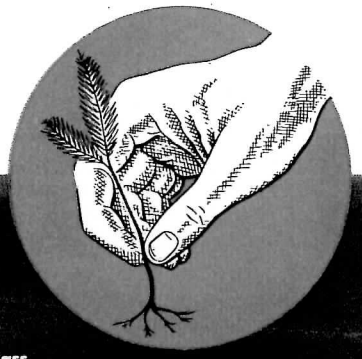
THE ROCKWELL

WATER Journal

Published by ROCKWELL Manufacturing Company

DEVOTED TO THE OPERATION AND MANAGEMENT OF WATER WORKS AND SEWAGE TREATMENT PLANTS

VOLUME XXXVI NOVEMBER-DECEMBER, 1952 NUMBER 6



Montgomery Reservoir, built in 1938, has a storage capacity of 184 mg. Acres of trees which were planted as part of the reforestation program, surround the reservoir.

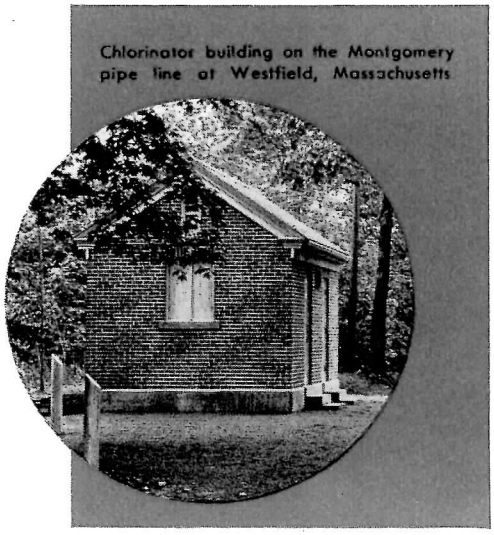
REFORESTATION PAYS OFF

By HARRY H. ANGELL, Deputy Superintendent, Westfield Water Department, Westfield, Mass.

More than forty years ago, Westfield, Massachusetts, began a reforestation program with pine seedlings. It now has almost three-quarters of a million trees on the watershed of its two water sources, which control erosion and provide a purer, more stable water source that requires little treatment.

THE TERM, conservation, has a rather broad meaning. What the water works man refers to by that term is, naturally, the conservation of forest lands so that the flow of streams within his watershed will remain more constant and, in turn, deliver more water to the ponds and reservoirs within his jurisdiction.

Much has been done in recent years along the lines of planting pine trees, scouting the gypsy moth, forest fire prevention, etc. in order that the watershed may become completely forested.



Chlorinator building on the Montgomery pipe line at Westfield, Massachusetts

In order that we may understand the relation of conservation to a city water department, let us briefly review the water system of the City of Westfield, Massachusetts.

Shortly after the year 1870, the need of a water system to supply the inhabitants of the Town of Westfield (incorporated as a city in 1920) became very acute. Wells and springs had become contaminated by the proximity of outhouses and by polluted brooks which ran through the main sections of the town. Frequent cases of water borne diseases were apparently caused by these conditions. As a result, a committee was appointed at a regular Town meeting to investigate the cost, possible location and the advisability of constructing a water system.

This committee, reporting back to a Town meeting in the spring of 1873, advised the immediate construction of a water system. A copy of this report is still on record at the water department office, and is extremely interesting. The committee showed a remarkable foresight of Westfield's future water needs.

The report was adopted and work undertaken very shortly, so that in 1874, Westfield's two reservoirs in nearby Montgomery, as well as the pipe lines were constructed.

At that time the town owned and controlled practically no land except what was necessary to actually construct the dams and flood the areas directly above. The policy for the last forty-five years has been to acquire the property within the watershed; the ultimate goal being control of the entire watershed to promote the utmost purity and wholesomeness of the water supply.

In 1896, the need for additional water supply to accommodate the increased growth of the town has become very apparent. After considerable study by a committee appointed for that purpose, it was decided to go to the Town of Granville for Westfield's future supply of water.

In 1898 and 1899, Winchell and Sackett reservoirs were constructed together with the connecting pipe lines between the two reservoirs, and also into the town proper to connect in Park Square with the existing system.

At that time, plans were made to construct, as soon as possible, a large reservoir above the newly constructed Winchell Reservoir, the purpose of which being to store the excess water during the wet, rainy periods for use when needed during dry times.

Without such a reserve, the entire Granville system was inadequate for the needs for which it was constructed; for, without ample storage for use during dry weather, the value of the new system was of rather doubtful nature as far as benefiting to any great extent the water situation in Westfield during a dry period.

