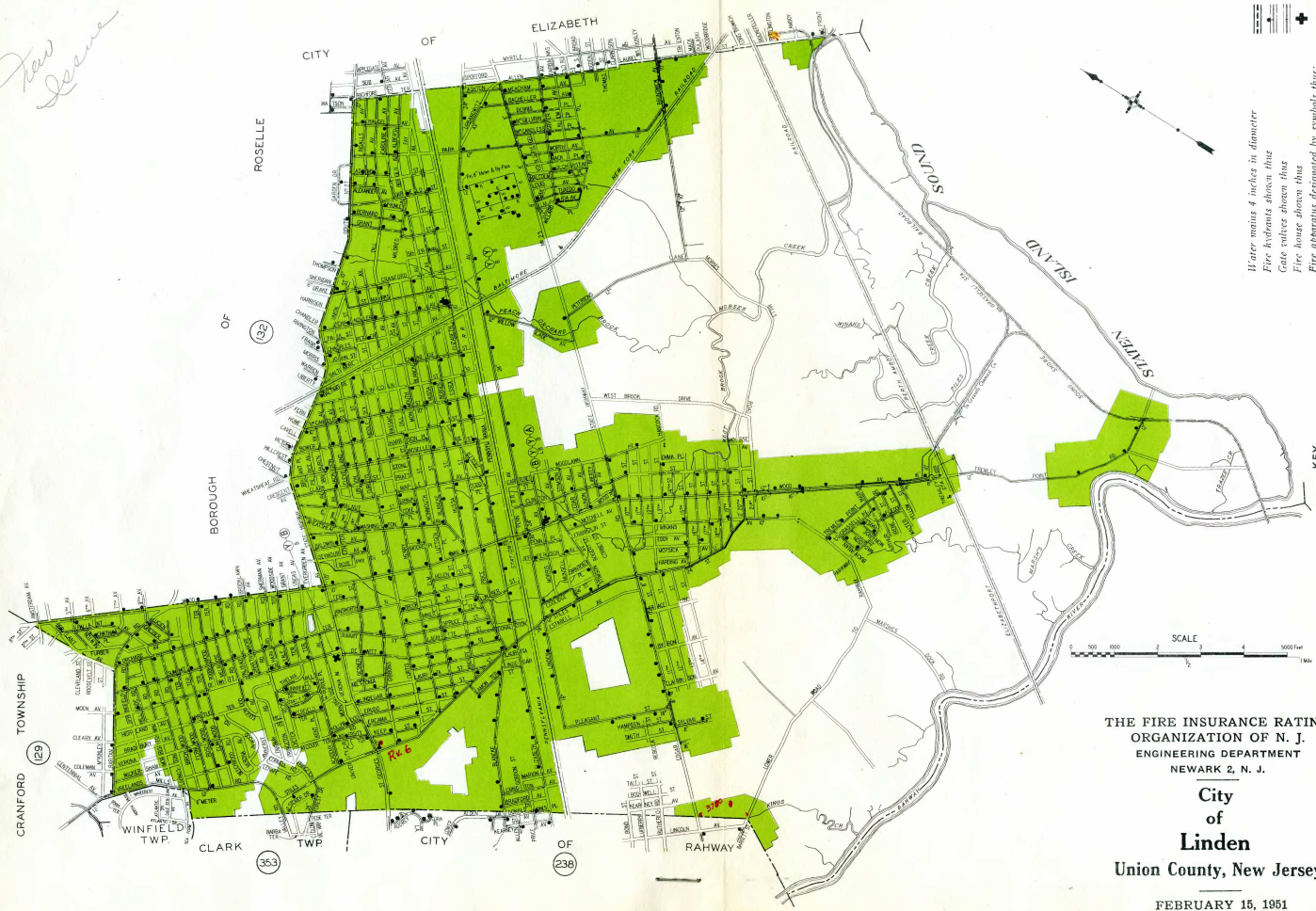


*See
Linden*

Superseding Map No. 15 of October 31, 1941. Please destroy old issue.



THE FIRE INSURANCE RATING
ORGANIZATION OF N. J.
ENGINEERING DEPARTMENT
NEWARK 2, N. J.
**City
of
Linden**
Union County, New Jersey
FEBRUARY 15, 1951

- KEY**
- PROTECTED FIRE ZONE: Shown in Green.
Note: — Fire protection report on file in Engineering Department of F. I. R. O. of N. J.
Elevation above sea level from Tide Water to 6 ft. above mean sea level.
- Water mains 4 inches in diameter
 - Fire hydrants shown thus
 - Gate valves shown thus
 - Fire house shown thus
 - Fire apparatus designated by symbols thus:
 - ① Pumping engine and hose car
 - ② Hose car
 - ③ Ladders on above
 - ④ Ambulance, Squad or Auxiliary car
 - ⑤ Booster car
 - ⑥ Booster tank or tanks on above
 - Water mains 6 inches in diameter
 - Water mains 8 inches and larger in diameter

October 31, 1941.

