



# THE SCHOOL DISTRICT OF LEE COUNTY INFORMATION TECHNOLOGY SUPPORT DEPARTMENT

2855 COLONIAL BLVD. • FORT MYERS, FLORIDA 33966-1102 ☎(239) 337-8546 • WWW.LEESCHOOLS.NET

## Request for E-Rate Proposal: Cellular Services

### Introduction:

The School District of Lee County is interested in procuring cellular voice and 3G/4G services. The services will be used with a variety of devices, the majority of which are iOS and Android-based smart phones and tablets. Additional data services will be utilized portable and desktop computers, as well as other WiFi-capable devices.

### Definitions:

#### Cellular Voice Services:

2G and cellular voice services, such as, but not limited to CDMA and GSM or newer, that are compatible with a minimum of two of the largest four national cellular competitive for roaming compatibility.

#### 3G Data Services:

Data services consistently capable of delivering performance suitable to support real-time applications such as standard-definition video streaming, two-way standard-definition video conferencing, and remote access to critical applications. (Target performance metrics provided in the table below). Technologies may include, but not are limited to EVDO and HSPA services compatible with smart phones, tablets, air cards, integrated 3G cards (such as those based upon GOBI chipsets) and mobile hotspot devices.

Maximum Average Latency	Min. Sustainable Downstream Bandwidth	Avg. Sustainable Downstream Bandwidth	Min. Sustainable Upstream Bandwidth	Avg. Sustainable Upstream Bandwidth
400 ms.	500 kilobits per second	One megabit per second	256 kilobits per second	500 kilobits per second

Note: Because these services are intended primarily for use during the work / school day, performance metrics will be measured during District business hours (7:00 am – 5:00 pm Monday Through Friday).

#### 4G Data Services:

Data services consistently capable of delivering performance suitable to support bandwidth-intensive real-time applications such as high-definition video streaming, two-way high-definition video conferencing, and remote access to critical applications. (Target performance metrics provided in the table below). Technologies may include, but not are limited to LTE services compatible with USB air cards and mobile hotspot devices.

Maximum Average Latency	Min. Sustainable Downstream Bandwidth	Avg. Sustainable Downstream Bandwidth	Min. Sustainable Upstream Bandwidth	Avg. Sustainable Upstream Bandwidth
200 ms.	Three megabits per second.	Five megabits per second.	One megabit per second.	Two megabits per second.

Note: Because these services are intended primarily for use during the work / school day, performance metrics will be measured during District business hours (7:00 am – 5:00 pm Monday Through Friday).

**Smart Phones:** Touch-screen and non-touchscreen cellular telephones capable of voice, SMS/SMS messaging, e-mail, web browsing, and installation of applications that may or may not utilize Internet data services. *(NOTE: Device definitions are provided as a courtesy to proposing vendors so that we may clearly articulate the types of devices we will utilize to take advantage of your service offerings. Because device purchases are not E-Rate qualifying purchases, device pricing will not be considered as part of this proposal, and should be provided separately.)*

**Tablet:** Slate-type mobile device based upon a mobile hardware and software platform, including iOS, Android, Windows Phone, and/or BlackBerry OS. *(NOTE: Device definitions are provided as a courtesy to proposing vendors so that we may clearly articulate the types of devices we will utilize to take advantage of your service offerings. Because device purchases are not E-Rate qualifying purchases, device pricing will not be considered as part of this proposal, and should be provided separately.)*

**Air Card:** Modem that connects to a computer via USB, ExpressCard, PC Card, Mini-PCI, or any industry-standard PCI architecture for the purpose of providing Internet access to a computer. Please note that, non-USB air cards must only be supported for 3G service. *(NOTE: Device definitions are provided as a courtesy to proposing vendors so that we may clearly articulate the types of devices we will utilize to take advantage of your service offerings. Because device purchases are not E-Rate qualifying purchases, device pricing will not be considered as part of this proposal, and should be provided separately.)*

**Mobile Hotspot:** Standalone mobile cellular router that is self-powering, provides a mobile WiFi hotspot, includes its own battery capable of a minimum of two hours of service without AC power; designed specifically to allow a minimum of five WiFi-capable devices to connect to the cellular provider's 3G and/or 4G service. An example of such a device would be the Novatel MiFi product line. *(NOTE: Device definitions are provided as a courtesy to proposing vendors so that we may clearly articulate the types of devices we will utilize to take advantage of your service offerings. Because device purchases are not E-Rate qualifying purchases, device pricing will not be considered as part of this proposal, and should be provided separately.)*

**Anytime Minutes:** Airtime (voice) plan minutes, excluding nights and weekends and mobile-to-mobile calls.

## Minimum Requirements:

Only proposals that meet the minimum requirements will be considered.

