,144		20,144				20,144
16	"	75,330	2,445	77,775	5,285	456	5,741	83,516
18	"	39,298	2,517	41,815	7,937	861	8,798	50,613
20	"	38,336	139	38,475	6,221		6,221	44,696
22	"	22,573	1,160	23,733	4,177	899	5,076	28,809
24	"	41,936	530	42,466	3,340		3,340	45,806
30	"	670		670				670
Total		2,173,449	93,393	2,266,842	346,920	27,201	374,121	2,640,963

Total pipe sewers laid Dec. 1, 1914, to Dec. 1, 1915... 120,594 lin. ft., or 22.84 mi.  
Pipe sewers, not including 6" pipe... 82,865 lin. ft., or 15.69 mi.  
Total length, all sewers accepted during 1915, not including 6" pipe... 98,323 lin. ft., or 18.62 mi.

TABLE VI

## Miscellaneous Contract Items for Year 1915

Elbows and bends (vitrified) 6"	No. of	1683
" 8"	"	2
Elbows and bends (cement) 6"	"	475
Manholes (standard)	"	296
Manholes (Type "A")	"	5
Manholes (Drop)	"	15
Catchbasins—Concrete	"	14
Inlets—Concrete	"	235
Excavation—earth	Cu. Yds.	137,705
Excavation—loose rock	"	5,283
" solid rock	"	47
Extra concrete 1-2-4	"	2.4
" 1-2½-5	"	17.45
Extra lumber, M ft., B. M.		119.4
Extra brick	No. of	280
Extra gravel	Cu. yds.	407
Sewer connections	No. of	19
Deep house connections	"	1
Sewer pipe, 2nd class, vitrified, 6"	Lin. ft.	2,507
Sewer pipe, 2nd class, vitrified, 8"	"	4,749
Junction chamber, 48"x63"	"	1
Pavement taken up and relaid—Asphalt	Cu. yds.	25.6
Pavement taken up and relaid—Bitulithic	"	459.1
Pavement taken up and relaid—Hassam	"	30.5

TABLE VII.  
Amount of Storm Water Reaching Sewer—Holladay Avenue Sewer District.

Total area of District... 205.36 acres  
Total impervious area (roofs, pavements and sidewalks)... 82.93  
Total paved area (pavements and sidewalks that are solid between property and curb)... 41.47  
Total area of roof surface (approx.)... 24.26 acres

DATE OF STORM	Duration of Storm		Computed Volume of Rainfall by Rain Gauge Cu. ft.	Total Flow in Sewer by Sewer Gauge Cu. ft.	Per Cent Run-Off on Total Area	Per Cent Run-Off on Impervious Area
	Hrs.	Min.				
Nov. 20 and 21, 1915...	21	53	752,864.1	172,847.9	23%	57.4%
Nov. 22 and 23, 1915...	14	16	1,133,023.2	303,731.5	26.12%	66.39%
Nov. 24 and 25, 1915...	10	24	499,424.7	129,487.5	25.92%	64.20%
Nov. 28th	12	50	521,787.0	129,271.1	24.77%	61.34%
Nov. 29th	1	16	81,995.1	19,804.7	24.15%	59.81%

TABLE VIII.

Showing Amount of Work Done by Maintenance Division During the Year.

Kind of Work Done	Amount of Work Done			COST	
	East Side	West Side	Total	Total Cost	Average Cost
Building Catch Basins	39	22	61	\$1803.39	\$29.56
Repairing Catch Basins	133	229	362	1627.51	4.50
Flushing Catch Basins	158	201	359	446.18	1.24
Flushing Sewers	40	16	56	97.91	1.75
Repairing Manholes	160	55	215	*1625.47	
Repairing Lampholes and Mon. Covers	26	4	30	86.49	2.88
Filling Settled Trenches	75	14	89	272.42	3.04
Locating House Laterals	49	4	53	558.84	10.54
Repairing House Laterals	38	3	41	299.16	9.74
Constructing House Laterals	14		14	493.43	35.25
Opening Sewers to Remove Obstructions	10	10	20	852.88	46.64
Opening C. B. Pipes to Remove Obstructions	5	7	12	619.38	51.62
Repairing Sewers	4	10	14	446.35	31.88
Dragging Sewers, lin. ft.	1170	200	1370	139.00	0.10
Laying New Pipes to connect C. B.'s	17	22	39	1369.42	35.10
Building Catch Basins account change of radius	32	75	107	1481.75	13.85
Flushing Intakes	2	4	6	56.33	9.39
Flushing Outfalls	2	6	8	99.89	12.49
Opening Stopped Sewers	42	12	54	491.00	9.09
Inspecting Sewers	6	3	9	16.84	1.87
Cleaning Sewers with Turbine				2311.04	
Investigating Complaints	42	28	70	49.43	0.71
Miscellaneous Work	24	9	33	1028.83	31.18
Building Manholes			16	850.08	53.13
Special Work				15,107.42	
Total				32,331.24	

\*This amount includes the cost of tarring 386 Manhole Covers.



## OPERATION OF SEWER CLEANING MACHINE (TURBINE)

MONTH	Lin. ft. Sewer Cleaned (all sizes)	Miles	Total Cost	Cost per Lineal Foot
January.....	4,500	.85	105.94	0.024
February.....	1,050	.20	56.56	0.054
March.....	6,465	1.22	136.44	0.021
April.....	8,080	1.53	272.32	0.034
May.....	3,750	.71	241.94	0.064
June.....	5,350	1.01	247.57	0.046
July.....	15,510	2.94	240.63	0.016
August.....	18,875	3.57	284.19	0.015
September.....	5,700	1.08	254.94	0.045
October.....	12,350	2.34	227.63	0.018
November.....	16,420	3.11	242.88	0.015
	98,050	18.56	\$2311.04	0.024

## CONSTRUCTION DIVISION

Contracts for new construction, aggregating in cost over \$15,000 each, were completed as follows:

NAME	Area Drained, Acres	Final Cost 5%		REMARKS
		Exclusive	Inclusive	
Long Ave. extension of Holgate St. Sewer.	130	\$ 17,599.08	\$ 18,437.03	4000' 27", 30" and 33"
East 45th St. and Long Ave. Sewer System	60	15,457.05	16,229.90	Lateral System. Drains into Long Ave. Sewer.
Rhine Street Trunk Sewer.....	1,300	102,085.00	107,189.25	Branch of Brooklyn Trunk Sewer. at Laterals draining into Rhine Street Sewer, providing sewerage for 80 a., constructed.
Willow Street and East 82nd Street Trunk Sewer (an extension of E. Stark Street Sewer).....	700	155,175.19	162,933.95	19,000 lineal feet ad- ditional laterals provide drainage for 62 acres.

## BUREAU OF SURVEYS AND DRAFTING

## ORGANIZATION

The organization of this bureau remained as in 1914.

## SURVEY DIVISION

This division handles all survey work for the department except that concerned with the construction of sewers and undertakes the routine work embraced in the marking of grades and lines for street improvements, extensions and general surveys, and general surveys in connection with major improvements and with special investigations. The routine work is divided among three sections or districts, one being on the west side of the Willamette River and the others on the east side, each district being supervised by a district surveyor in charge of the field parties delegated to the district. It is difficult to measure the amount of survey work undertaken, but the following table will, in general, indicate its character and extent:

## WORK DONE BY DISTRICT SURVEY PARTIES DURING 1915

Nature of work	Length in Miles
Cross-sections .....	42.20
Grading stakes .....	24.70
Finishing stakes for grading.....	9.25
Sidewalk line and grade stakes.....	39.65
Gutter points for pavement.....	29.74
Profile levels .....	20.90
Street extension surveys.....	28.54
Looking up points for and retracing street lines.....	132.75
Surveys for placing of (a) monuments; (b) iron pipes.....	25.12
Miscellaneous survey work.....	28.61
Measuring up contract work done.....	21.62
General levels .....	13.40
Precise levels .....	3.75
Resurveys .....	16.53
Stadia topography .....	1.53
Subgrade points set.....	2.06
Traverse line .....	46.00

This work is independent of special surveys ordered and mentioned further on, for which special allowances were made.

The more important surveys undertaken were:

1. A general survey of Patton Road from Mt. Zion crossroads to the junction of Broadway and Grant Street, comprehending the retracing of the entire roadway for a distance of 10,300 feet. Much difficulty was encountered in this work because of encroachment of private owners upon the established roadway of 60 feet. The work was ordered because of an attempt on the part of certain persons to have the road taken over as a city street.

2. A survey of Montgomery Drive from the west line of Lents Addition to Patton Road. In this case, also, there was much confusion regarding lines and an elaborate survey was completed which should be the basis for improvement if the roadway were taken over by the City. Much opposition to this transfer has been developed and the easterly portion of the road, only, was transferred to the custody of the City, to permit a private owner to undertake an improvement, which would give him access to his property.

3. A survey for a new street running diagonally from the intersection of Custer and Front Streets to the intersections of Third and



Mill Streets. The object of this survey was to locate a street which would permit of the elimination of two dangerous railroad crossings in this vicinity. This survey has been made the basis for the design of structures to eliminate these crossings.

4. A survey to retrace the western city boundary. In this work about 17.5 miles of line, both random and corrected, were run. There remains incomplete a section of about two and a half miles at the extreme northwesterly end of the city, which limits the area incorporated with the town of Linnton.

5. A survey for a revision of lines of the proposed Greeley Street extension. The revised lines were staked in the field in order that those interested in the extension might advise themselves of the proposed work.

6. Various surveys on the east side of the river to retrace street and addition lines preliminary to the establishment of monuments in the section bounded by Prescott Street, Killingsworth Avenue, Union Avenue and Commercial Street, and for the retracing of certain section lines northward and southward of East Stark Street. This work may be viewed in a measure as routine work, although its effect is general.

**Bench Level Survey**—This survey, begun in 1914 for the purpose of covering the entire city with precise working benches, has now been completed. In the 1914 report the methods and results of the survey were described, but since the work mentioned in the 1914 report, the entire West Side, some detached areas on the East Side and all of the area of the former city of St. Johns, have been covered by the level nets. Approximately 140 miles of levels were run during the year. The points set in the year were:

Class A and Class B tablets.....	246
Class A iron pipe B.M.'s.....	62
Class B iron pipe B.M.'s.....	17
Street monument B.M.'s.....	9
Class C benchmarks.....	90
<b>Total .....</b>	<b>424</b>

A number of the old city benchmarks were also redetermined during the progress of the survey and checks made to the benchmarks of the United States Geological Survey. All the field work was carefully adjusted and the complete tabulation of benchmarks comprehending a description and elevation of 2,006 benchmarks established and checked, has been prepared. Of these, 1,273 are listed in numerical order, the points being bronze castings stamped with a die. The cost of the year's work has been:

Salaries of field men.....	\$1,902.05
Salaries of office men in checking, adjustments, distribution of errors, tabulation, etc.....	848.80
Bronze tablet benchmarks (Classes A and B).....	79.70
Transportation of materials .....	13.25
Car fare .....	38.60
Miscellaneous expense .....	6.00
<b>Total .....</b>	<b>\$2,888.40</b>

Adding to this amount the expenditures for the preceding year (\$5,323.31), the total cost of the survey has been \$8,211.71. If from this

be deducted the value of equipment and materials on hand—approximately \$400.00—the cost per benchmark has been about \$3.90. In view of the permanency of the work, this expenditure has been extremely modest and far below what has been accomplished elsewhere. In most other places the benchmarks have not generally been available as a working system, but in Portland the whole thought was to make the survey thoroughly serviceable for ordinary field work.

**Street Monument Survey**—This survey has been extended on the west side of the river northward from Burnside Street and included the area as far westward as Twenty-seventh Street. Monuments have not been set in this section, but substantial points which will serve to locate the permanent monuments later, have been set. Accurate determination of the position of existing monuments which, in many cases, had become shifted through settlement, blows of traffic or paving operations, was made during the survey. Extreme care was taken in the determination of distances and angles, and every element adjusted in accordance with good practice. In the unmonumented district northward of Raleigh Street, the street and addition lines were retraced and adjusted and permanent iron pipes located at control points, which will serve later as a basis for setting the permanent monuments. Following is a statement of the work actually accomplished:

Distance measured, in feet.....	158,430
Distance checked, in feet.....	40,430
Range lines run, in feet.....	198,480
Range lines checked, in feet.....	123,660
Number of points set.....	2,190
Angles measured .....	558
Old monuments cleaned out and examined.....	97
Number of permanent points of iron pipe or rod established..	25

**Underground Survey**—The need of a system of underground maps has been very evident for several years but funds have usually been lacking to prosecute the work. In 1913 some work was started but laid aside because of insufficient funds. In 1914 practically no work was done and in 1915 only the necessary field work for the location of surface structures was possible. Much of the information exists in the form of unplotted notes which should be at once entered on the plans. It is purposed to reopen the work and to extend it in 1916.

#### STREET EXTENSION DIVISION

This division is charged with all matters touching the opening, widening and extension of streets, and the preparation of deeds of dedication, rights of way and similar matters relating to public improvements and public property. The following tabulation indicates the extent of these operations:



STREETS OPENED, LAID OUT AND ESTABLISHED BY  
EXTENSION PROCEEDINGS

Name of Street	Limits	Length in feet	
BY ORDINARY METHOD			
Union Avenue...	South line of Clinton St. South...	50	Res. No. 8411
54th Street S. E.	42nd Ave. to 44th Ave. S. E.	333	8503
East 13th St.	Rural Ave. to E. 14th St. at Bybee Ave.	325	8504
		708	
BY ADDITIONAL METHOD			
East Grant St.	E. 34th St. to Chestnut Hill	300	Ord. No. initiating 28625
Broadway	At Wheeler Street	80	29390
Broadway	Sandy Blvd. to East 45th St.	1350	28607
East Morrison St.	East 20th street east 155 feet	155	29527
Mill St.	16th street to 110 feet west	110	28464
		1995	
BY TAKING OVER COUNTY ROADS			
East 59th St.	Halsey St. to Sandy Blvd.	3350	Ord. No. 30552
Front Street	Wilson St. to north terminus	2420	30584
Nicolai Street	Front St. to Sherlock Ave.	250	30582
Nicolai Street	26th St. to 31st St.	2290	30583
E. 28th Street	Holgate St. to Schiller St.	725	30551
E. 17th Street	Sherrett Ave. to south line of city	990	30811
Tacoma Avenue	Grand Ave. to east line East 19th St.	4000	31073
E. Taylor St.	South of blk. "W," Tabor Heights	800	30864
Montgomery Dr.	W. L. Lents Add. to lot 16, Alta Vista	525	31030
Halsey St.	E. 60th St. to point east of O.-W. R. & N.	5500	31018
East 82d St.	Clackamas St. to Broadway	750	31017
		21,600	
STREETS OPENED OR WID- ENED BY DEED WITHOUT EXTENSION PROCEEDINGS			
Bryant St.	West line blk. 6, Lowell to Wood- lawn		Ord. No. accepting 30499
East 59th St.	Halsey St. to Syndicate Addition	200	30009
94th St. S. E.	Cherine Add. to 115 ft. south	633	30569
95th St. S. E.	Cherine Add. to 115 ft. south	115	30569
96th St. S. E.	Cherine Add. to 115 ft. south	115	30569
66th St. S. E.	26th Ave. to Section Line Road	115	30730
East 10th St.	Taggart St. to Milwaukie St.	450	29181
79th St. S. E.	36th Ave. S. E. to 45th Ave. S. E.	420	29099
East 74th St.	Over O.-W. R. & N. Co.'s right-of- way	2150	30853
		100	
		4198	
PROCEEDINGS ARE PENDING FOR THE EXTENSION, WID- ENING OR OPENING OF THE FOLLOWING STREETS AT THE END OF 1915			
Powell St.	Milwaukie St. to East 19th St.	1925	Order No. initiating 39957
Washington St.	Lownsdale St. to 16th St.	200	30367
East 45th St.	Halsey St. to Broadway	200	30534
58th St. S. E.	29th Ave. S. E. to Division St.	465	30432
Greeley St.	Killingsworth Ave. to Russell St.	1360	30788
Madrona St.	Bk. 1, Woodlawn to Dekum Ave.	9810	30815
E. Burnside St.	E. 44th St. to E. 55th St.	600	30910
		2420	

STREETS OPENED, LAID OUT AND ESTABLISHED BY  
EXTENSION PROCEEDINGS—(Continued)

Name of Street	Limits	Length in feet	
E. Burnside St. and Gilham Ave.	E. 63d St. to E. 69th St. and Thor- burn Ave.	1825	30909
Oregon St.	East line of York to east line East 29th St.	91	31125
Kline St.	Patton Road, southeast to S. L. Sec. 4	300	Res. 8933
Halsey St.	Through block 31, McMillen's Add.	97	8123
		19,088	

Among the more important works were the following:

1. The preparation of deeds and other instruments connected with the opening of Greeley Street. All documents related to this important project have been prepared and are ready for accomplishment.

2. The replatting of the area included in Hudson's Addition, Meadow Park, Fairview Addition, a portion of the Town of Wayne and a portion of Quinn's Addition to the Town of Wayne. This district, embracing about 40 acres northward of Knott Street and westward of East Thirty-third Street, was platted at various times in such an indifferent manner that the City consistently refused to consider any public improvements to the property. Streets were located in an amazing manner, a condition arising from the selfish desire of owners to secure as many lots as possible from their holdings, regardless of appearance, convenience or economy. A plan was devised for the replatting, in a single operation, of the entire area, which, briefly, may be described as follows:

The owners in the area would deed their holdings to a trustee and, after all such holdings had been so deeded, an area equivalent to his individual holdings would be re-allotted. With one or two exceptions, all of the 43 property-owners interested have assented to the replat and there is hope that the scheme will have a happy outcome. From the unallotted areas coming from the surplus of street area, the trustee and the City of Portland would find their returns for their efforts and for the expense of the proceedings. The scheme appears to offer a rational solution of an extremely complicated matter.

A similar plan is under consideration for the relocation of streets in the addition, known as "The Cove," located in the hill section in South Portland above Terwilliger Boulevard. This is a less important and less complicated case and probably will also be successful.

**Street Acquisition Maps**—There had never existed in workable form a record of the procedures by which street areas had been acquired and, after full consideration of the case, it was determined to construct maps which by color and notation would set forth the history of every street acquired by the City. For the formation of these maps it was necessary to make careful search of all records in the department and at the County Clerk's office and after collection of the data maps have now been prepared upon which, in convenient form, are recorded all essential facts touching the acquisition of streets. The maps show the complete history of each street so that if an area be affected by two or three proceedings it is possible, without reference



to any other record, to have a full memorandum. To increase the usefulness of the maps, the ownerships in fee of the City will be indicated on the maps. Constant use is being made of these maps and in the future will serve as a valuable asset to the City. It is believed that this scheme of record is the first attempt of the kind in any large city.

**City Map**—The City has never owned an adequate city map. Its records exist in the form of disjointed sheets from which no adequate idea of a general improvement may be drawn and dependence must be placed upon more or less indifferent maps prepared by private persons, which the City itself must purchase. For several years the matter of making an accurate city map of general service has been urged, but the expense has not seemed justified, although the wisdom of preparing such a map must be evident. As a basis for this map, it will be necessary to make a triangulation survey of the city. Probably the expense of an accurate map would exceed \$50,000.00, but, in my opinion, this expenditure will be amply repaid by the wide general use which the map will find.

#### DRAFTING DIVISION

The activities of this division are quite varied, it being the general drafting and computing agency of the department. In addition to the ordinary drafting work imposed upon similar organizations, it is charged with the preparation of preliminary estimates for street improvements and final estimates for both sewer and street improvements, the standardization of printed forms and documents, general statistical data regarding improvements and the finances of the city and a variety of other duties more or less related to computing and drafting. A statement of precise work accomplished is impossible and would not be enlightening, but attention is again called to the exceptional service performed by Mr. Kratz, Chief Draughtsman, as Secretary of the Forms Committee of the Council, who has continued his excellent work on revision and editing of all printed forms, securing both economy and simplicity.

#### LENGTH AND MATERIALS OF ROADWAY IN PLACE DEC. 1, 1915.

Kind of Improvement	In Place Dec. 1, 1914, Length in Miles	In St. Johns and Linnt'n at Time of Annexation	Completed During F.Y. 1915	In Place Dec. 1, 1915
Asphalt.....	107.27	.....	.304	107.574
Asphaltic Concrete.....	12.12	.....	7.054	19.174
Asphaltic Concrete Redress.....	4.45	.....	.....	4.45
Bitulithic.....	108.35	.09	1.542	109.982
Bitulithic Redress.....	5.31	.....	.58	5.89
Concrete.....	.15	.....	.....	.15
Bituminous Macadam.....	22.11	2.35	1.987	26.447
Granitoid.....	.37	.....	.....	.37
Gravel Bitulithic.....	35.16	.....	2.235	37.395
Hassam.....	46.83	.....	.933	47.763
Stone Blocks.....	9.16	.....	.227	9.387
Vitrified Brick.....	.70	.....	.612	1.312
Westrumite.....	1.00	.58	.....	1.58
Wood Blocks.....	2.29	.....	.....	2.29
<b>Total Hard Surface.....</b>	<b>355.27</b>	<b>3.02</b>	<b>15.474</b>	<b>373.764</b>
Elevated roadways.....	.54	.....	.....	.54
Graded (earth grade).....	255.15	12.67	14.506	282.326
Gravel.....	83.19	.....	.....	83.19
Macadam.....	46.03	9.39	1.075	56.495
Plank roadway.....	.80	.....	.....	.80
Reinforced concrete bridge.....	.16	.....	.....	.16
Steel Bridge.....	.37	.....	.....	.37
<b>Total Miscellaneous.....</b>	<b>386.24</b>	<b>21.02</b>	<b>15.581</b>	<b>423.881</b>
<b>Grand Total.....</b>	<b>741.51</b>	<b>24.04</b>	<b>31.055</b>	<b>797.645</b>

#### CUMULATIVE COST OF STREET IMPROVEMENTS

Cost of street improvements (Dec. 1, 1914, to Dec. 1, 1915).....	\$722,387.49
Total cost of street improvements (1865 to Dec. 1, 1914,) before annexation of Linnton and St. Johns.....	30,658,062.00
Total cost of street improvements in Linnton and St. Johns prior to annexation..	440,559.95
Total cost of street improvements (1865 to Dec. 1, 1915).....	31,821,009.44

#### STREET IMPROVEMENT WORK DONE DURING FISCAL YEAR 1915.

Kind of Improvement	Length in Miles	Total Cost including 5% for Eng., Adv. & Insp.
Asphalt.....	.304	\$ 15,197.12
Asphaltic Concrete on Crushed Rock base.....	1.793	73,002.01
Asphaltic Concrete on Bit. base.....	5.261	106,419.30
Bitulithic on Crushed Rock base.....	1.542	64,387.72
Bitulithic Redress.....	.58	22,704.90
Concrete.....	1.987	60,717.00
Gravel Bitulithic.....	2.235	83,314.50
Hassam, Class "A".....	.617	20,967.42
Hassam, Class "B".....	.316	8,654.75
Stone Blocks.....	.227	15,179.71
Vitrified Brick.....	.612	34,045.11
<b>Total Hard Surface.....</b>	<b>15.474</b>	<b>\$504,589.54</b>
Macadam.....	1.075	23,910.01
Graded (earth grade).....	14.506	193,887.94
<b>Total Miscellaneous.....</b>	<b>15.581</b>	<b>217,797.95</b>
<b>GRAND TOTAL.....</b>	<b>31.055</b>	<b>722,387.49</b>



## TOTAL AMOUNT OF STREET IMPROVEMENTS ACCEPTED DURING FISCAL YEAR 1915.

MONTH	PAVEMENT		GRADING AND WALKS		MACADAM	
	No.	Cost	No.	Cost	No.	Cost
December.....	1	\$2,375.02	4	\$ 69,003.22	..	..
January.....	2	14,233.98	3	9,346.08	2	20,089.84
February.....	2	19,454.36	2	12,403.22	1	1,541.00
March.....	1	19,452.00	..	..	..	..
April.....	..	..	1	3,525.38	..	..
May.....	2	18,430.53	3	12,413.10	..	..
June.....	5	21,306.93	13	29,885.63	..	..
July.....	5	56,621.65	5	11,940.10	..	..
August.....	12	86,147.10	6	15,701.58	1	2,279.17
September.....	10	141,636.03	3	6,433.27	..	..
October.....	6	83,272.58	5	12,414.60	..	..
November.....	7	41,659.31	5	10,821.76	..	..
Total.....	53	\$504,589.54	50	\$193,887.94	4	\$23,910.01

Total, three classes, \$722,387.49.

Note.—This is contract price plus 5%, and includes Grand Avenue permit work (\$4,103.40).

## CONTRACTS FOR STREET IMPROVEMENTS AWARDED DURING THE FISCAL YEAR 1915.

MONTH	PAVEMENT		GRADING AND SIDEWALK		MACADAM	
	No.	Contract Price by Preliminary Est.	No.	Contract Price by Preliminary Est.	No.	Contract Price by Preliminary Est.
December.....	2	36,273.00	1	3,500.00	1	1,789.00
January.....	..	..	1	7,871.00	..	..
February.....	1	15,469.00	2	7,974.00	..	..
March.....	4	19,411.00	7	15,730.00	..	..
April.....	2	23,524.00	9	19,935.00	1	2,249.00
May.....	7	60,218.00	1	1,275.00	..	..
June.....	11	102,130.00	7	21,473.00	1	9,887.00
July.....	4	33,915.00	2	1,252.00	..	..
August.....	3	27,805.00	6	10,245.00	..	5,817.00
September.....	3	44,207.00	3	3,833.00	..	..
October.....	13	83,030.00	1	930.00	1	5,225.00
November.....	2	8,664.00	3	10,122.00	1	3,535.00
Total.....	52	454,646.00	43	104,140.00	5	28,802.00

Total in contracts awarded, \$587,588.00.

## UNIT PRICES FOR PAVING FOR FISCAL YEAR 1915

KIND	Square Yards	UNIT PRICE			Remarks	
		Maximum	Minimum	Average		
Asphalt.....	4,284.8	1.60	1.48	1.54	Bid of 90c. was for inferior conc under St. J. specificat'ns	
Asphaltic Concrete on Cr. Rk. base.....	48,101.4	1.30	1.07	1.29		
Asphaltic Concrete on Bituminous base.....	87,127.1	1.17	1.00	1.12		
Bitulithic on Crushed Rock base.....	26,089.0	1.85	1.37	1.59		
Bitulithic Redress.....	15,826.7	1.25	1.12	1.18		
Concrete.....	30,460.9	1.50	.90	1.21		
Gravel Bitulithic.....	35,565.9	1.45	1.32	1.38		
Hassam, Class "A".....	12,555.4	1.40	1.40	1.40		
Hassam, Class "B".....	5,396.9	1.30	1.20	1.27		
Stone Blocks.....	800.0	2.90	2.90	2.90		
Vitrified Brick.....	7,140.5	2.85	2.22	2.53		
Total Hard Surface.....	273,348.6					
Macadam.....	4,896.4	3.00	2.50	2.65		Unit price given per cu. yd. for Macadam.
Portion in Track—						
Stone Blocks.....	3,546.5	3.50	2.75	3.18		
Vitrified Brick.....	5,470.5	2.00	2.00	2.00		
Concrete.....	62.0	2.00	2.00	2.00		
Total.....	9,079.0					
Portion in Central Strip—						
Vitrified Brick.....	1,129.9	3.00	2.75	2.94		
GRAND TOTAL.....	288,453.9					

## COMPUTERS' WORK ON STREET AND SEWER ESTIMATES FOR FISCAL YEAR 1915

NATURE	PRELIMINARY			FINAL		
	No.	Total Est. Const. Cost	Mileage	No.	Final Cost Plus 5%	Mileage
Street Improvement—						
Preliminary Estimates.....	94	678,425.00	20.4	..	..	..
Preliminary Permits.....	2	4,684.70	0.2	1	4,103.40	.075
Final Estimates.....	..	..	..	106	718,284.09	30.980
Sewer Improvements—						
Final Estimates.....	..	..	..	43	209,749.85	25.8



## DEPARTMENT OF PUBLIC WORKS

STREET IMPROVEMENT PROCEEDINGS DEFEATED BY REMON-  
STRANCE DURING FISCAL YEAR 1915

DURING FIRST SIX MONTHS				DURING SECOND SIX MONTHS			
Kind of Improvements	No.	Estimated Const. Cost	5% for Eng., etc.	Kind of Improvements	No.	Estimated Const. Cost	5% for Eng., etc.
Grad'g and walks	2	\$ 33,828	\$ 1,691.00	Grad. and walks	2	\$ 3,273	\$ 164.00
Macadam	4	15,731	787.00	Macadam	1	3,573	179.00
Pavement				Pavement	2	2,511	125.00
<b>Total</b>	<b>6</b>	<b>\$49,559</b>	<b>\$ 2,478.00</b>	<b>Total</b>	<b>5</b>	<b>\$9,359</b>	<b>\$468.00</b>

One improvement for pavement on which proceedings were discontinued before the completion of the estimate is included with the total number for the first six months, but the estimated contract for cost same is omitted from totals shown.

## ANNUAL REPORT

OF

THE DEPARTMENT OF  
PUBLIC AFFAIRS

FOR THE FISCAL YEAR ENDING

NOVEMBER 30, 1915



## DEPARTMENT OF PUBLIC AFFAIRS

WM. L. BREWSTER

COMMISSIONER

To June 30, 1915.

GEO. L. BAKER

July 1 to November 30, 1915.

### AUDITORIUM

#### OFFICE OF CITY ATTORNEY

Walter P. LaRoche, City Attorney

#### BUREAU OF CITY HALL

C. S. Simmons, Superintendent

#### BUREAU OF FREE EMPLOYMENT

C. E. Christenson, Superintendent

#### FREE MUSEUM

#### BUREAU OF PARKS

James O. Convill, Superintendent

#### BUREAU OF WEIGHTS AND MEASURES

E. D. Jones, City Sealer

## AUDITORIUM

A committee consisting of Messrs. F. C. Knapp, James B. Kerr, H. M. Haller, the Commissioner of Finance and the Commissioner of Public Affairs were appointed to consider the selection of a site for the Auditorium and to propose a type of building to be erected thereon. On February 11th, this committee made a report in which all joined, except the Commissioner of Finance, recommending that, if possible, Block 166, Portland, known as the Dolph Block, and lying diagonally southwest across Fifth Street from the City Hall, be purchased as the site; that the building be constructed primarily for conventions, lectures, concerts and other meetings of a like nature, and only secondarily for exhibition purposes and that provision be made for the Oregon Historical Society until it can obtain permanent quarters in a building of its own.

The Council, however, while concurring in the purpose for which the building should be constructed, declined to follow the report as to the site and confirmed the selection of the Market Block, at Third and Clay Streets, which had previously been selected by the old Public Auditorium Board.

The Council, moreover, were of the opinion that one block 200x200 feet would be sufficient and that it would not be necessary to buy any adjoining property. It will be remembered that the plans drawn for the Market Block site under the direction of the old board were for a plot of ground 200x360 feet. It therefore became necessary to have new plans drawn for the smaller parcel of land determined upon. Mr. Freedlander, the architect, came to Portland and negotiations were had as to the amount of money due him and although an agreement was approached, it finally fell through because Mr. Freedlander stipulated as a condition, that he should have the work of designing the smaller building.

The title of the City to the Market Block, which had been determined favorably to the City by the Circuit Court, and appealed to the Supreme Court, was confirmed by the latter on March 23, 1915.

On May 12, 1915, Messrs. Whitehouse & Fouilhoux were appointed local architects by Messrs. Freedlander & Seymour, of New York.

Immediately upon my assuming office on July 1st, I took up the task of erecting the Auditorium with the least possible delay. Various meetings were held, Messrs. Whitehouse & Fouilhoux, representatives of the architects, being present, and the general plan and arrangement of the building was discussed. Messrs. Whitehouse & Fouilhoux proceeded to make sketches, conforming with the decisions reached, which were completed and submitted to the Council for approval on July 30th. A few minor changes were made, after which the sketches were approved and sent to New York on August 7th, with instructions that preliminary plans should be prepared as soon as possible as we wished to proceed with construction without delay.

The difficulty of hastening the execution of construction in Portland, when all details had to be submitted to the New York architects, was soon apparent, and considerable delay was experienced on this account. While I appreciate that Messrs. Freedlander & Seymour are excellent architects, as efficient and capable as any firm whose services might have been secured, nevertheless I feel that results could



have been obtained more promptly had we been able to work through architects in this city in place of thirty-five hundred miles away.

On October 16th, preliminary working drawings were received from New York, and on November 30th the first set of finished drawings were mailed by the New York architects.

Considerable credit is due Messrs. Whitehouse & Foulhoux, not only for their thorough and efficient work as representatives of the New York architect, but for their success in facilitating the work of the Eastern office, thereby showing a desire to co-operate with our wishes of hastening the construction.

At the present time the preliminary arrangements have proceeded to such an extent that within the very near future advertisements for bids can be made, the bonds disposed of, and the construction work can proceed without further delay.

## ANNUAL REPORT OF THE OFFICE OF THE CITY ATTORNEY, 1915

December 1, 1915.

During the year 1915 there were rendered to the various departments of the City of Portland by the City Attorney's office 894 formal written opinions and 1,260 other official communications, and an average of 15 oral opinions each day by the members of this office.

There were prepared by this office 155 written contracts between the City of Portland and parties transacting business with the City. There have been approved as to form 1,184 contracts and bonds.

The following is a summary of the court work disposed of by this office during the year commencing December 1, 1914, and ending November 30, 1915.

Two cases were disposed of in the United States District Court for the District of Oregon. The case of Schaw Batcher Co. Pipe Works vs. the City of Portland was an action to recover the aggregate sum of \$230,628.37 plus interest balance alleged to be due for the construction of the Bull Run Conduit No. 2 and was made up of 11 causes of action. Verdict and judgment in favor of the City in 10 causes of action was entered April 4, 1915, verdict and judgment against the City for the sum of \$7,200.00 in one cause of action was entered April 5, 1915, representing the amount of penalty imposed by the City against the contractor. The case of Home Telephone & Telegraph Company vs. City of Portland, a suit to enjoin the enforcement of the electrical wiring ordinance, was compromised during trial.

Nine cases were disposed of in the Supreme Court of Oregon, six of which were decided in favor of the City, two were decided against the City and one was dismissed leaving the judgment of the lower court stand in favor of the City.

Ninety-four cases were disposed of in the Circuit Court of the State of Oregon for the County of Multnomah, 47 were decided in favor of the City, 19 were decided against the City and 28 were dismissed.

One case was disposed of in the Superior Court of the State of California, resulting in a settlement in favor of the Portland Firemen's Relief and Pension Fund.

Two cases were disposed of in the District Court, one of which was decided in favor of the City and one against the City.

There were tried in the Municipal Court during the year 1915 10,088 cases.

At the present time there are pending in the various courts the following number of cases: Three in the District Court of the United States for the District of Oregon; twenty in the Supreme Court of the State of Oregon; one case before the Public Service Commission; seventy-three cases in the Circuit Court of the State of Oregon for Multnomah County; one in the Circuit Court for Clackamas County; one case in the District Court for Multnomah County, and in the County Court for Multnomah County there are pending the following matters: Estate of Ralph H. Stahl, deceased; Estate of Flora E. Stahl, deceased, and Guardianship of the Stahl minors.

The City Attorney was directed by the Council to act as attorney in the above probate matters.

Considerable work has been done during the year 1915 on the cases now pending and many of them are either awaiting decision or are ready for trial.



It has been the constant effort of this office to lessen the amount of litigation by keeping in touch with departmental work so that commissioners and officers of the City could have the benefit of legal advice, and the results show that this effort has met with success—litigation has sharply decreased.

The legal work of the Dock Commission has required steady and prompt attention and the results have been entirely satisfactory.

The field covered by this office has broadened by the enlargement of the city's territory. The annexation of the City of St. Johns and the Town of Linnton brought much additional work to this office.

The organization of the City Attorney's office is closer knit and the various members of the office have worked together with perfect harmony so that any undue strain felt by one or more of its members is relieved by the support of the other members and the work in this way has been promptly dispatched and at all times kept under control.

Respectfully submitted,

W. P. LAROCHE,  
City Attorney.

#### BUREAU OF CITY HALL

Considerable repairing and painting has been done in the City Hall during the past year, particularly in the corridors and on the Fourth Floor. Many requests have been received for additional office space, which is impossible to furnish, and an effort was made to provide additional room by utilizing the gallery of the Council Chamber, which would permit considerable office space, but owing to financial conditions it was not considered advisable to make the changes at the present time.

#### FREE MUSEUM

Mr. C. F. Wiegand, Curator of the Museum, has secured several interesting exhibits from different sources; a large collection of minerals from Smithsonian Institute adding materially to an already valuable collection.

When the Auditorium is completed and more space provided for the Museum the same can be increased to a far greater extent. The space in the City Hall is so crowded that it does not seem advisable to do so at present.

The Museum is an attraction which brings many visitors to the City Hall who would not otherwise be interested.

#### BUREAU OF FREE EMPLOYMENT

A total of 5,984 positions were secured during the year, a decrease of 4,038 over the previous year.

The labor depression continued to be very marked and employers could obtain ample help from personal applications made, and did not need to send requests to the Employment Bureau.

During November, 1914, wood cutting camps were opened by the City to give employment to destitute and needy men. The first camp was established at Huber in Washington County and operated from November 20, 1914, to March 1, 1915. Camp No. 2 was opened December 10, 1914, and ran until March 22, 1915. Camp No. 3 was opened January 13, 1915, and ran until April 1. The total number of cords cut at the three camps was 15,103.

Over 900 men were given employment during the operations of the camps. The greater part were single men and only a small percentage of married men took advantage of the opportunity to cut wood in these camps. The average number of days that each man was employed was thirteen. The men were paid from 90 to 95 cents per cord, and cut an average of one and a half cords per man per day. The men were charged 75 cents per day for board, three meals, and in two of the camps \$1.00 per week for tools furnished by the City.

The total net money paid in wages for the cutting of the wood was \$6,462.58; that amount representing the sum paid to the men after deductions had been made for their meals and use of tools. The total sum expended for all purposes, including the stumpage price, amounted to \$33,253.83.

The success that the City Employment Office attained in selecting and handling the men engaged in the above wood cutting, showed to some considerable conclusion, that it should take an active part in all similar work in connection with the unemployed of the city. Having this fact in view, steps were taken early in the Fall of 1915 to reorganize and enlarge the scope of the work of the bureau.

A Citizens' Committee was appointed to co-operate in drafting new measures and outlining new work, consisting of the following: George L. Baker, Chairman; Chas. F. Berg, H. L. Corbett, Rev. W. T. Sumner, Isaac Swett, Eugene Smith, W. P. Strandborg, Father E. V. O'Hara, Marshall N. Dana and J. H. Barbour, which resulted in an ordinance being passed November 24, 1915, creating the Public Employment Bureau, and establishing the office of a Director, and an Assistant Director to manage same. Sub-committees were organized to investigate the advisability of establishing a municipal lodging house, also census committee and committee on Free Employment Bureau.

Mr. J. H. Barbour, United States Immigration Agent, represented the Federal Government, the co-operation of which was assured the Committee, and with this in view, Mr. Barbour made a trip of investigation to Los Angeles, where one of the most successful employment bureaus of the country is being conducted.

Commodious quarters were secured for the Public Employment Bureau, which were thoroughly equipped to handle the work. Arrangements were consummated whereby the United States Government Employment Office was to occupy quarters with the Employment Bureau.

To further cope with the unemployed situation, a municipal lodging



house was established, having a capacity to properly house and sleep over six hundred men. Ample bathing, clothes-washing, and reading room facilities were provided, and at the close of the fiscal year the lodging house was being remodeled and equipped for the purposes named, and the management of the new created Employment Bureau were placed in charge of their work.

NOTE—The figures given above were taken from the pamphlet, "Report on the Problem of Unemployed," by Wm. L. Brewster.

## EMPLOYMENT FURNISHED

1915	MALE		FEMALE		Total
	In City	Out of City	In City	Out of City	
December (1914)	*256	*149	*75	*18	*498
January	174	355	68	5	602
February	219	163	59	12	453
March	381	210	69	11	671
April	313	34	71	17	435
May	208	28	70	31	337
June	270	37	93	24	424
July	270	28	75	12	385
August	617	74	83	10	784
September	418	38	104	18	578
October	344	37	72	12	465
November	*242	*22	*81	*7	*352
Total	3,712	1,175	920	177	5,984

\*Approximated.

## MALE HELP

Following is classification of employment secured and number of employees sent thereto during the months of January, February, March, April, May, June, July, August, September, and October, 1915:

Apprentices	4	Janitors	18
Artist models	2	Kitchen helpers	45
Bakers	3	Laborers:	
Bannermen	14	City	626
Barnmen	1	Common	2317
Berry pickers	23	Lathers	1
Blacksmiths	2	Land clearers	26
Boilermakers	1	Lumber pilers	3
Bricklayers	3	Longshoremen	21
Building laborers	18	Machinists	2
Cabinet makers	1	Meat cutters	1
Carpenters	100	Mill men	7
Cement finishers	13	Painters	51
Concrete muckers	155	Paper hangers	18
Cooks	21	Plasterers	10
Dairy men	16	Plumbers	5
Deck hands	2	Polishers	1
Egg candlers	1	Porters	4
Electricians	1	Potato diggers	11
Elevator operators	2	Shinglers	12
Engineers	3	Steam fitters	3
Errand boys	3	Saw filer	1
Farm hands	121	Teamsters	17
Firemen	2	Tie cutters	3
Flunkies	2	Tree trimmers	1
Gardeners	60	Waiters	5
Hop pickers	71	Wood choppers	53
House men	311		

Following is classification of employment secured and estimated number of employees sent thereto during the months of December, 1914, and November, 1915:

Building laborers	14	Kitchen help	7
Carpenters	12	Land clearers	5
Cement finishers	8	Lathers	2
Concrete muckers	14	Laborers:	
Cooks	5	City	330
Diarymen	4	Common	200
Electricians	1	Painters	4
Farm hands	9	Plasterers	2
Gardeners	3	Teamsters	3
House men	29	Waiters	3
Janitors	2	Wood choppers	12

## FEMALE HELP

Following is classification of employment secured and number of employees sent thereto during months of January, February, March, April, May, June, July, August, September, and October, 1915:

Artist models	2	Housekeepers	72
Berry pickers	20	Janitresses	2
Companions	2	Kitchen help	32
Cannery workers	9	Laundresses	2
Clerks	2	Nurses	8
Chambermaids	31	Nurse girls	7
Cooks	59	Pantry girls	2
Copyist	1	Pressers	1
Day workers	344	Seamstresses	9
Demonstrators	1	Solicitors	3
Domestics	250	Stenographers	2
Factory workers	15	Waitresses	40

Following is classification of employment secured and estimated number of employees sent thereto during the months of December, 1914, and November, 1915:

Attendants	5	Janitresses	5
Chambermaids	10	Kitchen help	10
Cooks	8	Laundresses	1
Day workers	58	Nurses	5
Domestics	39	Nurse girls	7
Factory workers	10	Seamstresses	2
Housekeepers	15	Waitresses	6



## BUREAU OF PARKS

## PARKS

This report embraces a complete financial statement, also attendance reports of all playgrounds, band concerts, recreation buildings at Peninsula Park and public comfort stations. This financial report is the first prepared under our new cost keeping system, which, I think is as complete as any in use in any of the modern park bureaus. The attendance reports are chiefly of value in that they give some idea of the services rendered, but cannot be taken as absolutely accurate. I believe, however, that they are underestimated rather than overestimated.

From the standpoint of services given the year of 1915 in the Portland parks was very successful and increased interest was manifested by all classes of citizens, and playground attendance in the regular playgrounds was most gratifying. The attendance at band concerts was enormous, and the number of visitors in all parks increased.

The funds for 1915 were smaller than in many years, due to the fact that complete distribution of bond moneys had been made the preceding year. It was hoped and anticipated that more money would be available, due to the showing made, but such, in the judgment of the Council was not advisable and the outlook for continued good service is not bright at this time.

## SUMMARIZING FINANCIAL STATEMENT

\$152,323.68 was spent on the maintenance and improvement of the parks, on the Zoo, on street trees, band music, etc.  
 36,781.90 was expended for instructors, for maintenance and improvements of playgrounds.  
 1,695.77 stock on hand December 1, 1915.  
 \$190,801.35 grand total for year.

The maintenance distribution of moneys is so complete that reference may be made direct to the distribution sheets, and while the same is true regarding permanent improvement, the more important expenditures will be pointed out so that their relation to the entire scheme may be understood.

At Columbia Park the graveling of the walks was completed and the lighting system was installed. A concession building was erected and a small addition made to the greenhouse. The walks are not complete except for rolling, oiling and sanding. A small five-ton gas roller will be necessary to complete the park walks here, and since the Bureau of Parks has some fifteen miles of walks to maintain, the purchase of such a roller is recommended. The gas type is selected as the steam roller injured too much valuable shrubbery. The original plans for Columbia Park are complete except for a permanent band stand. I would recommend that this be held up for two or more years as the temporary stand will serve for at least that time, and the location of a permanent stand requires more growth of the linden trees. A dressing room for the ball players is desirable and a combination dressing room and comfort station has been designed for the north end of the promenade. It is hoped that such a building can be erected next year. The greenhouse in this park is the only one the Bureau of Parks has, and the piles of fertilizer and compost are proving very

offensive to the neighborhood; therefore, this greenhouse should be removed in the very near future.

At Firland Station, on the Mt. Scott line, the Bureau of Parks has control of the central parking strip for some four blocks. Seventy-second Street is an unpaved street and there are no curbs about the parking, nor does it contain any water connections. Trees have been planted but nothing else attempted. Some of the more progressive property owners keep up an agitation for better maintenance, which is impossible until water service is established. This is recommended at an early date. It is further recommended that no more center parkings be accepted unless water services are provided simultaneously with the street grading or improvement.

At the Forestry Building the City owns two acres of ground. None of the adjacent property has been occupied, except by the old Lewis & Clark Centennial buildings, and during the year one of these was totally destroyed by fire. Only by heroic efforts was the Fire Bureau able to save the Forestry Building. In a way, the fire was most fortunate, however, as the owners of the remaining nearby buildings were then prevailed upon to tear them down, and eighteen acres of adjacent land was turned over to the Bureau of Parks for playground purposes. This makes a beautiful twenty-acre park, and makes it possible to move the Lakeview playground from the Incinerator to this more healthful location. During the year, drinking fountains have been installed.

The planting of Hillside Parkway was completed during the year, and while many of the shrubs will die during the hot summer months, it is expected that enough plants will live to cover the embankments. The oiled macadam at the north end was carefully redressed during the year and an extension for two years in the permanent paving has been secured from the Oregon-Washington Railroad & Navigation Company.

The regeneration of Holladay Park started during the year. This beautiful tract has lain for many years in the wild state. Late in the year walks were laid and water service and drainage provided. Funds are available for a lighting system during 1916 and when lights and new comfort station facilities are provided the park will be practically complete for some years.

Kenilworth Park was lighted during the year and the girls' playground moved to the east side of the park. New tennis courts were built and proved very popular. The walk system at this park was laid out with the idea of filling the north area. This improvement will probably never be made and a readjustment of walk lines must follow. As soon as these can be made they should be paved.

Laurelhurst Park secured many needed improvements during the year. Most prominent was the paving of the walks, the installation of a lighting system for the entire park, and the erection of a first-class comfort station. Because of its central location the patronage of this park is enormous, culminating in the Jomelli concert, which drew about 32,000 people, the largest crowd ever assembled in a Portland park for a single band concert.

At Mt. Tabor Park funds were too limited to make much of a showing, but things were so shaped that the drives are ready for paving during 1916. A flight of steps was provided from the hill top to Sixty-ninth Street on the north. They proved most acceptable to large numbers of visitors to the hill top.



The area about the bandstand at Peninsula Park was designed for circular brick steps leading to the lawn area, and these were provided, as was the balustrade about the rose garden. There yet remains a pergola on the south side of this garden, exedras at each end, and colonnades at each of the four corners. It is very desirable to finish this garden, as it will reach the height of its glory in the near future. A new barn is needed at this park and much better results can be secured at the community house if outdoor dressing rooms are provided north of the pool.

At Sellwood a concession building was provided and lamp posts erected for a lighting system. Funds were provided for such a system for 1916 and it will be installed. A new community house is needed at this park and cannot be long delayed as the temporary bath house is rapidly falling down.

Washington Park is the oldest of all parks, and but forty acres of the one hundred and one have been improved. New drives have been laid out and plans made for the complete use of the entire area. Small improvements were made during the year, the most important being a new twenty-acre paddock for the elk. Three new elk barns were built, and while they were relatively inexpensive they were much needed and have provided ample quarters for the elk here, which now number seventeen. The Zoo at Washington Park has for some years past been in poor condition. It is not worthy of a city the size of Portland, and should either be abolished or new quarters provided. Two buildings under the present arrangement are heated; one for animals of the monkey type and one for tropical birds. Both of these buildings were formerly used for greenhouses, and it is impossible to properly heat them in the winter time, or to provide proper shade in the summer. The maintenance of the animals under such conditions is out of all proportion. We have developed plans for a complete Zoo, which calls for the expenditure of approximately \$12,000 for buildings. Such buildings would be sanitary in every respect, properly heated, and while such a sum would not provide any ornate features they would suffice for a number of years, and the amount of saving possible, due to modern heating, etc., would practically balance the interest on the money so expended. I would recommend that the Council go definitely on record so that we may start on this plan or abolish the Zoo. It is absolutely impossible to continue on our present basis.

#### COMFORT STATIONS

Prohibition has lead to much speculation concerning the comfort station needs of the City. After careful consideration I would recommend that a comfort station be established in the vicinity of lower Washington Street, in the North Park blocks, and several East Side locations, and that the unsightly station at the Plaza Blocks be removed and replaced with modern buildings.

#### ELM LEAF BEETLE

During the year the City was visited for the first time by the elm leaf beetle. Great havoc was wrought on the East Side, and while our law did not permit the immediate handling of the situation by the Bureau of Parks the Council later saw fit to give us permission, and while we were extremely late in entering the field, we can report that, in our judgment, the pest was checked and that during 1916 a vigorous campaign will be waged which will practically eradicate the beetle from

this locality. The appearance of this pest has simply focused attention on the street trees of the City. Under the present arrangement the trees in the parking strips are under the control of the abutting property owner, consequently no uniform plan is possible. Many varieties of trees are introduced which are not suitable for this climate. Many of the most magnificent trees are ruined by improper pruning, and altogether the trees of the city are in bad condition. It is recommended that authority be sought whereby the Bureau of Parks can extend supervisory capacity over street trees at least.