CITY OF LINDEN, UNION COUNTY, NEW JERSEY.

Population—Census of 1940 was 24,115.

IN GENERAL: Located on Staten Island Sound and the Rahway River south of the City of Elizabeth on the main line of the Pennsylvania Railroad and branch lines of the Central Railroad of New Jersey and the Baltimore and Ohio Railroad. Mainly a manufacturing community with about 55 industries employing around 9,400. Area 11.0 square miles. Elevations range from 0 to 81 feet. Main roads concrete, others gravel or macadam in fair to poor condition. Railroad crossing at grade and heavy traffic on main highway is said never to have interfered with the response of fire apparatus.

WATER SUPPLY: Water for domestic and fire protection purposes is furnished by the Elizabethtown Water Company Consolidated which furnishes the major portion of the city, and by the Plainfield-Union Water Company which furnishes a small section of the city north of St. Georges Avenue. For details as to organization, supply works, distribution systems, and appurtenances see reports with Maps Nos. 343 and 124. **Elizabethtown Water Company Consolidated—Distribution System:** Supply to Linden is from a 36-inch transmission main from the Raritan-Millstone Pumping Station with emergency connection from the City of Elizabeth. Supply to the heavy industrial and mercantile districts is through parallel 10- and 12-inch mains extending north and south of Wood Avenue from the 36-inch line at Linden Avenue. Arterial system is generally fair with a few dead end lines supplying hydrants. **Consumption:** The average and maximum daily consumption in the Elizabethtown territory (18,366 services) during 1940 was 11.19 and 12.10 m.g.d. On December 31, 1940 there were 4,140 consumers in the City of Linden of which 3,022 were metered. **Pipe:** Cast iron, tar coated, bell and spigot joint, and asbestos cement laid with about a 3½-foot cover. Total length 363,080 feet: 2.55% 36-inch, 2.77% 24-inch, 1.73% 16-inch, 9.58% 12-inch, 11.98% 10-inch, 3.25% 8-inch, 64.45% 6-inch, 3.69% 4-inch. No trouble from frozen mains, electrolysis, or tuberculation. **Gate Valves:** There are 676 valves of Rensselaer and Smith makes set with iron boxes to grade. Direction of operation is uniform. Valves are inspected continuously. **Hydrants:** There are 249 hydrants of Corey, Mathews, Mueller, and Wood makes of standard type; 8 have one 2½-inch outlet and 4-inch gated branch, while the remainder have one or two 2½-inch and one 4½-inch outlets and 6-inch gated branches. Hose outlets are 3 inches outside diameter and have 8 threads per inch. Steamer outlet threads are National Standard. Hydrants with the exception of 35 are owned by the city and are inspected twice a year by the fire department. Those operated during resurvey were found to be in good condition. **Pressures:** Pressure recording gauge at fire headquarters showed an average pressure of 75 pounds. Readings taken at 8 hydrants widely distributed showed pressures ranging from 62 to 80 pounds with an average of 75 pounds. **Fire Flow Tests:** Probable supply available for fire protection purposes was measured on March 24, 1937 by means of Pitot tube. Location of hydrant, discharge in gallons per minute, pressure before flow and pressure during flow were as follows:

Chandler Ave. and St. Georges Ave., 770—77—35.
Ziegler Ave. and Roselle St., 580—75—60.
Wood Ave. and Elizabeth Ave., 1,280—77—60.
Henry St. and Spruce St., 440—75—66.
Elizabeth Ave. 875 ft. N. E. of Marion Ave., 380—75—22.
State Highway No. 25 opposite Clarkson Ave., 1,260—80—56.
Buchanan St. and Grasselli Ave., 520—62—42.
Gilchrist Ave. and Grier Ave., 460—80—48.

Plainfield-Union Water Company System—Distribution System: Supply to Linden is through a 12- and a 6-inch