- Proposers in each category must have adequate cellular coverage in the Lee County, Florida area to provide sufficient voice and data performance (as specified above) at 95% of Lee County public school campuses. Campus addresses are available at: <http://www.leeschools.net/school/>. Vendors may provide coverage maps. If none

are provided as part of the proposal, the District will rely upon publically available coverage maps on each provider's web site.

- Upon request, each provider that submits a proposal for 3G data services must provide a 3G capable mobile hotspot device for performance testing.
- Upon request, each provider that submits a proposal for 4G data services must provide a 4G capable mobile hotspot device for performance testing.
- All proposers must offer smart phone and tablet data plans that allow a minimum of 2GB of monthly data usage included in the monthly rate. Additional options are appreciated.
- All proposers must offer air card and mobile hotspot data plans that allow a minimum of 5GB of monthly data usage, included in the monthly rate. Additional plans, such as unlimited plans are appreciated.
- Proposers may not place restrictions on the use of video conferencing, streaming media, or virtual private networking for Lee County School District accounts, except where they exceed the monthly data allowance in the plan.
- Proposers must provide a fully and clearly completed response sheet (attached) with any proposals.
- All voice plans must include unlimited mobile-to-mobile calling to all cellular phones (with all carriers) and unlimited push-to-talk if using an applicable device.
- All voice plans must include unlimited night and weekend calling, with the specific start and stop time for unlimited calling clearly disclosed within the proposal.
- All 4G services must include 3G data services to be used when the device is used in an area where 4G is unavailable.

## Service Categories:

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Vendors **are not required** to submit proposals for all categories. While it is the District's desire to consolidate wherever possible, the District will select the best option(s) by service category to meet the needs of our staff and students.

## Procurement Vehicle:

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Vendors may provide pricing based upon an existing qualifying agreement, such as Florida State Contracts or Western States Contracting Alliance agreements. Please specify any existing vehicle being used for pricing.

## Proposal Format:

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Proposers must, at a minimum, complete the attached response sheet to provide a response to the District's specific service requirements. Additional information, such as additional service tiers, optional services, and hardware pricing are welcome. If additional products and/or service information is provided, only requested E-Rate eligible services will be considered in the selection process.

## Submittals:

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All submittals should be directed to:

Derek Carnwath  
Lee County Public Schools  
2855 Colonial Blvd.  
Fort Myers, FL 33966  
E-mail: DerekJC@LeeSchools.net

All submittals must be received by e-mail, postal mail, or common carrier no later than 4:00 pm, 02/20/12.

Proposals submitted by e-mail should include "E-Rate Proposal" in the subject line of the e-mail message, as The District will be setting an auto-responder to reply to your message and confirm receipt. Additionally, proposals that contain e-mail attachments must be no larger than ten megabytes in size, including the content of the e-mail and all attachments.

## Evaluation Criteria

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The District will select the best overall proposal(s), based upon a one-hundred point system using the following evaluation criteria.

Criteria	Possible Points
<b>Overall Pricing:</b> Overall pricing of voice, data, and SMS/MMS services, based upon the District's anticipated usage volume and patterns.	50
<b>Service Performance:</b> Throughput, latency, and ease of use of proposed 3G and 4G data services.	20
<b>Service Availability:</b> General service coverage in the Lee County area and in-building penetration in District facilities.	20
<b>Account Management:</b> Ease of account management and District oversight of its users.	5
<b>Clarity and Completeness of Proposal</b>	5

# Proposal Response Sheet

## Category 1: Voice / Text Services

Cellular Phone Service (Voice / SMS / Smart Phone Data):

1. Please attach complete tiered service pricing to this response sheet (either as a physical attachment or an e-mail attachment).
2. Please use the attached pricing to provide the monthly cost for the following realistic scenario.