#### BENSON PARK

During the year S. Benson presented the City with beautiful Benson Park. Due to the extremely limited amount of money which the Bureau of Parks had for construction it was not possible for us to do much with this gift. Had it been made to almost any other park system in the United States immediate steps would have been taken to develop this wonderful tract. It embraces approximately four hundred acres, contains two of the most wonderful waterfalls in the country, has three-fourths miles of river beach, and contains more picturesque scenery than any other park with which I am familiar. Lying as it does thirty-two miles from the City on the Columbia River Highway, its maintenance at this time is rather an embarrassment for the Park Bureau. During the year we erected a small comfort station near the Highway at Wahkeena Falls. Plans have been developed in the Park Office of a commodious stone rest room at this point containing ample lounging rooms, comfort stations, etc. The portion lying between the railroad and the beach should be cleared from all underbrush, fallen trees, etc., and an overhead crossing should be built so that automobiles could be driven from the Highway to this picnic ground and there parked. The present comfort station should be moved from its present site on the Highway to this picnic ground as soon as the more commodious building is erected. To properly handle this park the sum of \$15,000 should be made immediately available for the construction purposes, and about \$5,000 should be thereafter appropriated for maintenance.

#### PLAYGROUNDS

During the year great activity was manifested in all sections of the City in playground work. It was most unfortunate that the playground needs of the City were not more fully understood before all bond moneys were spent. As the situation now stands, South Portland, North Portland on the West Side, Central East Portland, Alberta, Alameda, Rose City Park, Arleta, Woodstock, Montavilla and St. Johns are without proper play facilities. Three times the City of Portland has been asked for greater funds for park purposes, and three times bond issues have been refused. However, after making a careful canvass of the situation, I believe that the people want playground parks, and I believe that even as stringent as are local financial conditions at this time, if these different districts knew that playground parks would be provided for them they would not object to providing the necessary funds. I therefore recommend that a bill be prepared whereby the people may vote on a millage tax for park purposes. Under our present budget system it is not possible to give the services that the people demand. It is always desirable to have lower taxes, but much of the criticism levied at the Bureau would be averted if



the people themselves voted on the appropriations, under a millage tax system. I therefore earnestly recommend that it be placed on the ballot at the next general election.

SUMMARY

PARK	MAINTENANCE			IMPROVEMENT			Grand Total
	Labor	Material	Total	Labor	Material	Total	
All Parks.....	\$ 7,285.86	5,283.39	12,569.25	3,272.49	488.57	3,761.06	16,330.31
All Comfort Stations.....	5,656.41	3,646.27	9,302.68	22.39	395.39	417.78	9,720.46
Benson Park.....	69.87	122.37	192.24	1,120.35	1,308.92	2,429.27	2,621.51
Chapman and Lowndale Squares.....	1,859.56	435.54	2,295.10				2,295.10
Columbia Park.....	6,377.35	889.57	7,266.92	977.22	3,495.62	4,472.84	11,739.76
Firland.....	3.25		3.25				3.25
Forestry Building.....	1,538.49	107.66	1,646.15	60.23	44.98	105.21	1,751.36
Street Fountains.....	545.15	142.11	687.26	76.87	342.39	419.26	1,106.52
Governor's Park.....	39.13		39.13				39.13
Hillside Parkway (Terwilliger Boulevard).....	2,313.66	2,377.93	4,691.59	1,498.46	966.55	2,465.01	7,156.60
Holladay.....	795.80	28.12	823.92	682.37	683.62	1,365.99	2,189.91
Kenilworth Park.....	1,316.22	172.13	1,488.35	392.87	953.48	1,346.35	2,834.70
Ladd's Squares.....	1,544.68	106.25	1,650.93				1,650.93
Laurelhurst.....	4,441.92	1,289.24	5,731.16	2,632.21	12,671.60	15,303.81	21,034.97
Macleay.....	798.30	1.00	799.30	94.30	11.35	105.65	904.95
Mt. Tabor.....	5,375.03	1,364.36	6,739.39	6,254.99	2,359.71	8,614.70	15,354.09
Office.....	2,016.82	753.58	2,770.40	15.81	6.00	21.81	2,792.21
North Parkway.....	1,307.00	44.34	1,351.34				1,351.34
Peninsula.....	5,842.96	1,720.02	7,562.98	3,155.55	1,486.74	4,642.29	12,205.27
St. Johns.....	16.64		16.64				16.64
Sellwood.....	1,763.36	198.87	1,962.23	268.11	462.78	730.89	2,693.12
South Parkway.....	1,695.18	126.34	1,821.52	96.26	95.06	191.32	2,012.84
Terwilliger.....	228.88		228.88	84.00	52.95	136.95	365.83
Washington.....	10,982.64	2,211.41	13,194.05	771.65	10.65	782.30	13,976.35
Music.....	39.87	9,755.17	9,795.04				9,795.04
Street Trees.....	872.34	826.18	1,698.52	2.45		2.45	1,700.97
Zoo.....	3,054.81	4,298.74	7,353.55	174.73	829.09	1,003.82	8,357.37
Miscellaneous.....	30.33		30.33	65.20	227.62	292.82	323.15
<b>Total Park.....</b>	<b>67,811.51</b>	<b>35,900.59</b>	<b>103,712.10</b>	<b>21,718.51</b>	<b>26,893.07</b>	<b>48,611.58</b>	<b>152,323.68</b>

SUMMARY—Continued

PLAYGROUNDS	MAINTENANCE			IMPROVEMENT			Grand Total
	Labor	Material	Total	Labor	Material	Total	
All Playgrounds.....	685.27	977.01	1,662.28	17.52	206.69	224.21	1,886.49
Ainsworth.....	176.65	8.77	185.42	10.88		10.88	196.30
Arleta.....	399.62	28.78	428.40	6.00	30.22	36.22	464.62
Brooklyn.....	1,624.54	184.64	1,809.18	111.74	64.87	176.61	1,985.79
Columbia.....	808.33	110.95	919.28	251.45	326.04	577.49	1,496.77
Failing.....	381.46	42.43	423.89				423.89
Kenilworth.....	663.91	41.39	705.30	130.89	114.79	245.68	950.98
Lakeview.....	102.32	85	109.17	75.25	350.00	425.25	528.42
Laurelhurst.....	508.54	12.29	520.83				520.83
Lents.....	874.28	456.02	1,330.30	409.36	1,644.72	2,054.08	3,384.38
Lincoln.....	1,687.11	77.34	1,764.45	456.08	408.38	864.46	2,628.91
Mt. Tabor.....	277.46	35.73	313.19	1,233.72	1,235.27	2,468.99	2,782.18
North Park.....	568.96	24.05	593.01				593.01
Peninsula.....	5,404.51	1,667.83	7,072.34	87.17	12,941	216.58	7,288.92
Reed.....	365.37	6.45	371.82	22.87	7.84	30.71	402.53
Rose City.....	170.94	5.83	176.77				176.77
Sellwood.....	1,555.95	1,352.11	2,908.06	42.01	361.26	403.27	3,311.33
Shaver.....	181.78	112.15	293.93				293.93
Washington.....	877.99	60.80	938.79				938.79
Woodstock.....	14.32		14.32				14.32
School Playgrounds.....	176.25		176.25				176.25
Multnomah Tank.....	565.79	92.64	658.43	244.16	1,031.75	1,305.91	1,964.34
Peninsula Annex.....	270.70	102.85	373.55	82.48	397.30	479.78	853.33
12th and Davis Ball Gr'nd.....	599.20	79.69	678.89	110.22	1,199.75	1,309.97	1,988.86
Montgomery Tract.....	381.41	51.47	432.88	261.80	721.31	983.11	1,415.99
57th and 65th Ave.....				14.25	3.29	17.54	17.54
55th Ave. and 72d St. S. E.....				7.13		7.13	7.13
26th and Northrup.....				14.25	50.75	65.00	65.00
West End.....					15.00	15.00	15.00
E. 7th and E. 33rd and Fremont Streets.....				9.30		9.30	9.30
<b>Total, Playgrounds.....</b>	<b>19,322.66</b>	<b>5,532.07</b>	<b>24,854.73</b>	<b>3,598.53</b>	<b>8,328.64</b>	<b>11,927.17</b>	<b>36,781.90</b>
<b>STOCK</b>							
All Parks.....		1,695.77	1,695.77				1,695.77

SUMMARY—Continued

TOTALS	MAINTENANCE			IMPROVEMENT			Grand Total
	Labor	Material	Total	Labor	Material	Total	
Parks.....	67,811.51	35,900.59	103,712.10	21,718.51	26,893.07	48,611.58	152,323.68
Playgrounds.....	19,322.66	5,532.07	24,854.73	3,598.53	8,328.64	11,927.17	36,781.90
Stock.....		1,695.77	1,695.77				1,695.77
<b>Grand Totals.....</b>	<b>87,134.17</b>	<b>43,128.43</b>	<b>130,262.60</b>	<b>25,317.04</b>	<b>35,221.71</b>	<b>60,538.75</b>	<b>190,801.35</b>



DISTRIBUTION OF EXPENDITURES, BUREAU OF PARKS, DE-  
CEMBER 1, 1914, TO NOVEMBER 30, 1915

## ALL PARKS

	Labor	Material	Total
<b>Maintenance</b>			
Walks, repair .....	\$ .....	\$ 22.54	\$ 22.54
Trees and shrubs (spray) .....	.....	250.00	250.00
Benches .....	3.75	177.50	181.25
Light system .....	.....	.59	.59
Floral display .....	1.31	105.20	106.51
Equipment .....	2.25	678.00	680.25
Tools and implements .....	90.90	202.07	292.97
Toilets, repairs .....	.....	12.65	12.65
Toilets, supplies .....	.....	75.64	75.64
Motor vehicles:			
Truck repairs .....	10.70	283.20	293.90
Truck, gen'l del. ....	1,164.07	.....	1,164.07
Car 25, repairs .....	.....	152.95	152.95
Car 36, purchase .....	.....	515.00	515.00
Car 36, repairs .....	.....	139.58	139.58
Care of parks .....	161.00	55.81	216.81
Supervision .....	2,100.00	27.35	2,127.35
Sundry supplies .....	100.15	628.65	728.80
Stock (undistributed) .....	.....	1,956.66	1,956.66
Vacations .....	3,651.73	.....	3,651.73
	\$ 7,285.86	\$ 5,283.39	\$ 12,569.25
<b>Improvement</b>			
Engineering and drafting .....	\$ 3,272.49	\$ 101.77	\$ 3,374.26
Water system, sprinklers .....	.....	386.80	386.80
	\$ 3,272.49	\$ 488.57	\$ 3,761.06

## COMFORT STATIONS

	Labor	Material	Total
<b>Sixth and Yamhill (Women)</b>			
<b>Maintenance</b>			
Care of .....	\$ 1,857.76	\$ 41.50	\$ 1,899.26
Repairs .....	35.45	146.89	182.34
Supplies .....	.....	475.01	475.01
	\$ 1,893.21	\$ 663.40	\$ 2,556.61
<b>Sixth and Yamhill (Men)</b>			
<b>Maintenance</b>			
Care of .....	\$ 1,858.46	\$ 4.50	\$ 1,862.96
Repairs .....	9.97	95.60	105.57
Supplies .....	.....	1,296.34	1,296.34
	\$ 1,868.43	\$ 1,396.44	\$ 3,264.87
<b>Proposed Station, Second and Washington</b>			
<b>Improvement</b>			
Enigneering .....	\$ 3.26	.....	\$ 3.26
<b>Chapman and Morrison</b>			
<b>Maintenance</b>			
Care of .....	\$ 16.10	\$ 25.20	\$ 41.30
Repairs .....	3.82	4.87	8.69
	\$ 19.92	\$ 30.07	\$ 49.99
<b>Chapman and Morrison</b>			
<b>Improvement</b>			
Construction .....	\$ 19.13	\$ 395.39	\$ 414.52
<b>Tenth and Yamhill</b>			
<b>Maintenance</b>			
Care of .....	\$ 1,840.13	\$ 8.46	\$ 1,848.59
Repairs .....	3.82	.....	3.82
Supplies .....	.....	334.80	334.80
	\$ 1,843.95	\$ 343.26	\$ 2,187.21
<b>St. Johns</b>			
<b>Maintenance</b>			
Care of .....	.....	\$ 148.72	\$ 148.72
Repairs .....	\$ 30.90	14.38	45.28
Rent of Rest Rooms .....	.....	50.00	50.00
	30.90	\$ 213.10	\$ 244.00



## BENSON PARK

	Labor	Material	Total
<b>Maintenance</b>			
Care of .....	\$ 21.75	\$ 79.42	\$ 101.17
Picking paper, etc.....	20.87	.....	20.87
Labor Day (special).....	27.25	42.95	70.20
	\$ 69.87	\$ 122.37	\$ 192.24
<b>Improvement</b>			
Engineering .....	\$ 349.79	\$ .....	\$ 349.79
Clearing .....	353.56	151.35	504.91
Walks, trails and bridges.....	43.63	.60	44.23
Sewer system .....	154.35	176.80	331.15
Water system .....	164.42	240.81	405.23
Fountain .....	8.62	15.75	24.37
Benches and tables.....	5.63	2.55	8.18
Construction comfort station.....	40.35	721.06	761.41
	\$ 1,120.35	\$ 1,808.92	\$ 2,429.27

## CHAPMAN AND LOWNSDALE SQUARES

	Labor	Material	Total
<b>Maintenance</b>			
Watching .....	\$ 21.73	\$ .....	\$ 21.73
Lawn, mowing .....	170.05	.....	170.05
Lawn, seeding .....	4.51	.....	4.51
Lawn, picking papers, etc.....	116.63	57.00	173.63
Lawn, sprinkling .....	92.46	.....	92.46
Lawn, raking leaves.....	158.45	.....	158.45
Lawn, fertilizing .....	29.84	32.00	61.84
Walks, cleaning .....	272.46	.....	272.46
Trees and shrubs, pruning, etc.....	228.09	.....	228.09
Trees and shrubs, cultivating.....	10.12	.....	10.12
Trees and shrubs, planting.....	3.75	1.25	5.00
Trees, cutting down.....	23.06	.....	23.06
Water system .....	84.08	33.51	117.59
Fountains, cleaning .....	25.51	.....	25.51
Fountains, repair .....	8.31	.....	8.31
Benches .....	.38	.55	.93
Equipment (monument) .....	1.87	84.50	86.37
Tools and implements.....	5.99	93.15	99.14
Comfort stations (repair).....	169.63	29.62	199.25
Comfort stations (cleaning).....	331.21	77.96	409.17
Care of park.....	101.43	1.00	102.43
Sundry supplies .....	.....	25.00	25.00
	\$ 1,859.56	\$ 435.54	\$ 2,295.10

## COLUMBIA PARK

	Labor	Material	Total
<b>Maintenance</b>			
Watching .....	\$ 298.75	\$ .....	\$ 298.75
Lawn, mowing .....	436.03	.....	436.03
Lawn, seeding .....	21.85	.....	21.85
Lawn, picking paper, etc.....	151.16	.....	151.16
Lawn, sprinkling .....	312.51	.....	312.51
Lawn, raking leaves.....	172.80	.....	172.80
Walks, repair .....	23.37	.....	23.37
Walks, cleaning .....	35.72	.....	35.72
Trees and shrubs, pruning, etc.....	87.37	.....	87.37
Trees and shrubs, cultivating.....	693.68	.....	693.68
Sewers and drains, repair.....	20.49	15.15	35.64
Water system, repair.....	11.81	.24	12.05
Fountain, cleaning .....	5.75	.....	5.75
Benches .....	177.19	.....	177.19
Floral display .....	273.33	56.98	330.31
Fence .....	28.52	24.70	53.22
Tools and implements .....	11.18	4.52	15.70
Comfort station, repair.....	21.54	77.13	98.67
Comfort station, cleaning.....	102.13	32.83	134.96
Stable .....	4.50	100.78	105.28
Greenhouse .....	3,413.31	542.05	3,955.36
Care of park.....	74.36	25.00	99.36
Sundry supplies .....	.....	10.19	10.19
	\$ 6,377.35	\$ 889.57	\$ 7,266.92
<b>Improvement</b>			
Walks .....	\$ 277.25	\$ 391.84	\$ 669.09
Trees and shrubs.....	13.31	42.00	55.31
Water system .....	144.23	30.09	174.32
Lighting system .....	234.62	2,464.42	2,699.04
Floral display .....	51.39	.....	51.39
Concession building, construction.....	41.06	247.18	288.24
Greenhouse .....	105.63	234.56	340.19
Engineering .....	52.36	.....	52.36
Driveway .....	.....	45.53	45.53
Lawn (parking) .....	57.37	40.00	97.37
	\$ 977.22	\$ 3,495.62	\$ 4,472.84

## FIRLAND

	Labor	Material	Total
<b>Maintenance</b>			
Trees and shrubs, pruning, etc.....	\$ 3.25	.....	\$ 3.25

## FORESTRY BUILDING

	Labor	Material	Total
<b>Maintenance</b>			
Lawn, mowing .....	\$ 40.50	\$ .....	\$ 40.50
Benches .....	7.62	.....	7.62
Floral display .....	2.75	.....	2.75
Tools and implements.....	.....	10.00	10.00
Care of building.....	1,239.17	64.93	1,304.10
Repairs .....	32.95	16.01	48.96
Treating logs .....	215.50	16.72	232.22
	\$ 1,538.49	\$ 107.66	\$ 1,646.15
<b>Improvement</b>			
Fountain .....	\$ 60.23	\$ 44.98	\$ 105.21



## FOUNTAINS (Street)

	Labor	Material	Total
<b>Maintenance</b>			
Cleaning .....	\$ 417.95	\$ .30	\$ 418.25
Repairs .....	127.20	134.04	261.24
Sundry supplies .....		7.77	7.77
	\$ 545.15	\$ 142.11	\$ 687.26
<b>Improvement</b>			
New fountains .....	\$ 76.87	\$ 342.39	\$ 419.26

## GOVERNOR'S PARK

	Labor	Material	Total
<b>Maintenance</b>			
Trees and shrubs .....	\$ 12.88		\$ 12.88
Care of .....	26.26		26.25
	\$ 39.13		\$ 39.13

## HILLSDALE PARKWAY (Terwilliger Boulevard)

	Labor	Material	Total
<b>Maintenance</b>			
Watching .....	\$ 118.09	\$ 180.00	\$ 298.09
Cleaning .....	344.73	1.69	346.42
Repairs .....	109.68	2,011.20	2,120.88
Lawn, mowing .....	221.86		221.86
Picking up papers, etc. ....	7.13		7.13
Lawn, sprinkling .....	3.00		3.00
Lawn, raking .....	21.00		21.00
Lawns, fertilizing .....	10.69		10.69
Walks, repair .....	2.62		2.62
Walks, cleaning .....	61.13		61.13
Trees and shrubs, cultivating ..	204.45		204.45
Trees and shrubs, cleaning out ..	12.00		12.00
Shrubs, planting .....	7.13		7.13
Sewers and drains, cleaning .....	60.74		60.74
Sewers and drains, repair .....	109.69	7.74	117.43
Benches .....	5.54		5.54
Lighting system .....	5.25	153.30	158.55
Tools and implements .....	5.32		5.32
Comfort station, repairs .....	21.59		21.59
Comfort station, care of .....	26.46		26.46
Care of park .....	954.56	24.00	978.56
Sundry supplies .....	1.00		1.00
	\$ 2,313.66	\$ 2,377.93	\$ 4,691.59
<b>Improvement</b>			
Engineering .....	\$ 181.28		\$ 181.28
Clearing and grubbing .....	152.05		152.05
Lawn .....	57.57	15.00	72.57
Walks .....	38.62	791.82	830.44
Trees and shrubs (planting) .....	1,236.75		1,236.75
Drainage .....		60.00	60.00
Fountains .....	10.94	53.49	64.43
Comfort station (lattice, etc.) .....	2.53	46.24	48.77
	\$ 1,498.46	\$ 966.55	\$ 2,465.01

## HOLLADAY PARK

	Labor	Material	Total
<b>Maintenance</b>			
Watching .....	\$ 3.37		\$ 3.37
Lawns, mowing .....	214.32		214.32
Lawns, picking paper, etc. ....	59.23		59.23
Lawn, raking leaves, etc. ....	138.25		138.25
Walks, cleaning .....	39.88		39.88
Trees and shrubs (pruning, etc.) ..	58.81		58.81
Trees and shrubs (cultivating) ..	33.18		33.18
Water system, cleaning fountains ..	7.61		7.61
Fountain, repairs .....	36.22		36.22
Benches .....	30.31		30.31
Light system .....	.75	11.46	12.21
Floral display .....	2.70		2.70
Comfort station, repair .....	12.60	16.47	29.07
Comfort station, cleaning .....	70.39	.19	70.58
Building, care of (bandstand) .....	2.38		2.38
Care of park .....	85.42		85.42
Sundry supplies .....	.38		.38
	\$ 795.80	\$ 28.12	\$ 823.92
<b>Improvement</b>			
Engineering .....	\$ 12.17		\$ 12.17
Lawn .....	175.87		175.87
Walks .....	433.20	552.46	985.66
Water system .....	61.13	122.16	183.29
Light system .....		9.00	9.00
	\$ 682.37	\$ 683.62	\$ 1,365.99



## KENILWORTH PARK

	Labor	Material	Total
Maintenance			
Watching .....	\$ 240.76	\$ .....	\$ 240.76
Lawns, mowing .....	246.19	41.50	287.69
Lawn, seeding .....	21.94	.....	21.94
Lawn, picking paper, etc. ....	97.51	.....	97.51
Lawn, sprinkling .....	65.44	.....	65.44
Lawn, raking .....	103.68	.....	103.68
Lawn, fertilizing .....	6.00	.....	6.00
Walks, cleaning .....	15.00	.....	15.00
Trees and shrubs, pruning, etc. ....	62.12	.....	62.12
Trees and shrubs, cultivating, etc. ....	122.25	.....	122.25
Benches .....	33.01	.....	33.01
Lighting system .....	19.86	14.38	34.24
Floral display .....	31.38	30.55	61.93
Fence .....	3.00	.....	3.00
Equipment .....	.....	8.48	8.48
Tools and implements .....	6.39	.65	7.04
Comfort station, repair .....	.....	5.97	5.97
Comfort station, cleaning .....	31.88	.....	31.88
Care of park .....	209.81	.....	209.81
Sundry supplies .....	.....	70.60	70.60
	\$ 1,316.22	\$ 172.13	\$ 1,488.35
Improvement			
Engineering .....	\$ 19.55	\$ .....	\$ 19.55
Grubbing and clearing .....	73.87	.....	73.87
Fountain .....	6.40	2.30	8.70
Lighting system .....	288.55	922.43	1,210.98
Grading .....	4.50	.....	4.50
Tool house .....	.....	28.75	28.75
	\$ 392.87	\$ 953.48	\$ 1,346.35

## LADD'S SQUARES

	Labor	Material	Total
Maintenance			
Lawn, mowing .....	\$ 304.72	\$ .....	\$ 304.72
Lawn, seeding .....	44.62	.....	44.62
Lawn, picking up paper, etc. ....	30.12	.....	30.12
Lawn, sprinkling .....	132.34	.....	132.34
Lawn, raking leaves .....	2.62	.....	2.62
Lawn, fertilizing .....	3.00	.....	3.00
Walks, cleaning .....	38.80	.....	38.80
Trees and shrubs, pruning .....	41.29	.....	41.29
Trees and shrubs, mulching and spading .....	286.25	22.00	308.25
Trees and shrubs, planting .....	41.25	10.00	51.25
Floral display .....	617.89	10.00	627.89
Implements and tools .....	1.78	62.25	64.03
Sundry supplies .....	.....	2.00	2.00
	\$ 1,544.68	\$ 106.25	\$ 1,650.93

## LAURELHURST

	Labor	Material	Total
Maintenance			
Jomelli Concert—special .....	\$ 68.44	\$ 229.12	\$ 297.56
Watching .....	448.50	.....	448.50
Lawn, cutting .....	509.10	239.50	748.60
Lawn, resodding and seeding .....	58.90	.....	58.90
Lawn, picking paper, etc. ....	302.31	.....	302.31
Lawn, laying .....	6.00	.....	6.00
Lawn, watering .....	251.63	.....	251.63
Lawn, raking .....	1.50	.....	1.50
Lawn, fertilizing .....	21.00	.....	21.00
Walks, repairing .....	230.28	.....	230.28
Walks, cleaning .....	2.74	.....	2.74
Trees and shrubs, pruning, etc. ....	62.70	4.75	67.45
Trees and shrubs, cultivating .....	1,058.74	184.00	1,242.74
Trees and shrubs, planting .....	218.76	.....	218.76
Trees and shrubs, cutting down, etc. ....	15.00	.....	15.00
Drains, repairing .....	38.12	6.48	44.60
Water system, repairing .....	2.35	15.63	17.98
Benches .....	88.20	6.00	94.20
Light system .....	4.50	433.16	437.66
Floral display .....	36.56	115.04	151.60
Tools and implements .....	18.49	5.68	24.17
Comfort station, repairs .....	16.95	26.78	43.73
Comfort station, cleaning .....	13.67	.....	13.67
Stable .....	1.93	1.25	3.18
Park, care of .....	409.25	10.80	420.05
Supervising .....	555.89	1.00	556.89
Sundry supplies .....	.41	10.05	10.46
	\$ 4,441.92	\$ 1,289.24	\$ 5,731.16
Improvement			
Rock wall .....	\$ 11.25	\$ 512.89	\$ 524.14
Engineering .....	269.33	.....	269.33
Engineering, blk. 95 .....	3.55	.....	3.55
Clearing and grubbing .....	50.63	.....	50.63
Walks .....	421.61	5,656.29	6,077.90
Lawn .....	362.12	259.50	621.62
Trees and shrubs, planting .....	3.50	.....	3.50
Sewer from lake .....	.....	113.85	113.85
Water system .....	88.71	45.85	134.56
Fountains .....	14.19	60.74	74.93
Picnic tables .....	1.50	.75	2.25
Lighting system .....	1,185.96	3,080.12	4,266.08
Grading .....	45.76	.....	45.76
Fence (pipes at entrance) .....	22.60	30.79	53.39
Comfort station .....	78.74	2,885.42	2,964.16
Administration buildings .....	53.26	21.95	75.21
Steps .....	19.50	3.45	22.95
	\$ 2,632.21	\$ 12,671.60	\$ 15,303.81



## MACLEAY

	Labor	Material	Total
Maintenance			
Watching .....	\$ 159.76	\$ .....	\$ 159.76
Driveways, cleaning .....	1.50	.....	1.50
Lawn, cutting .....	.38	.....	.38
Lawn, picking papers, etc. ....	75.12	.....	75.12
Raking leaves .....	27.00	.....	27.00
Bridges, walks, repairing .....	215.06	.....	215.06
Walks, cleaning .....	218.00	.....	218.00
Trees and shrubs, cutting .....	56.69	.....	56.69
Sewers and drains .....	6.00	.....	6.00
Repairs .....	.41	.....	.41
Fence .....	4.50	.....	4.50
Tools and implements .....	2.13	.....	2.13
Care of park .....	31.75	1.00	32.75
	\$ 798.30	\$ 1.00	\$ 799.30
Improvement			
Fountain .....	\$ 11.55	\$ .....	\$ 11.55
Bridge .....	19.00	.80	19.80
Water system .....	57.00	10.55	67.55
Grading .....	6.75	.....	6.75
	\$ 94.30	\$ 11.35	\$ 105.65

## MT. TABOR

	Labor	Material	Total
Maintenance			
Watching .....	\$ 23.50	\$ .....	\$ 23.50
Driveway, cleaning .....	97.25	.....	97.25
Roads, cleaning gutters .....	41.25	.....	41.25
Driveway, repairing .....	303.91	180.00	483.91
Lawn, mowing .....	315.43	.....	315.43
Lawn, resodding and seeding .....	56.00	.....	56.00
Lawn, picking up paper, etc. ....	89.62	.....	89.62
Lawn, raking .....	50.13	.....	50.13
Haying .....	8.25	.....	8.25
Walks, repairing .....	96.62	.....	96.62
Walks, cleaning .....	65.88	.....	65.88
Trees and shrubs .....	201.31	.....	201.31
Trees and shrubs, mulching and spading .....	351.60	.....	351.60
Trees and shrubs, digging .....	42.06	.....	42.06
Trees and shrubs, planting .....	69.68	19.60	89.28
Sewers and drains .....	43.94	9.90	53.84
Water system, repairing .....	18.57	1.96	20.53
Benches .....	67.50	.....	67.50
Light system .....	15.75	3.00	18.75
Floral display .....	58.31	.....	58.31
Fence .....	9.00	.....	9.00
Equipment .....	.63	63.70	64.33
Tools .....	84.63	32.02	116.65
Toilet repair .....	40.95	65.83	106.78
Comfort station, cleaning .....	4.87	.....	4.87
Stable .....	253.46	932.24	1,185.70
Buildings, repair of .....	10.50	5.90	16.40
Nursery .....	1,845.74	8.15	1,853.89
Park, care of .....	343.60	24.00	367.60
Supervision .....	765.09	4.17	769.26
Sundry supplies .....	.....	13.89	13.89
	\$ 5,375.03	\$ 1,364.36	\$ 6,739.39
Improvement			
Engineering .....	\$ 384.70	\$ .....	\$ 384.70
Clearing greenhouse site .....	33.00	.....	33.00
Clearing and grubbing .....	1,054.46	116.00	1,170.46
New roads .....	332.53	903.37	1,235.90
Lawn .....	1.50	15.00	16.50
Walks .....	900.70	.....	900.70
Trees and shrubs .....	1,397.88	.....	1,397.88
Fountain .....	11.35	36.53	47.88
Benches and log seats .....	191.25	.....	191.25
Lamp posts .....	4.25	396.18	400.43
Grade Main street .....	3.25	.....	3.25
Grading .....	135.35	.....	135.35
Toilets .....	.....	347.43	347.43
Cold frames for nursery .....	21.12	26.53	47.65
Steps .....	367.70	518.67	886.37
Warehouse .....	1,415.95	.....	1,415.95
	\$ 6,254.99	\$ 2,359.71	\$ 8,614.70
OFFICE			
	Labor	Material	Total
Maintenance			
Supplies .....	\$ .....	\$ 562.90	\$ 562.90
Equipment .....	.....	190.68	190.68
Clerical .....	2,016.82	.....	2,016.82
	\$ 2,016.82	\$ 753.58	\$ 2,770.40
Improvement			
Engineering .....	\$ 15.81	\$ 6.00	\$ 21.81



## NORTH PARKWAY

	Labor	Material	Total
Maintenance			
Watching .....	\$ 3.00	\$ .....	\$ 3.00
Lawn, mowing .....	296.36	.....	296.36
Lawn, resodding and reseeded .....	1.50	.....	1.50
Lawn, picking up papers, etc. ....	119.81	36.00	155.81
Lawn, sprinkling .....	193.50	.....	193.50
Lawn, raking .....	199.75	.....	199.75
Lawn, fertilizing .....	73.52	.....	73.52
Walks, cleaning .....	22.88	.....	22.88
Trees and shrubs, pruning, etc. ....	42.38	.....	42.38
Trees and shrubs, cultivating .....	36.38	.....	36.38
Water supply, repairing pipes, etc. ....	1.50	.90	2.40
Fountains, cleaning .....	1.12	.....	1.12
Fountains, repairing .....	1.50	.92	2.42
Benches .....	11.53	4.04	15.57
Care tools .....	3.47	.32	3.79
Comfort station, repairing .....	3.10	1.66	4.76
Comfort station, cleaning .....	109.33	.50	109.83
Care of parks .....	186.37	.....	186.37
	\$ 1,307.00	\$ 44.34	\$ 1,351.34

## PENINSULA

	Labor	Material	Total
Maintenance			
Watching .....	\$ 927.31	\$ .....	\$ 927.31
Lawn, mowing .....	264.19	.....	264.19
Lawn, resodding and seeding .....	79.49	.....	79.49
Lawn, picking up papers, etc. ....	280.94	.....	280.94
Lawn, sprinkling .....	43.58	.....	43.58
Lawn, raking leaves, etc. ....	49.40	.....	49.40
Walks, cleaning .....	65.12	.....	65.12
Trees and shrubs, pruning and spraying .....	38.55	.....	38.55
Trees and shrubs, cultivating .....	254.07	.....	254.07
Trees and shrubs, planting .....	11.24	.....	11.24
Sewers and drains, repairing .....	226.97	39.44	266.41
Water system, repairing .....	19.32	.....	19.32
Fountains, cleaning .....	22.99	.....	22.99
Fountains, repairing .....	16.12	31.96	48.08
Care of benches .....	108.94	.....	108.94
Light system .....	13.38	24.94	38.32
Floral display (other than rose garden) .....	192.33	64.15	256.48
Fence .....	6.01	.....	6.01
Tools and implements .....	8.62	10.94	19.56
Comfort station, repairs .....	22.93	151.79	174.72
Comfort stations, cleaning .....	113.52	.....	113.52
Stable .....	14.30	102.38	116.68
Rose garden .....	1,872.26	1,248.42	3,120.68
Care of grounds .....	424.16	44.00	468.16
Supervision .....	767.22	2.00	769.22
	\$ 5,842.96	\$ 1,720.02	\$ 7,562.98
Improvement			
Engineering .....	\$ 61.50	\$ .....	\$ 61.50
Clearing .....	1.12	.....	1.12
Water system .....	82.89	529.98	612.87
Light system—Rose garden .....	109.36	139.76	249.12
Light system—General .....	271.70	.....	271.70
Bal. and steps—Paving sunken garden .....	2,628.98	817.00	3,445.98
	\$ 3,155.55	\$ 1,486.74	\$ 4,642.29

## ST. JOHNS

	Labor	Material	Total
Maintenance			
City Hall .....	\$ 16.64	.....	\$ 16.64

## SELLWOOD

	Labor	Material	Total
Maintenance			
Watching .....	\$ 308.98	\$ .....	\$ 308.98
Lawn, mowing .....	217.10	72.00	289.10
Lawn, resodding and seeding .....	21.91	.....	21.91
Lawn, picking up papers, etc. ....	126.59	.....	126.59
Lawn, watering .....	106.18	.....	106.18
Lawn, raking leaves .....	31.63	.....	31.63
Walks, repairing .....	1.62	.....	1.62
Walks, cleaning .....	46.13	.....	46.13
Trees and shrubbery, pruning .....	209.24	.....	209.24
Trees and shrubbery, cultivating .....	123.29	.....	123.29
Cleaning out shrubs .....	1.62	.....	1.62
Shrubs, planting .....	1.62	.....	1.62
Catch basins, cleaning .....	3.00	.....	3.00
Sewers, repairing, etc. ....	.81	.....	.81
Water supply, repairing pipes, hydrants .....	4.50	27.23	31.73
Fountains, cleaning .....	1.94	.....	1.94
Fountains, repairing .....	11.94	25.84	37.78
Benches .....	48.42	.....	48.42
Light system .....	2.25	.....	2.25
Floral display .....	6.37	21.30	27.67
Fence .....	5.25	.....	5.25
Tools and implements .....	7.49	.74	8.23
Comfort station, repairing .....	2.25	5.00	7.25
Toilets, cleaning .....	1.43	.....	1.43
Care of building .....	13.36	1.13	14.49
Building, repairing .....	27.69	3.73	31.42
Grounds, care of .....	306.51	25.00	331.51
Supervision .....	124.24	1.00	125.24
Sundry supplies .....	.....	15.90	15.90
	\$ 1,763.36	\$ 198.87	\$ 1,962.23
Improvement			
Engineering, Grand Ave. Ext. ....	\$ 1.86	\$ .....	\$ 1.86
Engineering .....	16.25	.....	16.25
Clearing .....	.....	71.63	71.63
Sewer .....	2.25	2.15	4.40
Fountain .....	3.36	.....	3.36
Light system .....	8.25	15.00	23.25
Concession building .....	144.63	165.62	310.25
Lamp standards .....	91.51	208.38	299.89
	\$ 268.11	\$ 462.78	\$ 730.89



## SOUTH PARKWAY

	Labor	Material	Total
<b>Maintenance</b>			
Watching .....	\$ 11.00	\$ .....	\$ 11.00
Lawn, mowing .....	200.77	.....	200.77
Lawn, seeding .....	28.13	.....	28.13
Lawn, picking up papers, etc. ....	397.68	36.00	433.68
Lawn, watering .....	213.01	.....	213.01
Lawn, raking leaves .....	316.49	.....	316.49
Lawn, fertilizing .....	158.85	30.00	188.85
Walks, repairing .....	40.87	36.00	76.87
Walks, cleaning .....	17.99	.56	18.55
Trees and shrubs, pruning, etc. ....	78.00	.....	78.00
Trees and shrubs, mulching and spading .....	78.75	.....	78.75
Water ssystem, repairing .....	1.56	.....	1.56
Benches .....	99.99	10.15	110.14
Light system .....	.....	4.80	4.80
Fence .....	7.13	.....	7.13
Tools and implements .....	1.49	1.48	2.97
Building, grand stand, etc., care of .....	12.75	.....	12.75
Building, grand stand, repair of .....	7.50	7.35	14.85
Care of park .....	23.12	.....	23.12
	\$ 1,695.18	\$ 126.34	\$ 1,821.52
<b>Improvement</b>			
Engineering .....	\$ 5.82	\$ .....	\$ 5.82
Fountains .....	90.44	95.06	185.50
	\$ 96.26	\$ 95.06	\$ 191.32

## TERWILLIGER

	Labor	Material	Total
<b>Maintenance</b>			
Lawn, mowing .....	\$ 81.01	.....	81.01
Lawn, picking up papers, etc. ....	39.37	.....	39.37
Haying .....	2.25	.....	2.25
Lawn, sprinkling .....	2.25	.....	2.25
Lawn, raking leaves .....	45.38	.....	45.38
Walks, repairing .....	5.50	.....	5.50
Walks, cleaning .....	5.25	.....	5.25
Trees and shrubs, pruning .....	3.00	.....	3.00
Trees and shrubs, cultivating .....	14.62	.....	14.62
Benches .....	7.13	.....	7.13
Fence .....	20.87	.....	20.87
Care of parks .....	2.25	.....	2.25
	\$ 228.88	.....	\$ 228.88
<b>Improvement</b>			
Steps .....	\$ 84.00	\$ 52.95	\$ 136.95

## WASHINGTON

	Labor	Material	Total
<b>Maintenance</b>			
Watching .....	\$ 1,367.24	\$ .....	\$ 1,367.24
Roads, cleaning .....	590.09	.....	590.09
Gutters, cleaning .....	8.25	.....	8.25
Roads, repairing .....	567.80	730.24	1,298.04
Lawn, mowing .....	878.51	.....	878.51
Lawn, resodding and seeding .....	26.06	.....	26.06
Lawn, picking up papers, etc. ....	353.59	.....	353.59
Haying .....	40.44	.....	40.44
Lawn, sprinkling .....	157.94	.....	157.94
Lawn, raking leaves .....	381.29	.....	381.29
Lawn fertilizer .....	12.00	.....	12.00
Walks, bridges, steps, etc., repairing .....	95.21	15.28	110.49
Walks, cleaning .....	757.30	.....	757.30
Trees and shrubs, pruning .....	347.70	.....	347.70
Trees and shrubs, mulching and spading .....	724.03	.....	724.03
Trees and shrubs, cleaning out .....	7.96	.....	7.96
Trees and shrubs, planting .....	247.48	.....	247.48
Trees, cutting, removing .....	22.50	.....	22.50
Cleaning catch basin .....	1.60	.....	1.60
Sewers and drains, repairing .....	43.34	.....	43.34
Water supply .....	82.26	37.52	119.78
Cleaning fountains .....	12.37	.....	12.37
Repairing fountains .....	1.55	.....	1.55
Benches .....	611.31	.....	611.31
Lighting system .....	79.68	482.86	562.54
Floral display .....	813.32	140.57	953.89
Fence .....	121.03	.....	121.03
Equipment .....	15.76	19.74	35.50
Tools .....	95.98	42.13	138.11
Toilet, repairs to .....	252.70	126.56	379.26
Toilet, cleaning .....	218.85	14.73	233.58
Stable .....	56.42	387.85	444.27
Buildings, care of .....	76.37	.90	77.27
Buildings, repairing .....	123.38	53.60	176.98
Park, care of .....	759.20	27.00	786.20
Supervising .....	1,030.63	39.00	1,069.63
Sundry supplies .....	1.50	93.43	94.93
	\$10,982.64	\$ 2,211.41	\$13,194.05
<b>Improvement</b>			
Engineering .....	\$ 265.41	\$ .....	\$ 265.41
Clearing and grubbing .....	100.26	.....	100.26
New roads .....	143.26	.....	143.26
Rubble wall .....	223.30	9.00	232.30
Water system .....	34.08	.....	34.08
Electric signs in toilet .....	5.34	1.65	6.99
	\$ 771.65	\$ 10.65	\$ 782.30

## MUSIC (All Parks)

	Labor	Material	Total
<b>Maintenance</b>			
Music .....	\$ 39.87	\$ 9,755.17	\$ 9,795.04



## DEPARTMENT OF PUBLIC AFFAIRS

## STREET TREES

	Labor	Material	Total
<b>Maintenance</b>			
Spraying, special .....	\$ 245.72	\$ 699.18	\$ 944.90
Spading and watering (Laurelhurst Add.) .....	107.25	28.00	135.25
Trimming and spraying .....	190.15	.....	190.15
Trees and shrubs, mulching and cultivating .....	218.08	99.00	317.08
Planting .....	88.64	.....	88.64
Trees .....	22.50	.....	22.50
	\$ 872.34	\$ 826.18	\$ 1,698.52
<b>Engineering</b>			
Map .....	\$ 2.45	.....	\$ 2.45

## ZOO

	Labor	Material	Total
<b>Maintenance</b>			
Sewers and drains, repair of .....	\$ 1.62	\$ .....	\$ 1.62
Fence .....	72.33	.....	72.33
Equipment .....	23.18	133.20	156.38
Care of Zoo .....	2,825.07	128.18	2,953.25
Care of buildings .....	13.38	.....	13.38
Repair of buildings .....	101.89	12.94	114.93
Supplies .....	17.24	4,024.42	4,041.66
	\$ 3,054.81	\$ 4,298.74	\$ 7,353.55
<b>Improvement</b>			
Buffalo and deer to Spokane .....	\$ 37.37	\$ 3.96	\$ 41.33
Water trough .....	12.38	.....	12.38
Fence .....	.....	135.01	135.01
Animals .....	.....	21.70	21.70
Elk barns, grade for .....	110.02	.....	110.02
Elk barns .....	14.96	668.42	683.38
	\$ 174.73	\$ 829.09	\$ 1,003.82

## MISCELLANEOUS

	Labor	Material	Total
<b>Maintenance</b>			
Other departments, men, team and truck .....	\$ 30.33	.....	\$ 30.33
<b>Improvement</b>			
Employment bureau and lodging house .....	\$ 5.06	\$ 20.49	25.55
Western Hills and Reservation Multnomah Falls, engineering .....	23.08	.....	23.08
Kelly Butte, engineering .....	10.78	.....	10.78
Irvington Club, fountain .....	.....	30.08	30.08
Wood .....	.....	47.05	47.05
Patton Avenue, grading .....	.....	110.00	110.00
Overlook, lawn making .....	7.75	.....	7.75
Trees and shrubs, Overlook .....	13.50	16.50	30.00
Overlook water system .....	5.03	3.50	8.53
	\$ 65.20	\$ 227.62	\$ 292.82

## BUREAU OF PARKS

## ALL PLAYGROUNDS

	Labor	Material	Total
<b>Maintenance</b>			
Watching .....	\$ 96.66	\$ 5.00	\$ 101.66
Equipment—Apparatus .....	141.70	549.90	691.60
Supervision .....	446.91	2.50	449.41
Sundry supplies .....	.....	419.61	419.61
	\$ 685.27	\$ 977.01	\$ 1,662.28
<b>Improvement</b>			
Engineering .....	\$ 17.52	\$ .....	\$ 17.52
Equipment .....	.....	206.69	206.69
	\$ 17.52	\$ 206.69	\$ 224.21

## AINSWORTH

	Labor	Material	Total
<b>Maintenance</b>			
Supervising playground .....	\$ 176.65	\$ .....	\$ 176.65
Sundry supplies .....	.....	8.77	8.77
	\$ 176.65	\$ 8.77	\$ 185.42
<b>Improvement</b>			
Erecting apparatus .....	\$ 10.88	.....	\$ 10.88

## ARLETA

	Labor	Material	Total
<b>Maintenance</b>			
Sundry supplies .....	.....	\$ 28.78	\$ 28.78
Supervising playgrounds .....	\$ 399.62	.....	399.62
	\$ 399.62	\$ 28.78	\$ 428.40
<b>Improvement</b>			
Grading .....	\$ 6.00	\$ .....	\$ 6.00
Sanding court .....	.....	30.22	30.22
	\$ 6.00	\$ 30.22	\$ 36.22



## BROOKLYN PLAYGROUNDS

	Labor	Material	Total
<b>Maintenance</b>			
Police and watching.....	\$ 101.63	\$.....	\$ 101.63
Gutters, cleaning.....	2.44	.....	2.44
Lawn, mowing.....	50.82	.....	50.82
Lawn, resodding, seeding.....	3.01	.....	3.01
Lawn, picking up papers, etc.....	31.50	.....	31.50
Lawn, sprinkling.....	91.12	.....	91.12
Lawn, raking leaves.....	59.25	.....	59.25
Lawn, fertilizing.....	3.37	.....	3.37
Walks, cleaning.....	143.42	.....	143.42
Trees and shrubs, pruning, etc.....	4.33	.....	4.33
Trees and shrubs, mulching.....	29.44	.....	29.44
Sewers and drains, repairing.....	1.13	.....	1.13
Water system, repairing pipes, etc.....	28.49	25.69	54.18
Water supply, cleaning fountains.....	14.23	.....	14.23
Fountains, repairing.....	1.88	2.07	3.95
Benches.....	30.19	.....	30.19
Floral display.....	37.22	.....	37.22
Fence.....	44.45	43.20	87.65
Equipment—Apparatus.....	102.41	2.58	104.99
Tools and implements.....	3.17	1.74	4.91
Toilets, repairing.....	21.23	12.21	33.44
Toilets, cleaning.....	150.56	6.62	157.18
Care of park.....	107.06	6.00	113.06
Supervision playground.....	562.19	.....	562.19
Sundry supplies.....	.....	84.53	84.53
	\$ 1,624.54	\$ 184.64	\$ 1,809.18
<b>Improvement</b>			
Fountains.....	\$ 23.64	\$ 26.13	\$ 49.77
Handball court.....	88.10	38.74	126.84
	\$ 111.74	\$ 64.87	\$ 176.61

## COLUMBIA

	Labor	Material	Total
<b>Maintenance</b>			
Apparatus and equipment.....	\$ 89.76	\$ 38.00	\$ 127.76
Care of grounds.....	122.35	.....	122.35
Supervising playgrounds.....	596.22	.....	596.22
Sundry supplies.....	.....	72.95	72.95
	\$ 808.33	\$ 110.95	\$ 919.28
<b>Improvement</b>			
Sanding court.....	\$ 20.25	\$ 8.58	\$ 28.83
Tennis court.....	76.19	9.41	85.60
Handball court.....	48.38	73.90	122.28
Wading pool, grading.....	15.75	.....	15.75
Wading pool.....	73.01	177.65	250.66
Cess pool.....	17.87	56.50	74.37
	\$ 251.45	\$ 326.04	\$ 577.49

## FAILING

	Labor	Material	Total
<b>Maintenance</b>			
Supervising playground.....	\$ 356.94	\$.....	\$ 356.94
Sundry supplies.....	24.52	.....	24.52
Building, repairing.....	.....	42.43	42.43
	\$ 381.46	\$ 42.43	\$ 423.89

## KENILWORTH PLAYGROUND

	Labor	Material	Total
<b>Maintenance</b>			
Valve, repairing.....	\$ 1.62	\$.....	\$ 1.62
Equipment—Apparatus.....	135.67	15.76	151.43
Park, care of.....	21.80	.....	21.80
Supervising, play.....	504.82	.....	504.82
Sundry supplies.....	.....	25.63	25.63
	\$ 663.91	\$ 41.39	\$ 705.30
<b>Improvement</b>			
Handball court.....	\$ 44.03	\$ 84.56	\$ 128.59
Tennis courts.....	86.86	30.23	117.09
	\$ 130.89	\$ 114.79	\$ 245.68

## LAKEVIEW PLAYGROUND

	Labor	Material	Total
<b>Maintenance</b>			
Apparatus—Equipment.....	\$ 25.63	\$.....	\$ 25.63
Supervising play.....	76.69	.....	76.69
Sundry supplies.....	.....	.85	.85
	\$ 102.32	\$ .85	\$ 103.17
<b>Improvement</b>			
Grading.....	\$.....	\$ 150.00	\$ 150.00
Cleaning.....	75.25	200.00	275.25
	\$ 75.25	\$ 350.00	\$ 425.25

## LAURELHURST PLAYGROUND

	Labor	Material	Total
<b>Maintenance</b>			
Equipment—Apparatus.....	\$ 5.99	\$ 4.56	\$ 10.55
Supervising play.....	501.05	.....	501.05
Care of.....	1.50	.....	1.50
Sundry supplies.....	.....	7.73	7.73
	\$ 508.54	\$ 12.29	\$ 520.83