main from the Roselle and Cranford distribution systems. Arterial system is mainly good with a few dead end 6-inch lines supplying hydrants. **Consumption:** The average and maximum daily consumption in the entire territory served (34,037 services) during 1940 was 8.00 and 9.50 m.g.d. On December 31, 1940 there were 864 services in Linden all of which were metered. **Pipe:** Cast iron, tar coated, bell and spigot joint, laid with a 3½-foot cover. Total length 55,200 feet; 4.3% 12-inch and 95.7% 6-inch. No trouble reported from frozen mains, electrolysis, or tuberculation. **Gate Valves:** There are 147 of Wood manufacture set with iron boxes to grade. Direction of operation is uniform. No regular inspection. **Hydrants:** There are 47 of Smith, Mathews, and Corey makes of standard type with two 2½- and one 4½-inch outlets and 6-inch gated branches. Hose outlets are 3 inches outside diameter and have 8 threads per inch. Steamer outlet threads are National Standard. Hydrants are inspected twice a year. Those operated during resurvey were found to be in good condition. **Pressures:** Readings taken at 2 hydrants widely distributed showed pressures ranging from 80 to 85 pounds with an average of 82½ pounds. **Fire Flow Tests:** Probable supply available for fire protection purposes was measured on March 24, 1937 by means of Pitot tube. Location of hydrant, discharge in gallons per minute, pressure before flow and pressure during flow were as follows:

Summit Ter. and Thelma Ter., 480—85—32.
Pallant Ave. near 7th Ave., 480—80—66.

FIRE DEPARTMENT: A full-paid department of three companies under the supervision of the Chairman of the Fire Committee of the City Council. City owns houses, apparatus, and equipment and appropriated \$124,570 for the support of the department in 1941. There are a chief, an assistant chief, 2 captains, 4 lieutenants, superintendent of the fire alarm, and 34 firemen. Appointments and promotions are made by the council on the recommendation of chief after a written and oral examination. New men are placed on a probationary period of 6 months. A pension fund established by state law is maintained by assessments on salaries of members and appropriations by the city. Members may retire on half pay in case of total disability or after twenty years of service if fifty years of age. Men receive 15 days vacation annually during which period department strength is generally one less per company per shift. Department is divided into two platoons on duty 11 and 13 hours with one day off in six. Off shift men are required to respond to all general alarms and are notified by diaphone at headquarters or by telephone. Men are not permitted to leave city on short day off without permission from chief, but may do so on long day off without permission. **Companies—Engine Companies No. 1 and 2:** Membership 25 including a deputy chief, captain, and two lieutenants. Located on the corner of Morris and Wood Avenues. Building is a 2-story joisted brick and concrete block structure with a tar and slag roof, concrete apparatus floor, steam heat, electric lights, 2 telephones, inside gas pump, and hose tower. **Equipment—Engine Company No. 1:** A 1916 American La France 750-g.p.m. triple combination pumping engine carrying a 30-gallon booster tank, 200 feet of booster hose, 1,200 feet of 2½-inch hose, 2 salvage covers, 1 distributor nozzle, 2 short ladders, and fair minor equipment. **Engine Company No. 2:** A 1926 American La France quadruple combination 750-g.p.m. pumping engine and 50-foot city service ladder truck carrying a 40-gallon booster tank with CO₂ for expellant, 250 feet of booster hose, 1,000 feet of 2½-inch hose, 4 salvage covers, 2 gas masks, 10 ladders ranging from 12 to 50 feet and totaling 241 feet, a deluge set, and good minor equipment. **Emer-**

CITY OF LINDEN, UNION COUNTY, NEW JERSEY.

Continued.

agency Truck: A 1927 Reo hose car carrying 500 feet of 2½-inch hose, 1 portable foam generator, 1,000 pounds of foam powder, one 650-watt portable electric generator with three 200-watt lights, and some minor equipment. **Engine Company No. 3:** Membership 14 including chief and 2 lieutenants. Located at the corner of Chandler and Elizabeth Avenues. Building is a 2-story joisted brick structure with a slag roof, concrete apparatus floor, steam heat, electric lights, 2 telephones, hose tower, and inside gas pump. **Equipment:** A 1930 American La France 1,000-g.p.m. triple combination pumping engine carrying an 80-gallon booster tank, 200 feet of booster hose, 1,200 feet of 2½-inch hose, 2 gas masks, 3 salvage covers, 2 distributor nozzles, 2 short ladders and good minor equipment. The chief is provided with a 1936 Oldsmobile sedan and the deputy chief is provided with a 1939 Oldsmobile coupe. **Hose:** All 2½-inch hose is C.R.L. with screw couplings which have an outside diameter of 3 inches with 8 threads per inch. Hose is tested twice a year at 200 pounds, dried in hose tower and shifted at fires and drills. There is a total supply of 7,400 feet of which 4,450 is over five years old and 3,600 feet is held in reserve. **Operations:** The department is governed by a city ordinance. Chief has control of apparatus and men at all times. He may suspend members. There are 3 members in each company who are assigned to drive the apparatus. Motors are started twice a day. **Drills and Training:** Drills held monthly under the chief and assistant chief consist of all regular fire department evolutions. Members of the department attend the Union County drill school for paid men. **Fire Methods:** Booster streams used on incipient fires reinforced by engine lines with shut off nozzles. Gas masks, salvage equipment, and heavy stream appliances are provided. **Response to Alarms:** Engine-ladder company and engine company respond to all alarms in the city. Emergency company responds to alarms at certain locations. Outside aid may be secured from Roselle, Cranford, Rahway, and Elizabeth. **Building Inspection:** There is a well organized fire prevention bureau consisting of a captain and one fireman. Bureau makes inspections of all schools, stores, and mercantile risks four times a year. Factories are inspected four times a year by chief or assistant chief and firemen. **Records and Reports:** Each company keeps a journal of all activities. Complete records of all fires are kept by chief in a regular fire department log. Chief submits an annual report to city council. **Fire Alarm System:** Fire alarm system is part of the fire department and is under the supervision of the fire alarm superintendent who with 2 firemen maintain system. Headquarters is located in a room on first floor of fire headquarters, is seriously exposed and has internal hazards common to a fire station housing automobile apparatus. Equipment is of Gamewell automatic type and includes an 8-circuit repeater, a ten circuit operating and charging board with the usual devices for testing and operation, current supervisory warning bells, relays and lights, and a break-wheel transmitter. Board is slate on iron frame. Repeater is mounted on metal cabinet. Circuits enter headquarters as No. 14 rubber covered copper wire in lead sheath in metal conduit direct to operating board. Wiring between apparatus is well installed in rigid conduit. Circuits are protected on operating board by ½-ampere inclosed fuses and by inert gas lighting arresters and 7 ampere fuses at the junction of aerial conductors with underground cable. Current for operation of system is supplied by 8 Oxide film rectifiers serviced from the 110-volt lighting circuit with 8 banks of storage batteries of 15 cells each floating. Batteries are mounted on standard rack and are located in room with operating board. Batteries and rectifiers are protected by 3-ampere cartridge