Service Type	Voice	Text (SMS)	3G Data	# Lines	Activation Fee Per Phone	Avg. Cost Per Month Per Device
Flip Phone	Shared Pool (75,000)	Not Included	Not Included	400		
Enhanced Smart Phone (iPhone or Equivalent)	Shared Pool (75,000)	Not Included	Min. 2GB per Month.	200		
Enhanced Smart Phone (iPhone or Equivalent)	Shared Pool (75,000)	Unlimited SMS & MMS	Min. 2 GB per Month	50		
Enhanced Smart Phone (iPhone or Equivalent)	Shared Pool (75,000)	Unlimited SMS & MMS	Min 4GB per month	20		
Enhanced Smart Phone (iPhone or Equivalent)	Shared Pool (75,000)	Unlimited SMS & MMS	Min 4GB per month + <b>WiFi Tethering</b>	50		
<b>TOTAL Costs</b>					<b>One-Time</b>	<b>Monthly</b>

\*All devices share a pool of 75,000 “anytime” minutes (or your closest available tier). “Anytime minutes” are defined as airtime minutes outside of the times of unlimited nights and weekends, and does not include mobile-to-mobile calling.

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## Category 2: 3G Tablet Data

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1. Please attach complete tiered service pricing to this response sheet (either as a physical attachment or an e-mail attachment).
2. Please provide monthly pricing for the following devices / service tiers.

Service Type	Monthly Data Allowance	Activation Fee	Monthly Price	Overage Cost Per GB
iPad	<b>2 GB</b> (or closest available tier)			
iPad	<b>5 GB</b> (or closest available tier)			
iPad	<b>Unlimited</b> (if available)			
Android Tablet	<b>2 GB</b> (or closest available tier)			
Android Tablet	<b>5 GB</b> (or closest available tier)			
Android Tablet	<b>Unlimited</b> (if available)			

## Category 3: 3G Air Card & Mobile Hotspots

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1. Please attach complete tiered service pricing to this response sheet (either as a physical attachment or an e-mail attachment).
2. Please provide monthly pricing for the following devices / service tiers.

Service Type	Monthly Data Allowance	Activation Fee	Monthly Price	Overage Cost Per GB
Air Card	<b>2 GB</b> (or closest available tier)			
Air Card	<b>5 GB</b> (or closest available tier)			
Air Card	<b>Unlimited</b> (If Available)			
3G Mobile Hotspot	<b>2 GB</b> (or closest available tier)			
3G Mobile Hotspot	<b>5 GB</b> (or closest available tier)			
3G Mobile Hotspot	<b>Unlimited</b> (If Available)			

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## Request for E-Rate Proposal: **School Core Switch Gear**

### Introduction:

The School District of Lee County is interested in reviewing E-Rate proposals for network switches as part of our internal connections application. The District anticipates that we will request E-Rate support for **up to** twenty-two (22) cores switch packages, to include the chassis switches and related components.

### Network Topology:

For vendor reference, The District currently utilizes the following network technologies and topology:

- Client (wired) client computers within our schools utilize structured copper network drops of Category 6, Category 5E, or Category 5 cable (depending upon age of the facility). Each drop is connected to a dedicated full-duplex 100 megabit per second switch port.
- Computers may connect to one of several wiring closets within the facility. All wiring closets have a direct connection to the main wiring closet, typically over fiber optic cable. In some cases, switches uplink via copper gigabit connections instead of fiber.
- A number of devices within the schools are powered via Power Over Ethernet (POE), provided by the switch.
- The most currently utilized edge switch model within our schools is the **Cisco Catalyst WS-C3560x-24P-L**. These devices will uplink to school core switches.
- For reference, our currently utilized core switch package includes the following components:

Component	Current Manufacturer	Current Model
Chassis Switch	Cisco	WS-C4506E
Redundant Power Supplies	Cisco	PWR-C45-1300ACV
Supervisor Card	Cisco	WS-X45-Sup7-LE
GBICs	Cisco	WS-X46-SFP-E
48-Port Copper Modules	Cisco	WS-X4748-RJ45-E

**NOTE:** This information is provided for vendor reference. Vendors may propose dissimilar solutions.

- Edge switches connect to a Cisco 4500 series (or newer) core switch in the main wiring closets. Core switches located in the school's MDF/ER are then uplinked to the

District's Cisco 6500 series core switch located in the District's central data center; utilizing leased Metro Ethernet WAN connections.

## Definitions:

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**Equipment Room (ER):** The room that hosts a facility's primary core network switch, that uplinks to the District's wide-area network.

**Main Distribution Frame (MDF):** The same as the Equipment Room.

**Telecommunications Room (TR):** Wiring closets located throughout a facility. TRs connect to the ER/MDF via one or more one gigabit-per-second fiber and/or copper uplinks.

**Intermediate Distribution Frame (IDF):** Another name for the TR.

**Core Network Switch:** High capacity (Layer 3) chassis switch used to aggregate connectivity from all wiring closets within a facility and uplink that facility's connection to the wide-area network.

