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CITIZENS' BUSINESS

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For a Water-Supply Plan

No. 1,405

April 25, 1939

A better procedure than that followed in the past is required to formulate the plan of water-supply development which Philadelphia needs.

TO safeguard its claims to available sources of water and promote economy of construction, Philadelphia should officially adopt a program of water-supply development. In order to decide upon a plan, however, the city needs much more conclusive information than it has.

Security and Economy. An officially adopted plan would strengthen the city's position in presenting its claims to available water resources and enable it to develop its water supply with maximum economy. Philadelphia's water supply is taken now, and probably will be taken in the future, from the waters of the Delaware River basin. It has often been proposed, however, that the future supply be taken at points other than the present ones, all of which are within the city limits. Whatever the future course, the city will have to defend its claims against those of other cities, as well as utilities, industries, and individuals in the area which looks to the Delaware River system for water. It can advance its claims most effectively if it knows definitely what they are. It can also develop its water supply with greater economy. When it is known what changes will have to be made in existing filtration plants and distribution mains to provide the best system for the future, construction, as it is undertaken, can conform to the later requirements and scrapping of plant units can be kept at a minimum.

Better Approach Needed. In order to reach a decision upon its program of water-supply development, however, Philadelphia's approach to the problem needs to be changed. The city has had numerous reports of official bodies, but these bodies have, particularly in recent years, been given insufficient time to make the exhaustive studies essential to reaching a conclusive decision. For example, the commission of 1920 was appointed in July and reported in September; a commission of 1924 was appointed in February, reported briefly

in May, and made a supplementary report in September; a Technical Committee of 1937 was appointed in May and reported in June. Reports prepared so hastily could do no more than review various projects and indicate which, with the evidence at hand, looked feasible. The committee of 1937 wrote, 'Your committee has not had time, the resources or sufficient detailed engineering data to check thoroughly the reliability of all of the various claims for the respective projects.'

A More Comprehensive Survey. Recognizing the need of a more thoroughgoing examination of the problem, the committee of 1937 said, further, 'In view of the tremendous importance of the Philadelphia water-supply problem and the regional aspects involved, we recommend that a comprehensive engineering survey be authorized to consider the problem in all its broad phases.' Such a survey would be most helpful. It should provide the detailed data which the 1937 committee lacked. These would include adequate facts concerning such features as yields of watersheds, quality of water, construction problems at dam and reservoir sites, location of aqueducts, treatment of water, and possibilities of power development.

Other Information Needed. A comprehensive survey would do still more. It would examine other public and private rights in the available sources, ascertain the future plans and requirements of communities, utilities, and industries, and determine the restrictions and costs which these interests impose on Philadelphia. The city's present water-works would be thoroughly studied, particularly with regard to the possibilities of improving existing sources by reducing pollution in the rivers from which the water is taken. Much of the required information is already available; but it needs to be assembled, supplemented, and thoroughly studied, so that a conclusive decision may be reached on a water-supply program.

PREVENTIVE MAINTENANCE

New York's Department of Sanitation has inaugurated what it calls 'preventive maintenance.' This program applies the principle of the periodic health examination to motor equipment. It provides that each motor vehicle shall come to the shop at regular intervals for a check-up. As the department has about 3,900 motor vehicles of 24 different kinds, the check-up is a full-sized job. Some of the equipment, however, such as snow loaders, is not in continuous use and does not need attention throughout the year. About 25 men are employed in the work. Brakes, batteries, and other parts are tested, and the trucks are lubricated. Some trucks are found to need more work than can be done during the check-up, so special days are designated for their return to the shop for the needed repairs. The purpose of 'preventive maintenance' is apparent: to keep equipment in good running order and detect conditions requiring repairs before they cause expensive breakdowns.

NAMING THE CITY SOLICITOR

House Bill 1319 (Cortese), introduced at Harrisburg on April 11, would make Philadelphia's City Solicitor elective. Under the present city charter he is appointed by the Mayor, with the consent of Council. It is pertinent to recall that prior to the present charter he was elected. When the Philadelphia Charter Committee of 1919 recommended that he be appointed, it argued that appointment was 'strictly in line with the practice in the State and Nation, and makes it certain that the City Solicitor will be able to work in harmony with the Mayor,' and that appointment would shorten the ballot. It is pertinent also to note that, in 1934, according to a recent report of the Committee on Urbanism of the National Resources Committee, of 841 cities in the United States having a population of 10,000 or over, only 100, or about 12%, elected their attorney; all the other cities appointed him.

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A Water-Supply Plan is Urgent

No. 1,436

November 28, 1939

Many conflicting proposals have been made for water-supply improvements. Early agreement upon a comprehensive, practicable, clear-cut plan of development is needed.

THAT Philadelphia needs to adopt a comprehensive plan of water-supply development has been pointed out repeatedly. Recently, organizations, officials, and others have made conflicting proposals for improving the water supply, and the resulting confusion strongly emphasizes the indispensability of early agreement upon a plan.

What Source of Water? Philadelphia now secures its water from the Delaware and Schuylkill Rivers. Both of these sources are polluted, and proposals have been made time and again that they, or one or the other of them, be abandoned as a source of supply. Just recently, for example, the Interstate Commission on the Delaware River Basin recommended that Philadelphia discontinue taking water from the Schuylkill River. On the other hand, the newly formed Schuylkill River Valley Restoration Association has advocated that the Schuylkill be cleansed of pollution and that Philadelphia continue to take water from it. Suggested new sources have included the Neshaminy, Perkiomen, and Tohickon Creeks, the upper Delaware River, streams of the Pocono Mountain region, and wells within the city limits. Numerous conflicting proposals concerning sources have been made during the last 20 years, but the city has not committed itself to any of them. Obviously, a decision concerning the source of water is of paramount importance. The source will determine not only the first cost of development, but also the annual expense, especially that of water treatment.

What Kind of Treatment? Agreement is needed upon the process that will be used to make the city's water healthful, pleasant to take, and suitable for household and industrial uses. No matter which source or sources Philadelphia selects from those available to it, treatment will be required; it is only a question of the extent of the treatment. At present the city filters the water through sand and then disinfects it with chlorine gas. Not long

ago, a proposal was made to filter the water through coal, and more recently treatment with ozone has been suggested. Ozone is an active form of oxygen produced from the air. City Council has been asked for money to try the ozone process.

Covered or Uncovered Reservoirs? Differences of opinion exist concerning the responsibility of an open reservoir for the recent unpleasant condition of the water in the Oak Lane section of the city. Storage of water in open reservoirs, such as the Oak Lane reservoir, has been criticized by some persons and defended by others. It costs more, of course, to build a covered reservoir than an open one. Is the additional expenditure for a covered reservoir necessary in order to protect water after it has been filtered, or is a cover over a reservoir merely a desirable feature to be provided if funds are plentiful? That is one of the many questions to be answered in formulating a plan of water-supply development.

Early Start Needed. Further avoidable delay in reaching an agreement upon a water-supply plan would be regrettable for several reasons. First, there are many conflicting opinions upon the steps to be taken, and it will require time to reconcile them. Only a few of the controversial proposals have been mentioned. Others include the metering of all services, financing through an authority or directly by the city, and revision of the charges for water. Secondly, a thoroughgoing study is needed. This should be given the time required to replace guesswork by fact wherever possible. Philadelphia has had numerous studies and reports on its water-supply needs, and much information of value has been compiled, but, at least in recent years, the studies have been inadequate or too hurried to be conclusive. Thirdly, after the plan is agreed upon, considerable time will elapse before its benefits will be realized. The situation is so urgent that an immediate start is imperative.

P. R. IN NEW YORK CITY

In an editorial on November 20, 1939, discussing some of the pros and cons of the election of members of New York's City Council by proportional representation, the *New York Times* said:

'The positive advantages brought by P. R. in the recent Council election are worth keeping in mind. With approximately two-thirds of the total vote, the organization Democrats won two-thirds of the seats. Under the old method of election, with such a percentage of the total vote, they would have had all or practically all of the seats, as they had in the past. Moreover, even the organization Democrats are not likely to be quite as machine-dominated as formerly.

'The voters have made their own selection from among them, and this means that these Democrats must please the voters rather than merely the boys in the clubhouses. The Opposition, though in possession of only one-third of the seats, consists mainly of able and experienced men. In an ordinary election a swing of votes as great as has just occurred would throw out many experienced legislators and substitute inexperienced ones. One of the great merits of P. R. is that it conserves experience. Out of the twenty-one members of the new Council, only four are newcomers.'

MORE THAN PRETTY PICTURES

To many minds, planning finds chief expression in such things as elaborate thoroughfares, parks, and public buildings. At best, these are the least product of this modern governmental process. Behind things seen are the effects of planning upon the way people live,—upon the manner and the costs of working and doing business. They are found in better housing and better living environment; in the improved adequacy and convenience of transportation and other public-service facilities; and in all manner of both public and private economies.—RUSSELL VANNEST BLACK, *Pennsylvania Planning*, October 1939.

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The Burden of Silt

No. 1,622

June 22, 1943

Philadelphia is seeking to lighten the burden, grown heavier in recent years, which silt-laden river water places upon the city's waterworks.

ALTHOUGH the city's water-treatment plants are greatly in need of rehabilitation and improvement, and the meeting of these needs is being delayed indefinitely by the war, the plants must clarify river waters carrying, on the average, more silt and other substances in suspension than they did when the plants were new. To obtain a reduction in the quantity of silt from coal mines, said to be a major source of water pollution, the city has recently appealed to the Pennsylvania Supreme Court.

Measurement of Suspended Matter. Substances carried in suspension by water make the water turbid, that is, not clear, and the turbidity of the water is a fair indication of the proportion of silt and other substances suspended in the water. The turbidity of water is commonly determined by comparing samples of the water to be tested with samples containing known proportions, in parts per million by weight, of suspended matter. The turbidity thus determined is expressed as parts per million—the larger the number of parts, the greater is the turbidity and the greater is the proportion of suspended matter.

Delaware River Turbidity. The average turbidity of the water pumped from the Delaware River to the Torresdale filter plant, which supplies about half of Philadelphia's water, has been higher in recent years than it was shortly after the plant began to deliver filtered water in 1907. Turbidity records of the Delaware River water, which have been kept by the Bureau of Water since 1912, show that the annual turbidity (the yearly average of daily tests) fluctuates widely from year to year. However, the averages of the annual turbidities over long periods of years have increased considerably. In the 10 years 1913–1922, the average of the annual turbidities was 27 parts per million; in the 10 years 1933–1942, it was 39 parts per million.

Schuylkill River Turbidity Much Higher. Determinations of the turbidity of the water pumped from the Schuylkill River in the earlier years are available only for the Belmont plant, one of four Schuylkill filter plants. At Belmont, the turbidities are much higher than at Torresdale, and they fluctuate more widely. In the first 10 years for which the records are available, 1914-1923, the average of the annual turbidities was 48 parts per million; in the last 10 years, 1933-1942, the average was 78 parts—just double the Delaware River average.

A Heavy Burden. Highly turbid waters place a heavy burden upon the city's treatment plants, which must remove the suspended silt and other matter from the water. To clarify the 55.9 billion gallons of water pumped from the Delaware River in 1942, the Torresdale plant removed 10,210 tons of sediment. At the Belmont plant, it was necessary to remove 8,687 tons of sediment from the 20.9 billion gallons of water pumped to it from the Schuylkill River in the same year. The Schuylkill River water contained 2.27 times as much suspended matter per gallon as was in the Delaware River water.

To Reduce Pollution from Coal Mines. Availing itself of a right to reopen a suit brought in 1896, granted by the Pennsylvania Supreme Court in 1907, the city recently petitioned that Court to restrain various coal companies from discharging or dumping mine wastes into or adjacent to the Schuylkill River or its tributaries. The Court had confirmed the report of a special master, who found that the coal companies were polluting the river, but the Court did not order abatement of the pollution, because the coal companies had already taken steps toward that end. In reopening the suit, the city contends that the coal companies are still discharging wastes into the river, and it seeks to obtain by court order a reduction in the pollution which places a heavy burden upon the waterworks.

PLANS VERSUS HUNCHES

As we prepare to face the post-war future, there is grave danger that we may mistake mere paper proposals, vague ideas, pretty pictures, and hunches for plans.

No city, in my opinion, can honestly say that it has a *plan* for post-war rehabilitation unless it has taken steps to acquire sites for at least the most urgently-needed public works, has under way the advance engineering surveys, and is at work on the specifications and working drawings. The mere *intention* to modernize the water works and enlarge the sewage treatment plant is inadequate. Good intentions alone build no public improvements and pave but one well-known road.

Some cities are now tackling these preliminaries with intelligence and courage, but too many others are content to speculate rather than plan, and indifferently excuse their inertia by saying that they will '... wait and see what the Federal Government may do.'

No one now knows how much aid from the Federal Government will be available after the war. But as we learned in the old PWA program, no Federal agency can act quickly and intelligently until it knows what is intended and desired.

Careful preparation pays for itself by eliminating the waste that inevitably results when projects are hastily improvised. Its expense may be compared to the cost of carrying insurance to protect against possible future need. I do not consider myself defrauded of my premiums simply because my house has not yet burned down.—Major-General PHILLIP B. FLEMING, Administrator, Federal Works Agency, as quoted in *The American City*, June 1943.

TRAINING PRIVATE FIRE-FIGHTERS

Fifteen cities, towns, and villages in Milwaukee County, Wisconsin, are participating in a fire-fighting training program designed for key men in industrial plants, department stores, etc., who, in turn, will organize fire brigades in their plants and train their crews.—*National Municipal Review*, June 1943.

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Paying for Waterworks Maintenance Out of Income

No. 1,627

July 27, 1943

An increase in the amount of current income spent for waterworks maintenance in 1942 was a step toward better and more economical upkeep of the city's water-supply system.

FOR many years now, maintenance of Philadelphia's water-supply system has been inadequate to keep the system in the best operating condition. In general, repairs and replacements have not been made as the need for them arose. It is gratifying, therefore, to find that a substantially increased amount of current income was applied to waterworks maintenance in 1942.

Increase in Expenditures. Records of expenditures kept by the Bureau of Water show that \$2,499,077.98 was spent in 1941 out of general funds, that is, out of current income, for the operation and maintenance of the city's water-supply system. This total includes not only the expenditures made through the Bureau of Water itself, but also those made for the water bureau by the Department of Supplies and Purchases for coal, motor oil, gasoline, fuel oil, lubricants, parts, repairs, and supplies of various kinds, expenditures for electric power and light made through the Electrical Bureau, and expenditures made by the Bureau of Mechanical Equipment in repairing waterworks equipment. Comparable figures for 1942 give a total of \$3,036,306.94 spent in that year, or \$537,228.96 more than was spent in 1941.

Less Water Distributed. The larger expenditures in 1942, however, were not caused by an increased production of water to meet the demands created by the war. Actually, the output of the waterworks was less in 1942 than in 1941; in fact, it was less than in any year since 1938. In 1942, the filter plants sent 116,454 million gallons of water into the distribution system, a decrease of 2,977 million gallons under the output of 119,431 million gallons in 1941. A trend, which had been upward each year since 1938, when 113,199 million gallons of water were distributed, was reversed. The output was lowered in 1942 by a successful campaign, in which private consumers cooperated, to reduce waste and unnecessary use of water.

Increased Expenditures for Maintenance. Larger expenditures for repairs to the water-supply system and for other maintenance work accounted for more than half of the 1942 increase in general-fund expenditures for the waterworks. Both in 1941 and in 1942, most of the general-fund expenditures for waterworks maintenance went for salaries and wages. An exact breakdown of the total expenditures for personal services has not been made, but available figures indicate that about \$606,000 was spent in 1941 for payrolls on waterworks maintenance, and that slightly more than \$699,400 was similarly spent in 1942. The increase of \$93,400 was due chiefly to bonuses and higher wages granted to city employes in 1942. Money spent for parts, materials, supplies, and work done by contract brought the total maintenance expenditures in 1941 to \$787,300. In 1942, the corresponding total was \$1,073,400, or \$286,100 larger than in 1941.