## LENTS PLAYGROUND

	Labor	Material	Total
Maintenance			
Watching .....	\$ 160.38	\$ .....	\$ 160.38
Lawn, mowing .....	41.25	.....	41.25
Lawn, picking up papers, etc. ....	63.38	.....	63.38
Lawn, raking leaves .....	14.62	.....	14.62
Shrubs, cutting out .....	1.88	.....	1.88
Trees and shrubs, mulching and cultivating ..	149.87	.....	149.87
Pipes and hydrants .....	1.50	.....	1.50
Fountains, cleaning .....	20.99	.....	20.99
Water supply—Fountains, repairing .....	7.16	.37	7.53
Benches .....	12.00	.....	12.00
Fence .....	13.49	.....	13.49
Equipment—Apparatus .....	171.78	13.50	185.28
Care of tools .....	.81	10.22	11.03
Toilet, repairing .....	1.50	283.22	284.72
Toilet, cleaning .....	11.06	13.23	24.29
Building, cleaning .....	20.07	.....	20.07
Buildings, repair of .....	47.34	46.03	93.37
Park, care of .....	55.87	67.00	122.87
Supervising play .....	540.36	.....	540.36
Sundry supplies .....	.....	22.82	22.82
	\$ 874.28	\$ 456.02	\$ 1,330.30
Improvement			
Engineering .....	\$ 91.51	\$ .....	\$ 91.51
Grading .....	.....	538.25	538.25
Wading pool .....	221.53	999.44	1,220.97
Walks about pool .....	22.13	6.90	29.03
Drains and sewers .....	16.50	57.00	73.50
Water supply .....	57.69	38.50	96.19
Handball court .....	.....	4.63	4.63
	\$ 409.36	\$ 1,644.72	\$ 2,054.08

## LINCOLN PLAYGROUND

	Labor	Material	Total
Maintenance			
Watching .....	\$ 171.77	\$ .....	\$ 171.77
Lawn, mowing .....	27.76	.....	27.76
Lawn, resodding and seeding .....	2.25	.....	2.25
Lawn, picking up papers, etc. ....	89.09	.....	89.09
Lawn, watering .....	5.62	.....	5.62
Lawn, raking .....	10.88	.....	10.88
Walks, repairing .....	2.25	.....	2.25
Walks, cleaning .....	93.11	.....	93.11
Trees and shrubs, pruning .....	24.75	.....	24.75
Trees and shrubs, mulching and spading .....	104.26	.....	104.26
Sewers and drains, repairing .....	18.75	.....	18.75
Fountains, repairing .....	.75	.....	.75
Fence .....	1.50	.....	1.50
Apparatus and equipment—Care of .....	249.29	27.06	276.35
Tools .....	.....	3.03	3.03
Comfort station, repairs .....	62.88	23.40	86.28
Comfort station, cleaning .....	133.89	.....	133.89
Grounds, care of .....	110.72	.....	110.72
Supervising play .....	577.59	.....	577.59
Sundry supplies .....	.....	23.85	23.85
	\$ 1,687.11	\$ 77.34	\$ 1,764.45
Improvement			
Wading pool .....	\$ 237.89	\$ 304.62	\$ 542.51
Walks .....	23.62	.....	23.62
Water supply .....	13.50	.....	13.50
Grading .....	45.76	.....	45.76
Engineering .....	3.15	.....	3.15
Handball court .....	55.12	74.35	129.47
Tool houses .....	.....	28.75	28.75
Tennis court .....	77.04	.66	77.70
	\$ 456.08	\$ 408.38	\$ 864.46

## MT. TABOR PLAYGROUND

	Labor	Material	Total
Maintenance			
Building, repairs of .....	\$ .....	\$ 22.09	\$ 22.09
Apparatus, erection and care for .....	42.92	.....	42.92
Playground, care of .....	9.00	.....	9.00
Supervising play .....	225.54	.....	225.54
Sundry supplies .....	.....	13.64	13.64
	\$ 277.46	\$ 35.73	\$ 313.19
Improvement			
Clearing and grubbing .....	\$ 3.00	\$ .....	\$ 3.00
Wading Pool .....	253.95	481.53	735.48
Wading pool, grading .....	209.25	.....	209.25
Sewer .....	347.57	198.62	546.19
Water system .....	31.12	9.20	40.32
Playground, grading .....	270.99	16.00	286.99
Tennis court, grading .....	90.87	.....	90.87
Tennis court .....	26.97	.....	26.97
Fence .....	.....	529.92	529.92
	\$ 1,233.72	\$ 1,235.27	\$ 2,468.99



## NORTH PARK PLAYGROUND

	Labor	Material	Total
Maintenance			
Playground equipment.....	\$ 32.25	\$.....	\$ 32.25
Grounds, care of.....	2.25	.....	2.25
Supervising play.....	534.46	.....	534.46
Sundry supplies.....	.....	24.05	24.05
	\$ 568.96	\$ 24.05	\$ 593.01

## PENINSULA PLAYGROUND

	Labor	Material	Total
Maintenance			
Fence.....	\$ 12.34	\$.....	\$ 12.34
Equipment and apparatus, care of.....	176.32	263.72	440.04
Building, care of.....	2,998.73	357.43	3,356.21
Recreation building, care of.....	79.41	68.84	148.25
Swimming pool.....	948.54	795.27	1,743.81
Care of.....	36.36	.....	36.36
Supervising play.....	1,152.81	.....	1,152.81
Sundry supplies.....	.....	182.52	182.52
	\$ 5,404.51	\$ 1,667.83	\$ 7,072.34
Improvement			
Fence.....	\$ 33.55	\$ 52.70	\$ 86.25
Hand ball court.....	53.24	76.71	129.95
Tennis courts.....	.38	.....	.38
	\$ 87.17	\$ 129.41	\$ 216.58

## REED PLAYGROUNDS

	Labor	Material	Total
Maintenance			
Supervision of play.....	\$ 365.37	\$.....	\$ 365.37
Sundry supplies.....	.....	6.45	6.45
	\$ 365.37	\$ 6.45	\$ 371.82
Improvement			
Grounds, care of, cleaning up.....	\$ 22.87	\$ 7.84	\$ 30.71

## ROSE CITY

	Labor	Material	Total
Maintenance			
Supervising play.....	\$ 170.94	\$.....	\$ 170.94
Sundry supplies.....	.....	5.83	5.83
	\$ 170.94	\$ 5.83	\$ 176.77

## SELLWOOD PLAYGROUND

	Labor	Material	Total
Maintenance			
Picking up papers, etc.....	\$ 3.00	\$.....	\$ 3.00
Equipment.....	61.72	515.23	576.95
Building, care of.....	27.06	.....	27.06
Building, repairing.....	15.50	1.08	16.58
Swimming pool, etc.....	823.91	747.21	1,571.12
Care of.....	41.96	.....	41.96
Supervising play.....	582.80	.....	582.80
Sundry supplies.....	.....	88.59	88.59
	\$ 1,555.95	\$ 1,352.11	\$ 2,908.06
Improvement			
Fence.....	\$.....	\$ 190.67	\$ 190.67
Hand ball court.....	42.01	73.14	115.15
Children's shelter.....	.....	97.45	97.45
	\$ 42.01	\$ 361.26	\$ 403.27

## SHAVER

	Labor	Material	Total
Maintenance			
Supervising play.....	\$ 181.78	\$.....	\$ 181.78
Sundry Supplies.....	.....	112.15	112.15
	\$ 181.78	\$ 112.15	\$ 293.93

## WASHINGTON PLAYGROUND

	Labor	Material	Total
Maintenance			
Apparatus.....	\$ 209.03	\$ 33.00	\$ 242.03
Care of grounds.....	126.58	.....	126.58
Supervising play.....	542.38	.....	542.38
Sundry Supplies.....	.....	27.80	27.80
	\$ 877.99	\$ 60.80	\$ 938.79

## WOODSTOCK

	Labor	Material	Total
Maintenance			
Supervising play.....	\$ 14.32	\$.....	\$ 14.32

## SCHOOL PLAYGROUNDS

	Labor	Material	Total
Maintenance			
Inspection, apparatus and erection.....	\$ 176.25	\$.....	\$ 176.25



## MULTNOMAH TANK

	Labor	Material	Total
<b>Maintenance</b>			
Equipment .....	\$.....	\$ 39.38	\$ 39.38
Swimming pool .....	451.67	38.07	489.74
Care of .....	114.12	15.19	129.31
	\$ 565.79	\$ 92.64	\$ 658.43
<b>Improvement</b>			
Engineering .....	\$ 26.33	.....	\$ 26.33
Tank, etc. ....	217.83	\$ 1,061.75	1,279.58
	\$ 244.16	\$ 1,061.75	\$ 1,305.91

## PENINSULA ANNEX

	Labor	Material	Total
<b>Maintenance</b>			
Ball grounds .....	\$ 270.70	\$ 102.85	\$ 373.55
<b>Improvement</b>			
Engineering .....	\$ 6.46	\$.....	\$ 6.46
Ball grounds .....	76.02	397.30	473.32
	\$ 82.48	\$ 397.30	\$ 479.78

## TWELFTH AND DAVIS BALL GROUNDS

	Labor	Material	Total
<b>Maintenance</b>			
Watching and care of grounds.....	\$ 599.20	\$ 79.69	\$ 678.89
<b>Improvement</b>			
Ball field, house, water and sewer.....	\$ 108.30	\$ 1,026.79	\$ 1,135.09
Equipment .....	.....	172.96	172.96
Engineering .....	1.92	.....	1.92
	\$ 110.22	\$ 1,199.75	\$ 1,309.97

## MONTGOMERY TRACT

	Labor	Material	Total
<b>Maintenance</b>			
Maintenance .....	\$ 381.41	\$ 50.85	\$ 432.26
Tools .....	.....	.62	.62
	\$ 381.41	\$ 51.47	\$ 432.88
<b>Improvement</b>			
Grounds, Bldgs., Backstops, Water, Sewer....	\$ 261.80	\$ 721.31	\$ 983.11

## 57TH AND 65TH AVENUE

	Labor	Material	Total
<b>Improvement</b>			
Playground and backstops.....	\$ 14.25	\$ 3.29	\$ 17.54

## 55TH AVENUE AND 72ND STREET, S. E.

	Labor	Material	Total
<b>Improvement</b>			
Engineering .....	\$ 7.13	\$.....	\$ 7.13

## 26TH AND NORTHRUP STREETS

	Labor	Material	Total
<b>Improvement</b>			
Backstops .....	\$ 14.25	\$ 50.75	\$ 65.00

## WEST END

	Labor	Material	Total
<b>Improvement</b>			
Ball field .....	\$.....	\$ 15.00	\$ 15.00

## EAST 7TH AND EAST 33RD AND FREEMONT

	Labor	Material	Total
<b>Improvement</b>			
Engineering .....	\$ 9.30	\$.....	\$ 9.30

## ALL PARKS

	Labor	Material	Total
<b>Maintenance</b>			
Stock .....	\$.....	\$ 1,695.77	\$ 1,695.77



## BUREAU OF WEIGHTS AND MEASURES

It is not the intention of this Bureau to prosecute in all cases of short weight or measure. Complaints are filed only in those cases where it is believed a clear intention to defraud exists. The majority of complaints made to this office are due to misunderstanding or mistakes as between the parties and it is believed that it is just as much our duty to clear up cases of this kind as it is to run down and prosecute cases of actual fraud. A great majority of the business men welcome our inspections, as is evidenced by an increasing demand for special tests.

It is recommended that a number of the owners of wagon platform scales located in convenient parts of the City be authorized to issue certified statements of weight. This could be done without the expenditure of any money on the part of the City and it would do much to insure the delivery of full weight in coal and similar commodities, and would also safeguard the interests of non-residents, who at the present time are unable to obtain disinterested statements of weight on merchandise shipped into the city.

This office is in receipt frequently of requests from importers and others for work of this kind which, with our limited force, we are unable to do.

Scales tested, found accurate and sealed.....	2996
Scales tested, adjusted and repaired.....	166
Scales ordered repaired.....	245
Scales condemned .....	355
<b>Total scales tested.....</b>	<b>3762</b>
Weights found accurate and sealed.....	707
Weights corrected .....	12
Weights condemned .....	26
<b>Total weights tested.....</b>	<b>745</b>
Automatic pumps and tanks sealed.....	257
Automatic pumps and tanks ordered repaired.....	39
Automatic pumps and tanks adjusted or repaired.....	53
Automatic pumps and tanks condemned.....	5
<b>Total automatic pumps and tanks tested.....</b>	<b>354</b>
Liquid capacity measures sealed.....	661
Liquid capacity measures condemned.....	63
<b>Total .....</b>	<b>724</b>
Taximeters tested and sealed.....	29
Taximeters condemned for repairs.....	6
<b>Total taximeters tested.....</b>	<b>35</b>
Wood measured, cords.....	4,731
Coal reweighed, pounds.....	10,000
<b>COMPLAINTS FILED IN MUNICIPAL COURT</b>	
Short weight in potatoes.....	3
Found guilty and fined.....	1
Found guilty and sentence suspended.....	2
Short weight in sausage.....	1
Found guilty and fined.....	1

## ANNUAL REPORT

OF

THE DEPARTMENT OF  
PUBLIC UTILITIES

FOR THE FISCAL YEAR ENDING

NOVEMBER 30, 1915



**DEPARTMENT OF PUBLIC UTILITIES**

**WILL H. DALY**  
COMMISSIONER

**BUREAU OF WATER WORKS—**  
L. S. Kaiser, Superintendent  
D. D. Clarke, Engineer

**BUREAU OF STREET CLEANING—**  
Alex Donaldson, Superintendent

**BUREAU OF GARBAGE DISPOSAL—**  
Wm. G. Helber, General Foreman

**MUNICIPAL LIGHTING—**  
C. F. Wiegand, Clerk

**MUNICIPAL LIGHTING**

To the Honorable Mayor and Council:

A subject of major importance at this time is adequate street lighting.

The City is now expending annually about \$200,000 for lighting streets, buildings and gulch bridges.

There are now on file in this office about 1,200 petitions for the establishment of additional arc lights. In checking over these petitions it is found that it would be good practice to install fully 800 of these requested lights.

It has not been thought practical in the past to greatly increase the number of arc lights in service, on account of the expenditure involved. Therefore, I have approached the subject from a new angle, hoping to accomplish the greatest economy and service to the City.

Observations of the low water flow of Bull Run River for the past 15 years shows that almost immediately the City must authorize the impounding of the storm waters of this river in order to provide sufficient water for the low water period, which usually occurs late in August or during the month of September. Had the 7,690 vacant services in 1915 been in active use the City would have faced a serious problem during the dry period of the past summer.

There being no question that the City should provide more lights for its streets and that it must impound water during the storm period to carry the consumers over the low water period, it was determined to blend the two problems into one, and with this end in view the engineering corps of the Bureau of Water Works during the past year in its explorations of the Bull Run Watershed to determine future additional water supply or locations for dam sites for impounding the water, has made these investigations with the view of finding not only the best point for constructing an impounding dam, but to so locate such dam that the power therefrom may be used for municipal lighting purposes. The data so far secured, while yet incomplete, shows that sufficient water may be impounded by the construction of a dam to develop 4,000 horsepower for a ten-hour average load. The cost of such dam (being necessary for water works operation) could well be divided between the Bureau of Water Works and the Municipal Lighting Bureau. If this were done the cost to the power plant would be very moderate.

The City is now using 157 acres of underground construction at a cost of \$63.60 each per year, and 3,392 arcs of overhead construction at a cost of \$51.60 each per year, or a total number of 3,549 at a total cost per year of \$185,064.00. This makes an average cost per arc per year of \$52.13 plus.

The arc lamps now in service are of the following illuminating values:

Amperes .....	4
Terminal volts .....	75-80
Arc volts (average).....	75
Terminal watts .....	310
Arc watts .....	300
Mean lower hemispherical candle power.....	525
Terminal watts per mean lower hemispherical candle power.....	.59
Arc watts per mean hemispherical candle power.....	.57
Mean spherical candle power.....	276
Terminal watts per mean spherical candle power.....	1.12
Arc watts per mean spherical candle power.....	1.09



A computation of the above shows that the City is using at terminals a total of 1,520 horsepower at a cost per horsepower year of \$121.52 plus.

While the City is expending about \$200,000 per year for lighting streets, parks, gulch bridges and buildings, the business firms of the City are also expending a considerable sum for the post lighting in the business streets of the City. No doubt, in the near future, the business men will tire of this burden and will ask (and properly so) that the City should assume the care of street lighting in the business section as well as in the residence districts.

There is no doubt but that a municipal system may be devised and a post lighting system throughout the business districts adopted whereby the City would take over the expense of maintaining and operating street lighting of the entire City without discrimination as to locality or style of lighting used.

As above stated, the City is now requiring approximately 1,520 horsepower. There is little doubt but what this may be increased to 3,000 horsepower through a municipal lighting system at little or no additional expense to the City.

From the experience of American municipalities it is proven that the most economical policing of a city is an efficient street lighting system. The City may, by combining its water conservation for municipal purposes with a municipal power plant, secure a municipal lighting system of the greatest efficiency and economy. An investment in the mountains in development of this kind means that the money now necessary to be expended for impounding purposes will do double duty by also serving the City with a lighting service and added water supply.

#### RECEIPTS AND EXPENDITURES

Appropriation (Ordinance 29821).....	\$196,000.00
Appropriation (Ordinance 30115).....	500.00
Sale of material.....	47.34
	<u>\$196,547.34</u>
Total expenditures .....	191,379.83
Balance .....	\$ 5,167.51

#### DETAILED EXPENDITURES

Arc lighting .....	\$176,978.01
Linnton .....	1,326.83
St. Johns .....	2,759.76
Patrol service .....	108.64
East Twenty-eighth street bridge.....	178.90
East Twelfth street bridge.....	123.74
East Twenty-first street bridge.....	281.36
Grand Avenue bridge.....	130.23
Union Avenue bridge.....	195.52
Street cleaning .....	761.85
Police department .....	23.08
Police department .....	60.86
Purchasing department .....	212.98
City Hall .....	1,511.51
Comfort stations .....	192.06
City jail .....	2,276.74
Park board .....	1,715.02
Free employment bureau .....	1.75
Fire department .....	1,605.29
Public market .....	36.12
Municipal shop .....	9.84
Decorative lighting .....	236.32

#### MUNICIPAL LIGHTING

171

Decorative lighting buildings, personal service.....	147.50
Lents .....	500.00
Supplies .....	5.92
Total .....	<u>\$191,379.83</u>

#### LIGHTS IN SERVICE NOV. 30, 1915

Overhead arcs, December 1, 1914.....	3,197
Overhead arcs installed .....	62
Acquired by annexation of St. Johns.....	135
	<u>3,394</u>
Arc lights discontinued .....	2
Total overhead arcs .....	<u>3,392</u>
Underground arcs, December 1, 1914.....	160
Underground arcs discontinued .....	3
Total underground arcs .....	<u>157</u>
Total number of incandescent lights acquired by the annexation of Linnton now in service .....	93



## BUREAU OF WATER WORKS

Available balance of water fund November 30, 1914.....	\$	20,266.09
Net receipts for water sold.....		705,978.30
Interest on daily balances.....		6,050.19
\$595,000 Water bonds sold.....		*560,800.00
Accrued interest on above bonds.....		1,175.56
Sale of old water pipe, etc.....		5,618.23
Linnton funds transferred to water funds.....		5,512.89
Rent of municipal garage.....		600.00
Rent of ground.....		125.00
Interdepartmental credits, etc.....		43.40
Warrants cancelled as per auditor's report.....		53.15
Material drawn from stock in excess of this year's purchase...		12,689.42

\$ 1,318,912.23

## Disbursements during fiscal year:

Interest on bonds.....	\$307,985.00
Payments into sinking fund.....	143,880.00
Operation, maintenance, etc.....	189,456.64
Refund of meter deposits.....	15,395.15
Construction, extending mains, improvements, hydrants, etc.....	358,949.25
Improvement bond sinking fund.....	181,861.21
Tools and equipment purchased.....	5,333.61
Meters purchased.....	6,141.05
	\$1,209,001.91

Available balance of water fund November 30, 1915..... \$ 109,910.32

\*From the above item, "Sale of bonds \$560,800.00," there should be deducted the item "Transfer to improvement bond sinking fund \$181,861.21," as the latter sum was paid into the Improvement Bond Sinking Fund to retire improvement bonds which had been issued for the construction of water mains, on which bonds the Bureau of Water Works was paying 6 per cent interest which, in effect, substitutes 4 per cent Water Bonds for the Improvement Bonds of higher rate.

Decrease of net receipts in 1915, amounting to 17.3 per cent, is due to a heavy reduction of water rates and earnings in 1915, part of which were not collected in that year owing to a change in the system of collection. Actual increase of revenue during 1915 is five per cent, based upon the rate for service in 1914.

## LINNTON WATER SYSTEM

As a result of the election of June, 1915, the Town of Linnton was annexed to the City of Portland and thereby the Bureau of Water Works fell heir to its municipal water system, and an estimate of Receipts and expenditures of that unit of our system is as follows:

## RECEIPTS

Water revenue ..... \$ 2,400.00

## DISBURSEMENTS

Operation	
Collection.....	\$ 60.00
Inspection and meter reading.....	288.00
Pump.....	140.00
Regulating valves.....	60.00
Maintenance	
Pump.....	640.00
Repairing mains.....	300.00
Interest on \$150,000, 5½ per cent bonds.....	8,250.00
Sinking fund 2 per cent.....	3,000.00
Total.....	\$12,738.00
Less revenue.....	2,400.00
Deficit.....	\$ 9,338.00

It will be seen by the above that there will be a loss to the Bureau of Water Works from the operation of the Linnton unit, of more than \$9,000.00 per annum.

There is little promise of any added water revenue in the district formerly known as Linnton. Therefore the above loss may be reasonably expected to continue for a considerable number of years.

## SERVICE SURVEY

An inquiry during the latter part of 1914 revealed the fact that there had been no complete survey of water services and fixtures, or inspections during the life of the Municipal system, and only one partial survey about 20 years prior to the year 1914.

Appreciating the fact that during this long period of operation without check there must be a great many inaccuracies as to service and fixture records, it was determined to begin a most comprehensive survey beginning with January 1, 1915.

There is a double purpose to be accomplished by such a survey or investigation. Not only the loss in revenue is to be considered, but on account of a great many small systems having been purchased and taken over by the Bureau of Water Works within the past fifteen years, the construction of the service pipes, of which no set rule had been followed, made it difficult, from the viewpoint of operation, to control those acquired units.

Commencing January 1st, three crews, consisting of two men each, were put in the field in different points of the City, their duties being to locate service pipes, curb cocks, and to survey the premises of each consumer.

The following tabulation shows, in detail, the work done and results accomplished by these crews for the fiscal year ending November 30, 1915. The total number of inspections made during this eleven-month period was 20,078, about 35 per cent of the total number of water services. This work is being continued during the year 1916 and will be completed before the close of 1917.

## Number of inspections:

January.....	2,270	July.....	1,306
February.....	2,031	August.....	1,195
March.....	2,050	September.....	1,970
April.....	1,925	October.....	2,208
May.....	1,882	November.....	1,541
June.....	1,700		

Total for 11 months..... 20,078

## MONTHLY EFFECT ON REVENUE

MONTH	Rates	Increased	Rates	Decreased	Net Monthly Increase
January.....	174	\$77.10	24	\$4.40	\$72.70
February.....	165	79.05	13	3.05	76.00
March.....	176	78.35	20	7.00	71.35
April.....	170	73.35	31	7.05	66.30
May.....	140	60.50	14	3.35	57.15
June.....	94	43.85	9	2.95	40.90
July.....	81	37.30	14	4.80	32.50
August.....	69	41.05	11	3.90	37.15
September.....	133	69.40	13	2.70	66.70
October.....	176	68.40	20	6.65	61.75
November.....	118	67.80	16	4.15	63.65
Total for 11 months.....	1496	\$696.15	185	\$50.00	\$646.15



## SERVICES AND FIXTURES NOT ON RECORD

	Services	Fixtures
January.....	7	50
February.....	4	103
March.....	5	60
April.....	5	65
May.....	2	66
June.....	2	34
July.....	1	52
August.....	5	15
September.....	10	56
October.....	12	133
November.....	4	98
	57	732

## BACK BILLS RENDERED

MONTH	Bills Rendered	Cash Paid	Adjustments	Balances
January.....	\$ 1,012.55	\$ 845.55	\$ 98.70	\$ 68.30
February.....	473.80	310.05	163.75	0.0
March.....	283.20	228.95	52.80	1.45
April.....	480.65	316.30	39.95	124.40
May.....	409.30	325.30	55.35	28.65
June.....	478.80	363.90	84.90	30.00
July.....	1,667.35	1,620.60	43.15	3.60
August.....	279.85	166.35	48.20	65.30
September.....	1,244.80	643.60	430.00	171.10
October.....	727.75	476.40	108.10	143.25
November.....	524.40	238.90	140.70	144.80
Total.....	\$ 7,582.45	\$ 5,535.90	\$ 1,265.70	\$ 780.85

Note: Of the outstanding balances on this account, nineteen services have been shut off with a total of \$332.30 against such services. Therefore, out of the total amount billed, \$7,582.45, there is but \$445.00 outstanding which is collectible at an early date. Over ninety (90%) per cent of these bills have, therefore, been liquidated, constituting as it does a remarkable showing for this particular activity.

## LEAKING FIXTURES

	Water Closets	Other Fixtures
January.....	182	7
February.....	134	13
March.....	102	19
April.....	122	24
May.....	167	26
June.....	94	14
July.....	98	6
August.....	24	1
September.....	92	19
October.....	94	10
November.....	85	10
Total number leaks.....	1194	149

Premises found having water coolers.....	105
Refrigerating plants not listed.....	6
Meters installed as a result of inspection.....	209
Water closets and urinals found which were not provided with tanks or self-acting float valves.....	99

NOTE—Of these 99 services having such fixtures, sixteen have made application to have meters installed. The expiration of the time

given to repair these fixtures has not yet arrived, consequently no action can be taken on the other services in time to make a note of it in this report.

Summarizing the above tabulation, we find the following startling result:

Of 20,078 premises inspected, the rates upon 1,496 services were increased; the rates of 185 were decreased. The total monthly net increase in revenue is \$646.15.

It was found that of the above number (20,078 services), 57 water service connections existed of which the Bureau of Water Works had no knowledge and which had never paid any charges, and 732 fixtures existed for which no permits had ever been applied for. The Bureau, after careful investigation, had billed the delinquent premises in the amount of \$7,582.45, of which \$5,535.90 has been paid.

The expense of this survey was \$7,469.03. The added annual revenue as a result of this inspection is \$7,753.80. So it is clearly shown that the expense is justified from a financial viewpoint, not taking into account its great importance in operating the water system.

The financial result of this survey is more than satisfactory in that it shows an annual increase in revenue of \$7,753.80 plus \$7,582.45 back-billing to premises which have not paid the lawful rate, showing a total addition to water revenue of \$15,336.25.



## INVENTORIES—REAL ESTATE

Name	Location	Area in Acres	Value of Land	Value of Improvements
Old reservoir site.....	All of Blk. 32, Carruthers Add., Broadway and Lincoln Sts.....	.92	\$ 100,000	\$ 1,000
Portland Heights reservoir site.....	Blk. K," Greenway Add.....	.51	5,000	11,114
Repair and meter shop.....	S. E. 1/2 of Blk. 150, Portland, 4th and Market.....	.25	125,000	1,000
East Side Water Office.....	Lot 8, Blk. 139, East Portland, E. 7th and E. Alder Sts.....	.11	8,500	23,415
Site of Old Irvington stand-pipe.....	Lots 5 and 6, Blk. 257, Holladay Add., E. 13th and Schuyler Sts.....	.22	4,500	
Former pumping station.....	Tract foot of Sherman St.....	.50	12,000	
Bull Run conduit No. 1 and 2.....	Tract foot of Stephens St.....	.60	7,500	
Reservoir No. 3 and 4.....	Adjoining Washington Park.....	63.10	189,000	569,000
Water Tanks.....	Portland Heights.....	.04	600	
Water Tanks.....	Willamette Heights.....	.06	500	2,500
Albina Warehouse.....	Blk. 73, Albina, Randolph and Loring Sts.....	1.00	40,000	5,000
Albina water office, shop and stable.....	Part of Blk. 25 and 26, Albina, Russell St., between Williams Ave. and Rodney Ave.....	.29	7,000	32,310
Old Highland Tank site.....	Lot 4, Blk. 6, Macgley Highland, Union Ave., between Wygant and Going Sts.....	.10	2,500	
Old tank site, Brown's system.....	E. 60th and Foster Rd.....	.08	700	
Old tank site, Brown's system.....	Lot 1, Blk. 1, Pomona Add.....	.08	300	
Old tank site, Brown's system.....	Lot in School Park Add.....	.01	50	
Old tank site, Brown's system.....	Lot 5, Blk. 22, Saginaw Heights.....	.10	300	30
Vernon standpipe.....	Tract E. 20th and Prescott.....	2.34	11,000	12,000
Palatine pump station.....		21.00	60,000	10,000
High service reservoir (No. 1).....	Mt. Tabor.....	5.75	28,000	134,000
Low service reservoir (No. 2).....	Mt. Tabor.....	10.00	50,000	121,000
Reservoir 5 and 6.....	Mt. Tabor.....	45.17	150,000	690,000
Standpipe.....	Near Lusted's.....	.50	100	
Headworks.....	Clackamas & Multnomah Counties.....	4360.00	150,400	16,597.93
Standpipe.....	Council Crest.....	.25	900	2,000
Pump station.....	Old Kinzel Park pump station, E. 76th and Yamhill Sts.....	1.00	2,000	200
Tract for water tanks.....	Ext. 19th St. 100 ft. south of Spring St.....	.025	500	
Reservoir No. 2.....	S. 60ft L. 32 and 33, Blk. 20, 1st Add. to Linnton.....	.07	150	2,890
Reservoir No. 3.....	Lower Whitwood, Linnton.....	.25	500	2,890
Reservoir No. 4.....	Upper Whitwood, Linnton.....	.25	500	3,102
Reservoir No. 6.....	Part L. 8, Blk. 28, Willalatin, Linnton.....	.25	500	2,890
Reservoir No. 7.....	Lower Willbridge, Linnton.....	.22	475	3,102
Reservoir No. 8.....	Upper Willbridge, Linnton.....	.13	280	1,440
Whitwood Court Pump.....	L. I, Blk. 24, Whitwood Court, Linnton.....	.34	1,475	212

## PERSONAL PROPERTY ON HAND

Material for mains.....	\$147,990.33
Material for Bull Run conduits.....	2,481.65
Material for submerged pipe.....	28,048.80
Meters.....	3,208.20
Tools and portable property, November 30, 1915.....	48,487.63

## DISTRIBUTION OF WATER RECEIPTS

Operation and maintenance.....	26.83%
Interest on bonds.....	43.62%
Deposited in Sinking Fund.....	20.37%
Available for improvements, etc.....	9.18%

## CHARGES FOR WATER DURING 1915

Flat rate, ordinary dwelling, per annum.....	\$ 7.20
Meter rates, minimum, per annum.....	6.00
Meter rates, first 150,000 gallons, per 1,000 gallons.....	.13 1-3
Meter rates, over 150,000 gallons, per 1,000 gallons.....	.10 2-3

The above are the rates as reduced at the beginning of the present fiscal year. For the prior year the flat rate for an ordinary dwelling was \$9.00 per annum, with a minimum meter charge of \$9.00 per annum. The meter rates were as follows:

Meter rates, first 4,500 gallons, per 1,000 gallons.....	\$ .16 2-3
Meter rates, next 150,000 gallons, per 1,000 gallons.....	.13 1-3
Meter rates, over 154,500 gallons, per 1,000 gallons.....	.10 2-3

## SERVICES—NOVEMBER 30, 1915—DETAILED STATEMENT

	Active Services	Vacancies
Dwellings, including flats.....	44,510	6,486
Dwelling and store combined.....	330	32
Apartment houses.....	329	4
Hotels, lodging houses, etc.....	655	36
Manufactories.....	163	26
Stores, restaurants, etc.....	1,904	555
Saloons.....	274	46
Office buildings, banks, etc.....	130	3
Churches.....	163	7
Schools—Public and private.....	121	3
Laundries.....	61	9
Fire protection.....	411	4
Elevators.....	160	35
Miscellaneous.....	2,034	444
Total number actually paying water rates for November, 1915.....	51,236	7,690
New services installed during the year.....	1,649	
Total services November 30, 1915.....		58,926
Total services metered.....		15,495
Percentage of all services metered.....		26.3
Dwellings served.....		50.996
Percentage of dwellings metered.....		22.28
Places other than dwellings served.....		7,930
Percentage of places other than dwellings metered.....		52.08

Dwellings metered are those where water is likely to be wasted and all places on higher elevations supplied by pumping system.

Of the above new services installed, 277 are included which were acquired by the annexation of the town of Linnton to the City of Portland, July 7, 1915—of this number 217 were metered.



Summary of receipts and disbursements of the Bureau of Water Works during the past 29 years of Municipal ownership:

Gross earnings .....	\$12,504,233.20	
Due from the City for water for fire protection, sprinkling, etc. ....	823,589.35	
Cash receipts for water sold .....	\$11,680,643.85	
Miscellaneous receipts .....	72,321.95	
Bonds sold by City of Portland, 1886 to November 30, 1915 .....	\$8,044,000.00	
Less discount on bonds sold .....	46,847.60	7,997,152.40
		\$19,750,118.20

## EXPENDITURES

Private waterworks purchased and improved .....	\$ 1,102,236.22	
Gravity system and improvements .....	5,586,469.91	
Extending mains, etc. ....	5,365,064.63	
Meters, tools, etc., on hand .....	133,159.45	
Total cost of property .....	\$12,186,930.21	
Operation and repairs .....	2,569,673.35	
Meter deposits refunded .....	15,395.15	
Interest on bonds .....	3,985,369.17	
Payments into Sinking Fund .....	882,840.00	\$19,640,207.88
Available balance on hand November 30, 1915 ..		\$ 109,910.32

## DISTRIBUTION OF WATER RECEIPTS

Operation and maintenance .....	21.99%
Interest on bonds .....	34.12%
Deposited in Sinking Fund .....	7.56%
Improvements and extensions .....	36.33%

## PRESENT BONDED INDEBTEDNESS

Jan. 1, 1887 .....	Jan. 1, 1917 .....	5%	Purchase of water works .....	\$ 700,000
July 1, 1893 .....	July 1, 1923 .....	5%	Construction of Bull Run system .....	2,200,000
Jan. 1, 1911 .....	Jan. 1, 1936 .....	4%	Construction of additional pipe line and purchase of property .....	500,000
March 1, 1911 .....	March 1, 1936 .....	4%	Construction of additional pipe line and purchase of property .....	500,000
Oct. 1, 1911 .....	Oct. 1, 1936 .....	4%	Construction of additional pipe line and purchase of property .....	500,000
March 1, 1912 .....	March 1, 1937 .....	4%	Construction of additional pipe line and purchase of property .....	500,000
Nov. 1, 1912 .....	Nov. 1, 1937 .....	4%	Construction of additional pipe line and purchase of property .....	250,000
June 1, 1913 .....	June 1, 1938 .....	4%	Construction of additional water mains and purchase of property .....	242,000
Aug. 1, 1913 .....	Aug. 1, 1938 .....	4%	Construction of additional water mains and purchase of property .....	75,000
Sept. 1, 1913 .....	Sept. 1, 1938 .....	4%	Construction of additional water mains and purchase of property .....	250,000
Nov. 1, 1913 .....	Nov. 1, 1938 .....	4%	Construction of additional water mains and purchase of property .....	22,000
Dec. 1, 1913 .....	Dec. 1, 1938 .....	4%	Construction of additional water mains and purchase of property .....	285,000
Feb. 2, 1914 .....	Feb. 2, 1939 .....	4%	Construction of additional water mains and purchase of property .....	175,000
Dec. 1, 1914 .....	Dec. 1, 1939 .....	4%	Construction of additional water mains and purchase of property .....	135,000
March 1, 1915 .....	March 1, 1940 .....	4%	Construction of additional water mains and purchase of property .....	460,000
May 1, 1891 .....	May 1, 1921 .....	6%	Construction of water system (former City of East Portland) .....	250,000
April 1, 1913 .....	April 1, 1933 .....	5½%	Construction of Linnton water system .....	100,000
May 1, 1915 .....	Serial .....	5½%	Construction Linnton water system .....	50,000
Total bonded indebtedness .....				\$ 7,194,000

## PRESENT PLANT VALUE

Total appraised value of water works property, 1903 .....	\$ 6,516,000.00
Improvements and extensions to November 30, 1915 .....	4,079,658.73
Reservoir improvements .....	242,496.17
Third submerged pipe across Willamette river .....	119,789.55
Purchase of water plants (private) .....	121,368.98
Purchase of property, erecting buildings and improvement of real property .....	102,214.70
Bull Run Conduit No. 2 and Reservoirs Nos. 5 and 6 .....	2,311,412.04
Preliminary work on new headworks and reservoir sites .....	43,003.49
Lowering submerged pipe across Willamette river .....	84,845.37
Dwellings and headquarters Bull Run headworks .....	17,094.36
Surveys of Bull Run Reserve .....	12,184.19
Linnton Water Works annexed (cost) .....	144,487.11
Redemption of bonds for water main assessments .....	284,469.32
Total .....	\$14,079,024.01

## CONDUITS AND RESERVOIRS

Available daily conduit capacity .....	67,500,000 gallons
Reservoir capacity .....	193,000,000 gallons

## DISTRIBUTION SYSTEM

During the year under review, the work of installing new mains has been carried forward to meet the requirements of the several districts of the City, principally in the Northeast and Southeast districts.

The following tabular statement shows the extent of this work in recent years:

	Miles	Total Miles
Miles of mains in use, 4 inches diameter and over, January 1, 1909 .....		252.329
Laid during 1909 .....	9.073	261.402
Laid during 1910 .....	49.151	310.553
Laid and purchased during 1911 .....	30.350	390.903
Laid during 1912 .....	65.894	456.797
Laid during 1913 .....	49.912	506.709
Laid and purchased during 1914 .....	40.511	547.220
Laid during 1915 .....	16.187	
Annexed during 1915—Linnton .....	11.006	
	27.193	574.413

From the foregoing it appears that the mileage of mains laid during the past year is considerably less than that laid during the year 1913 or during the year 1914.

There has also been laid considerable mileage of galvanized pipe, two inches in diameter, in the sparsely built up sections of the city, and largely in unimproved streets. During the year, 14,917 miles of pipes of this size have been added, including such pipes in Linnton, making total mileage of pipes less than four inches in diameter now in use 132.131 miles. Total now in use, four inches in diameter and over, 567.220 miles. Total of all sizes, 699.351 miles, not including the main supply conduits of steel and cast iron, 24 inches to 52 inches in diameter, between the Headworks on Bull Run River and the distributing Reservoirs at Mt. Tabor and the City Park.

The largest mains laid during the year were the 30-inch reinforcement main, connecting with the Vernon Standpipe, 2.733 miles, costing \$106,940.07 (the first section of which was built in 1913), and 0.84 miles of 24-inch main leading from the Vernon Standpipe westerly to Union Avenue, costing \$24,794.43.



The latter main is the first section of a second reinforcement main from the Standpipe, which ultimately will be extended West and North to the vicinity of University Park or St. Johns.

There was also laid 1.173 miles of 16-inch main to reinforce the East Side intermediate service district in Irvington and upper Alhina.

A total of 1.73 miles of 12-inch main has also been laid in several districts as part of the permanent supply for the City.

#### DISTRIBUTION MAINS

Mains laid by department forces are as follows:

30-inch	2.733 miles
24-inch	0.842 miles
20-inch	0.035 miles
16-inch	1.173 miles
12-inch	1.725 miles
10-inch	0.015 miles
8-inch	6.976 miles
6-inch	2.688 miles
4-inch	..... miles
2-inch	9.181 miles
1½-inch	0.135 miles
Total	25.503 miles

#### MAINS ACQUIRED BY ANNEXATION (LINNTON DISTRICT)

12-inch	4.992 miles
8-inch	0.576 miles
6-inch	4.197 miles
4-inch	1.241 miles
3-inch	0.514 miles
2½-inch	0.068 miles
2-inch	3.036 miles
1½-inch	0.201 miles
1¼-inch	0.105 miles
1-inch	0.338 miles
¾-inch	0.217 miles
Total	15.485 miles

#### MAINS ACQUIRED BY BILL OF SALE

2-inch	0.831 miles
1¼-inch	0.034 miles
1-inch	0.142 miles
¾-inch	0.115 miles
Total	1.122 miles

#### RECAPITULATION

Mains laid by department forces	25.503 miles
Mains acquired by annexation (Linnton District)	15.485 miles
Mains acquired by bill of sale	1.122 miles
Total of all sizes added during the year	42.110 miles
Total mains abandoned or relaid with larger sizes	14.038 miles
Net increase during the year	28.072 miles
Total expenditure during the year account extending mains, as per Superintendent's report	\$289,313.35

#### MAINS LAID BY PRIVATE OWNERS

(Not included in foregoing summaries of pipe in use.)

8-inch	0.074 miles
6-inch	0.613 miles
Total	0.687 miles

#### PROPOSED EXTENSION OF MAINS

The policy adopted during the year has been to lay permanent cast iron mains of suitable size in all streets under contract for the laying

of hard surface pavement, the mains being laid in advance of the pavement work. While for the sparsely built up sections, where the streets are unimproved, or at least are not to be paved in the immediate future, and a showing can not be made of at least 6 per cent revenue per annum, or an urgent need of improved fire protection service is not apparent, then as a rule 2-inch pipes are installed. The outlay required during the year has been materially lessened by the adoption of this policy, but the wisdom of this course will only appear in the event a considerable period shall elapse before the demand for a larger supply makes it necessary to substitute larger pipes for the small ones now being laid.

Few mains have been laid during the year under the charter provision providing that water mains may be laid by private owners and later taken over by the City, when a showing can be made of at least 6 per cent revenue; and no mains so laid during former seasons have been purchased during the year.

For the coming year it will probably be necessary to lay about the same mileage of 8-inch and 6-inch mains, and smaller pipes, as were laid during the present season, in order to meet the demands for improved domestic and fire protection service and to provide for necessary mains in streets about to be paved.

The following large mains have been reported upon in former years, but action thereon has so far been delayed, namely:

16-inch main, Morrison, Fourth to Chapman Streets, 3700 lineal feet; estimated cost, \$20,000.00.

12-inch main, Washington, Fourth to Fourteenth Streets, 2860 lineal feet; estimated cost, \$10,500.00.

These mains are designed to reinforce the present gridiron system in the West Side district mainly for fire protection purposes. The laying of these mains has been delayed heretofore, in part, because it was desired to avoid the expense of cutting the asphalt pavement in these streets by waiting until a general repair of the streets should become necessary, and, in part, on account of the high pressure fire mains projected to cover a portion of the territory to be served by the proposed mains. It is not contemplated to take up the work of laying these mains during the coming year, but they will ultimately be needed for the improvement of the service in the locality named.

#### EXTENSIONS PROPOSED BY THE NATIONAL BOARD OF FIRE UNDERWRITERS

Several of the mains heretofore recommended by the National Board of Fire Underwriters have not yet been laid. On the West Side the list of mains so recommended includes the following:

16-inch high gravity service, Cornell Road and Twenty-fourth Street, Washington to Lovejoy Streets. Ultimately this main should be extended to Twenty-ninth Street and St. Helens Road for the reinforcement of the district along the water front to Linnton, but this is not necessary at present. No extension of this main is planned for the coming year. The list also includes:

12-inch low service main, Fifth Street, Morrison to Alder.

12-inch low service main, Ankeny and Ash, Front to Fourth Streets.

12-inch high service main, Twelfth Street, Yamhill to Stark.

These mains should be laid at an early date for the improvement of the service.



On the East Side, the Underwriters have recommended laying the following:

16-inch main, Stark Street, East Twelfth to East Twenty-eighth Streets.

16-inch main, East Everett, East First to East Twelfth Streets.

16-inch main, East First Street, Holladay Avenue to Hancock Street.

Other mains having been laid which measurably act as substitutes for the foregoing, therefore, the mains listed above have not been considered as a part of the work required in the immediate future.

Officials of the Underwriters' Rating Bureau have recently called attention to the fact that at present the supply for the West Side business district is obtained through a single pipe leading from Mt. Tabor to the City Park reservoirs.

For the crossing of the Willamette River a double line of flexible joint submerged pipe has been provided, but for the remaining distance a single 32-inch line is depended upon. While a duplicate line for the entire six miles distance between the two reservoirs would be a desirable improvement, yet it has not been looked upon as imperative under the present circumstances. The cost of such a duplicate line would approximate \$260,000.00 for a 30-inch cast iron main, which would have to be laid under paved streets for the most part, but its construction would postpone the time when additional reservoirs will be required in the West Side district.

#### CHANGES DUE TO GRADE CROSSING ELIMINATIONS

**O. W. R. R. & N. Co.**—The plans now being carried out by the Department of Public Works for the elimination of grade crossings along the line of the O. W. R. R. & N. Co., between East Thirty-third and East Eighty-second Streets, will necessitate the taking up and relaying for short distances of several of the large water mains, where they cross the railroad tracks in question, for the supply of the Vernon standpipe and adjacent territory. These mains are the 24-inch in East Thirty-third Street, and in Halsey Street and East 47th Street; the 30-inch main and a 12-inch main at East Sixtieth Street; a 12-inch main at East Eighty-second Street; besides 8-inch mains at East Thirty-seventh and East Fifty-third Streets.

It is now understood that the expense of lowering or rebuilding these mains to conform to changed conditions of grade, etc., will be included by the Department of Public Works in the cost of the re-grade improvement which is to be borne in part by the City and in part by the Railroad Company. It is expected that the Water Bureau will be called upon to supervise the relaying of all water mains, but will not be required to assume other responsibility for the work.

**Southern Pacific Co.**—The Council has also authorized the construction of a viaduct at the crossing of the Southern Pacific tracks on Holgate Street. This will involve the relaying of about 1200 feet of 12-inch pipe at an estimate cost of \$1200.00.

#### REPAIRS TO MAINS

During the year but few breaks have occurred in the larger distribution mains, and in no case did extensive property loss result therefrom.

On June 17, 1915, a break occurred in the 16-inch main in Salmon Street, between Fifth and Sixth Streets, but no damage was done other than to delay the trains of the Oregon Electric Railway for a

short time. This main has been in service since 1891, and at some points is almost directly under the railroad tracks.

On July 3rd, a break occurred in the 12-inch main at East Sixtieth and Glisan Streets, caused by the settlement of a sewer trench completed in April, 1914. The flow of water caused some damage to sidewalks and to the foundation of one building in the vicinity. The street repairs and the claims for damage to private property aggregated \$310.00. Repairs to the main were made at once, and the main was again placed in service on the same day.

On September 2, 1915, the 24-inch Highland main gave way at a point in East Thirty-third Street, near the intersection with Campaign Street, which resulted in an overflow of some unimproved property in the vicinity. The break was repaired in a few hours and water again turned into the main. A few houses connected with the main in the vicinity of the break were inconvenienced during the night while the water was shut off for the purpose of repairing the broken pipe. No damage resulted from the overflow of the water at this point.

On September 28th, a break occurred in the 8-inch main at the intersection of East Thirty-ninth and Burnside Streets, which occasioned a greater property damage than either of the two breaks mentioned above. This was occasioned by the fact that the streets were paved with asphalt upon a light base resting upon sandy soil. The water found its way under the pavement for nearly a block, necessitating the relaying of about 2000 square yards of pavement. Other than this, there was but slight damage to property or inconvenience to residents.

#### HIGH PRESSURE FIRE MAINS

The construction of a system of high pressure mains for fire protection purposes in the congested business district of the City, west of the River to Sixth Street, and east of the River to Grand Avenue, for which bonds were authorized in 1907 in connection with the construction of a fire boat, has been under consideration during the year. Of the bond issue authorized there remains a total of \$150,000.00 applicable to this purpose, or an estimated net amount of about \$142,000.00. Tentative plans have been in the course of preparation for a system of mains, covering as many streets as possible under the present authorization, but all work upon same has now been suspended, owing to the decision of the Council not to undertake this work during the coming year.

As at present outlined, this project will call for the construction of 21120 lineal feet of 8-inch, 10-inch, 12-inch and 16-inch mains at an approximate cost of \$129,500.00. A northerly extension of the system on the West Side as far as Everett Street will cost \$16,000.00 additional, and a westerly extension, as far as Ninth Street, will cost approximately \$19,500.00 in addition to the original project. The cost of these mains per lineal foot will be large, owing to the fact that nearly every street traversed is now covered with a hard surface pavement with a concrete base, and the effect upon the street pavements has been one of the reasons why this work has been so long delayed.

#### PIPE STORAGE YARD

The facilities for the storage and distribution of water pipes and other construction materials have not been changed during the year. Owing to the amount of work in progress being less than in former years, the inconvenience has not been felt so much this year, but still



the situation is one that calls for consideration in view of the future needs of the Bureau.

A tract of land from 3 to 5 acres in extent should be secured at some point which would permit of a railroad siding being constructed either on or alongside the premises. On account of the general growth of the City being largely on the East Side, it now appears as if the most suitable location for a storage yard will be in the Northern or Northeastern district. This matter should receive consideration during the coming year.

#### SERVICE PIPES

The installation of service pipes and maintaining a record of same has been mentioned in former reports. During the year a general inspection of all services to buildings in the City has been in progress in three different districts, but at present it is only about 50 per cent completed, but the results so far secured have been very satisfactory. In connection with this inspection for revenue purposes, measurements have been made by men detailed from the office for the purpose of locating the position of each corporation and curb-cock. When this work has been completed we shall have a record of the old services, but there will be difficulty with the new work so long as the present method is followed of granting permits to plumbers and depending upon the accuracy of the return they may make to the Superintendent's office.

It is respectfully recommended that a change of procedure be made as soon as possible and all service connections from main to curb be installed by and at the expense of the Water Bureau; and furthermore, that the laying of service pipes to vacant lots be discontinued. It is believed that this method will secure more satisfactory results at a less cost for both installation and maintenance.

It is now understood that in the future the City Engineer will lay service pipes to unoccupied lots in only those cases where the property owner shall especially request that such connection be made. An adherence to this policy will serve to diminish one source of danger to the distribution system which has been dwelt upon in former reports, namely, that from leaks in unused services. Thousands of these services have already been installed, and no more should be laid except upon a showing that they will be put into actual use within a short time, not exceeding a year or two.

#### SUBMERGED PIPE LINES

The submerged Pipe Lines, 24-inch and 30-inch steel mains, have been in use throughout the year. No repairs have been required.

