DOCKET NO. 426 – Third Taxing District Electric Department application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of an electric substation located at 6 Fitch Street, Norwalk, Connecticut.	}	Connecticut
	}	Siting
	}	Council
	}	August 9, 2012

Findings of Fact

Introduction

1. The Norwalk Third Taxing District Electric Department (TTD), in accordance with provisions of Connecticut General Statutes (CGS) Sections 16-50g et seq., and Section 16-50j-1 et seq. of the Regulations of Connecticut State Agencies, applied to the Connecticut Siting Council (Council) on April 10, 2012 for the construction, maintenance, and operation of a bulk power substation at 6 Fitch Street, Norwalk, Connecticut (refer to Attachment 1). (TTD 1, p. 2)

2. TTD operates a citizen-owned public power utility that serves approximately 3,800 customers, mostly residential, in a four-square-mile area in the East Norwalk section of Norwalk (refer to Attachment 2). (TTD 1, p. 1; TTD 3, R. 1)

3. The purpose of the proposed facility is to improve reliability and add capacity to the electric power distribution system in TTD's service area in Norwalk. (TTD 1, p.2)

4. Pursuant to CGS § 16-50m, the Council, after giving due notice thereof, held a public hearing on June 14, 2012, beginning at 3:00 p.m. and continuing at 7:00 p.m. at the Norwalk City Hall, 125 East Avenue, Norwalk, Connecticut. **(**Transcript 1 – June 14, 2012 at 3:00 p.m. [Tr. 1], p. 3; Transcript 2 – June 14, 2012, at 7:00 p.m. [Tr. 2], p. 3)

5. The Connecticut Light and Power Company (CL&P) is a party to the proceeding. (Record)

6. The Council and its staff made an inspection of the proposed site on June 14, 2012, beginning at 2:00 p.m. (Council's Hearing Notice dated May 10, 2012)

7. Pursuant to CGS § 16-50*l*(b), public notice of the filing of the application to the Council was published in The Norwalk Hour on April 6 and April 9, 2012. (TTD 2b)

8. On June 1, 2012, TTD erected a four-foot by eight-foot sign at the front of the property describing the proposed project. The sign included the Applicant's name, type of facility proposed, the date and location of the Council's public hearing, and contact information for the Applicant and the Council. (Tr. 1, p. 62)

9. Pursuant to CGS § 16-50*l* (b), notice of the application was provided to all abutting property owners by certified mail. (TTD 2c)

10. Pursuant to CGS § 16-50*l*(b), TTD provided notice to all federal, state and local officials and agencies listed therein. (TTD 2a)

11. TTD provided a copy of the application to the Connecticut Energy Advisory Board (CEAB). Pursuant to CGS § 16-50*l*(a)(2), the project is exempt from the CEAB mandatory request for proposal process. No comment from the CEAB was received. (TTD, p. 41; Record)

State Agency Comment

12. Pursuant to CGS § 16-50j(h), on May 10 and June 15, 2012, the following State agencies were solicited by the Council to submit written comments regarding the proposed facility: Department of Agriculture, Department of Energy & Environmental Protection (DEEP), Department of Public Health, Council on Environmental Quality, Public Utilities Regulatory Authority, Office of Policy and Management, Department of Economic and Community Development, the Department of Transportation (DOT), and the Department of Emergency Services and Public Protection. (Record)

13. The Council received written comment from the DOT, but the comment did not pertain to this project. (Record)

14. No other State agencies commented on the proposal. (Record)

Municipal Consultation

15. On February 22, 2012, TTD met with and submitted a technical report to the Norwalk City Mayor, Richard Moccia, Norwalk Corporate Counsel, Robert Maslan, and Norwalk Planning Director, Michael Greene. (TTD 1, p. 37)

16. On March 8, 2012 TTD representatives met with the Norwalk Planning and Zoning Plan Review Committee to discuss the facility. (TTD 1, p. 37)

17. On March 21, 2012 TTD met with the Norwalk Zoning Commission to discuss the facility. (TTD 1, p. 37)

18. On March 23, 2012, the Planning and Zoning Commission submitted written comment to the Council indicating support for the proposed project. The Commission made several recommendations, including designing the control house as a wood frame building, modifying the landscaping, installing screening slats on the substation fence, and keeping the substation gate closed at all times except as necessary. (Record)

