



# Digital Infrastructure: Built by Volunteers

**By Michael Brennan**

The next time you drive over a bridge, imagine if its maintenance depended on the efforts of a single volunteer. Its structure, safety, and general upkeep would hinge on this one person's availability to check the screws, examine the steel for signs of fatigue, and give the bridge a fresh coat of paint. Absurd, right? If we maintained our bridges, roads, and other physical infrastructure this way, we couldn't really rely on them. They would fail and endanger us regularly—and who knows how long adequate repairs might take?

It sounds crazy in the context of physical infrastructure, but many people don't know that this is how much of our critical digital infrastructure is maintained. The infrastructure we rely on every day to make sure our digital clocks are in sync or to protect our credit card information when we shop online is often maintained by a single volunteer. This means that often, just one person makes sure that the essential software code that powers so many

of the products and services we use every day runs smoothly.

This is because the same free software code is used for the critical components in many different kinds of software: No one person "owns" it. This enables innovation, because everyone can build off what has come before, and makes it possible for more technology to be created at a lower cost, because no one needs to start from scratch. But this free, public code—which we refer to as open source software—needs regular upkeep and maintenance, just as physical infrastructure does, and because it doesn't belong to any one person or party, it is no one person's job to maintain it. Without maintenance, we see the digital equivalent of a crumbling road or a collapsing bridge. Some people call this phenomenon a "tragedy of the commons."



**How we rely on digital infrastructure—and what happens when we can't**

In 2013, a critical security flaw was discovered in an obscure website called RubyGems, which manages some of the freely available code that

companies like Twitter, Hulu, and Airbnb rely on anytime they want to update their code. RubyGems enables everything from small design tweaks to managing e-commerce. The security flaw was first noticed during a normal workday, but it could not be

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## Sub-Bid Requests

**American Bridge**  
 American Bridge Company is seeking MWBE/SDVOSB subcontractors, suppliers  
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**Lendlease Turner Joint Venture**  
 is seeking MWBE & SDVOB firms for subcontracting opportunities on the

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**Jacob K. Javits Convention Center Expansion Project**

Owner: New York Convention Center Operating Corporation (New York, NY)

The Lendlease Turner Joint Venture (LLTJV) will construct 1.2 million additional square feet of space expanding the nation's busiest convention center. The LLTJV team is reaching out to New York State certified MWBE-SDVOB firms to cultivate significant participation on the project.

**How To Get Involved:**  
 LLTJV@moderntimesinc.com issues Notice of Interest (NOI) emails to all Lendlease Turner registered vendors notifying them of upcoming 1st tier opportunities on the project. Firms respond by clicking through the NOI to the opportunities that match scopes of work they perform.

**To Register as a Vendor with Lendlease Turner JV:**  
 Note : All NYS Empire State Development certified MWBE/SDVOB vendors are already registered with LLTJV. Please contact us if your firm is not currently receiving LLTJV Notices of Interest by sending a note to: LLTJV@moderntimesinc.com

**Get or Update Your Empire State Development MWBE & SDVOB Certificate:**  
 LLTJV seeks Empire State Development certified firms for every 1st Tier Subcontract Opportunity.

**Seeking to be certified or re-certified?** Visit <https://esd.ny.gov/mwbe-new-certification> to learn more about eligibility, requirements, and how to get started.  
**Have a question about certification?**  
 Call the Empire State Development MWBE Hotline: (212) 803-2414

To get in touch, please contact: [LLTJV@MODERNTIMESINC.COM](mailto:LLTJV@MODERNTIMESINC.COM)

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**Flood Mitigation at Three Bus Depots in the Boroughs of Manhattan, Brooklyn, and Staten Island**  
 MTA NYCT Contract No. B-62032 (DBE)  
 Bid Date: September 6, 2018

**Installation of Three Elevators at 59th Street Station**  
 MTA NYCT Contract No. A-37124 (DBE)  
 Bid Date: September 12, 2018

