

**MANCHESTER PUBLIC SCHOOLS
REQUEST FOR PROPOSALS FOR
FIBER OPTIC NETWORK CONNECTIONS**

SPECIFICATIONS

General Overview

The Manchester Public Schools has issued this Request for Proposals in order to continue to provide fiber optic connections between 12 school buildings and the Manchester Public Schools' Data Centers located at 45 North Main St., Manchester, CT 06040 and 94 Cedar St., Manchester, CT 06040. These locations are currently serviced by dark fiber (SMF-28).

We are also looking for a maintenance contract for no fewer than four (4) strands of dark fiber connecting our Data Center at 45 North School Street to our other schools in a ring configuration, as well as from Manchester Regional Academy - Annex at 94 Cedar St. which is where our backup node is located.

FROM PRIMARY NODE	TO
494 Main Street, Manchester, CT 06040	
	Bowers Elementary School 141 Princeton St., Manchester, CT 06042
	Buckley Elementary School 65 North School St., Manchester, CT 06042
	Elisabeth M. Bennet Academy 1151 Main St., Manchester, CT 06040
	Highland Park Elementary School 397 Porter St., Manchester, CT 06040
	Illing Middle School 227 Middle Tpke. E. Manchester, CT 06040
	Manchester Regional Academy 665 Wetherell St. Manchester, CT 06040
	Keeney Elementary School 179 Keeney St., Manchester, CT 06040
	Martin Elementary School 140 Dartmouth Road Manchester, CT 06040
	Manchester High School 134 East Middle Turnpike Manchester, CT 06040
	Manchester Preschool Center 60 Washington St Manchester, CT 06042
	Verplanck Elementary School 126 Olcott St., Manchester, CT 06040
	Waddell Elementary School 163 Broad St., Manchester, CT 06042
FROM BACKUP NODE	TO
94 Cedar St., Manchester, CT 06040	

	Bowers Elementary School 141 Princeton St., Manchester, CT 06042
	Buckley Elementary School 65 North School St., Manchester, CT 06042
	Elisabeth M. Bennet Academy 1151 Main St., Manchester, CT 06040
	Highland Park Elementary School 397 Porter St., Manchester, CT 06040
	Illing Middle School 227 Middle Tpke. E. Manchester, CT 06040
	Manchester Regional Academy 665 Wetherell St. Manchester, CT 06040
	Keeney Elementary School 179 Keeney St., Manchester, CT 06040
	Martin Elementary School 140 Dartmouth Road Manchester, CT 06040
	Manchester High School 134 Middle Tpke. E. Manchester, CT 06040
	Manchester Preschool Center 60 Washington St Manchester, CT 06042
	Verplanck Elementary School 126 Olcott St., Manchester, CT 06040
	Waddell Elementary School 163 Broad St., Manchester, CT 06042

Scope of Project

We are seeking options for a private dedicated network solution for the connections between the individual schools and the data centers. The School District is seeking two options for bids for either dark or lit fiber. Respondents may bid one or both.

We are also looking for a maintenance contract for no fewer than 4 strands of dark fiber currently installed and operational connecting our Data Center at 45 North School Street to our other schools in a ring configuration, as well as from Manchester Regional Academy - Annex at 94 Cedar St. which is where our backup node is located.

The first option is a leased dark fiber solution that includes 4+ strands of fiber between the designated end points and fiber maintenance and operations for the circuit from the individual schools to the data center hub. The second option is a fully managed, lit service transport to these locations.

Fiber Lease

The Manchester Public Schools is interested primarily in a 6-8 strand lease for each location to be connected with a one-time capital cost payment for the lease of fiber combined with recurring payments for operations and maintenance costs for the first use of the fiber.

Respondents are encouraged to separate special construction/non-recurring charges as defined by E-rate Modernization Order 2. New fiber special construction charges as defined by the order include construction, design, engineering and project management.

Dark Fiber Maintenance

Operations and Maintenance Practices: The (School District) will require on-going maintenance and operations of the fiber. When pricing maintenance and operations, the respondent should include an overview of fiber maintenance practices including:

- Routine maintenance and inspection,
- Call before you dig/locate services
- Scheduled maintenance windows and scheduling practices for planned outages,
- Fiber monitoring including information on what fiber management software is used, what fiber monitoring system is used, and who performs the monitoring,
- Handling of unscheduled outages and customer problem reports
- What service level agreement is included, and what alternative service levels may be available at additional cost,
- What agreements are in place with applicable utilities and utility contractors for emergency restoration,
- Repair of fiber breaks,
- Replacement of damaged fiber,
- Replacement of fiber which no longer meets specifications,
- Policies for customer notification regarding maintenance,
- Process for changing procedures, including customer notification practices.

The pricing for dark fiber maintenance should include the annual cost per linear mile for dark fiber maintenance and operations.

Lit Service:

As an alternative the respondent may quote a Lit fiber solution between the designated (School District) locations.

The School district must have guaranteed Lit Transport Bandwidth to this end point throughput (upload and download) of 10Gbps, upgradable to 40Gbps with Service Level Agreement (SLA) guarantees. Prices should be all inclusive. All-inclusive in this case means, including all nonrecurring costs (NRC) required by the vendor to commence service and all monthly recurring costs (MRC) should be included in the pricing.

All lit Service circuits must support Quality of Service (QoS) and have the ability to apply rate limiting guarantees to specific packet types to ensure Quality of Service at each link. The network must have the ability to support multiple QoS policies and prioritization queues across each link to reduce latency and packet loss and guarantee throughput for data, voice, and video.

For lit services the following specifications shall apply:

- Required web portal or local monitoring of all circuits
- Shared management of equipment

- Must provide response time for outages
- Must provide 99.99% guaranteed uptime
- There is no right to rate limit or throttle the capacity of the circuit at any time
- Symmetrical upstream and downstream bandwidth to the required levels
- Network Latency Commitment <10 milliseconds roundtrip
- Network Jitter Commitment <5 milliseconds
- Bit-Error Rate commitment <0.1% between circuit endpoints
- Mean Time-To-Repair for outages <4 hours

IMPORTANT ADDITIONAL INFORMATION FOR PROPOSAL SUBMISSIONS:

- As part of its response a network diagram displaying the paths to be used to serve each endpoint must be included.
- 3 references from current customers in the bid.
- For all lit service circuits or dark fiber an exact (required) scope of work listing all pertinent details, including but not limited to installation schedules, exact standards to be adhered to, identification of aerial vs. buried fiber segments, as well as detailed drawings showing fiber and equipment locations will be provided to the District by the successful vendor.
- **All responding vendors must be a registered vendor with USAC and have a USAC issued**
- **Service Provider Identification Number-SPIN**