#### RESERVOIRS

The reservoirs now in use are located at the following points:

	Material	Elevation	Gallons Capacity	When Built
Reservoir No. 1, Mt. Tabor.....	Concrete.....	411.6	12,000,000	1894
Reservoir No. 2, Mt. Tabor.....	Brick.....	229.2	20,500,000	1894
Reservoir No. 3, City Park.....	Concrete.....	299.5	16,400,000	1894
Reservoir No. 4, City Park.....	Concrete.....	229.5	17,600,000	1894
Reservoir No. 5, Mt. Tabor.....	Concrete.....	411.6	50,000,000	1911
Reservoir No. 6, Mt. Tabor.....	Concrete.....	305.0	75,000,000	1911
Portland Heights.....	Concrete.....	865.0	600,000	1908
King's Heights.....	Concrete.....	865.0	200,000	1911
South Portland.....	Concrete.....	475.0	60,000	1907
Willamette Heights.....	Concrete.....	445.6	60,000	1907
Tabor Heights.....	Concrete.....	590.0	200,000	1912
Vernon Stand Pipe.....	Steel.....	343.6	360,000	1906
Council Crest Stand Pipe.....	Steel.....	1096.5	60,000	1909
Burlingame Stand Pipe.....	Steel.....	635.0	114,000	1912
LINNTON DISTRICT				
Upper Linnton.....	Concrete.....	538.9	130,000	1913
Lower Linnton.....	Concrete.....	192.9	130,000	1913
Willallitan Park.....	Concrete.....	1065.6	130,000*	1913
Upper Whitwood.....	Concrete.....	566.7	130,000	1913
Lower Whitwood.....	Concrete.....	192.1	130,000	1913
Upper Willbridge.....	Concrete.....	768.3	65,000*	1913
Lower Willbridge.....	Concrete.....	189.9	130,000	1913
Total.....			194,199,000	

\*Discontinued, October, 1915.

The general overhauling of the gate chambers at the several reservoirs built during the year 1894—Nos. 1, 2, 3, and 4—which was commenced last year, has been completed during the present season. Various changes and improvements have been made which may be summarized as follows:

#### RESERVOIR NO. 1, MT. TABOR

This basin has been cleaned, and the concrete lining repaired at a few points. The flap valve between the basin and the tank has been replaced with one of the sluice gate type. A 36-inch sluice gate was also installed between the weir chamber and the tank. The cylinder gates originally installed inside of the tank when the reservoir was built have been removed, as they never worked satisfactorily. A weir has been built with a recording gage attached for the purpose of measuring the overflow from the reservoir basin.

The roof of the gate chamber has been repaired, and the iron work inside and out has been cleaned and painted. The fence around the outside of the reservoir basin has also been painted. The reservoir and gate chamber are now in good condition.

The repairs to this reservoir during the 20 years since it was built have been very slight, and even with the work just completed the maintenance costs have been low.

The repair work described above has cost to November 1, 1915, for materials and labor, \$3103.71.

#### RESERVOIR NO. 2, MT. TABOR

Repairs to the gate chambers at this reservoir, commenced in 1914, have been completed during the year. A sluice gate has been installed in place of the flap valve between the basin and the tank. A 12-inch



drain has been laid from the basin to the sump inside of the gate chamber. A sluice gate has been installed between the weir chamber and the tank, and also one between the weir chamber and the basin. The cylinder gates have been removed, and a weir with recording gage built to measure the overflow from the reservoir basin. The iron work has also been cleaned and painted.

The cost of the materials and labor for this work amounts to \$2808.65.

Repairs have been made to the reservoir bottom at several points where the brick lining has given away, the repair work undertaken in 1914 not having been effective at all points owing to the defective foundation for the lining. At these points the holes have been filled with concrete. The indications now are that ultimately the bottom lining, at least for the East half or two-thirds of the basin, will have to be removed and replaced with concrete after the underlying material has been rolled or thoroughly consolidated, the original construction having been deficient in this regard. A test undertaken October 16 to 23rd showed the basin losing about two-thirds million gallons per day. Upon drawing off the water in the basin, a number of holes in the lining were discovered. These holes have since been repaired as stated above. By repeating these tests at intervals, and afterwards making such repairs as may seem necessary, it is expected that the leakage can be kept within a reasonable amount.

#### RESERVOIR NO. 3, CITY PARK

The repairs at this reservoir have been similar to those undertaken at the Mt. Tabor reservoir, viz.:

A sluice gate has been installed between the weir chamber and the basin, and one between the weir chamber and the tank; and the two cylinder gates inside the tank have been removed. An overflow weir with recording gage has also been built, and the iron work in gate chamber and the outside fence were thoroughly cleaned and painted. The reservoir basin was cleaned and the lining and face of dam were repaired at a few points where defective concrete was found.

The inspection shaft near the west end of the dam was relagged and a new plank cover provided.

Below the dam a new 12-inch drain connection was cut in above the valve in the 18-inch line which feeds the pump from the basin direct when the gate house is out of commission. This makes it possible to drain the reservoir without interfering with the service from the pumps when the latter are operated from the tank.

New concrete chambers were built to enclose the gates on the lines between the reservoir and the power house, thus facilitating the maintenance of these valves.

An 18-inch Premier meter was installed on the 18-inch gravity main, a concrete chamber having been built for the same at a point immediately east of the power house.

The pumping station has been cleaned and painted, the roof repaired, the electric wiring removed and a new switchboard installed.

The two Reidler pumps, which have been in continuous use for 20 years, were overhauled, together with the Pelton wheels which operate same. A new flywheel was installed on the Gould triplex pump, operated by electric power, replacing the one which broke recently. This pump was installed in 1906.

While repairs on this reservoir were in progress it was necessary to operate the steam pumping plant at Broadway and Lincoln Streets.

Cost of repair work, including operation of Broadway and Lincoln Street pump, \$7344.99.

For some years there has been a slight seepage through the body of the concrete dam at this reservoir, which appears in the "laitance" deposit, which discolors the outer face. The water-proofing of the inner face of the dam, in order to remedy this difficulty, is now under consideration.

#### RESERVOIR NO. 4, CITY PARK

The repair work at this reservoir during the year consists of the following:

A 30-inch sluice gate has been installed in place of the flap valve between the basin and the tank. A 12-inch drain has been placed leading from the basin to the sump inside of the gate chamber; the two cylinder gates originally installed inside of the tank have been removed; an overflow weir with recording gage installed to measure overflow from basin into the City sewers; iron work in gate chamber and fence around basin thoroughly cleaned and painted; and a reinforced concrete gate chamber built over the valve controlling the flow between the 32-inch supply main and Reservoir No. 4. This chamber replaces the small one originally built of brick—at a considerable depth below the present surface—with a terra cotta pipe manhole, which made it difficult of access and besides it could not be drained.

A 24-inch Premier meter has been installed in a concrete gate chamber on the 30-inch low service distribution main leading from this reservoir.

While the above work was in progress, it was necessary to operate the steam pump at Broadway and Lincoln Streets for a period of 27 days.

The cost of the material and labor for the repair work at this reservoir, including operation of steam pump, aggregates \$8027.74.

It was also noted that at one point on the west side of this basin the parapet wall and fence have been bent out of shape by the earth pressure, but this repair work was deferred until another season.

#### RESERVOIR NO. 5, MT. TABOR

This reservoir has been in constant use during the year, no material changes or repairs having been undertaken. It has been observed that there has been an increase in the volume of water flowing in the under-drains from this basin, which indicates a possible enlargement of the joints between some of the concrete lining slabs. This will be examined into at an early day.

It was noted that there was considerable vibration in the 36-inch steel pipe between Reservoirs No. 5 and No. 6, where it passes through the tunnel under dam No. 5. This was corrected by the placing of additional concrete piers under the pipe alternating with those originally constructed when the pipe was built.

The sprinkler system around the margin of the basin has been improved by the substitution of 2½-inch risers with fire hose connections for the 1-inch riser originally used.

The plank walk between Reservoirs No. 5 and No. 6 has been repaired and a handrail constructed, and the roadway in front of the gate chamber has been drained.

The cost of the above work for materials and labor amounts to \$662.24.



## RESERVOIR NO. 6, MT. TABOR

Both basins of this reservoir have been drained and cleaned. In the North basin it was found that several of the lining slabs had been cracked, and in consequence the seepage into the under drains had noticeably increased. Parts of seven slabs have been repaired and the basins are again in use.

2½-inch risers with fire hose connections have been placed in the sprinkler pipe around the reservoir in place of the 1-inch risers originally installed.

The cost of above repair work for materials and labor amounted to \$1025.04.

In the center of the North basin of this reservoir there has been installed a fountain or spray nozzle purchased of the J. L. Mott Iron Works of Brooklyn, N. Y.; and in the South basin there has been installed a somewhat similar fountain-head originally built for Reservoir No. 2. It is thought that the use of these nozzles will produce a pleasing effect which will more than justify the attendant expense. In order that these fountains may be operated continuously, with the full obtainable head, it will be necessary to run an independent 8-inch pipe from the fountains to Reservoir No. 5, connecting with the steel tank in the gate chamber. This can be done at small expense and will enable the fountains to play at all times regardless of the supply passing from Reservoirs No. 5 and No. 6, which now varies from time to time.

## STAND PIPES AND TANKS

The concrete-lined tanks situated at:

Portland Heights .....	600,000 gal. capacity
Kings Heights .....	200,000 gal. capacity
Tabor Heights .....	200,000 gal. capacity
South Portland .....	60,000 gal. capacity
Willamette Heights .....	60,000 gal. capacity
Lower Linnton .....	130,000 gal. capacity
Upper Linnton .....	130,000 gal. capacity
Lower Whitwood .....	130,000 gal. capacity
Upper Whitwood .....	130,000 gal. capacity
Lower Willbridge .....	130,000 gal. capacity

have been in use throughout the year without repair or extra cost for maintenance.

The steel tanks situated at:

Council Crest .....	60,000 gal. capacity
Burlingame .....	114,000 gal. capacity

have required no repairs during the year.

At the Vernon stand pipe, 360,000 gallons capacity, a rearrangement of valves has been made in order to provide for a connection with the new 30-inch reinforcement main from Mt. Tabor, and the new 24-inch distributing main leading to the westward. As at present arranged, the 24-inch and 30-inch supply pipes from Mt. Tabor feed into the stand pipe through one opening, and they can also be united for the supply of the district beyond when the standpipe is cut out. The two large distributing mains are also united at this point—one running from the standpipe north to Prescott Street and thence west and north, and the other south to Skidmore Street and thence west.

By means of a float inside of the tank, which mechanically operates a valve regulating the hydraulic gate in the supply main, the height of the water in the standpipe can be regulated much more satisfactorily

than was possible with the pressure device originally installed for this purpose.

A 20-inch Premier meter has been installed on the 20-inch discharge main, and a brick gate chamber has been constructed with a frame building above to include all the valves and regulators at this point. This makes all the vital points of the system readily accessible.

Improvement to the grounds and repairs to the fence surrounding the standpipe site have also been made.

The cost of this work, not including the connections of the 30-inch and 24-inch mains, which has been charged to extension of mains, amounts to \$556.10.

## PUMPING STATIONS

The following pumps are now in use:

	Style of Motor	Elevation	Elevation Supplied	Gallons Per Day Capacity
City Park .....	Hydraulic .....	230	445	1,000,000
City Park .....	Hydraulic .....	230	865	500,000
City Park .....	Electric .....	230	865	500,000
Council Crest at Greenway, Portland Heights .....	Electric (automatic) .....	865	1096.5	220,000
Fulton .....	Electric (automatic) .....	230	635	250,000
Reservoir No. 2 .....	Hydraulic .....	230	590	375,000
Palatine Hill .....	Auxiliary Steam Plants .....			
Broadway and Lincoln .....				

Also the following pumps, connected with the Linnton Municipal supply and transferred to the care of the Water Bureau on July 8, 1915.

	Style of Motor	Elevation	Elevation Supplied	Gallons Per Day Capacity
Linnton .....	Electric (automatic) .....	190	537	108,000
Whitwood .....	Electric (automatic) .....	190	565	108,000
Willallitan .....	Electric (automatic) .....	550	1062.5	108,000
Willbridge .....	Electric (automatic) .....	187.5	762.5	108,000

In the interest of economy of operation a re-arrangement of the Linnton service has been made since the pumps and mains were taken over by the City, and only the pumps at Linnton and Whitwood are in operation at this time.

## CITY PARK PUMPS

The two Reidler pumps at this station, each operated by a Pelton water wheel, have been overhauled and are in good condition. The Gould pump operated by electric motor has had a new fly wheel and also a new switchboard installed so that current for the pumps can be taken from the generator originally installed for lighting the gate house.

## COUNCIL CREST PUMP, GREENWAY RES.—ELECTIC AUTOMATIC CONTROL

The pump house has been cleaned and painted, and the roof repaired.

Adjustments and overhauling of the pump cost a total of \$44.95.

During the hottest days in the summer this pump worked to its full capacity. It is, therefore, probable that in the near future a larger



pump will have to be installed or the capacity of the standpipe increased.

#### FULTON PARK PUMP—ELECTRIC AUTOMATIC CONTROL

This pump has been overhauled and house cleaned and painted. It has been in continuous operation during the year. No accidents or shutdowns have occurred.

#### RESERVOIR NO. 2

The Smith-Vaile pump installed at Reservoir No. 2, and operated by a Pelton water wheel, for the supply of Tabor Heights, has been in operation throughout the year. A rearrangement of the suction and discharge pipes has been made and the station is now in good condition.

#### PALATINE HILL PUMP

The auxiliary steam plant at Palatine Hill has been maintained in readiness for service.

New valves have been placed in the water end of this pump, and minor repairs and adjustments made. Some time during the coming year the second battery of boilers should be overhauled, as the brick work and mud drum are in bad condition. It is estimated that this work will cost \$250.00.

#### BROADWAY AND LINCOLN STREETS STATION

Has been maintained ready for service. No repairs required.

#### LINNTON PUMPS

The operation of the two small pumps at Willbridge and at Upper Whitwood has been discontinued. They are, however, turned over at intervals and kept in repair.

A bent shaft and a wornout bearing at the Lower Whitwood pump have been repaired and the same is now working satisfactorily.

An underground control cable has been installed between the pump and the reservoir it supplies, so that this plant is now operated automatically.

The Linnton pump is in fair condition. The control line for this pump has been repaired and the plant is now operating automatically, but the underground work has not yet been completed.

Since the Linnton system was taken over an endeavor has been made to reduce the cost of operation of the reservoirs in that district, and to this end the use of the Willallitan and the Upper Willbridge tanks has been temporarily discontinued, the number of houses to be supplied from these reservoirs not warranting their longer continuance in service.

#### REGULATING VALVES

The following is a list of the pressure regulators that have been established at various points during recent years, especially on the West Side, in order to reduce the pressure in the street mains to satisfactory limits. These regulators are located at the following points, and are inspected periodically in order that they may be kept in

proper working order. The size, elevation and pressure on high and low pressure sides are as shown below:

Pressure Reg.	Kind	Size	Elevation	Pressure	
				High	Low
				lbs.	lbs.
E. 38th and Woodstock.....	Mueller (old)	8"	206.0	78	22-25
E. 33rd and Ainsworth.....	"	3 1/2"	146.0	82	40
E. 13th and Holman.....	"	8"	160.8	78	38-40
5th and Witham.....	"	4"	387.4	105	40
Kelly and Custer.....	"	3 1/2"	252.0	95	40
17th and Elizabeth.....	"	4 1/2"	640.0	100	40
Myrtle and Chapman.....	"	4"	512.0	93	35
21st and Clifton.....	"	3 1/2"	497.5	100	40
Chula Vista and Hermosa.....	"	4 1/2"	654.8	95	30
Macleay and Melinda.....	"	4"	506.0	90	30
Fairview and Rutland.....	"	3 1/2"	492.0	95	40
Fairview and Alley.....	"	4 1/2"	639.7	100	40
Mill Street and Alpine.....	"	1 1/2"	584.7	122	40
Mill Street, Whitwood Court.....	Ross	6 1/2"	.....	61	30
Springville Road.....	"	6"	423.1	52	28

During the year, the regulator installed at Macleay and Melinda Avenues was out of commission for a short time, owing to a broken strainer; and the one at East Thirtieth and Ainsworth has been moved to East Thirty-third and Ainsworth. All the regulators and strainers have been painted with a metallic paint and are now in good working order.

In connection with the Linnton plant, four regulators were originally installed. Two of these have since temporarily been discontinued and the others have been overhauled and put in service. Those now in use are located at the following points:

Mill Street, Whitwood Court.  
Springville Road, Whitwood Court.

#### AUTOMATIC PRESSURE RECORDING GAGES.

The use of Bristol recording gages, as reported in 1914, has been continued during the year and has proven to be of great benefit to the service. These gages are useful in recording the hour when excessive draft occurs on any main; the exact time when a break in a main occurs and the time the flow is re-established; and they will also record the fact of any excessive water hammer, if it should occur, endangering the safety of the pipes.

The gages now in use are located at the following points, viz.:

Bristol Gages	Elevation Feet	Pressure Pounds
Vernon High .....	251.52	70
Vernon Low .....	251.53	40
Russell—297 Sacramento .....	157.82	64
Portland Heights .....	.....	275
N. and S. Portland Pump.....	.....	125
123 E. 7th St. (Alder).....	43.24	81
59th Ave. and 77th St.....	239.01	74
Northern Sub.....	148.04	85
Eng. No. 20—13th and Tenino.....	122.76	47
City Hall High.....	66.00	97
City Hall Low.....	66.00	67

The number of pressure gages and regulators and large meters now in use at widely scattered points makes it imperative that men shall be specially detailed to make periodical examination of the apparatus



in order to insure that it is kept in proper working order. The men to whom this work has heretofore been assigned have sometimes been called upon in emergencies for special duties elsewhere. This work would be expedited if the man especially in charge had another motor car of small size at his command.

#### VENTURI METERS.

The following is a list of meters of the Venturi type already installed in connection with Conduit No. 2 from Bull Run and the larger distribution mains of the City, and also those already authorized and purchased but not yet installed owing to their late arrival from the factory. Those now in use are as follows:

- 1 52-inch Venturi, Conduit No. 2, Headworks.
- 1 44-inch Venturi, Conduit No. 2, Mt. Tabor.
- 1 24-inch Premier, Highland Main, Mt. Tabor, Reservoir No. 1.
- 1 30-inch Premier, Southeastern Supply, Mt. Tabor, Reservoir No. 1.
- 1 30-inch Premier, E. S. Int. Supply, Mt. Tabor, Reservoir No. 6.
- 1 24-inch Premier, Low. S. West Side, City Park, Reservoir No. 4.
- 1 18-inch Premier, High G. West Side, City Park, Reservoir No. 3.
- 1 20-inch Premier, High G. Peninsula Dist., Vernon Stand Pipe.
- 1 6-inch Premier, Pump Service, Tabor Heights, Reservoir No. 2.

Meters on hand to be installed as follows:

- 1 24-inch Premier, E. S. Low Service, Reservoir No. 2.
- 1 30-inch Premier, Highland Main, Reservoir No. 5.
- 1 8-inch Premier, South Portland, Force Main, City Park.
- 1 10-inch Premier, Willamette Heights, Force Main, City Park.
- 1 12-inch Premier, Portland Heights, Force Main, City Park.
- 1 12-inch Premier, King Heights, Force Main, City Park.
- 1 6-inch Premier, Council Crest, Force Main, Greenway Res.
- 1 10-inch Premier, Burlingame, Force Main, Fulton Park.

These meters automatically record the rate of flow for each hour, as well as the total volume passed each day, and thus afford a valuable check upon the daily consumption of the several districts of the City. By comparing the recorded flow into the different service districts with the readings of the service meters, accurate information can be secured regarding the needs of a particular locality and whether or not there is any actual cause of complaint. The meters now on hand will be installed early the coming year.

Expended during the year, account Venturi meters and installation of same, \$7,519.59.

#### RECAPITULATION OF THE COST OF REPAIR WORK DURING THE YEAR 1914-1915.

Reservoirs and Gate Chambers	1914	1915
Reservoir No. 1.....	\$ 1,596.40	\$ 3,103.71
Reservoir No. 2.....	19,430.73	2,808.65
Reservoir No. 3.....	2,033.84	6,122.99
Reservoir No. 4.....	1,218.00	6,758.74
Reservoir No. 5.....	236.11	662.24
Reservoir No. 6.....	793.20	1,025.04
	\$25,308.28	\$20,481.37
		1,222.00
		1,269.00
		\$22,972.37
Total 1914 .....	\$25,308.28	
Total 1915 .....		\$22,972.37
		\$48,180.65

The expenditures listed above have been made largely in connection with changes and alterations and repair of the basin at Reservoir No. 2, and the gate chambers in use at Reservoirs Nos. 1, 2, 3 and 4, which were built in 1894 and have, therefore, been in use for over 20 years. In 1904 extensive repairs were made at Reservoirs Nos. 3 and 4—relining the basins where damaged by the movement of the adjacent hillside. This repair work involved the expenditure of about \$76,000.00 for new linings, in addition to cost of drainage tunnels. During all these years, few changes have been made in the gate houses until recently. Several of the valves had become badly worn, and hence were difficult to operate, and others were of a type not the best adapted to the service required. Through the changes now made, the operation of the gate chambers has been made so much easier and safer as to fully warrant the outlay specified.

#### LEAKAGE FROM RESERVOIRS.

The estimated leakage from the concrete and brick lined reservoirs now in use is as follows:

Reservoir No. 1 .....	gallons per day.
Reservoir No. 2 .....	573,000 gallons per day.
Reservoir No. 3 .....	48,000 gallons per day.
Reservoir No. 4 .....	gallons per day.
Reservoir No. 5 .....	770,000 gallons per day.
Reservoir No. 6 .....	346,000 gallons per day.

These amounts may appear to be large, in some instances, but it should be remembered that an absolutely water-tight basin is exceedingly difficult to secure. It is also believed that our experience in Portland in this respect is fully as satisfactory as that of other cities.

#### DRAINAGE TUNNELS AT CITY PARK.

Observations of the discharge from the drainage tunnels under the sliding land west of the City Park Reservoirs indicate that the flow has ranged from a maximum of 28,800 gallons per day on March 10, 1915, to a minimum of 13,100 gallons per day on November 4, 1915.

Measurements of the movement of the slide were taken in March, July and November. The recorded movement for the year being 0.44 inches, this being the average at 46 stations along a central belt of 100 feet wide, extending from the Western to the Eastern margin of the moving ground.

Total number of stations observed.....	227
Total number of observations taken.....	640
Average recorded movement for year 1910.....	0.52 inches
Average recorded movement for year 1911.....	0.48 inches
Average recorded movement for year 1912.....	0.30 inches
Average recorded movement for year 1913.....	0.40 inches
Average recorded movement for year 1914.....	0.35 inches
Average recorded movement for year 1915.....	0.44 inches

It is now 15 years and more since this system of surveys was inaugurated, and about 10 years since the construction of the drainage tunnels began to be markedly effective. As will be noticed from the foregoing, the average yearly movement since 1910 has been but about 0.41 inches. The only place where this movement has been apparent is along the West parapet wall of Reservoir No. 4, about 175 feet from the power house. Here the wall has been cracked and a section of the iron fence is inclined from the vertical, but the reservoir lining does not seem to have been effected. Considering all the circumstances of



the case, the results secured by the drainage and corrective work heretofore undertaken have been very satisfactory.

#### ADDITIONAL RESERVOIRS.

In former reports attention has been called to the necessity for additional reservoir capacity, especially in the West Side district, and the reasons heretofore given, in explanation of this need, still obtain. These conditions should not be overlooked and their consideration indefinitely postponed, although it is not considered imperative that action should be taken during the coming year, unless it may be thought advisable to secure the sites for one or more additional reservoirs. It may be stated, however, that if the construction of a new 30-inch main from Mt. Tabor to City Park should be undertaken in the near future, the reservoir work might safely be delayed for a time.

#### LINNTON WATER SUPPLY.

At the City election held June 7, 1915, it was voted to annex the town of Linnton, and on July 8th this district officially became a part of the City of Portland.

Estimated area of annexed district, 9.5 square miles.

Estimated population of annexed district (277x5), 1,385.

The water supply for the town of Linnton has been furnished during the past two years by a municipally-owned plant which has now been incorporated with that of the Portland City plant, and is being operated by the Water Bureau as a part of the City System.

The following is a list of the water mains, reservoirs and pumps, transferred by the act of consolidation, as above:

Water Mains acquired by annexation (Linnton District):		
12 -inch	.....	4.992 miles
8 -inch	.....	0.576 miles
6 -inch	.....	4.197 miles
4 -inch	.....	1.241 miles
3 -inch	.....	0.514 miles
2½ -inch	.....	0.068 miles
2 -inch	.....	3.036 miles
1½ -inch	.....	0.201 miles
1¼ -inch	.....	0.105 miles
1 -inch	.....	0.338 miles
¾ -inch	.....	0.217 miles
Total	.....	15.485 miles
Number of hydrants	.....	38
Gate valves:		
2-inch	.....	25
3-inch	.....	2
4-inch	.....	11
6-inch	.....	23
8-inch	.....	5
12-inch	.....	12
Total	.....	78

#### LINNTON RESERVOIRS

	Elevation Feet	Approximate Capacity
No. 1, Linnton.....	190.0	130,000 gals.
No. 2, Linnton.....	537.0	130,000 gals.
No. 3, Whitwood.....	190.0	130,000 gals.
No. 4, Whitwood.....	565.0	130,000 gals.
No. 5, (not constructed).....	.....	.....
No. 6, Willallitan.....	1062.5	130,000 gals.
No. 7, Willbridge.....	187.5	130,000 gals.
No. 8, Willbridge.....	762.5	65,000 gals.
Willallitan Pump House Floor.....	550.0	.....

The use of Reservoirs Nos. 4 and 8 has been discontinued, the pumps supplying same having been shut down.

#### PUMPS

The Linnton Plant consists of a 4-stage Alberger Turbine Pump, the rated capacity being 75 gallons per minute under a head of 385 feet; direct connected to a 20 H. P. Fairbanks-Morse induction motor; 220-volt 3-phase, 60-cycle, 3,600 R. P. M., with a Cutler-Hammer automatic control for starting and stopping. This plant is in operation and is automatically controlled.

The Lower Whitwood Plant consists of a 4-stage Alberger Turbine Pump having a rated capacity of 75 gallons per minute against a head of 385 feet, direct connected to a 20 H. P. Fairbanks-Morse induction motor; 220-volt, 3-phase, 60-cycle, 3,600 R. P. M. This motor is controlled by a Cutler-Hammer starting and stopping device. This plant is in operation and automatically controlled.

The Upper Whitwood Plant consists of one Dean Triplex, single acting plunger pump, 4½x8, geared to a 15-H. P., 220-volt, 60-cycle, 3-phase, Westinghouse induction motor, 870 R. P. M. The motor control is a Cutler-Hammer automatic starting and stopping device. Capacity of pump, approximately 75 gallons per minute. Plant is now shut down. No service on system.

The Willbridge Plant consists of one Dean, single-acting, triplex plunger pump, 4½x8, geared to a 15 H. P., 220-volt, 60-cycle, 3-phase Westinghouse induction motor, 870 R. P. M., Cutler-Hammer Automatic starting and stopping device. Capacity of pump approximately 75 gallons per minute. Plant is now shut down. No service on system.

The Linnton water supply has been secured from the City of Portland under an agreement approved by the Water Board, Nov. 12, 1912, the Town of Linnton laying a 12-inch main from the Portland city limits to the business center of their town, a distance of 26358 feet—4.992 miles. In this manner they were able to secure a gravity supply reaching a distributing reservoir at an elevation of 190 feet. For the higher elevations of the town, dependence was had upon electric drive pumps installed at different points and pumping from the lower reservoirs to those at a higher level. The pumps and reservoirs are of small capacity, and, with the exception of the main supply pipe, the distribution mains are of small size, although probably adequate for the needs of the sparsely built up area, outside of the main business street, for years to come. Estimated "reproduction cost new," and including an allowance of 10 per cent for Engineering and Contingencies, but not including land, \$131,000.00.

Bonds to the amount of \$150,000.00 were issued to build the water



works plant, which seems to have been laid out on a scale wholly unwarranted by the present business development. There are at present in use but 277 services, and the revenue therefrom is but approximately from \$2400.00 to \$2600.00 per annum, which is not sufficient to pay the interest on the bonded indebtedness. Every effort is being made to reduce the maintenance and operating expense to the lowest limits in order that the deficiency in revenue may be overcome as far as possible.

#### ST. JOHNS WATER SUPPLY

The annexation of the town of St. Johns by vote at the election held June 7th was officially consummated on July 8, 1915, when the direction of affairs was assumed by the Mayor and Council.

The water supply of the City being in the hands of the St. Johns Water Works & Lighting Company, which for about 12 years has been operating under a franchise granted in 1903, the Water Bureau was not immediately affected by the transfer. It was but a few weeks, however, before petitions were presented to the Council asking that City water rates be granted to the St. Johns people.

In compliance with instructions received September 25th, the Engineer prepared a special report upon the value of the St. Johns Company plant for use of the City in furnishing a gravity supply of Bull Run water to the St. Johns district. This report was submitted on November 23rd.

The report placed the valuation of the entire plant of the St. Johns Company, including wells, pumps, reservoirs and water mains and general equipment now in use, at \$130,000.00, this being the estimated "reproduction cost new."

The present depreciated value was estimated at \$106,300.00, while the net value to the City for use in furnishing a gravity supply of Bull Run water was placed at \$94,000.00. This latter estimate omitted certain items of land, pumps and boiler equipment valued at \$12,750.00, not considered necessary to the operation of the plant as a part of the Portland municipal supply. It may be noted that this appraisal, while prepared 2½ years later, checks very closely with the Public Service Commission valuation, the depreciated value being placed at approximately \$2,500.00 less than the Public Service valuation prepared in 1913.

In connection with the foregoing, an estimate was prepared of the cost of building a new system of pipes for the supply of the St. Johns district, connecting with the present City mains in adjacent territory; the mains to be of sizes slightly larger than those now in use in St. Johns.

Estimated cost, \$124,000.00.

This estimate did not provide for furnishing standard mains throughout the entire district, but included a large amount of 2-inch pipe, which will furnish an ample domestic supply for many of the sparsely built up streets. The question of standard mains for fire protection purposes will have to be considered when the demand arises. The settlement of this question is now in the hands of the Council. It is expected that ultimately some arrangement will be made by which the City will take over at a fair valuation the water mains now owned by the St. Johns Company and operate same as a part of the Municipal system.

#### BULL RUN CONDUITS

Service has been maintained through Conduits No. 1 and No. 2 throughout the year. The repairs to Conduit No. 1, undertaken during

the year 1914, have not been continued during the past season. The work done last year covered the weakest points so far discovered, and few new pittings have since broken through, but other leaks will undoubtedly appear later.

An appropriation of \$5000 has been requested for the continuance of the work of cleaning and recoating the pipe during the coming season. It is recommended that this work be continued from year to year until the entire line has been gone over so as to insure its continuance in service for at least another twenty years or more.

On December 25, 1914, a break occurred in the Little Sandy Power Flume of the Portland Railway, Light & Power Company at a point about 4800 feet east of the power station on the Bull Run river. This flume is a light timber construction, and from the first has required frequent repairs. The seepage from the flume has been large until quite recently, the Power Company having finally succeeded in calking the joints between the planking. The break in the flume mentioned above, which is situated upon the hillside above the pipe line, did not damage the conduits, the flow of water having followed a natural watercourse crossing over the pipe on a plank apron especially prepared to prevent possible undermining of the conduits.

In January a special report was submitted, calling attention to the frailty of the flume construction and the possible danger to the conduits resulting from breaks similar to those which have already occurred. While no serious damage has so far resulted, yet an element of danger will exist until the power flume is rebuilt in a more substantial manner or is removed to a new location remote from the vicinity of the City conduits.

Expenditures during the year on account of extra work made necessary by the flume repairs and the inspection and protection of pipe, \$1398.75.

#### HEADWORKS

The keepers' residences, contracted for with Geo. A. Thompson in 1914, were completed early in the present year and final payment made thereon July 4th.

Amount expended during the year under this contract, \$3282.50.

Total cost of buildings, not including grading of grounds around buildings, \$9882.75.

The road construction undertaken last year was completed in February.

Total expenditure for material and labor, \$10,238.60.

During November additional surveys were made, looking for a new location for dam and intake, for which a budget allowance of \$100,000.00 has been made.

Revised plans and estimates are now in course of preparation, and it is hoped that they will be ready for commencement of construction operations early in the coming year.

#### BULL RUN RESERVE SURVEYS AND EXPLORATIONS

During the past season a survey party was employed for a period of about three months (July 6th to Sept. 20th) in running out and marking the boundaries of the Bull Run and Little Sandy watersheds.

Length of miles surveyed, 74.1 miles.

Length of boundary of Bull Run watershed, 53.3 miles.

Length of boundary of Little Sandy watershed, 32.5 miles.



Length of boundary of combined Bull Run and Little Sandy watersheds, 65 miles.

Approximate area of Bull Run watershed, 102 square miles.

Approximate area of Little Sandy watershed, 23 square miles.

During October the field party was engaged upon a preliminary survey for a power plant on the Bull Run river, between Bull Run lake and the headworks.

Computation of area and plans and estimates for power plant project have not yet been completed.

Expenditures during the season on account of water shed survey.....	\$3,790.00
On account of power plant survey.....	2,235.00
On account of new headworks.....	141.00

Total .....	\$6,216.00
-------------	------------

#### BULL RUN LAKE

Early in the year authority was granted to construct a low timber and rock fill dam across the high water outlet to Bull Run Lake for the purpose of determining the possibility of restraining or retarding the escape of the flood waters of the early spring. If this can be successfully accomplished, it is thought that it will solve the problem of providing necessary storage for Portland's water supply for a number of years.

The area of Bull Run Lake (over 440 acres in extent), with an available depth of even 20 feet, will provide a storage of over 25,000,000 gallons per day for a period of 100 days, or more than sufficient to tide over any low water period of which we have record. It is believed that a much greater depth, or at least 50 feet, will be available for storage as the lake is over 100 feet deep in the center. It is, therefore, thought to be well worth while to make a test during the coming winter and spring.

The dam referred to has been built to a height of 10 feet above ordinary high water in the lake at a cost of \$1488.

This is intended as a temporary structure only.

There was also expended for the installation of measuring weirs and gages, etc., \$759.00, and for a log cabin, built near the lake, a sum of \$283.00 was expended, making \$2540.00 as the cost of work done at Bull Run Lake, exclusive of trails.

It is noted that one of the most important things accomplished has been the installation of weirs and gages for securing a hydrographic record of the flow from Bull Run Lake and at the head of Bull Run River, which will be of value in years to come.

#### TRAILS

During the time the survey crew was at work, and the construction of the dam and cabin at Bull Run Lake was in progress, a few men were employed making trails into different portions of the reserve in order to expedite the movement of men and supplies for the season's work and for future years as well.

This work has been done at such points as would fit in and connect with the trails heretofore built by the U. S. Forestry Service.

The result has been that a trail has been completed from the Headworks to Bull Run Lake, both along the northern and the southern borders of the Bull Run watershed.

Total expenditure for cleaning old trails and building about 11 miles of new trails during the year, \$1963.00.

Total expenditure during the year account of surveys and explorations, etc., \$10,719.00.

#### POWER PLANT DEVELOPMENT

During October and November a preliminary survey was made along the main Bull Run River, between Headworks and Blazed Alder Creek, for the purpose of determining the possibility of securing a hydro-electric power site, suitable for developing power for a municipal lighting plant.

Several reservoir sites and flume lines have been located tentatively, but the plans and estimates based on these locations have not yet been prepared. It may be said, however, that it now appears possible to secure the development of approximately 5000 H. P. within reasonable limits as to cost, etc.

#### SHAW-BATCHER COMPANY CLAIMS

In 1912 the Shaw-Batcher Company filed a suit in the U. S. District Court seeking to recover \$199,134.13, with interest from November 4, 1911, which they claimed to be due them under their contract with the City for the construction of Conduit No. 2, the total claim amounting to approximately \$240,000.00.

The case came to trial in February, in Judge Bean's court before a jury of 11 men, and continued until the end of March.

The taking of testimony was concluded March 31st, and after deliberating 21 hours the jury rendered a verdict on April 4th in favor of the plaintiff in the sum of \$7,200.00 with interest, this sum being the amount retained by the City from the final estimate of the contractors on account of the delay in completing the work beyond the specified time, this deduction being authorized by the contract.

On May 26th the Council voted on an appropriation of \$12,190.35 to cover the award in this case, including interest and plaintiff's costs, the plaintiff's attorneys having signified an acceptance of the award and the abandonment of an appeal.

In defending this suit the City incurred an expense of approximately \$11,500.00 for engineers, attorneys, stenographers and witness fees, making a total cost of the defense approximately \$23,700.00, or about 10 per cent of the original claim.

Under the circumstances, this verdict is regarded as a decided victory for the City, the contention of the City Attorney being sustained upon practically all points. The rulings of the Court in interpreting the contract also supported the views contended for by the Engineering staff in carrying on the work.

#### MOREHEAD SUIT

The suit of ejectment filed by M. Morehead in April in the Circuit Court of Clackamas County, seeking to prevent the City from using the pipe line roadway across his property (the N. ½ of the S. W. ¼ of Sec. 34, T. 1 S. Range 5 E. W. M.) has been compromised, the City agreeing to pay the sum of \$500.00 for a deed to a strip of land 100 feet wide following the line of the roadway now crossing the property. The city also agreed to permit Morhead to use the plank roadway from Bull Run P. O. The papers in this case have not yet been signed.

#### CHARACTER OF BULL RUN WATER

In the report from this office for the year 1914, reference was made to the analysis of Bull Run water and the report thereon forming a



part of Water Supply Paper No. 363, issued by the U. S. Geological Survey in 1914.

Extracts from this paper were given in the report for last year, and are repeated herein in part as follows:

"Bull Run River flows from a small lake formed by a morainal dam lying across an upland valley near Mt. Hood. The lake discharges through its surface outlet only at high stages, the usual outflow being by seepage through the boulders of the moraine. The outflowing stream flows northwestward a few miles, then southwestward to its junction with Sandy River. A long, low rise separates this basin from the Mt. Hood glaciers, and no glacial water reaches the river. The basin comprises 168 square miles, of which the greater part is heavily forested.

"The mean annual precipitation at Bull Run postoffice, which is 647 feet above sea level and above which there are 96 square miles of the drainage basin, is 76 inches. Much of this falls as snow in winter, but storage in the lake tends to equalize the run-off somewhat and to increase the volume of the low-water flow.

"The annual run-off from the drainage basin probably averages more than 100 inches in depth over the area.

"The quality of the water of this river is important because the City of Portland diverts water from it near the town of Bull Run through two lines of pipe for a municipal supply. The entire drainage basin above the intake of the pipe lines is included in the Bull Run Forest Reserve, and trespass is prevented by efficient policing. Because of the remoteness of upper Bull Run basin and the ideal sanitary conditions and effective patrol in it, Portland's water supply may be considered primarily pure and above criticism.

#### Character of the Water.

"Sample of water for analysis were collected daily during the period covered by the investigation through the courtesy of the Water Board of Portland. The water is always clear, largely because of lake storage and underground flow. It is very slightly mineralized and is not subject to great changes in mineral content, as shown by the following analyses:

"The water typically represents surface water flowing over igneous rocks in a heavily forested region of large rainfall. It is characterized by primary alkalinity as a result of its origin among volcanic rocks, and it is alkaline carbonate in type—that is, alkalis are present in excess of alkaline earths—and carbonate comprises more than 72 per cent of the acidic radicles. It is soft and non-scaling. One of the largest laundries in Portland finds it cheaper to buy Bull Run water from the City than to use the Willamette River water, which may be obtained without cost, the saving in cost of soap more than counterbalancing the cost of the water. The water will not corrode boilers or pipes as a result of its mineral content, but it may, unless first heated in an open heater, cause corrosion and rusting because of its content of dissolved carbon dioxide and oxygen. Any natural water of great mineral purity is likely to do the same, however, and it is by no means a peculiarity of Bull Run water. The water is very slightly colored and its appearance is exceptionally attractive. The pride of the City in its water supply appears to be amply justified by the facts."

In addition to the foregoing, a detailed analysis of each sample of water is given, showing the following averages:

	Parts per million
Turbidity .....	Tr.
Silica (SiO <sub>2</sub> ) .....	9.00
Iron (Fe) .....	.03
Calcium (Ca) .....	2.70
Magnesium (Mg) .....	.53
Sodium (Na) .....	3.10
Potassium (K) .....	.50
Bicarbonate radicle (HCO <sub>3</sub> ) .....	12.00
Sulphate radicle (SO <sub>4</sub> ) .....	3.10
Nitrate radicle (NO <sub>3</sub> ) .....	.31
Chlorine (C-1) .....	1.30
Total dissolved solids .....	30.00

In view of the statement, which even now appears in print at frequent intervals, to the effect that Bull Run water comes from the glaciers of Mt. Hood, attention is called to the above report which expressly states as follows: "A long, low rise separates this basin from the Mt. Hood glaciers, and no glacial water reaches the river."

BULL RUN WATERSHED  
Table Showing "Run-off" By Years  
(Discharges in Second-Feet)

	1910			1911			1912		
	Max.	Min.	Mean	Max.	Min.	Mean	Max.	Min.	Mean
January.....	4,520	244	1,010	5,080	408	933	10,400	160	2,090
February.....	4,272	191	933	1,120	260	480	4,240	561	1,560
March.....	9,490	545	2,090	1,340	240	700	583	270	416
April.....	2,060	510	970	1,050	388	601	1,070	416	577
May.....	1,550	244	619	2,680	622	1,150	1,580	494	869
June.....	555	182	249	942	298	460	811	311	477
July.....	191	91	132	396	135	203	444	132	238
August.....	102	80	88.7	142	83	117	1,640	92	249
September.....	91	72	83	784	80	260	1,220	156	421
October.....	1,340	171	426	926	148	335	1,630	215	630
November.....	4,100	180	1,350	5,230	126	1,610	4,520	394	1,410
December.....	2,120	328	1,050	1,880	388	851	4,270	463	1,070
For the year.....	9,490	72	749	5,230	80	642	10,400	92	838
	1913			1914			1915		
	Max.	Min.	Mean	Max.	Min.	Mean	Max.	Min.	Mean
January.....	4,610	489	1,300	5,230	274	1,470	2,480	285	781
February.....	2,870	359	853	2,240	473	1,000	1,240	376	719
March.....	5,980	326	1,150	2,480	551	1,130	1,110	407	632
April.....	1,680	711	1,260	2,480	520	1,030	1,640	218	576
May.....	1,590	594	1,120	541	256	407	1,730	182	610
June.....	1,000	390	647	853	274	414	655	267	388
July.....	760	180	357	260	100	152	865	221	337
August.....	178	107	141	102	72	86.5	215	92	133
September.....	847	107	247	841	72	307	115	74	86.8
October.....	2,800	129	698	2120	281	607	1,420	112	419
November.....	3,330	288	860	3,320	355	903	7,920	435	1,970
December.....	1,240	250	439	970	188	366	.....	.....	.....
For the year.....	5,980	107	755	5,230	72	656	.....	.....	.....

The foregoing table shows the mean "run-off" of Bull Run River for the years 1910 to 1915, inclusive, to range between 642 and 838 second-feet. It is also noted that the minimum flow of 72 second-feet, or 46½ million gallons per day, occurred in September, 1910, and also in Au-



gust and September, 1914, the lowest for 1915 being 74 second-feet in the month of September.

When it is considered that the average run-off from the main Bull Run River (over 600 second-feet) is over eight times the minimum flow during the low water period, which seldom exceeds 30 to 60 days, it will be seen at once that the main question involved is one of providing sufficient reservoir capacity for the storing of winter flood waters until the following dry season, the capacity of the water shed being ample to furnish a supply for a city of three million population, figured on a basis of 100 gallons per capita per day. This, however, would involve the general use of meters.

Surveys have already been commenced looking towards the location of the first storage unit in anticipation of the time when the demands of the city will exceed the supply furnished by the low water flow of Bull Run.

That this time is not remote is indicated by the conditions which were observed during the month of August of the present year, when during the warmest days, the consumption exceeded 40,000,000 gallons or about 90 per cent of the low water flow of the stream at that date.

This means that the construction of at least one storage basin should be undertaken within the next year or two. Surveys made at Bull Run Lake during the present season indicate the possibility of developing a considerable storage at that point at small expense. If upon further examination this plan is found to be feasible, the storage problem will be solved for a considerable period.

POPULATION SUPPLIED

The population of the city in 1910 was reported by the United States Census Bureau as 207,214.

The dwelling connections reported on December 31st, 1910, numbered 41,175. This gives an average of 5.03 persons supplied for each residence service installed throughout the entire city on that date.

Assuming "5" as a multiplier for the year 1915, and the service connections in use November 30th, 1915, as 51,236, this gives the population now supplied 256,000.

WATER CONSUMPTION

Total number of services listed as per Water Bureau ledgers, 58,926.

Number actually in use November 30th, 1914, 51,236.

Vacancies, shut-offs and discontinued services, 7,690.

Meters installed, all sizes, 15,495.

Average number in actual use, 14,624.

Total consumption through 14,624 metered services of all sizes, 2,940,000,000 gallons, or 8,054,000 gallons per day.

The following table shows the consumption in the several districts of the city:

CONSUMPTION THROUGH METERS 1914 AND 1915

DISTRICTS	FLATS		METERS		Av. Con. thru Meters, Gal. per day, All Services 1915	Est'd. Pop. Supplied by Meters 1915	Av. Gal. per Day per Capita thru Meters 1915	Metered Residence Services only 1915			Av. Gal. per Day 1914	
	1914	1915	1914	1915				Services	Population	Per Day, Gal.		
WEST SIDE												
Low Gravity.....	7,483	4,198	3,077	3,663	4,089,400	18,315	223.3	1,381	6,905	33.0	236.5	
High Gravity.....	3,138	2,651	2,259	1,909	990,300	9,545	103.8	1,548	7,715	40.9	82.3	
Pump N. of Jefferson.....	.....	27	161	248	13,000	1,240	91.6	175	1,195	53.6	88.2	
Pump S. of Jefferson.....	37	121	102	198	24,700	890	24.9	239	875	24.8	90.0	
Portland Heights.....	.....	50	477	484	119,700	2,420	49.5	479	2,395	44.2	75.4	
Council Crest.....	.....	13	40	62	11,600	310	37.4	57	285	24.8	69.2	
*Burlingame Standpipe.....	.....	26	68	58	37,700	290	130.0	46	230	26.0	56.8	
EAST SIDE												
Low Gravity.....	6,486	7,039	1,063	1,388	1,110,000	6,040	159.9	775	3,875	32.9	127.3	
Intermediate Gravity.....	9,176	8,886	3,571	3,332	791,100	16,660	47.5	3,105	15,525	30.0	53.0	
High Gravity, South of Division.....	6,063	6,217	116	593	88,800	2,965	30.0	545	2,725	18.3	44.6	
High Gravity, North of Division.....	4,197	4,978	235	298	189,800	1,490	127.4	197	985	38.0	44.0	
Vernon Standpipe.....	6,926	9,672	1,329	2,257	469,400	11,285	41.6	2,026	10,130	26.6	41.9	
Pump, Tabor Heights.....	96	.....	87	134	17,800	670	26.6	131	655	26.6	75.3	
Totals.....	43,602	43,828	12,585	14,824	8,053,900	73,120	110.1	10,689	53,495	32.2	111.6	
Or, excluding East and West Side Low Gravity Service.....	13,969	11,237	4,140	5,951	5,199,400	25,255	.....	2,156	10,780	.....	.....	
	29,633	32,591	8,445	9,873	2,854,500	47,865	59.6	8,543	42,715	.....	64.1	

\*West Side Low Gravity includes Linnton as one service.  
 \*\*West Side Burlingame Standpipe includes Multnomah as one service.



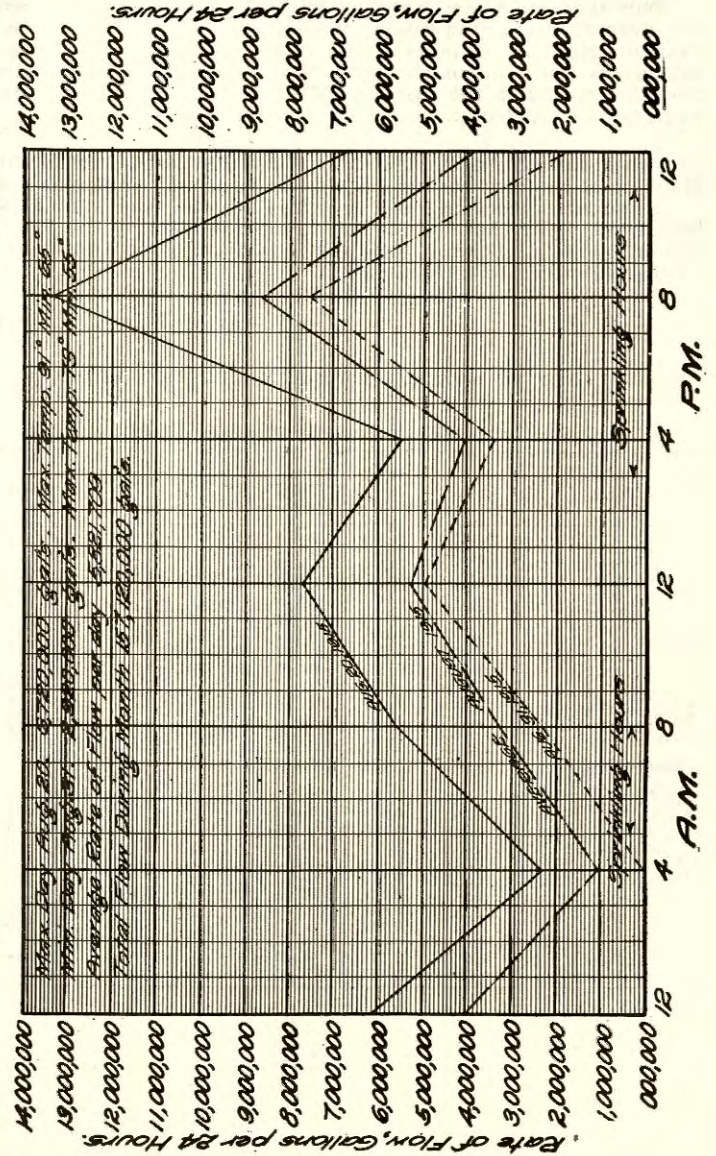
From the foregoing comparison of the daily consumption in the several districts of the city, it is noted that there is a considerable variation in the amount used per day per capita, the highest rates being found in the low gravity, or the business districts of the East and West Sides of the River (223.3 gallons for the West Side and 159.9 gallons for the East Side), as was observed in 1914; the average of all metered services being 110.1 gallons per capita in 1915 as against 111.6 gallons per capita in 1914. Omitting the East and West Side low gravity districts, the per capita consumption of metered water in the remaining districts of the city is found to be 59.6 gallons in 1915 as against 64.1 gallons in 1914.