A Step in the Right Direction. Meeting the cost of waterworks maintenance directly out of income is the correct thing to do. Not only does this practice save money; it also insures better maintenance of the waterworks. Obviously, it is more economical to pay for repairs and replacements currently out of income than to borrow the money for them, and then have to pay interest and other debt charges over a long period of years. Furthermore, if the money is made available currently out of income, repairs and replacements can be made promptly, as the need for them arises. Thus, the city would avoid getting into the situation in which it found itself in 1940. In April of that year, it will be recalled, the voters were asked to approve, and did approve, a loan of \$18,000,000 for the waterworks. (Largely because of the war, only a small part of this money has thus far been spent.) Much of the \$18,000,000 was needed to make up for neglect of maintenance over a long period.

TAXATION OF FEDERAL PROPERTY

One of the practices followed by the federal government which frequently results in property tax avoidance is to retain title to property and then lease it to private persons for use in the performance of governmental contracts. In *Appeal of Mesta Machine Co.*, the Supreme Court of Pennsylvania on May 12 dealt this practice a severe blow that may have repercussions in many other states.

The United States and the Mesta Machine Company entered into a contract on a cost-plus-fixed-fee basis for the production of munitions. This contract provided that the machinery necessary for performance of the work, although installed in the buildings of the manufacturer, remained the property of the federal government and was leased at the nominal rental of one dollar a year.

The Pennsylvania court held that machinery thus used in the production of munitions is subject to assessment for tax purposes as the property of the company, even though legal title to it is actually in the federal government. If this decision is appealed to the United States Supreme Court, the National Association of Assessing Officers says, 'it seems likely that it will be sustained for this court in several recent decisions has indicated that it is not likely to support the government's claim of exemption unless there has been an attempt to impose the burden of taxes on it directly. ... It would ... seem that except in five or six states fixtures and improvements affixed by the federal government to land belonging to private owners can be included in the assessment of the real estate of the latter.'—Adapted from *Public Management*, July 1943.

SCHOOL BOYS REPAIR STREETS

High school officials in Springfield, capital of Illinois, have cooperated with the city engineer in recruiting students for work on street repairs and maintenance. About 40 boys were secured. Many of them took the work largely as a means of training for athletic competitions or for military service.—Adapted from *News Bulletin*, Public Administration Clearing House, July 10, 1943.

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Continuing Water-Leakage Surveys are Desirable

No. 1,634

September 14, 1943

Surveys to find and stop leakage from Philadelphia's water-distribution system have covered about half the total mileage of mains. The results obtained amply justify continuing the work.

IN May 1940, the city began a series of surveys to detect and stop leaks in the water-distribution system. As a result of these surveys, the loss of many millions of gallons of water has been prevented. Furthermore, tests of large water meters have revealed that the city was losing considerable revenue through under-registration of meters, and about five thousand valves were found to be in need of repairs.

Ground Covered Thus Far. To date, these water-waste surveys have covered the whole of West Philadelphia, the area between the two rivers south of Callowhill Street, and a section in the northeast bounded by Frankford Creek, American Street, Kensington Avenue, Fairmount Avenue, and the Delaware River. This work was done by a private company, under contracts which provided for the use of WPA labor. Work is now in progress north of Callowhill Street and south and west of the section in the northeast already covered. This work, too, is being done by a private company, but under a contract which requires the city to provide the necessary labor, transportation, and materials. Thus far, about one-half of the mileage of the water mains in the distribution system has been surveyed. When the present contract is completed, about 60 per cent of the system will have been checked for leaks.

Leakage Discovered. To and including September 4, 1943, the surveys have discovered 498 leaks in active service pipes, wasting 3,999,000 gallons of water a day, and 350 leaks in abandoned services, wasting 5,039,000 gallons daily. In addition, 2,125,000 gallons a day were being lost through 64 leaking joints in water mains, 6,139,000 gallons a day were going to waste from 54 breaks in mains, and 15 miscellaneous leaks were discharging 333,000 gallons a day. Thus, the surveys have found a total of 981 leaks, which were wasting 17,635,000 gallons of water a day.

Large Meters Tested. During the surveys, consumers' water meters 4 inches and larger in size are tested to determine the accuracy with which they register the quantity of water passing through them. Meters have been discovered that were not registering at all, and others were under-registering by large amounts. To and including September 4, 43 large meters were found to be registering 4,326,000 fewer gallons a day than they should have been registering. Obviously, the city was losing revenue for this water. About 2,000,000 gallons of this total would be charged for at the charity rate of 6 cents a 1,000 cubic feet. The remainder, it may be assumed, would be charged at the rate (40 cents a 1,000 cubic feet) applicable to metered water taken in excess of the quantity allowed for the minimum annual charge. The apparent loss of revenue to the city from the under-registration of the 43 meters exceeded \$51,000 a year.

Continuation Desirable. Stopping the waste of more than 17,600,000 gallons of water a day from about half of the water-distribution system would seem to justify continuing the surveys throughout the remainder of the city. Prevention of waste is particularly desirable at this time, when water must be conserved in order to assure an adequate supply for wartime activities. A desirable byproduct of the surveys is that they reveal the need of repairs besides those to stop leaks. For example, 4,850 of the valves which control the flow of water in the distribution system were found to be in poor condition or inoperative, and have been repaired. Also, the tests of water meters made during the surveys are valuable, since they enable the city to secure revenue to which it is entitled from the sale of water. Although the city tests and repairs hundreds of meters annually, it has no routine program for checking all of the more than 200,000 meters regularly. That such a program is desirable is shown by the surveys.

ADMISSION TAXES FOR POST-WAR USE

Cities in the state of Washington will obtain an estimated \$1,444,000 in revenue during the next year from municipal admission taxes, adopted earlier in the year after the state vacated the admission tax field by legislative action and gave municipalities the right to make such levies.

According to estimates of admission tax returns, as reported by The American Municipal Association, cities with a population of 20,000 or more will collect about 75 cents per capita, while smaller places may expect to collect approximately 50 cents per capita. Local conditions, however, may change expectations, and several war 'boom' cities are collecting exceptionally high yields from their admission taxes.

Most of the Washington cities adopting ordinances to allow levying of admission taxes do not need the extra revenue for current purposes but to build up reserve funds for post-war public works programs, the AMA said.—Adapted from *The American City*, August 1943.

HIGHLY USEFUL MATERIALS EXHIBIT

The Public Works Department of the City of New York has established a permanent exhibit of construction materials, which is unique in that most of the basic materials have been incorporated into the design of the floors, walls, partitions, ceilings and furniture of the offices of the department's Materials Section.

In these rooms, architects, engineers and contractors serving the city of New York are afforded an opportunity to study and compare hundreds of different types of materials and appliances in relation to their function and appearance in a finished structure—a far cry from the old method of searching the four corners of the drafting room for manufacturers' samples, which seldom, if ever, were to be found. The smaller items in the exhibit are attractively displayed in cabinets located strategically about the offices where they can be examined with ease.—*Engineering News-Record*, September 2, 1943.

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Municipal Sanitation

No. 1,643

November 16, 1943

Although Philadelphia, like other cities, has advanced a long way in the improvement of municipal sanitation, there is still a considerable distance to go.

USE by the city of measures developed through the advance of sanitary science has done much to improve municipal sanitation in Philadelphia. However, the city is still far short of doing all that is possible.

Safer Water. An outstanding example of progress in municipal sanitation is the improvement of the city's water supply since 1902. In that year the city pumped its water, as it does now, from the polluted Delaware and Schuylkill Rivers, but, except for sedimentation in reservoirs, the disease-laden water was distributed just as it came from the rivers. Following 1902, the city began to filter and chlorinate its water, and by the end of 1913 the entire water supply was being filtered and chlorinated. The reduction in the death rate from typhoid fever, a water-borne disease, is an approximate measure of the benefit to health derived from these improvements. In 1906, before treated water was available throughout the city, the typhoid death rate reached 74.0 per 100,000 of population; in 1914 it was 7.5 per 100,000, while last year, 1942, it was only 0.4 per 100,000. However, the city is not nearly as safe as it should be. The water-treatment plants have been allowed to deteriorate, and until they are put in first-class condition the defenses against water-borne disease will not be secure.

Sewers and Sewage Disposal. Municipal sanitation has been improved by the construction of sewers to carry away the city's vast quantities of sewage. Many hundreds of miles of sewers have been built, but there are still areas where sewage is discharged into cesspools because there are no sewers. It was estimated, during the health and hospital survey of 1929, that between 15,000 and 18,000 houses had cesspools. The recent agitation for sewers in Burholme and other outlying districts indicates that but little progress has been made since 1929 in correcting this condition. Further-

more, although one of three proposed sewage-disposal plants has been built, the city has much more to do before pollution of the rivers by its sewage will be completely abated through suitable treatment of the sewage discharged into the rivers.

Some Other Sanitary Measures. Present-day street cleaning is a big advance over the practice in the city's very early days of throwing all kinds of refuse on the streets and allowing it to remain there. However, even now, some refuse is thrown on the streets, and the ideal of clean streets has not been reached. Also, while progress has been made through the enforcement of sanitary regulations in bettering the condition of tenements and other buildings, a real-property survey made in 1939 revealed that 10.9 per cent of the occupied family accommodations in Philadelphia had inadequate sanitary facilities. Of the 491,602 families, 53,793 lacked private bathing facilities, 47,279 had no private inside toilet, and 1,040 had no running water in the house.

Higher Standards. While means for improving the sanitation of cities were being developed, the standards of municipal sanitation were rising. It is no longer sufficient that water be clear and abundant; it must also be healthful, odorless, and tasteless. Merely to collect and dispose of wastes such as garbage, ashes, and rubbish as conveniently as possible is no longer adequate; they must be collected inoffensively and neatly, and must be disposed of quickly and in a sanitary manner. However, as the standard is raised, approach to the standard is slower. Considerable improvement in an insanitary condition may be quickly effected, but the final elimination of the condition may be difficult and slow. Thus, when the typhoid death rate was high, it was reduced 66.5 per 100,000 of population by the improvements of eight years. At the end of 28 more years, the typhoid death rate had declined only a further 7.1 per 100,000.

COMBINED POLICE AND FIRE STATIONS

Plans are now being developed in many communities for post-war construction. But so far as I know, surprisingly little attention seems to have been paid to possible economies. . . .

For example, here in New York City the Planning Commission is developing an immense program. I notice that it includes more than fifteen new fire houses, and a dozen new police stations—each a wholly independent building. This just perpetuates the extravagant planning of the past. There are in New York City today fire stations and police stations side by side, each a separate building, with a separate heating plant and a separate maintenance force. . . . Why not combine these into adjoining units of a single building? The combined structure would cost far less than two separate stations. From the point of view of maintenance, it means one heating plant instead of two, one building superintendent instead of two, and many other ways of lowering annual costs.—STANLEY M. ISAACS, *The American City*, October 1943.

POLICE—PUBLIC OR PRIVATE?

The city council of Detroit, Michigan, recently adopted an ordinance declaring it unlawful for any person "to wear any uniform on the streets, highways, alleys, or other public places in the city of Detroit simulating the uniforms of the Detroit police department . . . unless such uniforms shall have placed at the top of each sleeve . . . in contrasting colors and in letters not less than one-half inch in height the words 'private police' or words of like designation." The police commissioner is authorized to inspect such uniforms and approve or disapprove them. This step was taken after the police commissioner called attention of the council to the fact that on a number of occasions plant guards and privately employed auxiliary police have been mistaken for members of the police department and that these private police officers had not always conducted themselves in a manner that tends to win the respect of the citizens.—*Public Management*, October 1943.

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To Expedite Completion of Sewage-Treatment System

No. 1,646

December 7, 1943

Sentiment at Council's hearing on proposed sewer rentals was unanimous for speeding completion of the city's sewage-treatment works, and favored sewer rentals as a step in the financing.

ON November 24, City Council's Committee on Finance held a public hearing on two proposed ordinances relating to the imposition of sewer rentals. A large and widely representative group attended the hearing, and there was an extended discussion.

The Proposed Plan. One of the ordinances simply provided for sewer rents based upon water consumption. The objective was to set up a schedule of legal sewer rents, sufficient to make the sewerage and sewage-disposal system self-supporting, and thereby create a special borrowing capacity which could be used in case of need for completing the system. The other ordinance provided for a 20 per cent reduction in the charges for water, effective when sewer rents became collectible. (The proposed plan is explained in CITIZENS' BUSINESS No. 1,624, July 6, 1943.)

Views at the Hearing. Those at the hearing seemed to be unanimously in favor of speeding the completion of the sewerage and sewage-disposal system. Naturally, there was less agreement regarding the method of raising the necessary money. It was suggested that the city should set aside something for the project each year out of revenues; but no one anticipated for a moment that the work could be financed entirely, or even principally, out of revenues. Everyone recognized that large borrowings would be required. It was recognized, too, that the city now has no general borrowing capacity, and that even though one may develop beginning next year, it may not be large enough to provide for both the sewerage work and the other public improvements that

will need to be undertaken. Opinion seemed to favor the adoption of some system of sewer rentals in order to secure a special borrowing capacity for the sewerage work. Favorable response was given to a recommendation that the entire sewerage project, including the various proposals for financing it, be referred to the Commission on City Planning for early action. Near the end of the hearing it was announced that the Mayor was working on a sewer-rent plan and that it would shortly be submitted to City Council.

Desirable Steps. In view of the great need to complete the city's sewerage and sewage-disposal system as soon as possible after the war ends, and the doubtfulness of the city's ability to finance this and other required work out of its general borrowing capacity, it seems desirable that the city take prompt steps to create a special borrowing capacity for sewerage purposes by making the sewerage system self-supporting through the imposition of sewer rentals. Following receipt of the Mayor's sewer-rent plan, Council would do well to seek the cooperation and advice of the Commission on City Planning, and, after one or more public hearings, pass an ordinance imposing the best system of sewer rentals that can be devised to meet the local situation. If genuine and sufficiently productive sewer rentals are imposed, the city will be in position to obtain all the money it will need to borrow to complete its sewerage and sewage-disposal system as speedily as conditions permit. Actual collection of the sewer rentals need not be made unless, nor until, the special borrowing capacity is used.

TO CONTROL RIVER POLLUTION

A \$200,000,000 project to control pollution in the Ohio River has been recommended to Congress by the Ohio River Committee as a means of safeguarding the public water supply and reclaiming streams in the Ohio River drainage area for recreational purposes.

The project, covering a 15-year period, would be financed over 40 years, with the federal government putting up 35 per cent of the cost. Among other things, the project calls for the establishment of sewage-disposal plants in 27 metropolitan areas, including Pittsburgh, Cincinnati, Louisville, Youngstown, and Nashville.

The pollution-abatement recommendation was made by the Ohio River Committee and concurred in by the War Department and the Corps of Engineers, following a 5-year survey of domestic and industrial wastes and acids from mines.

The Ohio River Committee, appointed by the secretaries of War and the Treasury, is composed of an Army engineer, a representative of the Public Health Service, and a non-government expert on stream-pollution problems.—Adapted from *Engineering News-Record*, November 25, 1943.

POLICE TAKE COLLEGE COURSE

Thirty members of the Syracuse, New York, police department have been selected to attend a one-year course of police training at the extension department of Syracuse University. Instructors will be three key men in the police department, assisted by university staff.—*Public Management*, November 1943.

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A New Sewer-Rent Ordinance

No. 1,655

February 8, 1944

The new sewer-rent ordinance submitted to Council by the Mayor, is basically similar to the ordinance introduced on May 20, 1943, but differs markedly therefrom in rental rates.

AT the hearing before Council's Finance Committee held November 24, 1943, on the sewer-rent ordinance introduced on May 20, 1943, it was announced that the Mayor was working on a sewer-rent plan and shortly would submit it to Council. On January 27, a new sewer-rent ordinance was submitted by the Mayor to Council and was introduced. A companion ordinance providing for an offset in real estate taxes is to be presented in the near future.

Basically Alike. The new proposed ordinance has much in common with the corresponding ordinance introduced last May. Chief among their common features is the basis of the sewer rentals, namely, water consumption. Two earlier ordinances, the first of which based the rental upon the assessed valuation of real estate and the second partly on the assessed valuation of real estate and partly on water consumption, were disapproved by the courts. From the court decisions, however, it appeared that sewer rentals based solely upon water consumption would be legal. Both the Mayor's proposed ordinance and the one introduced last May make the sewer rentals percentages of the charges for water.

