A SHORT HISTORY

of the

EXPANSION OF THE WATER SUPPLY SYSTEM

IN OAK LAWN

PRIOR TO 1941:

The original Public Water Supply for Oak Lawn was instituted sometime about 1927 or 1928 and consisted of the construction of a Deep Well, an Elevated Steel Water Tower, and a system of Cast Iron Pipe Water Mains.

The Deep Well was drilled on Village owned property approximately 40 feet East of Cook Avenue and 30 feet North of the alley which runs East from Cook Avenue, immediately South of the Old Village Hall, now the Public Safety Building. It was drilled to a diameter of 16" through the Glacial Drift approximately 60 feet deep and into the first bed rock, cased with a steel casing installed to cut off seepage of ground water. The drilling was reduced to 15 inches through the solid rock to a depth of approximately 700 feet without casing, and by successively installing steel casings of varying sizes the drilling was reduced by stages to 7 inches to a total depth of more than 1700 feet. Water was encountered at several stages, each time of varying quantities and qualities.

As finally developed, it was purportedly proven to be capable of delivering up to 900 gallons of water per minute for sustained periods up to 4 hours.

A Deep Well Turbine Pump, rated at 750 to 800 gallons per minute against a total discharge head of 150 feet, electric motor driven, was installed and housed within a small frame enclosure to which was attached a garage used by the Village for storage of a truck and tools used by the Village for street repairs. The Pump discharged water

into the System maintaining sufficient pressure and quantity to supply the needs of the population at the time, with a surplus which was stored in the nearby Elevated Tank.

A Steel Elevated Tank of 120,000 gallons storage capacity was constructed within 100 feet of the well. This consisted of a conventional steel tower with four legs supporting a tank measuring 30 feet in diameter and 21 feet 6 inches deep. The bottom of the bowl of the tank was 107 feet three inches above the street and the highest water elevation was established at 127 feet above the foundation. Automatic pressure gauges controlled the maximum height by stopping the Pump when the Tank became full and restarting it when the water receded 1/3 the depth of the tank.

This structure was erected by the Chicago Bridge and Iron Company. The Well and Elevated Tank were financed by special assessments spread over the entire area of the Village.

The Water Main System consisted of a 12 inch pipe East and West in the alley North of 95th Street, extending West to Central Avenue; 10 inch pipe East to 52nd Avenue, in 52nd Avenue from 91st Street to 99th Street; 8 inch mains in 91st Street, 99th Street, Central Avenue and in other streets for short distances, and 6 inch pipes in all other streets. This system was confined to an area from 91st Street to 99th Street, from Central Avenue East to Tulley Avenue, North of the Wabash Railroad and to 49th Avenue South of 95th Street, but only in streets actually laid out North of 98th Street.

The Pump and Elevated Tank was able to supply the Village with an

average pressure ranging from a minimum of 40 to a maximum of 55 pounds pressure except on Mondays and other days during summer months.

During the 20 years following installation it was necessary to rehabilitate the Well by reaming out at several depths where the ground pressure was forcing some soft rock strata to partially close the hole.

Sometimes during this period the Well was filled with concrete up to a depth of approximately 1800 to shut off some of the extremely hard water.

Most of the water entered at depths of 400 to 450 feet; 750 to 800 feet and 1100 to 1300 feet. It was very hard and family water softeners were installed by most of the residents. It was reported that during the period when the hard water was used, the average cost of soap compounds was $25.00 per year per family. Some residents retained their original private wells for purposes of having a naturally soft water for washing clothes. There were at least two locations where several families used a single well system for all purposes and paid assessments on the water mains for many years until eventual failure of their pumps and iron supply pipes forced them to abandon them.

By 1938 the Village officials were aware of a small increase in home building and a corresponding increase of population, which translated to a need for more water.

Then, during 1938, a second well was drilled on a lot near 94th Street West of Central Avenue, and in 1939-1940 a Water Softening Plant was

constructed. This was financed and constructed as a WPA project under which the Village paid for a substantial portion from a General Bond Issue.