**DB Ventilation System Rehabilitation and Fixed Fire Suppression System Prototype at the Hugh L. Carey Tunnel**  
 MTA Bridges and Tunnels Contract No. HC-07 (M/WBE, SDVOB)  
 Bid Date: September 12, 2018

**B-62032, Flood Mitigation at Three Bus Depots in Manhattan, Brooklyn, Staten Island (DBE):**  
 The scope of work for this project includes providing flood protection walls, stop logs, flood barrier/panels, replacing manhole covers, sump pumps, and other flood mitigation resiliency measures at three (3) bus depots (MJ Quill, Casey Stengel, and Castleton) in the Boroughs of Manhattan, Queens, and Staten Island. **Many bidding opportunities available:** flood doors, stop logs, louver covers, concrete repair, trench drains, french drain, drainage, penetration sealant, manhole covers, check valve, gate valve, plumbing, masonry, steel H-piles, piles, precast concrete panel, masonry, demolition, crack and spall repair, asbestos removal, sidewalk construction/repair, MPT material, electrical work.

**A-37124, Installation of Three Elevators at 59th Street Station (DBE):**  
 Installation of three elevators; expand full-time control area on north and south side of existing mezzanine; reconfigure stairs, ramps, and public facilities. **Many bidding opportunities available:** electrician, elevator sub, plumber, HVAC sub, steel fabrication, miscellaneous metals fabrication, utility relocation sub, architectural finishes, curbs and sidewalks, demolition.

**HC-07, DB Ventilation System Rehabilitation (M/WBE, SDVOB):**  
 The work to be performed under this contract includes: complete design and construction services at the Brooklyn Ventilation (BVB), Governors Island Ventilation (GIVB), Manhattan Blower (MBB), and Manhattan Underground Exhaust Buildings (MUEB), inclusive of construction quality control and quality assurance for the following: furnish and install high efficiency supply and exhaust fan motors with associated drive assemblies; furnish and install removable stainless steel partitions; relocate actuators, electrical demolition, and equipment replacements and relocations; replacement of inboard and outboard fan supports; testing and commissioning of all new and modified equipment and systems; and design, furnish, install, test, and commission fixed fire suppression system (FFSS)—Water Mist Prototype through zones EE4, EE5, and WE5 of the Hugh L. Carey Tunnel (HLCT). **Many bidding opportunities available:** mechanical—fan work, motor installation, fire suppression, water main, civil—equipment pads, maintenance and protection of traffic, and electrical.

If you are interested in bidding on these projects, please contact Skanska's Outreach Coordinator: [Julia.Omanoff@skanska.com](mailto:Julia.Omanoff@skanska.com) • EOE/M/F/Vet/Disabled

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**42nd Street Shuttle Line Project**  
 MTA NYCT Contract No. A-35302/37116  
 Bid Date: September 7, 2018

**Description of project:**  
 Times Square, conversion from a three-track to a two-track shuttle operation with a six-car train on each track. The existing platforms will be reconfigured into one twenty-eight foot wide platform which shall also be extended three hundred sixty feet along the existing track alignment. A second means of egress will be provided at the east end of the extended platform. Work will also include providing vertical accessibility with a new stairway from the shuttle mezzanine to street level, a new Control Area, removing columns, modifying the structural system at all column consolidation locations to redistribute the loads, removing an existing Control Area, stairs P-9 and S-12, relocating columns for proper alignment of car doors and proper passenger flow, new communication rooms at both stations, GCT scrubber room relocation, line GCT employee area, and stair work at GCT.