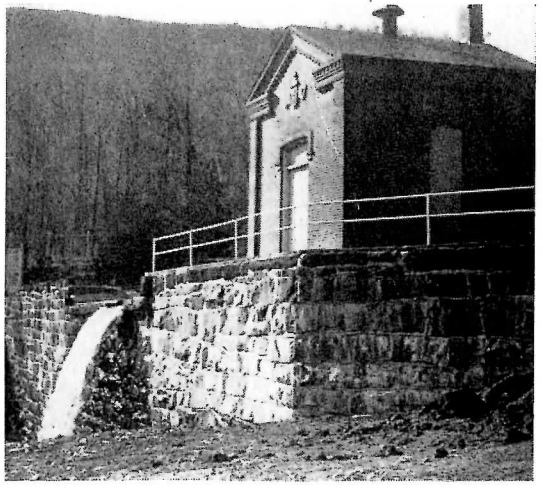
After about thirty years of opposition and debate, the new Granville reservoir dam was constructed, holding in reserve enough water to supply the entire City at its present rate of consumption for an entire year. This project was started early in the spring of 1928 and completed and first filled to capacity in April 1930.

The Granville watershed contains 4096 acres; the Montgomery 3046.40. The total area of City owned property on both watersheds now equals 6010 acres. On both watersheds 741,000 trees have been set out.

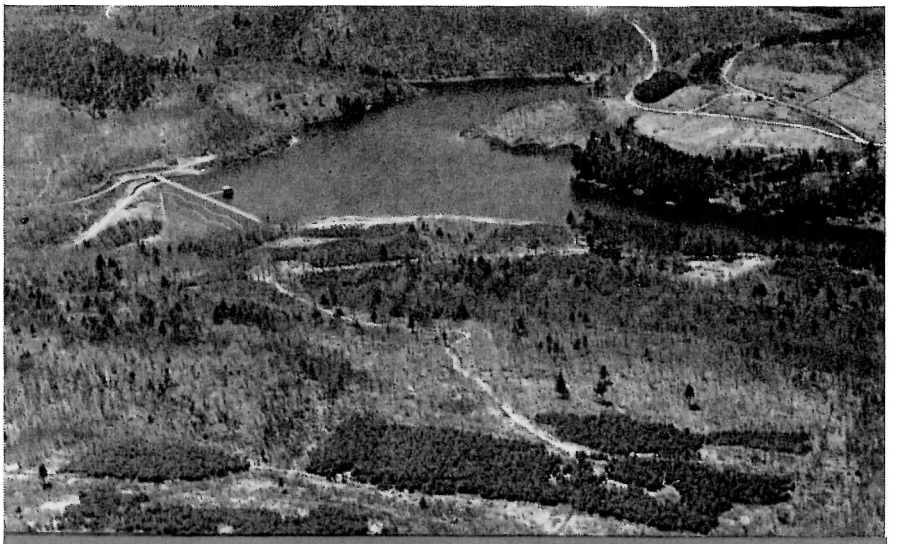
REFORESTATION BENEFITS

A surface water supply, such as ours, is subject to high turbidity due to excessive rainfall, and melting snow in the spring. A heavily wooded watershed eliminates much of the erosion of side hills and banks, tending to keep the water in the overflowing brooks, free of mud, sand, and other debris which causes much trouble and expense to eliminate through expensive systems of filtration and draining of ponds each year in order to clean out accumulated sand and mud.

I would venture to say that a completely wooded watershed would, no doubt, eliminate the need of much expensive filtering now necessary throughout the country.



Tekoa Reservoir, original Westfield source, located 292 feet above town. It was constructed in 1874 and is still in use.



View of Granville Reservoir, capacity 630 mg, taken from Drake Mountain, showing the town forest areas.

Sand Spring, source of Montgomery water shed supply.

Red pine trees planted on Montgomery water shed, show twenty years growth.

RESERVOIRS

The two reservoirs into which the Montgomery and Granville watersheds drain have a capacity of 184 mg and 630 mg respectively. In the Granville reservoir alone the capacity is sufficient for an average year's supply of water for Westfield.

No question has ever been raised concerning the purity of the water. However, during construction of Granville reservoir, with the numerous workmen engaged in construction above the intake reservoir, it was deemed advisable to chlorinate the water. A chlorinating outfit was installed on the main line below Winchell reservoir and has been in operation since that time.

At the suggestion of the Massachusetts State Board of Public Health, the Montgomery system is being chlorinated as a safeguard against any possible contamination, which condition, regardless of careful inspection, patroling, posting of lands, etc. is always possible with a surface water supply. Fences have been constructed about Sackett and Tekoa reservoirs as added protection against pollution by careless trespassers.

Westfield has an exceptional pressure for fire protection. Pressures range from 73 lb. on the Highlands to 128 lb. on lower Union Street and Little River. All new extensions are being made in accordance with suggestions of the Fire Underwriters' with the idea of still lower insurance rates in the future.

The Westfield water system serves a population of about 21,000; average daily consumption is 2,259,000 gallons. Francis J. Martin is superintendent of Public Works in Westfield.