**Edge Network Switch:** Switches utilized in IDF/TR rooms to connect to client devices (computers, cameras, printers) and wireless access points distributed throughout a District facility. Core switches uplink to the facility's core network switch.

**Wide Area Network (WAN):** Leased Metro-Ethernet network that connects schools and remote administrative facilities to The District's data center. Also known as metropolitan area network (MAN). In the District's WAN implementation, core network switches connect to the WAN provider's network switch to uplink to The District's data center.

**Chassis Switch:** A modular switch solution comprised of an expandable network switch chassis that can be utilized with a variety of switch "blades" or "cards", including, but not limited to, copper and fiber optic switch ports.

## Minimum Requirements:

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Only proposals that meet the minimum requirements will be considered.

- All proposed core switches must be enterprise-grade managed equipment designed for high-availability (99.99%) reliability in an enterprise network environment.
- All proposed core switches must mount securely in an industry-standard 19" rack or telecommunications cabinet and include all mounting hardware. Mounting hardware must work in any universal cabinet and not be specific to one manufacturer's rack or cabinet. The District prefers no more than 1 RU space consumed per 24 network ports.
- All proposed core switches must be compliant with the following industry standards and features:
  - **Cable / Connection Type:** RJ-45, Ethernet 1000Base-T, Ethernet 100Base-TX , Ethernet 10Base-T (see specific standards below).

- **Authentication Protocols:**
  - Kerberos
  - RADIUS
  - Secure Shell (SSH)
  - TACACS+
  
- **Industry-Standard Protocols and Functionality:**
  - MAC Layer Security (**IEEE 802.1ae** Compliant)
  - MAC Bridging Support (**IEEE 802.1D** Compliant)
  - Traffic Prioritization / Layer 2 QOS (**IEEE 802.1p** Compliant)
  - VLAN Support (**IEEE 802.1Q** Compliant)
  - Per-VLAN Spanning Tree Support (**IEEE 802.1s** Compliant)
  - Rapid Configuration Spanning Tree Support (**IEEE 802.1w** Compliant)
  - Radius Authentication Support (**IEEE 802.1x** Compliant)
  - 1000BASE-T Gbit/s Ethernet over twisted pair at 1 Gbit/s (125 MB/s) (**IEEE 802.3ab** Compliant)
  - Link Aggregation Control Protocol (“LACP”) (**IEEE 802.3ad / IEEE 802.3ax** Compliant)
  - Power Over Ethernet (“POE”) 12.95W (**IEEE 802.3af** Compliant).
  - Power Over Ethernet Plus 25.5W (“POE+”) (**IEEE 802.3at** Compliant)
  - 100BASE-TX, 100BASE-T4, 100BASE-FX Fast Ethernet at 100 Mbit/s (12.5 MB/s) w/ auto-negotiation / auto-uplink (auto MDI/MDI-X) Support (**IEEE 802.3u** Compliant)
  - Full-Duplex Flow Control (**IEEE 802.3x** Compliant)
  - 1000BASE-X Gbit/s Ethernet over Fiber-Optic at 1 Gbit/s (125 MB/s) (**IEEE 802.3z** Compliant)
  - Address Routing Protocol (ARP) Support (**RFC 826 / Internet STD 37** Compliant)
  - Dynamic Host Configuration Protocol (DHCP) support (Compliant with **RFCs 2131, 3315**)
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- **Features:**
  - Layer 3 Switching
  - Security:
    - Access Control List (ACL) support.
    - Broadcast Storm Control
    - DHCP Snooping
    - Dynamic ARP inspection or equivalent protocol to prevent:
      - ARP spoofing
      - ARP Cache Poisoning
      - ARP Poison Routing
    - Unicast Storm Control
    - Broadcast Storm Control
    - Multicast Storm Control
    - IGMP Snooping (**RFC 4541** Compliant)
    - Multicast Listener Discovery (MLD) Snooping (**RFC 4541** Compliant)
  - Jumbo Frames support (**RFC 4960** Compliant)

- Syslog support (**RFC 5424**)

## Service Categories:

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Vendors **are not required** to submit proposals for all categories. While it is the District's desire to consolidate wherever possible, the District will select the best option(s) by service category to meet the needs of our staff and students.

## Procurement Vehicle:

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Vendors may provide pricing based upon an existing qualifying agreement, such as Florida State Contracts or Western States Contracting Alliance agreements. Please specify any existing vehicle being used for pricing.