Less Inducement for Metering. It is in the rental rates that the two proposed ordinances differ markedly. In the first place, whereas the ordinance introduced last May provided a higher rate for non-metered properties than for metered properties, the Mayor's ordinance provides the same rate for both kinds of properties. Obviously there would be less inducement under the latter than under the former to install meters.

No Wholesale Rates. In the second place, whereas the ordinance introduced last May gave the large consumers of water the benefit of wholesale rates, the Mayor's ordinance does not. The former provided for graduated rates, ranging from 105 per cent of the charges for water for the great majority of small metered consumers, who have half-inch connections with the water mains, to 50 per cent of such charges for big industries having connections over six inches in size. The latter provides a uniform rate of 90 per cent of the charges for water for all consumers. Under neither ordinance, however, would the rates become fully effective in the first year. Under the one introduced last May, they would start at five-tenths of the full rates, advance one-tenth each year, and become fully effective the sixth year. Under the new ordinance, they would start at six-tenths of the full rates, advance one-tenth each year, and become fully effective the fifth year.

Need of Prompt Action. As sewer rentals seem to offer the only feasible way of insuring the early completion of Philadelphia's sewage-disposal system, an appropriate sewer-rent ordinance should be adopted as soon as possible. Once adopted, its legality can be tested in the courts and the decks can be cleared for the financing of the sewage-disposal project. While the work of construction cannot be begun until labor and material, now needed in the war, again become available for peacetime improvements, the city should make itself ready so that it can proceed with the project as soon as construction work can be resumed. Now is the time to make ready.

A JUNIOR BOARDING SCHOOL

A junior boarding school, the first of its kind in the United States, opened in Detroit recently—a new approach to the problem of adequate safeguards for children whose mothers work. The school, operated temporarily by the Day Care Committee of the Michigan Defense Council, is partly supported by the Detroit War Fund. If successful, the school may be the forerunner of other wartime boarding schools in the state. Primarily for boys and girls of preschool age, the school accepts school children as well, both to keep family groups together and to approximate a normal family atmosphere. However, instead of attending classes in the building, older children will go to the nearest public school. The junior boarding school offers six days a week of substitute home life to youngsters whose regular home life has been dislocated by war conditions. Housed in a dwelling in a residential section, the school has a play yard equipped with ladders, swings and slides.—Adapted from *News Bulletin*, Public Administration Clearing House, February 2, 1944.

TAXPAYERS' HEAVEN

Rio Vista, California, is what property owners call a taxpayers' heaven. The city council, in adopting the annual budget, fixed the tax rate at zero. The city has leased withdrawal rights to gas-bearing sands to oil companies on a royalty basis. In addition to being absolved of taxation for city governmental expenses, individual property owners will receive royalties.—*Florida Municipal Record*, January 1944.

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Hearings on the Sewer-Rent Ordinance

No. 1,659

March 7, 1944

At the hearings on the Mayor's proposed sewer-rent ordinance, suggestions have been made for wholesale rates and for making only part of the sewer debt self-supporting.

SINCE the introduction in City Council, on January 27, 1944, of the Mayor's proposed sewer-rent ordinance, two hearings on it have been held before Council's Committee on Finance, one on February 15, the other on February 29. A third hearing is scheduled for March 9. At the two hearings already held, all who spoke were for proceeding as promptly as possible with the work of completing the city's sewage-disposal system, but they differed as to the manner in which the project should be financed.

Wholesale Rates Proposed. The proposed ordinance would impose a sewer rental which, upon reaching its maximum, would be 90 per cent of the water bill for all users of the city's sewerage system. A group of business and industrial organizations, including the Chamber of Commerce and Board of Trade, urged that the ordinance be amended to provide for a wholesale rate for the larger consumers of water. Speaking through the Citizens Sewer Rent Committee, some of these consumers offered two specific schedules of sewer rents. One of these would make the rentals for unmetered properties two dollars plus 90 per cent of the charges for water, and for metered properties two dollars per water ferrule connection plus percentages of the charges for water ranging from 75 per cent for consumers having connections of three-quarters of an inch or less to 40 per cent for consumers having connections of six inches or more. In principle, this schedule of graduated rates is similar to the one in the proposed ordinance introduced on May 20, 1943.

Basic Assumptions. To understand the purpose of two other suggestions offered at the hearings, it is necessary to recall that the city now has little, if any, general borrowing capacity, but could borrow for sewers and sewage-treatment works if it made sewerage debt self-supporting, that is, if it provided the system with revenues sufficient to meet operating expenses and the interest and sinking-fund charges on the debt. Both the Mayor's proposed ordinance and the one of last May are based on the assumption that the revenues must be sufficient to make *all* sewer debt self-supporting, old as well as new, for sewers as well as for sewage-treatment works. The two other suggestions, explained below, are based on different, and doubtful, assumptions.

Of Doubtful Constitutionality. One, a suggestion offered by the Citizens Sewer Rent Committee, assumes that only *new* sewer debt need be made self-supporting. Recognizing, however, the doubtful constitutionality of this assumption, the Committee would have the ordinance provide for two rent schedules, the first to yield only enough revenue to support the new debt, the second (described in the second paragraph above) to yield enough to support both the old and the new debt. Which of these schedules would become effective would depend on the decision of the courts. The other suggestion, offered by the Philadelphia Committee of the Pennsylvania Economy League, assumes that only the debt for sewage-treatment works need be made self-supporting. This assumption, too, is of doubtful constitutionality.

IMPROVING LOCAL ADMINISTRATION

The Council on Intergovernmental Relations, an unofficial organization at the national level, has selected three states—Minnesota, Indiana, and Georgia—for experiments in determining which levels of government can best provide essential governmental services, what improvements can be made in cooperative relationships, and ways of accomplishing better coordination of all services at the local level. The Council also hopes to discover a basis for increased control of local services at the local level and to create incentives for improving the administrative structure of local government. . . .

When a new governmental service is evolved or is demanded by the people, officials at higher levels of government generally have a tendency to think that local governments are not administratively competent to handle the new activity, and then the process of centralization is started. It is hoped that the experiments in these three states will result in bringing about desirable changes at the several levels of government and in strengthening and improving the administration of local services.—JOHN O. WALKER, *Public Management*, January 1944.

MEMPHIS PAYS AS IT GOES

At the close of 1943 the Memphis, Tennessee, City Commission moved to discontinue bond issuance and set up a 1944 permanent improvement fund of \$500,000 from current surplus revenues. As surplus allows, the fund will be increased for future financing of major projects.—*Municipal Finance News Letter*, February 16, 1944.

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Sewer Rentals Adopted

No. 1,667

May 2, 1944

In enacting the sewer-rent ordinance, Philadelphia has taken an important step toward completing its sewage-disposal system.

ON April 20, Council passed and the Mayor approved the new ordinance for sewer rentals. This is an important step toward the completion of Philadelphia's sewage-disposal system.

Wholesale Rates Restored. In CITIZENS' BUSINESS No. 1,655, February 8, 1944, the Bureau described the differences between the proposed ordinance introduced on January 27 and the one that had been introduced on May 20 of last year. While both sought to establish sewer rentals based indirectly on water consumption, the ordinance of May 20 provided for wholesale rates for large users of water but the one of January 27 would have imposed a uniform rate of 90 per cent of the charges for water on all users of the city's sewers. Otherwise the two proposals were very much alike. As finally passed, the new ordinance, too, provides for wholesale rates, its rate schedule for metered properties being similar to the one in the earlier proposal.

The Rates Adopted. The rates fixed in the new ordinance are the following percentages of the charges for water:

For unmetered properties, 100 per cent.

For metered properties (except charitable institutions, public and private schools, and properties whose water charges are at special rates—for all of which the sewer rental is made 100 per cent of the charges for water), the percentage varies with the size of the water ferrule, as follows: $\frac{1}{2}$ -inch, 100%; $\frac{5}{8}$ -inch, 95%; $\frac{3}{4}$ -inch, 90%; 1-inch, 85%; $1\frac{1}{4}$ -inch, 80%; $1\frac{1}{2}$ -inch, 75%; 2-inch, 70%; 3-inch, 65%; 4-inch, 60%; 6-inch, 55%; over 6-inch, 50%.

When Effective. The sewer rentals will not go into effect immediately. In the first place, they will not go into effect at all until January 1 of the year 'next succeeding the borrowing or appropriation of money for the extension and improvement of the sewer system or sewage treatment works of the city, or the entering into any contract or contracts therefor, whichever event shall first occur.' In the second place, when they do go into effect, they will do so gradually. They will start at six-tenths of the full rates, advance one-tenth each year, and become fully effective the fifth year.

Makes System Self-Supporting. It is expected that the sewer rentals, when they are in full force, will yield about \$6,000,000 a year. This would be sufficient, according to official estimates, to make the completed sewerage system self-supporting, that is, sufficient to meet operating expenses and the debt charges on the sewer debt, both old and new. The city's next step will be to petition the court, on the strength of the revenue the sewer-rent ordinance is expected to produce, to declare the existing sewer debt and the proposed new sewer debt self-supporting, and therefore deductible from the debt chargeable against the city's general debt limit.

Borrowing Capacity Increased. One effect of making the existing sewer debt deductible as a charge against the general debt limit will be to increase the city's general borrowing capacity by about \$39,000,000, from \$9,000,000 to \$48,000,000. This should be husbanded against a later day of need.

THE RIGHT TO STRIKE

In January, the United States Conference of Mayors adopted the following resolution:

WHEREAS the health, safety, and welfare of the people of all municipalities is endangered by strikes of municipal employees to enforce their demands against their city governments, especially in the midst of war;

WHEREAS the President of the United States has declared that: 'All government employees should realize that the process of collective bargaining, as usually understood, cannot be transplanted into the public service . . . militant tactics have no place in the functions of any organization of government employees. A strike of public employees manifests nothing less than an intent on their part to prevent or obstruct the operations of government until their demands are satisfied. Such action . . . is unthinkable and intolerable.'

Now, therefore, be it RESOLVED: that the United States Conference of Mayors . . . does hereby affirm the statement of principles hereinabove stated, and does hereby condemn any strikes of public employees against duly constituted municipal governmental agencies or authorities.

BRITAIN MAY DRIVE ON RIGHT

The British Government is investigating the possibility of changing the highway rule in Britain from drive-left to drive-right. Although the Englishman drives on the left he always walks on the right, and all efforts to change this have failed.—*Police Chiefs' News Letter*, April 1944.

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For Universal Water Metering

No. 1,703

March 13, 1945

Putting all unmetered water services in the city on a metered basis is one of the projects which the City Planning Commission recommends to be undertaken as soon as possible.

METERING of all water services has long been recognized as an essential step in the further improvement and development of Philadelphia's water-supply system. For years there have been repeated efforts to reach this goal, but more positive action is needed to accelerate the process.

Why Needed. Universal metering is required for two reasons: to distribute the cost of providing water more equitably, and to eliminate waste of water and the attendant costs. Water charges for services not provided with meters are based on the number and type of fixtures, and on the size of the connection to the water main. There is no incentive for occupants of unmetered premises to save water, and leaks in plumbing fixtures and pipes frequently are not repaired promptly or at all. Studies made some years ago by the Bureau of Municipal Research indicated that private unmetered consumers, as a group, were taking 40 per cent more water than they would have been using had their properties been metered.

Cost of Wasted Water. The elimination of this waste is important. Pumping, treating, and distributing costs are larger than they would need to be, and no additional income is derived by the city. Waste water finds its way to the sewers and adds to the burden of the sewage system and disposal works. A consulting engineer retained by the city in 1940 to study and report on the city's water-supply system and needs estimated that the total water supply required in 1965, with an increased population and a more extensive actual use of water, would not be measurably greater

than the 1940 consumption, if certain steps, including universal metering, were taken. Thus by the prevention of waste, the construction of needless water plant capacity can be avoided.

Progress to Date. In 1916 the city enacted an ordinance requiring various types of large consumers of water, particularly industrial and commercial users, to purchase water at meter rates rather than at schedule or fixture rates. This ordinance also empowered the Chief of the Bureau of Water to install meters, at the property owners' expense, on all premises where water was being wasted. Beginning in 1918 all new water services and all enlargements of existing services were required to be metered. As a result of these ordinances and the voluntary action of consumers, 231,000 of the 466,000 present water services in Philadelphia are metered. Unmetered services now total 235,000.

Achieving Universal Metering. In its *Recommended Program of Public Improvements, 1945-1950*, submitted to City Council on September 15, 1944, the City Planning Commission has recommended a \$6,050,000 project for the provision and installation of meters for all unmetered water services in the city. The Commission lists this project among those that should be undertaken as soon as possible. As there are several ways in which this project might be financed, it would seem desirable for City Council, and the city officials concerned, to study the alternatives and reach an early decision, so that the project may be gotten under way without delay when labor and materials become available.

PHILADELPHIA'S RANK IN TAX RATES

Among the 14 cities in the United States that had a population of more than 500,000 in the 1940 census, Philadelphia last year ranked 8th (starting with the highest) in total real estate tax rates (city, county, school, state, and other combined) per \$1,000 of estimated true valuation. Philadelphia's total rate was \$28.75, made up of a city-county rate of \$17 and a school district rate of \$11.75, both of which have remained unchanged throughout the 6 years 1940-1945. Boston, with a total rate of \$39.90, was highest, and Washington, with a total rate of \$15.75, was lowest.

Here is how the 14 cities ranked (based upon the 23d annual compilation of tax rate data made by the Detroit Bureau of Governmental Research, and published in the December 1944 issue of the *National Municipal Review*):

1. Boston . . .	\$39.90	8. Philadelphia	\$28.75
2. Buffalo . . .	39.13	9. Milwaukee .	28.23
3. Chicago . . .	39.00	10. St. Louis . .	26.68
4. Pittsburgh .	37.52	11. Los Angeles .	26.28
5. Detroit . . .	33.13	12. Cleveland . .	23.84
6. Baltimore . .	29.70	13. San Francisco	23.45
7. New York . .	29.10	14. Washington	15.75

MONEY FOR PLAYGROUNDS IN PARK

At a meeting held last Thursday, the Fairmount Park Commission voted to ask City Council for an appropriation of \$25,000 to provide playground facilities at 10 locations in Fairmount Park. This, it is said, would double the recreation facilities in the park for both children and adults.

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City's Sewer-Rent Ordinance Upheld by Court

No. 1,705

March 27, 1945

Court of Common Pleas No. 6 has ruled that the sewer rents set up by the city last year are not taxes, and that they are equitable, reasonable, non-discriminatory, and valid.

ANOTHER major hurdle in the financing of the completion of the city's sewage-disposal system has been passed successfully. On March 15, Court of Common Pleas No. 6, in an exhaustive opinion by Judge Gerald F. Flood, upheld the city's sewer-rent ordinance of April 20, 1944 on every one of the numerous grounds upon which it had been attacked.

Appeal Likely. It is expected that an appeal from this decision will be taken to the State Supreme Court. For one thing, opponents of the sewer-rent ordinance doubtless hope that they still can have the ordinance stricken down, either in whole or in part. More important than that, since many millions of dollars of bonds will need to be issued to finance the contemplated work, bankers, investors, and the city all will want every doubt as to the legality of the sewer rents resolved by the state's highest court. The city authorities would welcome an appeal by the opposition.

Sewer Rents Not Taxes. One of the chief points made against the sewer rents was that they were in reality taxes; that being taxes they were required by the state constitution to be uniform; and that, as they were far from uniform, they were invalid. Twice before, it will be recalled, the State Supreme Court found that given sewer rents, or sewer charges, prescribed by the city were really taxes. In October 1940, that court ruled that the sewer rentals fixed by an ordinance of August 1, 1940, and which were based on the assessed valuations of real estate, were actually taxes, and so were not the kind of revenue needed to make the city's sewer and sewage-disposal debt

self-supporting and therefore not chargeable against the city's constitutional debt limit. Then, in September of the following year, that court affirmed the decision of Court of Common Pleas No. 6, written also by Judge Flood, which held that the sewer rents imposed by an ordinance of June 12, 1941 were, in part, taxes, since they included a charge based on the assessed valuations of real estate. The present ordinance bases the sewer rents entirely on the annual charges for water, and the Court has ruled that the rents are not taxes, but are charges for services, just as the water charges themselves are. 'The sewer rentals imposed by the Ordinance of April 20, 1944 are not taxes nor a substitute for taxes, and are not subject to the provision of the Constitution of Pennsylvania relating to uniformity of taxes.'