The Pump was a10 stage centrifugal deep well type, 7 inches in diameter, setting approximately 350 feet below street level. It was rated at approximately 1100 gallons per minute against the system and the elevated tank. The body of the Pump was of cast steel and iron, a fact which eventually was to cost the Village a great expense and the people a great agony.

After completion and use in 1939 or 1940, it became obvious that the new well and pump were not delivering sufficient water to supply the demands of the population.

Tests were made by various parties, well experts, Engineers and Inspectors for the Illinois State Board of Health, etc., and two pertinent facts were disclosed. First it was discovered that the natural ground water level was receding at a rate exceeding 7 feet per year, and also that there were stray electrical currents emanating from the well casing. The ability of this well and pump to deliver sufficient water rapidly declined, and it was necessary to operate the original pump to supply additional water (unsoftened) to meet the demand. By 1941 the old well and pump could barely supply 375 gallons per minute, largely due to deterioration of equipment, motor and pump, and also recession of water.

This Well was like the previous one of various diameters ranging from 16 inches down to 10 inches, and to a depth of 1600 feet.

FROM 1940 TO 1948:

During 1940-41 several privately financed extensions were installed to a total length of approximately 8,000 feet, serving a population of approximately 1,000 new residents. A substantial building boom was generated by the construction of Sanitary Sewers under a WPA program resulting in a population of approximately 3,500 in 1940 directly supplied by the water system requiring a daily use of from 350,000 to 400,000 average daily use.

The ability of the pumps and wells to deliver continued to decline. After the beginning of World War II, the building of new homes increased to provide homes for War Industrial Workers employed at the Chrysler-Dodge Division Plant (commonly referred to as the Ford Aviation Engine Plant, now the Ford City Shopping Center) in Clearing, Midway and elsewhere.

During the summer of 1942 the condition of the system became critical, and it was decided that all things being considered, it would be partially relieved by lowering Pump Number 2 to a greater depth, adding 150 feet of shaft and casing, thus reaching the depth of greater supply.

Because of the War, a PRIORITY was required from the War Production Board, and an application was made for the necessary material and a NEW BRONZE 13 STAGE PUMP.

The usual governmental procedures bucked the application around from August or September until October and the back-log of orders delayed the delivery of the pump casing and shafts, which were delivered on or

about December 15, 1942.

A well contractor was employed to do the mechanical work, and he had to secure a priority to obtain gasoline to transport his rig to Oak Lawn and operate it.

By this time the water supply was very erratic and pressures low and in some instances non-existing, due in part to the greed of some ingenious people who removed their meters and pumped water out of the main, thus depriving their neighbors of water. The problem was most acute between 4:30 and 10:00 PM, also from 5:30 to 8:00 AM. Many people would fill a bathtub between midnight and dawn, providing the tub was located on the first floor.

Then on December 26, 1942 after due notice to the population, beginning at 6:30 AM the contractor, after due preliminary work, began the work of removing the motor and adding the pump column and shafting, continuing uninterruptedly until the motor was reinstalled and electrically connected at 12:05 AM December 27. With the pump running full speed, a tap was opened and exactly one bucket of water flowed out. Tests were made and it was determined that no water was being pumped, that the shaft was not merely spinning. Frantic efforts were made to restart the old pump, but after about one hour it proved fruitless.

About two or three days before this the President, Al Brandt, appeared before the City Council of Chicago and made a dramatic appeal for Chicago water to be delivered to the Village in tank trucks, voluntarily offered by several Milk Transport Companies. In spite of the fact that Oak Lawn was at that time not in the Sanitary District of

Chicago, and Chicago had no obligation to supply any water, this consent was given and several truck loads per day were delivered to Oak Lawn and pumped into the System through fire hydrants.

It was during this period that several Chicago newspapers published photos of women and children sitting in dry bathtubs or vainly trying to get water from kitchen faucets to cook their family meals. Some people banded together and hauled water in 50 gallon oil drums, risking their gasoline ration privileges. Most purchased bottled water for consumption and nearly everyone sent his laundry out.