Attention is especially called to the consumption through meters attached to residences exclusively, as shown at the right-hand of the above table. It is to be noted that the consumption ranges from a maximum of 53.6 gallons to a minimum of 18.3 gallons per capita—the average being 32.2 gallons. This is an unusually favorable showing, although in excess of that shown for seven of the thirteen service districts of the city, and affords another demonstration of the regulative effect produced by the installation of meters.

Diagram No. 1 has been prepared from the readings of the 30-inch Venturi meter attached to the main supplying the East Side intermediate gravity service, showing the hourly consumption during the day of maximum and minimum flow for that district.

The minimum flow observed was on August 31st, 2,920,000 gallons; maximum temperature, 73 degrees. Maximum consumption, 6,720,000 gallons, on August 20th; maximum temperature, 91 degrees. Average daily consumption, 5,063,000 gallons.

**WATER DEPARTMENT  
PORTLAND, OREGON.  
30" Meter, Reservoir No. 6  
Rate of Water Consumption  
MONTH OF AUGUST 1915.**





This diagram shows the "peak" load which usually occurs during the evening sprinkling hours, when the rate of consumption is more than double that at other hours of the day, and in consequence of this excessive demand the service often proves to be inadequate at the high points in the district. The more general use of meters will remedy this difficulty.

STATISTICS

The accompanying tables show the water mains laid in the several districts of the city during the year and the total mileage now in use.

A summary has also been prepared for the year ending November 30th, 1915, using therefor the form recommended by the New England Water Works Association for the compilation of data relating to water works maintenance and operation.

Respectfully submitted,

D. D. CLARKE, Engineer.

SUMMARY OF WATER MAINS IN USE NOVEMBER 30, 1915

WEST SIDE				EAST SIDE			
Size Inches	C. I.	Steel or W. I.	Total Miles	C. I.	Steel or W. I.	Wood	Total Miles
30	0.871	4.282	5.153	4.674	1.800	.....	6.474
24	2.289	4.630	6.919	7.030	2.481	.....	9.511
20	5.143	0.667	5.810	2.116	0.586	.....	2.702
18	0.089	0.596	0.685	.....	0.587	.....	0.587
16	4.181	.....	4.181	10.523	.....	.....	10.523
14	3.176	.....	3.176	3.469	.....	.....	3.469
12	13.876	1.088	14.964	16.930	.....	1.788	18.718
10	10.500	0.737	11.237	3.942	.....	0.297	4.239
8	23.892	0.276	24.168	138.391	.....	.....	138.391
7	.....	.....	.....	.....	.....	0.230	0.230
6	44.511	1.362	45.873	57.564	.....	1.188	58.752
5	.....	.....	.....	.....	.....	0.189	0.189
4	16.933	.....	16.933	16.022	1.111	3.584	20.717
Total 4" and over	125.461	13.638	139.099	260.661	6.565	7.276	274.502
3 1/2	.....	.....	.....	.....	0.052	.....	0.052
3	0.567	0.514	1.081	.....	2.878	2.532	5.410
2 1/2	.....	0.250	0.250	.....	1.199	0.313	1.512
2	.....	5.397	5.397	.....	34.631	1.599	36.230
1 1/2	.....	0.311	0.311	.....	26.845	.....	26.845
1 1/4	.....	0.103	0.103	.....	8.935	.....	8.935
1	.....	0.846	0.846	.....	7.537	.....	7.537
3/4	.....	0.393	0.393	.....	2.956	.....	2.956
1/2	.....	0.061	0.061	.....	1.105	.....	1.105
Total under 4"	0.567	7.875	8.442	.....	86.138	4.444	90.582
Total all sizes	126.028	21.513	147.541	260.661	92.703	11.720	365.084

SUMMARY OF WATER MAINS IN USE NOVEMBER 30, 1915—(Continued)

ALBINA					TOTALS			
Size Inches	C. I.	Steel or W. I.	Wood	Total Miles	C. I.	Steel or W. I.	Wood	Total Miles
30	2.733	.....	.....	2.733	8.278	6.082	.....	14.360
24	2.985	.....	.....	2.985	12.304	7.111	.....	19.415
20	1.129	.....	.....	1.129	8.388	1.253	.....	9.641
18	.....	.....	.....	.....	0.089	1.183	.....	1.272
16	3.457	.....	.....	3.457	18.161	.....	.....	18.161
14	2.290	.....	.....	2.290	8.935	.....	.....	8.935
12	13.867	.....	.....	13.867	44.673	1.088	1.788	47.549
10	1.038	0.050	.....	1.088	15.480	0.787	0.297	16.564
8	81.474	0.263	0.339	82.076	243.757	0.539	0.339	244.635
7	.....	.....	.....	.....	.....	.....	0.230	0.230
6	31.728	2.150	0.023	33.901	133.803	3.512	1.211	138.526
5	.....	.....	.....	.....	.....	.....	0.189	0.189
4	6.795	3.298	.....	10.093	39.750	4.409	3.584	47.743
Total 4" and over	147.496	5.761	0.362	153.619	533.618	25.964	7.638	567.220
3 1/2	.....	.....	.....	.....	.....	0.052	.....	0.052
3	.....	0.794	.....	0.794	0.567	4.186	2.532	7.285
2 1/2	.....	.....	0.757	0.757	.....	1.449	1.070	2.519
2	.....	22.374	0.293	22.667	.....	62.402	1.892	64.294
1 1/2	.....	1.891	.....	1.891	.....	29.047	.....	29.047
1 1/4	.....	0.617	.....	0.617	.....	9.655	.....	9.655
1	.....	5.164	.....	5.164	.....	13.547	.....	13.547
3/4	.....	1.118	.....	1.118	.....	4.467	.....	4.467
1/2	.....	0.099	.....	0.099	.....	1.265	.....	1.265
Total under 4"	.....	32.057	1.050	33.107	0.567	126.070	5.494	132.131
Total all sizes	147.496	37.818	1.412	186.726	534.185	152.034	13.132	699.351

BULL RUN CONDUITS

	Miles	Total Miles
CONDUIT NO. 1—HEADWORKS TO MT. TABOR		
42-inch steel (riveted).....	10.022	.....
35-inch steel (riveted).....	7.772	.....
33-inch steel (riveted).....	6.505	24.299
CONDUIT NO. 2—HEADWORKS TO MT. TABOR		
52-inch steel (lock-bar).....	10.018	.....
44-inch steel (lock-bar).....	14.742	24.760
MT. TABOR TO CITY PARK		
24-inch steel (submerged).....	0.387	.....
30-inch steel (submerged).....	0.387	0.774
32-inch cast iron (shore connections).....	6.020	.....
30-inch cast iron (shore connections).....	0.437	6.457
Grand Total	.....	56.290



**SUMMARY OF STATISTICS FOR YEAR ENDING NOV. 30, 1915.**

In Form Recommended by New England Water Works Association.

**MUNICIPAL WATER WORKS**

City of Portland, Multnomah County, State of Oregon.

**GENERAL STATISTICS**

Population by census of 1910, 207,214.  
 Date of construction, 1893-4. Additions in 1910-11.  
 By whom owned, the City of Portland.  
 Source of supply, Bull Run River.  
 Mode of supply, gravity and pumping.

**PUMPING STATISTICS.**

- 1—Builders of pumping machinery:
  - 2 Reidler pumps, Fraser & Chalmers, Chicago, Ill.
    - 1 1,000,000 gallons capacity per 24 hours.
    - 1 500,000 gallons capacity per 24 hours.
  - 3 Gould pumps, Gould Mfg. Co., Seneca Falls, N. Y.
    - 1 540,000 gallons capacity in 24 hours.
    - 1 220,000 gallons capacity in 24 hours.
    - 1 250,000 gallons capacity in 24 hours.
  - 1 Smith & Vaile, Platt Iron Works, Dayton, Ohio.
    - 1 375,000 gallons capacity in 24 hours.
  - 2 4-Stage Alberger Turbine Pumps, New York.
    - 2 108,000 gallons capacity in 24 hours.
- In reserve—
  - 2 Dean Pumps, Holyoke, Mass.
    - 2 108,000 gallons capacity in 24 hours.
  - 3 Holly-Gaskell Compound Pumps, Holly Mfg. Co., Lockport, N. Y.
    - 1 10,000,000 gallons capacity per 24 hours.
    - 1 2,500,000 gallons capacity per 24 hours.
    - 1 500,000 gallons capacity per 24 hours.
  - 2 Worthington Pumps, Henry R. Worthington, N. Y.
    - 2 5,000,000 gallons capacity per 24 hours.
- 2—Description of fuel used—
  - (a) Kind: Wood and electricity.
  - (b) Brand of coal: Pelton wheel and electric motor for operating plants; cordwood for reserve plants.
  - (c) Average price of coal per gross ton, delivered, \$.....
  - (d) Percentage of ash.....
  - (e) Wood: Price per cord, \$.....
- 3—Coal consumed for the year.....pounds.
- 4—Pounds of wood consumed, divided by 3 equals equivalent amount of coal.....pounds.
- 5—Total equivalent coal consumed for the year (3)-(4)..... lbs.
- 6—Total pumpage for the year, 342,000,000 gallons.
- 7—Average static head against which pumps work, 175 to 585 feet.
- 8—Average dynamic head against which pumps work, 150 to 570 feet.
- 9—Number of gallons pumped per pound of equivalent coal (5).....pounds.
- 10—Duty-gallons pumped (6) x 8.34 pounds x 100 x dynamic head (8).....  
 Total fuel consumed (5).  
 Cost of pumping, figured on pumping station expense, \$14,846.31.

11—Per million gallons pumped, \$43.41.

12—Per million gallons raised one foot (dynamic), \$.....

**FINANCIAL STATISTICS**

Receipts	
Balance brought forward.....	\$ 20,266.09
(a) From ordinary (maintenance) receipts.....	
(b) From extraordinary receipts (bonds, etc.).....	
Total.....	\$ 20,266.09
From Water Rates:	
A. Fixture rates.....	\$ 307,583.85
B. Meter rates.....	378,625.45
C. Total from consumers.....	\$ 686,209.30
D. For hydrants.....	
E. For fountains.....	
F. For street watering.....	
G. For public buildings.....	
H. For miscellaneous use.....	12,349.75
I. General appropriation.....	
J. Total from municipal departments.....	643.40
K. From tax levy.....	
L. From bond issues.....	561,975.56
M. From other sources.....	24,778.71
N. Total.....	\$ 1,306,222.81
Expenditures	
Water Works Maintenance:	
AA. Operation (management and repairs).....	\$ 189,456.64
BB. Special.....	
CC. Total maintenance.....	\$ 189,456.64
DD. Interest on bonds.....	307,985.00
(CC and DD).....	
EE. Payment on bonds.....	
FF. Sinking fund.....	143,880.00
Water Works Construction:	
GG. Extension of mains, etc.....	278,419.17
HH. Extension of services.....	10,894.18
II. Extension of meters.....	10,393.00
JJ. Special: Tools, equipment and stock material.....	4,874.73
Office and other buildings.....	6,699.05
Water Works property purchased.....	900.00
Improvements of real property.....	2,608.98
Reservoir No. 5.....	
Reservoir No. 6.....	
Lowering submerged pipes Nos. 1 and 2.....	
Clearing and roads.....	10,515.48
Bull Run Conduit No. 2 (S. B. Co.).....	19,560.70
New Headworks.....	226.13
Surveys and explorations.....	12,184.19
Improvement Bond Sinking Fund.....	181,861.21
KK. Total construction.....	538,936.82
LL. Unclassified expenses.....	16,054.03
MM. Balance (aa) ordinary.....	
(bb) extraordinary.....	
Net balance.....	109,910.32
N. Total.....	\$ 1,306,222.81
Disposition of balance:	
O. Net cost of works to date.....	\$12,186,930.21
P. Bonded debt at date.....	7,194,000.00
J. Payments into Sinking Fund to date.....	882,840.00
R. Average rate of interest.....	4, 5 and 6%

**STATISTICS RELATING TO DISTRIBUTING SYSTEM****Mains**

- 1—Kind of pipe: Cast iron, steel and wrought iron and wood.
- 2—Sizes: From 1 inch to 30 inches.



- 3—Extended: 4 inches and over in diameter, 27.193 miles; under 4 inches in diameter, 14.917 miles; total, 42.110 miles.
- 4—Discontinued, 14.038 miles.
- 5—Total now in use, 699.351 miles.
- 6—Cost of repairs per mile.
- 7—Number of leaks per mile.
- 8—Length of pipes, less than 4 inches in diameter, 132.131 miles.
- 9—Number of hydrants added during the year (public and private), 137.  
Number added on mains owned by city, 127.  
Number added on mains laid by private parties under city supervision, not yet taken over by city, 10; total, 137.
- 10—Number of hydrants (public and private) now in use (13 removed), 5,028.
- 11—Number of stop gates added during the year, 323.  
Number added on mains owned by the city, 317.  
Number added on mains laid by private parties under city supervision, not yet taken over by city, 6; total, 323.
- 12—Number of stop gates now in use, 6,886.
- 13—Number of stop gates, smaller than 4 inches in diameter, 628.
- 14—Number of blow-offs, 286.
- 15—Range of pressure on mains, 20 to 80 pounds.

Services

- 16—Kind of pipe: Galvanized iron.
- 17—Sizes:
- 18—Extended: .....feet.
- 19—Discontinued: .....feet.
- 20—Total now in use .....miles.
- 21—Number of service taps added during the year, 1,649.
- 22—Number now in use, 51,236.
- 23—Average length of service .....feet.
- 24—Average cost of service for the year, \$.....
- 25—Number of meters added, 1,519.
- 26—Total in use, 15,495. Average number in actual use, 14,624.
- 27—Percentage of dwelling services metered, 22.28 per cent.
- 28—Percentage of receipts from metered water (B. C.), 55.2 per cent.
- 29—Number of motors and elevators added.....
- 30—Number now in use.....

Statistics of Consumption of Water

- 1—Estimated total population to date.....
- 2—Estimated population on lines of pipe.....
- 3—Estimated population supplied, 256,000.
- 4—Total consumption for the year, 12,034,000,000 gallons.
- 5—Total passed through meters, 2,940,000,000 gallons.
- 6—Percentage of consumption metered, 24.4 per cent.
- 7—Average daily consumption, 32,900,000 gallons.
- 8—Gallons per day to each inhabitant.....
- 9—Gallons per day to each consumer, 128.5 gallons.
- 10—Gallons per day to each tap, 642 gallons.
- 11—Cost of supplying water per million gallons, figured on total maintenance (Item CC), \$15.74.
- 12—Total cost of supplying water per million gallons, figured on total maintenance, plus interest on bonds, \$41.33

PIPE EXTENSIONS COMPLETED DURING THE FISCAL YEAR ENDING NOVEMBER 30, 1915

WEST SIDE		Size (Inches)	Length (Feet)
July.....	E. L. City Park, Madison St. to Jefferson St. (steel).....	8	296
	Jefferson St., E. L. City Park to Right of Way 834' South (steel).....	8	834
	Right of way (Ford Street Bridge), Jefferson St. to Market St. (steel).....	8	326
	Intersection branch on Market St.....	6	11
	Intersection branch on Madison St.....	8	10
August.....	15th St., Hoyt St. to Irving St.....	8	208
	15th St., Overton St. to Pettygrove St.....	8	296
	Intersection branch on Overton St.....	6	33
	Hydrant connections.....	6	6
	Talbot Road, Patton Road to alley bet. Lots 5 and 9, Block F, Greenway.....	8	744
	Hydrant connections.....	6	12
Total.....			2776
	Hydrant connections included in above total.....		18

SUMMARY

Total length 6-inch pipe.....	.008 miles.
Total length 8-inch pipe.....	.514 "
Total.....	.522 miles.

PIPE EXTENSIONS LESS THAN 4 INCHES DIAMETER COMPLETED DURING THE FISCAL YEAR ENDING NOVEMBER 30, 1915

WEST SIDE		Size (Inches)	Length (Feet)
December, 1914	Buckingham Ave., Cross Ave. to 440 ft. West of Elevator Ave.....	2	905
	Dearborn Ave., Buckingham Ave. to Davenport St.....	2	235
	Davenport St., Dearborn Ave. to E. L. Governor's Park.....	2	1745
Total.....			2,85

SUMMARY

Size 2-inch.....	Length 0.546 miles.
------------------	---------------------

PIPE ACQUIRED BY BILL OF SALE DURING THE FISCAL YEAR ENDING NOVEMBER 30, 1915

WEST SIDE		Kind	Size	Length (Feet)
April.....	Nebraska St., Macadam St. to Bond St.....	W. I.	1 1/4"	179
May.....	3rd St., Miles St. to 247 ft. North.....	"	1	247
	3rd St., 247 ft. to 496 ft. N. N. L. Miles St.....	"	3/4	249
Total.....				675

SUMMARY

Size 3/4-inch.....	Length .047 miles
1-inch.....	.047 "
1 1/4-inch.....	.034 "
Total.....	.128 miles



PIPE ACQUIRED BY ANNEXATION DURING THE FISCAL YEAR ENDING NOVEMBER 30, 1915

Street	Limits	Kind	Size	Length (Feet)
St. Helens Road, former Portland city limits to H St.		C. I.	12	26,359
<b>Waldemere Add.</b>				
Wilark St., Hoge St. to 455 ft. North.		"	4	455
Hoge St., Wilark St. to 255 ft. South.		"	4	255
Alley (bet. Lots 8 and 9) St. Helens Road to Hoge and Wilark.		"	4	265
<b>Whitwood Court</b>				
McKeon St., Harris St. to Mills St.		W. I.	2	558
McKeon St., Harris St. to Springville Rd.		C. I.	4	191
Bailey St., Mills to Springville Rd.		W. I.	2	1,093
Shepard St., Mills St. to Springville Rd.		"	2	1,015
Wood St., Mills St. to Springville Rd.		"	2	1,034
Ogden St., Mills St. to Springville Rd.		"	2	1,102
Mills St., McKeon to Bailey		"	2	200
Mills St., Ogden St. to Bailey St.		C. I.	4	769
Mills St., Ogden St. to Whitney St.		"	6	247
Springville Rd., McKeon St. to Ogden St.		"	4	1,245
Springville Rd., Whitney St. to Ogden St.		"	6	374
<b>Linnton Add.</b>				
1st St., "C" St. to "I" St.		"	6	1,525
3rd St., "C" to "H" St.		"	6	1,280
4th St., "C" to "H" St.		"	6	1,263
"C" St., 1st St. to 2nd St.		"	6	386
"C" St., 2nd St. to 3rd St.		"	6	350
"C" St., 3rd St. to 4th St.		"	6	204
"D" St., 2nd St. to 3rd St.		W. I.	2	399
"E" St., 2nd St. to 3rd St.		"	2	407
"F" St., 2nd St. to 3rd St.		C. I.	8	405
"G" St., 2nd St. to 3rd St.		W. I.	2	422
"H" St., 2nd St. to 3rd St.		W. I.	2	380
"H" St., 1st St. to 2nd St.		C. I.	6	373
<b>Clark Terrace</b>				
2nd St., "C" St. to S. L. Clark Ter. Add.		C. I.	4	560
2nd St., S. L. Clark Ter. Add. to 210 ft. South.		W. I.	2	210
3rd St., "C" St. to S. L. Clark Ter. Add.		C. I.	4	546
4th St., "C" St. to S. L. Clark Ter. Add.		"	4	598
S. L. Clark Terrace, 3rd St. to 4th St.		"	4	294
<b>Glenn Harbor Ets. Add.</b>				
Willallitan Park et. al., Fes. No. 6 to Mount View Blvd.		W. I.	2	980
Mountain View Blvd., Germantown Rd. to Hillside Blvd.		"	2	3,250
Hillside Blvd., Mountain View Blvd. to Plymouth Ct.		"	2	3,320
<b>Glen Harbor Add.</b>				
St. Helens Rd., N. L. Glen Harbor Add. to Alley bet. Lots 34 and 35, B. 1		W. I.	1 1/2	350
St. Helens Rd., reducer bet. Lots 17 and 18, B. 1 to alley bet. Lots 34 and 35, B. 1.		"	2	435
St. Helens Rd., reducer bet. Lots 17 and 18, B. 1, to Harbor Blvd.		"	2 1/2	360
St. Helens Rd., S. L. Glenn Harbor to Harbor Blvd.		"	3/4	446
Hardy Ave., S. L. Glenn Harbor to Harbor Blvd.		"	1	270
Watts Ave., N. L. Lot 1, Blk. 5, to Harbor Blvd.		"	1	200
Watts Ave., S. L. Lot 26, Blk. 4, to Harbor Blvd.		"	3/4	215
Alley in Blk. 3, Lot 10, Blk. 3, along E. L. Lot 11 to alley Lot 4, Blk. 3		"	3/4	210
Raleigh Ave., Lot 17, Blk. 6, to alley bet. Lots 9 and 10, Blk. 6.		"	1	400
Raleigh Ave., line bet. Lots 3 and 4, Blk. 6, to bet. Lots 9 and 10, Blk. 6		"	1 1/2	310
Raleigh Ave., line bet. Lots 3 and 4, Blk. 6, to Harbor Blvd.		"	2	350
Glenn Ave., Lot 14, Blk. 7, to Harbor Blvd.		"	3/4	275
Vista Ave., Lot 15, Blk. 8, to alley running North and South through B. 8		"	1 1/2	400
Line bet. Lots 21 and 22, Blk. 10, St. Helens Rd., to Lot 25, Blk. 10.		"	1	145
North and South alley in Blk. 3, Harbor Blvd., to East and West alley in Blk. 3.		"	1	190
Germantown Rd., Vista Ave. to reservoir, Lot 1, Blk. 14		"	3	940
Vista Ave., Germantown Rd. to alley bet. Lots 5 and 6, Blk. 7		"	3	370
Alley bet. Lots 5 and 6, Blk. 7, Vista Ave. to Harbor Blvd.		"	3	165
Harbor Blvd., alley bet. Lots 5 and 6, Blk. 7, to St. Helens Road.		"	3	1,240
Germantown Road, Vista Ave. to Harbor Blvd.		"	2	875
Germantown Road, South line Lot 6, Blk. 4, to Harbor Blvd.		"	1 1/4	300
Germantown Road, South line Lot 6, Blk. 4, to Maybrook Ave.		"	1	300

PIPE ACQUIRED BY ANNEXATION DURING THE FISCAL YEAR ENDING NOVEMBER 30, 1915—Continued

Street	Limits	Kind	Size	Length (Feet)
<b>Willbridge Add.</b>				
Addison Ave., St. Helens Road to Willbridge Ave.		"	1 1/4	255
Willbridge Ave., Addison Ave. to Lot 17, Blk. 11.		"	1	279
St. Helens Road, "H" St. to 2,896 ft. North (est. 8" and 6", half each)		C. I.	8	1,448
St. Helens Road, "H" St. to 2,896 ft. North (est. 8" and 6", half each)		"	6	1,448
Willbridge Ave., St. Helens Road to Reservoir No. 7 (Pump Main)		"	6	2,200
Willbridge Ave., Reservoir No. 7 to Reservoir No. 8 (Pump Main)		"	6	2,300
Whitwood Court, St. Helens Rd. to Reservoir No. 3 (Pump Main)		"	8	300
Whitwood Court, Reservoir No. 3 to Reservoir No. 4 (Pump Main)		"	6	1,600
Willallitan, St. Helens Rd. to Reservoir No. 6 (Pump Main)		"	6	7,900
Linnton, St. Helens Rd. to Reservoir No. 1 (Pump Main)		"	8	500
Linnton, Reservoir No. 1 to Reservoir No. 2 (Pump Main)		"	6	1,100
North line Glenn Harbor, St. Helens Rd., to Reservoir Lot 1, Blk. 14, (Pump Main)		"	4	1,375
Total				81,764

SUMMARY

Size	Length
3/4-inch	0.217 miles
1-inch	0.338 "
1 1/4-inch	0.105 "
1 1/2-inch	0.201 "
2-inch	3.036 "
2 1/2-inch	0.068 "
3-inch	0.514 "
4-inch	1.241 "
6-inch	4.197 "
8-inch	0.576 "
12-inch	4.992 "
Total	15.485 "



PIPE EXTENSION COMPLETED DURING THE FISCAL YEAR ENDING  
NOVEMBER 30, 1915

EAST SIDE		Size (Inches)	Length (Feet)
January	E. Washington St., E. 76th St. to E. 80th St.	6	980
	Hydrant connections	6	12
February	E. 44th St., E. Stark St. to E. Halsey St.	16	5,260
	Intersection branch on E. Oak St.	8	20
	Intersection branch on E. Pine St.	8	20
	Intersection branch on E. Ash St.	8	20
	Intersection branch on E. Burnside St.	8	20
	Intersection branch on E. Couch St.	8	20
	Intersection branch on Laurelhurst Ave.	8	20
	Intersection branch on Hazel Fern Place	8	20
	Intersection branch on Senate St.	8	20
March	E. 80th St., E. Morrison St. to E. Yamhill St., looks East.	8	237
	E. 80th St., E. Yamhill St., looks West to E. Taylor St., looks East.	8	258
	E. 2nd St., Hawthorne Ave. to E. Market St.	8	461
	Intersection branch on E. Clay St.	6	74
	Hydrant connections	6	36
	E. 45th St., E. Lincoln St. to Division St.	8	934
	Hydrant connections	6	6
April	E. 25th St., Oregon St. to Holladay Ave	8	475
	Hydrant connections	6	6
	E. 6th St., North line E. Clay St., to South line E. Clay St.	8	60
	E. 8th St., North line E. Clay St. to South line E. Clay St.	8	60
	E. 9th St., North line E. Clay St. to South line E. Clay St.	8	60
	E. 10th St., North line E. Clay St. to South line E. Clay St.	8	60
	E. 24th St., Oregon St. to Pacific St.	6	200
	Hydrant connections	6	6
	E. 44th St., E. Lincoln St. to Division St.	16	934
May	E. 23rd St., E. Irving St. to E. Hoyt St.	6	228
	E. 19th St., Powell St. to Franklin St.	6	213
	Hydrant connections	6	6
	E. 23rd St., Powell St. to Tibbets St.	8	638
	Hydrant connections	6	6
	Tibbets St., E. 23rd St. to E. 25th St.	8	508
	Hydrant connections	6	6
	Karl St., E. 10th St. to Milwaukie St.	6	441
	E. 38th St., Ivon St. to Clinton St.	6	222
	Intersection branch on Ivon St.	6	17
June	E. 24th St., Holladay Ave. to Pacific St.	6	251
	E. Grant St., E. 50th St. to 402 ft. West.	6	402
	Hydrant connections	6	6
	E. 30th St., Holgate St. to Long Ave.	8	465
	Hydrant connections	6	6
	Grand Ave., Woodward Ave. to Beacon St.	8	905
	Intersection branch on Beacon St.	8	30
	Hydrant connections	6	6
	Grand Ave., Beacon St. to Karl St.	6	500
	Hydrant connections	6	12
	52nd St. S. E., 64th Ave. S. E., looking West, to 64th Ave. S. E., looking East.	8	91
	64th Ave. S. E., 46th St. S. E. to 52nd St. S. E.	8	1,724
	46th St. S. E., 64th Ave. S. E. to 65th Ave. S. E.	8	149
	65th Ave. S. E., Lance Ave. to 46th St. S. E.	8	161
	Lance Ave., 65th Ave. S. E. to County Road.	8	4,870
	Hydrant connections	6	84
	County Road, Lance Ave. to County line.	8	534
July	86th St. S. E., 18 ft. North South line to 10 ft. North North line 65th Ave. S. E.	8	36
	Hydrant connections	6	6
	88th St. S. E., 18 ft. North South line to 44 ft. North North line 65th Ave. S. E.	8	79
	Hydrant connections	6	6
	90th St. S. E., 18 ft. North South line to 10 ft. North North line 65th Ave. S. E.	8	49
	Hydrant connections	6	6
	E. 71st St., E. Yamhill St. to E. Taylor St.	6	256
	E. 19th St., Sandy Blvd. to E. Irving St.	8	814

PIPE EXTENSION COMPLETED DURING THE FISCAL YEAR ENDING  
NOVEMBER 30, 1915—(Continued)

	Hydrant connections	6	6
	Center St., 18 ft. East West line to 8 ft. East East line Milwaukie	8	50
	E. Madison St., E. 41st St. to E. 43rd St.	6	466
August	E. 50th St., E. Stark St. to North line Wallace Add.	8	1,209
	Hydrant connections	6	18
	E. 22nd St., Sandy Blvd. to E. Irving St.	6	373
	Hydrant connections	6	12
	E. 27th St., Sandy Blvd. to Pacific St.	8	238
	Hydrant connections	6	6
September	E. 12th St., Powell St. to Frederick St.	8	740
	Hydrant connections	6	12
	Frederick St., Milwaukie St. to E. 12th St.	8	291
	E. Stark St., Brooke St. to E. 70th St.	8	1,339
	Intersection branch on E. 67th St., looking North.	6	34
	E. Stark St., intersection branch on Brooke St., looking North.	6	37
	E. Stark St., 16 ft. West East line to 3 ft. West West line Brooke St.	6	37
	Hydrant connections	6	6
	Martin Ave., 14 ft. East West line Milwaukie St. to West line Milwaukie St.	6	14
October	E. Kelly St., E. 39th St. to 550 ft. East.	8	572
	Hydrant connections	6	12
	E. 39th St., Woodward Ave. to Tibbets St.	8	499
	Intersection branch on Tibbets.	8	41
	Hydrant connections	6	6
November	Glenn Ave., E. Lincoln St. to E. Grant St.	8	238
	E. Grant St., Glenn Ave. to E. 34th St.	6	516
	Hydrant connections	6	12
	E. 27th St., E. Flanders St. to Buxton St.	6	443
	E. 47th St., E. Salmon St. to E. Madison St.	8	700
	Hydrant connections	6	6
	E. Madison St., E. 47th St. to 106 ft. East.	8	106
	Total		32,051
	Hydrant connections included in above		312

## SUMMARY

6-inch pipe	1.080 miles
8-inch	3.758 "
16-inch pipe	1.173 "
Total	6.011 miles



PIPE EXTENSIONS LESS THAN 4 INCHES DIAMETER COMPLETED  
DURING THE FISCAL YEAR ENDING NOVEMBER 30, 1915

EAST SIDE		Size (inches)	Length (feet)
December 1914	59th St. S. E., 404 ft. to 604 ft. South South line 45th Ave. S. E.	2	200
	60th Ave. S. E., 67th St. S. E. to 69th St. S. E.	2	658
	69th St. S. E., 60th Ave. S. E. to 61st Ave. S. E.	2	225
	Intersection branch on 60th Ave. S. E., looking East.	2	73
	58th Ave. S. E., 67th St. S. E. to 69th St. S. E.	2	713
	41st Ave. S. E., 60th St. S. E. to 62nd St. S. E.	2	707
	43rd Ave. S. E., Foster Road to 62nd St. S. E.	2	380
	44th Ave. S. E., 58th St. S. E. to 59th St. S. E.	2	322
	61st St. S. E., 45th Ave. S. E. to Foster Road	2	452
	E. 80th St., E. Salmou St. to E. Main St.	2	180
	E. Main St., E. 78th St. to E. 80th St.	2	426
	Bismark St., E. 21st St. to E. 22nd St.	2	189
	39th Ave. S. E., E. 48th St. to E. 49th St.	1 1/4	144
	64th St. S. E., 52nd Ave. S. E. to 55th Ave. S. E.	2	897
	68th St. S. E., 55th Ave. to 235 ft. South South line 55th Ave.	2	253
	57th Ave. S. E., 67th St. S. E. to 69th St. S. E.	2	639
	69th St. S. E., 57th Ave. S. E. to 165 ft. North	2	204
	62nd Ave. S. E., 67th St. S. E. to 69th St. S. E.	2	675
	63rd Ave. S. E., 67th St. S. E. to 69th St. S. E.	2	582
	67th St. S. E., 62nd Ave. S. E. to 64th Ave. S. E.	2	552
January 1915	Reynolds Ave., E. 9th St. to Milwaukee Ave.	2	890
	51st St., S. E., 30th Ave. S. E. to 31st Ave. S. E.	1 1/2	240
February	Hassalo St., E. 58th St. to E. 60th St.	2	485
	E. 58th St., Hassalo St. to 280 ft. North North line Hassalo St.	2	319
	E. 59th St., 94 ft. North North line Hassalo to 200 ft. South South line Hassalo.	2	354
	E. Yamhill St., E. 71st St. to E. 73rd St.	2	593
	E. Alder St., E. 80th St. to E. 84th St.	2	1,112
March	76th St. S. E., 40th Ave. S. E. to 45th Ave. S. E.	2	1,284
	E. 23rd St., Tacoma Ave. to Sherrett St.	2	1,017
	Broadway St., E. 77th St. to 107 ft. West West line E. 77th St.	2	146
	Intersection branch on E. 77th St.	2	42
	Nehalem Ave., E. 19th St. to E. 23rd St.	2	920
	Ochoco St., E. 9th St. to E. 10th St.	2	254
	Intersection branch on E. 9th St.	2	26
	E. 10th St., Ochoco St. to 100 ft. North	2	116
	E. 33rd St., Francis Ave. to 370 ft. North	2	410
	E. 87th St., E. Glisan St. to 792 ft. North	2	792
	E. 33rd St., 370 ft. to 548 ft. North of Francis Ave.	1 1/2	178
April	Hawthorne Ave., E. 76th St. to E. 80th St.	2	1,065
	79th St. S. E., 40th Ave. S. E. to 45th Ave. S. E.	2	1,304
	45th Ave. S. E., 79th St., looks North to 79th St., look South.	1 1/2	152
	Lucky Ave., E. 62nd St. to East line Lot 4, Blk. "U," Tabor Hts.	2	443
May	E. Washington St., E. 74th St. to E. 76th St.	2	346
	Franklin St., E. 15th St. to S. P. Co. right of way	2	367
June	E. 14th St., Linn Ave. to 163 ft. South	2	185
	57th St. S. E., 42nd Ave. S. E. to 44th Ave. S. E.	2	384
	58th St. S. E., 42nd Ave. S. E. to 44th Ave. S. E.	2	384
	44th Ave. S. E., 44 ft. West West line 57th St. S. E. to 58th St. S. E.	2	343
	E. 37th St., 9 ft. North North line to 87 ft. South South line Liebe St.	2	146
	Alley (W. L. Gilham's 2nd Add.) E. Grant St. to E. Sherman	2	250
	Brooklyn St., E. 6th St., looks North, to E. 6th St., looks South	2	120
	E. 6th St., Brooklyn St. to 330 ft. South	2	343
	71st Ave. S. E., 87th St. S. E. to 92nd St. S. E.	2	1,378
July	E. Alder St., E. 71st St. to E. 73rd	2	466
	Yukon Ave., Milwaukee St. to E. 14th St.	2	575
	41st St. S. E., 48th St. S. E. to 128 ft. East of 49th St. S. E.	2	389
August	E. 59th St., Halsey St. to 330 ft. North	2	388
Sept.	50th Ave. S. E., 80th St. S. E. to 82nd St. S. E.	2	522
	Mall St., E. 37th St. to E. 39th St.	2	510
October	Martins Ave., Milwaukee St. to 35 ft. East East line East 13th St.	2	805
Nov.	E. Clay St. (Ext.), 296 ft. East East line E. 37th St. to E. 38th St.	2	143
	43rd Ave. S. E., 67th St. S. E. to 72nd St. S. E.	2	1,321
	64th Ave. S. E., 52nd St. S. E. to 436 ft. East	2	448
Total			30,426

## SUMMARY

1 1/4-inch	0.135 miles
2-inch	5.627 "
Total	5.762 miles

PIPE ACQUIRED BY BILL OF SALE DURING THE FISCAL YEAR ENDING NOVEMBER 30, 1915

EAST SIDE		Kind	Size (inches)	Length (feet)
June	E. 58th St., Sacramento St. to 359 ft. North	W. I.	2	359
	E. 58th St., Thompson to 180 ft. South South line Tillamook	"	2	613
September	E. 81st St., Beech St. to Shaver St.	"	2	957
	E. 79th St., Beech St. to 184 ft. North	"	2	221
Total				2,150

## SUMMARY

2-inch	0.407 miles
--------	-------------



PIPE EXTENSIONS COMPLETED DURING THE FISCAL YEAR ENDING  
NOVEMBER 30, 1915

ALBINA		Size (inches)	Length (feet)
December	Webster St., 7 ft. South South line to 17 ft. North South line		
	Albina	6	24
1914	Ainsworth Ave., Campbell St. to Denver Ave.	8	262
	Campbell St., Ainsworth Ave. to Colfax St.	6	514
	Hydrant connections	6	6
February	Vancouver Ave., Mason St. to Skidmore St.	6	480
1915	E. 20th St., 18 ft. South North line Prescott St. to South line Prescott	8	42
April	E. 47th St., Fremont St. to The Alameda	6	2,109
	Hydrant connections	6	18
	E. 48th St., Siskiyou St. to The Alameda	6	1,121
	Hydrant connections	6	6
	E. 49th St., Siskiyou St. to The Alameda	6	1,121
	Hydrant connections	6	12
	Bryant St., E. 15th St. to E. 17th St.	8	437
May	Boston Ave., Lombard St. to Buffalo St.	6	654
	Hydrant connections	6	6
	Russett St., Peninsular Ave. to Burrage St.	6	566
	Hydrant connections	6	6
	Grand Ave., 20 ft. South North line to South line Dekum Ave.	6	54
June	Church St., Union Ave. to E. 9th St.	8	1,327
	Hydrant connections	6	12
July	E. 66th St., Siskiyou St. to Fremont St.	8	1,022
	E. 12th St., intersection of Ainsworth Ave.	8	17
	E. 12th St., 4 ft. South South line to 26 ft. North South line Ainsworth Ave.	6	30
	City property, Vernon Standpipe to Skidmore St.	30	396
	Skidmore St., E. 20th St. to E. 33rd St.	30	3,729
	E. 33rd St., Skidmore St. to Prescott St.	30	318
	Prescott St., E. 33rd St. to E. 37th St.	30	1,325
	E. 37th St., Prescott St., looks West, to Prescott, looks East.	30	138
	Prescott St., E. 37th St. to E. 42nd St.	30	1,289
	Right of way, E. 42nd St. to E. 57th St. (extended).	30	4,143
	E. 57th St. (ext.), right of way to Fremont St.	30	2,634
	Fremont St., E. 57th St. to E. 59th St., looks North.	30	458
	Wistaria Ave., E. 51st St. to E. 54th St.	6	976
	Hydrant connections	6	6
	E. 54th St., The Alameda to Sandy Blvd.	6	345
	Hydrant connections	6	6
August	Sumner St., E. 13th St. to right of way 340 ft. East.	6	393
	Hydrant connections	6	6
	Klickitat St., E. 72nd St. to E. 80th St.	8	2,080
	Hydrant connections	6	24
	Wygant St., Denver Ave. to Gay St.	8	588
	Hydrant connections	6	6
August	E. 28th St., Tillamook St. to Thompson St.	8	653
	Hydrant connections	6	6
	Shaver St., Capitol St. to Commercial St.	8	3,582
	Intersection branch on Borthwick St.	8	60
September	Ainsworth Ave., E. 30th St. to E. 33rd St.	8	1,096
	Hydrant connections	6	12
	E. 33rd St., Ainsworth Ave. to Killingsworth Ave.	12	1,313
	Hydrant connections	6	12
	Killingsworth Ave., Glenn Ave. to E. 33rd St.	12	274
	Hydrant connections	6	6
	Union Ave., Alberta St. to Knott St., looks East.	12	6,221
	Union Ave., Knott St., looks East, to Knott St., looks West.	10	77
	Intersection branch on Going St., looks East.	8	59
	Intersection branch on Graham St., looks West.	6	14
	Intersection branch on Monroe St., looks West.	6	19
	Intersection branch on Fargo St., looks West.	6	19
	Hydrant connections	6	78
	Killingsworth Ave., Patton Ave. to Denver Ave.	12	1,271
	Intersection branch on Campbell St.	8	49
	Hydrant connections	6	6
	Sumner St., Concord St. to Denver Ave.	8	598

PIPE EXTENSIONS COMPLETED DURING THE FISCAL YEAR ENDING  
NOVEMBER 30, 1915—Continued

	Hydrant connections	6	6
	Dwight St., Lombard St. to Kilpatrick St.	8	1,139
	Hydrant connections	6	12
	Skidmore St., Union Ave. to E. 19th St.	24	4,025
	Intersection branch on E. 19th St., looks South.	12	27
	City property, Vernon Standpipe to Skidmore St.	24	410
	Skidmore St., 23 ft. Ea East line E. 19th St. to 208 ft. East East line E. 19th St.	20	185
November	Baldwin St., 18 ft. West East line to 8 ft. East East line Peninsula	8	26
	Haven St., Lombard St. to Willis Blvd.	8	1,240
	Hydrant connections	6	12
Total			51,213
	Hydrant connections included in above		252

SUMMARY

6-inch	1.600 miles
8-inch	2.704 "
10-inch	0.015 "
12-inch	1.725 "
20-inch	0.035 "
24-inch	0.842 "
30-inch	2.733 "
Total	9.654 "



PIPE EXTENSIONS LESS THAN 4 INCHES DIAMETER COMPLETED  
DURING THE FISCAL YEAR ENDING NOVEMBER 30, 1915

ALBINA		Size (inches)	Length (feet)
December..	Webster St., Albina Ave. to Kerby St.	2	447
1914	Campbell St., Holman St. to Highland Ave.	2	340
February..	Omaha Ave., Ainsworth Ave. to Portland Blvd.	2	1,234
1915	Lombard Ave., Rodney Ave. to 300 ft. East of Mallory	2	743
	Highland St., E. 13th St. to E. 17th St.	2	888
March.....	Liberty St., E. 8th St. to Durham Ave.	2	435
April.....	E. 36th St., 266 ft. to 348 ft. South South line Prescott	2	152
	Portland Blvd., Grand Ave. to E. 6th St.	2	259
	Grand Ave., Portland Blvd. to 169 ft. South South line Portland Blvd.	2	186
	E. 15th St., Bryant St. to Morgan St.	2	341
May.....	Boston Ave., Buffalo St. to Bryant St.	2	662
	Alberta St., Gay St. to 371 ft. West	2	386
	Grand Ave., Dekum Ave. to Madrona St.	2	318
June.....	Borthwick St., Portland Blvd. to 496 ft. North	2	571
	E. 18th St., 203 ft. South of Holman, to Ainsworth Ave.	2	590
	E. 19th St., Ainsworth Ave. to Holman St.	2	805
July.....	Kerby St., Portland Blvd. to 490 ft. North	2	518
	E. 12th St., 4 ft. South South line Ainsworth Ave. to 95 ft. North North line Jarrett	2	481
	E. 12th St., 10 ft. South North line Killingsworth Ave. to 38 ft. South South line Church	2	133
August.....	Right of way bet. E. 13th St. and Vernon Ave., Sumner, looks East to Sumner, looks West	2	110
	Sumner St., Vernon Ave. to 105 ft. West	2	139
	Wygant St., Gay St. to Delaware Ave.	2	660
	Peninsular Ave., Houghton St. to Columbia Slough Road	2	576
October.....	Humboldt St., Gay St. to Delaware St.	2	533
	Church St., Tattou St. to Campbell St.	2	1,020
November..	E. 8th St., Holland St. to Madrona St.	2	1,118
	Baldwin St., Peninsular Ave. to Burrage St.	2	511
	Humboldt St., Michigan Ave. to Mississippi Ave.	2	346
	Mississippi Ave., Humboldt St. to Blandena St.	2	522
	Haven St., Willis Blvd. to Houghton St.	2	857
Total.....			15,881

## SUMMARY

2-inch pipe..... 3.008 miles

PIPE ACQUIRED BY BILL OF SALE DURING THE FISCAL YEAR ENDING  
NOVEMBER 30, 1915

ALBINA		Kind	Size (inches)	Length (feet)
December..	Buffalo St., 387 ft. to 423 ft. East East line E. 17th St.	W. I.	2	36
	E. 18th St. (ext.), Buffalo St. to Columbia Blvd.	"	2	829
	Columbia Blvd., E. 18th St. to 146 ft. East	"	2	146
February..	E. 63rd St., Shaver St. to Prescott St.	"	2	1,227
April.....	Webster St., Patton Ave. to 231 ft. West	"	3/4	231
	Knott St., E. 33rd St. to 63 ft. West	"	1	130
	Knott St., 63 ft. West West line E. 33rd St. to 52 ft. East of Glenn Ave.	"	3/4	128
	Lombard St., 81 ft. to 454 ft. West West line E. 8th St.	"	1	373
Total.....				3,100

## SUMMARY

Size	Length
3/4-inch.....	0.068 miles
1 -inch.....	0.095 "
2 -inch.....	0.424 "
Total.....	0.587 miles

## RECAPITULATION

Pipe Extensions Completed During the Fiscal Year Ending November 30, 1915  
(By Department Forces)

Size	West Side Miles	East Side Miles	Albina Miles	Total Miles
1 1/2 -inch.....		0.135		0.135
2 -inch.....	0.546	5.627	3.008	9.181
	0.546	5.762	3.008	9.316
6 -inch.....	0.008	1.080	1.600	2.688
8 -inch.....	0.514	3.758	2.704	6.976
10 -inch.....			0.015	0.015
12 -inch.....			1.725	1.725
16 -inch.....		1.173		1.173
20 -inch.....			0.035	0.035
24 -inch.....			0.842	0.842
30 -inch.....			2.733	2.733
	0.522	6.011	9.654	16.187

Pipe Extensions Acquired by Bill of Sale During the Fiscal Year Ending  
November 30, 1915

Size	West Side Miles	East Side Miles	Albina Miles	Total Miles
3/4 -inch.....	0.047		0.068	0.115
1 -inch.....	0.047		0.095	0.142
1 1/2 -inch.....	0.034			0.034
2 -inch.....		0.407	0.424	0.831
	0.128	0.407	0.587	1.122



Pipe Extensions Acquired by Annexation During the Fiscal Year Ending November 30, 1915  
"LINNONTON DISTRICT"

Size	"LINNONTON DISTRICT"	West Side Miles	East Side Miles	Albina Miles	Total Miles
3/4-inch		0.217			0.217
1-inch		0.338			0.338
1 1/4-inch		0.105			0.105
1 1/2-inch		0.201			0.201
2-inch		3.036			3.036
2 1/2-inch		0.068			0.068
3-inch		0.514			0.514
4-inch		1.241			1.241
6-inch		4.197			4.197
8-inch		0.576			0.576
12-inch		4.992			4.992
<b>TOTALS</b>		<b>15.485</b>			<b>15.485</b>

Size	West Side Miles	East Side Miles	Albina Miles	Total Miles	
3/4-inch	0.264		0.068	0.332	
1-inch	0.385		0.095	0.480	
1 1/4-inch	0.139			0.139	
1 1/2-inch	0.201	0.135		0.336	
2-inch	3.582	6.034	3.432	13.048	
2 1/2-inch	0.068			0.068	
3-inch	0.514			0.514	
4-inch	1.241			1.241	
6-inch	4.205	1.080	1.600	6.885	
8-inch	1.090	3.758	2.704	7.552	
10-inch			0.015	0.015	
12-inch	4.992		1.725	6.717	
16-inch		1.173		1.173	
20-inch			0.035	0.035	
24-inch			0.842	0.842	
30-inch			2.733	2.733	
<b>TOTALS</b>		<b>16.681</b>	<b>12.180</b>	<b>13.249</b>	<b>42.110</b>

PIPE ABANDONED OR REMOVED DURING THE FISCAL YEAR ENDING NOVEMBER 30, 1915

WEST SIDE	Size (inches)	Kind	Length (feet)
Fairmount Blvd., 161 ft. South of 8 in. gate to Wapato Ave., S. 70 ft.	8	C. I.	70
Fairmount Blvd., cross at steps at Wapato to 166 ft. North	4	"	166
Fairmount Blvd., 8" gate South of steps to Wapato Ave. to 161 ft. S.	8	"	161
Burnside St., 20 ft. East-West line 12th St. to 19 ft. West East line 12th	6	"	21
15th St., North line Hoyt St. to South line Irving	4	"	200
15th St., South line Pettygrove St. to 35 ft. South South line Overton	4	"	295
Aspen St., bet. Franklin St. and Thurman St. (ext.)	1 1/4	W. I.	342
Washington St., 23rd St. to Brooke St.	4	C. I.	460
Ford St., Madison St. to Market St. Drive	6	W. I.	480
Jefferson St., Reservoir No. 4 to Ford St. Bridge	6	"	1,112
(Drive way (City Park) Power House to Head of Jefferson)	6	"	257
(Note—This was found to be 8", but was always listed as 6").			
Drive way (City Park) Power House to Head of Jefferson	6	"	111
Drive way (City Park) Power House to Head of Jefferson	4	"	50
<b>Total</b>			<b>3,725</b>

SUMMARY

Size	C. I. Miles	Steel-W. I. Miles	Wood Miles	Total Miles
1 1/4-inch		0.065		0.065
4-inch	0.212	0.009		0.221
6-inch	0.004	0.371		0.375
8-inch	0.044			0.044
<b>TOTALS</b>		<b>0.260</b>	<b>0.445</b>	<b>0.705</b>



PIPE ABANDONED OR REMOVED DURING THE FISCAL YEAR ENDING  
NOVEMBER 30, 1915—(Continued)