Equitable, Reasonable, Non-Discriminatory. In its final conclusion, the Court says: 'The sewer rental imposed by the Ordinance of April 20, 1944 is fair, just, reasonable and non-discriminatory and in accordance with law; and the rates are equitably apportioned among the users of the facilities.' Other findings include the following: Classification between customers who receive metered service and those who receive unmetered service is proper. Rates charged to different classes of users need not be uniform or equal, or equally profitable to the city, although they must be free from arbitrary or unjust discrimination. The aggregate revenue estimated to be received from the sewer rentals imposed by the ordinance of April 20, 1944 will be substantially less than the amount permitted by state law.

PERSONAL PROPERTY ASSESSMENT

On March 15, the Board of Revision of Taxes notified City Council that the assessed valuation of taxable personal property (stocks, bonds, mortgages, etc.) for 1945 totals \$639,785,646.86. This is \$17,240,895.31 more than last year's valuation, and it is larger by \$109,786,000 than the estimated assessment used for budgetary or appropriation purposes.

The increase of the actual valuation over the estimate means a \$439,140 larger personal property tax levy than was estimated when the current year's budget was adopted. Moreover, the increase over the estimated assessment makes the city's borrowing capacity \$10,978,600 larger than it would have been, had the actual valuation turned out to be the same as the estimated one. The increase over last year's assessment operates to add \$1,724,100 to the actual borrowing capacity of the city.

JOINT ACTION FOR RECREATION

As a result of a meeting held last January, which was sponsored by the City Planning Commission, a committee of local officials concerned with recreation was formed. Composed of the City Architect and representatives of the Board of Education, the Department of Public Welfare, and the Fairmount Park Commission, the Committee has undertaken the study of various recreational problems and the coordination of an over-all program for Philadelphia. Because of past proposals to centralize responsibility for recreation in one city department, the achievements of this committee will be of particular interest.

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A Change That Weakens

No. 1,708

April 17, 1945

Elimination of the merit-system provisions of the city-county consolidation amendment may make impossible realization of the full benefits of consolidation.

SENATE Bill 132, the proposed city-county consolidation amendment, has been reported out of committee, but with the elimination of the provision that 'Laws shall be enacted to provide that all appointments and promotions of officers and employes paid out of the city treasury shall be according to merit and fitness.'

State Control Preserved. Sponsors of the amendment have never regarded it as a home-rule measure. Its object was not to set up bounds within which Philadelphia could act independently of the state, because it was recognized that the right of the state to interfere could not be abridged. Philadelphia might hope to be trusted to regulate city, county, and court finances and personnel without state interference, but could not hope to be immune from intervention if the state judged it recreant to its trust, especially in county or court affairs.

Judiciary or Legislature? If the state is to control, the question arises, through what branch? Presumably it would be the legislative branch for employes performing city and county functions, but it might be the judicial branch for those performing court functions. A great deal has been heard from time to time about the 'inherent rights' of courts to regulate their own affairs. The theory is that since the judiciary and the legislature are coordinate, the legislature cannot decide such things as how many employes a court shall have, what they shall be paid, or what their qualifications shall be.

Needless to say, this is an important issue in Philadelphia's city-county consolidation problem.

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A New Water Commission

No. 1,712

May 15, 1945

The Water Commission appointed by the Mayor will not find all the answers in the reports submitted by its predecessors.

THE Mayor has acted wisely in appointing a Commission to recommend a water-supply plan. For many years Philadelphia has badly needed a sound, comprehensive water program. Without agreement as to its future course, particularly the sources from which water will be taken, the city can never be certain that steps toward improved distribution facilities within the city will not turn out to be costly mistakes. Worse than that, as the Knowles report of 1940 puts it, 'The possibility of going to other sources of supply has been the principal cause of deferring necessary improvements to the present system.'

Quick Jobs. Looking over the work of past boards and commissions that have advised on water supply, the present Commission may see some importance in taking all the time it needs for careful study. A Board of Engineers appointed in 1920 had a 50-year plan ready in two months. A Commission appointed February 14, 1924, presented a 50-year plan on May 22 following, which it supplemented with supporting data on September 13. The Technical Committee of the Mayor's Water Commission of 1937 made its report 30 days after it was appointed. It had had time only to describe past proposals and its only recommendation of consequence was that 'a comprehensive survey be authorized to consider the Philadelphia water supply problem in all its broad phases.' Such facts may help to explain why proposals made in past studies have not had more substantial backing.

Needs Overestimated. The new Commission will have reason to wonder whether its predecessors have not overestimated the amount of water

needed in the future. From 1890 to 1900 the city's population grew 24 per cent; from 1900 to 1910, 20 per cent; from 1910 to 1920, 18 per cent. The 1920 Commission estimated a population of 3,250,000 by 1970. The 1937 Commission, contemplating an increase of only 7 per cent from 1920 to 1930, estimated 3,100,000 by 1980. The Knowles report, early in 1940, estimated a population of 2,500,000 in 1965.

The present Commission is faced with a slight *decrease* in population from 1930 to 1940, and with facts strongly indicating that growth in the metropolitan area may be destined to occur more in the suburbs than in the city itself.

Attitude Toward Pollution. The new Commission will observe in past reports a strong disposition to accept pollution of the Delaware and Schuylkill Rivers as something to retreat from rather than to fight. Thus the 1924 Commission found the Schuylkill pollution bad and growing worse, and recommended that the Schuylkill be abandoned. And the 1920 Commission, believing that pollution at the Torresdale intake would later make the water undesirable at that point, proposed that when that time arrived the city should move its intake up the river. The present Commission may not be quite so willing to urge that the city go to great expense to run away from pollution. A new public attitude may encourage it to see greater possibilities of freeing the rivers from their contamination. This issue has a vital bearing on whether the city needs to go anywhere for water of acceptable quality except to the two rivers that flow right through its yard.

WHY THEY WERE THROWN OUT

Recent issues of **CITIZENS' BUSINESS** dealing with legislative reapportionment (Nos. 1,709 and 1,710) stated that reapportionment acts passed in 1937, based on the 1930 census, had been held invalid in court decisions. A reader asks what was wrong with them.

Three defects, all in Allegheny County, were noted by the court in the senatorial apportionment. There was one district which comprised two disconnected areas and another which was made up of three such areas (violating the constitutional requirement of contiguity), and the Borough of Sewickley Heights was not included in any district.

The defects in the representative apportionment were too numerous to be listed here. A number of areas were not included in any district, and there were violations of the contiguity requirement. Also, the City of Harrisburg was given two representatives and the rest of Dauphin County one, though Harrisburg had less than half the county's population.

None of the trouble was in Philadelphia. The decisions are in 45 Dauphin, p. 322 and p. 111.

DETAILED PLANS FOR PUBLIC WORKS

Obviously, public improvements cannot be proceeded with until the related drawings and specifications have been completed. Moreover, until they have been completed, or quite definitely lined up, it frequently is not possible to make any realistic estimate of either the cost or the time required to do given work. Accordingly, the City Planning Commission is securing information as to the exact status of the detailed plans for the various public improvements proposed for the city.

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THE YEAR

Voluntary Installations of Water Meters

No. 1,717

June 19, 1945

Many property owners would find it advantageous to install water meters on their premises without waiting for the city to require them to do so.

IN various issues of CITIZENS' BUSINESS, the most recent of them being No. 1,703, the desirability of putting all unmetered water services in the city on a metered basis has been stressed. Among the advantages to the city, and indirectly to the taxpayers and water consumers as a group, would be a large reduction in the waste of water, and the resulting lower cost of supplying water. Also, many property owners would have smaller water bills, or could have more water facilities for the same, or approximately the same, annual charges. These property owners would find it worth while to install water meters voluntarily, without waiting for the city's proposed metering project to materialize.

Fixture Rates. About 235,000 of the city's water services are unmetered. For the most part, these are small domestic and commercial services established before 1918. Water charges for unmetered properties are based on the size of the ferrule, or connection to the water main, and the type and number of fixtures attached to the service. For the $\frac{1}{2}$ -inch ferrule—the one almost always used for dwellings—there is a minimum charge of \$5 a year. This allows for the use of a kitchen sink and a plain hydrant in the yard; \$1 additional is charged for each toilet, washstand, and laundry tub, and \$3 for each bathtub and each hose connection.

Meter Rates. Minimum charges at meter rates are based on the size of the ferrule. For a $\frac{1}{2}$ -inch ferrule, which is adequate for the vast majority of individual dwellings, the minimum charge is \$8 a year. For a $\frac{5}{8}$ -inch ferrule the charge is \$12, and

so on up to a 12-inch ferrule, for which the yearly charge is \$4,600. In all instances, 1,000 cubic feet (7,480.5 gallons) of water are allowed without charge for each dollar of the minimum charge. Of the 231,000 metered services in the city, about 200,000 are connected to the water main by the smallest ($1\frac{1}{2}$ -inch) ferrule. In 1943 the average annual bill for this group was \$8.12.

Unmetered Properties. There are thousands of unmetered services in Philadelphia which, at fixture rates, pay only \$6 to \$8 a year for water. Most of these deficient accommodations will not be changed to a metered service until the city requires the installation of meters, or the rates are drastically increased relative to meter rates. Yet where the fixture charge is \$8 or more it usually is worth while to install a meter.

Examples. Unmetered water supplied through a $1\frac{1}{2}$ -inch ferrule to a dwelling having a kitchen sink, a laundry tray, a bathtub, a washstand, and a toilet costs \$11 a year. If metered, the cost would probably not exceed \$8, a difference of \$3 in favor of the metered property. Assuming a two-family house and a $1\frac{1}{2}$ -inch ferrule, the cost of water, if metered, probably would not exceed \$12, and may be as low as \$8. Yet, on fixture rates, if each family is provided with a kitchen sink, a toilet, a bathtub, and a washstand, the cost would be \$20 a year. With sewer rentals based on the charges for water the savings with metered services would be doubled. Property owners, however, must pay for the meter and its installation and repairs. For the small-size meters the annual allowance for these costs should not exceed \$1.50.

REVENUES CONTINUE GOOD SHOWING

In the first 5 months of this year general-fund revenue receipts of the city totaled \$54,440,949—an increase of \$1,055,000 over the similar receipts in the same period of last year, \$53,385,801.

Most of the important revenues of the city show larger receipts in the first 5 months of this year than in the same months of last year. Here are some of the comparisons:

Current real estate tax receipts, \$30,918,120—\$177,000 more than in 1944.

Earned income tax receipts, \$10,710,974—an increase of \$668,000 over last year.

Receipts from water rents, etc., \$5,056,899—\$107,000 more than in 1944.

Receipts from the Philadelphia Transportation Company (principally rentals of the Broad Street Subway and the Frankford Elevated Railway), \$2,114,580—\$16,000 more than in 1944.

Receipts from the state from liquor licenses, \$1,630,325—just \$5,700 under last year's amount.

Delinquent real estate tax receipts, \$688,720—a decrease of \$162,000 under last year.

Current personal property tax receipts, \$545,258—\$43,000 more than in 1944.

MORE EFFECTIVE TAX COLLECTION

Approval by the Governor on May 22 of House Bill 660, now Act No. 342, greatly strengthens Philadelphia's power to collect delinquent taxes and municipal claims. Delinquent property may now be sold free from any right of redemption by anyone.

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Last Year's Expenditures

No. 1,718

June 26, 1945

Compared with 1943, payrolls and total expenses increased in 1944; on the other hand, decreases occurred in capital expenditures, in payments for principal of debt, and in interest.

ISSUANCE of the City Controller's detailed annual report for last year makes possible a discussion of some of the more significant of 1944's expenditure figures.

Expenses. In 1944, the city's expenditures for expense purposes, as distinguished from capital expenditures and payments of debt, totaled \$81,153,433 (excluding depreciation, but including minor replacements of property; also including all interest paid on the city's bonded debt). Compared with the preceding year, expenses as thus defined increased \$116,000, or almost exactly 1/7 of 1 per cent.

Capital Expenditures. Last year's capital expenditures amounted to only \$2,123,989—\$455,000, or 17.6 per cent, less than in the preceding year. They were the smallest for any year since 1936, when the amount was \$1,615,564, and they were only 3.3 per cent of the peak yearly figure of \$64,222,434, in 1926. Of 1944's capital expenditures, \$667,123 (31.4 per cent) were met out of general-fund revenues; most of the rest were made from the proceeds of bond issues.

For Payments of Debt. Expenditures for the payment of the principal of the city's bonded debt totaled \$6,905,947 last year. This consisted of \$5,925,947 for sinking-fund instalments, and \$980,000 to pay maturing serial bonds. In the preceding year, payments of sinking-fund instalments totaled \$6,409,691, payments of maturing serial bonds were \$895,000, and total payments for principal of bonds came to \$7,304,691.

Payrolls. By far, the largest item of expense last year was the one for salaries, wages, and other

compensation of officials and employes. In 1944, these expenditures totaled \$44,675,856—an increase of \$1,154,000, or 2.7 per cent, over the 1943 amount, \$43,521,443.

Interest. Second in size among the city's expenses were the expenditures for interest. Last year, these expenditures amounted to \$19,298,982—a decrease of \$696,000, or 3.5 per cent, under the 1943 figure, \$19,995,336.

A Reinterpretation. As noted above, the amount given for last year's expenses includes the gross amount of interest paid on the city's bonded debt. That is the official interpretation of interest, and the usual one. However, no allowance has been made for the fact that a large portion of this interest is not a true expense: that the interest paid on sinking-fund holdings of city bonds is, in the final analysis, a payment toward the principal of city bonds, just as fully as are the payments of sinking-fund instalments; that, in fact, such interest and all other earnings of the sinking funds are properly deductible from the gross interest payments, and only the resulting net amount is the real burden of interest.

Taking the amount reported as income on sinking-fund investments in 1944 (\$5,287,401) as an offset to the gross interest payments, the city's expenses in 1944 were \$75,866,032 (instead of \$81,153,433), interest expense was \$14,011,581 (instead of \$19,298,982), and payments for principal of debt totaled \$12,193,348 (instead of \$6,905,947). These adjusted amounts not only give a *truer picture* of the city's expenditures, but they give a *decidedly more favorable picture*.

MOUNTAIN WATER

Water from the distant mountains always appeals to the sentiment of the general public who think of it as crystal clear, as they have seen it in the bubbling hillside brooks on their excursions afield—cool, refreshing and satisfying. This is seldom, if ever, so, and in the present case it is a highly idealized sentiment and far from the facts . . .

The Upper Lehigh and its branches and the Delaware River tributaries above the Water Gap could furnish a very soft, generally clear, and hygienically safe water which would, however, at times be turbid, have a high color or vegetable stain, and would be subject to occasional dangerous pollution. To make it as satisfactory as the water which Philadelphia is now using would require treatment to remove the color, turbidity and disease germs. We go so far as to express the opinion that with rare exceptions no surface water should be consumed without filtration or other treatment.—*Report of the Mayor's Water Commission of 1920.*

PENALTIES AND INTEREST ABATED

Both the city and the school district have accepted the provisions of Act No. 386, approved May 25, 1945, abating penalties and interest on delinquent real estate taxes, provided the delinquent taxes and current taxes are paid within specified periods.

NEXT ISSUE ON SEPTEMBER 4

Our readers are reminded that CITIZENS' BUSINESS is not published during July and August. The next issue will be the one of September 4.

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State Supreme Court Upholds Sewer Rents

No. 1,728

November 6, 1945

The validation by the State Supreme Court of the city's sewer rents gives the city upwards of \$81,600,000 of additional borrowing power for public improvements.

ON October 30, the State Supreme Court handed down an opinion upholding the legality of the city's sewer-rent ordinance of April 20, 1944. The city has thus been given power to proceed with many millions of dollars of public improvements that would have been held up indefinitely if the sewer rents had been invalidated.

Loans for Sewers and Sewage Disposal. One of the major results of the Supreme Court's favorable decision is that the city will now be able to finance the whole of its sewer and sewage-disposal program without having to use any of its general borrowing capacity for that project. The city will now be able to authorize, outside its debt limit, all the additional bonds estimated to be needed to complete the sewage program. The chief alternatives to this would have been (1) further long delays in securing needed sewers and sewage-treatment facilities; or (2) the use, for the sewage program, of the city's general borrowing capacity, and the consequent sidetracking of other important public improvements; or (3) increased taxes to provide the money required for the sewage program (or required for improvements sidetracked by that program).

