



- KEY**
- PROTECTED FIRE ZONE: Shown in Green.
  - Note - For description of fire protection, etc., see other side.
  - Elevations range from 140 to 680 feet above mean sea level
  - Water mains 8 inches and larger in diameter
  - Water mains 6 inches in diameter
  - Water mains 4 inches in diameter
  - Fire hydrants shown thus
  - Gate valves shown thus
  - Fire house shown thus
  - Fire apparatus designated by symbols thus:
  - Y Pumping engine and hose car
  - L Ladder truck
  - A Ambulance, Squad or Auxiliary car
  - Q Booster tank or tanks on above

THE FIRE INSURANCE RATING ORGANIZATION OF N. J.  
ENGINEERING DEPARTMENT  
NEWARK 2, N. J.

**Cedar Grove Township**  
Essex County, New Jersey

FEBRUARY 28, 1960

## CEDAR GROVE TOWNSHIP, ESSEX COUNTY, NEW JERSEY.

Population—Census of 1930 was 4,793.

**IN GENERAL:** Located along the Pompton Turnpike (State Highway Route No. 23) on the Erie Railroad adjoining the westerly limits of Montclair. It is principally a developing residential community with two small industries normally employing about 20, and the Essex County Institutions with about 3,000 inmates and employees located to the southwesterly end of the township. These institutions have private fire protection systems and are served in part by Cedar Grove. Area of township about 45 square miles. Elevations range from 140 to 680 feet. Main thoroughfares are concrete or macadam; some secondary streets are dirt in fair to poor condition. Grades are severe in some residential sections. Grade crossings are such that they should not seriously interfere with the response of fire apparatus, but heavy week-end and holiday traffic on through highways could effect delays in fire department response and operations.