On that cold winter morning, the President appealed to the Office of Civil Defense and obtained 5,000 feet of fire hose and three or four booster pumps. By connecting to the Westernmost fire hydrant located in Evergreen Park on 95th Street near Crawford Avenue, and boosting the water to a connection made with a fire hydrant near the Coral Theatre on 95th Street in Oak Lawn, the Village had a supply of water giving pressures of about 20 to 25 pounds, and about 50% of the usual demands of the people. This arrangement continued until March 17, 1943.

Immediately after the installation of the fire hose and booster pumps, the Village Board passed an Emergency Bond Issue, secured emergency priority from the United States Government, secured emergency delivery of approximately 6,000 feet of 6 inch cast iron water pipe, valves and other material, let a contract, and constructed an emergency connection with Chicago water mained in Crawford Avenue at 103rd Street, extending to 97th Place and Kenton Avenue.

This contract was awarded to the Santry Construction Company, who worked

all during the cold and snow of February and March and completed the job on March 17, at which time the water was turned on and the Village received an ample supply of water for several months until the Pump was replaced in June or July of 1943.

Either on the same day that the water was turned on through this emergency connection, or the following Saturday, the one and only fire occured which destroyed a restaurant located on the lot now occupied by the White Castle Restaurant, but slightly East thereof.

Because of the War, the priority issued to the Village was not as high as that to the United States Navy. The Village was once notified that it could pick up the Pump at the factory in Columbus, Ohio, but two days later notice was received that the Navy had exercised its priority and taken the Pump.

Finally, without previous notice, the Village received the Pump and the contractor arranged to install it. When the old pump was pulled and examined, it was found that the original well column and pump casing were perforated due to electrolysis. One hole in the top of the pump casing exceeded two inches in diameter, and several holes in the pump column exceeded one inch in diameter. Each hole represented points where the stray electrical currents jumped from the well casing to the pump casing or column.

Since the new pump was solid bronze, it was thought that no currents should attack it, but during the replacement of the damaged column, proper cathodic protective devices were installed and proved effective.

When put in use, the new pump performed perfectly and full service was

restored to the people on about August 1.

However, continued growth of the Village and recession of the water table indicated that the Village would have to take further steps to assure an adequate supply. Immediately following the end of the War a great building boom occurred, many subdivision projects were started, and scattered building increased the population to more than 5,000 people.

In 1946 a new subdivision comprising originally 320 acres, was planned for the vacant land lying between Central Avenue and Cicero Avenue, South of 99th Street. At that time Oak Lawn was not in the Sanitary District of Chicago, therefore, all water main and sanitary sewer extensions were subject to approval of the State Board of Health and the Sanitary Water Division. When the plans for this proposed subdivision were submitted to these two bodies in early 1946 they were rejected because the Oak Lawn Sewage Plant was inadequate, and no further projects would be approved unless or until the Village improved and increased the capacity of the Plant.

Several meetings wereheld in Springfield by Village officials and the Consulting Engineer, Edwin Hancock, resulting in an agreement that the State would approve 300 homes to be served by the Sewage Plant on the condition that at the next legislature in 1947 the Village would seek annexation to the Sanitary District of Chicago.

After many consultations, the way was paved for the Sanitary District of Chicago to simultaneously sponsor a Bill in the House for the annexation and in mid-1947 Oak Lawn became a part of the Sanitary District

and therefore eligible to receive water from Chicago.

Plans were immediately started for a water reservoir of one million gallons and a connection with the City of Chicago. At that time the nearest water main in Chicago was a 12 inch main in Crawford Avenue, terminating at about 76th Street. After the contract with Chicago was consummated, and the Village had completed its financing, the City of Chicago extended its 12 inch main to 87th Street, and the Village constructed a 12 inch main along the Southwest Highway, passing into the site of the reservoir at Kostner Avenue and extending all the way to 52nd Avenue at 93rd Street, where a connection was made with the 10 inch main located therein.