19. On March 26, 2012, Honorable Richard Moccia submitted written comment to the Council indicating support for the proposed project. (Record)

Project Need

20. TTD is a member of the Connecticut Municipal Electric Energy Cooperative, allowing TTD to purchase electricity from The Connecticut Light and Power Company (CL&P) for its customers. TTD maintains two 27.6-kV to 4.16-kV substations within its service area. (TTD 1, p. 1)

21. CL&P provides power to TTD at a distribution system voltage of 27.6-kV via two underground circuits (9S-45 and 9S-46 circuits) originating at CL&P's 9S substation in Norwalk. One circuit serves TTD's Rowan Street substation and the other circuit serves TTD's East Avenue substation (refer to Attachment 3). (TTD 1, pp. 1-6)

22. The two 27.6 kV CL&P circuits are over 60 years old and also supply other CL&P customers before entering TTD's service area. Ongoing maintenance and service issues associated with other CL&P customers frequently cause outages on one of the two circuits, leaving only one to supply power to TTD. The existing CL&P circuits can provide sufficient capacity to serve future load to TTD when either the 9S-45 circuit is in service or when both lines are in service, but not when the 9S-46 circuit is the only one operating. (TTD pp. 1-2, 5-6; TTD 3, R. 4)

23. The 9S-45 and the 9S-46 circuits have a capacity of 19.5 MW and 12.9 MW, respectively. (TTD 3, R. 7)

24. TTD's 2011 peak load was 16.1 MW. (Tr. 1, pp. 38-39)

25. The existing CL&P circuits have little capacity for anticipated load growth. TTD anticipates load growth of 5 MW by 2014 to serve the Waste Water Treatment Plant, a TTD customer. Additionally, a new data center will be a joint customer of TTD and CL&P. As part of the joint service agreement, TTD must also be able to provide CL&P's portion of the data center load (8 MW by 2015) in the event CL&P has an outage. TTD's anticipated load in 2016, including normal load growth, the Waste Water Treatment Plant, and the data center, with backup capability for CL&P's portion, is 36.16 MW. (TTD 3, R. 6)

26. The estimated load growth cannot be accommodated or delayed by energy efficiency or conservation and load management programs or by distributed generation. (TTD 1, pp. 8-9; TTD 3, R. 16)

27. A new substation servicing the East Norwalk area was projected in the Council's 2010-2011 Forecast of Loads and Resources. (Council Administrative Notice item # 13)

28. The existing Rowan Street substation is located on a small parcel with no room for expansion. (TTD 1, p. 8)

29. The East Avenue substation, although adjacent to the proposed site, would remain separated from the proposed substation by a fence. (TTD 1, p. 8)

Site Location

30. The 6 Fitch Street parcel consists of a 0.58-acre open lot, zoned Industrial No. 1. (TTD 1, p. 10)

31. TTD acquired the property in September 2010. Prior to the acquisition of the parcel, one other parcel on Goldstein Place was considered for a substation but abandoned due to soil conditions that would require structures on pilings. (TTD 1, pp. 10, 16; Tr. 1, pp. 24-25)

32. The parcel was used as a single-family residence that was demolished by TTD in 2010. (TTD 1, p. 10)

33. The parcel ranges in elevation from 24 to 30 feet above mean sea level. (TTD 1, p. 10)

34. Abutting property includes TTD's existing East Avenue Substation and a commercial property to the west, an auto-body repair shop and several apartments to the east, the East Norwalk train station and railway to the south, and a church and residences to the north. (TTD 1, pp. 10-11; TTD 3, R. 10)

35. The nearest residential dwelling is located 15 feet to the east, at 8 Fitch Street. This property is also an auto body repair shop (refer to Attachment 1). (TTD 3, R. 10)

36. Except for the church, all other parcels on the north side of Fitch Street are zoned residential. All properties on the south side of Fitch Street are zoned industrial. (TTD 1 bulk file, Norwalk Zoning Map)

37. CL&P's 115-kV no. 1416 transmission line is located south of the parcel, along the north side of the Metro North Railroad (refer to Attachment 1). The transmission monopoles in this area are approximately 115 feet in height. (TTD 1, p. 11, Tab B)