**WATER SUPPLY:** The Township of Cedar Grove owns and operates the distribution system supplying water for domestic and fire protection purposes to territory within the municipal limits and purchases water at wholesale from the Town of Montclair which participates in the Wanauque development constructed by the North Jersey District Water Commission. Water Supply for a small area adjoining Little Falls Township is purchased from the New Jersey Water Company. The system was designed and installed in 1927 under the supervision of consulting engineers. The water department is under the control of the mayor and commissioners and the system is in charge of a superintendent who is appointed for a four year term. The superintendent with the township clerk performs all duties with laborers hired as needed. Office in municipal building. A few supplies are kept on hand at a repair shop at the rear of the municipal building. A small truck is provided, and the superintendent responds to alarms of fire. Records are very incomplete and many control valves are not accurately located. **Cedar Grove Supply:** The Cedar Grove system is supplied from the Montclair high service standpipe with a capacity of 2.5 million gallons located on the ridge at the Montclair-Cedar Grove limits at about elevation 670. This supply is transmitted through about 4,000 feet of single 8-inch cast iron main part of which is 46 years old and is in questionable condition and connects to the Cedar Grove system on the Pompton Turnpike and continues to partially supply the Essex County Penitentiary and the Newark City Home in North Caldwell and Verona respectively and affords an emergency supply to the Essex County Institutions in Cedar Grove. There is a 6-inch "Protectous" meter and by-pass on the transmission main near the standpipe and the institution feeders carry independent 6-inch meters in addition. The supply to the small section adjoining Little Falls is purchased from the New Jersey Water Service Company in that community and is delivered through a short 6-inch line equipped with a 6-inch meter and by-pass. For description of the Little Falls distribution system and supply see report on Little Falls with Zone Map No. 31. A few services and one hydrant on Bradford Way at the township line are supplied directly from the Montclair system. **Distribution System:** The distribution system which covers the major portion of the township is segregated by pressure regulators to three services; a high service under full standpipe head supplying the territory above elevation 360 in the southern end of the township and above 300 in the center; an intermediate service under high service head regulated at elevation 360 to 100 pounds supplying territory north of Fairview Avenue below elevation 360; and a low service under high service head regulated at elevation 370 to 50 pounds supplying territory in the township center between elevation 220 and 420. In addition there are 2 small services supplied separately as extensions of the Little Falls and Montclair distribution systems. Some additional supply of questionable value could be obtained in emergency through the connection to Overbrook Hospital through a 6-inch metered connection to Verona and through an 8-inch connection to the 60-inch Cedar Grove Reservoir supply line, but except for one hydrant to be installed on a 12-inch institution supply line in the business area, no suitable provisions have been made for utilizing these supplies on short notice. See map and description above. **Consumption:** The average daily consumption during 1938 on the Montclair service was 139,000 gallons and it is estimated that the maximum daily consumption is 200,000 gallons. During the year an additional supply of 2.79 mg was purchased from the New Jersey Water Company. On December 31, 1938 there were about 575 services within the township all of which are metered. **Pipe:** All cast iron, tar coated, bell and spigot joint, except 2,300 feet of universal joint, laid with a minimum cover of 4 feet. Pipe is A. W. W. A. Class "B", "C" and "D". No trouble reported from frozen mains or electrolysis, but some difficulty has been experienced with breaks in the older mains. Total length, excluding 8,000 feet of 8-inch transmission main which is not in service, 82,550 feet: 25.1% 8-inch, 73.1% 6-inch, 1.8% 4 inch. **Gate Valves:** There are 81 on the system in Cedar Grove of Wood make, valve boxes part at grade and part below grade. Direction of operation is uniform. Valves are said to be operated at least annually. **Hydrants:** There are 124 hydrants on the system in Cedar Grove of Mathews, Smith, Darling and Eddy makes. All except 12 old hydrants have one 4 1/2 and two 2 1/2-inch outlets, 5-inch barrels and 6 inch gated branches. Older installations have two 2 1/2-inch outlets and 4-inch barrels and branches. Hydrants are inspected twice annually and at time of inspection were found to be in fair condition except that a few in outlying sections were found to have non-uniform operating nuts and threads. **Pressures:** A direct reading gage in the basement of the Municipal Building showed 155 pounds at time of inspection. Readings taken at 13 well distributed hydrants showed pressures as follows: High service from 40 to 144 with an average of 93.5 pounds. Intermediate service from 143 to 157 with an average of 150 pounds. Low service from 54 to 108 with an average of 87 pounds. Little Falls service 83 pounds, Montclair service 35 pounds. General average over entire system 92 pounds. Pressures fluctuate above these readings due to improper operation of the pressure regulating valves. **Fire Flow Tests:** Probable supply available for fire protection purposes was measured on September 6, 1933 by means of Pitot tube and corrected to date. Location of hydrant, discharge in gallons per minute, pressure before flow and pressure during flow were as follows:

High Service

Elmwood Rd and Overlook Rd, 530—70—16

Mountain Ave and Buena Vista Ave., 265—133—4  
Crestmont Rd N. of Bradford Ave., 205—40—\*  
Cedar Grove Pkwy. 600 feet E. of Fairview Ave., 314—144—4.  
Pompton Tpk. and Fairview Ave., 265—135—\*  
Crestmont Rd and Cedar St., 517—40—0  
Intermediate Service  
Pompton Tpk S. of Lindsley Rd, 365—143—14 x  
Lindsley Rd N. of Mountain Ave., 419—157—\* x  
Lindsley Rd. 500 ft. South of North Caldwell limits, 290—177—3.  
Low Service  
Pompton Tpk. bet. Church St. and Grove Ave., 1045—104—23  
Ridge Rd. N. of Lakewood Ave., 428—54—7.  
Little Falls Rd. S. of Love Lane, 482—108—17 x  
Little Falls Service  
Lindsley Rd. E. of Stevens Ave., 445—83—11  
Montclair System  
Bradford Way at Township Line, 421—35—\* x  
\* No reading taken  
x Tests conducted 1930 to 1932 and correct to date