Large Increase in Borrowing Capacity. Another major result of the favorable court decision is the exclusion, from the debt chargeable against the city's general debt limit, of all existing and all authorized but unissued debt for sewers and sewage-treatment plants (such exclusion to be obtained by petition to one of the Courts of Common Pleas). Through the imposition of the sewer rents, all such existing and authorized debt has

been made self-supporting, and so will cease to be chargeable against the city's general debt limit. Not only will the \$34,000,000 or more of bonds still to be authorized for the sewage program be excluded from the debt chargeable against the general debt limit, but the approximately \$53,607,000 of outstanding sewage bonds (figured as of the close of 1945) and the \$8,000,000 of unissued sewage bonds authorized by ordinance of October 5, 1945 will be similarly excluded. Since these \$61,607,000 of bonds are now charged against the general debt limit, their exclusion will increase the city's general borrowing capacity by about \$47,607,000 (\$61,607,000 less approximately \$14,000,000 of sinking-fund assets applicable to the outstanding sewage bonds).

Makes an Immense Difference. Imposition of the sewer rents therefore will make possible the borrowing of about \$47,607,000 more for non-self-supporting public improvements, and at least \$34,000,000 more for sewage purposes, than would have been possible had the sewer rents not been imposed. The significance of these increases, which total more than \$81,600,000, stands out when one notes that at present the city has a borrowing capacity of only about \$5,000,000 (of which \$4,000,000 is about to be used for a councilmanic loan, as explained in last week's issue of CITIZENS' BUSINESS), and that the annual increase in borrowing capacity, disregarding any increase or decrease resulting from changes in the assessed valuation of taxable property, was about \$10,000,000 this year, and, with sewage debt self-supporting, will be about \$9,000,000 next year.

INDEPENDENT PLANNING COMMISSION

In recognition of the importance of the City Planning Commission and its many-sided relationship to the various departments, bureaus, and other units of the city-county government of Philadelphia, the Mayor, in his proposed budget for next year, has recommended that the Commission be given the status of a separate, independent unit.

Thus far, the Commission has received its appropriations through the Director's Office, Department of Public Works, and has been to a considerable extent under the supervision and administrative control of the Director of Public Works.

It is believed that the Commission deserves to be given the independence enjoyed by a full-fledged department of the city government, that its prestige would be fittingly enhanced by its having independent status, and that the Commission would be able to function even more expeditiously and advantageously than heretofore.

BONDS AWAITING ISSUANCE

In addition to issuing whatever bonds may hereafter be authorized against the city's general borrowing capacity, or that may lawfully be authorized for self-supporting projects, the city has power to issue bonds already authorized but not yet sold. At present, these authorized but unsold bonds total \$24,000,000 (exclusive of a very small, odd amount that probably will be canceled). These consist of \$11,000,000 for water purposes, \$8,000,000 for sewage purposes, and \$5,000,000 for airports.

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TION TO BUREAU
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Crime Prevention Work of Philadelphia's Police

No. 1,732

December 4, 1945

Since 1932, the city has had a Crime Prevention Division in the Bureau of Police. This Division, which deals with children and youths, has reduced crime and saved money.

PHILADELPHIA'S police force, although primarily a law-enforcement body, has a Crime Prevention Division, which does a big and effective job in preventing crime.

Crime Prevention Division. This Division was founded in 1932 on the recommendation of the Crime Prevention Association. At first, and until 1936, its staff comprised one lieutenant and two policemen. In 1936, however, the personnel was increased to sixteen, and five policewomen were included in the enlarged staff. Since then it has continued to expand; now it is under the command of a captain, and has a total personnel of forty-seven, including fifteen policewomen.

Function to Reduce Delinquency. The Division works with boys and girls under twenty-one who have gotten into trouble. On complaint of police, the Board of Public Education, public institutions, or parents, an officer of the Division investigates the case. The investigation has both welfare and police aspects. Once the necessary information is obtained, the fundamental aim is to put the juvenile who has gotten into trouble into a situation where he or she will not become, or continue to be, a delinquent. Wherever possible, arrests are avoided and cases are handled with little or no legal formality.

Cooperates With Other Agencies. The work of the Division involves cooperation with many agencies, for it is realized that the Division by itself could deal with only a very small fraction of the more than 400,000 children and youths in the city. Accordingly, after the situation of the child or youth has been examined the case is re-

ferred to an appropriate social agency for handling and supervision. A report on each case is sent periodically to the Crime Prevention Division. At present, the Division deals with thirty-eight agencies, and through them the work of preventing crime is integrated with other community services.

Accomplishments. In the nearly fourteen years of its life the Division has accomplished much. It has definitely reduced the rate of delinquency in each area it has entered. In its early years the Division concentrated on a few districts. Now it covers the entire area between the two rivers from Lehigh Avenue to the Navy Yard, and also the Sixteenth Police District, in West Philadelphia. In addition, it acts on complaint in any other section of the city. From the point of view of social advantage to the community, the Crime Prevention Division has saved thousands of children and youth from drifting into crime; while from the point of view of the taxpayers, it has saved much money. No exact financial estimate of the savings to the taxpayer is possible, but they far exceed the cost of the crime-prevention work.

A New Chapter. The Division is about to begin a new chapter in its existence. At its November meeting, the Board of Public Education formally recognized the Crime Prevention Division as an integral part of the educational system of the city, and invited it and the Crime Prevention Association to establish their offices in the school district's Administration Building. It is expected that the new quarters will be occupied within the next two weeks.

NEW WATER SUPPLY RECOMMENDED

On Thursday last, the Mayor's Water Commission submitted to City Council a preliminary report on the city's water supply which was made to the Commission by its board of consulting engineers.

Outstanding among the recommendations of the engineers are the following: (1) abandonment of the Schuylkill River as a source of water supply; (2) building a dam and a 98-billion-gallon storage reservoir at the Wallpack Bend of the Delaware River, about 13 miles above the Delaware Water Gap; and (3) taking the city's water supply from the Delaware River at Yardley, above Trenton, the volume of water in the river being augmented at times by releasing water from the reservoir.

No estimate of the cost of carrying out the recommendations is given in the report, but one of the consulting engineers estimated that it would exceed \$100,000,000, and that 5 to 6 years would be required to complete the project.

STATUS OF NEXT YEAR'S BUDGET

City Council has completed its initial, detailed consideration of the budget for 1946, and has referred it to the committee on finance. Definite decisions apparently have not yet been made regarding pay increases for policemen, firemen, and city employes in general; collection of sewer rents; or the 1946 real estate tax rate.

GIFTS TO BUREAU DEDUCTIBLE

By ruling of the Commissioner of Internal Revenue, contributions to the Bureau of Municipal Research are deductible by the donors in arriving at their taxable net income.

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Abandonment of the Schuyl- kill River as a Water Supply

No. 1,752

April 23, 1946

Even with the results to be expected from cleansing the Schuylkill, the abandonment of that river as a source of Philadelphia's water supply may prove desirable.

TWO weeks ago, CITIZENS' BUSINESS No. 1,750 pointed out that treatment could make the water from the city's present sources of supply palatable as well as safe, and that full consideration should be given to providing adequate treatment before it is decided to abandon these sources. Two earlier issues (Nos. 1,745 and 1,747) dealt with other details pertinent to the city's current water problem. This week consideration is given to the desirability of abandoning the Schuylkill river as a source of city water.

Quality of Schuylkill River Water. Many of the poor qualities in Philadelphia's water are directly attributable to the portion that is taken from the Schuylkill. That river is three times as polluted as the Delaware, and its water is more than twice as hard and turbid. It is polluted far beyond the limit recommended by the U. S. Public Health Service as the permissible maximum pollution in water that is to be treated by passing through rapid sand filters. Further, it has a high content of taste-producing matter, which the present treatment, largely rapid sand filtration, does not remove completely. Also, it has a manganese content in excess of permissible limits. Finally, unit costs for treatment are almost twice as high as for Delaware water.

Effect of Pollution-Abatement Programs. The program undertaken by the State Department of Health to force municipalities along the Schuylkill to treat their wastes should greatly reduce the pollution in that river. And controls now being imposed on industries, especially on collieries, should result in a marked reduction in the quan-

tity of culm and other industrial wastes in the Schuylkill. These controls, plus federal and state dredging programs and construction of the contemplated desilting basins, should almost eliminate the Schuylkill culm problem. Together these measures should considerably reduce the turbidity of the water and the operating difficulties at the Schuylkill plant intakes and filters over the next 5 to 10 years, the probable time that would be needed to develop an upland water supply.

Residual Faults. However, there would still be pollution in the Schuylkill, since none of the plants will completely treat their effluent, and since there always will be discharges of wastes from small, uncontrolled sources. Also, because its capacity to dilute discharges into it is comparatively small, only minor gains in cleansing can be expected from the river itself. The water will have about the same degree of hardness as at present, and it will have some tastes and odors. Moreover, the manganese content probably would not be materially reduced.

Abandonment of the Schuylkill River. Although it is feasible to treat the residual faults, their number and character suggest the desirability of early abandonment of the Schuylkill river, and the substitution of a source which is softer, less polluted, lower in manganese, and containing less taste-producing matter. Major gains in *raw-water* quality can be had by taking all needed water from the Delaware, and the quality improves almost progressively in the proposed new sources with their distance from Philadelphia. These gains will be discussed in subsequent articles.

SCHOOL TAX COLLECTIONS

Current Real Estate Tax. From the current real estate tax the school district obtained \$18,667,739.07 in the first 3 months of this year—an amount greater than the corresponding figure of last year (\$18,374,101.19) by \$293,637.88, or 1.6 per cent.

Delinquent Real Estate Taxes. Collections of delinquent school taxes on real estate amounted to \$360,846.63, and exceeded the like collections in the same period of 1945 (\$328,398.10) by \$32,448.53, or 9.9 per cent.

Total from Real Estate Taxes. Current and delinquent real estate taxes together brought in \$19,028,585.70 for the schools—\$326,086.41, or 1.7 per cent, more than the comparable item of last year (\$18,702,499.29).

Tabular Comparisons. In condensed form, the foregoing comparisons appear as follows:

	1946	1945	Increase	
Current ..	\$18,667,739	\$18,374,101	\$293,638-	1.6%
Delinquent	360,847	328,398	32,449-	9.9
Total	19,028,586	18,702,499	326,086+	1.7

VINE STREET WIDENING POSTPONED

Announcement was made last week by the Governor that work on the widening of Vine Street from the Delaware River Bridge westward has been postponed indefinitely. The postponement was made primarily to avoid the dislodging of families and businesses in this period of critical housing and building shortages.

The state authorities have indicated that due consideration will be given to any alternative design that the city may desire to submit in place of the postponed project.

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About Water From Nearby Delaware River Sources

No. 1,755

May 14, 1946

This issue, the fifth of a series dealing with the city's water needs and proposals to meet them, discusses three plans for taking the water from nearby Delaware River sources.

IN a recent issue (No. 1,750), **CITIZENS' BUSINESS** pointed out that an entirely suitable water could be produced, by proven methods of treatment, from the city's present sources of supply. A subsequent issue (No. 1,752) discussed the desirability of discontinuing the taking of water from the Schuylkill River, and substituting a source that would provide water that is less polluted, lower in manganese, and containing less taste-producing matter. The present issue deals with several plans to take all the city's water from the Delaware River, or from it and two nearby creeks.

Delaware River at Torresdale. In its report of April 1946, the Board of Consulting Engineers to the Philadelphia Water Commission indicated that Philadelphia's entire water supply could be obtained from the Delaware at Torresdale, where about 45 per cent of that supply is now taken. Delaware water at Torresdale is free of manganese, and is much softer than Schuylkill water. Also, it contains less taste-producing matter, and is only about one third as polluted. However, there is danger of insufficient water during periods of drought, if Philadelphia's requirements (now about 325 million gallons a day) should approach 500 million gallons a day. The cost of this project is estimated at \$87,568,000, including \$62,568,000 for necessary improvements to the existing treatment and distribution facilities.

Delaware River Yardley Project. By taking water from the Delaware at Yardley, about 6 miles above Trenton, a decidedly better raw water could be obtained than can be gotten at Torres-

dale. Both the pollution produced between Yardley and Torresdale, and the very high pollution carried by the incoming tides, would be by-passed. Under a plan known as the Delaware River Yardley Project, water would be taken from the Delaware at Yardley and from reservoirs on the Perkiomen and Tohickon Creeks. This project could meet a demand of upwards of 500 million gallons a day. Reliability of the supply would be insured during droughts by the storage on the creeks, and the raw water would be only half as polluted as that at Torresdale. It would be slightly harder than the Torresdale water, but it would be much softer than the Schuylkill water. Development of this project is estimated to cost \$188,730,000. Including needed improvements to the existing distribution system and treatment plants, the total cost would be about \$240,000,000.

Yardley-Wallpack Bend Project. Under another proposal, designated the Yardley-Wallpack Bend Project, all the city's water would be taken from the Delaware at Yardley. The flow in the Delaware would be controlled, and made adequate to meet a demand of 500 million gallons a day, by the construction of a dam at Wallpack Bend (about 13 miles above the Delaware Water Gap), and the release of water at appropriate times into the river channel. The water would be about the same in quality as that furnished by the Delaware River Yardley Project. Moreover, the cost would be considerably less, being estimated at \$126,882,500. Including necessary improvements to the present treatment and distribution facilities, the total cost would be \$185,014,000.

TWO NEW CITY TAX MEASURES

On Thursday of last week, two proposed ordinances providing increased tax revenues for the city were introduced in City Council. These measures are designed to provide money needed to finance (1) proposed pay increases of \$400 a year for city and county employes now receiving less than \$5,000 a year, and (2) the adoption of a shorter work-week (48 hours, instead of 72) for firemen. City officials estimate that these measures would yield about \$4,500,000 this year (assuming they are made effective on July 1, as planned), and about \$9,000,000 next year.

Increased Amusement Tax. One of the proposed ordinances would increase the city's amusement tax from 1 cent per 25 cents of the charge for admission to 1 cent per 10 cents. The estimated yield of this increase in rate is \$3,500,000 during the second half of the current year, and about twice that amount next year.

Tax on Hotel Rooms. The other measure would impose a tax of 10 per cent on the charges for rooms in hotels, lodging houses, etc., when occupied by transients. This new tax, it is estimated, would produce \$1,000,000 in the last half of this year, and \$2,000,000 next year.

SCHOOLS STRESS CLEAN-UP TIME

Philadelphia's public and parochial schools are stressing that 'springtime is clean-up time'—in homes and gardens, and for streets. Among other things, about 325,000 attractive and informative circulars are to be given the children to take home.

2004.059.0033

CITIZENS' BUSINESS

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BUREAU OF MUNICIPAL RESEARCH

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SUSTAINING SUBSCRIP-
TION TO BUREAU
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About Building a Dam On the Delaware

No. 1,757

May 28, 1946

This issue, the sixth of a series dealing with the city's water needs and proposals to meet them, discusses the need for interstate agreements if a dam is to be built at Wallpack Bend.

INTERSTATE difficulties, though not necessarily insurmountable ones, arise in the damming of the Delaware River at Wallpack Bend, as contemplated in two of the alternative water-supply plans proposed for the city.

States' Rights. First of all, each of four states—New York, New Jersey, Delaware, and Pennsylvania—has rights in the Delaware River that cannot be taken away, or be reduced, by any of the other of those states, or their political subdivisions, without the consent of the state or states adversely affected. Besides, since New Jersey and Pennsylvania many years ago entered into a compact which provided that the Delaware was to be maintained as an open highway, and since the building of the proposed dam would block the upper portion of the river, New Jersey's consent would have to be obtained. Also, inasmuch as construction of the dam would flood extensive areas in New Jersey and New York, as well as in Pennsylvania, the approval of both New Jersey and New York would be needed. Moreover, it would seem that the consent of New Jersey, and perhaps of New York and Delaware, would need to be obtained because the building of the dam would reduce, or might be anticipated to reduce, the availability or suitability of the river for recreational, industrial, agricultural, water-supply, or other purposes beneficial to those states, their residents, industries, or municipalities.