Proposed Substation Description

38. The proposed substation would encompass most of the parcel and would be enclosed by an eight-foot high chain link fence with one foot of barbed wire. Privacy slats would be installed on the north side of the fence, including the access gate. (TTD 1, Tab B; Tr. 1, pp. 18, 34)

39. Access to the substation would be from a new 15-foot wide, 35-foot long access drive extending from Fitch Street. The new driveway would be across the street from the existing church parking lot. (TTD 1, Tab B)

40. The fenced substation area would measure approximately 106 feet by 180 feet. (TTD 1, p. 20)

41. Substation equipment would include two 115/27.6-kV transformers, a 115-kV loop feed with a single tie breaker and associated buswork, and a 25-foot wide, 42-foot long, 19-foot high control house. (TTD 1, Tab B; Tr. 1, p. 13)

42. Two line terminal structures, up to 40-feet in height (preliminary design), would be installed at the south end of the substation. (TTD 1, Tab B; Tr. 1, p. 20)

43. The preliminary transmission line interconnection design would require the installation of two 115-foot tall angle structures that would loop CL&P's 1416 line through the substation. Additionally, an existing 115-foot transmission monopole southeast of the substation may be removed to provide adequate clearance for the new angle structure. However, CL&P is analyzing whether it is necessary to retain this existing structure as part of the interconnection. The final design would be presented within the Development and Management Plan. (TTD 1, Tab B, G; Tr. 1, p. 79)

44. CL&P would examine the possibility of installing a pole configuration where a transmission line would continue on the 1416 line rather than being looped through the substation, and two tap lines, one from each structure, would connect to the substation. This design would not require heavy angle structures thus reducing the visual profile of the connecting structures. (Tr. 1, pp. 71-77)

45. The proposed substation would be connected to the existing East Avenue substation by two underground 23.6-kV feeders. (TTD 1, p. 33)

46. The construction phase of the project is expected to take approximately 12-18 months, with a tentative in-service date of December 2013. (TTD 1, p. 6, 22)

47. Construction would generally occur from 7:00 a.m. to 5:00 p.m. Monday through Friday, except for work that needs to be scheduled at off-peak electrical demand hours such as installation of terminal structures and interconnections. (TTD 1, p. 22)

48. The nominal service life of the substation equipment is 40 years. (TTD 1, p. 7)

49. The estimated cost for the siting, design, construction of the proposed substation and interconnection is $9,000,000. CL&P would bear the cost of the interconnection, estimated to be $1,500,000. (TTD, 1, p. 7; Tr. 1, p. 20)

Environmental Considerations

50. TTD would grade the site and install fill to create a four-foot pitch from the south side of the site to the north. A phase one study conducted in 2010 identified no issues in relation to soil contamination. (Tr. 1, pp. 21-22, 38)

51. The site consists of an open lot with a few trees located along Fitch Street. An attempt would be made to retain a medium-sized ornamental tree located in the northeast corner of the lot, as it provides some screening from residential areas northeast of the site. (TTD 1, p. 23; Tr. 1, pp. 18-19)

52. There are no wetlands at or adjacent to the site. The nearest wetland area is 2,000 feet to the northeast. (TTD 1, pp. 11, 21)

53. The site is not located within a 100-year or 500-year flood zone. (TTD 1, p. 22)

54. The site is not within the Coastal Area Management zone, established to protect coastal resources, and site construction and operation would not adversely affect coastal resources. (TTD 1, pp. 22-23; TTD 3, R. 12)

55. Construction of the site would not increase run-off for 5, 10 and 25-year storm events. Storm water would infiltrate into the ground or be directed into a rain garden on the north side of the property. The rain garden is approximately one foot deep and would have appropriate landscape plantings within the basin. The rain garden was sized in accordance with the DEEP Storm Water Manual. (TTD 1, pp. 24-25; Tr. 1, pp. 16-17)

56. The site is an open lot, thus the project would have a minimal effect on wildlife and wildlife habitat. (TTD 1, pp. 21, 25)

57. There are no known state or federal endangered, or threatened, or species of special concern in the project area. (TTD 1, p. 21)

58. The site is not within any historic district and would have no impact on archeological or historic resources. An inquiry to the State Historic Preservation Office by TTD was not returned. (TTD 1, pp. 13-14; Tr. 1, pp. 23-24; Council Administrative Notice 4)

