

# Joseph Carbonaro, PE

Senior Engineer

Joe Carbonaro has 25+ years of railway experience in addition to extensive knowledge and expertise in project management and delivery, technical design, and construction management for industrial, commercial, and municipal infrastructure projects. He is well-versed with AREMA, APTA, NETA, NFPA 130, NEC, NESC, and Uniform Building Codes as they relate to standards and practices for municipal and industrial infrastructure, construction, and railroad operation. He has served in a variety of roles on projects with varied delivery methodologies.

Mr. Carbonaro has diversified design, construction, and operations knowledge with particular emphasis on railway/subway mass transit, light and heavy rail systems, encompassing such specialized systems as vehicles/rolling stock, track alignment, railroad signal, cathodic protection, emergency power, ventilation and drainage, vertical circulation, OCS and 3rd rail, low and medium Voltage AC and DC traction and facility power, communications, fire alarm, and SCADA/building management control systems.

Mr. Carbonaro's experience includes:

## CAPITAL RAILWAY PROJECTS

### CalMod/Caltrain

#### Peninsular Corridor Electrification Project, San Francisco, CA Project Manager Rail Systems (January 2017 to Present)

Management and leadership of the owner's safety critical ICE/ISE group for rail signal and grade crossing systems.

- Management of rail signal designers and engineers reviewing designs and V & V documentation to ensure all safety, operations, quality, and performance technical requirements are satisfied.
- Working closely with the owner and the owner's representative to assist the Design Builder in the management of its subcontractors engaged in the design of the train control system incorporating a CBOSS/ATC overlay not yet in service.
- Coordination with the rail signal and the systems integration designers to overhaul the project requirements capture method.

### Go Triangle, Durham-Orange Light Rail Transit Project, Raleigh, NC Program Manager Rail Systems (December 2017 to Present)

Manage and lead Rail Systems engineers and technical professionals in the performance of Program Management activities for the Go Triangle Transit Agency in addition to providing value engineering and overall systems engineering guidance to Agency staff.

- Management of rail systems discipline leads reviewing 3<sup>rd</sup> party GEC designs during all stages of development for OCS, Traction and Facility Power, Rail Signal, Communications, AFC, and Corrosion Control systems.
- Manage the collaboration with a variety of disciplines including life/safety, structure/architecture, track alignment, construction management, and communications specialties to progress the project and produce a fully integrated and coordinated system.
- Initiate and guide reviews of rail systems design criteria, operational

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## Education

B. S. Engineering Science -  
Electrical Engineering, City  
University of New York, 1994

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## Registrations/licenses

Professional Engineer  
New York 083131, 2005  
Maryland

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## Certifications

Master Electrician No. 368,  
Orange County, NY  
NACE Cathodic Protection  
Technician CP2 Certification  
NACE Cathodic Protection  
Tester CP1 Certificate  
Railway Track Systems:  
Engineering and Design  
Certificate  
Railway Train Control and  
Signaling Certificate

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## Professional affiliations

New York State Society of  
Professional Engineers  
National Association of  
Corrosion Engineers  
International, NACE  
The Corrosion Society  
International Council on Systems  
Engineering, INCOSE  
Institute of Electrical and  
Electronics Engineers, IEEE  
National Society of Professional  
Engineers

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## Software

Microsoft Windows, Excel,  
Access, Word, Power Point,  
Visio,  
Auto Cad, NMA, Bentley  
MicroStation, e-Builder

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## Professional development

Power System Engineering  
Certificate, Technical Training  
Group  
DNX-100 Digital Cross-  
Connection System; FD-565  
Optical Fiber Transmission

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requirements, design specifications and drawings, and reports to ensure adherence to industry, client, and technical requirements and constraints.

**Purple Line Light Rail Transit Project, MTA/Maryland  
Rail Systems Coordinator** (August 2016 to January 2017)

Provide oversight for Rail Systems 14 designers and engineers as the Concessionaires' Lead Light Rail Systems Designer for stations, OCS, traction and facility power, signal, communications, MEP, and corrosion control systems.