## Proposal Format:

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Proposers must, at a minimum, complete the attached response sheet to provide a response to the District's specific service requirements. Additional information, such as additional service tiers, optional services, and hardware pricing are welcome. If additional products and/or service information is provided, only requested E-Rate eligible services will be considered in the selection process.

## Submittals:

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All submittals should be directed to:

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Proposals submitted by e-mail should include "E-Rate Proposal" in the subject line of the e-mail message, as The District will be setting an auto-responder to reply to your message and confirm receipt. Additionally, proposals that contain e-mail attachments must be no larger than ten megabytes in size, including the content of the e-mail and all attachments.

## Evaluation Criteria

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The District will select the best overall proposal(s), based upon a one-hundred point system using the following evaluation criteria.

<b>Criteria</b>	<b>Possible Points</b>
<b>Overall Pricing:</b>	<b>50</b>
<b>System Features / Manageability / Expandability</b>	<b>45</b>
<b>Clarity and Completeness of Proposal</b>	<b>5</b>

# Proposal Response Sheet

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Please provide full specifications for the proposed equipment model(s) as an attachment to this response sheet.

<b>Component Manufacturer</b>	<b>Component Model</b>	<b>Price Per Unit</b>

# Proposal Response Sheet

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<b>Component Manufacturer</b>	<b>Component Model</b>	<b>Price Per Unit</b>



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## Request for E-Rate Proposal: **Network (Edge) Switches**

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### Introduction:

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The School District of Lee County is interested in reviewing E-Rate proposals for network switches as part of our internal connections application. The District anticipates that we will request E-Rate support for **up to** 355 edge switches.

### Network Topology:

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For vendor reference, The District currently utilizes the following network technologies and topology:

- Client (wired) client computers within our schools utilize structured copper network drops of Category 6, Category 5E, or Category 5 cable (depending upon age of the facility). Each drop is connected to a dedicated full-duplex 100 megabit per second switch port.
- Computers may connect to one of several wiring closets within the facility. All wiring closets have a direct connection to the main wiring closet, typically over fiber optic cable. In some cases, switches uplink via copper gigabit connections instead of fiber.
- A number of devices within the schools are powered via Power Over Ethernet (POE), provided by the switch.
- The most currently utilized edge switch model within our schools is the **Cisco Catalyst WS-C3560x-24P-L**. (**NOTE:** This information is provided for vendor reference. Vendors may propose dissimilar solutions).
- Edge switches connect to a Cisco 4500 series (or newer) core switch in the main wiring closets. Core switches located in the school's MDF/ER are then uplinked to the District's Cisco 6500 series core switch located in the District's central data center; utilizing leased Metro Ethernet WAN connections.

### Definitions:

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**Equipment Room (ER):** The room that hosts a facility's primary core network switch, that uplinks to the District's wide-area network.

**Main Distribution Frame (MDF):** The same as the Equipment Room.

**Telecommunications Room (TR):** Wiring closets located throughout a facility. TRs connect to the ER/MDF via one or more one gigabit-per-second fiber and/or copper uplinks.

**Intermediate Distribution Frame (IDF):** Another name for the TR.

**Core Network Switch:** High capacity (Layer 3) chassis switch used to aggregate connectivity from all wiring closets within a facility and uplink that facility's connection to the wide-area network.

**Edge Network Switch:** Switches utilized in IDF/TR rooms to connect to client devices (computers, cameras, printers) and wireless access points distributed throughout a District facility. Edge switches uplink to the facility's core network switch.

**Wide Area Network (WAN):** Leased Metro-Ethernet network that connects schools and remote administrative facilities to The District's data center. Also known as metropolitan area network (MAN). In the District's WAN implementation, core network switches connect to the WAN provider's network switch to uplink to The District's data center.

## Minimum Requirements:

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Only proposals that meet the minimum requirements will be considered.

