

**FAIRFAX COUNTY PLANNING COMMISSION  
POLICY AND PROCEDURES COMMITTEE  
THURSDAY, JANUARY 21, 2010**

**COMMITTEE MEMBERS PRESENT:**

Walter L. Alcorn, At-Large  
Earl L. Flanagan, Mount Vernon District  
Janet R. Hall, Chairman, Mason District  
James R. Hart, At-Large  
John L. Litzenberger, Sully District  
Timothy J. Sargeant, At-Large

**COMMITTEE MEMBERS ABSENT:**

Suzanne F. Harsel, Braddock District  
Kenneth Lawrence, Providence District

**OTHER COMMISSIONERS PRESENT:**

Frank A. de la Fe, Hunter Mill District  
Peter F. Murphy, Jr., Springfield District

**STAFF PRESENT:**

David Marshall, Chief, Facilities Planning Branch, Planning Division (PD),  
Department of Planning and Zoning (DPZ)  
Anita Capps, Senior Planner, PD, DPZ  
Barbara J. Lippa, Executive Director, Planning Commission Office  
Kara A. DeArrastia, Deputy Clerk to the Fairfax County Planning Commission

**FAIRFAX COUNTY PUBLIC SCHOOLS STAFF PRESENT:**

Dean Tistadt, Chief Operating Officer, Facilities and Transportation Services  
Lee Ann Pender, Director, Administrative Services  
Bob Cordova, Coordinator, Administrative Services, Property Management Section  
Tom Casey, Athletic Program Director, W. T. Woodson High School

**OTHERS PRESENT:**

Len Forkas, Founder and CEO of Milestone Communications  
Kelly Griffin, Milestone Communications  
Hillorie Morrison, T-Mobile  
Ed Donohue, Esquire, Donohue & Stearns, PLC  
Alex Beiro, Site Acquisition Specialist, Donohue & Stearns, PLC

**ATTACHMENT:**

A. PowerPoint Presentation on Wireless Telecommunication Infrastructure, dated  
January 21, 2010, and produced by Milestone Communications

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In the temporary absence of Chairman Janet R. Hall, Commissioner Hart called the meeting to order at 7:34 p.m., in the Board Conference Room, 12000 Government Center Parkway, Fairfax, Virginia 22035.

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Commissioner Hart noted that the Committee would be briefed on the Fairfax County Public Schools' (FCPS) policy on telecommunications facilities at middle and high schools.

David Marshall, Chief, Facilities Planning Branch, Planning Division (PD), Department of Planning and Zoning (DPZ), stated that Milestone Communications had been working with FCPS in coordinating sites for telecommunication uses and so far, these uses had primarily been located at high school sites. He noted that staff anticipated receiving a considerable number of applications from Milestone Communications for several providers to locate 115-foot tall treepoles at middle schools throughout Fairfax County. Mr. Marshall said representatives from Milestone Communications would provide an overview of the upcoming applications.

Len Forkas, Founder and CEO of Milestone Communications, delivered a PowerPoint presentation on wireless telecommunication infrastructure, as shown in Attachment A. The slides addressed the following topics:

- Major Trends in Wireless
- RF Safety
- FCPS Tower Program

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Upon her arrival, Chairman Hall assumed the Chair.

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Responding to questions from Chairman Hall, Mr. Forkas explained the procedure for processing a request for a placing a monopole on FCPS property.

In reply to a question from Commissioner Alcorn, Dean Tistadt, Chief Operating Officer, Facilities and Transportation Services, FCPS, indicated that of the 40 percent rental income received by FCPS, 15 percent went to the individual school and the remaining 25 percent went to the school system.

Replying to questions from Chairman Hall, Mr. Forkas reviewed the construction, leasing, and maintenance process for placing telecommunications facilities on school property.

Commissioner Litzenberger said in a recent case for a telecommunications facility at Westfield High School, the applicant had proffered that all revenues generated would go to the school at the request of parents and surrounding residents who would have to deal with its visual impact.

He asked if public hearings could be held by the School Board on these applications in the future so that citizens would have an opportunity to comment on how the revenue was used. Mr. Tistadt replied that he would raise this proposal at a School Board work session but he doubted it would be embraced if FCPS as a whole did not benefit from the revenue.

Commissioner Sargeant questioned whether an exception for monopolies might set a precedent for other types of facilities that were considered aesthetically intrusive such as field lighting.

Following further discussion of this issue, Chairman Hall said all schools should benefit from the revenue generated by these facilities.

In response to a question from Commissioner Flanagan, Mr. Forkas said that Milestone Communications considered all potential co-location sites before recommending new construction.

In reply to a question from Commissioner Flanagan, Mr. Forkas noted that the total revenue reported in last year's Capital Improvement Program had not included the accumulation of the one-time \$25,000 fee that FCPS had received for each new monopole, which helped raise the total revenue significantly. He said the revenue would continue to escalate, especially given the fact that Milestone had recently constructed four towers on school sites.