**FIRE DEPARTMENT:** A volunteer organization of three companies under the control of the township which owns apparatus and equipment and appropriated \$3850 for the support of the department during 1939. Company No. 1 is quartered in the Municipal Building, Company No. 2 owns its quarters and Company No. 3 rents its quarters. Total active membership in three companies 43, of whom a minimum of about 18 are available at all times. Officers including a department chief, two assistant chiefs, and at each company a captain and lieutenant, are elected annually and confirmed by the mayor and commissioners. **Companies—Headquarters:** Center Fire Company No. 1: Total active membership 15. Located in communicating section of municipal building on Pompton Turnpike at Love Lane as shown on map. Building is a two-story brick structure with slate roof, concrete apparatus floor, hose tower, steam heat, siren and electric lights. Apparatus room is also used for housing the independently owned rescue car. **Equipment:** One 1938 Mack 600 g.p.m. triple combination pumping engine carrying 1,000 feet of 2 1/2-inch hose, 200 feet of 1 1/2-inch hose, one 100-gallon booster tank, 150 feet of booster hose, 2 short ladders and some minor equipment. One 1914 American La France 50-foot city service ladder truck carrying 10 ladders from 12 to 50 feet totaling 295 feet, one Browder life net and some minor equipment. One 1939 Ford rescue car independently owned, but manned by members of the fire department. **North End Fire Company No. 2:** Total active membership 13. Located on Lindsley Road near Stevens Avenue as shown on map. Building is a one story concrete block structure with composition covered wood roof, wood apparatus floor, steam heat, siren and electric lights. **Equipment:** One 1938 Mack 500-g.p.m. triple combination pumping engine carrying 1,000 feet of 2 1/2-inch hose, 200 feet of 1 1/2-inch hose, one 100-gallon booster tank, 150 feet of booster hose, 2 short ladders and some minor equipment. **Cedar Knoll Fire Company No. 3:** Total active membership 15. Located on the Newark-Pompton Turnpike south of Harper Terrace as shown on map. Building is a small frame garage with composition roof, concrete floor, stove, siren and electric lights. Drive to this station is narrow and steep, building is small and unsuited to the housing of fire apparatus and is severely exposed by a frame dwelling and garage. **Equipment:** One 1938 Mack 500-g.p.m. triple combination pumping engine carrying 900 feet of 2 1/2-inch hose, 200 feet of 1 1/2-inch hose, one 100-gallon booster tank, 150 feet of booster hose, 2 short ladders and some minor equipment. **Hose:** All 2 1/2-inch hose is C. R. L. with National Standard screw couplings. All in serviceable condition is carried on apparatus. All hose is less than 2 years old and is tested twice annually at 150 pounds and is shifted in part and repacked at monthly drills. A hose tower is provided in the municipal building. **Operations:** Department is under the direction of the mayor who is the director of public safety and is governed by municipal ordinance and company by-laws. Chief has control of apparatus at all times and of men at fires and drills. Motors are started at least weekly and three drivers and one engineer are appointed for each piece of equipment. **Drills and Training:** Company drills are held at least monthly with a minimum of twenty drills each year under the direction of the chief officers. They consist of hose laying, pump operation and some ladder work. At the time of inspection special weekly instruction drills in hydraulics and first aid were being conducted under the supervision of neighboring department officers. **Response to Alarms:** First alarm response includes a pumping engine and ladder truck from Company No. 1 and the nearest outlying pumping engine with the remaining engines responding to headquarters. Aid may be secured from the surrounding volunteer departments at Little Falls, Verona and Caldwell and from the paid department in Montclair. **Fire Methods:** Hand extinguishers and booster lines are used on incipient fires together with 1 1/2-inch lines reinforced by engine streams with shut-off nozzles. One all-service gas mask is provided for each company, but salvage covers, special and heavy stream appliances are lacking. **Building Inspection:** No regular scheduled inspection, but the chief of the fire department annually inspects public buildings and mercantile occupancies and investigates complaints. **Records and Reports:** Company records consist of attendance tabulations, nature of alarms and a general report included in the secretary's records. Copies of the individual fire reports are filed with the township commissioners. **Fire Alarms:** Telephoned through the Verona Exchange to the police desk in the municipal building and sounded on the three sirens at the fire station from a transmitter located at the police desk. Fire department sirens are also equipped with outside push buttons near fire station.

