

Superseding Map No. 238 of March 15, 1937. Please destroy old issue.

CITY OF LINDEN



Schedule Rating Office of New Jersey  
ENGINEERING DEPARTMENT  
NEWARK, N. J.

**City  
of  
Rahway**  
Union County, New Jersey

SEPTEMBER 15, 1942

- KEY**
- PROTECTED FIRE ZONE: Shown in Green.
  - Note.— For description of fire protection, etc., see other side.
  - Elevations range from 5 to 81 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:
  - Ⓟ Pumping engine and hose car
  - Ⓜ Hose car
  - Ⓛ Ladder truck
  - Ⓞ Booster tank or tanks on above

September 15, 1942.

## CITY OF RAHWAY, UNION COUNTY, NEW JERSEY.

Population—Census of 1940 was 17,498.

**IN GENERAL:** Located 6 miles southeast of Elizabeth on the main line of the Pennsylvania Railroad and the Rahway River. The city is industrial, business, and residential in character. There are about 30 industries employing around 7,000. Area 4.1 square miles. Elevations range from 5 to 81 feet. Main roads concrete and macadam, others gravel in fair to poor condition. Heavy traffic and parked cars in the business district might seriously interfere with the response of fire apparatus.

**WATER SUPPLY:** Water for domestic and fire protection purposes is furnished by the city which owns supply works and distribution system and supplies water to the city only. **Organization:** System is under the supervision of a board of water commissioners whose members are the chairman of the fire and water committee of the council, the mayor, and three commissioners, one of whom is elected annually for a three-year term. There are a superintendent, a chief engineer, a secretary, 6 pumping station operators working in three 8-hour shifts, a foreman, and assistant foreman, 5 laborers, and 2 clerks who maintain and operate system. All appointments and promotions to department are made by board of water commissioners from an eligible list furnished by the State Civil Service Commission. Office in city hall. Yard and shop at pumping station. Two well equipped trucks are provided. Operating records are good, but records of hydrant and valve locations are incomplete. **Supply Works:** Built in 1872 and subsequently improved. Water is obtained from the North Branch of the Rahway River. River rises in the Orange Mountains and has a watershed covering about 39 square miles. The flow varies from 5 to 500 m.g.d. Water flows by gravity from river through a 30-inch brick conduit into a suction well in pump room, whence it is pumped by low lift pumps into a 0.75 million gallon coagulation basin and flows by gravity through a 0.46 million gallon coagulation basin and six rapid sand filters to a 0.40 million gallon clear water basin. Water is pumped from clear water basin into distribution system with standpipe acting as equalizer. A 20-inch transmission main from the Robinson's Branch Pumping Station of the Middlesex Water Company extends southeasterly through the city to Carteret. There are two 12-inch emergency connections between this main and the distribution system, each equipped with an 8-inch meter and a pressure regulating valve and each capable of delivering 3.0 m.g.d. There are 13 hydrants on this transmission main. A 36-inch transmission main from the Raritan Millstone Pumping Station of the Elizabethtown Water Company Consolidated extends along the northeast boundary line of the city to Linden. There is a 12-inch emergency connection to this main equipped with an 8-inch meter and a pressure regulating valve capable of delivering 4.0 m.g.d. **Pumping Station:** Located in the northeast portion of the city near Westfield Avenue as shown on map. Building is a 3-story brick structure with slate and composition roof, electric lights, steam heat, and 2 hand extinguishers. Wiring in conduit. Exposures mild. House-keeping good. Elevation of pump room floor 25.3 feet. Chief engineer lives on 2nd and 3rd floors. **Equipment—Low Lift Pumps:** One 6.0 m.g.d. De Laval centrifugal pump driven by either a 100-h.p. G. E. electric motor or a 157-h.p. Buffalo gasoline engine. One 5.0-m.g.d. De Laval centrifugal pump driven by a 75-h.p. G. E. electric motor. **High Lift Pumps:** One 6.0-m.g.d. De Laval centrifugal pump driven by a 200-h.p. G. E. electric motor or a 310-h.p. Buffalo gasoline engine. A 5.0-m.g.d. De Laval centrifugal pump driven by a 150-h.p. G. E. electric motor. **Vacuum Pumps:** One Nash-Hytor vacuum pump driven by a 3-h.p. Nova gasoline engine. One Nash-Hytor vacuum pump driven by a 3-h.p. G. E. electric motor. South of and adjacent to pumping sta-