Concluding his presentation, Mr. Forkas said if the School Board decided to permit the location of treepoles on elementary school sites, Milestone would be able to generate over \$3 million per year to the school system and \$7 million over the next four to five years.

In response to a question from Commissioner Sargeant, Mr. Forkas explained that a school would benefit from on-site telecommunications infrastructure because it would receive the strongest signal and the ability to use various forms of data, such high speed Internet, at a reduced cost.

Responding to a question from Commissioner Flanagan, Mr. Forkas noted that Milestone located telecommunications facilities on light poles at athletic fields on high school and middle school properties.

Chairman Hall recommended that Milestone reinforce the method of mounting antennas on platforms that faced the same direction so they looked uniform. Mr. Forkas said he would ensure that this directive was included in Milestone's lease agreements with carriers.

Commissioner Murphy explained that at a meeting of the Telecommunications Committee, he, Mr. Marshall, Mr. Tistadt, and other FCPS staff had discussed the need for the School Board, FCPS staff, and the applicant to become more involved in the Planning Commission's 2232 application process by sharing information and attending public hearings, with which they had complied. He noted that he and Mr. Marshall had also asked FCPS to expand its tower program to keep the local schools and PTAs informed. Commissioner Murphy said he expected this trend to continue as middle school sites were proposed because the Commission needed support from

the School Board during the 2232 process. Mr. Tistadt pointed out that the School Board no longer voted on 2232 applications.

Mr. Tistadt said he thought that based on the discussion this evening it appeared that there was enough support from the Planning Commission for the same presentation to be made at a School Board work session. He noted that at this work session, he would determine the School Board's willingness to permit monopoles at middle schools and perhaps elementary schools.

In reply to questions from Commissioner Flanagan, Mr. Forkas stated that Milestone no longer built flush mount and flagpole towers because they could not cover the demands of the 4G networks. He said Milestone engineered and designed all its poles to handle up to five carriers.

Replying to questions from Chairman Hall, Mr. Forkas explained that it would not be economically feasible for Milestone to build a monopole that accommodated only one carrier.

Chairman Hall recalled one vendor who mounted the panel antennas on top of street lights and questioned whether that would work for an athletic light pole. Mr. Forkas pointed out that this vendor was Ricochet Networks, which used to provide dial-up speed Internet service.

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Commissioner Hart MOVED THAT THE MINUTES OF OCTOBER 29, 2009 BE APPROVED.

Commissioner Alcorn seconded the motion which carried unanimously.

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The meeting was adjourned at 8:16 p.m.  
Janet R. Hall, Chairman

An audio recording of this meeting is available in the Planning Commission Office, 12000 Government Center Parkway, Suite 330, Fairfax, Virginia 22035.

Minutes by: Kara A. DeArrastia

Approved: April 14, 2010

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Linda B. Rodeffer, Clerk  
Fairfax County Planning Commission

**Wireless Telecommunication  
Infrastructure**



***Milestone***  
COMMUNICATIONS

**Presentation to the  
Fairfax County VA Planning Commission**

**January 21, 2010**

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**Since 2000, Milestone has partnered with Fairfax County Public Schools to develop and manage over 30 wireless communication towers on school properties.**



**We design, permit, construct, lease and own high quality, well-located, facilities that are compatible with the surrounding environment**

# Agenda

1. Discuss the current trends that are driving the demand for new wireless infrastructure in Fairfax County VA.
2. Present the findings of the recent update to the FCPS Radio Frequency safety analysis
3. Update on the wireless tower partnership between FCPS and Milestone & introduce Middle School and future FCPS locations.
4. Q&A





# MAJOR TRENDS

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# Major Trends in Wireless

1. Wireless: Its not about the “phone.”  
(New array of “intelligent” internet enabled devices)
2. Next generation wireless networks: 3G, 4G, Wimax and LTE
3. Why wireless infrastructure must be closer to the customer.
4. Consumers beginning to view wireless as an “Essential Infrastructure”, like power, gas and cable.