59. The transformers contain a mineral oil that serves as an insulator. The transformers feature a secondary containment system designed to hold 110 percent of the transformer oil capacity. Oil would collect in sumps and would be blocked from draining through the use of an Imbiber Bead containment system. Additionally, a low-oil alarm would be installed as part of the substation control system. (TTD 1, p. 28)

60. Noise levels from normal substation operations would not exceed regulatory criteria at the property line. (TTD 1, pp. 21-22; Tr. 1, pp. 25-28)

Visibility

61. The site would be most visible from Fitch Street and the abutting properties, including the commercial properties to the east and west, the church parking lot, and an abutting residence to the northeast, across Fitch Street. (TTD 1, Figure A-2)

62. Landscaping associated with the rain-garden area would mitigate views of the lower portion of the substation from Fitch Street. (TTD 1, p. 25, Tab B; Tr. 1, p. 17)

63. In addition to landscaping, the control house would be oriented along the north side of the substation to prevent direct views of substation equipment from Fitch Street. The control house would be treated to appear as a wood frame structure. (Tr. 1, pp. 13-14, 19, 33; TTD 5)

64. TTD would examine screening options (privacy slats or landscaping) along the east side of the substation abutting the auto-body repair shop. (Tr. 1, pp. 18-20)

65. The site is not within any City of Norwalk scenic area. (TTD 1, p. 13)

66. The nearest park is Mill Pond Park, approximately 0.5 mile south of the site. (TTD 1, Tab E-10)

67. Low-level lighting installed for safety and security purposes would be recessed or have manual activation to minimize visual effects at night. (TTD 1, p. 28)

Magnetic Field Levels

68. Existing magnetic field (MF) sources in the project area are the existing 115-kV 1416 transmission line adjacent to the site and the existing underground 26.7-kV feeders west of the proposed site, with measured MF levels of 23 milliGauss (mG) and 75 mG, respectively. (TTD 1, p. 31)

69. Once the new substation is constructed, the highest calculated MF levels around it under average load conditions would be less than 82 mG at the southeast corner of the substation, where the 1416 transmission line would cross into the substation. The MF level would decrease to 20 mG approximately 23 feet outside of the substation fence. (TTD 1, p. 31; Tr. 1, pp. 45-46)

70. Under peak load conditions, the highest calculated MF level would be 186 mG in the southeast corner of the substation, decreasing to 20 mG 60 feet outside of the substation fence. These levels are consistent with other substations at points where the transmission line crosses into the substation. (TTD 1, p. 31; Tr. 1, p. 46)

71. The calculated MF level under average load conditions at the auto repair shop east of the substation would be up to 18 mG, approximately 13 mG higher than existing conditions. (TTD 1, Tab G, p. 12)

72. International health and safety agencies, including the World Health Organization, the International Agency for Research on Cancer (IARC), and the International Commission on Non-Ionizing Radiation Protection (ICNIRP), have studied the scientific evidence regarding possible health effects from MF produced by non-ionizing, low-frequency 60-Hertz alternating currents in transmission lines. Two of these agencies attempted to advise on quantitative guidelines for mG limits protective of health, but were able to do so only by extrapolation from research not directly related to health: by this method, the maximum exposure advised by the International Committee on Electromagnetic Safety (part of IARC) is 9,040 mG, and the maximum exposure advised by the ICNIRP is 833 mG. Otherwise, no quantitative exposure standards based on demonstrated health effects have been set world-wide for 60-Hertz MF, nor are there any such state or federal standards in the U.S. The existing and calculated MF levels for this project are well below these recommended exposure levels. (Council Administrative Notice Item 10; TTD 1, Tab G, pp. 18-19)

Safety and Reliability

73. Construction of the proposed substation would be performed in full compliance with the standards of the National Electrical Safety Code. (TTD 1, Tab G, p. 20)

74. In the event of equipment failure, protective relaying equipment would remove the equipment from service. (TTD 1, p. 34)

75. Reliability would be improved by utilizing a loop-through design, transformer protection devices, and redundant automatic protective relaying equipment. Protective relaying equipment would provide automatic detection of abnormal conditions. If an abnormal condition occurred, a protective trip signal would be sent to the respective circuit breakers to isolate faulted equipment. TTD plans to install redundant protective relaying schemes with continuous monitoring. (TTD 1, p. 17)