EAST SIDE	Size	Kind	Length (feet)
79th St. S. E., 40th Ave. S. E. to 45th Ave. S. E.	2	Wood	902
40th Ave. S. E., 60th St. S. E. to 62nd St. S. E.	1	W. I.	507
50th Ave. S. E., E. 80th St. to 28 ft. East East line E. 80th St.	2½	"	64
Gladstone Ave., 15 ft. West West line E. 26th St. to 44 ft. West West line 26th St.	2	"	29
E. 56th St., 19 ft. North South line Powell to 7 ft. North North line Powell.	2	"	48
E. 71st St., 20 ft. North North line E. Taylor St. to 101 ft. North North line Taylor.	2	"	81
61st St. S. E., 46th Ave. S. E. to 47th Ave. S. E.	1½	"	190
64th Ave. S. E., 50th St. S. E. to 25 ft. East West line 51st St. S. E.	1½	"	155
41st Ave. S. E., 48th St. S. E. to 140 ft. East East line 48th St.	1½	"	161
Alley (bet. E. 64th and E. 65th Sts.) 40th Ave. to 45th Ave. S. F.	1½	"	1,375
40th Ave., 34 ft. to 180 ft. West West line E. 58th St.	1½	"	146
E. 54th St., 32nd Ave. to 60 ft. North North line 32nd Ave.	1½	"	60
33rd Ave., E. 49th St. to E. 50th St.	1½	"	255
34th Ave., E. 49th St. to 10 ft. East West line 50th St.	1½	"	265
E. Kelly St., E. 39th St. to 154 ft. East East line 39th St.	1½	"	154
43rd Ave., West line to 263 ft. West West line E. 70th St.	1½	"	263
43rd Ave., East line to 240 ft. East East line, E. 70th St.	1½	"	240
37th Ave., East line, to 192 ft. East East line E. 54th St.	1½	"	192
37th Ave., 5 ft. to 105 ft. East East line E. 52nd St.	1½	"	100
E. Kelly St., 154 ft. to 318 ft. East East line E. 39th St.	1	"	164
43rd Ave., 263 ft. to 369 ft. West West line E. 70th St.	1	"	106
43rd Ave., 240 ft. East East line E. 70th St. to 20 ft. West East line E. 72nd St.	1	"	220
Mall St., E. 37th St. to E. 39th St.	1	"	456
E. 79th St., 57 ft. to 135 ft. North North line 45th Ave.	1	"	78
E. Kelly St., 318 ft. to 513 ft. East East line E. 39th St.	¾	"	191
E. 58th St., 12 ft. North South line to 94 ft. North North line 44th Ave	¾	"	132
E. 10th St., 4 ft. South South line to 16 ft. North South line E. Clay	4	C. I.	20
E. 8th St., 3 ft. South South line to 8 ft. North North line E. Clay St.	4	"	76
E. 46th St. S. E., 64th Ave. S. E. to 65th Ave. S. E.	6	Wood	147
65th Ave. S. E., Lance Ave. to E. 46th St.	6	"	174
Lance Ave., 65th Ave. to 72nd Ave.	6	"	1,703
72nd Ave. S. E., 14 ft. West East line to 12 ft. West West line Lance Av	6	"	58
50th Ave. S. E., 80th St. to 82nd St.	4	"	191
Lance Ave., 72nd Ave. to Abington St.	6	"	1,000
50th Ave. S. E., 80th St. to 82nd St.	3	"	206
89 ft. South South line 37th Ave., 13 ft. East West line to 95 ft. East East line E. 72nd St.	2	"	132
Bet. E. 76th and E. 79th Sts., 40th Ave. to 124 ft. North North line of 45th Ave.	2	"	1,149
249 ft. East East line 74th St., 12 ft. North South line 40th Ave. to 295 ft. North North line 45th Ave.	2	"	978
E. 100th St., 31 ft. South North line to 74 ft. South North line 67th Ave.	2	"	43
37th Ave., 107 ft. West West line E. 67th St. to 104 ft. West West line E. 68th St.	2	W. I.	266
E. 71st St., E. Taylor St. to E. Yamhill St.	2	"	252
E. 80th St., E. Taylor St. to E. Morrison St.	2	"	583
Gladstone Ave., 20 ft. East West line E. 25th St. to 44 ft. West West line E. 26th St.	2	"	186
E. 25th St., Gladstone Ave. to 95 ft. North North line Holgate.	2	"	1,025
E. 66th St., 19 ft. North South line to 10 ft. North North line 55th Ave	1½	"	51
E. 51st St., 30th Ave. to 32nd Ave.	1½	"	484
Grand Ave., Karl St. to Beacon St.	1½	"	500
E. 23rd St., 15 ft. South North line to 140 ft. South South line Tibbets	1½	"	220
64th Ave. S. E., 50th St. S. E. to 77 ft. West West line 52nd St. S. E.	1½	"	553
86th St. S. E., 19 ft. North South line to 11 North North line 65th Ave	1½	"	53
72nd St. S. E., 20 ft. North South line to 14 ft. South North line 43rd Ave. S. E.	1¼	"	22
Grand Ave., 278 ft. to 378 ft. South South line Brooklyn St.	1¼	"	100
E. 6th St., Brooklyn St. to 450 ft. South.	1¼	"	450
Brooklyn St., 37 ft. West East line to 125 ft. East East line Grand Ave.	1¼	"	162
Grand Ave., South line to 278 ft. South South line Brooklyn St.	1¼	"	278
41st Ave., E. 48th St. to E. 49th St.	1¼	"	199

PIPE ABANDONED OR REMOVED DURING THE FISCAL YEAR ENDING  
NOVEMBER 30, 1915—(Continued)

EAST SIDE	Size	Kind	Length (feet)
E. 88th St., 19 ft. North South line 65th Ave. to 44 ft. North North line 65th Ave.	1¼	"	88
211 ft. West West line E. 100th St., 30 ft. South North line to 70 ft. North North line 67th Ave.	1¼	"	100
Mall St., E. 37th St. to E. 39th St.	1	"	456
Glenn Ave., E. Lincoln St. to E. Grant St.	1	"	240
43rd Ave., E. 67th St. to 369 ft. West West line E. 70th St.	1	"	390
43rd Ave., 18 ft. West East line to 20 ft. West West line E. 72nd St.	1	"	52
43rd Ave., West line to East line E. 70th St.	1	"	50
E. Madison St., E. 41st St. to 36 ft. West West line E. 43rd St.	1	"	376
Hassalo St., E. 55th St. to E. 60th St.	1	"	485
E. 87th St., North line E. Ghan St. to 792 ft. North.	1	"	792
E. 30th St., Holgate St. to 44 ft. South.	1	"	460
E. 28th St., Karl St. to Powell St.	1	"	268
Powell St., E. 28th St. to E. 29th St.	1	"	570
E. Alder St., E. 80th St. to 32 ft. West West line E. 82nd St.	1	"	626
E. 76th St., 45th Ave. to 259 ft. North North line 45th Ave.	1	"	270
E. Washington St., E. 74th St. to E. 76th St.	1	"	346
E. Alder St., E. 71st St. to E. 73rd St.	1	"	466
E. 60th St., 130 ft. North North line 60th Ave. to 22 ft. North South line 62nd Ave.	1	"	508
50th Ave., 13 ft. East West line to 26 ft. East East line E. 80th St.	3	"	63
37th Ave., 107 ft. East East line E. 69th St. to 108 ft. East East line E. 70th St.	2½	"	264
E. 50th St., 9 ft. North North line to 1,201 ft. North North line E. Stark	2	"	1,192
E. 67th St., 62nd Ave. to 63rd Ave.	2	"	354
E. Sherman St., E. 45th St. to E. 46th St.	2	"	228
E. 45th St., E. Lincoln St. to E. Sherman St.	2	"	456
E. Sherman St., E. 44th St. to E. 45th St.	2	"	202
E. 44th St., E. Lincoln to E. Sherman St.	2	"	456
E. 72nd St., 11 ft. North South line to 89 ft. South South line 37th Av	2	"	100
E. 54th St., 22 ft. North South line to 130 ft. South South line 59th Ave.	2	"	152
Alley bet. 59th and 60th Aves., E. 54th St. to E. 62nd St.	2	"	1,954
E. 57th St., 21 ft. North South line to 130 ft. North North line 60th Av.	2	"	189
64th Ave., 18 ft. West East line to 430 ft. East East line E. 52nd St.	1¼	"	448
Alley bet. E. 63rd and 64th St., North line to 28 ft. South North line 45th Ave.	1½	"	28
Alley bet. E. 66th and 67th St., Powell St. to 40th Ave.	1½	"	1,297
Alley bet. E. 63rd and 64th Sts., Powell St. to 40th Ave.	1¼	"	1,295
Alley bet. E. 65th and 66th Sts., Powell St. to 40th Ave.	1	"	1,297
Alley bet. E. 62nd and 63rd Sts., Powell St. to 40th Ave.	1½	"	1,295
Alley bet. E. 64th and 65th Sts., Powell Sts. to 40th Ave.	1¼	"	1,295
Alley bet. E. 62nd and 63rd Sts., 40th Ave. to Poster Road.	1½	"	1,219
Alley bet. E. 63rd and 64th Sts., 40th Ave. to 45th Ave.	1½	"	1,291
62nd St. S. E., 22 ft. North South line to 134 ft. North North line 62nd Ave. S. E.	1½	"	172
Alley bet. 60th and 62nd Ave., E. 62nd St. to 100 ft. East East line 65th St.	1½	"	773
E. Stark St., E. 69th St. to E. 70th St.	1¼	"	220
E. 33rd St., 20 ft. North South line to 170 ft. North North line Francis Ave.	1¼	"	210
Alley bet. E. 67th and 68th Sts., Powell St. to 40th Ave.	1¼	"	1,282
Alley bet. E. 69th and 70th Sts., Powell St. to 40th Ave.	1¼	"	1,308
Alley bet. E. 68th and 69th Sts., Powell St. to 40th Ave.	1¼	"	1,278
E. 19th St., Sandy Blvd. to E. Irving St.	1	"	350
Marie St., 3rd Ave. to 7th Ave.	1	"	990
E. Washington St., E. 76th St. to E. 80th St.	1	"	940
E. Stark St., West line Broke St. to 240 ft. East.	4	Steel	290
E. Stark St., 240 ft. East East line Broke St. to 21 ft. West East line E. 69th St.	2½	W. I.	830
Alley bet. 62nd and 63rd Ave., 13 ft. West East line E. 62nd St. to 79 ft. West West line E. 65th St.	2	"	536
Total			48,592



SUMMARY

Size	C. I. Miles	Steel-W. I. Miles	Wood Miles	Total Miles
¾-inch		0.061		0.061
1-inch		2.171		2.171
1¼-inch		1.749		1.749
1½-inch		2.082		2.082
2-inch		1.570	0.607	2.177
2½-inch		0.219		0.219
3-inch		0.012	0.039	0.051
4-inch	0.018	0.055	0.036	0.109
6-inch			0.584	0.584
	0.018	7.919	1.266	9.203

PIPE ABANDONED OR REMOVED DURING THE FISCAL YEAR ENDING NOVEMBER 30, 1915

ALBINA	Size	Kind	Length (feet)
Union Ave., Knott St. to Graham Ave.	8	C. I.	361
Killingsworth Ave., E. 31st St. to Glenn Ave.	2	W. I.	214
Union Ave., Lot 3, Blk. 6, Highland Add. to Alberta St.	6	C. I.	673
Sumner St., F. 13th St. to 20 ft. West West line right of way	2	W. I.	100
Shaver St., Commercial St. to Albina Ave.	2	"	862
Shaver St., Maryland Ave. to Missouri Ave.	2	"	765
Killingsworth Ave., Glenn Ave. to E. 31st St.	2	"	548
E. 20th St., 24 ft. North North line Prescott St. to 3 ft. South South line Prescott	2	"	87
E. 8th St., 2 ft. South South line Liberty St. to 18 ft. North South line Liberty	2	"	20
Liberty St., 42 ft. West East line E. 8th St. to 124 ft. East East line 8th	2	"	166
E. 33rd St., Ainsworth Ave. to 100 ft. North North line Killingsworth	1½	"	1,145
Baldwin St., Peninsular Ave. to 477 ft. East of Peninsular	1	"	495
E. 15th St., 53 ft. North North line Junior St. to 18 ft. North South line Dekum Ave.	1	"	165
E. 15th St., 39 ft. South South line Junior St. to 89 ft. South South line Junior	1	"	50
Boston Ave., 25 ft. South North line Buffalo St. to 320 ft. North North Line same	1	"	405
Buffalo St., 16 ft. West East line Boston Ave. to 11 ft. East East line Boston	1	"	27
Alberta St., 19 ft. East West line Gay St. to 200 ft. West West line Gay	1	"	219
Wygant St., Denver Ave. to Gay St.	1	"	632
Wygant St., 32 ft. West East line Gay St. to 308 ft. West West line Gay	1	"	336
Peninsular Ave., Houghton St. to Trenton St.	1	"	574
Sumner St., E. 13th St. to right of way	1	"	220
Fremont St., Union Ave. to 21 ft. East East line Union Ave.	2	"	93
Fremont St., E. 7th St. to E. 8th St.	2	"	267
Omaha, Portland Blvd. to Holman St.	2	"	648
Killingsworth Ave., E. 31st St. to E. 33rd St.	2	"	822
Church St., Patton Ave. to 150 ft. West West line Concord St.	1½	"	810
Church St., Union Ave. to 450 ft. East East line Union Ave.	1½	"	450
E. 32nd St., Ainsworth Ave. to alley South of Ainsworth	1½	"	200
Holman St., Denver Ave. to Campbell St.	1½	"	238
Campbell St., Holman St. to Highland St.	1	"	400
Omaha, Holman St. to Killingsworth Ave.	1	"	1,896
Dwight St., Lombard St. to Kilpatrick St.	4	Steel	1,150
Union Ave., Skidmore St. to Lot 3, Blk. 6, Maegley Highland	6	W. I.	1,003
Union Ave., Skidmore St. to Graham Ave.	6	"	4,290
Ainsworth Ave., E. 30th to E. 33rd St.	4	"	1,027
Fremont St., E. 57th St. to E. 59th St.	16	C. I.	458
Total			21,816

SUMMARY

Size	C. I. Miles	Steel-W. I. Miles	Wood Miles	Total Miles
1-inch		1.026		1.026
1¼-inch		0.045		0.045
1½-inch		0.493		0.493
2-inch		0.870		0.870
4-inch		0.412		0.412
6-inch	0.127	1.002		1.129
8-inch	0.068			0.068
16-inch	0.087			0.087
	0.282	3.848		4.130

RECAPITULATION

Pipe Removed or Abandoned During the Fiscal Year Ending November 30, 1915

Size	West Side Miles	East Side Miles	Albina Miles	Total Miles
¾-inch		0.061		0.061
1-inch		2.171	1.026	3.197
1¼-inch	0.065	1.749	0.045	1.859
1½-inch		2.082	0.493	2.575
2-inch		2.177	0.870	3.047
2½-inch		0.219		0.219
3-inch		0.051		0.051
4-inch	0.221	0.109	0.412	0.742
6-inch	0.375	0.584	1.129	2.088
8-inch	0.044		0.068	0.112
16-inch			0.087	0.087
	0.705	9.203	4.130	14.038

RECAPITULATION—DISTRIBUTION SYSTEM—FISCAL YEAR ENDING NOVEMBER 30, 1915

Mains 4 inches in Diameter and Over Laid, and Mains Taken Out or Abandoned, Showing Net Increase

	4 in.	5-in.	6-in.	7-in.	8-in.	10-in.
<b>WEST SIDE</b>						
Laid or acquired	1.241		4.205		1.090	
Removed or abandoned	0.221		0.375		0.044	
Net increase	1.020		3.830		1.046	
<b>EAST SIDE</b>						
Laid or acquired			1.080		3.758	
Removed or abandoned	0.109		0.584			
Net increase	(-0.109)		0.496		3.758	
<b>ALBINA</b>						
Laid or acquired			1.600		2.704	0.015
Removed or abandoned	0.412		1.129		0.068	
Net increase	(-0.412)		0.471		2.636	0.015



**RECAPITULATION—DISTRIBUTION SYSTEM—FISCAL YEAR ENDING  
NOVEMBER 30, 1915**

WEST SIDE	12-in.	16-in.	20-in.	24-in.	30-in.	Total Miles
Laid or acquired.....	4.992					11.528
Removed or abandoned.....						0.640
Net increase.....	4.992					10.888
<b>EAST SIDE</b>						
Laid or acquired.....		1.173				6.011
Removed or abandoned.....						0.693
Net increase.....		1.173				5.318
<b>ALBINA</b>						
Laid or acquired.....	1.725		0.035	0.842	2.733	9.654
Removed or abandoned.....		0.087				1.696
Net increase.....	1.725	(-0.087)	0.035	0.842	2.733	7.958

Total miles of pipe laid or acquired, 4 in. diameter and over..... 27.193 miles

Total miles of pipe 4 in. diameter and over, removed or abandoned..... 3.029 "

Net increase, 4 in. diameter and over..... 24.164 miles

**RECAPITULATION—DISTRIBUTION SYSTEM—FISCAL YEAR ENDING  
NOVEMBER 30, 1915**

WEST SIDE	½-in.	¾-in.	1-in.	1¼-in.	1½-in.	Total Miles
Laid or acquired.....		0.264	0.385	0.139		0.201
Removed or abandoned.....				0.065		
Net increase.....		0.264	0.385	0.074		0.201
<b>EAST SIDE</b>						
Laid or acquired.....						0.135
Removed or abandoned.....		0.061	2.171	1.749		2.082
Net increase.....		-0.061	-2.171	-1.749		-1.947
<b>ALBINA</b>						
Laid or acquired.....		0.068	0.095			
Removed or abandoned.....			1.026	0.045		0.493
Net increase.....		0.068	-0.931	-0.045		-0.493

**RECAPITULATION—DISTRIBUTION SYSTEM—FISCAL YEAR ENDING  
NOVEMBER 30, 1915**

WEST SIDE	2-in.	2½-in.	3-in.	Total Miles
Laid or acquired.....	3.582	0.068	0.514	5.153
Removed or abandoned.....				0.065
Net increase.....	3.582	0.068	0.514	5.088
<b>EAST SIDE</b>				
Laid or acquired.....	6.034			6.169
Removed or abandoned.....	2.177	0.219	0.051	8.510
Net increase.....	3.857	-0.219	-0.051	-2.341
<b>ALBINA</b>				
Laid or acquired.....	3.432			3.595
Removed or abandoned.....	0.870			2.434
Net increase.....	2.562			1.161

Total miles pipe laid or acquired under 4-in. diameter..... 14.917 miles

Total miles pipe removed or abandoned under 4-in. diameter..... 11.009 "

Net increase under 4-in. diameter..... 3.908 "  
(Not included in foregoing Summaries of pipe in use).

**STATEMENT OF PIPE LAID BY PRIVATE CONTRACTS UNDER CITY  
SUPERVISION DURING THE FISCAL YEAR ENDING NOVEMBER  
30, 1915, AND NOT YET TAKEN OVER BY THE CITY  
(Not Included in Foregoing Summaries of Pipe in Use)**

WESTOVER TERRACE	Size	Length (feet)	Feet	Est. Cost
Albemarle Ter., Melinda Ave. to Cumberland Road..	6	860		
Culpepper Ter., South line Lot 20, Blk. 8, to Cumberland Road.....	6	507		
Cumberland Rd., Albemarle Ter. to Shenandoah Ter.	6	732		
Shenandoah Ter., West line Lot 8, Blk. 12, to Cumberland Rd.....	6	505		
Branch on Cumberland Rd. and Shenandoah Ter.....	8	64		
Total length 6-in. pipe.....			2,604	
Total length 8-in. pipe.....			64	\$ 2,800.00
<b>MORNINGSIDE ADD. (PART OF)</b>				
E. Stark St., E. 70th St. to E. 71st St.....	8	326		
Branch on Royal Ave.....	6	34		
Ayer Afe., 769 ft. to 1,097 ft. North North line E. Stark	6	328		
Matteson Ave., 920 ft. to 1,192 ft. North North line E. Stark St.....	6	272		
Total length 6-in. pipe.....			634	
Total length 8-in. pipe.....			326	\$ 1,042.0

**SUMMARY**

Size	Length (feet)	Length (miles)	Est. Cost
6-inch.....	3,238	0.613	
8-inch.....	390	0.074	
	3,628	0.687	\$3842.00



## BUREAU OF STREET CLEANING

As the appropriation for conducting the Bureau of Street Cleaning for the coming year has been reduced to the minimum, and as it is the desire to keep the streets of the city in as clean and presentable condition as in the past, it will be necessary to strictly enforce the law prohibiting the throwing of any kind of rubbish on an improved street, and compelling contractors and others to remove the debris and material from the street immediately upon completion of their contracts. A street may be surfaced with the most modern pavement, and be followed up with the best system of hand sweeping, yet if the public persist in throwing paper, fruit parings, store sweepings, etc., into the street, the surface cannot be kept in a clean condition. We have an ordinance prohibiting these things being done, but it rests with the Police Bureau to enforce it.

We desire to have the co-operation of the various organizations throughout the city, which are formed for the betterment of the districts in which they are located. With their assistance we would be enabled to give better service and probably further reduce the cost of the Bureau.

The following statement will show the frequency with which the several districts throughout the city are cleaned:

## WEST SIDE NIGHT CREW

Cleaned every night

All streets east of Fourteenth, from Yamhill to Burnside.

All streets east of Ninth, from Burnside north, except Front street, from Glisan north, and Seventh street from Johnson north.

All streets east of Fifth, from Yamhill to Jefferson.

All streets east of Fourth, from Jefferson to Mill.

Also the main thoroughfares running out from the business center as follows: Alder to Lowndale, Washington to Twentieth, Burnside to Sixteenth, Everett to Twelfth, Flanders to Twelfth, Front to Hall, First to Arthur and Second to Montgomery.

This area contains 454 blocks.

## WEST SIDE DAY CREW

Cleaned three times each week.

District lying between Ninth and Fourteenth, and Burnside and Hoyt.

This area contains 40 blocks.

Cleaned twice each week

All streets west of Fifth, from Yamhill south, except Kings and Portland Heights.

All streets west of Fourteenth, from Yamhill to Overton, except those main thoroughfares cleaned every day and mentioned above.

This area contains 600 blocks.

Cleaned every four days

All streets north of Overton.

All streets south of Mill, except those main thoroughfares cleaned every day and mentioned above.

Fifth street, from Jefferson south; Seventh street, from Johnson north, and Front street, from Glisan north.

This area contains 375 blocks.

## EAST SIDE NIGHT CREW

Cleaned every night

All hard-surfaced streets lying between Ellsworth and Holladay, from Grand to the river, including the Willamette River bridges.

Also the following individual streets: Union to Alberta, Grand to Broadway; Russell, from Williams to Gantenbein; McMillan, from Williams to Crosby; Larrabee, from Holladay to McMillan; Burnside, from Grand to Tenth; Broadway, from Union to Eighth; Williams, from Broadway to Alberta; Fargo, from Williams to Vancouver; Knott, from Union to Vancouver; Milwaukee, from Holgate to Hawthorne; Division, from Tenth to Twenty-first; Twenty-first, from Division to Powell; Hawthorne, from Grand to Fourteenth, and Belmont, from Grand to Thirtieth.

This area contains 296 blocks.

Cleaned three times each week

Crosby, from Holladay to McMillan; Third, Holladay to Weidler; Larrabee, from McMillan to Hancock; Williams, from Holladay to Broadway; Multnomah, from First to Grand; Wasco, from Union to Grand; Hassalo, from Larrabee to Grand; Burnside, from Tenth to Twenty-fourth; Broadway, from Eighth to Twentieth; Holladay, from Grand to Thirteenth; Schuyler, from First to Ninth; Second, from Hancock to Broadway; Russell, from Gantenbein to Goldsmith; Commercial, from Knott to Russell; Milwaukee, from Bybee to Holgate; Twenty-first, from Division to Bush; Hawthorne, from Fourteenth to Thirtieth; Fourteenth, from Hawthorne to Belmont; Morrison, from Union to Twentieth; Union, from Salmon to Hawthorne; Eleventh, from Brooklyn to Frederick, and Thirteenth, from Hawthorne to Morrison.

This area contains 173 blocks.

Cleaned once each week

Sixteenth, from Holgate to Powell; Sixteenth, from Division to Brooklyn; Fifteenth, from Division to Ellsworth; Fourteenth, from Division to Clinton; Thirteenth, from Division to Clinton; and Ivon, from Twelfth to Sixteenth.

This area contains 31 blocks.

## EAST SIDE DAY CREW

Owing to the large area to be cleaned by this crew, comprising approximately 200 miles, and the lack of equipment, it is impossible to have regular routes. The crew cleans about 26 miles per day.

There are 134 miles of macadam and gravel streets in the city which must be cleaned. With the present crew we clean an average of about one mile per day.

The following table comprises the employes for the operation of the Bureau of Street Cleaning:

1 superintendent, 1 clerk, 3 district superintendents, 2 foremen, 3 chauffeurs, 1 foreman (repair hso), 3 repairmen, 2 broom-makers, 1 horseshoer, 10 hostlers, 207 laborers.

The West Side day district superintendent has 54 laborers and 1 truck chauffeur, who work as follows:

Nine men operate two horse-brooms, one sprinkling wagon and three carts, and clean an average of 104,000 square yards (5 miles) per day.

Eleven men operate five flushing machines and one cart and clean 208,000 square yards (10 miles) per day.



Nineteen men, each with a patrol cart and dressed in a white suit patrol the main business thoroughfares during the day, keeping them free from horse-droppings, paper and all unsightly rubbish which accumulates constantly during the day. These same streets are cleaned every night by the night crew, but patrolling them during the day aids materially in keeping them in a presentable condition. These men patrol an average of eight blocks each, four times per day.

Three men clean macadam and gravel streets by scraping up the mud and rubbish, which is then hauled away. These men also hand-sweep the hard-surfaced streets in those districts which are too hilly to take our apparatus. As these hard-surfaced streets are not traveled much, owing to the grades, they never become very dirty. These men clean an average of 6,240 square yards (3-10 miles) of macadam and gravel streets per day.

Three men, with one horse and cart, remove and haul away the dirt from catch-basins. These men clean an average of 50 catch-basins each day, removing about five yards of dirt.

One man levels and keeps the dumps in a safe condition for dumping.

Three men work as hostlers in the barn.

One chauffeur and two laborers, with a three-ton auto truck, haul away the rubbish collected by the patrol-cart men, and the dirt from the macadam and gravel streets.

In order to give the men their annual vacation it is necessary for the crew to have three men on vacation relief.

The West Side night district superintendent has forty-two laborers, who work as follows:

Thirty-one men operate six horse-power brooms, two sprinkling wagons and ten carts, and clean an average of 384,800 square yards (18½ miles) each night.

Six men operate three flushing machines and clean an average of 104,000 (5 miles) per night.

Three men with one horse and cart remove and haul away the dirt from catch-basins in the business district. These men clean an average of 55 catch-basins each night.

In order to give the men their annual vacations it is necessary for this crew to have two men on vacation relief.

The East Side district superintendent has 65 laborers and 2 truck chauffeurs, who work as follows:

Twelve men operate three horse-power brooms, one sprinkling wagon and four carts, and clean an average of 202,800 square yards (9¾ miles) per day.

The Elgin motor sweeper requires one chauffeur and two laborers, with the use of a man, with a horse and cart a portion of the day. This machine cleans an average of 72,000 square yards (3½ miles) per day.

Six men operate two squeegee machines and two carts and clean an average of 140,400 square yards (6¾ miles) per day. These machines can be used successfully only on perfectly smooth pavements, but do very effective work on that class of streets.

One man with a patrol cart, patrols the business section in the vicinity of Williams avenue and Russell street. He patrols 30 blocks twice each day.

Five men, employed sweeping crosswalks in the residence district, clean an average of 200 crosswalks per day.

Four men, with two horses and carts, remove and haul away the dirt from catch-basins. These men clean an average of 95 catch-basins per day, removing about 12 yards of dirt.

One man levels and keeps the dumps in a safe condition for dumping.

Three men work as hostlers in the barn.

Eleven men clean macadam and gravel streets, by scraping up the mud and rubbish, which is then hauled away. These men clean an average of 15,600 square yards (¾ mile) per day.

One chauffeur and five laborers, one of whom acts as a chauffeur, with two five-ton auto trucks, are employed carting away the dirt which has been scraped up on the macadam and Gravel streets by the hoemen.

In order to give the men their annual vacations, it is necessary for this crew to have three men on vacation relief.

The East Side night foreman (Hancock barn division) has twenty-one laborers who work as follows:

Sixteen men operate three horse-power brooms, one sprinkling wagon and five carts and clean an average of 176,800 square yards (8½ miles) per night.

Four men operate two flushing machines and clean 72,800 square yards (3½ miles) per night.

In order to give these men their annual vacations it is necessary to have one man for vacation relief.

The East Side night foreman (Brooklyn barn division) has twenty-five laborers, who work as follows:

Eighteen men operate three power brooms, one sprinkling wagon and seven carts, and clean an average of 197,600 square yards (9½ miles) per night.

Six men operate three flushing machines and clean an average of 97,760 square yards (4.7 miles) per night.

In order to give the men their annual vacation it is necessary for this crew to have one man for vacation relief.

The following is a statement of the average cost of cleaning by the various methods:

	Per 1000 sq. yds.	Per Mile
Average cost of horse-broom sweeping.....	\$0.3105	\$ 6.46
Average cost of motor-broom sweeping.....	.1526	3.17
Average cost of flushing.....	.2293	4.77
Average cost of squeegee sweeping.....	.145	2.96
Average cost of hand patrol cart sweeping.....	.336	7.00
Average cost cleaning macadam and gravel.....	2.678	55.70
Average cost of cleaning crosswalks, each.....	.075	.....
Average cost of cleaning catchbasins, each.....	.17	.....

The Bureau oiled 123.2 miles of the city streets during the summer season at a cost of \$7,180.84.



Following is a statement of the distances oiled in the various widths:

36 feet wide.....	1.5 miles or	9 miles 6 feet wide
30 feet wide.....	1.7 miles or	6.8 miles 6 feet wide
24 feet wide.....	72.2 miles or	238.8 miles 6 feet wide
18 feet wide.....	20.3 miles or	60.9 miles 6 feet wide
12 feet wide.....	15.45 miles or	30.9 miles 6 feet wide
6 feet wide.....	12.05 miles or	12.05 miles 6 feet wide
	123.2	408.45

Average cost per six-foot mile, \$17.58.

Following is a statement of the appropriation and receipts, expenditures and unincumbered balances in the Bureau of Street Cleaning account for the year ending November 30, 1915:

	Total Appropriation Including Transfers, Credits, etc.	Total Incumbrance	Unincum- bered Balance
Personal service .....	\$228,398.00	\$220,489.19	\$ 7,908.81
Supplies .....	28,700.00	28,544.44	155.56
Material .....	15,300.00	11,116.83	4,183.17
Equipment .....	9,765.00	4,184.28	5,580.72
Construction and extension.....	7,211.96	4,115.59	3,096.37
Repairs .....	4,500.00	3,323.46	1,176.54
Transportation and communication	617.00	589.50	27.50
Light, heat and power.....	125.00	13.27	111.73
Janitorial service .....	125.00	105.02	19.98
Contingencies .....	1,000.00	221.13	778.87
Fixed charges .....	600.00	600.00	.....
Totals .....	\$296,341.96	\$273,302.71	\$ 23,039.25

Real property owned by this Bureau:

Lots 5, 8, 9, 10, 11 and 12, Block 1, Davenport Addition, with a three-story concrete and brick barn and repair shop and wagon shed.

Lots 1, 2, 7 and 8, Block 251, Holliday Addition, with a two-story frame barn.

Parcel of land 112 feet by 200 feet, at Milwaukee and Powell, with a two-story brick barn.

Statement of livestock owned by this bureau:

Horses on hand December 1, 1914, 158; horses received during the year, 6; total, 164. Horses sold during the year, 6; horses died during the year, 2; horses killed during the year, 2; horses given away (Pisgah Home), 1; total, 11. Horses on hand November 30, 1914, 153.

## GARBAGE DISPOSAL.

Early in the year the matter of municipal collection was considered under existing authorization, viz.:

Requiring a charge for service, was considered impractical.

Later consideration has not developed sufficient or any reason for a change of opinion, that the expense of making small collections would be unreasonable as compared with the receipts or that payment cannot be equitably enforced, the only penalty possible to impose being the discontinuance of service. Also that collection on a fee basis would secure no more garbage than by the present method.

If we were not to have collection on a broad and effective principle, then it appeared unnecessary to construct an additional incinerator at an expense of approximately \$200,000. This construction was therefore deferred, saving to the city about \$48,000 annually.

The result has fully justified such deferment, the tonnage having not materially increased and the present plant has taken care of it, withstanding the load fairly well.

For the same reason it seems advisable to defer additional construction for at least another year and make a corresponding saving.

Repairs to the existing plant have been consistently made and it is in good condition.

The cost of incineration has been reduced 2.22 per cent.

The incinerator now has on hand between 35,000 and 40,000 bricks removed from the chimney and general construction of the old incinerator, the value of which, if cleaned, would be between five and six dollars per thousand. It also has on hand one car of curved blocks derived from the same source, and which will be used from time to time in the repair of the present plant.

Bonded obligation:

Total amount of bonds issued.....	\$108,000
Redemptions as follows:	
September, 1911 .....	\$ 5,000
September, 1912 .....	5,000
December, 1912 .....	5,800
September, 1913 .....	5,000
December, 1913 .....	5,800
September, 1914 .....	5,000
December, 1914 .....	5,800
September, 1915 .....	5,000
December, 1915 .....	5,800
Total .....	48,200
Balance outstanding .....	\$ 59,800

Total amount of garbage incinerated:

Garbage .....	39,452¼ tons
Manure .....	680 tons
Trash .....	5,866¾ tons
Total .....	45,999 tons

Percentage of each class of refuse incinerated:

Garbage .....	85¾ per cent
Manure .....	1½ per cent
Trash .....	12¾ per cent

Average amount of refuse incinerated per day..... 148 tons



## Cost of incineration per ton:

Labor .....	31 1/3 cents
Supplies and repairs.....	1 2/3 cents
<b>Total .....</b>	<b>33 cents</b>

## Animals incinerated:

Horses .....	14
Dogs .....	1121
Colts .....	2
Sheep .....	1
Calves .....	*2
Hogs .....	2
Bear .....	1
<b>Total .....</b>	<b>1143</b>
*1 elk calf.	

## Animals hauled by city's team:

Horses .....	3
Hogs .....	1
<b>Total .....</b>	<b>4</b>

Number of loads received from scavengers.....	33,599
Number of loads received from non-licensed teams.....	1,947

<b>Total number of loads received.....</b>	<b>35,546</b>
--	---------------

Average amount of refuse incinerated per day.....	148 tons
Percentage delivery by non-licensed teams.....	5 1/2 per cent
Average number of loads received per day.....	114 loads
Average weight per load.....	2,591 pounds
Percentage delivery by licensed teams.....	94 1/2 per cent

## Operating expense of the Incinerator:

Salaries .....	\$14,411.25
Supplies and Repairs.....	718.59
<b>Total .....</b>	<b>\$15,129.84</b>

## Operating Expense of Dump and Ground:

Salaries .....	\$ 5,452.25
Supplies .....	58.40
<b>Total .....</b>	<b>\$ 5,510.65</b>

## Operating Expense of Barn:

Salaries .....	\$ 468.00
Supplies .....	212.03
<b>Total .....</b>	<b>680.03</b>

<b>Complete Total of the Fiscal Year.....</b>	<b>\$21,320.52</b>
---	--------------------

## Statement of Appropriations and Expenditures, November 30, 1815:

Appropriation including transfers.....	\$25,537.35
Total incumbrance .....	21,320.37
Unincumbered balance .....	4,216.98

Of the total cost of the incinerator, 95 per cent was for salaries, 2 1/2 per cent for repairs to furnace, 1 per cent for repairing of furnace tools, and 1 1/2 per cent for plant supplies.

Number of men employed, 19; number of men discharged, none; number of men resigned, 1; number of men appointed, 1; number of men injured on duty, none.

## TOTAL AMOUNT INCINERATED

	Garbage Tons	Manure Tons	Trash Tons	Total Tons
December.....	2,679 1/4	21 1/4	382 1/4	3,083
January.....	2,880 1/2	73 1/2	425 1/2	3,379 1/4
February.....	2,725	73 1/4	471 1/4	3,270
March.....	3,487 1/2	94 1/2	659 1/2	4,241 1/2
April.....	3,372 1/2	74 1/4	621 1/4	4,068
May.....	3,160 1/2	94 1/2	493 1/2	3,748 1/2
June.....	3,331	85 1/4	508 1/2	3,925 1/4
July.....	3,540 1/2	72 1/2	503 1/2	4,116 1/2
August.....	3,562 1/2	62 1/2	450 1/4	4,075 1/4
September.....	3,779 1/2	14 1/2	459	4,253
October.....	3,450 1/2	8	452 1/4	3,910 1/4
November.....	3,483	5	440	3,928
<b>Total.....</b>	<b>39,452 1/4</b>	<b>680</b>	<b>5,866 1/4</b>	<b>45,999</b>

## OPERATING EXPENSE OF INCINERATOR

	Salaries	Supplies & Repairs	Total
December.....	\$1,140.75	\$164.42	\$ 1,305.17
January.....	1,209.00	65.76	1,274.76
February.....	1,151.00	15.45	1,166.45
March.....	1,238.00	38.19	1,276.19
April.....	1,198.50	69.72	1,268.22
May.....	1,191.00	25.79	1,216.79
June.....	1,209.00	29.22	1,238.22
July.....	1,238.00	16.13	1,254.13
August.....	1,209.00	23.12	1,232.12
September.....	1,209.00	90.12	1,299.12
October.....	1,209.00	74.26	1,283.26
November.....	1,209.00	106.41	1,315.41
<b>Total.....</b>	<b>\$ 14,411.26</b>	<b>\$718.59</b>	<b>\$ 15,129.84</b>



## UTILITY POLE CONSTRUCTION.

It is satisfying to note that unusual progress has been made in the past year in the work of eliminating useless poles which have been for a long time eyesores on the public streets.

This department took up the pole problem in 1913, the first active work being done on Front street, where several companies maintained thick lines of these unsightly timbers. The Commissioner of Public Utilities arranged a meeting with the heads of the different companies involved and was able to show them that by cutting out needless construction traffic could be greatly facilitated and the general public benefited without loss of efficiency to the companies themselves.

Front street now presents a far different aspect to that of former years, where at one time the sides of the street resembled picket fences, and great improvement is noticeable and the pole construction has been reduced 30 per cent.

With this as a beginning, the four leading utility companies of the city, viz.: The Portland, Railway, Light & Power Company, Northwestern Electric Company, Pacific Telephone & Telegraph Company and the Home Telephone Company formed what is known as the joint pole committee, which now has charge of all new construction involving the installation of poles. The committee has a secretary and an office in the Electric Building and in its last report to this department, dated December 6, 1915, states that arrangements had been made at that time for the joint use and ownership of 3,071 poles. Two thousand, eight hundred and nineteen of these poles are used by two companies, 231 are used by three companies and 21 by four companies.

No new poles or pole lines are now erected until the possibility of joint ownership of existing poles or of erection of poles to serve the purposes of more than one party has been considered, and since this policy has stopped the erection of duplicate lines of new poles it is expected that in time the entire number of poles on the streets will be reduced to the number indispensable for the various services. Not only is this gratifying from the utilitarian viewpoint, but it is especially pleasing to those people who are actively engaged in furthering the city beautiful movement.

## MOTOR BUS INSPECTION.

Under the authority and by direction of Ordinances numbered 30,315 and 30,578 as amended, a motor bus inspector was appointed January 23rd, 1915, and served the city to and including September 30th, 1915. At various times during this period the legality of the ordinances was questioned and the exact authority and power of the City not established. About September 30th it appeared that a definite conclusion as to the legality of the ordinance would not be arrived at in the near future. The services of the inspector were therefore dispensed with.

During his employment 468 chauffeurs were examined as to their qualifications for driving a public service motor bus conveyance. Of this number 19 were refused permits to drive on account of incompetence evidenced in various ways. Four hundred and twenty-two cars were examined and permission to operate refused to six.

Many chauffeurs as well as cars required two or more examinations. The number of chauffeurs and cars, therefore, does not represent the total of examinations.

As indicated heretofore, the authority of the city was in question during this period and a strict enforcement was not possible, but the efforts of the city, together with the willing co-operation of a large majority of car owners and drivers made it possible to render very material service to the traveling public by providing safe conveyances and drivers as well as a somewhat regular routing and time of operation of cars. The general result, even under adverse conditions, clearly evidenced the desirability of regulation of such service. At this time the litigation is not yet concluded, but it is expected that the authority of the city will be determined in the near future.

## MOTOR BUS INSPECTION

Appropriation .....	\$ 850.00
Expenditures (Personal Service).....	326.67
Balance on hand .....	\$ 523.33
Stationery and Supplies Appropriation.....	\$ 100.00
Stationery and Supplies Expenditures.....	34.58
Stationery and Supplies Balance.....	\$ 65.42



(11)

ANNUAL REPORT  
OF  
THE DEPARTMENT OF  
FINANCE

---

FOR THE FISCAL YEAR ENDING  
NOVEMBER 30, 1915



## DEPARTMENT OF FINANCE

C. A. BIGELOW  
COMMISSIONER

### BUREAU OF PURCHASES—

J. R. WOOD, Purchasing Agent

### OFFICE OF CITY TREASURER—

WM. ADAMS, City Treasurer

### BUREAU OF PUBLIC MARKETS—

J. A. EASTMAN, Market Master

### BUREAU OF LICENSES—

J. S. HUTCHINSON, Inspector of Licenses

## ANNUAL REPORT OF BUREAU OF PURCHASES.

During the past year the Bureau of Purchases has maintained its reputation among the business houses of the city in close buying and fair dealing with all concerned. Bids on all commodities purchased have been opened and tabulated in a systematic manner on specifications prepared by the bureaus interested. Centralization of purchasing all supplies and its co-ordinate functions as bill control, etc., has enabled this bureau to save money for the taxpayers, and has made it easier and cheaper for the business houses interested to deal with the city.

In the purchase of supplies and material, many instances of savings made can be shown. After a great deal of effort the printed forms used by the city and the quantities required on each by the different bureaus were compiled and put up for bidding. Keen competition was obtained among twenty-six bidders. The contract was let to the lowest bidder for one year at prices as low or lower than similar forms had ever been printed before, considering the higher cost of material. Since the contract was signed paper prices have been soaring, but the city of course has been protected. In fact, the city is protected for some time by contracts on almost all commodities of which the city is a large user. We were particularly fortunate in our contract for 50,000 gallons of gasoline. During the fall of this year, after considerable jockeying and rejection of bids, a price of  $9\frac{1}{2}$  cents per gallon was obtained, which was 2 cents below the then market price of gasoline. If the market continues to soar as indications at present would indicate, our saving for the coming year will be around \$5,000.

In asking for bids for printing the Electrical Code a combination among the printers was plainly evident, when after the first bids had been rejected and the second opening showed practically the same bidders and the same prices. This bureau advertised the third time for bids, but let it be known that this bureau would send the printing out of town if a reasonable price was not secured. An out of town printing house did actually bid and came within \$5 of getting the business. The low man was \$78 under the first two openings when the combination was evident. At the third opening the bidders numbered five, as against two each the other two times.

In the purchase of ten fire alarm boxes a saving of \$50 each was obtained, due to keen competition between the two companies.

In the matter of the purchase of hay and grain used by the city a saving of \$2,938 was made over prices paid the year before. A part of this saving (\$1,900) was obtained by rejecting the first bids, which seemed high, and re-advertising. Better bids to the extent of \$1,900 were received at the second opening.

We were able to make an especially fine contract for sand, gravel, crushed rock, etc. The saving over the year 1914 was \$1,175 and the saving over prices paid under the councilmanic form of government was approximately \$2,500.

In the matter of the purchase of wheels for steam rollers: If we had purchased from the manufacturer as was generally done under the former administration in similar cases, we would have paid \$500 for the two wheels. As it happened we secured prices from two local foundries and had them made for \$389, a saving of \$111.



A list of forty different kinds of commodities was compiled together with unit prices paid in 1912 and in 1915. A saving of 26 per cent was shown as an average throughout the list. A part of this showing was due to the difference in price paid for articles purchased at retail in small quantities and buying at wholesale in yearly requirements or contract, and part from market conditions.

Many other instances could be cited where savings have been made. In fact, the very existence of a Purchasing Agent in the City Hall means to the vendor that competition will always be keen and now, price and quality will always get the business.

J. R. WOOD,  
Purchasing Agent.

CITY TREASURER'S REPORT FOR YEAR 1915.