This water main was completed in the spring of 1948, and all the pumps were put out of commission. The Village now began using Chicago water exclusively, at Chicago pressure somewhat less than desired, but at least adequate, and this condition continued until the new reservoir and pumping station were completed in late 1949 and put in service.

RECENT DEVELOPMENTS:

In the years following the construction of the 20 inch main in Columbus Avenue, the City of Chicago started the construction of a new large reservoir and pumping station at 84th Street and Kedvale Avenue and a large tunnel to feed the reservoir from Western Avenue near 73rd Street, along Columbus Avenue to 83rd Street and West to the new pumping station. Simultaneous with this, there was also an extension of large water pipe ranging from 30 inches through 66 inches along Crawford Avenue to 83rd Street.

All these improvements were carried out over a period of about six or

seven years and were completed in 1963, resulting in a vast increase in supply available to the Southwest area of Chicago and adjacent suburban communities, and transferred the load from the Roseland Station to the new station. In addition to the increased supply, the operating pressure was raised from the usual 28 to 45 pounds to from 48 to 55 pounds. Needless to say, this not only completely changed the outlook for future supplies available to Oak Lawn, but also the receptivity of the City to requests made for an additional connection.

In 1962 the State of Illinois Northeast Planning Commission addressed a letter to the Village of Oak Lawn in which it was suggested that Oak Lawn should be the agency for receiving and distributing Chicago water to several Southwest Suburban Villages in Worth and Palos Townships; namely, Chicago Ridge, Worth, Palos Hills, Palos Park, Palos Heights, Orland Park and the unincorporated areas surrounding them.

Preliminary studies had been made previously to include Chicago Ridge and Worth, but this new suggestion required a completely new study and acceptance by the Village of Oak Lawn of this responsibility.

The City of Chicago through its Water Distribution Division, requested the Edwin Hancock Engineering Company, the Consulting Engineers for Oak Lawn, to undertake a study and feasibility report. This was done and a report was completed in April, 1963. This study considered the population growth and potential water use projected to the year 2000. The report was addressed to the Commissioner of Water and Sewers, Mr. James Jardine, and copies were given to Oak Lawn, which has made it available to other Villages on request.

The highlights of this report are that the potential population of Oak Lawn and Chicago Ridge combined would approach 100,000, using an average of 8.5 million gallons of water daily, and the five other Villages would approach 125,000, using an average of 10.5 million gallons of water per day, and that the total population would reach 225,000, using an average of 19,000,000 gallons of water daily. The population was projected at the rate of 14 or 16 per acre occupying all the usable land excluding cemeteries, forest preserves, golf courses, Sanitary District and School properties; and a demand of 85 gallons per day per person, which includes only about 15% for commercial or small industrial use.

Since Oak Lawn was already being supplied at 87th Street with a potential of 6.5 to 7.0 million gallons of water per day, it is obvious that only the difference would have to be obtained from another connection and that the amount required would be about 12 million gallons per day.

On the strength of this study, it was determined that a 30 inch main would be required to supply the water to Oak Lawn and that it could be distributed South and West through a 24 inch water main.

This report corroborated a report prepared by Engineers of the City of Chicago, except that it differed only by about one million gallons of water to be required per day, and became in part the basis by which the City was to approve a new connection for which the President, Fred M. Dumke, had been negotiating for several months.

The Village then entered into an agreement with Chicago Ridge and made

a joint application for an increased supply of water to be received through a new connection with the 36 inch Chicago main in Crawford Avenue at 104th Street. With the approval of this request, the Village Board authorized the preparation of plans, specifications and estimates of cost for constructing the supply and distribution mains, a two million gallon reservoir and pumping station, and an elevated storage tank of one million gallon capacity, and preparations were made for financing such installations, including the acquisition of the lands for the pumping station and the elevated tank.

THE 1963 PLAN:

Since the direction and speed of population increases can only be conjectured, and the trend must be taken as the base for all projections, it is not always possible to accurately anticipate the local growths. Therefore, certain assumptions were made and a system designed.