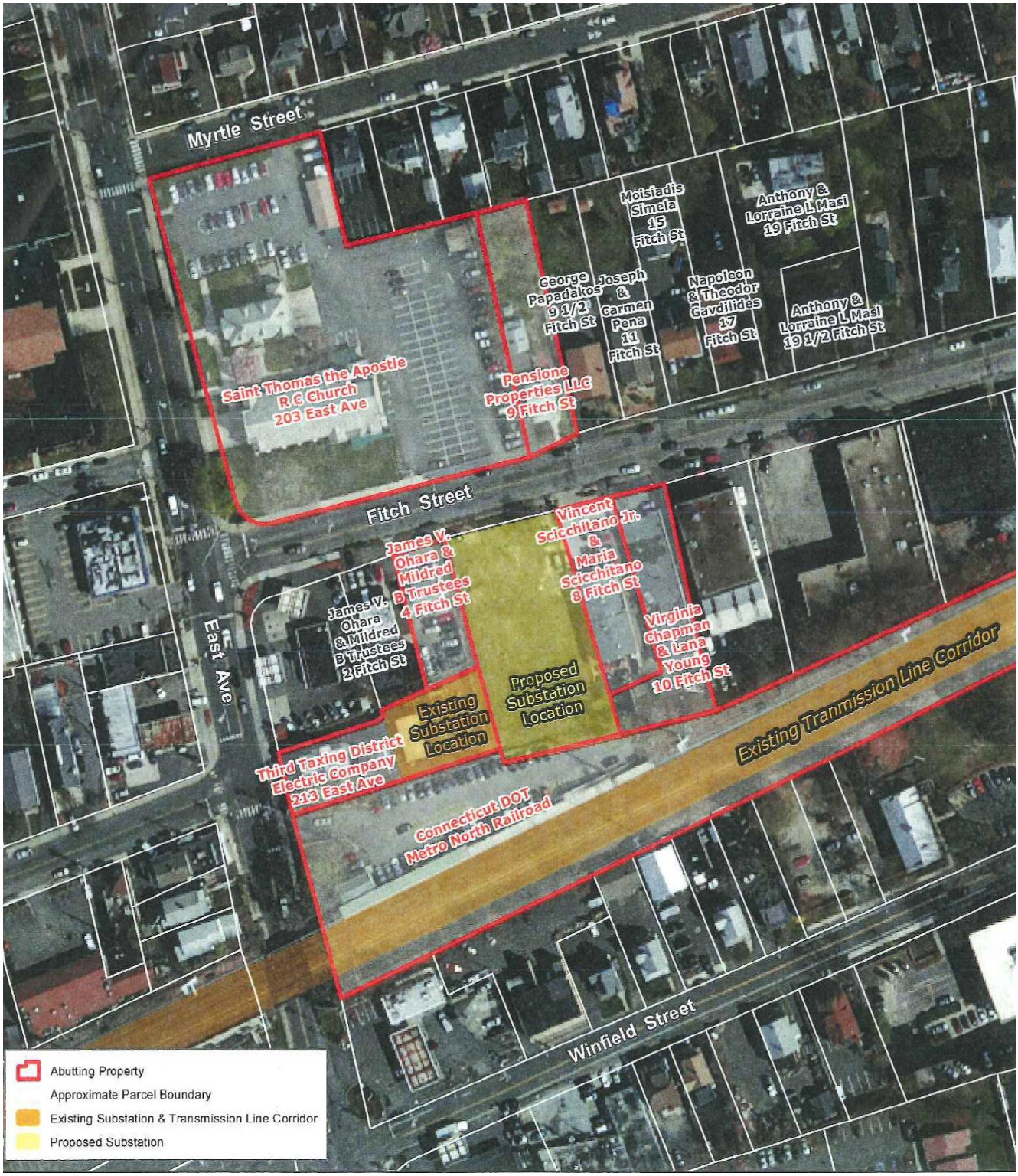
76. The substation would be remotely controlled and monitored by the Connecticut Valley Electric Exchange System Operator using digital metering systems and a Supervisory Control and Data Acquisition system. (TTD 1, pp. 17-18)

77. Appropriate signage would be posted at the substation to alert the public of a high voltage facility and the access gate locked to prevent unauthorized access. (TTD 1, p. 34)