Annual Report of Wm. Adams, City Treasurer, for the year ending November 30, 1915

Balance in Treasury Nov. 30, 1914.....	\$1,504,050.48	\$.....
Balance in New York Nov. 30, 1914.....	12,735.00	.....
Received from all sources.....	8,367,511.39	.....
Disbursed .....	.....	8,507,864.66
Balance in Treasury Nov. 30, 1915.....	.....	1,367,752.43
Balance in New York Nov. 30, 1915.....	.....	8,679.78
	<b>\$9,884,296.87</b>	<b>\$9,884,296.87</b>

GENERAL FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 844,060.04
(Credited as follows):		
Receipts—		
General licenses .....		64,009.91
Building permits .....		12,784.95
Dog licenses .....		15,050.00
Milk and cream licenses.....		1,792.50
Vehicle licenses .....		24,991.70
Fines Municipal court.....		28,158.20
Public Market.....		5,893.55
Miscellaneous costs .....		864.58
Pound fees .....		1,451.35
Prints .....		367.89
Sidewalk permits .....		950.50
Certified copies .....		143.40
Liquor licenses .....		291,213.50
Repair of sidewalks .....		12,740.16
City charters .....		18.80
Removing earth .....		785.41
Interest on street extensions.....		34.71
Solicitor's badges .....		173.35
Rental, Hawthorne Avenue bridge.....		19,416.09
Rental, Morrison bridge.....		13,264.95
Rental, Burnside bridge .....		5,550.99
Rental, Steel bridge .....		2,426.13
Rental, Broadway bridge .....		12,067.41
Franchise, Southern Pacific Co.....		2,525.00
Franchise, Oregon Electric Ry. Co.....		1,285.00
Franchise, United Railway Co.....		2,200.00
Franchise, Portland Ry. L. & P. Co.....		11,972.00
Franchise, Spokane, Port. & Seattle Ry. Co.....		500.00
Franchise, Northwestern Electric Co.....		7,338.40
Franchise, O.-W. R. & N. Co.....		200.00
Franchise, Central Heating Co.....		50.00
Franchise, Portland Central Heating Co.....		5.00
Franchise, Home Telephone & Telegraph Co.....		3,378.93
Franchise, Pacific Tel. & Tel. Co.....		1,000.00
Franchise, Mt. Hood Ry. Co.....		2,000.00
Taxes sundry years, J. M. Lewis, Co. Treas.....		99.52
Merchants Nat. Bank, int. Cert. of Deposit.....		3,000.00
Damage to cart, Boyce Auto Co.....		4.75
Refund, Portland Gas & Coke Co.....		9.70
Refund, Car tickets, J. H. Knowies.....		4.00
Comfort station .....		248.99
Birth and death certificates.....		154.65
Play grounds .....		2.50
Storage of launch "Doc Yak".....		2.50
Multnomah Co. resurfacing roadway.....		150.00
Multnomah Co. for steel.....		31.50
Port. Ry. L. & P. Co., use of streets.....		60.00
Junk sold .....		340.85
Dividend, Percy & Strickler.....		.38
Repairs, Union Avenue bridge.....		677.85
Refund, Steel bridge, O.-W. R. & N. Co.....		119.35
Refund, insurance premium.....		912.34



## DEPARTMENT OF FINANCE

## GENERAL FUND—Continued

O.-W. R. & N. Co., use of streets.....	\$.....	\$ 51.00
Canary birds sold.....		2.50
Jitney bus receipts.....		7.75
Survey work.....		19.80
Auction of three skiffs.....		6.00
Compression tests.....		82.75
Fines, Circuit Court.....		716.70
Rebate Ford auto.....		60.54
Rolling.....		\$91.62
Flushing.....		15.68
Repairs, stone pavement.....		423.93
Sale of old iron.....		143.16
A. A. Beckstrom, concession Sellwood Park.		250.00
Com'n on telephones, City Hall.....		10.71
Refund W. P. LaRoche, Barton vs. City.....		.13
Interest on warrants.....	1,235.79	
Premium on bonds.....	47,000.42	
License tags.....	7.25	
Warrants held by City.....	7.85	
Sale of metal life boat.....	17.00	
Repairs, private sewer.....	12.17	
Tractor repairs.....	57.73	
Damage to flusher.....	5.34	
Market sheds.....	3,891.00	
Right of way.....	3,015.22	
Photographic service.....	8.30	
Damage to truck.....	10.32	
Damage to sprinkler.....	65.00	
Witness fees, R. C. Flanders.....	1.60	
Witness fees, L. E. Burdick.....	12.40	
Witness fees, Wm. Adams.....	2.10	
Witness fees, H. R. Albee.....	4.20	
Witness fees, W. H. Daly.....	2.10	
Witness fees, W. L. Brewster.....	2.10	
Witness fees, C. A. Bigelow.....	2.10	
Witness fees, C. H. Smith.....	2.00	
Witness fees, S. Grutze.....	2.10	
Witness fees, Mrs. E. L. Caldwell.....	1.60	
Witness fees, A. L. Barbur.....	2.10	
Contractor penalties.....	455.00	
Refund of postage.....	.60	
W. J. Donovan, jury fees.....	74.60	
Damage to sweeping cart.....	9.35	
Repairs of railing, Hawthorne Ave. bridge.....	26.31	
Taxes, John M. Lewis, Co. Treas.....	1,619,923.03	
Costs engineering, A. L. Barbur, Auditor.....	63,611.36	
Interest on daily balances.....	12,795.07	
Driveway permits.....	81.50	
Registration electrical contractors.....	1,900.00	
Grading permits.....	140.00	
Plumbing permits.....	2.00	
Taxes, St. Johns.....	11,485.37	
Taxes, Linnton.....	10,715.42	
Canoe sold, J. R. Wood, Purch. agent.....	19.50	
Railing sold, J. R. Wood, Purch. agent.....	182.00	
Police horses sold, J. R. Wood, Purch. agent.....	342.50	
Horses, wagon and harness sold, J. R. Wood.....	550.00	
Repairing roadway.....	201.08	
Replacing sign.....	.20	
Removing nuisance, weeds, etc.....	1,090.73	
Refund, Warren Construction Co.....	93.67	
Refund, tax, Com'n of Public Docks.....	72.32	
Stationery, Com'n of Public Docks.....	629.96	
Sale of rock.....	163.82	
Refund, Standard Oil Co.....	24.00	
Grappling.....	63.50	
Appeals, building inspector.....	60.00	
Jefferson Street levee.....	3,849.96	
Sale of sacks.....	2,055.98	

## OFFICE OF CITY TREASURER

## GENERAL FUND—Continued

Transfer liquor license.....	\$.....	\$ 140.00
Dominico Frisis lease.....		10.00
Use of patrol boat.....		5.00
Sale of anti toxin.....		120.25
Damage to police auto, S. P. Co.....		661.75
Refund, expressage on plants.....		10.03
Refund, Goodyear Rubber Co.....		2.52
Refund, Telegram.....		2.21
Refund, Ambrose appeal.....		5.00
Refund, Dr. Marcellus expense money.....		12.05
Multnomah Co. account Liberty Bell.....		125.00
Sale of Guinea pigs.....		23.50
Damage to hose.....		4.44
Wallace McCamant, account Liberty Bell.....		144.25
Refund, Claim No. 29906.....		.10
Refund, Material.....		1.80
Bill board permits.....		79.50
Sale of wood by city.....		13,720.70
Sale of wood by Employment committee.....		20.75
Vending machine.....		2.46
Park concession, Mrs. Burnett.....		1,300.00
Park concession, Mr. Bailey.....		275.00
Lease of Bik 132, Gerlinger Motor Car Co.....		25.00
Sale of Asphalt machine.....		10.50
Outstanding checks cancelled.....		11.92
Park concession, Mr. Ross.....		20.00
Wood sold, city of St. Johns.....		1,312.95
Refund, Employment commission.....		1,108.05
General fund, Linnton.....		1,239.87
General fund, St. Johns.....		3,075.28
Franchise, Dennison, St. Johns.....		1.00
Rounding corners.....		10.00
Oiling Country Club track.....		20.00
Sale of curb irons.....		1.00
Prize money, Panama-Pacific Exposition.....		100.00
Donation, ship Success, Capt. Speier.....		20.00
Map.....		.45
Spraying trees.....		3.00
Fence at gravel pit.....		22.95
Connecting house laterals.....		12.90
Towage and storage of launch.....		2.50
Refund, Paul Keyser.....		.83
Cedar log sold.....		13.25
Refund, Ford Motor Car Co.....		350.00
Use of car, C. E. Atlas.....		4.32
Electric Codes.....		22.52
Drawings.....		2.20
Refund, J. R. Wood, Ord. No. 11962.....		4.87
Redemption of property.....		3.11
Repairs to dock.....		100.00
Safety First signs.....		10.60
Recording permits.....		12.30
Cleaning sewers.....		16.23
Repair of sidewalk, Atwood.....		6.52
Laurelhurst Park, repairs to trees.....		51.00
Miscellaneous collections, chief of police.....		115.81
Removing dead animals.....		19.00
Hospital service.....		3.00
Refund, Firestone Rubber Co.....		5.60
Refund, Portland Gas Co.....		11.15
School District No. 1, signs.....		117.29
Refund salary, C. P. Leehan.....		44.52
Damage to sweeper.....		19.50
Northwestern Nat. Bank, int. Cert. of Dep.....		1,500.00
Autos sold.....		670.00
Dividend Chicago market.....		.30
Library Association, storage on car.....		19.47
Kenel license.....		5.00
Premium on Linnton improvement bonds.....		436.65
Interest on Linnton improvement bonds.....		44.06



GENERAL FUND—Continued

Interest on street extension bonds.....	\$.....	\$ 161.81
Transferred from 1915 tax fund.....	2,048.70	
Transferred from Fire department fund.....	107.90	
Transferred from police department fund.....	44.27	
Transferred from street repair fund.....	209.44	
Transferred from park fund.....	78.42	
Transferred from St. Clean'g & Sprink. fund.....	26.15	
Transferred from public auditorium fund.....	15.08	
Transferred from water fund.....	6,561.37	
Transferred from maintenance fund Linnton.....	5.93	
Transferred from special bridge fund.....	409.44	
Transferred from sewer fund.....	27.70	
Transferred from 1st ext. water fd. Linnton.....	797.53	
Transferred from Broadway bridge.....	23.96	
Transferred to—		
Street improvement fund.....	1,305.03	
Sewer fund.....	1,966.40	
Street and sewer interest fund.....	6,500.00	
Water fund.....	2,566.30	
Redemption fund.....	70.17	
Improvement bond sinking fund.....	6,465.62	
Improvement bond interest fund.....	82,607.93	
Special bridge fund.....	26.77	
Broadway bridge fund.....	1,182.00	
Park and Boulevard fund.....	356.25	
Runners and solicitors badges redeemed.....	52.50	
Crematory bonds redeemed and returned.....	10,800.00	
Crematory bonds interest coupons returned.....	3,675.00	
Warrants paid and returned.....	2,550,140.41	
Balance.....	555,233.27	
	<b>\$3,222,947.65</b>	<b>\$3,222,947.65</b>

FIRE DEPARTMENT FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 107.90
Transferred to General fund.....	107.90	
	<b>\$ 107.90</b>	<b>\$ 107.90</b>

POLICE DEPARTMENT FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 44.27
Transferred to General fund.....	44.27	
	<b>\$ 44.27</b>	<b>\$ 44.27</b>

STREET REPAIR FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 209.44
Transferred to General fund.....	209.44	
	<b>\$ 209.44</b>	<b>\$ 209.44</b>

BONDED INDEBTEDNESS INTEREST FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 105,448.83
Received taxes John M. Lewis, Co. Treas.....	316,272.12	
Received transfer from 1915 tax fund.....	401.20	
Received refund error in warrant.....	.....	.....90
Interest coupons paid and returned.....	280,220.00	
Transferred to Chemical National Bank.....	33,400.00	
Transferred to Harris-Forbes & Co.....	3,000.00	
Transferred to Hanover National Bank.....	180.00	
Warrants paid and returned.....	129.40	
Balance.....	105,193.65	
	<b>\$ 422,123.05</b>	<b>\$ 422,123.05</b>

BONDED INDEBTEDNESS INTEREST FUND  
NEW YORK ACCOUNT

Balance Chase National Bank Nov. 30, 1914.....	\$.....	\$ 150.00
Balance Harris-Forbes & Co.....	7,530.00	
Balance Chemical National Bank.....	5,055.00	
Transferred to Chase National Bank.....	3,000.00	
Transferred to Harris-Forbes & Co.....	15,000.00	
Transferred to Chemical National Bank.....	33,400.00	
Transferred to Hanover National Bank.....	180.00	
Interest coupons paid Chase National Bank.....	3,060.00	
Interest coupons paid Harris-Forbes & Co.....	21,960.00	
Interest coupons paid Chemical National Bank.....	33,980.00	
Balance Chase National Bank.....	90.00	
Balance Harris-Forbes & Co.....	570.00	
Balance Chemical National Bank.....	4,475.00	
Balance Hanover National Bank.....	180.00	
	<b>\$ 64,315.00</b>	<b>\$ 64,315.00</b>

LIBRARY FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 40.59
Received taxes John M. Lewis, Co. Treas.....	9.54	
Warrants paid and returned.....	40.59	
Balance.....	9.54	
	<b>\$ 50.13</b>	<b>\$ 50.13</b>

PARK FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 78.42
Transferred to General fund.....	78.42	
	<b>\$ 78.42</b>	<b>\$ 78.42</b>

STREET CLEANING AND SPRINKLING FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 26.15
Transferred to General fund.....	26.15	
	<b>\$ 26.15</b>	<b>\$ 26.15</b>



PARK AND BOULEVARD FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 9,134.67
Received refund .....	.....	.22
Transferred from General fund.....	.....	356.25
Warrants paid and returned.....	7,144.39	.....
Balance .....	2,346.75	.....
	\$ 9,491.14	\$ 9,491.14

WATER FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 58,240.06
Receipts—		
Collections, use of water.....		708,340.30
Sale of bonds \$135,000 at 95 cents.....		128,250.00
Sale of bonds \$460,000 at .9403261.....		432,550.00
Accrued interest on bonds 23 days at 4%.....		1,175.56
Interest on daily balances.....		6,050.19
Refund Eccles and Smith.....		3.20
Repair of water main.....		917.07
Repair of water meters.....		92.60
Moving hydrant.....		127.80
City Atty LaRoche, acc't Schaw-Balcher Co.		503.65
Refund warrant.....		1.00
For work at Oregon City.....		42.65
For resetting fountain.....		18.65
For motor car repairs.....		5.00
For inspecting main.....		64.00
Town of Linnton.....		220.00
Rent.....		125.00
Old iron.....		5,641.68
Transferred from—		
General fund.....		2,566.30
First extension water main, Linnton.....		5,251.75
Linnton water fund.....		41.14
Transferred to—		
Improvement Bond Sinking Fund.....	181,861.21	.....
General fund.....	6,561.37	.....
Chase National Bank.....	3,000.00	.....
Harris-Forbes & Co.....	12,000.00	.....
National Park Bank (Linnton).....	4,345.00	.....
Interest coupons paid and returned.....	291,032.50	.....
Warrants paid and returned.....	715,251.84	.....
Balance .....	136,175.68	.....
	\$1,350,227.60	\$1,350,227.60

BILL DISTRIBUTOR'S BADGE FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 218.00
Received for badges.....	.....	76.00
Badges redeemed and returned.....	53.00	.....
Balance .....	241.00	.....
	\$ 294.00	\$ 294.00

IMPROVEMENT BOND SINKING FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 203,608.49
Received sundry collections.....	.....	1,367,690.35
Received sale of bonds held by city.....	.....	652,542.81
Received transfer from Water fund.....	.....	181,861.21
Received transfer from General fund.....	.....	6,465.62
Bonds redeemed and returned.....	2,210,519.55	.....
Transferred to redemption fund.....	166.67	.....
Warrants paid and returned.....	1,058.13	.....
Charged off Ordinance No. 31096.....	42.07	.....
Balance .....	200,382.06	.....
	\$2,412,168.48	\$2,412,168.48

IMPROVEMENT BOND INTEREST FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 39,711.47
Received sundry collections.....	.....	646,542.92
Received interest on daily balances.....	.....	5,670.25
Received interest on bonds held by city.....	.....	20,306.05
Transferred to St. Johns imp't bond int. acc't..	.....	317.27
Received transfer from General fund.....	.....	82,607.93
Received transfer from Rice interest fund.....	.....	150.00
Transferred to National Park Bank.....	6,428.41	.....
Warrants paid and returned.....	369.61	.....
Charged off Ordinance No. 31096.....	17.67	.....
Interest coupons paid and returned.....	778,736.62	.....
Balance .....	9,753.58	.....
	\$ 795,305.89	\$ 795,305.89

MT. HOOD RAILWAY & POWER CO.  
ORDINANCE NO. 22989

Balance per report Nov. 30, 1914.....	\$.....	\$ 3,000.00
Warrants paid and returned.....	2,000.00	.....
Balance .....	1,000.00	.....
	\$ 3,000.00	\$ 3,000.00

MT. HOOD RAILWAY & POWER CO.  
PERMANENT REPAIR FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 1,000.00
Balance .....	1,000.00	.....
	\$ 1,000.00	\$ 1,000.00

FIRE BOAT AND FIRE MAIN FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 108.03
Balance .....	108.03	.....
	\$ 108.03	\$ 108.03

BROADWAY BRIDGE FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 5,133.55
Transferred from General fund.....	.....	1,182.00
Transferred to Special Bridge fund.....	20.49	.....
Transferred to General fund.....	23.96	.....
Warrants paid and returned.....	195.91	.....
Balance .....	6,075.19	.....
	\$ 6,315.55	\$ 6,315.55



## WATER BOND SINKING FUND

Balance per report Nov. 30, 1914.....	\$ .....	\$ 136,410.87
Received collections .....	.....	143,880.00
Received Crematory bonds redeemed.....	.....	5,000.00
Received interest on bonds.....	.....	43,980.00
Warrants paid and returned.....	128,250.00	.....
Balance .....	210,020.87	.....
	<u>\$ 329,270.87</u>	<u>\$ 329,270.87</u>

## WATER FUND BOND ACCOUNT

Balance per report Nov. 30, 1914.....	\$ .....	\$ 22.95
Balance .....	22.95	.....
	<u>\$ 22.95</u>	<u>\$ 22.95</u>

## BONDED INDEBTEDNESS SINKING FUND

Balance per report Nov. 30, 1914.....	\$ .....	\$ 644.74
Received interest on bonds.....	.....	180.00
Balance .....	824.74	.....
	<u>\$ 824.74</u>	<u>\$ 824.74</u>

## POLICE AND FIRE DEPARTMENT RELIEF FUND

Balance per report Nov. 30, 1914.....	\$ .....	\$ 25.35
Balance .....	25.35	.....
	<u>\$ 25.35</u>	<u>\$ 25.35</u>

## SPECIAL 1916 TAX FUND

Received taxes John M. Lewis, Co. Treas.....	\$ .....	\$ 2,292.25
Received interest on daily balances.....	.....	10.96
Balance .....	2,303.21	.....
	<u>\$ 2,303.21</u>	<u>\$ 2,303.21</u>

## SPECIAL BRIDGE FUND

Balance per report Nov. 30, 1914.....	\$ .....	\$ 3,669.93
Received taxes John M. Lewis, Co. Treas.....	.....	26,057.16
Received transfer 1915 Tax fund.....	.....	33.85
Received refund warrant.....	.....	.01
Received transfer from General fund.....	.....	26.77
Received transfer from Broadway bridge fund..	.....	20.49
Transferred to General fund.....	409.44	.....
Warrants paid and returned.....	7,475.07	.....
Balance .....	21,923.70	.....
	<u>\$ 29,808.21</u>	<u>\$ 29,808.21</u>

## REDEMPTION FUND

Balance per report Nov. 30, 1914.....	\$ .....	\$ 1,243.32
Received collections .....	.....	16,548.39
Received transfer from General fund.....	.....	70.17
Received transfer from Street Extension fund..	.....	100.00
Received transfer from imp't bond sinking fund	.....	166.67
Received transfer from Sewer fund.....	.....	13.02
Warrants paid and returned.....	17,140.38	.....
Balance .....	1,001.19	.....
	<u>\$ 18,141.57</u>	<u>\$ 18,141.57</u>

## PUBLIC AUDITORIUM FUND

Balance per report Nov. 30, 1914.....	\$ .....	\$ 24,584.49
Received interest on daily balances.....	.....	403.66
Transferred to General fund.....	15.08	.....
Warrants paid and returned.....	10,300.00	.....
Balance .....	14,673.07	.....
	<u>\$ 24,988.15</u>	<u>\$ 24,988.15</u>

## STREET EXTENSION BOND SINKING FUND

Balance per report Nov. 30, 1914.....	\$ .....	\$ 390.54
Received assessments .....	.....	918.24
Balance .....	1,308.78	.....
	<u>\$ 1,308.78</u>	<u>\$ 1,308.78</u>

## STREET EXTENSION BOND INTEREST FUND

Balance per report Nov. 30, 1914.....	\$ .....	\$ 34.02
Received sundry collections.....	.....	311.59
Interest coupons paid and returned.....	321.53	.....
Balance .....	24.08	.....
	<u>\$ 345.61</u>	<u>\$ 345.61</u>

## SINKING FUND

Balance per report Nov. 30, 1914.....	\$ .....	\$ 11,094.39
Received taxes John M. Lewis, Co. Treas.....	.....	121,344.84
Received transfer from 1915 Tax fund.....	.....	153.86
Received transfer from St. Johns City Hall fund	.....	150.07
Received crematory bonds redeemed and ret'd..	.....	5,800.00
Received interest on Crematory bonds.....	.....	1,160.00
Received interest on Water bonds.....	.....	11,075.00
Received interest on Imp't and Street Extension	.....	14,872.25
bonds .....	.....	560.54
Received interest on daily balances.....	.....	.....
Warrants paid and returned.....	136,512.09	.....
Balance .....	29,698.86	.....
	<u>\$ 166,210.95</u>	<u>\$ 166,210.95</u>



## POLICE RELIEF FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 3,201.45
Received sundry collections .....	.....	1,805.00
Received bonds redeemed.....	.....	500.00
Received interest on bonds.....	.....	452.88
Received souvenir band .....	.....	500.00
Received donations .....	.....	50.00
Received interest on daily balances.....	.....	81.11
Warrants paid and returned.....	1,621.20	.....
Balance .....	4,969.24	.....
	\$ 6,590.44	\$ 6,590.44

## STARK STREET EXTENSION FUND

Received collections .....	\$.....	\$ 500.00
Balance .....	500.00	.....
	\$ 500.00	\$ 500.00

## STREET IMPROVEMENT FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 25,494.91
Received sundry collections .....	.....	1,058,384.35
Transferred from General fund.....	.....	1,305.03
Warrants paid and returned.....	1,056,763.99	.....
Balance .....	28,420.30	.....
	\$1,085,184.29	\$1,085,184.29

## SEWER FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 12,370.96
Received sundry collections .....	.....	212,139.71
Transferred from General fund.....	.....	1,966.40
Transferred to Redemption fund.....	13.02	.....
Transferred to General fund.....	27.70	.....
Warrants paid and returned.....	214,233.67	.....
Balance .....	12,202.68	.....
	\$ 226,477.07	\$ 266,477.07

## STREET EXTENSION FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 6,174.54
Received sundry collections .....	.....	12,576.38
Transferred to Redemption fund.....	100.00	.....
Warrants paid and returned.....	3,867.72	.....
Balance .....	14,783.20	.....
	\$ 18,750.92	\$ 18,750.92

## STREET AND SEWER INTEREST FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 875.42
Interest on assessments.....	.....	5,806.56
Transferred from General fund.....	.....	6,500.00
St. Johns Street and Sewer Interest fund.....	.....	11.16
Interest paid on warrants.....	12,298.33	.....
Warrants paid and returned.....	5.77	.....
Balance .....	889.04	.....
	\$ 13,193.14	\$ 13,193.14

## WATER MAIN FUND

Balance per report Nov. 30, 1914.....	\$.....	\$ 4,762.08
Received collections .....	.....	76.90
Balance .....	4,838.98	.....
	\$ 4,838.98	\$ 4,838.98

## LINNTON WATER FUND

Received Town of Linnton.....	\$.....	\$ 25.24
Received collections.....	.....	15.90
Transferred to Water fund.....	41.14	.....
	\$ 41.14	\$ 41.14

IMPROVEMENT BOND INTEREST FUND, NEW YORK ACCOUNT  
NATIONAL PARK BANK

Transfer from Imp't Bond Interest fund.....	\$.....	\$ 7,168.16
Interest coupons paid and returned .....	4,800.88	.....
Balance .....	2,367.28	.....
	\$ 7,168.16	\$ 7,168.16

## STREET AND SEWER INTEREST FUND—ST. JOHNS

Received from City of St. Johns.....	\$.....	\$ 11.16
Transfer to Street and Sewer Interest fund.....	11.16	.....
	\$ 11.16	\$ 11.16

NATIONAL PARK BANK, NEW YORK  
ACCOUNT LINNTON WATER BONDS

Transferred from Water fund.....	\$.....	\$ 4,345.00
Coupons paid and returned.....	3,547.50	.....
Balance .....	797.50	.....
	\$ 4,345.00	\$ 4,345.00

## IMPROVEMENT BOND SINKING FUND—ST. JOHNS

Received from City of St. Johns.....	\$.....	\$ 8,706.89
Received collections .....	.....	1,281.71
Balance .....	9,988.60	.....
	\$ 9,988.60	\$ 9,988.60

## IMPROVEMENT BOND INTEREST FUND—ST. JOHNS

Received from City of St. Johns.....	\$.....	\$ 1,057.02
Received premium on bonds.....	.....	896.66
Received interest on bonds.....	.....	90.49
Transferred to National Park Bank.....	739.75	.....
Transferred to Imp't Bond Interest fund.....	317.27	.....
Balance .....	987.15	.....
	\$ 2,044.17	\$ 2,044.17



CITY HALL FUND—ST. JOHNS

Received from City of St. Johns.....	\$.....	\$ 150.07
Transferred to Sinking fund.....	150.07	.....
	\$ 150.07	\$ 150.07

RICE INTEREST FUND—ST. JOHNS

Received from City of St. Johns.....	\$.....	\$ 150.00
Transferred to Improvement and Bond Int. fund.....	150.00	.....
	\$ 150.00	\$ 150.00

MAINTENANCE FUND—LINNTON

Received from Town of Linnton.....	\$.....	\$ 5.93
Transferred to General fund.....	5.93	.....
	\$ 5.93	\$ 5.93

FIRST EXTENSION WATER FUND—LINNTON

Received from Town of Linnton.....	\$.....	\$ 6,049.28
Transferred to General fund.....	797.53	.....
Transferred to Water fund.....	5,251.75	.....
	\$ 6,049.28	\$ 6,049.28

IMPROVEMENT BOND SINKING AND INTEREST FUND

Received collections .....	\$.....	\$ 21.12
Balance .....	21.12	.....
	\$ 21.12	\$ 21.12

IMPROVEMENT BOND SINKING FUND—LINNTON

Received assessments .....	\$.....	\$ 6.57
Balance .....	6.57	.....
	\$ 6.57	\$ 6.57

1915 TAX FUND

Balance .....	\$.....	\$ 2,880.61
Received interest on deposit.....	.....	4.34
Transferred to General fund.....	2,048.70	.....
Transferred to Bonded Indebtedness Int. fund..	401.20	.....
Transferred to Sinking fund.....	153.86	.....
Transferred to Special bridge fund.....	33.85	.....
Warrants paid and returned.....	247.34	.....
	\$ 2,884.95	\$ 2,884.95

SUMMARY

Balance in treasury Nov. 30, 1915.....	\$1,367,752.43	\$.....
Balance in New York.....	8,679.78	.....
Credited as follows:		
General fund .....	.....	555,233.27
Bonded Indebtedness Interest fund.....	.....	105,193.65
Chase National Bank, New York.....	.....	90.00
Harris-Forbes & Co.....	.....	570.00
Chemical National Bank.....	.....	4,475.00
Hanover National Bank.....	.....	180.00
Imp't bond int. acc't Nat. Park Bank, New York	.....	2,367.28
Linnton Water acc't National Park bank, N. Y.	.....	797.50
Library fund .....	.....	9.54
Water fund .....	.....	136,175.68
Improvement Bond Sinking fund.....	.....	200,382.06
Improvement Bond Interest fund.....	.....	9,753.58
Park and Boulevard fund.....	.....	2,346.75
Mt. Hood Ry. & Power Co., Ordinance No. 22989	.....	1,000.00
Mt. Hood Ry. & Power Co., permanent repair fd.	.....	1,000.00
Bill Distributors Badge fund.....	.....	241.00
Fire Boat and Fire Main fund.....	.....	108.03
Broadway Bridge fund.....	.....	6,075.19
Water Bond Sinking fund.....	.....	201,020.87
Water Bond bond account.....	.....	22.95
Bonded Indebtedness Sinking fund.....	.....	824.74
Special Bridge fund.....	.....	21,923.70
Police Relief fund.....	.....	25.35
Redemption fund .....	.....	1,001.19
Special 1916 Tax fund.....	.....	2,303.21
Public Auditorium fund .....	.....	14,673.07
Street Extension Bond Sinking fund.....	.....	1,308.78
Street Extension Bond Interest fund.....	.....	24.08
Sinking fund .....	.....	29,698.86
Police Relief and Pension fund.....	.....	4,969.24
Stark Street Extension fund.....	.....	500.00
Street Improvement fund.....	.....	28,420.30
Sewer fund .....	.....	12,202.68
Street Extension fund.....	.....	14,783.20
Street and Sewer Interest fund.....	.....	889.04
Water Main fund .....	.....	4,838.98
Improvement Bond Sinking and Interest fund...	.....	21.12
Improvement Bond Sinking fund, St. Johns.....	.....	9,988.60
Improvement Bond Interest fund, St. Johns.....	.....	987.15
Improvement Bond Sinking fund, Linnton.....	.....	6.57
	\$1,376,432.21	\$1,376,432.21

Respectfully submitted,

WM. ADAMS,  
City Treasurer.

December 14, 1915.



ANNUAL REPORT  
OF  
THE OFFICE OF THE  
CITY AUDITOR

---

FOR THE FISCAL YEAR ENDING  
NOVEMBER 30, 1915



ANNUAL REPORT OF A. L. BARBUR, AUDITOR OF THE CITY OF PORTLAND, FOR THE YEAR ENDING NOVEMBER 30, 1915

	Balance Dec. 1, 1914	Received by Transfer	Receipts	Disbursements	Disbursed by Transfer	Balance Nov. 30, 1915	Warrants Outstanding Dec. 1, 1914	Warrants Drawn	Warrants Paid	Warrants Outstanding Nov. 30, 1915	Warrants Cancelled
1. General Fund.....	\$ 844,060.04	\$ 10,355.89	\$ 2,368,531.72	\$ 2,564,667.91	\$ 103,046.47	\$ 555,233.27	209,058.84	2,529,375.73	2,550,140.41	183,257.94	5,036.22
2. Fire Department Fund.....	107.90				107.90						
3. Police Department Fund.....	44.27				44.27						
4. Bonded Indebtedness Interest Fund.....	105,448.83	401.20	316,273.02	280,349.40	36,580.00	105,193.65		129.40	129.40		
5. Chemical National Bank, N. Y.....	5,055.00	33,400.00		33,980.00		4,475.00					
6. Harris, Forbes & Co., N. Y.....	1,620.00	3,000.00		4,320.00		300.00					
7. Hanover National Bank, N. Y.....		180.00				180.00					
8. Street Repair Fund.....	209.44				209.44						
9. Public Library Fund.....	40.59		9.54	40.59		9.54	40.59		40.59		
10. Park Fund.....	78.42				78.42						
11. Special Bridge Fund.....	3,669.93	81.11	26,057.17	7,475.07	409.44	21,923.70	583.83	7,435.24	7,475.07	544.00	
12. Sinking Fund.....	11,094.39	303.93	154,812.63	136,512.09		29,698.86		136,512.09	136,512.09		
13. Street Cleaning and Sprinkling Fund.....	26.15				26.15						
14. Water Fund.....	58,235.61	7,859.19	1,284,132.80	1,006,284.34	207,767.58	136,175.68	36,944.52	706,133.33	715,251.84	27,682.86	143.15
*15. Chase National Bank, N. Y.....	150.00	3,000.00		3,000.00		90.00					
*16. Harris, Forbes & Co., N. Y.....	5,910.00	12,000.00		17,640.00		270.00					
*17. National Park Bank, N. Y.....		4,345.00		3,547.50		797.50					
18. Water Bond Sinking Fund.....	136,410.87		192,860.00	128,250.00		201,020.87		128,250.00	128,250.00		
19. Police and Fire Dept. Relief Fund.....	25.35					25.35	25.35			25.35	
20. Redemption Fund.....	1,243.32	349.86	16,548.39	17,140.38		1,001.19	1,148.18	16,285.74	17,140.38	293.54	
21. Water Fund, Bond Account.....	22.95					22.95				22.95	
22. Park and Boulevard Fund.....	9,134.67	356.25	.22	7,144.39		2,346.75	127.84	7,215.53	7,144.39	198.98	
23. Broadway Bridge Fund.....	5,133.55	1,182.00		195.91	44.45	6,075.19	24.07	195.91	195.91	24.07	
24. Fire Boat and Fire Mains Fund.....	108.03					108.03					
25. Bill Posting Badge Fund.....	218.00		76.00	53.00		241.00					
a26. Mt. Hood Ry. & Power Co. Deposit Fund.....	3,000.00			2,000.00		1,000.00		2,000.00	2,000.00		
b27. Mt. Hood Ry. & Power Co. St. Repair Fund.....	1,000.00					1,000.00					
28. Street Improvement Fund.....	25,494.91	1,305.03	1,058,384.35	1,056,763.99		28,420.30	443,710.84	1,021,772.44	1,056,763.99	338,269.34	70,449.95
29. Sewer Funds.....	12,370.96	1,966.40	212,139.71	214,233.67	40.72	12,202.68	40,910.08	252,296.80	214,233.67	41,605.02	37,368.19
30. Street Extension Funds.....	6,174.54		12,576.38	3,867.72	100.00	14,783.20	4,971.44	2,247.50	3,867.72	2,549.67	801.55
31. Stark Street Extension Fund.....			500.00			500.00					
32. Water Main Funds.....	4,762.08		76.90			4,838.98	6,136.25			6,136.25	
33. Street and Sewer Interest Fund.....	875.42	6,511.16	5,806.56	12,304.10		889.04		5.77	5.77		
34. Improvement Bond Sinking Fund.....	203,608.49	188,326.83	2,020,233.16	2,211,619.75	166.67	200,382.06	257.68	977.05	1,028.13	176.60	
35. Improvement Bond Interest Fund.....	39,711.47	83,075.20	672,519.22	779,123.90	6,428.41	9,753.58	343.11	369.61	369.61	105.87	
c36. National Park Bank, N. Y.....		7,168.16		4,800.88		2,367.28					
37. Imp. Bond Skg. and Imp. Bond Int. Fund.....			21.12			21.12					
38. Bonded Ind. Sinking Fund.....	644.74		180.00			824.74					
39. Special Tax Fund, 1915.....	2,880.61		4.34	247.34	2,637.61			247.34	247.34		
40. Special Tax Fund, 1916.....			2,303.21			2,303.21					
41. Street Extension Bond Sinking Fund.....	390.54		918.24			1,308.78					
42. Street Extension Bond Interest Fund.....	34.02		311.59	321.53		24.08					
43. Public Auditorium Fund.....	24,584.49		403.66	10,300.00	15.08	14,673.07		10,300.00	10,300.00		
44. Police Relief Fund.....	3,201.45		3,388.99	1,621.20		4,969.24	195.79	1,541.39	1,621.20	51.75	64.23
45. Imp. Bond Sinking Fund of St. Johns.....			9,988.60			9,988.60					
46. City Hall Fund of St. Johns.....			150.07			150.07					
47. Interest Coupon Fund of St. Johns.....			150.00			150.00					
48. Street and Sewer Int. Fund of St. Johns.....			11.16			11.16					
49. Imp. Bond Int. Fund of St. Johns.....			2,044.17			987.15					
50. Maintenance Fund, Linnton.....			5.93			5.93					
51. First Extension Fund, Linnton.....			6,049.28			6,049.28					
52. Water Fund, Linnton.....			41.14			41.14					
53. Imp. Bond Sinking Fund, Linnton.....			6.57			6.57					
Totals.....	\$1,516,781.03	365,167.21	\$3,367,515.84	\$3,507,864.66	365,167.21	1,376,432.21	744,290.62	4,823,264.37	4,852,747.51	600,944.19	113,863.29

\*Custodians of funds in New York, to pay interest on Water Bonds.

aAmount deposited as required by Ord. 22989.

bAmount deposited as guarantee that streets disturbed in constructing conduits, will be properly replaced.

cCustodians of funds in New York, to pay interest on St. Johns Bonds.



## GENERAL FUND

Balance December 1, 1914.....	\$.....	\$ 844,060.04
RECEIPTS		
Property taxes:		
Taxes, 1915 .....	1,568,414.28	
Delinquent taxes .....	51,608.27	
St. Johns taxes, 1915.....	11,485.37	
Linnton taxes, 1915.....	10,715.42	1,642,223.34
Interest on deposits:		
Daily balances .....	12,795.07	
Certificate of deposits.....	4,500.00	
Warrants held by City.....	1,235.79	18,530.86
Licenses:		
Liquor .....	291,213.50	
General .....	64,009.91	
Milk and cream.....	1,792.50	
Vehicle .....	24,991.70	
Dog .....	15,050.00	
Kennel .....	5.00	
Registration of electrical contractors.....	1,900.00	
Transfer of liquor licenses.....	140.00	399,102.61
Franchises:		
S. P. & S. Railway.....	500.00	
Southern Pacific Company.....	2,500.00	
Oregon Electric Company.....	1,285.00	
United Railway Company.....	2,200.00	
Portland Railway, Light & Power Company..	11,973.00	
Oregon-Washington R. R. & N. Co.....	251.00	
Central Heating Company.....	50.00	
Home Telephone & Telegraph Company.....	3,378.93	
Pacific Telephone & Telegraph Company....	1,000.00	
Mt. Hood Railway & Power Co., Deposit Fund	2,000.00	
Portland Central Heating Co.....	5.00	
Northwestern Electric Company.....	7,338.40	32,481.33
Use of bridges by Street Railway Company....	.....	52,725.57
Fines and fees:		
Municipal Court .....	28,158.20	
Pound fees .....	1,451.35	
Building permits .....	12,784.95	
Sidewalk permits .....	950.50	
Birth and death certificates.....	154.65	
Driveway permits .....	81.50	
Southern Pacific Company, use of streets...	25.00	
Portland Railway, Light & Power Company,		
use of streets.....	60.00	
Grading permits .....	140.00	
Bill board permits .....	79.50	
Plumbing permits .....	2.00	
Curb iron permits.....	1.00	
Badges .....	173.35	
Receipts from telephone booths.....	10.71	
Receipts from comfort station.....	248.99	
Receipts from public market.....	5,893.55	
Concessions .....	1,845.00	
Appeal from building inspector's decision....	60.00	
Fines, County Clerk.....	716.70	52,836.95
Public improvements:		
Cost engineering, advertising, inspection, etc.	63,611.36	
Premium on bonds.....	47,598.88	
Cost advertising delinquent assessments.....	864.58	
Contractors penalized .....	455.00	
Interest on street extensions.....	34.71	
Rolling streets .....	860.55	
Purchase of right-of-way .....	3,015.22	116,440.30
Sale of personal property and contributions for		
services performed:		
Cutting weeds .....	1,090.73	
Construction of sidewalks.....	12,740.16	
Removing earth .....	785.41	
Certified copies .....	143.40	
Blue prints .....	367.89	



GENERAL FUND—Continued

City charters .....	\$ 18.80	\$.....
Compression tests .....	82.75	
Duplicate license tags .....	7.25	
Public Dock Commission stationery .....	629.96	
Jury fees, W. J. Sovern .....	74.60	
Sale of Electric Codes .....	22.52	
Grappler services .....	68.50	
Sale of St. Johns wood .....	1,812.95	
Sale of City wood .....	13,741.45	
Witness fees:		
R. C. Flanders .....	\$ 1.60	
S. Grutze .....	2.10	
Wm. Adams .....	2.10	
L. E. Burdick .....	12.40	
H. R. Albee .....	4.20	
W. H. Daly .....	2.10	
W. L. Brewster .....	2.10	
C. A. Bigelow .....	2.10	
C. H. Smith .....	2.00	
A. L. Barbur .....	2.10	
Mrs. E. T. Colwell .....	1.60	
Sale of property:		
A. D. Moodie, hook and ladder .....	20.00	
Old skiffs .....	6.00	
Canary bird .....	2.50	
Old horse .....	35.00	
Bride material .....	31.50	
Guinea pigs .....	23.50	
Sacks sold .....	2,055.98	
Antitoxin .....	120.25	
Sale of horses .....	307.50	
Metal life boat .....	17.00	
Asphalt separator .....	10.50	
Old iron .....	143.16	
Morris canoe .....	19.50	
Bridge railing .....	182.00	
Sprinkler wagon, etc. ....	550.00	
Sale of junk .....	320.85	
Crushed rock .....	163.82	
Cedar log .....	13.25	
School signs .....	127.89	
Buick car .....	215.00	
Vellie car .....	275.00	
Ford Runabout .....	180.00	
Repairs to pavements .....	423.93	
Rents and leases:		
Domino Friear, 5th and Arthur .....	10.00	
Storage of launch .....	2.50	
Gerlinger Motor Co., block 132 .....	25.00	
S. P. Co., Jefferson Street levee .....	3,849.96	
Refunds:		
Ford Motor Car Co., mdse. returned .....	60.54	
Warren Construction Co. ....	93.67	
Wells Fargo Co., rebate .....	3.68	
O. R. & N. Co., overpayment Steel bridge .....	119.35	
Goodyear Tire Company .....	2.52	
Great Northern Express Company .....	6.35	
Western Union Telegraph Co. ....	2.21	
J. H. Knowles, car tickets .....	4.00	
Portland Gas & Coke Co. ....	9.70	
W. P. La Roche, Ballin vs. City .....	.13	
Commission of Public Docks, Sylvan taxes .....	72.32	
Citizens Employment Committee .....	1,108.05	
Ambrose Appeal .....	5.00	
M. B. Marcellus, balance appropriation for trip to fair .....	12.05	
W. McCamant, account Liberty Bell .....	1.51	
Enterprising Planing Mill .....	.10	
Covey Motor Car Co., material .....	1.80	
Standard Oil Company .....	24.00	
		31,130.77

GENERAL FUND—Continued

Paul Keyser, adv. money .....	\$ .83	\$.....
Ford Motor Car Co., profit coupons .....	350.00	
Marshall Wells Hardware Co., mdse. returned .....	4.87	
C. P. Leehan, salary .....	44.52	
Portland Gas & Coke Co., discount .....	11.15	
Firestone Tire & Rubber Co. ....	5.60	1,943.95
Refunds of insurance:		
Dooley & Company .....	37.64	
I. L. Webster .....	34.61	
Dunne & Reynolds .....	48.64	
N. W. Rountree .....	34.61	
J. B. Ogden .....	72.76	
J. Pettis .....	55.16	
Carlock & Muellhaupt .....	34.61	
Oregon Home Builders .....	33.21	
R. E. Menefee .....	34.61	
I. L. White .....	56.70	
G. H. Thomas .....	36.03	
Everett & Company .....	50.85	
Ritter, Lowe & DeForrest .....	51.20	
G. L. Story .....	50.85	
Henry Hewitt .....	53.00	
H. P. Jones .....	15.88	
J. H. Corbin .....	30.91	
Callan & Kaser .....	36.32	
F. L. McGuire .....	59.00	
Hartman & Thompson .....	85.75	
Miscellaneous:		
Redecking Union Avenue Bridge .....	66.50	
Damage to cart, Royce Auto Co. ....	4.75	
Donation market sheds .....	3,891.00	
Damage to Sweeper J. D. Gussi .....	9.35	
Damage to bridge, P. R. L. & P. Co. ....	26.31	
Photographic work .....	8.30	
Receipts from playgrounds .....	2.50	
Flushing track, K. Y. Azar .....	15.68	
J. Pittinger, postage on book .....	.60	
U. S. Marshal, use of patrol boat .....	5.00	
Warrant held by City .....	7.85	
S. P. Co., repairs to police auto .....	661.75	
P. R. L. & P. Co., repairs to Union Avenue bridge .....	211.35	
Receipts from jitney bus .....	7.75	
St. Vincent's Hospital, repairs to sewer .....	12.17	
Repairs to tractor .....	57.73	
Multnomah County, resurface road .....	150.00	
Percy & Strickler Co., final dividend .....	.38	
A. Bellerts, damage to truck .....	10.32	
First National Bank, survey work .....	19.80	
P. R. L. & P. Co., damage to sprinkler .....	65.00	
Vending machine .....	2.46	
Nick Krout, damage to Hose .....	4.44	
Linnton General Fund .....	1,239.87	
St. Johns General Fund .....	3,075.28	
P. R. L. & P. Co., damage to flusher .....	5.34	
Multnomah County, account Liberty Bell .....	125.00	
N. P. Terminal, rounding curb corners .....	10.00	
W. McCamant, account Liberty Bell platform .....	142.74	
M. Heller, oiling track .....	20.00	
U. S. National Bank, unclaimed checks .....	11.92	
P. R. L. & P. Co., repairs to Stark street .....	201.08	
Replacing steel sign .....	.20	
Bureau of Health prize money .....	100.00	
Capt. Smith convict ship .....	20.00	
Portland Gas Co., rolling ditches .....	31.07	
Chief of Police, keep of persons, phone, etc. ....	134.81	
Chas. Solomon, repairs to sewer .....	1.10	
Storage of launch .....	2.50	
G. Gordon, constructing laterals .....	12.90	
		912.34



GENERAL FUND—Continued

Recording permits .....	\$ 12.30	\$.....
S., P. & S. Co., repairs to Union Ave. bridge	400.00	
Ira Beeman, drawings.....	2.20	
Spraying trees .....	3.00	
Maps .....	.45	
Redemption of property .....	3.11	
Public Library, storage of car.....	19.47	
Laurelhurst Co., repairs to trees.....	51.00	
Commission of Public Docks, repairs to dock	100.00	
A. R. Atwood, repairs to sidewalk.....	6.52	
C. E. Atlas, use of city car.....	4.32	
Cleaning sewers .....	15.13	
Building fence at gravel pit.....	22.95	
H. Kipper, damage to sweeper.....	19.50	
Hospital service .....	3.00	
Accrued interest on Linnton Bonds.....	44.06	
Chicago Market, final dividend.....	.30	
		11,082.11
Transfers:		\$ 3,212,591.76
Public Auditorium Fund.....	15.08	
Special Tax Fund, 1915.....	2,048.70	
Fire Department Fund.....	107.90	
Police Department Fund.....	44.27	
Street Repair Fund.....	209.44	
Park Fund .....	78.42	
Street Cleaning and Sprinkling Fund.....	26.15	
Water Fund .....	6,561.37	
Broadway Bridge Fund.....	23.96	
Special Bridge Fund.....	409.44	
1st Extension Fund of Linnton.....	797.53	
Maintenance Fund of Linnton.....	5.93	
E. 33rd St. Extension of Sullivan Gulch Sewer	27.10	
Sewer, E. 26th St. at Brazee St.....	.60	
		10,355.89
		\$ 3,222,947.65
<b>DISBURSEMENTS</b>		
Crematory bonds redeemed.....	\$ 10,800.00	
Interest paid on crematory bonds.....	3,675.00	
Hotel runners' badges redeemed.....	52.50	
Transfers:		
Improvement Bond Sinking Fund.....	6,465.62	
Improvement Bond Interest Fund.....	82,607.93	
Street and Sewer Interest Fund.....	6,500.00	
Special Bridge Fund.....	26.77	
Water Fund .....	2,566.30	
Park and Boulevard Fund.....	356.25	
Redemption Fund .....	70.17	
Broadway Bridge Fund .....	1,182.00	
Improvement Skidmore Street, et. al.....	14.19	
Improvement Division Street—East 10th to		
East 41st St.....	70.44	
Improvement East 32nd Street—Division to		
E. Sherman St.....	5.26	
Dist. Improvement Ladd Ave.—Division St. to		
Central Park .....	757.22	
Improvement Karl Street.....	457.92	
Canyon Road Extension of Tanner Creek		
Sewer .....	1,966.40	
Warrants paid and returned.....	2,550,140.41	
		\$ 555,233.27
Balance November 30, 1915.....		\$ 3,222,947.65

FIRE DEPARTMENT FUND

Balance December 1, 1914.....	\$.....	\$ 107.90
Disbursements:		
Transferred to General Fund.....		107.90

POLICE DEPARTMENT FUND

Balance December 1, 1914.....	\$.....	\$ 44.27
Disbursements:		
Transferred to General Fund.....		44.27

STREET REPAIR FUND

Balance December 1, 1914.....	\$.....	\$ 209.44
Disbursements:		
Transferred to General Fund.....		209.44

PARK FUND

Balance December 1, 1914.....	\$.....	\$ 78.42
Disbursements:		
Transferred to General Fund.....		78.42

STREET CLEANING AND SPRINKLING FUND

Balance December 1, 1914.....	\$.....	\$ 26.15
Disbursements:		
Transferred to General Fund.....		26.15

BONDED INDEBTEDNESS INTEREST FUND

Balance December 1, 1914.....	\$ 105,448.83	
Receipts:		
Delinquent taxes .....	9,126.73	
Taxes, 1915 .....	307,145.39	
Excess commission on warrant No. 997.....	.90	
Transferred from Special Tax Fund 1915.....	401.20	\$ 422,123.05
Disbursements:		
Transferred to Chemical Nat'l Bank.....	\$ 33,400.00	
Transferred to Harris, Forbes & Co., New		
York .....	3,000.00	
Transferred to Hanover National Bank.....	180.00	
Interest coupons paid.....	280,220.00	
Warrants paid and returned.....	129.40	
Balance November 30, 1915.....	105,193.65	\$ 422,123.05

APPROPRIATION PAYMENT OF INTEREST

Appropriation .....		\$ 329,653.50
Interest paid and warrants drawn:		
Warrants drawn, commissions.....	\$ 129.40	
Interest coupons paid.....	280,220.00	
Transferred to New York accounts.....	36,580.00	
Deduct miscellaneous credits.....	.90	
Unexpended balance .....	12,725.00	\$ 329,653.50



**GENERAL BONDED INDEBTEDNESS.**

Statement of Interest Coupons Outstanding November 30, 1914, and Due, Paid and Outstanding November 30, 1915.

Name of Bonds	Outstanding Nov. 30, 1914	Due During Year	Paid During Year	Outstanding Nov. 30, 1915
Funding.....		\$23,760.00	23,760.00	
City Hall.....	\$ 450.00	34,050.00	34,025.00	475.00
Bridge.....	945.00	137,680.00	138,270.00	355.00
Ferry.....	95.00	5,430.00	5,495.00	30.00
Park and Boulevard.....	20.00	40,000.00	40,020.00	
New Water.....		50,000.00	50,000.00	
Fire Boat and Fire Mains.....		5,000.00	5,000.00	
Municipal Jail.....	360.00	8,000.00	7,800.00	560.00
Auditorium.....		1,400.00	1,400.00	
East Portland, Light.....	1,620.00	3,000.00	4,320.00	300.00
Albina, General and Park & Blvd.....	30.00	8,400.00	8,430.00	
	\$3,520.00	\$316,720.00	\$318,520.00	\$1,720.00

**CHEMICAL NATIONAL BANK, NEW YORK**

Balance December 1, 1914.....	\$ 5,055.00	
Receipts:		
Transferred from Bonded Indebtedness Interest Fund.....	33,400.00	\$ 38,455.00
Disbursements:		
Interest coupons paid.....	\$ 33,980.00	
Balance November 30, 1915.....	4,475.00	\$ 38,455.00

**HARRIS, FORBES & COMPANY, NEW YORK**

Balance December 1, 1914.....	\$ 1,620.00	
Receipts:		
Transferred from Bonded Indebtedness Interest Fund.....	3,000.00	\$ 4,620.00
Disbursements:		
Interest coupons paid.....	\$ 4,320.00	
Balance November 30, 1915.....	300.00	\$ 4,620.00

**HANOVER NATIONAL BANK, NEW YORK**

Receipts:		
Transferred from Bonded Indebtedness Interest Fund.....	\$.....	\$ 180.00
Disbursements:		
Balance November 30, 1915.....		180.00

**SINKING FUND**

Balance December 1, 1914.....	\$ 11,094.39	
Receipts:		
Delinquent taxes.....	3,551.88	
Taxes, 1915.....	117,792.96	
Interest on daily balances.....	560.54	
Interest on Water Bonds.....	11,075.00	
Interest on Improvement Bonds.....	14,744.94	
Interest on Street Extension Bonds.....	127.31	
Crematory Bonds cashed.....	5,800.00	
Interest on Crematory Bonds.....	1,160.00	
Transferred from Special Tax Fund, 1915.....	153.86	
Transferred from City Hall Fund, St. Johns.....	150.07	\$ 166,210.95
Disbursements:		
Purchase of securities.....	\$ 136,512.09	
Balance November 30, 1915.....	29,698.86	\$ 166,210.95

**APPROPRIATION, PURCHASE OF SECURITIES, SINKING FUND**

Appropriation.....		\$ 165,124.60
Claims audited and warrants drawn:		
Purchased of securities.....	\$ 136,512.09	
Unexpended balance.....	28,612.51	\$ 165,124.60

**SPECIAL BRIDGE FUND**

Balance December 1, 1914.....	\$ 3,669.93	
Receipts:		
Delinquent taxes.....	65.32	
Taxes, 1915.....	25,991.84	
Excess on warrant.....	.01	
Transferred from Special Tax Fund 1915.....	33.85	
Transferred from General Fund.....	26.77	
Transferred from Broadway Bridge Fund.....	20.49	\$ 29,808.21
Disbursements:		
Transferred to General Fund.....	\$ 409.44	
Warrants paid and returned.....	7,475.07	
Balance November 30, 1915.....	21,923.70	\$ 29,808.21

**APPROPRIATION, ELIMINATION OF GRADE CROSSINGS**

Appropriation.....		\$ 28,196.95
Claims audited and warrants drawn:		
(a) Personal service.....	\$ 7,288.36	
(b) Supplies.....	472.06	
(c) Equipment.....	1.00	
E2 and 3, Repairs.....	6.00	
E6 and 7, Transportation and Communication.....	30.00	
Unexpended balance.....	20,399.53	\$ 28,196.95

**WATER FUND**

Balance December 1, 1914.....	\$ 58,235.61	
Receipts:		
Collection of water rates.....	708,344.75	
Interest on daily balances.....	6,050.19	
Repairs to meters.....	92.60	
Repairs to water mains.....	917.07	
Accrued interest on bonds sold.....	1,175.56	
Sale of bonds.....	560,800.00	
Sale of material.....	5,641.68	
Refund by City Attorney.....	503.65	
Removing hydrant.....	127.80	
Resetting fountain.....	18.65	
Inspection of mains.....	64.00	
Refund on warrant.....	1.00	
Refund Covey Motor Car Co.....	5.00	
Installing gate at Oregon City.....	42.65	
Rent of pumping station.....	125.00	
Refund by Eccles & Smith.....	3.20	
National Park Bank, acct. Town of Linnton..	220.00	
Transferred from General Fund.....	2,566.30	
Transferred from Linnton, 1st Extension Fund.....	5,251.75	
Transferred from Linnton Water Fund.....	41.14	\$ 1,350,227.60
Disbursements:		
Transferred to General Fund.....	\$ 6,561.37	
Transferred to Improvem't Bond Sinking Fund.....	181,861.21	
Transferred to Chase National Bank.....	3,000.00	
Transferred to Harris, Forbes & Co.....	12,000.00	
Transferred to National Park Bank.....	4,345.00	
Interest Coupons paid.....	291,032.50	
Warrants paid and returned.....	715,251.84	
Balance November 30, 1915.....	136,175.68	\$ 1,350,227.60



## CHASE NATIONAL BANK, NEW YORK

Balance December 1, 1914.....	\$ 150.00	
Transferred from Water Fund.....	3,000.00	\$ 3,150.00
Disbursements:		
Interest coupons paid and returned.....	\$ 3,060.00	
Balance November 30, 1915.....	90.00	\$ 3,150.00

## HARRIS, FORBES &amp; COMPANY, NEW YORK

Balance December 1, 1914.....	\$ 5,910.00	
Transferred from Water Fund.....	12,000.00	\$ 17,910.00
Disbursements:		
Interest coupons paid and returned.....	\$ 17,640.00	
Balance November 30, 1915.....	270.00	\$ 17,910.00

## NATIONAL PARK BANK, NEW YORK

Receipts:		
Transferred from Water Fund.....	\$.....	\$ 4,345.00
Disbursements:		
Interest coupons paid and returned.....	3,547.50	
Balance November 30, 1915.....	797.50	\$ 4,345.00

DEPARTMENT OF PUBLIC UTILITIES  
BUREAU OF WATER WORKS

		<b>Personal Service</b>	
A-1	Salaries .....		\$ 296,389.34
A-2	Special services .....		5,007.22
		<b>Supplies</b>	
B-1	Office .....		4,503.91
B-2	Fuel .....		2,093.97
B-3	Forage and veterinary.....		1,063.76
B-4	Food .....		955.44
B-5	Cleaning and disinfecting.....		112.17
B-6	Motor vehicle .....		3,820.28
B-7	Botanical and agricultural.....		51.25
B-10	General plant .....		1,281.24
		<b>Material</b>	
C-3	Building .....		3,981.78
C-4	General plant .....		175,350.61
		<b>Equipment</b>	
D-1	Office .....		500.33
D-2	Household .....		130.30
D-4	Motorless vehicle .....		178.99
D-5	Motor vehicles .....		538.43
D-7	Tools .....		805.55
D-8	General plant .....		7,805.76
		<b>Contract and Open Order Service</b>	
E-1	Construction and extension.....		30.60
		<b>Repairs</b>	
E-2	General .....		7,503.25
E-3	Motor vehicle .....		1,168.15
		<b>Light, Heat and Power</b>	
E-4a	Light .....		257.24
E-4c	Heat .....		2,448.99
		<b>Transportation and Communication</b>	
E-6a	Hire of horses and vehicles.....		1,550.85
E-6b	Hire of automobiles.....	*	247.47
E-6c	Storage of motor vehicles.....		130.41
E-6d	Shoeing and boarding of horses.....		529.55
E-6e	Car fare .....		1,122.10
E-6f	Other transportation .....		280.45
E-7a	Telephone .....		603.10
E-7b	Telegraph, cable and messenger service.....		19.39
F	Contingencies .....		14,121.53
		<b>Fixed Charges and Contributions</b>	
G-1a	Interest on bonds .....		310,377.50
G-1b	Sinking Fund .....		143,880.00
G-2	Rent .....		503.00
G-4	Insurance .....		59.37
G-5	Advertising .....		137.20
G-6	Other fixed charges.....		184.50
H	Purchase of real estate.....		900.00
		<b>Special Appropriations</b>	
	Refund of meter deposits.....		17,270.50
	Payment of Linnton Claims.....		1,182.84
			<b>\$ 1,008,583.38</b>

\*Credits deducted.