Condemnation of Lands To Be Flooded. Complications arise also from the need to condemn lands in New Jersey and New York that would become flooded as a result of the building of the

dam. Pennsylvania may condemn lands within its own borders, but it possesses no right of condemnation in New Jersey or New York. Nor is it certain that those states can condemn land for Philadelphia's or Pennsylvania's benefit, unless some benefit to the condemning state can be demonstrated. Such a possible benefit to New Jersey might exist in a proposed power plant. Whether some benefit can be found or be provided for New York remains to be seen.

Policing Reservoir and Controlling Pollution.

Still other problems concern the policing of the reservoir to be formed by the proposed dam, and the controlling of stream pollution. Pennsylvania can provide for adequate policing of the Pennsylvania portion of the reservoir, and can exercise effective control of stream pollution within its own territory, but it has no police powers in either New Jersey or New York. For the policing of the reservoir in those states special arrangements would have to be made with them. Possibly also, special arrangements for controlling pollution in those states of the upper Delaware and its tributaries would need to be made.

Interstate Compacts. Most of the problems arising from the construction of the proposed dam could be solved by resort to interstate compacts. Very likely, many of them could be handled by the Interstate Commission on the Delaware River Basin, well known as INCODEL, which was created by the four states Pennsylvania, New Jersey, New York, and Delaware in 1936. The various problems present real difficulties, but they are not necessarily insurmountable.

CITY'S EARNED INCOME TAX UPHeld

On May 20, the U. S. Supreme Court announced its refusal to review a decision of the Superior Court of Pennsylvania in a case involving a resident of New Jersey who is employed at the U. S. Navy Yard, and who asserted that he goes directly from New Jersey to the Navy Yard, does not pass through any part of Philadelphia, receives no benefit from the city government, and therefore should not be subject to the city's earned income tax.

Refusal to review the decision of the State Superior Court is, practically speaking, equivalent to approving that decision. The Superior Court had held that the worker in question was subject to the city tax—that the Navy Yard is part of Philadelphia; that the worker receives benefits from expenditures of the city in patrolling the Delaware River and keeping it open in winter, whether or not he receives any other benefits from the city government; and that even if the city failed to perform its duties with reference to the Delaware River, the fact that the city was obligated to perform those duties was a benefit to the worker.

MONEY FOR RECREATION CENTERS

City Council, in an ordinance approved by the Mayor on May 17, has just appropriated \$1,466,720 for improvements to and equipment for recreation centers. This money, part of the \$4,000,000 councilmanic loan authorized November 8, 1945, is allotted to 63 different recreation centers throughout the city, in amounts ranging from \$200 to \$58,130 each.

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High-Quality Water At Reasonable Cost

No. 1,758

June 4, 1946

A program to give Philadelphia a high-quality water, in adequate quantities for the distant future, at the lowest annual cost, is described herein.

IN any discussion of a water supply for Philadelphia, it is important to distinguish between raw water, which is a source material, and delivered water, which is the final product to be used by the consumer.

Raw Water Must Be Treated. Regardless of its quality, all the raw water from the various sources proposed for the city must be processed to some degree before delivery to the consumer. However, by proven methods of treatment, a high-quality water can be produced from any of the proposed new sources, and even from the present sources. By 'high-quality water' is meant water that is free of objectionable tastes and odors, and that is colorless, soft, clear, palatable, and free of disease-bearing organisms.

A Program Indicated. Analysis of the various water-supply proposals as to the quality of the final product, adequacy of supply, capital costs, total annual costs for water including debt service, and probable time of completion, leads to the conclusion that a high-quality delivered water can be provided in the shortest time, and at the lowest annual cost, including debt service, by adopting the following program.

Stage One. First in order would be the installation and operation of equipment to eliminate all objectionable tastes and odors from the water from the present sources, and to take out manganese from the Schuylkill River water. This, with what is now being done, would result in meeting, within one year, all the specified quality standards except softness, and at a capital cost of not more than \$4,000,000.

Stage Two. Next would be the abandonment of the Schuylkill River as a regular source of supply, and the taking of all the water (except in emergencies) from the Delaware River at Torresdale, with part of the water conducted to the Queen Lane and Belmont treatment plants through tunnels, the construction of which should commence immediately. This stage also includes improvements to the existing plants and distribution system. Completion of this stage would result, within three years, in supplying a water meeting all the specified quality standards, and adequate in volume for the highest presently estimated requirements. The capital cost of this stage would be about \$87,568,000.

Under existing regulations for the control of withdrawals from the Delaware River, completion of these two stages should be all that would be needed. These stages meet stream conditions as they exist today, and any advantages secured in the future through pollution abatement would be reflected in lower annual operating costs.

Stage Three. In anticipation of the possibility that withdrawals from the Delaware River, by industries and communities above Torresdale, should become so great as to make it seem desirable to control the flow of the river, negotiations should be undertaken for clearing the legal paths for the construction of a dam at Wallpack Bend. Actual construction, however, would not be started unless the dam is found to be needed. In the event of failure to clear these legal paths, provision for an alternative supply from the Perkiomen and Tohickon Creeks might be undertaken.

PAYMENTS FOR PUBLIC ASSISTANCE

Two weeks ago, CITIZENS' BUSINESS No. 1,756 gave the per capita expenditures of 7 comparable large cities in 1944 for the operation of general government, exclusive of schools, and for several separate city functions or services.

The amounts given for the operation of general government included the various cities' expenditures for public assistance, but the amounts of these were not shown. Since these expenditures differ greatly (for example, Philadelphia's are very small, because the state provides practically all the public assistance in Pennsylvania), it seems desirable to show them separately, and also to show the total expenditures for the operation of general government exclusive of public assistance as well as schools.

Public Assistance. Following are the 7 cities' per capita expenditures in 1944 for public assistance:

1. Boston	\$15.68	5. Washington	\$3.58
2. San Francisco	12.56	6. St. Louis46
3. New York	10.77	7. Philadelphia37
4. Baltimore	5.37		

Operation of General Government. For the operation of general government, exclusive of schools and public assistance, the per capita expenditures of the 7 cities in 1944 were:

1. Washington	\$47.86	5. Baltimore	\$32.33
2. Boston	46.47	6. Philadelphia	28.75
3. San Francisco	36.78	7. St. Louis	26.59
4. New York	34.24		

TO COMBAT INCREASING CRIME

A number of changes have been made in the operations of the city's motor bandit patrol. Hours of the different shifts have been changed, and more police cars, equipped with radio, and more officers on foot will be on duty at night.

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Water From Distant Upland Sources

No. 1,760

June 18, 1946

Delivered water from the distant upland sources discussed herein would be better than that from the Delaware at Torresdale only in degree of softness, but would cost very much more.

THREE proposals to furnish Philadelphia with 500 million gallons of water daily from distant upland sources were among those studied by the Board of Consulting Engineers to the Philadelphia Water Commission, and dealt with in the Board's report of November 1945. One of these proposals, the Delaware River Project, was reported on in detail by the Board in April 1946, and designated as the Commission's first choice of an upland source, in the event that the present sources are to be abandoned. The other two proposals are the Lehigh-Pocono Project and the Upper Delaware River Basin Tributaries Project.

Delaware River Project. Under the Delaware River Project all the required water would be taken from a reservoir to be formed by a dam on the Delaware at Wallpack Bend. Water would be carried 80 miles by a pressure tunnel to the present Queen Lane plant, through a control reservoir to be constructed near Warrington. The estimated capital cost for this project is \$315,791,000, including needed improvements within the city.

The quality of the raw water from this source is very good. Nevertheless, to obtain a high-quality final product, that water would require treatment, including coagulation, rapid sand filtration, stabilization, chlorination, and occasional treatment for taste and odor control. Even then, the final product would be superior in only one respect to that obtainable under the program outlined in CITIZENS' BUSINESS No. 1,758, entitled 'High-Quality Water At Reasonable Cost'—the water would be *very soft* instead of just soft. This small gain would cost about \$5,400,000 annually.

Lehigh-Pocono Project. To secure the advantages of the better raw water in the Upper Lehigh River Valley and the Pocono Mountains, the Engineers devised the Lehigh-Pocono Project. This provides for taking all the required water from reservoirs to be constructed on 4 Lehigh River tributaries and 4 Delaware River tributaries. About 105 miles of pressure tunnel would interconnect the reservoirs and carry the water to the existing Roxborough plant, through a control reservoir to be built on Unami Creek, near Green Lane. The cost for development of the water sources of this project is estimated at \$376,720,000; and the total capital cost, including improvements to be made within the city, would be about \$450,000,000.

Although the raw water from these sources is superior to that of the Delaware River Project, the Board of Consulting Engineers recommends filtration. Treatment similar to that required for the latter project is therefore indicated. The final product would be practically the same as that of the Delaware River Project, but would cost about \$3,200,000 more a year.

Upper Delaware River Basin Tributaries Project. A still better raw water could be obtained from the Upper Delaware River Basin Tributaries Project. It would be taken from reservoirs to be constructed on the Lackawaxen River and 5 other tributaries of the Delaware. The total annual cost for water produced by this project would be slightly higher than for the Lehigh-Pocono Project, with probably no gain in the quality of the final product.

CITY'S LOWEST RATE BOND SALE

On June 11, the city sold \$29,100,000 of serial bonds at a lower interest cost to the city than it has ever before secured on any bond issue.

Two nationwide syndicates bid for the bonds. The low, and therefore successful, bidder offered a price which, for the combination of interest rates and annual maturities specified, involved an interest cost to the city of 1.5959 per cent per year. The other bidder named a price and combination of interest rates and maturities that represented an annual interest cost of 1.6216 per cent. As will be seen, the effective interest rates of the two bids differed by only a little more than $\frac{1}{40}$ of 1 per cent (0.0257 per cent).

The lowest previous interest cost on an issue of city bonds was 1.6664 per cent per year—on \$14,100,000 of 25-year straight serial bonds sold in October 1941. Last week's sale, therefore, bettered that rate by approximately $\frac{1}{15}$ of 1 per cent (0.0705 per cent).

In all, the \$29,100,000 of bonds comprised 5 lots, ranging in term or duration from 9 $\frac{1}{2}$ -year serials to 49 $\frac{1}{2}$ -year serials, each with annual maturities. The bonds were sold by the winning syndicate to the public at prices to yield from 0.30 per cent (for bonds maturing January 1, 1947) and 0.50 per cent (for maturities of January 1, 1948) to a little over 1.75 per cent (for the latest maturities).

\$400 PAY RISE FOR CITY EMPLOYEES

Last Thursday, City Council passed, and the Mayor approved, an ordinance giving a pay increase of \$400 a year to all city-county employes who were receiving less than \$5,000 annually.

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State Highways in Philadelphia

No. 1,762

September 3, 1946

In the last four years the state has spent on state highways in Philadelphia slightly over 14.5 per cent of the amount authorized by a law of 1941 to be so spent.

Entered as Second Class Matter June 7, 1913, at the Post Office at Philadelphia, Pa., Under the Act of August 24, 1912.

PENNSYLVANIA took over, as state highways, 156.27 miles of city streets in Philadelphia in 1937 (Act of May 7, 1937, P.L. 589). With revisions, deletions, and additions made in 1941, these highways now total 153.02 miles (Act of July 10, 1941, P.L. 345).

Principal Streets Under State Control. Most of the principal streets in Philadelphia, or large segments of them, became state highways, under the responsibility of the state, as a result of these acts. Among those included, and their approximate mileage, are the following:

Aramingo Street, from Girard Avenue to Roosevelt Boulevard, 5.1 miles
Baltimore Avenue, from Cobbs Creek to Woodland Avenue, 2.1 miles
Benjamin Franklin Parkway, entire length, 1 mile
Broad Street, from Grange Avenue to Oregon Avenue, 8.4 miles
Chestnut Street, from Cobbs Creek Parkway to 5th Street, 5 miles
City Line Avenue, entire length, 4.5 miles
Cottman Avenue, from Fillmore Street to Frankford Avenue, 3.2 miles
Delaware Avenue, from Washington Avenue to Dyott Street, 2.9 miles
Frankford Avenue, from Levick Street to Poquessing Creek, 4.1 miles
Germantown Avenue, from Northwestern Avenue to Mt. Pleasant Avenue, 2.6 miles
Girard Avenue, from Haverford Avenue to 25th Street, 3.1 miles
Haverford Avenue, from City Line Avenue to 31st Street, 4.2 miles
Hunting Park Avenue, from the Schuylkill River to Roosevelt Boulevard, 2.5 miles
Lancaster Avenue, from City Line Avenue to Spring Garden Street, 3.1 miles
Oregon Avenue, from Vare Avenue to Swanson Street, 2.1 miles
Passyunk Avenue, from Island Road to Broad Street, 3.9 miles

Penrose Avenue, from Island Road to 24th Street, 2.5 miles
Race Street, from Benjamin Franklin Parkway to the Delaware River Bridge approach, 1.2 miles
Ridge Avenue, several portions, 3.8 miles
Rising Sun Avenue, from Roosevelt Boulevard to Cottman Avenue, 2.8 miles
Roosevelt Boulevard, from Hunting Park Avenue to the city line at Byberry, 10.7 miles
Spring Garden Street, from 42d Street to Delaware Avenue, 3.8 miles
Stenton Avenue, from Bethlehem Pike to Broad Street, 3.9 miles
Vine Street, from Benjamin Franklin Parkway to the Delaware River Bridge approach, 1.2 miles
Walnut Street, from Cobbs Creek Parkway to 6th Street, 4.9 miles

State Responsibility and Limitations. Responsibility for the maintenance, construction, and reconstruction of these streets and the others taken over was vested in the state Department of Highways. However, the maintenance of structures, curbs, and footways, and policing, traffic control, and snow removal, remained the responsibility of the city. The act of 1941 permitted the making of agreements between the city and the Secretary of Highways, with the Governor's approval, for changes in the line, grade, or width of streets taken over by the state, partly at the latter's expense. This act also authorized expenditures, out of state funds, up to \$12,000,000 a year, for state highways in Philadelphia.

State Expenditures. During the four completed fiscal years since the 1941 law was enacted, the state highway department has expended an average of \$1,745,338 a year for maintenance and construction of state highways in Philadelphia. This is slightly over 14.5 per cent of the amount authorized by the 1941 law to be so spent.

FEDERAL AID FOR URBAN HIGHWAYS

The Federal-Aid Highway Act of 1944 provided \$125,000,000 a year, for the first three post-war fiscal years, for highway construction in urban areas. In January 1946 the Public Roads Administration began considering proposed projects from state highway departments for construction under the first year's apportionments, which will be available to the states until June 30, 1947. To the close of June 30, 1946, 21 states and the District of Columbia had urban projects approved.

The 10 states having the highest percentages of their first year's apportionments covered by approved projects, and the amounts of those apportionments and the percentages approved, are:

Utah	\$433,731	95.41%
Oregon	810,873	91.86
California	8,122,233	68.80
Michigan	5,682,433	35.80
Washington	1,467,429	34.86
Connecticut	2,607,495	29.02
Maine	560,538	26.84
Kansas	1,107,219	20.37
Pennsylvania	10,517,201	19.78
Tennessee	1,593,037	19.62

TWO NEW BUREAU REPORTS

Two reports have been issued recently by the Bureau of Municipal Research. *Philadelphia's Water Supply* analyses nine proposals for a future water supply for the city, and contains a recommended program derived from a study of these proposals. The other report is on *Rates of Pay and Conditions of Employment of Sanitation Laborers in Eighteen Cities in the United States in 1946*.

Copies of these reports may be obtained from the Bureau, free of charge, while the supply lasts.

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A Revised Waterworks Improvement Program

No. 1,763

September 10, 1946

The amended waterworks program adopted informally by City Council in July is the first step toward providing Philadelphia with high-quality water.

ON July 9 City Council, meeting informally, adopted a revised waterworks improvement program to be paid for out of the water loan approved by the voters of the city in 1940. This program provides for improvement of the Belmont, Queen Lane, and Torresdale plants, including steps to eliminate objectionable tastes and odors from the water, and to remove manganese from water taken from the Schuylkill River. Completion time was estimated as 3 years, with taste and odor control fully effective at Belmont in 15 months, and at Queen Lane and Torresdale in 6 months.