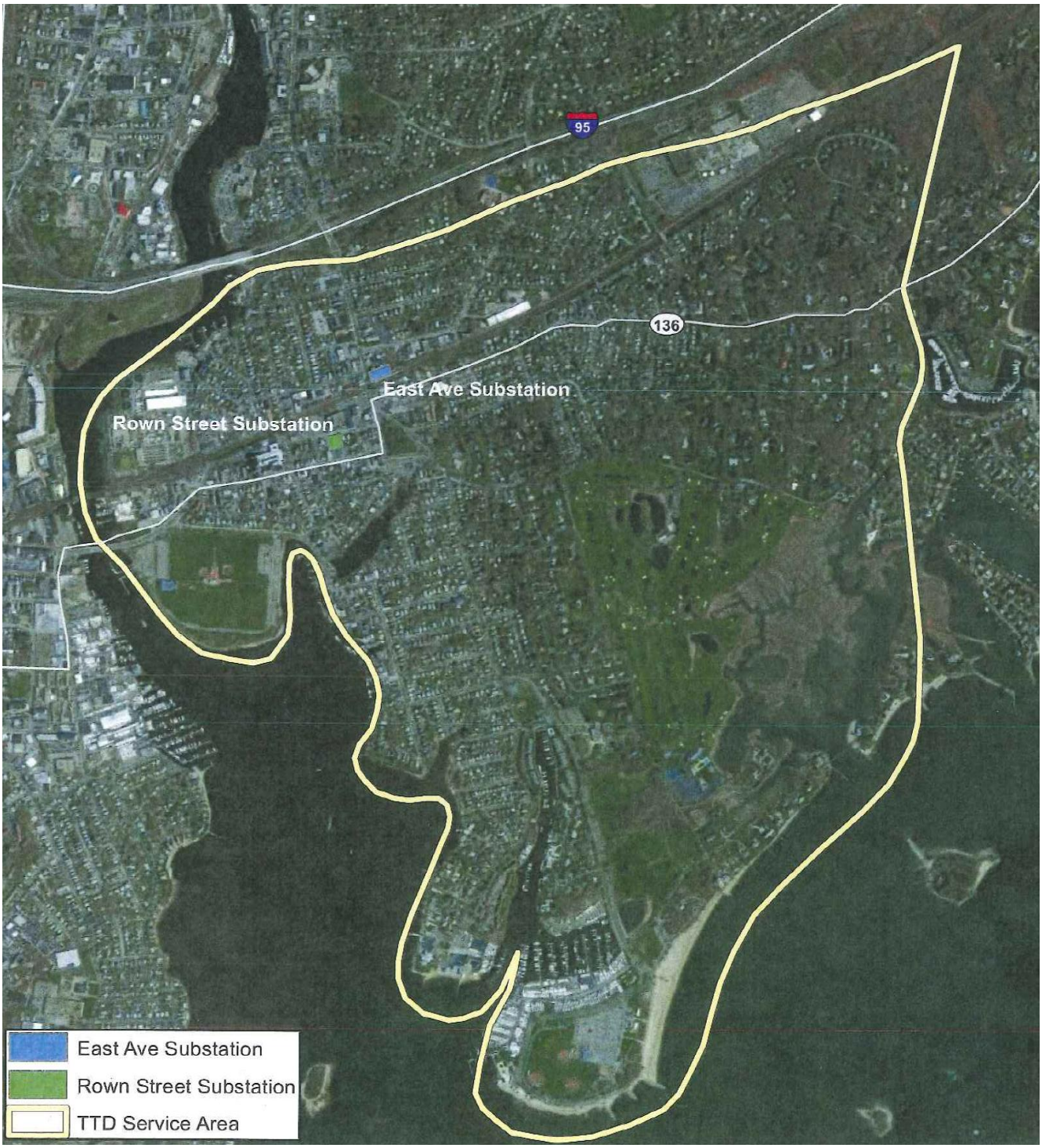
78. TTD would meet Norwalk law enforcement and emergency response personnel to discuss substation security and emergency response issues. TTD would also establish off-duty police protection during major construction activity. (TTD 1, p. 18)