**POLICE DEPARTMENT:** Consists of a chief and three full paid officers in addition to which there are six special officers. One De Soto radio equipped car and one motorcycle are provided.

**BUILDING LAWS:** Code adopted in 1924 provides for the appointment of a competent building inspector and embodies general construction regulations which are not sufficiently comprehensive from a fire protection standpoint. The code does not establish fire limits nor prohibit the use of combustible roof coverings.

**EXPLOSIVES AND FLAMMABLES:** No adequate regulations except that the state laws limit the use of fireworks to responsible bonded parties and regulate the storage and shipment of explosives and the construction of motion picture booths.

February 28, 1950.

## CEDAR GROVE TOWNSHIP, ESSEX COUNTY, NEW JERSEY.

Population — 1940 Census — 5,208.

1949 Estimate — 6,656 including 2,720 Inmates and Employees at Overbrook County Institution.

**IN GENERAL:** Located along the Pompton Turnpike State Highway Route No 23 on the Erie Railroad adjoining the westerly limits of Montclair. It is principally a developing residential community with a few small scattered industries with about 100 employees. The Essex County Institutions are located along Fairview Avenue in the southwesterly portion of the township. These institutions have private fire protection systems and are protected in part by Cedar Grove Area of township about 45 square miles. Elevations range from 140 to 680 feet. Main thoroughfares are concrete or macadam and practically all streets in the developed areas are surfaced and in good condition. Grades are severe in some local areas. Grade crossings are not such that they should seriously interfere with the response of fire apparatus, but traffic congestion on the main highway through the business district could effect delays in the response and operation of the fire department.

**WATER SUPPLY:** The Township of Cedar Grove owns and operates the distribution system supplying water for domestic and fire protection purposes to territory within the municipal limits and purchases water at wholesale from the Town of Montclair, which participates in the North Jersey District Water Supply Development except that in a small area adjoining Little Falls the supply is purchased from the New Jersey Water Service which is a subsidiary of the Northeastern Water Service Corporation serving that community, and one hydrant supplied from Montclair affords protection to a small residential area on Bradford Parkway. The system was designed and installed in 1927 under the supervision of consulting engineers with the supply being purchased from the City of Newark and delivered through a pumping station in conjunction with a storage tank. Subsequently this supply was discontinued and the pumping station and storage tank were dismantled and supply was then purchased from the Town of Montclair for which supply mains have been installed with metered connections from the Montclair standpipe at the extreme southeasterly end of the township. This method of supply results in inadequate distribution capacity in much of the township due to operation contrary to the original design. **Organization:** The water department is under the control of a commissioner with a local township engineer serving as superintendent with 4 employees in the department of public works who maintain the system and perform all duties with contractors and day labor as necessary. Three trucks and complete repair equipment are provided and a few supplies are kept on hand in the repair shop at the rear of the municipal building. Additional supplies are available on short notice from the Town of Montclair. Records consist primarily of a distribution map and operating data, but details of valves and connections are lacking in numerous instances. **Supply System:** The supply from Montclair is delivered through parallel 6- and 4-inch compound meters connecting with two supply mains; one is 8-inch extending in a westerly direction connecting with an 8-inch high service main in the Pompton Turnpike, and the other is 12-inch extending in a northerly direction connecting with a 6-inch high service main in Crestmont Road. The Montclair standpipe supplying Cedar Grove is located on the ridge at the Montclair-Cedar Grove limits as shown on map, and has a capacity of 2½ million gallons with base at elevation 633 and overflow at elevation 683. The New Jersey Water Service Company supply from Little Falls is delivered through a short 6-inch line equipped with a 6-inch meter and by-pass. A few services and one hydrant on Bradford Parkway at the township line are supplied directly from the Montclair system. **Distribution System:** The distribution system which covers the major portion of the township is segregated by pressure regulators into three services: a high service under full standpipe head supplying the territory above elevation 360 in the southern end of the township and above 300 in the center; an intermediate service under high service head regulated at elevation 360 to approximately 100 pounds supplying territory north of Fairview Avenue below elevation 360; and a low service under