- All proposed edge switches must be enterprise-grade managed equipment designed for high-availability (99.99%) reliability in an enterprise network environment.
- All proposed edge switches must have a minimum of 24 RJ-45 ports capable of half or full-duplex 10/100/1000 megabits per second connectivity.
- All proposed edge switches must mount securely in an industry-standard 19" rack or telecommunications cabinet and include all mounting hardware. Mounting hardware must work in any universal cabinet and not be specific to one manufacturer's rack or cabinet. The District prefers no more than 1 RU space consumed per 24 network ports.
- All proposed edge switches must be compliant with the following industry standards and features:
  - **Cable / Connection Type:** RJ-45, Ethernet 1000Base-T, Ethernet 100Base-TX , Ethernet 10Base-T (see specific standards below).
  - **Authentication Protocols:**
    - Kerberos
    - RADIUS
    - Secure Shell (SSH)
    - TACACS+
  - **Industry-Standard Protocols and Functionality:**
    - MAC Layer Security (**IEEE 802.1ae** Compliant)
    - MAC Bridging Support (**IEEE 802.1D** Compliant)
    - Traffic Prioritization / Layer 2 QOS (**IEEE 802.1p** Compliant)
    - VLAN Support (**IEEE 802.1Q** Compliant)
    - Per-VLAN Spanning Tree Support (**IEEE 802.1s** Compliant)

- Rapid Configuration Spanning Tree Support (**IEEE 802.1w** Compliant)
- Radius Authentication Support (**IEEE 802.1x** Compliant)
- 1000BASE-T Gbit/s Ethernet over twisted pair at 1 Gbit/s (125 MB/s) (**IEEE 802.3ab** Compliant)
- Link Aggregation Control Protocol (“LACP”) (**IEEE 802.3ad / IEEE 802.3ax** Compliant)
- Power Over Ethernet (“POE”) 12.95W (**IEEE 802.3af** Compliant).
- Power Over Ethernet Plus 25.5W (“POE+”) (**IEEE 802.3at** Compliant)
- 100BASE-TX, 100BASE-T4, 100BASE-FX Fast Ethernet at 100 Mbit/s (12.5 MB/s) w/ auto-negotiation / auto-uplink (auto MDI/MDI-X) Support (**IEEE 802.3u** Compliant)
- Full-Duplex Flow Control (**IEEE 802.3x** Compliant)
- 1000BASE-X Gbit/s Ethernet over Fiber-Optic at 1 Gbit/s (125 MB/s) (**IEEE 802.3z** Compliant)
- Address Routing Protocol (ARP) Support (**RFC 826 / Internet STD 37** Compliant)
- Dynamic Host Configuration Protocol (DHCP) support (Compliant with **RFCs 2131, 3315**)
- 
- **Features:**
  - Layer 2 Switching
  - Security:
    - Access Control List (ACL) support.
    - Broadcast Storm Control
    - DHCP Snooping
    - Dynamic ARP inspection or equivalent protocol to prevent:
      - ARP spoofing
      - ARP Cache Poisoning
      - ARP Poison Routing
    - Unicast Storm Control
    - Broadcast Storm Control
    - Multicast Storm Control
    - IGMP Snooping (**RFC 4541** Compliant)
    - Multicast Listener Discovery (MLD) Snooping (**RFC 4541** Compliant)
  - Jumbo Frames support (**RFC 4960** Compliant)
  - Syslog support (**RFC 5424**)

## Service Categories:

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Vendors **are not required** to submit proposals for all categories. While it is the District’s desire to consolidate wherever possible, the District will select the best option(s) by service category to meet the needs of our staff and students.

## Procurement Vehicle:

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Vendors may provide pricing based upon an existing qualifying agreement, such as Florida State Contracts or Western States Contracting Alliance agreements. Please specify any existing vehicle being used for pricing.

## Proposal Format:

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Proposers must, at a minimum, complete the attached response sheet to provide a response to the District's specific service requirements. Additional information, such as additional service tiers, optional services, and hardware pricing are welcome. If additional products and/or service information is provided, only requested E-Rate eligible services will be considered in the selection process.

## Submittals:

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## Evaluation Criteria

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The District will select the best overall proposal(s), based upon a one-hundred point system using the following evaluation criteria.

Criteria	Possible Points
<b>Overall Pricing:</b>	<b>60</b>
<b>System Features / Manageability</b>	<b>35</b>
<b>Clarity and Completeness of Proposal</b>	<b>5</b>

# Proposal Response Sheet

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Please provide full specifications for the proposed equipment model(s) as an attachment to this response sheet.

<b>Switch Manufacturer</b>	<b>Switch Model</b>	<b>Price Per 24 Port Switch</b>



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## Request for E-Rate Proposal: **Wireless Networks**

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### Introduction:

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The School District of Lee County is interested in reviewing E-Rate proposals for wireless network equipment as part of our internal connections application. The District anticipates that we will request E-Rate support for **up to** 1360 wireless access points (WAPs) and **up to** 355 Power Over Ethernet Adapters.