79. TTD would incorporate appropriate standards for fire protection in the design of the substation. TTD personnel and local fire responders would be trained in the proper methods of extinguishing a substation fire. (TTD 1, p. 18)

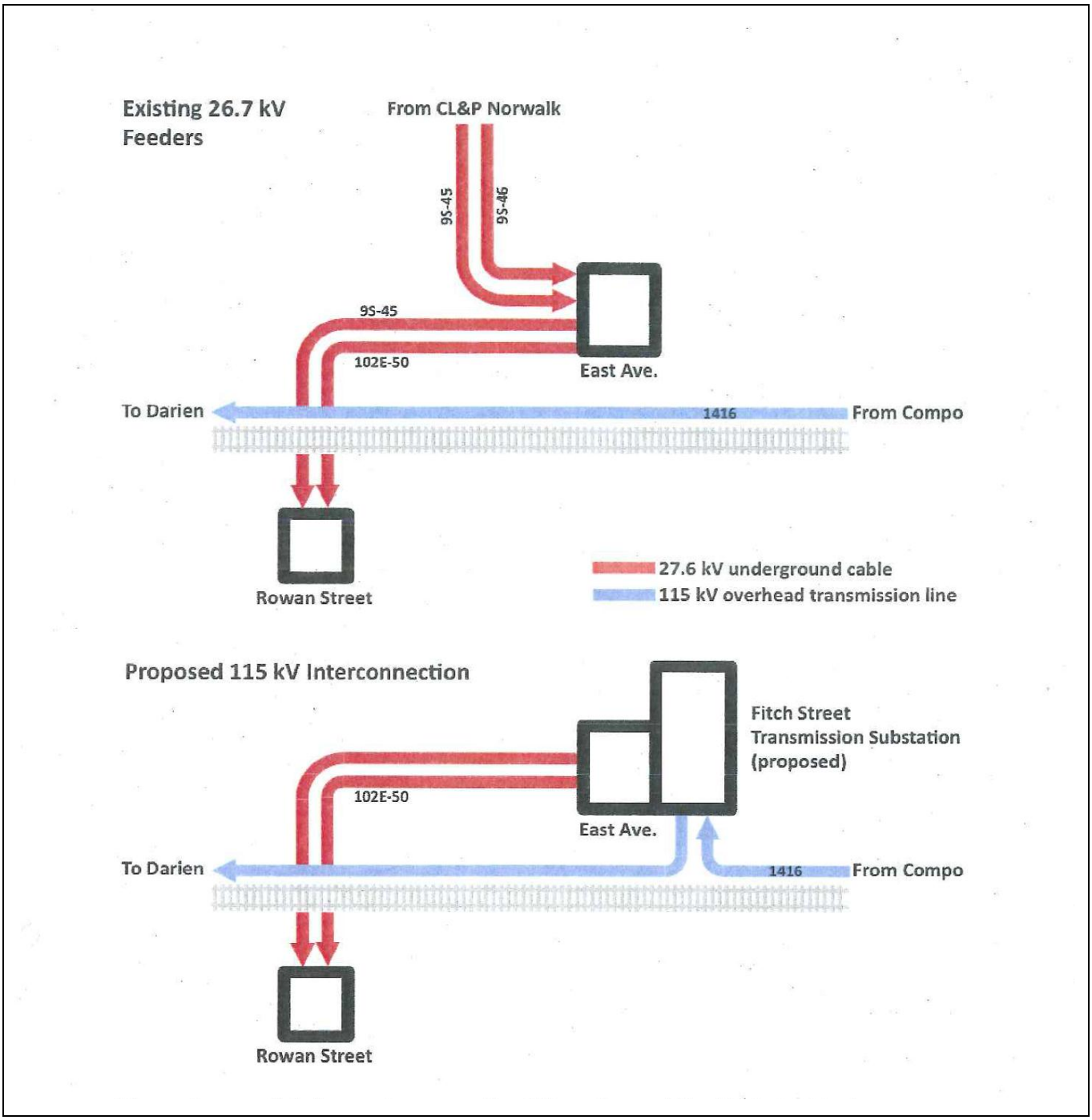
80. The proposed substation would be constructed in accordance with all applicable codes, including provisions for seismic loading, wind loading, and snow and ice loading. (TTD 1, p. 22)