tion is a 1-story cement block structure with a composition roof and electric lights housing pure water aerator and clear water basin. **Purification Plant:** Located east of main pumping station. Building is a 1-story brick structure with electric lights and steam heat. No hand protection. Exposures negligible. Wiring in conduit. Housekeeping good. Elevation of pump room floor 56.5 feet. **Equipment:** Six 1.0-m.g.d. rapid sand filters. **Distribution System:** In one service; see map. Supply to the principal mercantile district is through two 12- and one 20-inch mains extending south from the pumping station and supplying three 12- and one 16-inch lines which extend southeast and southwest to industrial and mercantile districts. Arterial system is fair with a few dead end 4- and 6-inch lines supplying hydrants. **Standpipe:** Located southeast of main pumping station as shown on map; steel, 25 x 125; capacity 459,000 gallons. Elevation of base 51.6 feet. Elevation of overflow 176.6 feet. **Consumption:** The average and maximum daily consumption during 1941 was 3,896 and 5,240 m.g.d. On December 31, 1941 there were 4,322 services of which 1,061 were metered. **Pipe:** Cast iron, tar coated, bell and spigot and Universal joint, and cement, laid with a 4- to 5-foot cover. Newer installations are cement lined. Total length, exclusive of 20 and 36-inch transmission mains, 217,487 feet; 7.42% 4-inch, 58.76% 6-inch, 4.41% 8-inch, 4.63% 10-inch, 20.20% 12-inch, 3.95% 16-inch, and 0.63% 20-inch of which 15% is cement. No trouble reported from frozen mains or electrolysis, some trouble from tuberculation. **Gate Valves:** There are 548 of various makes set with iron boxes and manholes to grade. Direction of operation is not uniform. No regular inspection. **Hydrants:** There are 337 of Corey make of standard type; 35 have two 2½-inch outlets while the remainder have two 2½- and one 4½-inch outlets. Hydrant branches are 4- and 6-inch of which about 50% are gated. Hose and steamer outlet threads are National Standard. Hydrants are inspected twice a year. Those operated during resurvey were found to be in poor condition. **Pressures:** Recording gauge at pumping station at elevation 25.3 feet showed pressures ranging from 45 to 47 pounds. Readings taken at 11 well distributed hydrants showed pressures ranging from 34 to 48 pounds with an average of 42 pounds. **Fire Flow Tests:** Probable supply available for fire protection purposes was measured on August 5, 1942 by means of Pitot tube. Location of hydrant, discharge in gallons per minute, pressure before flow, and pressure during flow were as follows:

Main St and Cherry St, 2,480—45—38  
 W Inman and Russell Aves, 560—34—15  
 E Scott Ave and Lawrence St, 1,060—43—40.  
 St Georges Ave and Linden Ave, 480—39—22.  
 Bedford St and Broadway, 390—40—8  
 Barnett St and E Milton Ave, 310—46—18  
 Hopkinson St and E. Hazelwood Ave, 350—40—4  
 Leesville Ave and Force St, 370—44—32.  
 Milton Blvd and Brookside Rd, 350—39—12.  
 Maple Ter and Central Ave, 480—46—19  
 St. Georges Ave and Jaques Ave, 620—48—18

**FIRE DEPARTMENT:** A part paid organization under the supervision of the chairman of fire and water committee of the council. City owns house, apparatus, and equipment and appropriated \$55,745 for the support of the department in 1942. There are 21 full paid men including a chief, 2 deputy chiefs, 4 captains, and 13 firemen and 20 call men. Paid members of the department are divided into two platoons, on duty 10 and 14 hours, alternating every third day. No meal periods allowed. They are allowed 15 days annual

## CITY OF RAHWAY, UNION COUNTY, NEW JERSEY.

### *Continued.*

vacation during which period strength of the department is generally one less per platoon. Paid men on the off shift respond to all box alarms and are not allowed to leave city on short day off, but may do so on long day off without permission. All appointments and promotions are made by the council from eligible list furnished by the State Civil Service Commission. Call men are appointed by the council. Pension fund for paid men is established by state law and is supported by assessments from salaries of members and by the city. Members may be retired on half salary in case of total disability or after 20 years of service if 50 years of age. About 6 members of the off-shift platoon and 10 call men are available at all times. **Company:** Located on Seminary Avenue near Church Street. Building is a 2-story joisted brick stuccoed structure with a frame annex, tar and gravel roof, concrete apparatus floor, steam heat, electric lights, hose tower, and 2 telephones. **Equipment:** A 1916 American La France 750-g.p.m. triple combination pumping engine carrying a 40-gallon booster tank with CO<sub>2</sub> for expellant, 200 feet of booster hose, 1,250 feet of 2½-inch hose, 2 short ladders, and fair minor equipment. A 1919 American La France 750-g.p.m. triple combination pumping engine carrying a 40-gallon booster tank with CO<sub>2</sub> for expellant, 200 feet of booster hose, 1,200 feet of 2½-inch hose, 2 short ladders, and good minor equipment. A 1937 American La France 1,250-g.p.m. triple combination pumping engine carrying a 100-gallon booster tank, 250 feet of booster hose, 1,200 feet of 2½-inch hose, a deluge set, a portable foam generator, 400 pounds of foam powder, 2 short ladders, and good minor equipment. A 1925 American La France 65-foot aerial truck drawn by a 1941 G. M. C tractor carrying 9 other ladders ranging from 9 to 40 feet and totaling 272 feet, a 650-watt portable generator with three 250-watt flood lights, a ladder pipe, 2 distributor nozzles, a 40-gallon booster tank with CO<sub>2</sub> for expellant, 200 feet of booster hose, and good minor equipment. A 1939 Chevrolet hose car carrying 500 feet of 2½-inch hose, 1 short ladder and some minor equipment. The chief is provided with a 1936 Chevrolet coupe. **Hose:** All 2½-inch hose is C.R.L. with National Standard screw couplings. It is tested annually at 200 pounds, shifted monthly and dried on apparatus floor. There is a total supply of 6,200 feet of which 4,350 feet is over five years old and 2,550 feet is held in reserve. **Operations:** Department is governed by city ordinances. Chief has control of apparatus and paid men at all times. He can suspend members pending a hearing before the fire committee and civil service commission. Two members are assigned to drive each piece of apparatus. Motors are started daily. **Drills and Training:** Drills for paid men held weekly under supervision of officers, consist of all fire department evolutions. **Fire Methods:** Booster streams used on incipient fires reinforced by engine and hydrant lines with shut-off nozzles. First company due lays directly from fire to hydrant and second company due lays from hydrant to fire. Hydrant outlets are gated and engine is usually hooked up. Gas masks, salvage equipment, and heavy stream appliances are provided. **Response to Alarms:** Two engines and one ladder company respond to all alarms unless person calling clearly states that fire is rubbish, grass, or similar fire, then hose or one engine company is dispatched. Two of the off-shift firemen respond to fire house and man third engine in case of a second or subsequent alarm. Outside aid may be secured from Linden, Westfield, and Elizabeth. **Building Inspection:** Department makes 4 inspections annually of all factories and mercantile buildings. Complete sketches of all buildings are kept on file. **Records and Reports:** A journal is kept of all fire department activities. Complete records are kept of each fire and an annual report is submitted to the chairman of the fire and water committee. **Fire Alarm System:** System is under the supervision of the fire chief who with 2 firemen maintains the system. Headquarters is located in a 1-story cement block annex in rear of fire house. Annex has a concrete floor, composition roof, electric lights, steam heat, and