**Many bidding opportunities available.**

If you are interested in bidding on this project, please contact Skanska's Outreach Coordinator: [Julia.Omanoff@skanska.com](mailto:Julia.Omanoff@skanska.com) • EOE/M/F/Vet/Disabled

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**CBTC System Overlay West 8th Street to Church Street, Culver Line "B" Division Project in the Borough of Brooklyn, New York**  
 MTA NYCT Contract No: S-47009  
 Bid Date: August 30, 2018

**ALL QUOTATIONS ARE DUE BY CLOSE OF BUSINESS Friday, August 24, 2018.**  
 For further information concerning subcontracting and/or purchasing opportunities, and to register as a subcontractor or vendor, please respond to [solicitations@tutorperini.com](mailto:solicitations@tutorperini.com) or contact Jackie Cotto at 914-739-1908. Come and join our team!

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**Replacement of Roadway Deck in Suspended Spans of the Throgs Neck Bridge Project in the Borough of Queens, New York**  
 MTA Bridges and Tunnels Contract No: TN-49  
 Bid Date: September 13, 2018

**ALL QUOTATIONS ARE DUE BY CLOSE OF BUSINESS Friday, September 7, 2018.**  
 For further information concerning subcontracting and/or purchasing opportunities, and to register as a subcontractor or vendor, please respond to [solicitations@tutorperini.com](mailto:solicitations@tutorperini.com) or contact Jackie Cotto at 914-739-1908. Come and join our team!

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 IS SOLICITING BIDS FROM M/WBE AND VETERAN SUBCONTRACTORS AND SUPPLIERS CERTIFIED WITH THE NEW YORK STATE CONTRACT SYSTEM

**Throgs Neck Bridge Replacement of Roadway Deck in Suspended Spans**  
 MTA Bridges and Tunnels Contract No: TN-49  
 Bid Date: September 13, 2018

Subcontracting opportunities include but are not limited to Asphalt, Barrier, Bearings, CPM Scheduling, Demolition, Drainage, Electrical, Expansion Joints, Fencing, Field Tiling, Fuel, Haul and Dispose, Highway Lighting, Miscellaneous Metals, MPT, Painting, Paving, Railings, Rebar, Sandblasting, Saw Cutting, Sealing, Signs, Striping, Structural Steel, Surveying, Testing, and Trucking. Please see contract documents for further opportunities.

Interested firms please contact [john.papagiannakis@skanska.com](mailto:john.papagiannakis@skanska.com) • EOE/M/F/Vet/Disabled

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**2018**

**abishop@cweonline.org**  
 Fee: Free; registration required

Looking for new markets for your small business's goods or services? Consider selling to the federal government. Attend this workshop, led by the US Small Business Administration, to learn how the federal government purchases goods and services; understand the federal certification process for small business, small disadvantaged business, woman-owned small business, veteran and service disabled business; investigate the 8(a) Business Development Program and HUBZone Program. Small business certifications document a special capability or status. To participate in government contracts, you may need some certifications.

**Selling to the Government, 8A, Hubzone, and WOSB Certification**  
**Wednesday, September 5, 2018, 10:00 am–12:00 pm**  
 Business Outreach Center Network, YWCA Brooklyn, 30 Third Avenue, Brooklyn, NY  
 Main Sponsor(s): US Small Business Administration  
 Contact: [Ana Hernandez@sb.gov](mailto:Ana Hernandez@sb.gov)  
 Fee: Free; registration required

The federal government spends \$500 billion per year on goods and services. Does your company capture any of this business? This seminar is geared toward assisting socially and economically disadvantaged businesses, as well as small businesses located in Historically Underutilized Business (HUB) zones and those defined as Woman-Owned Small Businesses (WOSBs). Participants will better understand how to position themselves to do business with the federal government. Join us to learn more about the certification process and how your business can benefit from this amazing opportunity.

**Federal Government Contracting**  
**Tuesday, August 28, 2018, 9:00 am–11:00 am**  
 Center for Women and Enterprise Eastern Hampshire, 30 Temple Street, Suite 610, Sixth Floor, Nashua, NH  
 Main Sponsor(s): US Small Business Administration, Center for Women and Enterprise  
 Contact: [Alexandra Bishop](mailto:Alexandra Bishop), 603-318-7580,

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