high service head regulated at elevation 370 to 50 pounds supplying territory in the township center and to the northwest and northeast between elevation 220 and 420. The distribution system extending along Ridge Road to the northeast connects with the Little Falls distribution system through a 6-inch meter to supply a small high area in Little Falls Township in that vicinity. See map and description above. **Emergency Connections and Supply:** The principal emergency source of supply is available from a 12-inch county main extending to the Overbrook Institution on which a hydrant has been installed at the municipal building in the business area from which a supplementary supply of about 750 gallons per minute is directly available in the immediate area or in conjunction with pumping engines and special hydrants nearby can be delivered directly to either the low or high service mains. Some additional supply in the extreme southwesterly section of the township can be obtained in emergency through a 6-inch meter in Ozone Avenue from the Verona system, and some additional supply can be delivered through hose lines from the Little Falls system in the northerly section of the township. The original 8-inch connection from the City of Newark supply at the Cedar Grove reservoir has been disconnected, but could be reinstated as a source of low service supply in emergency. Distribution system adequacies are such that this supply would be utilized when needed with primary dependence being placed on the institution supply available at the municipal building in conjunction with fire department pumping engines, methods for the use of which have been established and tested. **Consumption:** The average daily consumption during the twelve months ending November 30, 1949 on the system supplied from Montclair was 0.247 million gallons. The maximum daily consumption during this period was 0.48 million gallons and periodic peak demands have been such as to deplete high areas. At time of inspection there were 1,284 services, all of which were metered. **Pipe:** All cast iron, tar coated, bell and spigot joint except about 2,300 feet of Universal joint. Recent pipe installation is cement lined. Pipe is laid with a minimum 4-foot cover and no trouble has been reported from frozen mains or electrolysis, but some difficulty has been experienced with tuberculation and serious breaks in the older mains. Total length, 132,400 feet; 9.5% 12-inch, 21.3% 8-inch, 67.4% 6-inch, and 1.8% 4-inch. **Gate Valves:** There are 105 on the system in Cedar Grove mainly of Wood make set with valve boxes part at grade and part below grade. Direction of operation is uniform, but no inspection or operation practice is established. **Hydrants:** There are 163 on the system in Cedar Grove of Mathews, Smith, Darling, and Eddy makes, practically all of which have one 4½-inch and two 2½-inch outlets and 6-inch gated branches. A few installations have two 2½-inch outlets and 4-inch branches. Hydrant outlets are National Standard. Hydrants are inspected annually and at time of inspection were found to be in fair to good condition. **Pressures:** Pressures are normally regulated to provide 150 pounds on the high service and 120 pounds on the low service at the municipal building in the business district at which location recording gauges are installed. Immediately following this survey pressures were reduced approximately 25 pounds as a water conservation effort following an extremely dry period. Readings taken at 23 well distributed hydrants showed pressures as follows: Low Service from 52 to 170 pounds with an average of 93 pounds — High Service from 32 to 140 pounds with an average of 90.3 pounds — Modified High Service from 125 to 172 pounds with an average of 147 pounds — Little Falls Service 90 pounds, and Montclair Service 35 pounds. **Fire Flow Tests:** Probable supply available for fire protection purposes was measured during 1949 by means of Pitot tube. Location of hydrant, discharge in gallons per minute, pressure before flow, and pressure during flow were as follows:

**Low Service —**

Pompton Ave opposite Bowden Rd, 760—105—17.  
Pompton Ave opposite Bowden Rd, 1,140—\*—30\*\*