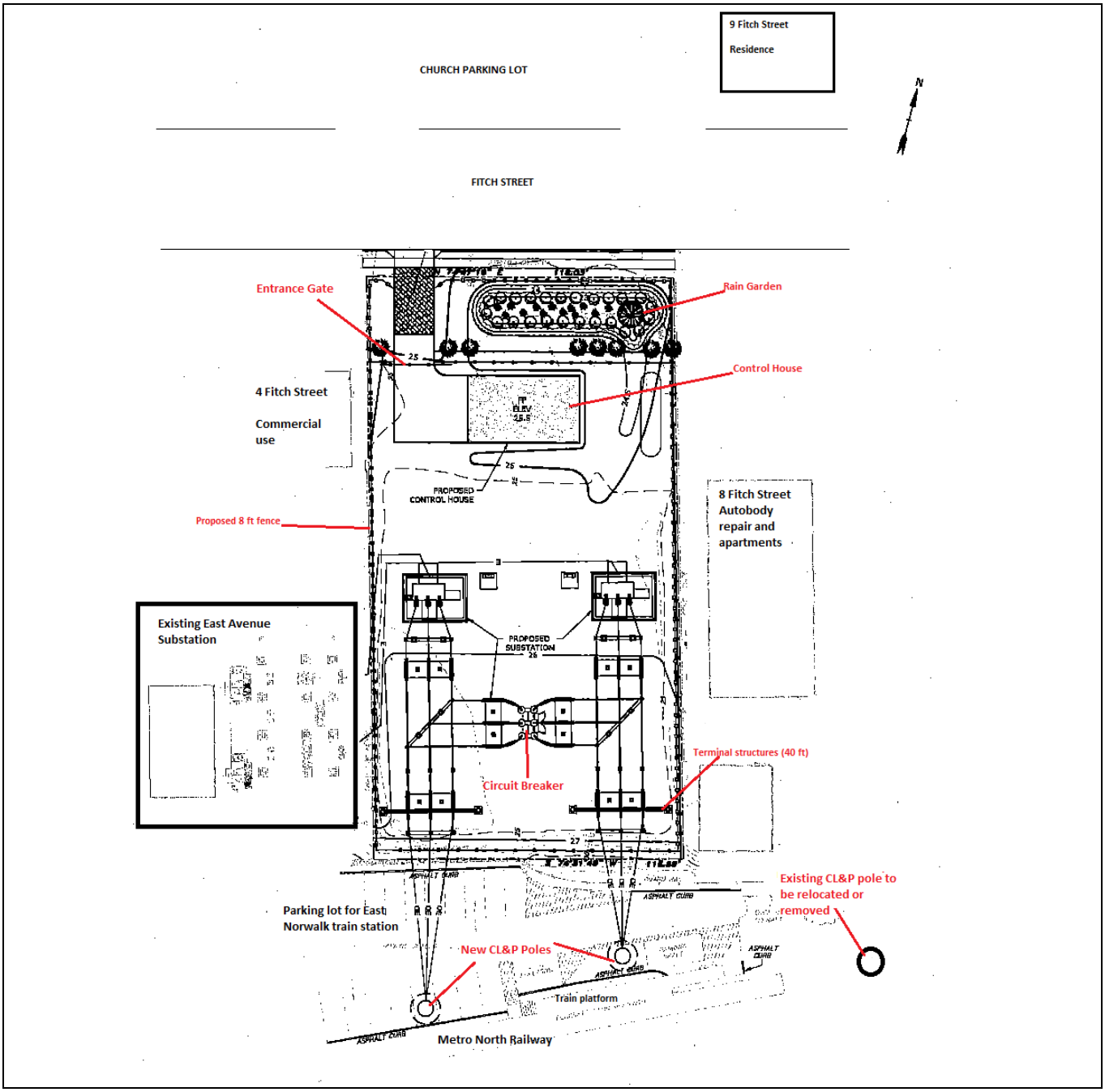
Attachment 1: Site Location at 6 Fitch Street, Norwalk. (TTD 3, R. 10) (not to scale)



Attachment 2: TTD service area and location of existing TTD substations. (TTD 1, Tab B) (not to scale)



Attachment 3: Existing and proposed configurations of the TTD electrical interconnection. (TTD Tab G)



Attachment 4: Proposed Substation Site Plan. (TTD 1, Tab B) (not to scale)