### Wireless Network Topology:

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For vendor reference, The District currently utilizes the following network technologies and topology:

- Wireless client devices consist of traditional desktop computers, notebook computers, convertible Windows-based Tablet PCs, iOS and Android tablets, iOS and Android smart phones, wireless bar-code scanning equipment, and wireless printers. We anticipate the diversity of devices growing in the short-term to include a number portable slate devices, smart phones, personal media players, and non-traditional wireless client devices.
- Wireless client devices within our schools utilize a combination of 802.11g and 802.11n wireless networks in both the 2.4 Ghz. And 5 Ghz. Spectrum. Additionally, we have a very small number of devices that utilize 802.11b wireless capabilities.
- Access points may connect to one of several wiring closets within a facility. All wiring closets have a direct connection to the main wiring closet, typically over fiber optic cable. In some cases, switches uplink via copper gigabit connections instead of fiber.
- A number of devices within the schools are powered via Power Over Ethernet (POE), provided by the switch.
- The District's current wireless infrastructure is based upon **Aerohive's HiveAP 120** wireless access points, connected and powered via **Cisco Catalyst WS-C3560x-24P-L** POE-compliant switches. In situations where access points do not uplink directly to a POE switch, we utilize **PowerDsine 3001GC** or equivalent POE adapters. (**NOTE:** This information is provided for vendor reference. Vendors may propose dissimilar solutions if desired.)
- Edge switches connect to a Cisco 4500 series (or newer) core switch in the main wiring closets. Core switches located in the school's MDF/ER are then uplinked to the District's Cisco 6500 series core switch located in the District's central data center; utilizing leased Metro Ethernet WAN connections.

## Intended Usage & Additional Important Notes:

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It is important to note that the State of Florida has included technology initiatives that result in tremendous demand upon the District's wireless networks.

- State and District standardized tests are transitioning from paper-based delivery, to online testing solutions. Mobile computer labs and wireless networks are our **primary** delivery mechanism for electronic testing. As a result, our wireless networks must be self-adjusting, stable, and resilient in the event of a failure.
- The State of Florida will be moving from traditional textbooks to dynamic electronic content for core instructional materials in the coming years. This generates a demand for very high-density wireless environments capable of handling 30 wireless devices within each classroom or instructional space – with the ability to accommodate more in the event of a WAP failure.

## Definitions:

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**Equipment Room (ER):** The room that hosts a facility's primary core network switch, that uplinks to the District's wide-area network.

**Main Distribution Frame (MDF):** The same as the Equipment Room.

**Telecommunications Room (TR):** Wiring closets located throughout a facility. TRs connect to the ER/MDF via one or more one gigabit-per-second fiber and/or copper uplinks.

**Intermediate Distribution Frame (IDF):** Another name for the TR.

**Core Network Switch:** High capacity (Layer 3) chassis switch used to aggregate connectivity from all wiring closets within a facility and uplink that facility's connection to the wide-area network.

**Edge Network Switch:** Switches utilized in IDF/TR rooms to connect to client devices (computers, cameras, printers) and wireless access points distributed throughout a District facility. Edge switches uplink to the facility's core network switch.

**Wide Area Network (WAN):** Leased Metro-Ethernet network that connects schools and remote administrative facilities to The District's data center. Also known as metropolitan area network (MAN). In the District's WAN implementation, core network switches connect to the WAN provider's network switch to uplink to The District's data center.

**Wireless Access Point:** Wireless access device to which wireless client devices attach to gain access to The District's computer network.

## Minimum Requirements:

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Only proposals that meet the minimum requirements will be considered.

- All proposed solutions must be high-density, high-availability, enterprise-grade managed equipment designed for a minimum of (99.99%) availability in an enterprise network environment.
- All WAPs must be able to connect to 10/100/1000 megabit per second wired connections to uplink to The District's LAN.
- All WAPs must safely mount on a wall or ceiling, out of the reach of students to maintain appropriate wireless coverage and student safety.
- All WAPs must support, at a minimum IEEE 802.11b 2.4 Ghz, 802.11g 2.4 Ghz, and 802.11n 2.4 and 5 Ghz bands, with band steering technology to balance load across the multiple frequencies.
- All WAPs must be self-adjusting, providing for adequate load balancing and hand-off between WAPs in the event a client roams or load must be redistributed between WAPs. Load balancing and roaming must be handled without a user disconnect.
- All WAPs must support IEEE802.1x authentication and WAP Enterprise encryption technologies.
- All WAPs must have the capability to be centrally managed to maintain consistent configurations, failure and error reporting, and security management.