- Work closely with all disciplines including structure/architecture, track alignment, construction management, and communications specialties to produce a fully integrated and coordinated design.
- Conduct TWG design focused meetings to achieve on-time delivery and strict adherence to budgetary and technical constraints for various rail systems design and construction packages.
- Performed review of rail systems design plans and reports for adherence to technical specification constraints.
- Coordinate with project design team members and program management staff, MDOT, MTA, and service utility providers.

System; FMT-150 Optical Fiber Transmission System, Nortel

ND-4E Digital Channel Bank, NEC

INCS-64 Intelligent Connectivity System, Western Telematic

Switched Access System, Inrange Technologies

5900 Automatic Protection Switch, Larus Corporation

NMA Alarm Analysis; NMA DBQ Report Writing, Telcordia Technologies

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**Ottawa Light Rail Transit Project, Stages 1&2, Ottawa, Canada**

**Rail Systems Manager** (September 2015 to July 2016)

Leadership of the vehicles and systems group comprised of 18 engineers and designers, charged with defining and developing specifications and design criteria for the City of Ottawa's new electrified light rail and extension of the City's existing DMU rail systems. Provided expert insight and guidance to City officials and staff on requirements for design, procurement, construction, commissioning, and operation of the new light rail system as the Owner's Engineer.

- Oversaw rail systems designers and engineers during design development for Systems Integration, OCS, Traction and Facility Power, Rail Signal, Communications, Vehicles, and Corrosion Control systems.
- Facilitated collaboration with a variety of disciplines including structure/architecture, track alignment, construction management, and communications specialties to produce a fully integrated and coordinated design.
- Performed review of rail systems design plans and reports for adherence to technical specification constraints.
- Responded to and developed change order requests, NCRs, and requests for information as required from or to vendors and contractors, managed budget, and conducted quality assurance/quality control audits.
- Conducted field surveys and review deliverables for verification of design

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and constructability.

**53<sup>rd</sup> Street Tunnel Rehabilitation Project, MTA/NYC Transit, New York, NY****Project Manager** (June 2015 to September 2015)

Oversite of the design and construction sequencing for replacement of critical components and cables damaged due to Hurricane Sandy in October of 2012. Identified and evaluated salt water damage to electric traction, cables, signals, and communications system for this heavy 3<sup>rd</sup> rail system. Provided expert advice and assistance to the Metropolitan Transportation Authority for rapid recovery efforts to bring the tunnel back into service. Supported planning activities for total rehabilitation of the tunnel.

**Communications and Power System Repair and Storm Resiliency Project****Rockaway Park Yard and Coney Island Yard, MTA/NYC Transit, New York, NY****Project Manager** (June 2015 to September 2015)

Evaluated damage to signal, electric traction and communications systems. Oversaw the assessments of switch machines, wayside signal units, trip stops, wayside telephones, radio networks, relays, cabling, PBX facilities, and equipment housings. Identified means and methods to harden system yards against future extreme weather conditions.

**Eastside Access Project, MTA/Long Island Railroad, New York, NY****Electrical/Traction Power Systems Manager**(April 2008 to July 2015)

Assembled and led a team comprised of approximately 12 to 20 engineers, designers, and cad staff, throughout the many critical stages of this heavy 3<sup>rd</sup> rail commuter railway expansion mega project.

Mr. Carbonaro deployed the expertise of this team, of diverse and effective, design and construction support professionals across this complex project, engaging multiple agencies (Amtrak, LIRR, NYCT, MNR, DOT), utilities (Con Edison, LIPA, Verizon), and stakeholders (MTACC, FRA, FTA).

- Designed and coordinated critical testing and commissioning plans of power and power control systems, and oversaw their successful and simultaneous, execution and acceptance by multiple agency and contract stakeholders.
- Developed work plan and oversaw the activity of electrical systems designers and engineers for traction power, facility power, signal, power, communications/SCADA, fire detection, and security systems.
- Worked closely with senior project team members consisting of the PMT, general engineering consultant (GEC), and MTA officials.
- Responsible for on-time delivery and strict adherence to budgetary constraints for various project tunnel system design packages.
- Conducted field surveys, quality assurance/quality control audits, design,

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and constructability reviews.