The first assumption in 1963 was that approximately one-half the area of the Village, plus the anticipated unincorporated areas adjacent to the Village West of Austin Avenue, in Worth Township, out to Harlem Avenue, would continue to be supplied by the Kilbourn Avenue station; and that the remaining area of the Village, being South of 99th Street, and all adjacent Villages would be supplied by a new pumping station to be located adjacent to 105th Street and West of Laramie Avenue.

The contract with the Village of Oak Lawn and Chicago Ridge provides that each Village maintain storage facilities for a one day supply of water at its daily average use. The Village of Chicago Ridge has complied with this requirement and constructed a handsome elevated tank

of one million gallon capacity on a site West of Ridgeland Avenue at about 105th Street. This should supply its needs for several years until its population exceeds 10,000 unless industrial development increases drastically.

THE DESIGN

It was determined early that the original pumping stations and distribution system would be interconnected with the new pumping station and both would operate as a single system, each to keep the system loaded to equal pressures, and that the new elevated tank would raise its water to the same height as that in the existing elevated tank. Furthermore, the Village of Oak Lawn would pump water directly into the new Chicago Ridge system and raise the water into its new elevated tank to the same height.

It was also determined that the most economical plan would provide for an elevated tank of one million gallon capacity, supplied with water by an underground reservoir of two million gallon capacity, with a combined pumping station containing a minimum of three pumps with provisions for three additional pumps.

The underground reservoir was designed to be expanded by the construction of two additions, each of one million gallons capacity.

Thus, the present storage capacity of 3,125,000 gallons would be increased to 6,125,000 gallons, which could be expanded to 10,125,000 gallons by constructing additions to the underground reservoirs, and to any amount required by additional elevated tanks as the future may require.

The 6,125,000 gallons storage of Oak Lawn, added to the one million gallon elevated tank in Chicago Ridge, makes 7,125,000 gallons total storage available to sustain a population of 80,000, and the two million gallon additions would sustain a population of 92,000. It is believed that this population will not be reached before the year 1980.

The total pumping capacity of the Kilbourn Avenue Pumping Stations, all pumps working together, is about 8,000 gallons per minute. This station alone could supply approximately eight million gallons of water per day, but could not maintain adequate pressures at the extremities of the system, especially after the extensions of water mains into the newly annexed Northwest areas including Columbus Manor and Dearborn Heights.

The new pumping station was designed to supply the ultimate requirements of more than 225,000 people, including all of Oak Lawn within its annexed boundaries, in the event of failure of the Kilbourn Avenue Station.

THE COMPLETED IMPROVEMENTS

THE CHICAGO CONNECTION

The contract with the City of Chicago specified that the City would make a physical connection with its water main in Crawford Avenue at 104th Street and extend the main to the West side of the Street. This was a complicated installation which included a "PATENTED" pressure connection, providing for a 24 inch outlet and valve attached to the 36 inch Chicago concrete water pipe and the extension of 24 inch ductile iron pipe across the pavement in Crawford Avenue.

This was completed in July, 1964 at a cost of $22,000.00 paid for by Oak Lawn.

30 INCH SUPPLY MAIN AND 24 INCH DISTRIBUTION MAIN

A contract was awarded to the DiPaolo Construction Company of Chicago for the 30 inch supply pipe in 104th Street, Keating Avenue and 105th Street from Crawford Avenue to the site of the reservoir at Lockwood Avenue, and a 24 inch distribution main in 105th Street from the reservoir site to Central Avenue, and in Central Avenue to 107th Street, at which point the Chicago Ridge system is connected. This installation included 9110 feet of 30 inch and 3507 feet of 24 inch ductile iron pipe and 964 feet of 12 inch cast iron pipe, together with butterfly valves and appurtenances.

In addition to this, there was a reinforced concrete meter vault located in 104th Street just West of Crawford Avenue in which there are installed two propeller type meters furnished by the Hersey Sparling Meter Company. Pipe fittings were installed for the future of the two additional meters.