## OFFICE OF THE CITY AUDITOR

DEPARTMENT OF PUBLIC UTILITIES  
BUREAU OF WATER WORKS—Continued

Warrants drawn, account 1915.....	\$ 695,752.18	
Add miscellaneous debits.....	6,561.37	
Deduct miscellaneous credits.....	4,107.67	
Interest coupons charged.....	310,377.50	
Outstanding claims .....	19,002.76	
	\$ 1,027,586.14	
Total appropriation .....	1,300,782.66	
Unexpended balance.....	\$ 273,196.52	

BUREAU OF WATER WORKS  
Expenditures authorized during 1914, paid during 1915

A-2	<b>Personal Service</b>		
	Special services.....	\$ 233.69	
B-1	<b>Supplies</b>		
B-2	Office .....	264.31	
B-5	Fuel .....	86.39	
B-6	Cleaning and disinfecting.....	1.00	
B-10	Motor vehicle .....	78.46	
	General plant .....	39.45	
C	<b>Material</b>		
	Building .....	218.52	
	General plant .....	2,391.58	
D	<b>Equipment</b>		
	Motor vehicle .....	140.62	
	General plant .....	246.12	
E-1	<b>Contract and Open Order Service</b>		
	Construction and extension.....	5,326.18	
E-2	<b>Repairs</b>		
E-3	General .....	532.96	
E-4	Motor vehicle .....	8.75	
	Light, heat and power.....	107.13	
E-6a	<b>Transportation and Communication</b>		
E-6d	Hire of horses and vehicles.....	79.40	
	Shoeing and boarding of horses.....	31.00	
F	<b>Contingencies</b> .....	110.34	
G-2	<b>Fixed Charges and Contributions</b>		
	Rent .....	18.50	
	<b>Special Appropriations</b>		
	Refund meter deposits .....	466.75	10,381.15
	Total appropriation .....		\$10,381.15

## OFFICE OF THE CITY AUDITOR

## WATER BOND SINKING FUND

Balance Dec. 1, 1914.....	\$ 136,410.87	
Receipts:		
Interest on improvement bonds.....	40,080.00	
Interest on water bonds .....	2,400.00	
Interest on crematory bonds .....	1,500.00	
Crematory bonds cashed.....	5,000.00	
2% of water debt.....	143,880.00	\$ 329,270.87
Disbursements:		
Purchase of securities .....	\$ 128,250.00	
Balance Nov. 30, 1915.....	201,020.87	\$ 329,270.87

APPROPRIATION, PURCHASE OF SECURITIES WATER BOND  
SINKING FUND

Appropriation .....	\$.....	\$ 138,400.87
Claims Audited and Warrants Drawn:		
Purchase of securities .....	128,250.00	
Unexpended balance .....	10,150.87	138,400.87

## REDEMPTION FUND

Balance Dec. 1, 1914.....	\$ 1,243.32	
Receipts:		
Redemption of property.....	16,548.39	
Transferred from Street Extension fund.....	100.00	
Transferred from General fund.....	70.17	
Transferred from Sewer fund.....	13.02	
Transferred from Imp't Bond Sinking fund....	166.67	\$ 18,141.57
Disbursements:		
Warrants paid and returned.....	\$ 17,140.38	
Balance Nov. 30, 1915.....	1,001.19	\$ 18,141.57

## APPROPRIATION, REDEMPTION OF CERTIFICATES

Appropriation .....	\$.....	\$ 25,960.44
Claims Audited and Warrants Drawn:		
Redemption of certificates.....	16,285.74	
Unexpended Appropriation .....	9,674.70	\$ 25,960.44

## BILL POSTING BADGE FUND

Balance Dec. 1, 1914.....	\$ 218.00	
Receipts:		
Sale of badges.....	76.00	\$ 294.00
Disbursements:		
Badges redeemed .....	\$ 53.00	
Balance Nov. 30, 1915.....	241.00	\$ 294.00



## STREET IMPROVEMENT FUND

Balance Dec. 1, 1914.....	\$ 25,494.91	
Receipts:		
Sale of bonds.....	859,789.52	
Collection of assessments.....	198,594.83	
Transferred from General fund.....	1,305.03	\$ 1,085,184.29
Disbursements:		
Warrants paid and returned.....	\$ 1,056,763.99	
Balance Nov. 30, 1915.....	28,420.30	\$ 1,085,184.29

## SEWER FUNDS

Balance Dec. 1, 1914.....	\$ 12,370.96	
Receipts:		
Sale of bonds.....	156,233.68	
Collection of assessments.....	55,906.03	
Transferred from General fund.....	1,966.40	\$ 226,477.07
Disbursements:		
Transferred to General fund.....	\$ 27.70	
Transferred to Redemption fund.....	13.02	
Warrants paid and returned.....	214,233.67	
Balance Nov. 30, 1915.....	12,202.68	\$ 226,477.07

## STREET EXTENSION FUNDS

Balance Dec. 1, 1914.....	\$ 6,174.54	
Receipts:		
Sale of bonds.....	3,877.78	
Collection of assessments.....	8,698.60	\$ 18,750.92
Disbursements:		
Transferred to Redemption fund.....	\$ 100.00	
Warrants paid and returned.....	3,867.72	
Balance Nov. 30, 1915.....	14,783.20	\$ 18,750.92

## STARK STREET EXTENSION FUND

Receipts:		
Property owners' subscription.....	\$.....	\$ 500.00
Balance Nov. 30, 1915.....		\$ 500.00

## WATER MAIN FUNDS

Balance Dec. 1, 1914.....	\$ 4,762.08	
Receipts:		
Collection of assessments.....	76.90	\$ 4,838.98
Disbursements:		
Balance Nov. 30, 1915.....	\$.....	\$ 4,838.98

## STREET AND SEWER INTEREST FUND

Balance Dec. 1, 1914.....	\$ 875.42	
Receipts:		
Transferred from General fund.....	6,500.00	
Trans. from St. & Sewer Int. fund, St. Johns..	11.16	
Interest collected on assessments.....	5,806.56	\$ 13,193.14
Disbursements:		
Interest paid on street and sewer warrants.....	\$ 12,298.33	
Warrants paid and returned.....	5.77	
Balance Nov. 30, 1915.....	889.04	\$ 13,193.14

## IMPROVEMENT BOND SINKING FUND

Balance Dec. 1, 1914.....	\$ 203,608.49	
Receipts:		
Transferred from General fund.....	6,465.62	
Transferred from Water fund.....	181,861.21	
Collections on bonded assessments.....	1,367,690.35	
Sale of bonds held by city.....	652,542.81	\$ 2,412,168.48
Disbursements:		
Transferred to Redemption fund.....	\$ 166.67	
Receipt No. 88250 canceled.....	42.07	
Improvement bonds redeemed.....	2,210,519.55	
Warrants paid and returned.....	1,058.13	
Balance Nov. 30, 1915.....	200,382.06	\$ 2,412,168.48

## IMPROVEMENT BOND INTEREST FUND

Balance Dec. 1, 1914.....	\$ 39,711.47	
Receipts:		
Transferred from General fund.....	82,607.93	
Transferred from St. Johns Int. Coupon fund..	150.00	
Transferred from St. Johns Bond Int. fund.....	317.27	
Interest collected on bonded liens.....	646,542.92	
Interest on bonds held by the city.....	20,306.05	
Interest on daily balances.....	5,670.25	\$ 795,305.89
Disbursements:		
Interest paid on improvement bonds.....	\$ 778,736.62	
Warrants paid and returned.....	369.61	
Transferred to National Park Bank, N. Y.....	6,428.41	
Receipt No. 88250 canceled.....	17.67	
Balance Nov. 30, 1915.....	9,753.58	\$ 795,305.89

## NATINAL PARK BANK, NEW YORK

Receipts:		
Transferred from Improvement Bond Int. fund..	\$.....	\$ 7,168.16
Disbursements:		
Interest coupons paid and returned.....	\$ 4,800.88	
Balance Nov. 30, 1915.....	2,367.28	\$ 7,168.16



**STREET EXTENSION BOND SINKING FUND**

Balance Dec. 1, 1914.....	\$ 390.54	
Receipts:		
Collection of assessments.....	918.24	\$ 1,308.78
Disbursements:		
Balance Nov. 30, 1915.....	\$ .....	\$ 1,308.78

**STREET EXTENSION BOND INTEREST FUND**

Balance Dec. 1, 1914.....	\$ 34.02	
Receipts:		
Interest on assessments.....	311.59	\$ 345.61
Disbursements:		
Interest paid on street extension bonds.....	\$ 321.53	
Balance Nov. 30, 1915.....	24.08	\$ 345.61

**PUBLIC AUDITORIUM FUND**

Balance Dec. 1, 1914.....	\$ 24,584.49	
Receipts:		
Interest on daily balances.....	403.66	\$ 24,988.15
Disbursements:		
Transferred to General fund.....	\$ 15.08	
Warrants paid and returned.....	10,300.00	
Balance Nov. 30, 1915.....	14,673.07	\$ 24,988.15

**APPROPRIATION, CONSTRUCTION OF PUBLIC AUDITORIUM**

Appropriation .....	\$ .....	\$ 18,118.67
Claims Audited and Warrants Drawn:		
Architect's fees .....	10,300.00	
Unexpended balance Nov. 30, 1915.....	7,818.67	\$ 18,118.67

**POLICE AND FIRE DEPARTMENT RELIEF FUND**

Balance Dec. 1, 1914.....	\$ .....	\$ 25.35
Balance Nov. 30, 1915.....	.....	\$ 25.35

**WATER FUND BOND ACCOUNT**

Balance Dec. 1, 1914.....	.....	\$ 22.95
Balance Nov. 30, 1915.....	\$ .....	\$ 22.95

**PARK AND BOULEVARD FUND**

Balance Dec. 1, 1914.....	\$ 9,134.67	
Receipts:		
Refund from cash advanced.....	.22	
Transferred from General fund.....	356.25	\$ 9,491.14
Disbursements:		
Warrants paid and returned.....	\$ 7,144.39	
Balance Nov. 30, 1915.....	2,346.75	\$ 9,491.14

**APPROPRIATION, PURCHASE OF PARKS AND ESTABLISHMENT OF BOULEVARDS**

Appropriation .....	\$ .....	\$ 9,006.83
Claims Audited and Warrants Drawn		
Personal service .....	75.00	
Supplies .....	147.83	
Material .....	730.77	
Equipment .....	1.96	
Construction and extension.....	5,893.75	
Repairs .....	9.75	
Unexpended balance .....	2,147.77	\$ 9,006.83

**FIRE BOAT AND FIRE MAINS FUND**

Balance Dec. 1, 1914.....	\$ .....	\$ 108.03
Balance Nov. 30, 1915.....	.....	\$ 108.03

**BROADWAY BRIDGE FUND**

Balance Dec. 1, 1914.....	\$ 5,133.55	
Receipts:		
Transferred from General fund.....	1,182.00	\$ 6,315.55
Disbursements:		
Transferred to Special Bridge fund.....	\$ 20.49	
Transferred to General fund.....	23.96	
Warrants paid and returned.....	195.91	
Balance Nov. 30, 1915.....	6,075.19	\$ 6,315.55

**APPROPRIATION, CONSTRUCTION OF BROADWAY BRIDGE**

Appropriation .....	\$ .....	\$ 133.55
Claims Audited and Warrants Drawn		
Personal service .....	25.13	
Material .....	15.97	
Unexpended balance .....	92.45	\$ 133.55

**APPROPRIATION, FIREPROOFING BROADWAY BRIDGE**

Appropriation .....	\$ .....	\$ 6,000.00
Claims Audited and Warrants Drawn		
Personal service .....	175.30	
Supplies .....	23.96	
Unexpended balance .....	5,800.74	\$ 6,000.00

**MT. HOOD RAILWAY & POWER CO. DEPOSIT FUND**

Balance Dec. 1, 1914.....	\$ .....	\$ 3,000.00
Disbursements:		
Warrants paid and returned.....	2,000.00	
Balance Nov. 30, 1915.....	1,000.00	\$ 3,000.00



## APPROPRIATION, PAYMENT OF FRANCHISE

Appropriation .....	\$.....	\$ 2,000.00
Claims Audited and Warrants Drawn: Payment of franchise Ord. 22989.....		\$ 2,000.00

## APPROPRIATION, PURCHASE OF BONDS

Appropriation .....	\$.....	\$ 3,000.00
Appropriation cancelled .....	2,000.00	
Unexpended balance .....	1,000.00	\$ 3,000.00

## MT. HOOD RAILWAY &amp; POWER CO. STREET REPAIR FUND

Balance Dec. 1, 1914.....	\$.....	\$ 1,000.00
Balance Nov. 30, 1915.....		\$ 1,000.00

## SPECIAL TAX FUND 1915

Balance Dec. 1, 1914.....	\$ 2,880.61	
Receipts: Interest on daily balances.....	4.34	\$ 2,884.95
Disbursements: Transferred to General fund.....	\$ 2,048.70	
Transferred to Bonded Indebtedness Int. fund..	401.20	
Transferred to Sinking fund .....	153.86	
Transferred to Special Bridge fund.....	33.85	
Warrants paid and returned .....	247.34	\$ 2,884.95

## APPROPRIATION, DISTRIBUTION OF 1915 TAX

Appropriation .....	\$.....	\$ 247.34
Claims Audited and Warrants Drawn: Firemen's Relief and Pension fund.....	38.47	
Public Docks fund .....	208.87	\$ 247.34

## SPECIAL TAX FUND 1916

Receipts: Taxes paid in advance.....	\$.....	\$ 2,303.21
Balance Nov. 30, 1915.....		\$ 2,303.21

## BONDED INDEBTEDNESS SINKING FUND

Balance Dec. 1, 1914.....	\$ 644.74	
Receipts: Interest on Improvement bonds.....	180.00	\$ 824.74
Balance Nov. 30, 1915.....		\$ 824.74

## PUBLIC LIBRARY FUND

Balance Dec. 1, 1914.....	\$ 40.59	
Receipts: Delinquent taxes .....	9.54	\$ 50.13
Disbursements: Warrants paid and returned.....	\$ 40.59	
Balance Nov. 30, 1915.....	9.54	\$ 50.13

## APPROPRIATION EXPENSE LIBRARY

Appropriation .....	\$.....	\$ 1,206.08
Unexpended balance .....		\$ 1,206.08

## POLICE RELIEF FUND

Balance Dec. 1, 1914.....	\$ 3,201.45	
Receipts: Interest on daily balances.....	81.11	
Interest on bonds.....	452.88	
Donation, Failing estate.....	50.00	
Dues .....	1,805.00	
Improvement bonds cashed.....	500.00	
Proceeds of souvenir band.....	500.00	\$ 6,590.44
Disbursements: Warrants paid and returned.....	\$ 1,621.20	
Balance Nov. 30, 1915.....	4,969.24	\$ 6,590.44

## APPROPRIATION PAYMENT OF SICK BENEFITS

Appropriation .....	\$.....	\$ 3,116.11
Claims Audited and Warrants Drawn: Sick benefits and pensions paid.....	1,541.39	
Unexpended balance .....	1,574.72	\$ 3,116.11

## ST. JOHNS CITY HALL FUND

Balance received former city of St. Johns.....	\$.....	\$ 150.07
Disbursements: Transferred to Sinking fund.....		\$ 150.07

## ST. JOHNS INTEREST COUPON FUND

Balance received former city of St. Johns.....	\$.....	\$ 150.00
Disbursements: Transferred to Improvement Bond Int. fund....		\$ 150.00

## ST. JOHNS STREET AND SEWER INTEREST FUND

Balance received former city of St. Johns.....	\$.....	\$ 11.16
Disbursements: Transferred to Street and Sewer Int. fund.....	\$.....	\$ 11.16



ST. JOHNS IMPROVEMENT BOND SINKING FUND

Balance received former city of St. Johns.....	\$ 8,706.89	
Collections on assessments.....	1,281.71	\$ 9,988.60
Balance Nov. 30, 1915.....	\$.....	\$ 9,988.60

ST. JOHNS IMPROVEMENT BOND INTEREST FUND

Balance received former city of St. Johns.....	\$ 1,057.02	
Collected on assessments.....	987.15	\$ 2,044.17
Disbursements:		
Transferred to National Park Bank, N. Y.....	\$ 739.75	
Transferred to Imp't bond interest fund.....	317.27	
Balance Nov. 30, 1915.....	987.15	\$ 2,044.17

LINNTON MAINTENANCE FUND

Balance received former city of Linnton.....	\$.....	\$ 5.93
Disbursements:		
Transferred to General fund.....	\$.....	\$ 5.93

LINNTON FIRST EXTENSION FUND

Balance received former city of Linnton.....	\$.....	\$ 6,049.28
Disbursements:		
Transferred to General fund.....	\$ 797.53	
Transferred to Water fund.....	5,251.75	\$ 6,049.28

LINNTON WATER FUND

Balance received former city of Linnton.....	\$.....	\$ 41.14
Disbursements:		
Transferred to Water fund.....	\$.....	\$ 41.14

LINNTON IMPROVEMENT BOND SINKING FUND

Collection on assessments.....	\$.....	\$ 6.57
Balance Nov. 30, 1915.....	\$.....	\$ 6.57

IMPROVEMENT BOND SINKING AND IMPROVEMENT BOND INTEREST FUND

Collection on assessments.....	\$.....	\$ 21.12
Balance Nov. 30, 1915.....	\$.....	\$ 21.12

TRIAL BALANCE NOV. 30, 1915

City of Portland.....	\$30,391,839.59	\$.....
Bonds.....		17,079,300.00
Improvement bonds.....		13,062,321.96
Street extension bonds.....		11,338.78
Improvement bonds of former city of St. Johns.....		297,498.36
Improvement bonds of former town of Linnton.....		24,999.53
Street and sewer warrants.....	83,619.04	
Wm. Adams, city treasurer, general account.....	1,375,432.21	
Wm. Adams, city treasurer, special account.....	1,000.00	
Imp't Bond Sinking and Imp't Bond Int. fund.....		21.12
Wm. Adams, treasurer, investment account.....	1,469,322.86	
Water Bond Sinking fund, investments.....		843,000.00
Bonded Indebtedness Sinking fund, investments.....		3,000.00
Sinking fund investments.....		616,024.78
Police Relief fund, investments.....		7,298.08
Revenue receivable taxes 1914.....	28,042.06	
Reserve for loss on taxes 1914.....		28,042.06
Revenue receivable taxes 1915.....	92,049.80	
Revenue General fund, taxes 1915.....		38,757.99
Revenue bonded Indebtedness Int. fd. taxes 1915.....		7,589.99
Revenue Sinking Fund, Taxes 1915.....		2,910.92
Revenue Special Bridge Fund, Taxes 1915.....		563.01
Reserve for loss on taxes 1915.....		42,227.89
John Clark chief of police.....	355.00	
Fugitive fund.....		355.00
Public Library fund.....		9.54
Appropriation, Public Library.....	1,206.08	
Appropriation, expense Library.....		1,206.08
Police and Fire Department Relief fund.....		25.35
Water fund, bond account.....		22.95
Park and Boulevard fund.....		2,346.75
Appropriation, Park and Boulevard fund.....	2,147.77	
Appropriation, purchase of parks and establishment of boulevards.....		2,147.77
Fire Boat and Fire Mains fund.....		108.03
Broadway Bridge fund.....		6,075.19
Appropriation, Broadway Bridge fund.....	5,893.19	
Appropriation, construction Broadway bridge.....		92.45
Appropriation, fireproofing Broadway bridge.....		5,800.74
Mt. Hood Ry. & Power Co. Deposit fund.....		1,000.00
Appropriation, Mt. Hood Ry. & Power Co. Deposit fund.....	1,000.00	
Appropriation, purchase of bonds.....		1,000.00
Mt. Hood Ry. & Power Co. Street Repair fund.....		1,000.00
Bonded Indebtedness Sinking fund.....		824.74
Appropriation, Bonded Ind'bt. Sinking fund.....	986.00	
Appropriation, purchase of bonds.....		986.00
Police Relief fund.....		4,969.24
Appropriation, Police Relief fund.....	1,574.72	
Appropriation payment of sick benefits.....		1,574.72
Special tax fund 1916.....		2,303.21
General fund.....		555,233.27
Appropriation, General fund.....	122,576.42	
Appropriation, exp. furnish'g municipal jail bldg.....		4,907.39
Appropriation, purchase of right-of-way.....		46.00
Appropriation, exp. repairing Maywood Drive.....		108.00
Appropriation, relief of unemployed.....		18,642.78
Appropriation, expense Mayor's office.....		13.96
Appropriation, expense Bureau of Fire.....		24,328.84
Appropriation, expense Bureau of Police.....		2,086.01
Appropriation, expense Bureau of Health.....		1,703.16
Appropriation, expense Municipal Court.....		71.50
Appropriation, Bureau of Pound.....		21.00
Appropriation, expense Com. of Public Affairs.....		40.00
Appropriation, expense office of City Attorney.....		1,302.61
Appropriation, expense Bureau of Parks.....		8,022.17
Appropriation, expense Bureau of City Hall.....		287.30
Appropriation, exp. Bu. Weights & Measures.....		86.00
Appropriation, expense free museum.....		191.50



TRIAL BALANCE—Continued

Appropriation, expense office City Treasurer.....	\$.....	\$ 133.75
Appropriation, expense municipal garage.....	.....	210.60
Appropriation, expense public market.....	.....	52.50
Appropriation, exp. Bu. Purchases & Stores.....	.....	19.69
Appropriation, stationery stock.....	.....	6,040.25
Appropriation, rotary shop expense.....	.....	4,741.06
Appropriation, expense lighting streets and public buildings.....	.....	17,000.00
Appropriation, exp. Bureau Garbage Disposal.....	.....	5.50
Appropriation, expense Bureau Street Cleaning.....	.....	1,669.98
Appropriation, expense Dept. Public Works.....	.....	16,306.55
Appropriation, expense Dept. of Auditing.....	.....	673.41
Appropriation, expense Civil Service Board.....	.....	51.96
Appropriation, expense advertising.....	.....	50.00
Appropriation, expense Crematory bonds.....	.....	200.00
Appropriation, expense repairing retaining wall, Montgomery Drive.....	.....	585.66
Appropriation, payment prior year claims.....	.....	162.00
Appropriation, refund vehicle licenses.....	.....	148.90
Appropriation, salary of secretary of Board of Motion Picture Censors.....	.....	6.25
Appropriation, refund of taxes, Sylvan.....	.....	876.96
Appropriation, payment claims town of Linnton.....	.....	142.08
Appropriation, payment of claims of City of St. Johns.....	.....	4,547.07
Appropriation, purchase of property.....	.....	590.03
Appropriation, construction sewer E. 31st St.....	.....	1,504.00
Appropriation, expense municipal lodging house.....	.....	5,000.00
Bonded Indebtedness Interest fund.....	.....	105,193.65
Appropriation, Bonded Indebtedness Int. fund.....	12,725.00	.....
Appropriation, payment of interest.....	.....	12,725.00
Chemical National Bank, New York.....	.....	4,475.00
Harris, Forbes & Co., New York.....	.....	300.00
Hanover National Bank, New York.....	.....	180.00
Sinking fund.....	.....	29,698.86
Appropriation, Sinking fund.....	28,612.51	.....
Appropriation, purchase of securities.....	.....	28,612.51
Special Bridge fund.....	.....	21,923.70
Appropriation, Special Bridge fund.....	20,399.53	.....
Appropriation, cost of fills and const. bridges.....	.....	20,399.53
Water fund.....	.....	136,175.68
Appropriation, Water fund.....	19,050.70	.....
Appropriation, expense Bureau Water Works.....	.....	14,500.26
Appropriation, payment interest on Water bonds.....	.....	4,502.50
Appropriation, Payment of claims former town of Linnton.....	.....	47.94
Chase National Bank, New York.....	.....	90.00
Harris, Forbes & Co., New York.....	.....	270.00
National Park Bank, New York.....	.....	797.50
Water Bond Sinking fund.....	.....	201,020.87
Appropriation, Water Bond Sinking fund.....	10,150.87	.....
Appropriation, purchase of securities.....	.....	10,150.87
Redemption fund.....	.....	1,001.19
Appropriation, Redemption fund.....	9,674.70	.....
Appropriation, redemption of certificates.....	.....	9,674.70
Bill Posting Badge fund.....	.....	241.00
Street Improvement fund.....	.....	28,420.30
Sewer funds.....	.....	12,202.68
Stark Street Extension fund.....	.....	500.00
Street Extension fund.....	.....	14,783.20
Water Main funds.....	.....	4,838.98
Street and Sewer Interest funds.....	.....	889.04
Improvement Bond Sinking fund.....	.....	200,382.06
Improvement Bond Interest fund.....	.....	9,753.58
National Park Bank, New York.....	.....	2,367.28
Street Extension Bond Sinking Fund.....	.....	1,308.78
Street Extension Bond Interest fund.....	.....	24.08
Public Auditorium fund.....	.....	14,673.07
Appropriation, Public Auditorium fund.....	7,818.67	.....
Appropriation, construction Pub. Auditorium.....	.....	7,818.67

TRIAL BALANCE—Continued

Franchises.....	\$.....	\$ 903.40
Franchise, City Messenger & Delivery Co.....	800.00	.....
Franchise, Heights Trust Co.....	30.00	.....
Franchise, Errol Heights Railway Co.....	73.40	.....
Wm. Adams, city treas., security account.....	2,775,766.74	.....
Bank of California.....	.....	550,000.00
Geo. W. Bates & Co., bankers.....	.....	7,000.00
Citizens bank.....	.....	50,000.00
First National bank.....	.....	456,286.51
Hibernia Savings bank.....	.....	57,000.00
Ladd & Tilton bank.....	.....	343,000.00
Lumbermen's National bank.....	.....	281,500.00
Montavilla Savings bank.....	.....	10,000.00
Northwestern National bank.....	.....	365,900.00
Scandinavian American bank.....	.....	50,000.00
United States National bank.....	.....	563,000.00
Bank of Sellwood.....	.....	10,000.00
Northwestern Electric Co.....	.....	2,000.00
Peninsula National bank, St. Johns.....	.....	10,000.00
First Trust & Savings bank, St. Johns.....	.....	15,080.23
First National Bank of Linnton.....	.....	5,000.00
Improvement Bond Sinking fund, St. Johns.....	.....	9,988.60
Improvement Bond Interest fund, St. Johns.....	.....	987.15
Improvement Bond Sinking fund, Linnton.....	.....	6.57
	\$36,462,146.86	\$36,462,146.86



DEPARTMENT OF PUBLIC SAFETY

Code Designation		Mayor's Office	Bureau of Fire	Municipal Court	Bureau of Police	Bureau of Health	Pound	Public Defender	Bd. Motion Picture Censors
<b>Personal Service</b>									
A 1	Salaries.....	\$ 9,969.00	\$ 488,415.80	5,940.00	363,927.51	41,618.99	4,838.64	1,325.80	749.00
2	Special Services.....		13.75	756.50	15.00				
<b>Supplies</b>									
B 1	Office.....	80.83	536.04	178.15	1,340.11	885.30	4.66		154.68
2	Fuel.....		12,544.75		1,679.00	150.00			
3	Forage and Veterinary.....		12,703.12				603.90		
4	Food Supplies.....				3,512.33	1,016.51			
5	Cleaning and Disinfecting.....		1,400.48		663.31	750.29	42.27		
6	Motor Vehicle.....	130.36	2,351.96		2,404.70	967.44			
7	Botanical and Agricultural.....		13.50						
8	Educational and Recreational.....					149.43			
9	Medical and Surgical.....					1,738.52			
10	General Plant.....		2,007.83		515.18	349.85	2.80		
<b>Material</b>									
C 1	Highway.....								
2	Sewer.....				32.95				
3	Building.....	1,876.86		240.72	288.81	56.58	12.94		
4	General Plant.....		2,264.24						
<b>Equipment</b>									
D 1	Office.....	57.05	57.55	125.38	99.73	69.85		182.23	11.80
2	Household.....		970.71		34.90	224.10			
3	Livestock.....				225.00				
4	Motorless Vehicles and Equipment.....		26.41		27.45		16.50		
5	Motor Vehicles and Equipment.....	7.29	15,788.40		580.90	19.18			
6	Tolls.....		166.10		36.85				
7	General Plant.....		12,084.37		302.64	749.83	4.75		
<b>Contract and Open Order Service</b>									
E 1	Construction and Extension.....		28.00		802.75	91.75			
<b>Repairs</b>									
2	General.....		15,908.38		149.90	3.50	57.74		5.00
3	Motor Vehicle.....	31.20	5,300.59		1,759.06	1,520.22			
<b>Light, Heat and Power</b>									
4a&b	Light.....								
4c	Power.....		52.00				5.92		
4d	Heat.....					15.66			
5	Janitorial Service.....		975.00	24.00	196.27	170.93			

DEPARTMENT OF PUBLIC SAFETY—Continued

Code Designation		Mayor's Office	Bureau of Fire	Municipal Court	Bureau of Police	Bureau of Health	Pound	Public Defender	Bd. Motion Picture Censors
<b>Transportation</b>									
6	Hire of Horses and Vehicles.....					649.90			
6a	Hire of Automobiles.....								
6b	Storage of Motor Vehicles.....								
6c	Shoeing and Boarding of Horses, including Veterinary.....	4,654.76		3,217.11		105.50			5.00
6d	Car fare.....		2.00			617.50	30.00		
6e	Other Transportation.....		880.60		3.00	427.71			
6f	<b>Communication</b>								
7	Telephone.....		91.60		1,248.95				
7a	Telegraph Cable and Messenger Serv.....				140.16				
7b	General Plant Service.....				24.00	2,498.34			
8	Contingencies.....	25.45	1,042.53		1,387.15	85.81	1.50		
<b>Fixed Charges and Contributions</b>									
F 2	Rent.....		*588.00						
4	Insurance.....								
5	Advertising.....								
6	Other Fixed Charges.....								
7	Other Contributions.....		1,230.00	175.00					
<b>Purchase of Real Estate</b>									
<b>Special Appropriations</b>									
H	Traveling Expenses of Fire Marshal.....		100.00						
	Rent of Fire Hydrants, St. Johns.....		392.00						
	Total Claims Paid.....	\$10,301.18	583,291.33	7,199.03	384,832.49	54,860.14	5,727.12	1,508.03	925.48
	Warrants drawn.....	10,174.88	564,736.60	7,027.38	382,772.08	52,417.52	5,567.73	1,508.03	765.80
	Add Miscellaneous Debits.....	126.80	30,015.15	171.65	2,416.94	2,713.46	159.39		159.68
	Deduct Miscellaneous Credits.....	.50	11,460.42		356.53	270.84			
	Total Expenditures.....	10,301.18	583,291.33	7,199.03	384,832.49	54,860.14	5,727.12	1,508.03	925.48
	Claims Outstanding.....	13.96	24,078.84	71.50	1,506.86	1,703.16	21.00		6.25
	Total Encumbrance.....	\$10,315.14	607,370.17	7,270.53	386,339.35	56,563.30	5,748.12	1,508.03	931.73
	Total Appropriation.....	10,423.00	708,518.03	8,207.00	447,407.67	60,640.00	7,348.00	1,510.80	1,007.25
	Balance of Appropriation canceled.....	107.86	100,897.86	936.47	60,489.17	4,076.70	1,599.88	2.77	75.52
	Balance of Appropriation carried forward.....		250.00		579.15				

\*Deduct.



DEPARTMENT OF PUBLIC AFFAIRS

Code Designation		Office of Commissioner	Bureau of Parks	Office City Attorney	Bureau of City Hall	Bureau of Weights and Measures	Bureau of Free Employment	Municipal Reference Library	Free Museum
<b>Personal Service</b>									
A 1	Salaries.....	\$7,800.87	110,785.15	21,333.67	13,660.63	3,000.00	2,369.53		
2	Special Services.....				80.92				
<b>Supplies</b>									
B 1	Office.....	127.76	475.06	468.93	12.36	32.03	61.57		
2	Fuel.....		320.06		1,697.59		28.05		
3	Forage and Veterinary.....		4,489.12						
4	Food Supplies.....								
5	Cleaning and Disinfecting.....		1,580.89		393.92				
6	Motor Vehicle.....		250.24			36.48			
7	Botanical and Agricultural.....		2,585.26						
8	Educational and Recreational.....		1,024.17						
9	Medical and Surgical.....		40.89						
10	General Plant.....		1,457.76		327.81				
<b>Material</b>									
C 1	Highway.....		5,705.03						
2	Sewer.....		72.18						
3	Building.....		1,370.37		80.22				
4	General Plant.....		12,421.95		14.29				
<b>Equipment</b>									
D 1	Office.....		214.68	586.79		4.25	27.80	37.20	
2	Household.....		2.38		48.48				
3	Livestock.....		23.66			*225.00			
4	Motorless Vehicles and Equipment.....		10.42						
5	Motor Vehicles and Equipment.....		549.71			507.10			
6	Educational and Recreational.....		1,704.36						
7	Tools.....		172.40		1.85	3.53			
8	General Plant.....		2,858.19		5.57	91.70			
<b>Contract and Open Order Service</b>									
E 1	Construction and Extension.....		9,549.96		564.66				
<b>Repairs</b>									
E 2	General.....		2,735.59			1.15			
3	Motor Vehicles.....		117.14		344.80	35.07			
<b>Light, Heat and Power</b>									
4c	Power.....								
4d	Heat.....		415.95		113.05				
5	Janitorial Service.....		2,623.31		482.97		4.50		

DEPARTMENT OF PUBLIC AFFAIRS—Continued

Code Designation		Office of Commissioner	Bureau of Parks	Office City Attorney	Bureau of City Hall	Bureau of Weights and Measures	Bureau of Free Employment	Municipal Reference Library	Free Museum
<b>Transportation</b>									
6a	Hire of Horses.....		1,865.00						
6b	Hire of Automobiles.....		11.05						
6c	Storage of Motor Vehicles.....								
6d	Shoeing and Boarding of Horses, including Veterinary.....		122.75						
6e	Car fare.....		319.00			40.00			
6f	Other Transportation.....		177.25	50.60	3.07		16.66		
<b>Communication</b>									
7a	Telephone.....		182.10	3.45	1,076.40		96.75		
7b	Telegraph.....		8.88	6.20					
8	General Plant Service.....		11,188.46	1,695.98	489.57				
F	Contingencies.....	7.50	5,940.19	130.95		15.50		2.79	307.70
<b>Fixed Charges and Contributions</b>									
G 2	Rent.....		197.85				1,365.00		
5	Advertising.....		2.81						
6	Other Fixed Charges.....		14.00						
<b>Special Appropriations</b>									
	Judgments.....			2,171.58					
	Department of Public Affairs, Unemployed Appropriation.....		1,996.93						
	Total Claims Paid.....	\$7,736.13	185,582.15	26,448.15	19,398.16	3,541.81	3,969.86	39.99	307.70
	*Deduct.....								
	Warrants Drawn.....	7,610.05	183,009.55	26,018.69	19,358.10	3,747.03	3,876.33	39.99	307.70
	Add Miscellaneous Debits.....	127.34	4,017.26	474.07	40.06	69.78	93.53		
	Deduct Miscellaneous Credits.....	1.26	1,444.66	44.61		275.00			
	Total Expenditures.....	7,736.13	185,582.15	26,448.15	19,398.16	3,541.81	3,969.83	39.99	307.70
	Claims Outstanding.....	40.00	7,222.17	1,302.61	287.30	86.00			191.50
	Total Encumbrance.....	7,776.13	192,804.32	27,750.76	19,685.46	3,627.81	3,969.86	39.99	499.20
	Total Appropriation.....	7,830.00	194,470.97	28,859.86	20,209.50	4,175.00	4,105.00	40.00	500.00
	Balance of Appropriation Canceled... Balance of Appropriation carried forward.....	53.87	866.65	1,109.10	524.04	547.19	135.14	.01	.80
			800.00						

\*Credit.



DEPARTMENT OF FINANCE

Code Designation		Office of Commissioner	Bureau of Licenses	Office of Treasurer	Municipal Garage	Public Market	Bureau of Purchases	City Store House	Municipal Shop Equipment	
A	<b>Personal Service</b>									
1	Salaries.....	6,017.05		16,606.95	3,417.57	2,076.00	9,775.55	1,062.50		
B	<b>Supplies</b>									
1	Office.....	38.88	47.30	4,816.96	42.50	80.37	395.15			
2	Fuel.....				115.85					
5	Cleaning and Disinfecting.....				51.28					
6	Motor Vehicle.....				1,994.79					
10	General Plant.....			7.20	68.79	8.87				
C	<b>Material</b>									
3	Building.....				4.12					
4	General Plant.....				30.37					
D	<b>Equipment</b>									
1	Office.....			119.22			49.85	16.25		
7	Tools.....				24.81					
8	General Plant.....				375.95	47.00			963.23	
E	<b>Contract and Open Order Service</b>									
1	Construction and Extension.....				50.00	3,114.72				
2	<b>Repairs</b>									
	General.....			78.29		29.25				
	<b>Light, Heat and Power</b>									
4c	Power.....				53.53					
4d	Heat.....				26.87					
5	Janitorial Service.....					70.25				
7a	<b>Communication</b>									
	Telephone.....				96.00					
F	Contingencies.....	15.83		134.47	11.45	151.06	12.87	48.01		
G	<b>Fixed Charges and Contributions</b>									
2	Rent.....			205.00	420.70			60.00		
	Total Claims Paid.....	\$6,071.76	47.30	21,968.09	6,784.58	5,577.32	10,233.42	1,186.76	963.23	
	Warrants Drawn.....	6,032.88		21,328.35	6,579.22	5,483.17	9,867.00	1,141.54	956.47	
	Add Miscellaneous Debits.....	38.88	47.30	684.26	795.00	94.15	476.92	45.22	6.76	
	Deduct Miscellaneous Credits.....			44.52	590.24		110.50			
	Total Expenditures.....	6,071.76	47.30	21,968.09	6,784.58	5,577.32	10,233.42	1,186.76	963.23	
	Claims Outstanding.....			133.75	210.60	52.50	19.69			
	Total Encumbrance.....	6,071.76	47.30	22,101.84	6,995.18	5,629.82	10,253.11	1,186.76	963.23	
	Total Appropriation.....	6,270.00	50.00	22,327.00	8,659.60	6,060.10	10,519.75	1,372.50	1,000.00	
	Balance of Appropriation Canceled.....	\$198.24	2.70	225.16	1,664.42	430.28	266.64	185.74	36.77	

DEPARTMENT OF PUBLIC WORKS

Code Designation		Department Public Works	Permanent Works	Weeds and Brush Nuisance	Peninsula District Sewer Survey	Repairs Patton Road Sewer	Repairs to Retaining Wall	Repairs to Montgomery Drive Retaining Wall	Repairs to Maywood Drive	Repairs to Grand Avenue Bridge	
A	<b>Personal Service</b>										
1	Salaries.....	\$274,526.41	13,139.53	1,936.47	3,117.00	288.51		544.38	30.00	477.21	
2	Special Services.....	24.25									
B	<b>Supplies</b>										
1	Office.....	3,389.79		14.38							
2	Fuel.....	1,817.92									
3	Forage and Veterinary.....	22.72									
4	Food.....	2.20									
5	Cleaning and Disinfecting.....										
6	Motor Vehicle.....	884.03									
10	General Plant.....	1,956.85	54.49		72.00						
C	<b>Material</b>										
1	Highway.....	14,253.54	798.34							5.72	
2	Sewer.....	4,836.97	599.89			270.45					
3	Building.....	349.11									
4	General Plant.....	2,593.34	130.40	1.96	7.93		32.48	69.96			
D	<b>Equipment</b>										
1	Office.....	612.36									
4	Motorless Vehicles and Equipment.....	8.82									
5	Motor Vehicles and Equipment.....	1,446.91									
7	Tools.....	324.34	9.70								
8	General Plant.....	6,754.47	4.65		4.37					50.90	
E	<b>Contract and Open Order Service</b>										
1	Construction and Extension (See permanent works).....		41.94						2,715.76	418.77	
2	<b>Repairs</b>										
	Street Maintenance.....	9,627.50									
3	General.....	4,660.43	3,016.96		5.00					8,371.80	
	Motor Vehicles.....	1,886.91									
	<b>Light, Heat and Power</b>										
4c	Power.....	41.12									
E	<b>Transportation</b>										
6a	Hire of Horses.....	5,688.13	44.75								
6b	Hire of Automobiles.....	*6.87									
6c	Storage of Motor Vehicles.....	27.50									
6d	Shoeing and Boarding of Horses, including Veterinary.....	4.00									
6e	Car Fare.....	2,610.90	98.55	48.00	145.95				1.00	6.90	
6f	Other Transportation.....	156.85									

\*Deduct.



DEPARTMENT OF PUBLIC WORKS—Continued

Code Designation		Department Public Works	Perman-ent Works	Weeds and Brush Nuisance	Peninsula District Sewer Survey	Repairs Patton Road Sewer	Repairs to Retain-ing Wall.	Repairs to Mont-gomery Drive Re-taining Wall	Repairs to Maywood Drive	Repairs to Grand Avenue Bridge	
<b>Communication</b>											
7a	Telephone.....	1.20									
7b	Telegraph.....	10.06									
8	General Plant Service.....								1.10		
F	Contingencies.....	379.13	15.72	20.00							
G	<b>Fixed Charges and Contributions</b>										
2	Rent.....	338.75									
6	Other Fixed Charges.....	49.50									
	Total Claims Paid.....	\$339,279.14	17,954.92	2,020.81	3,352.25	558.96	32.48	614.34	2,747.86	9,331.30	
	Warrants Drawn.....	338,129.92	17,827.71	1,958.43	3,260.01	558.96	32.48	614.34	2,745.76	9,266.15	
	Add Miscellaneous Debits.....	10,864.55	154.47	62.38	96.74				2.10	65.15	
	Deduct Miscellaneous Credits.....	9,715.33	27.26		4.50						
	Total Expenditures.....	\$339,279.14	17,954.92	2,020.81	3,352.25	558.96	32.48	614.34	2,747.86	9,331.30	
	Claims Outstanding.....	10,952.54	2,263.82		49.75			20.00	108.00		
	Total Encumbrance.....	\$350,231.68	20,218.74	2,020.81	3,402.00	558.96	32.48	634.34	2,855.86	9,331.30	
	Total Appropriation.....	382,587.25	21,200.00	2,852.38	4,018.02	558.96	1,153.00	1,200.00	3,179.59	10,802.24	
	Bal. of Appropriation Canceled.....	\$32,355.57	981.26	831.57			1,120.52		323.73	1,470.94	
	Bal. of Appropriation carried forward.....				616.02			565.66			

\*Deduct.

OFFICE OF THE CITY AUDITOR

DEPARTMENT OF PUBLIC WORKS—Continued

Code Designation		Repairs to First St. Bridge	Repairs Union Av Bridge	Repairs Front St. Bridge	Obstruc-tions to Naviga-tion	Repairs to Pavement Broadway Bridge	Expense Morrison Street Bridge	Repairs to Bridges	Refilling E. Alder Street Sewer	East 31st Street Sewer	Ad-ditional Booths Public Mark'ts
<b>Personal Service</b>											
A	1	Salaries.....	\$ 211.06	56.38	238.57	154.95	68.58				
	2	Special Services.....									
<b>Supplies</b>											
B	1	Office.....									
	2	Fuel.....									
	3	Forage and Veterinary.....									
	4	Food.....									
	5	Cleaning and Disinfecting.....									
	6	Motor Vehicle.....									
	10	General Plant.....									
<b>Material</b>											
C	1	Highway.....	391.43			*.40					
	2	Sewer.....									
	3	Building.....									
	4	General Plant.....			86.93						
<b>Equipment</b>											
D	1	Office.....									
	4	Motorless Vehicle and Equipment.....									
	5	Motor Vehicles and Equipment.....									
	7	Tools.....									
	8	General Plant.....									
<b>Contract, Open Order Service</b>											
E	1	Construction and Extension.....		809.28							
<b>Repairs</b>											
	2	Street Maintenance.....									
	3	General.....		*211.35			693.60	1,424.16			
	3	Motor Vehicles.....									
<b>Light, Heat and Power</b>											
	4c	Power.....									
<b>Transportation</b>											
E	6a	Hire of horses.....									
	6b	Hire of Automobiles.....									
	6c	Storage of Motor Vehicles.....									
	6d	Shoeing and Boarding of Horses.....									
	6e	including Veterinary.....									
	6f	Car Fare.....		3.00							
	6f	Other Transportation.....									

\*Deduct.

OFFICE OF THE CITY AUDITOR



OFFICE OF THE CITY AUDITOR

DEPARTMENT OF PUBLIC WORKS—Continued

Code Designation	Communication	Repairs to First St. Bridge	Repairs to Union Av. Bridge	Repairs to Front St. Bridge	Obstructions to Navigation	Repairs to Pavement Broadway Bridge	Expense Morrison Street Bridge	Repairs to Bridges	Refilling E. Alder Street Sewer	East 31st Street Sewer	Additional Booths Public Markets
7a	Telephone										
7b	Telegraph										
8	General Plant Service	4.00			3,002.73						
F	Contingencies										
G	Fixed Charges Contributions										
2	Rent										
6	Other Fixed Charges										
	Total Claims Paid	\$ 606.49	657.31	325.50	3,157.68	*.40	762.15	1,424.16			
	Warrants Drawn	606.49	865.66	325.50	3,154.95		717.60	1,424.16			
	Add Miscellaneous Debits		3.00		2.73	.40	44.58				
	Deduct Miscellaneous Credits		211.35								
	Total Expenditures	606.49	657.31	325.50	3,157.68	*.40	762.18	1,424.16		1,349.70	
	Total Encumbrance		657.31	325.50	3,157.68	*.40	762.18	1,424.16		1,349.70	
	Total Appropriation	1,100.00	1,712.21	543.04	4,371.56	1,224.02	821.37	1,424.16	1,200.00	1,504.00	102.18
	Bal. of Appropriation Canceled										
	Bal. of Appropriation Carried Fwd	493.51	1,054.90	218.14	1,813.88	1,224.42	59.19		1,200.00	154.30	102.18

\*Deduct.

OFFICE OF THE CITY AUDITOR

DEPARTMENT OF AUDITING

Code Designation		
A	Salaries	<b>Personal Service</b>
1	Special Services	\$ 41,796.63
2		1,381.73
B	Office	<b>Supplies</b>
1	General Plant (License tags*)	2,918.45
10		113.00
D	Office	<b>Equipment</b>
1		312.89
E	General	<b>Contract and Open Order Service</b>
2	Contingencies	Repairs
		41.34
		139.50
	Total Claims Paid	\$ 46,703.54
	Warrants Drawn	44,795.54
	Add Miscellaneous Debits	3,223.66
	Deduct Miscellaneous Credits	1,315.66
	Total Expenditures	\$ 46,703.54
	Claims Outstanding	673.41
	Total Encumbrance	47,376.95
	Total Appropriation	47,997.31
	Balance of Appropriation Canceled	\$620.36

CIVIL SERVICE BOARD

Code Designation		
A	Salaries	<b>Personal Service</b>
1		\$ 3,704.52
B	Office	<b>Supplies</b>
1		247.74
D	Office	<b>Equipment</b>
1	Contingencies	70.00
F		84.48
G	Advertising	<b>Fixed Charges and Contributions</b>
2		42.66
	Litigation expense	<b>Special Appropriations</b>
		102.07
	Total Claims Paid	\$ 4,251.47
	Warrants Drawn	3,996.66
	Add Miscellaneous Debits	254.81
	Deduct Miscellaneous Credits	
	Total Expenditures	\$ 4,251.47
	Claims Outstanding	51.96
	Total Encumbrance	4,303.43
	Total Appropriation	4,760.00
	Balance of Appropriation Canceled	456.57