## Product / Service Categories:

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Vendors **are not required** to submit proposals for all categories. While it is the District's desire to consolidate wherever possible, the District will select the best option(s) by service category to meet the needs of our staff and students.

## Procurement Vehicle:

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Vendors may provide pricing based upon an existing qualifying agreement, such as Florida State Contracts or Western States Contracting Alliance agreements. Please specify any existing vehicle being used for pricing.

## Proposal Format:

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Proposers must, at a minimum, complete the attached response sheet to provide a response to the District's specific service requirements. Additional information, such as additional service tiers, optional services, and hardware pricing are welcome. If

additional products and/or service information is provided, only requested E-Rate eligible services will be considered in the selection process.

## Submittals:

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All submittals should be directed to:

Derek Carnwath  
Lee County Public Schools  
2855 Colonial Blvd.  
Fort Myers, FL 33966  
E-mail: DerekJC@LeeSchools.net

All submittals must be received by e-mail, postal mail, or common carrier no later than 4:00 pm, 02/20/12.

Proposals submitted by e-mail should include "E-Rate Proposal" in the subject line of the e-mail message, as The District will be setting an auto-responder to reply to your message and confirm receipt. Additionally, proposals that contain e-mail attachments must be no larger than ten megabytes in size, including the content of the e-mail and all attachments.

## Evaluation Criteria

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The District will select the best overall proposal(s), based upon a one-hundred point system using the following evaluation criteria.

Criteria	Possible Points
<b>Overall Pricing:</b>	<b>50</b>
<b>System Features / Manageability / Resilience</b>	<b>45</b>
<b>Clarity and Completeness of Proposal</b>	<b>5</b>

# Proposal Response Sheet

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Please provide full specifications for the proposed equipment model(s) as an attachment to this response sheet.

<b>WAP Manufacturer</b>	<b>WAP Model</b>	<b>Price Per WAP</b>
<b>POE Injector Manufacturer</b>	<b>POE Injector Model</b>	<b>Price Per POE Injector</b>



# THE SCHOOL DISTRICT OF LEE COUNTY INFORMATION TECHNOLOGY SUPPORT DEPARTMENT

2855 COLONIAL BLVD. • FORT MYERS, FLORIDA 33966-1102 ☎(239) 337-8546 • WWW.LEESCHOOLS.NET

## Request for E-Rate Proposal: **Webcaster System**

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### Introduction:

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The School District of Lee County is interested in reviewing E-Rate proposals for a Webcaster package to encode and distribute video to classrooms within a school over the existing Ethernet network.

### General Specifications:

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1. DESCRIPTION: Viewing of Instructional television will be accomplished by a web based computer system equipped for distribution of "In-House" programming by School Board, video sources and selective commercial television signals. Transmission equipment will distribute programs via twisted pair CAT 6 cable to each classroom, office and common areas.
2. INTERNAL SCHOOL DISTRIBUTION: A Webcaster system will distribute television signals via twisted pair CAT 6 cables. Distribution will be from the headend to the MDF where the signal will be routed via switches and hubs. Interconnection from the headend to the MDF will be through twisted pair CAT 6 cables. Connection to the classrooms will be provided via twisted pair CAT 6 cable. Connection to computer desktop will be made by Cat 6 patch cable of sufficient length. The output from the computer will be converted to twisted pair through a system such as Crestron and fed to a projector. For classrooms without a projector a tunable digital to analog converter (set top box encoder) will be utilized to convert signals from twisted pair to RF and fed into a television set.
  - a. Headend shall consist of the following 12 channels, seven channels wired as output from four tunable mini-demodulators (channels 1-4) and three tunable DVD/VCR combinations (channels 5-7) and Four (ITV) instructional television signals (channels 9-12) originating from the video courier computer. RF input to these demodulator and DVD/VCR units will be from CATV. One channel (channel 8) will be from the audio and video input feed from studio.

### Product / Service Categories:

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<b>Clarity and Completeness of Proposal</b>	<b>5</b>

# Proposal Response Sheet

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Please provide full specifications for the proposed equipment model(s) as an attachment to this response sheet.

Hardware	Manufacturer	Model	Estimated Quantity	Price (ea.)
Broadcast Encoder			72	
<b>Proposed:</b>				
Chassis			24	
<b>Proposed:</b>				
Demodulator			96	
<b>Proposed:</b>				
Distribution Amp			24	
<b>Proposed:</b>				
KVM Switch			24	
<b>Proposed:</b>				
Set Top Box Encoder			192	
<b>Proposed:</b>				