Belmont Plant. Improvements at the Belmont plant were estimated by the Director of Public Works to cost \$3,722,000. For taste and odor control \$750,000 would be spent for installation of an ozone plant and \$3,000 for installation of equipment for treatment of the water with activated carbon. A total of \$2,520,000 is to be used for the completion of the new rapid sand filters now being installed, and for new treatment basins, new chemical and administration buildings, and reconstruction of existing treatment basins. The present rapid sand filters are to be rebuilt, at an estimated cost of \$200,000. The rest of the money is intended to provide automatic postchlorination and automatic corrosion control (\$97,000), and to construct a new high-pressure pumping station (\$152,000).

Queen Lane Plant. The approved program for the plant at Queen Lane includes the providing of facilities for treating the water with activated carbon, chlorine, and ammonia, for taste and

odor control, at an estimated cost of \$22,500. Water that is to be filtered through rapid sand filters would first receive chlorine-ammonia treatment. The total cost of the improvements at Queen Lane was estimated at \$4,693,500. Of this total, \$1,765,000 is needed for the reconstruction of mechanical filters, and \$2,686,000 for the construction of a new pretreatment plant. Rehabilitation of the mechanical filter beds, minor repairs to the existing building, and installation of new dry-feed equipment are the other improvements scheduled (\$220,000).

Torresdale Plant. Changes at the Torresdale plant were estimated to cost \$455,000. Activated carbon treatment, deemed sufficient for taste and odor control of the better raw water processed at this slow sand filtration plant, requires an installation of equipment costing \$10,000. Additional effluent conduit, automatic chlorinators, a post-treatment building, and new connections to the reservoir were expected to cost \$445,000.

First Step. This revised water program corresponds in most respects to stage one and part of stage two of the program recommended by the Bureau of Municipal Research in May. It is a good first step toward furnishing the public with a high-quality water. Moreover, it should fit in well with future programs.

Next Step. City Council is awaiting a report from the Philadelphia Water Commission before making a decision on a long-range program. This report, which will be based upon extensive studies made by the Commission's Board of Consulting Engineers, is expected within the next few weeks.

OFF-STREET PARKING SURVEY REPORT

A report on off-street parking in the central business district was made to City Council last week by the Philadelphia Committee for the Relief of Traffic Congestion. It is based largely on a survey of parking facilities, present and future demand, and parking habits, in the area between the Delaware and Schuylkill Rivers from Vine Street to Pine Street. For the purpose of the survey, the district was divided into 28 zones, each approximately 3 blocks square.

Although only 8 of the 28 zones were found deficient in parking space for the present and anticipated demand, these 8 had a deficiency of 20,000 car spaces, and a net deficiency of 3990 spaces was found in the entire district. As expected, the major deficiency (13,753 spaces) was in the 4 zones adjacent to city hall. All of the deficiencies were in an area bounded by 17th, Arch, 4th, and Walnut Streets. Only 9 of the 20 zones with surplus space had sufficient off-street facilities to eliminate street parking completely.

STATE HIGHWAYS IN PHILADELPHIA

Last week, CITIZENS' BUSINESS No. 1,762 incorrectly stated the total mileage of state highways in Philadelphia as 153.02 miles. Additional streets were taken over by the state highway department under an Act of May 18, 1945 (P.L. 786) and an Act of June 1, 1945 (P.L. 1242). The total mileage now, as recorded in the Bureau of Engineering, Surveys and Zoning, is 159.33 miles. The additions of 1945 included Grant Avenue, from Bustleton Avenue to Frankford Avenue, and Cheltenham Avenue, from Old York Road to Ivy Hill Road.

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Choosing a Drink

No. 1,764

September 17, 1946

Selecting a water source because of its raw quality or distance from Philadelphia has little bearing on the 'drink' obtained.

IN the last analysis, the logical choice of a water supply is the one from which a high-quality final product can be made in the quantity required at the lowest annual cost. This will not necessarily be the popular choice, for the latter frequently is based on misconceptions.

Skeletons in the Closet. A tendency exists among uninformed consumers to favor a source because of its good raw water quality, or to oppose it because of the treatment involved. That this tendency exists is indicated by such names as 'filtered sewage,' 'chlorine cocktail,' and their converse 'sparkling mountain water.' These names indicate a mental linking by consumers to the past history of their water. Raw water from any of the sources considered for Philadelphia is polluted to some degree and the final product would therefore be 'filtered sewage'—if it is filtered. At least filtration will remove the sewage. Water from all the sources considered will have to be chlorinated; but none of it, if properly treated before chlorination, needs to have any objectionable taste. 'Sparkling mountain water' has an appeal for everyone, a more pleasant association with the water's origin. However, the use by Philadelphia of the mountain streams available, would necessitate storage for about a year in reservoirs, in which algae grow, and would require stabilization for corrosion control, as well as chlorination and filtration for the 'skeletons in the closet.' The product delivered would be surprisingly like a properly treated 'filtered sewage'—both will be high-quality water. The only advantage of the better raw water is a lower treatment cost.

'Same as New York.' Then, there is the desire of some Philadelphians to have the 'same as New York,' which city has developed distant sources of water supply. These persons ignore the fact that Manhattan and The Bronx could not take their water at their own doorsteps. The Hudson River at New York City is too salty for a public water supply, so the Croton Lake source was developed for these boroughs. Brooklyn, Queens, and Richmond boroughs used local streams and wells until they proved insufficient, then the Catskill supply was developed. Shortage of water from nearby sources is not a problem for Philadelphia.

'Same as Chicago.' Why not wish for the 'same as Chicago'? We're more like that city in the quantity of water consumed, and like them we have a choice. Chicago has its source, Lake Michigan, at its doorstep. The pollution of the lake having greatly increased, Chicago has installed improved treatment methods, and recently it completed a huge filtration plant to process 440 million gallons a day. Chicago might have gone to Wisconsin's 'sparkling woodland streams,' just as Los Angeles went to Colorado mountain streams. However, it decided to continue using its nearby source, perhaps realizing that positive control was better than relying on the quality of distant raw water obtained with expensive construction. Then, too, Chicago avoided interstate disputes, delays, and possibly dangers to its water supply such as Los Angeles now faces, with the U. S. Bureau of Reclamation planning other uses for the Colorado waters.

FEDERAL FUNDS FOR HOSPITALS

The Hill-Burton bill, passed in the closing weeks of the last session of Congress and approved by the President, provides for \$75,000,000 a year for 5 years for construction of modern hospitals and other public health facilities. Under this act, the U. S. Public Health Service may approve the use of federal funds for one third of the construction cost of public and non-profit medical facilities. Yearly apportionments on the basis of population and per capita income will be made to the states. An additional appropriation of \$2,350,000 was made to cover one third of the cost of surveys by states to determine hospital needs, and the same proportion of the cost of the planning of construction programs.

DIVIDENDS FROM RIVER CULM

In an article appearing in 'Civil Engineering' this month, the Chief Engineer of the Interstate Commission on the Delaware River Basin points out that a substantial part of the estimated \$35,000,000 Federal and State dredging costs for desilting the Schuylkill River may be recovered by the sale of coal reclaimed from the culm in the form of fine grains, known as coal fines. Approximately 50% of the silt deposits are these fines which have a high heat value. Collieries which are installing equipment to prevent further discharge of coal, culm, and silt by clarifying the discharges are also finding a return paid to them in coal fines. These monetary returns should provide a greater incentive to clean up the Schuylkill River than will legislation alone.

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What Dirties Our Rivers

No. 1,766

October 1, 1946

To aid in understanding the subject of stream purification, this issue, the first of a series, discusses the sources and evaluates the effects of stream pollution.

THE condition of the streams in and around Philadelphia has created concern and raised questions as to what is being done to clear these waterways of odors, silt, and pollution. To understand the problem better, it may be well to examine the sources and effects of these forms of contamination.

Silt and Culm. Schuylkill River pollution is frequently thought of in terms of the readily observed silt and culm carried in the flowing stream. Silt and culm cause no deleterious effect upon health, but their presence does increase the turbidity of the water, thereby requiring coagulation and settling basins for their removal from water supplies. As they settle in the stream bed, they interfere with stream flow, produce unsightly bars on which debris is deposited, and reduce the capacity of the river channel. Constant dredging around water intakes is required to prevent clogging of these facilities. Continuous and costly dredging of ship channels are necessitated by these deposits. Most of the Schuylkill silt and culm is from coal mines and culm banks and contains manganese, some of which dissolves, passes filters, and deposits as an oxide in pipes, thereby imparting a brownish color to the water supply.

Acid Mine Water. Mines have discharged acid mine water into the Schuylkill for many years. Since it is discharged into the streams at points distant from Philadelphia, it is normally sufficiently diluted upon reaching the city to cause no serious problem. Its chemical action on the limestone channel of the Schuylkill, however, increases the hardness of the water in that stream.

Sewage. Contamination of a stream with sewage produces a serious health problem in addition to foul river odors and unsightly appearance. Not only must the water taken from such sources be carefully treated at great expense, but it is necessary also to guard against the constant danger to persons using these health menacing sources for recreational purposes. Discharges of untreated or partially treated sewage of communities and wastes from dairies and slaughterhouses are the major cause of this pollution. At Philadelphia's water intakes both the Delaware and the Schuylkill are polluted (the latter much more than the former) from the sewage of upstream communities. Below these points Philadelphia adds to the pollution, discharging about 300 million gallons of sewage daily, of which only one fifth is treated at all, and that treatment reduces oxygen demand only 30 per cent.

Industrial Wastes. Another cause of foul river odors and unsightly appearance are some of the wastes discharged by industries into the rivers. Some of these wastes create many taste and odor problems in our water supply, others are known to attack ship hulls and produce deterioration of properties located at the river banks. Special waste-treatment plants and rigorous control of discharges from industrial plants are essential to eliminate this type of pollution.

Elimination and control of pollution at its source is desirable, for in addition to reducing the cost of treating the water for general use, it also reduces the unsightly, foul smelling, health menacing condition of the streams.

ADDITIONAL 'PARK-RIDE' LOTS

Supplementing its recommendations for off-street parking to relieve congestion in the central business district, the Committee for the Relief of Traffic Congestion is considering the establishment of 'park-ride' lots at the terminals of the city-owned Broad Street Subway. The Philadelphia Transportation Co. now operates such a lot at 69th and Market Streets which has a capacity of 385 vehicles, and another at Frankford Avenue and Bridge Street with a capacity of 245 cars. Both lots are being used to capacity. For a fee of 25 cents, a customer obtains two tokens and may park his car all day.

EQUIPMENT AND CRIME

Lack of equipment, and the condition of present equipment, were cited last week by the Director of Public Safety as major problems in crime prevention. Roving patrol cars have been found by the Bureau of Police to be one of the best crime deterrents, but the police officials are having great difficulty in obtaining sufficient cars and in keeping their present ones in operation. Many of those in operation are in bad condition. In March, 302 new cars were ordered by the Bureau to replace old ones and to increase the number on the streets, but only 57 have been delivered. The Bureau now has a total of 239 cars, including 27 patrol wagons, but from 20 to 30 vehicles are daily out of service for repairs. Fifty-eight of the vehicles have 2-way radios, but these too are depleted regularly, since on the average 7 radios are out of service each day.

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CITIZENS' BUSINESS

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SUSTAINING SUBSCRIP-
TION TO BUREAU
TEN DOLLARS THE YEAR



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Outlawed— Silt and Pollution

No. 1,767

October 8, 1946

This issue, the second of a series on stream purification, discusses legislation dealing with this vital subject.

IN THE early history of the state, little attention was paid to contamination of waterways, but with the growth of population, the urbanization of communities, and the development of industries, the dangers of stream pollution became apparent and remedies were sought in the courts and through legislation.

The Common Law View. For the last sixty years the courts of Pennsylvania have held, under the common law, that discharges into streams of mine water, which include silt and acid mine water, do not constitute abatable nuisances. The courts have indicated that the major industry of the state must not be hampered because of a nuisance to others. Occasionally, however, they have enjoined the discharge of other industrial wastes into a stream used by the public.

Early Pennsylvania Laws. The first statute on stream pollution, the Act of June 24, 1895, *merely prohibited the use of land for burial purposes* within prescribed distances from streams. The Act of April 22, 1905, was more general in application. It sought to preserve the purity of waters by requiring state approval of the source for a public water supply and state permission for the discharge of sewage into a stream. In effect, this act allocated some sources for public water supplies and others for sewage disposal. It might be termed a 'permissive use' statute rather than one for positive elimination of stream pollution. The act, moreover, excepted from its provisions water from mines and tanneries, thus giving legislative sanction to coal mine and tannery discharges into streams.

Recent State Legislation. Two recent Pennsylvania statutes (Acts of June 22, 1937, and May 8, 1945) empower the Sanitary Water Board of the State Department of Health to compel municipalities and industries to erect satisfactory treatment plants for their sewage and waste discharges. The later act prohibits discharge of coal mine culm and provides that acid mine water may not be discharged into 'clean streams.' Its definition of 'clean streams,' however, is rather vague. Moreover, it requires the state to provide diversion conduits in ordering discontinuance of acid mine water discharges. Administrative difficulties may therefore be encountered in enforcing this prohibition.

Clearing of Interstate Streams. Pollution control of the Delaware River is dependent in part upon interstate cooperation and the enforcement by New York, New Jersey, and Delaware of their own anti-pollution laws, which, in general, are not as rigid as Pennsylvania's. The Interstate Commission on the Delaware River Basin (Incodel) is an agency whereby such cooperation and standardization of laws may be promoted.

Federal Legislation. Early federal statutes, such as the Federal Rivers and Harbors Act of 1899 and the Oil Pollution Act of 1924, were directed chiefly at discharges which obstructed navigation. However, a bill (H.R. 6024), introduced in the last session of Congress but not passed, would extend federal jurisdiction to deal also with health-menacing stream pollutions. This indicates that the problem has grown from one of local to one of national concern.

DECLINE IN JUVENILE DELINQUENCY

A decline of 11 per cent in juvenile delinquency cases during the first 8 months of 1946 as compared to the same period in 1945 is reported by the Municipal Court. From January through August 1946, the Court had 5,319 juvenile cases, whereas the total for the same months in 1945 was 5,985. Cases this year which involve boys totaled 4,548, in contrast to 771 cases involving girls, a ratio of about 6 to 1. Declines of 13 per cent in boys' cases and 12 per cent in girls' cases were registered for those under 16. Cases of boys 16 and 17 had the smallest decline, 3 per cent, and those of girls 16 and 17 the greatest decline, 24 per cent.

FEDERAL AID FOR SCHOOL LUNCHES

Contracts have been completed by the Board of Education to obtain a federal subsidy to cover a portion of the cost of school lunches, and of milk for kindergarten children, under a \$75,000,000 National School Lunch Program. The program is administered by the U. S. Department of Agriculture, and money is allotted to the states for distribution to their school districts. Philadelphia's subsidy is estimated to total \$341,040, including \$273,456 for cafeteria luncheons, \$13,824 for special nutritional classes, and \$53,760 as a 2-cent subsidy on half-pints of milk for kindergarten children. Under this program an estimated 16,000 pupils will be able to obtain for 20 cents a luncheon valued at 29 or 30 cents, and approximately 14,000 kindergarten children will be able to buy bottles of milk for 4 cents.

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Progress Toward Stream Purification

No. 1,769

October 22, 1946

Recent actions by the federal government, the state, the city, and industry give substantial grounds for optimism in regard to the restoration of our streams.

STRENGTHENED legislation and a growing militant interest in cleaning up the streams of Pennsylvania offer a good prospect of real progress toward the elimination of silt, odors, and industrial and sewage pollution.

Coal-Mine Culm Discharges. The state, under the authority of its recent statutes (see CITIZENS' BUSINESS No. 1,767), is compelling mine operators to provide facilities that will prevent further discharges of coal-mine silt and culm into the streams. Twelve of the 51 collieries which have been dumping culm into the Schuylkill River have completely discontinued the practice. The rest of the collieries either have not completed their treatment works or have not brought them to full efficiency. However, 9 of these have reduced culm and silt discharges by 75 to 90 per cent, 8 by 50 to 75 per cent, and 8 by 25 to 50 per cent. Some of the 14 collieries, all small, which have not yet completed treatment plants, and a few of those whose treatment plants are not yet fully efficient, are being delayed by lack of required equipment on order. It is anticipated that when all the treatment works have been finished in accordance with approved plans, practically complete removal of settleable solids will be secured at all collieries.