fuses. A motor generator set is held in reserve. There are a punch register, a 12-inch gong on apparatus floor, and two 6-inch gongs in dormitory at fire headquarters; a punch register, an 18-inch gong on apparatus floor, and one 6-inch gong in chief's office and one in dormitory, in Engine Company No. 3; a 6-inch gong in chief's home; a 6-inch gong and punch register in deputy chief's home; a 6-inch gong in police headquarters, and a 12-inch outside gong at the intersection of Wood Avenue and Route No. 25. There are 74 boxes of which 5 are private and inaccessible to the public. Of these 45 are of the succession type, 2 are of the master succession type, 21 are non-interfering type, 3 are of the master non-interfering type and 3 of the interfering type with brush breaks. Outer cases are grounded to copper weld rods. Three boxes in principal mercantile district are mounted on pedestals with police call boxes, others are mounted on utility company poles with red and white indicating bands at or near street intersections. All boxes have blue indicating lights. Those examined during inspection were found to be in good operating condition. There are 5 box circuits, one local alarm circuit carrying alarm equipment in fire headquarters and one outside alarm circuit carrying alarm equipment in Engine Company No. 3. Total length of circuits is 50.16 miles, of which 0.96 miles is underground. Underground wire is No. 14 twelve conductor rubber covered copper wire in lead sheath, installed in duct carrying telephone cable only. Aerial wire is No. 10 hard drawn copper, triple braided weatherproofed on joint occupancy poles well below other utility wires. There are 2 telephones in each fire house, one of which is connected to the public exchange and the other on a private wire between houses. Firemen act as operators. No night watch kept. A 1929 Ford truck is provided for construction and maintenance work. Circuits are tested daily for voltage, current, and ground. One test tap is sent over the system daily. Complete records are kept of all tests. Boxes are tested monthly. Alarms of fire may be telephoned to either of the two fire houses which notify the other by telephone of location and nature of fire. No one is left on duty to handle telephone alarms when apparatus responds to a general alarm.

POLICE DEPARTMENT: Consists of a chief, 2 captains, 3 lieutenants, 8 sergeants, 39 patrolmen, and 1 electrician working in 8-hour shifts. There are 32 police signaling boxes, over which men on foot report every hour, and 21 recall lights. There are 8 radio cars equipped with three-way radio, 1 motorcycle, 1 patrol wagon, and 1 electrical maintenance truck. Police respond to all box alarms and still alarms if called; they also report violations of building code and unauthorized building construction to building inspector.

BUILDING LAWS: Code adopted June 22, 1925 provides for the annual appointment by council of a building inspector and assistants. Code has poor provisions in regard to protection of openings in fire walls, but in general conforms to the code recommended by the National Board of Fire Underwriters. No fire limits are established and flammable roof coverings are allowed throughout the city.

EXPLOSIVES AND FLAMMABLES: Code adopted July 17, 1926 is modeled after the Fire Prevention Ordinance of the National Board of Fire Underwriters, but has no provisions in regard to hazardous chemicals, motion picture machines and booths, and combustible fabrics. The 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.