has internal hazards common to a building housing automobile fire apparatus. Equipment is of the Gamewell automatic type and includes a 6 circuit slate operating and charging board with the usual devices for testing and operation. Circuit enters headquarters from outside pole in a common conduit direct to operating board. Wire between apparatus is well installed in rigid conduit. Circuit is protected on operating board by ½-ampere enclosed fuses and by inert gas lightning arresters and 3-ampere fuses at entrance of circuit to fire alarm headquarters. Current for operation of system is supplied by 4 Oxide film rectifiers serviced from the 110 volt lighting circuit with 4 banks of storage batteries of 11 cells each floating. Batteries are mounted on standard rack and are located in room with operating board. Batteries are protected by 3-ampere cartridge fuses, and rectifiers by ½-ampere cartridge fuses. A motor generator set is held in reserve. There are a punch register, an 18-inch gong, a visual indicator, a 6-inch gong in dormitory and a breakwheel transmitter in fire headquarters, a 6-inch gong in home of chief, a 10-inch gong in home of one deputy chief, and an air horn at old police station. There are 42 boxes of Gamewell and Horni makes or which 3 are private and inaccessible to the public. Thirty-four boxes are of the succession type and remainder are of the non-interfering type. Five boxes in principal mercantile district are mounted on pedestals and four have blue indicating lights; others are mounted on utility company poles with red and silver indicating bands at or near street intersections. Those boxes examined during inspection were found to be in good operating condition. There is a single circuit divided into 3 outside loops carrying fire alarm boxes, chief's gongs, and air horn, and one inside loop carrying alarm instruments in fire headquarters. Total length of circuit is 14 miles of No 10 hard drawn copper triple braided weatherproof, mounted below power wires on utility company poles. Test taps are sent over system twice a day. Circuits are tested for voltage, amperage, and grounds twice daily. Boxes are inspected and subjected to a silent test twice a year. Records of tests are kept in a journal. A map showing the location of circuits and boxes is provided. Alarms of fire may be telephoned to fire headquarters over one of two trunks from public exchange and are sounded on a breakwheel transmitter. One trunk is reserved exclusively for fire calls.

**POLICE DEPARTMENT:** Consists of a chief, a captain, 2 lieutenants, 4 sergeants, 3 detectives, 1 clerk, and 13 patrolmen working in 8-hour shifts. There are 3 call boxes in business district over which patrolmen report hourly. There are 4 cars, 3 of which are equipped with three-way radio, 1 motorcycle, and 1 ambulance. Police respond to all alarms of fire and report all unauthorized building construction to building inspector.

**BUILDING LAWS:** Code adopted December 26, 1927 and subsequently amended provides for the appointment of a building inspector and requires that plans be filed and permit secured before building operations may begin. Code is modeled after the National Board of Fire Underwriters' code but has no regulations in regard to area. Fire limits are established and flammable roof coverings are allowed except in the fire limits.

**EXPLOSIVES AND FLAMMABLES:** Code adopted March 19, 1928 follows that of the National Board of Fire Underwriters but has only fair provisions in regard to explosives, nitro-cellulose motion picture film, pyroxylin plastics, carbide, and garages. A captain of the fire department is in charge of enforcement. State laws adequately cover the storage and shipment of explosives and flammables and the construction of motion picture booths. They also restrict the discharge of fireworks to responsible bonded parties.