Last, and by no means least, there is an automatically electrically operated and controlled butterfly valve by which the City of Chicago will control the amount of water to be taken from the Chicago mains at any or all times. The electrical controls were furnished by the Sparling Meter Company and all butterfly valves were furnished by the Henry Pratt Valve Company.

This water main was completed in October, 1964, and tested by the DiPaolo Construction Company to a pressure of 150 pounds per square inch.

The total cost of this contract was $378,452.84, exclusive of engineering costs.

16 INCH, 12 INCH AND 10 INCH DISTRIBUTION MAINS

Prior to 1962 the Village had improved its distribution system by extending a 16 inch cast iron pipe from the Kilbourn Avenue pumping station to 91st Street, West in 91st Street to Kilpatrick Avenue; South in Kilbourn Avenue to 92nd Street, and West in 92nd Street to 52nd Avenue, where it connected with the existing 10 inch main. Connections were made at several points along the way to improve the supply and pressure into the system. This work was completed over a period of four years by four contractors at a cost of approximately $60,000.00, total.

In 1963 a contract was awarded Peter Ciccone for the construction of a 16 inch ductile iron pipe water distribution main in 92nd Street and in 91st Street, from 52nd Avenue to Austin Avenue; South in Austin Avenue to 98th Street, East in 98th Street to Menard Avenue; South in Menard Avenue to 103rd Street; East in 103rd Street to Central Avenue, where it was connected with an existing 12 inch water main. This contract also included short sections of 12 inch water mains as connections with existing mains, and about 2,000 feet of 10 inch water mains in 103rd Street to close gaps in the system. Frequent connections were made along the route of the 16 inch pipe with the existing system to increase water supply and pressures.

Following annexation of parts of the Northwest Area, the Village authorized the extension of a 16 inch main in Oak Park Avenue, from 91st Street to 95th Street, where provisions were made for future extensions

South into Dearborn Heights, when required.

The improvement included 25,051 feet of 16 inch, 300 feet of 12 inch, and 1650 feet of 10 inch ductile iron pipe, together with butterfly valves and appurtenances. This was completed in October, 1964 and tested by the Peter Ciccone Company to a pressure of 150 pounds per square inch. The total cost of this improvement was $385,489.94, exclusive of engineering costs.

ELEVATED SPHEROID TANK - One Million Gallon Capacity

A contract was awarded to the Chicago Bridge and Iron Company for the construction of a one million gallon capacity spheroid elevated tank and reinforced concrete foundation which was constructed on a site purchased by the Village on the South side of 98th Street between Parkside and Massasoit Avenues.

This was constructed during 1963, but the painting and final completion was carried over into 1964. Water was first introduced into the tank in May and it went into general service riding on the system in July.

The tank is supplied through a branch of the 16 inch main laid in 98th Street from Menard Avenue. Like the original elevated tank, the water will enter and leave through the 16 inch main, and rise to its maximum height and fall with the daily use within fixed limits.

The diameter of the tank is 74 feet and the effective range of depth is 34 feet.

The foundation of the tank is at an elevation of 596 feet above sea level and the maximum height to which the water will rise is 144 feet,

thus helping to maintain equalized pressures throughout the Village at from 44 pounds to 63 pounds static pressure depending on the location where measured.

There is a red flashing warning light mounted atop the tower which is automatically controlled by an electric photocell. The elevation (and pressure) of the water in the tank is automatically telemetered over leased telephone wires to a recording gauge located in the new pumping station and to devices which are set to control the pumps. When the water reaches its maximum height within the elevated tank, all pumps are stopped and remain so until the water recedes a predetermined amount, when a small pump is restarted. If, when one pump is started, the water continues to recede, a second pump will be started, and eventually a third pump my be started.