Silt Removal. To eliminate the huge deposits of silt that have accumulated in the Schuylkill River, the federal government, upon the recommendation of the Army Engineers, has entered into a cooperative program with the state for the dredging and removal of these deposits. Under this program, the federal government will dredge the river as far as Norristown, while the state is

to dredge the upper river and construct desilting basins. The federal government, however, will not undertake its share, though appropriations are available, until the state has done a large part of its work. While actual construction by the state has not begun, surveys are in progress for the acquisition of lands to be used for spoil banks, and for a desilting basin at Auburn. Specifications are being prepared for the removal of silt by dredging. Some of the needed land has been acquired by the state, and negotiations are proceeding for other tracts.

Sewage and Industrial Wastes. The Sanitary Water Board of the State Department of Health has issued orders (prior to October 11) to 521 municipalities and to 394 industrial plants in the state, to submit completed plans for their waste-treatment facilities. Such orders continue to be issued to municipalities and industries which have been found by the Board's investigations to require them. Orders have not been issued for construction because of the instability of prices and wages, and shortages of materials. It is to be expected that the Board will issue notices requiring construction when undue hardship will not be placed on the municipalities and industries concerned. In Philadelphia, an \$8,000,000 councilmanic loan and a \$34,000,000 loan authorized by the voters last spring have made it financially possible for the city to proceed with the construction of its sewage-collection and treatment system, the completion of which is estimated to cost \$58,200,000. Plans are well advanced and contracts for some of the work have been let.

NEW COLLEGE CENTERS OPENING

Emergency college centers under the direction of the State Council of Education and the Department of Public Instruction will open October 28 in Philadelphia Central High School (Martin College), in Fleisher Vocational School (Rittenhouse College) and in Chester High School (Sproul College) for Area 1, which consists of Delaware, Bucks, Chester, Montgomery, and Philadelphia counties. These centers are not intended to be additional colleges, but are to supplement temporarily the more than twenty regularly accredited collegiate institutions in this area which have more applications than their facilities can accommodate. At present the plan is to operate the centers for one year only, and to offer only standard freshmen courses. Heads of departments are being borrowed from the established institutions. The centers will be self-supporting. Tuition charges have been fixed at \$300 for the year, and additional fees will bring the cost to approximately \$350. The 'school day' will be from 3 P.M. to 9 P.M. Although the centers are not restricted to veterans, 90 per cent of the 3,500 inquiries received have been from veterans. A total enrollment of 2,000 to 2,500 students is anticipated.

SEWER CONTRACTS

Last week the Department of Public Works opened bids covering sewer construction, estimated to cost \$548,000, at 35 different locations. Previous contract awards on the city's \$42,000,000 sewage-treatment and sewer program have totaled \$1,443,000 for 96 projects.

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Whose Water Bill Do You Pay?

No. 1,771

November 5, 1946

Under the present incomplete system of metering and the present water rate structure, the careful user subsidizes the water-waster, and some metered users pay for others.

NOW that the city's water rate structure is also the basis for sewer rents and soon may be the formula for collecting a substantially larger volume of water revenues, its shortcomings take on a more serious aspect than heretofore.

Effect of Incomplete Metering. Its greatest shortcoming lies in its dual character. Slightly over half of the connections to the city's water mains are metered, including all industrial connections. The charges for water taken through these connections, about 242,000 in number, are based roughly upon the quantity of water taken. The remaining connections, about 233,000, are unmetered, and the charges for water taken through them are flat rates based upon the water fixtures and outlets attached to the connections, not at all upon the quantity of water taken. Obviously, to the extent that flat-rate consumers take more water than their pro rata share they are in effect subsidized by other consumers who do not take more than their pro rata share.

Effect of Voluntary Metering. The present plan for the extension of metering, moreover, is not well designed to bring the subsidized flat-rate consumer into the ranks of metered consumers. An ordinance of 1918 made it mandatory to meter all connections made or increased in size after May 31 of that year, but it did not require metering for already existing connections so long as they were not increased in size. Extension of metering to the latter can occur only through the voluntary act of the property owner. As the flat-rate consumer who pays \$12.00 and uses less than 8,000 cubic feet (c.f.) of water annually could re-

duce his yearly water bill to \$8.00 by metering, there is a real inducement to the careful consumer to meter, but there is no such inducement to the flat-rate consumer who uses water lavishly. The voluntary method of extending metering therefore does not tend to eliminate the subsidy, and it tends to reduce the city's water revenues without reducing water waste.

Universal Metering Needed. Only through universal metering, that is, the compulsory metering of all connections, can the charges for water be proportioned to the quantities actually taken and the subsidy ended. This system is based on the principle of paying for value received. No one expects to receive free electricity or free gas and should not expect free water. Universal metering, moreover, would tend to reduce water waste and thus to lower the operating expenses of the waterworks. It might even lessen the need for capital expenditures for the water plant.

Meter Rates Need Revision. Another 'must' to end water subsidies is the revision of the meter rate structure. The present minimum charge for water is set so high that a large proportion of the metered users do not take the quantity of water allowed for that charge. In effect those who use less than the minimum allowance subsidize those who use the minimum or more. It would be more equitable to make the minimum charge smaller, just enough to cover the city's readiness to serve, and to allow for it only a nominal quantity of water. Such an arrangement would come much nearer than the present one to making the charges for water vary with the quantity taken.

\$300,000 FOR NEW FIRE APPARATUS

Six pieces of fire apparatus bought in 1945 were the first to be added to the Philadelphia Fire Bureau since before the war. During the remainder of 1946 and the two following years, however, the Bureau plans to purchase at least 21 pieces of apparatus at a cost of \$300,000.

Already 10 combination hose-booster wagons, equipped with high-pressure pumps and hose for small and large fires, have been ordered at a cost of \$7,740 each, less an allowance of \$100 for each of 20 old-style chemical wagons as part payment. Also 1 combination rescue wagon, with special rescue equipment, floodlights, two-way radios, and loudspeakers, has been ordered. It will cost \$18,290. Early in November bids are to be opened for 6 stock automobiles and for 3 or 4 ladder trucks. The ladder trucks are to be of a type never used here before, carrying metal ladders each of which may be extended 85 feet and can be raised or swung around or held by hydraulic pressure.

SEWAGE TREATMENT PLAN APPROVED

Philadelphia's initial plans for enlarging and improving the Northeast Sewage Treatment Works, at Wheatsheaf Lane and Richmond Street, has received the approval of the State Department of Health. The construction costs are to amount to about \$7,000,000. The major construction is to include concrete tanks for primary sedimentation, secondary sedimentation, and aeration. When the project is completed, the capacity of the plant will be increased from 60,000,000 to 125,000,000 gallons daily. The city-wide sewage treatment plan includes the construction of two additional plants, in the southeast and southwest.

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The Water Commission Reports

No. 1,773

November 19, 1946

The Philadelphia Water Commission recom-
mends a three-stage program to give Philadel-
phia a high-quality water, in the quantity it
needs, at a low annual cost.

ON March 6, 1945 the Mayor created the Philadelphia Water Commission and directed it to prepare a definite program to be known as the 'Philadelphia Plan for Improvement of Its Water Supply.' Last week the Commission presented its program to the Mayor.

How It Proceeded. The Commission, whose 20-man membership was broadly representative of Philadelphia, retained a Board of Consulting Engineers for investigating upland sources and determining what improvements to the present water system are needed to produce high-quality water. From this Board the Commission received two reports: a preliminary one in November 1945 and a final one in April 1946. The Commission considered these reports in detail as they were completed and also considered proposals made by private bodies, such as that of the Lehigh Coal and Navigation Company. In addition, in May and June of this year, after the Board had completed its reports, the Committee on Public Works of City Council conducted extensive hearings on all the proposals.

Recommended Program. As a result of its consideration of all the proposals, studies, and testimony, the Commission has recommended a three-stage program, which is as follows:

Stage A includes the rehabilitation of the filtration and distribution system and treatment for taste and odor control to be paid for out of the unexpended balance of the \$18,000,000 loan authorized in 1940. This stage corresponds to the revised waterworks program, now under way, reported in CITIZENS' BUSINESS No. 1,763.

Stage B is a long-range program to be started after *Stage A* is completed. It includes taking a larger proportion of the needed water from the Delaware River, and the possible abandonment of the Schuylkill River as a source, except for reserve purposes. It also includes improvements for storage, filtration, and distribution, as well as universal metering, and possibly tunnels from Torresdale to the Belmont and Queen Lane plants.

Stage C provides for the pre-emption of the Wallpack Bend dam site for possible use in the distant future. This recommendation is based on the Commission's decision that this is the best *upland* source and may be the best future answer if large increases in consumption are encountered.

Adequate and Practical. The Commission has recommended a program that will give the city a high-quality water, in a quantity sufficient for its needs for years to come, at a low annual cost. In substance, the Commission's program closely coincides with the three-stage program which the Bureau of Municipal Research presented on May 28 to Council's Committee on Public Works. *Stage B* differs from the Bureau's plan in two minor respects: (1) The Commission would have this stage started after the completion of *Stage A*, whereas the Bureau would have it started simultaneously with *Stage A*; and (2) the Commission contemplates a gradual increase in the use of Delaware water, whereas the Bureau recommended abandonment of the Schuylkill except as a reserve as soon as tunnels can be built to transfer Delaware water to the Schuylkill area, this principally because of the hardness of Schuylkill water.

THE FIRST TEN MONTHS' RECEIPTS

Revenue receipts of the city during the first 10 months of 1946 totaled \$89,285,164, an increase of \$7,707,433, or 9.5 per cent, over the corresponding receipts of 1945. Receipts for the full year will greatly exceed the estimate of such receipts, \$91,696,489. Estimates of the excess range from \$3.5 million to more than \$7 million.

For budget purposes, the city's receipts from the earned income tax for the full year were estimated at \$20,000,000, whereas they have amounted to \$21,563,126 in the first 10 months, and are expected to exceed \$25,000,000 for the year. Amusement tax receipts, though greater than in 1945, will fall far under the \$6,200,000 estimate, the receipts for the first 10 months being only \$2,391,121. The new sewer rent has brought in \$3,002,856 up to October 31.

Current water-rent receipts have declined \$221,715 compared with the first 10 months of 1945. Officials attribute this to the lateness in mailing the combined water and sewer-rent bills, and to decreases in water consumption by industry since the end of the war. Recent increases in metering by consumers who benefit by having meter rates instead of flat rates (see CITIZENS' BUSINESS No. 1,771) also accounts for some of this decline.

UNITED NATIONS HEADQUARTERS

Prospective locations for United Nations Headquarters were limited to Philadelphia, New York, Boston, and San Francisco last week by the UN Headquarters Committee. Philadelphia offers a site of 2 square miles in Fairmount Park and one of 10 square miles in Roxborough.

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Hard to Take

No. 1,775

December 3, 1946

Savings to Philadelphians in soap and other costs from using only water from the Delaware River would offset in a few years the construction costs necessitated by the change.

SINCE water from the present sources can be made continuously safe and palatable, why does the Bureau of Municipal Research recommend abandonment of the Schuylkill River as a regular source of supply? The answer is (1) that the river would be materially improved by the elimination of pumping therefrom (sometimes equal to the flow), and, more importantly, (2) the water from the Schuylkill is too hard.

What is Hardness? Hardness is a term applied to the soap-consuming property of water and refers to its content of carbonates, bicarbonates, sulphates, or other compounds of calcium or magnesium. Hardness is customarily measured in parts per million (p.p.m.) or grains per gallon. Water with hardness of less than 50 p.p.m. is usually classified as soft, of 50 to 100 p.p.m. as moderately soft, of over 100 p.p.m. as hard. It is not generally considered justifiable to soften water with less than 80 p.p.m. hardness for a municipal supply. The value of softening below this point accrues more to special users, such as laundries and dyers, than to the general public.

Soap Costs. Before soap can lather in water it must first reduce the hardness, and the cost of doing so may run high. With soap at 16 cents a pound, it costs \$1,800 per million gallons to eliminate hardness from the 130 p.p.m. Schuylkill water and \$800 per million gallons for the 50 to 60 p.p.m. Delaware water. Mr. Sheppard T. Powell, a consulting engineer of Baltimore, in a paper on 'The Quality of Water and Its Value for Industrial and Domestic Uses,' estimated the annual cost for soap to destroy hardness present

in Philadelphia water as \$2,700,000. This apparently is based on using soap with only 2 per cent of the water supplied. If the same amount of water were taken entirely from the Delaware at Torresdale, the cost would be \$1,400,000—a saving of \$1,300,000 annually.

Other Effects of Hard Water. Hard water has many effects which cannot be readily measured in cost. No housewife who uses hard water needs to be reminded of the work involved in cleaning bathroom fixtures and kitchen utensils, or of the effect on her hands. Coils or tubes of hot-water and steam-heating plants using hard water become incrustated with scale, which insulates the water from heat, thereby increasing fuel consumption. Many special industrial processes require huge annual expenditures for softening. If all these costs could be measured, they probably would be many times the soap costs mentioned.

Obtaining Soft Water. Although it is entirely feasible for the city to soften water from the Schuylkill, it would be very costly. Philadelphia is fortunate in that it has a cheaper and easier solution—taking all the water from the Delaware at Torresdale. The estimated cost of \$25,000,000 for tunnels to bring the water to the present Queen Lane and Belmont plants, which now take water from the Schuylkill, would be offset in soap savings alone in less than 20 years; and if all savings were considered, only a few years would be required to offset the cost. On the other hand, if distant upland waters are taken, only a few parts per million softness, and nothing else, would be gained, at a very high cost.

POLICE-FORCE RANKINGS

As shown in the following table, Philadelphia ranks 4th among the 18 largest cities in the United States in (1) the number of police officers per 1,000 population, (2) the number of police officers per square mile of land area, and (3) the total number of police employes per square mile. In the total number of police employes per 1,000 population, Philadelphia ranks 5th among these cities. (*Italic figures show the rankings.*)

City (in order of 1940 population)	Police officers	Total police em- ployes (includ- ing ci- vilians)	Police officers per 1,000 popula- tion	Total police em- ployes per 1,000 popula- tion	Police officers per square mile	Total police em- ployes per square mile
New York.....	15,427	16,335	9 2.07	11 2.19	2 51.60	3 54.63
Chicago.....	7,544	7,852	6 2.22	9 2.31	5 36.50	6 37.99
Philadelphia...	4,747	5,008	4 2.46	5 2.59	4 36.60	4 38.61
Detroit.....	3,607	3,851	6 2.22	8 2.37	10 26.16	10 27.93
Los Angeles...	2,892	3,646	13 1.92	6 2.42	17 6.45	17 8.13
Cleveland.....	1,600	1,895	14 1.82	12 2.16	13 21.89	12 25.92
Baltimore.....	1,756	1,966	10 2.04	10 2.29	12 22.31	13 24.98
St. Louis.....	1,908	2,354	5 2.34	2 2.88	6 31.28	5 38.59
Boston.....	2,206	2,444	1 2.86	1 3.17	3 50.25	2 55.67
Pittsburgh.....	1,087	1,132	16 1.62	16 1.69	14 20.86	14 21.73
Washington....	1,690	1,817	2 2.55	4 2.74	9 27.52	9 29.59
San Francisco	1,279	1,371	11 2.02	12 2.16	8 28.68	8 30.74
Milwaukee.....	1,152	1,231	12 1.96	14 2.10	11 26.06	11 27.85
Buffalo.....	1,215	1,373	8 2.11	7 2.38	7 30.68	7 34.67
New Orleans..	845	864	15 1.71	15 1.75	18 4.24	18 4.33
Minneapolis...	495	540	18 1.01	18 1.10	16 9.20	16 10.04
Cincinnati.....	724	753	17 1.59	17 1.65	15 9.96	15 10.36
Newark.....	1,067	1,188	3 2.48	3 2.76	1 62.40	1 69.47

NOTE: This table is based upon (1) the number of police officers and total police employes (as of April 30, 1946) given in *Uniform Crime Reports*, July 1946 issue, (2) the population in 1940, and (3) the land areas given in *The Municipal Year Book*, 1944.

FIRE SCHOOL GRADUATION

A class of 50 firemen, the first of more than 300 new appointees, last week completed an intensive 40 days' training course at the Training School of the Bureau of Fire. The class then reported for active duty.