- Produced manpower FTE, progress/status, and deliverables reports.
- Responded to client and contractor request for information and change order requests.

**7-Line Extension Project, MTA/New York City Transit, New York, NY****Lead Power/SCADA Engineer** (June 2013 to December 2014)

Provided design services during construction (DSDC) for traction and facility power SCADA systems for the expansion of this heavy 3<sup>rd</sup> rail subway transit system.

Worked closely with senior project team members consisting of the PMT and MTA officials.

- Responsible for contractor's strict adherence to specifications and design criteria for SCADA design and construction.
- Worked with various disciplines including structure/architecture, construction management, contractors, and communications specialties to construct a fully integrated and coordinated control system.
- Conducted design and constructability reviews.

**CITY/STATE AGENCY EXPERIENCE****New York City Transit (NYCT)****NYCT/SONET Installation****Former Supervisor** (February 2006 to April 2008)

Supervised NYCT and subcontractor personnel conducting fiber optic and copper cable rerouting, fusion splicing, optical time domain reflectometry, and bit error rate testing (BERT) of network components in support of NYCT's ongoing multibillion-dollar citywide synchronous optical network (SONET) installation. Mr. Carbonaro managed progress, both on-site and remotely, via network monitoring and analysis software. He completed daily progress and cable test reports, and maintained the integrity of existing transmission systems during SONET's implementation. Mr. Carbonaro supervised as many as 12 field maintainers and technicians at a time, making sure to furnish the team with up-to-date information regarding cable and equipment identifications.

**NYCT Power Control Center****Former Supervisor** (March 2001 to April 2008)

Supervised maintenance and operations of the fiber optic, PBX, and other associated high-speed transmission networks housed at NYCT's Power Control Center in Manhattan and other locations throughout New York City. Mr. Carbonaro

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was responsible for daily testing and preservation of the systems, including the preparation of daily status and production reports for the data transmission team. He was in charge of 15 technicians and technical support personnel, and oversaw troubleshooting and repair tasks on transmission equipment throughout New York City and within the center. This work included the supervision of as many as four field maintainers and technicians at a time for site-to-site testing and installation activities in 95 node sites for substations throughout Manhattan, Queens, Brooklyn, and the Bronx, as well as in PBX sites based on Staten Island.

**NYCT Power Control Center****Former Maintainer** (February 1994 to February 2001)

Performed system-wide station rehabilitation work for NYCT throughout the New York metropolitan area. Mr. Carbonaro's work encompassed tunnel emergency alarm (EA), emergency telephone (ET), and fire alarm systems, as well as public station address systems.

**COMMERCIAL****NYNEX/NY Telephone Citywide Outside Plant Reconfiguration****Operations Engineer**

Supervised subcontractor crew operations for the citywide restructure/reconfiguration of this telecommunication service provider's aerial and underground fiber optic and copper cable plant in New York City. Mr. Carbonaro coordinated and interfaced seamlessly with outside plant personnel from multiple companies and management levels.

**GOVERNMENT****Town of Goshen Town Hall Renovation****Field Engineer**

Designed and supervised the installation of a power system supporting the renovation of a 5-story office building in Goshen, NY. Mr. Carbonaro supplied estimates, design, and provision, per National Electric Code, Institute of Electrical and Electronics Engineers, and American National Standards Institute standards.

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#### **HEALTH & SCIENCE**

##### **VA St. Albans Primary and Extended Care Facility Fiber-Optic Installation - Operations Engineer**

Installed cable plant and main distribution frame for NEC PBX system at this U.S. Veterans Administration (VA) hospital facility in Queens, NY. This underground cable construction included testing and repair as needed. Mr. Carbonaro provided direct supervision of all associated work crews.

#### **INDUSTRIAL**

##### **Planet Powder Coating Inc. Factory Equipment Retrofit Engineer**

Designed power system reconfiguration for a 15,000-sf facility in Warwick, NY. Mr. Carbonaro designed and supervised the installation of facility power equipment to power updated powder coating ovens and related equipment.