The spheroid structure is supported on a pedestal type central column. The base is circular and rests upon a reinforced concrete foundation approximately 54 feet in diameter. The smallest diameter of the pedestal is 35 feet in diameter. Within the pedestal there is a room entered through a specially constructed door. There is a small pump well with a sump pump automatically pumping the ground water seepage. A central circular shaft with interior steps enables workmen to climb to the top of the structure and, if necessary, enter into the spheroid for inspection or repairs.

The exterior of the structure is painted with a specially compounded rust inhibiting and light reflecting paint to reduce the absorption of paint. The structure is also protected from corrosion by cathodic protective devices.

This spheroid was completed by the Chicago Bridge and Iron Company at a cost of $253,000.00.

THE RESERVOIR

The reinforced concrete structure consists of two cells, each measuring 80x128 feet, having capacities of one million gallons. The nominal depth of the water is 13 feet.

Toward the South end, there are five walls connected with the reservoir proper by valves inserted in the walls in such a manner that water may be removed from any one of them for any purpose.

The water enters the reservoir through a 20 inch supply pipe and is distributed to each cell by automatic float controlled valves which close to prevent overflowing and which open to admit new water as required.

In each well there are (or will be) pumps of varying capacities. These are shallow well turbine pumps operated by electric motors, all controlled from a control center located in the main building.

The operation of the pumping system may be described in brief as follows: The water in each pump well is normally identical in level with that in the reservoirs. When the water in the elevated tank has receded to the predetermined elevation, the impulse telemetered to the gauges in the pump building is relayed to the control center making a demand for water and one pump is started automatically to be followed, if necessary, by a second pump or even a third pump. These pumps will continue to operate automatically until the water in the elevated tank

reaches the maximum height when all pumps are started. Ordinarily, one pump will operate continuously around the clock, except perhaps for short periods during night hours. As soon as any pump is started, a chlorinator is automatically started to feed the required solution to the water as pumped. The strength of the solution is automatically controlled by an analyser which also records the results on a chart.

A fourth pump (and a fifth and sixth pump to be installed in the future) will be manually started and operated as required by the Village.

The present installations of pumps and motors is as follows:

Pump Number 1	2000 GPM	125 HP
Pump Number 2	3000 GPM	200 HP
Pump Number 3	3000 GPM	200 HP
Pump Number 4	4000 GPM	240 HP
Total	12,000 GPM	765 HP

If operated simultaneously, these four pumps would probably deliver about 10,200 GPM at a rate of 14 million gallons per day. The ideal operation would utilize no more than three pumps at any one time, pumping from 6800 GPM to 8500 GPM, holding at least one pump in reserve.

The plans for future installations are for two pumps, each of 6000 GPM capacities, driven by motors of 300 HP. The ultimate pumping capacity of six pumps having a rated capacity of 24,000 GPM, operating simultaneously, would have a probable ability to deliver at the rate of more than 19,000 GPM which is at a maximum rate of about 28 million gallons per day.

From the above it is seen that the present installations will supply the average daily requirements of a population of 175,000, which to

say the least will not materialize for several years. This pumping station which can supply 175,000, when combined with the Kilbourn Avenue Pumping Station, which can supply 80,000, will then have the capacity to supply the average daily requirements of a population of 225,000, and when ultimately developed can supply a population of more than 320,000.

To assure continued operation of the pumps in the event of total electrical power interruption, there has been installed a diesel motor operated generator of 300 KVA capacity which will deliver sufficient power to operate at least two pumps.

The equipment is housed within a modern designed brick structure, 130 feet long by 27 feet in width.

FUTURE DEVELOPMENTS

The pumping and mechanical requirements have been provided for the needs of the Village for many years. Large water mains have been extended to cover more than 90% of the area of the Village. Only after operation of the system for at least one year will it be determined whether there may be any small isolated areas receiving insufficient pressures for which extensions of larger mains will be required.

The attention of the Village officials will perforce consist of providing the extensions to the adjacent communities as required.

Unless Oak Lawn does an about face and develops a large industrial community or some industry requiring a large amount of water were to settle in the Village, there should be no fear of a shortage for years to come.