Pittsburgh Considers

Continued from page 1

ges, and viaducts for road transportation, which are very costly to build and involve heavy continuous maintenance costs, and which, if neglected, result in accelerated depreciation and increased hazards to life and property. The operators of the municipal waterworks system have many unusual problems to provide water supply and fire protection with such extremes in the terrain. Under similar conditions of even most efficient and intelligent management, Pittsburgh's costs could not be as low as in a city like Detroit, with its abundant supply of lake water and its flat land area. No matter how skillful the management, it could not be successful unless the operators were granted the necessary funds from the city administration to maintain the property in an efficient manner. This lack of retained funds seems to be the primary, if not the sole, reason for the condition of the system. The city administration's desire to avoid an increase in tax rates is the cause which suggested the sale of the property to an authority. The greatest advantage the Authority will have, will result from its freedom from political influence in building up and maintaining its financial requirements and in its selection of personnel to manage its properties.

An editorial in the PITTSBURGH PRESS of October 15th is entitled, "TAXPAYERS, BEWARE!":

City Council has acted with unusual haste to put into effect the most recent proposal for selling the City waterworks to a Municipal Authority.

An engineering report was made Friday. Yesterday, Council President Thomas J. Gallagher introduced the resolution. The Finance Committee will consider it today and a public hearing is scheduled for Monday. You don't often get speed like that from your City Government.

If Pittsburgh taxpayers don't watch out, they're going to be out of the water business and into an Authority deal they don't know much about, and on short notice.

This whole proposition is based on the idea that our run-down water system needs rebuilding before it falls apart. But here are some of the things that could happen to the taxpayers:

1—Having already paid once for the water system, they may have to pay for the whole works a second time, if it is sold at a fair price to an Authority. Price 40 million dollars and up.

2—They'll surrender control of their water rates to the appointed members of an Authority, not responsible to the voters and committed to repay large amounts of borrowed money over a long period of years.

3—They'll no longer get free water for their schools, hospitals, charitable and public institutions and fire protection. That all comes to $998,560 a year—and guess who will pay for it?

As for our run-down water system, it provides drinkable water daily for 673,763 people. The taxpayers have invested $39,277,091 and they owed only $2,441,112 on the plant, at last reports. It's practically paid for.

This run-down plant makes plenty of money, but it's siphoned off to pay general expenses of the City. Mayor Lawrence gave the figures to a State Senate Committee last Dec. 11 in these words:

"We estimate an income of $6,567,400 from our water sales in 1952. We will budget about $3,925,000 for operating costs. That produces a cash balance of $2,642,400."

So the water plant needs repairs? That cash balance of $2,642,400 would amount to $26,424,000 in 10 years. Why isn't that enough to repair the works?

The Authority deal certainly would end the City Government's water problem—by getting rid of the works at a nice price. But from where we sit, that would just be the beginning of the taxpayer's problem. He's the guy who will have to pay, in the final accounting.

Instead of rushing into this deal, while public attention is centered on the national elections, City Council ought to lay it out on the table, where everybody can see what it looks like.

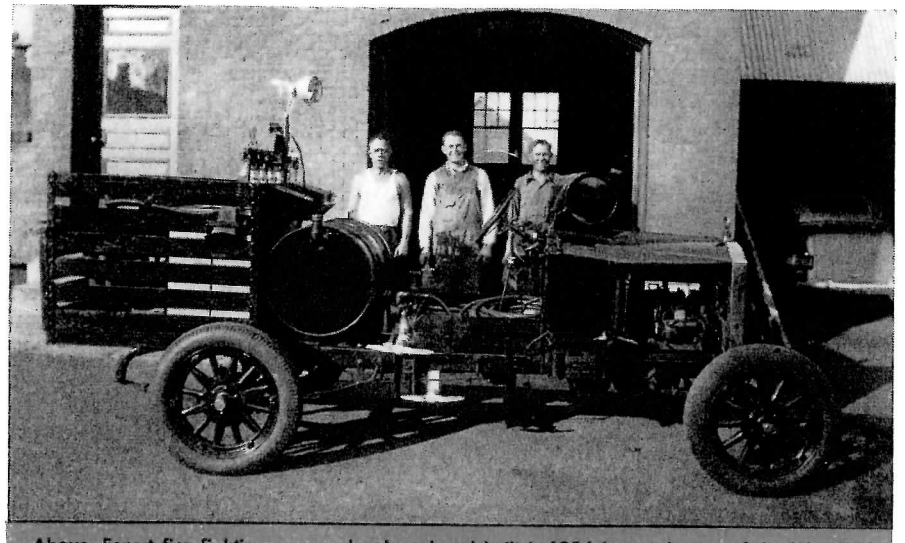
If the plan can't be sold to the voters on its merits, the City should junk it.

The PITTSBURGH PRESS also presents a summary of the report of the engineering firm of Parsons, Brinckerhoff, Hall & Macdonald of New York, which forecasts a repair bill of $30,000,000 for the water system:

Nearly 30 million dollars will be needed in the very near future to put Pittsburgh's city water system into first class working order.

That is the report of the engineering firm of Parsons, Brinckerhoff, Hall & Macdonald, of New York, which has completed a survey of the system for three investment houses.

The report outlines in detail the sorry plight of the system, which has been plagued by increasing numbers of water main breaks and other defects.



Above: Forest fire fighting wagon, developed and built in 1936 by employees of the Westfield Water Department, is still in use.