# The Mobile Internet is...

## The next major wave in the computing cycle



*Mainframe  
Computing  
1950s*



*Mini  
Computing  
1960s*



*Personal  
Computing  
1980s*



*Desktop Internet  
Computing  
1990s*



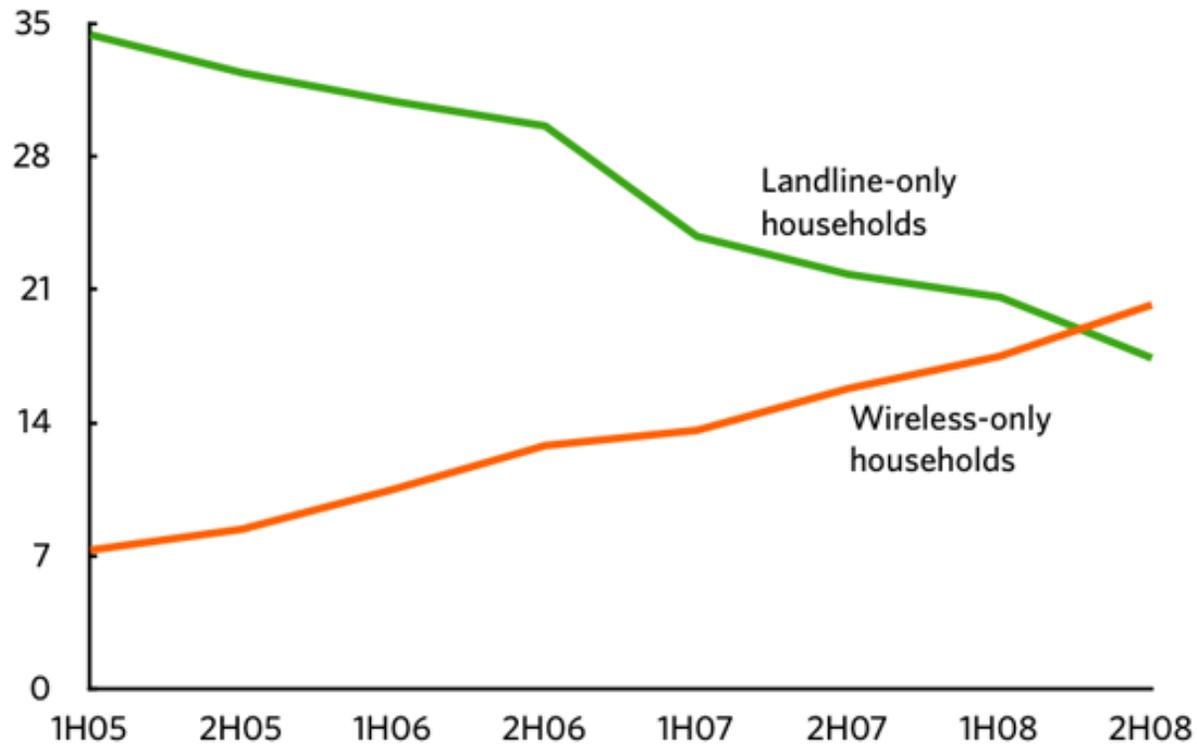
*Mobile Internet  
Computing  
2000s*



# Consumers are dropping “land line” phones

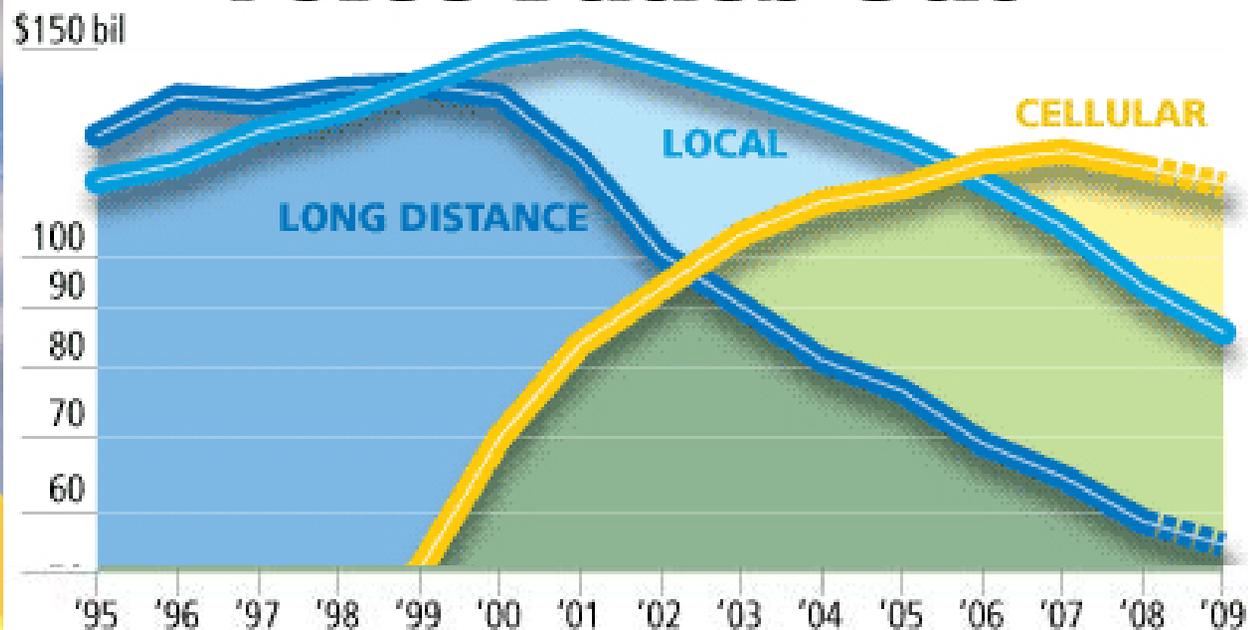


US households with wireless or landline phone service  
Percent



# Consumers are talking less

## Voice Fades Out



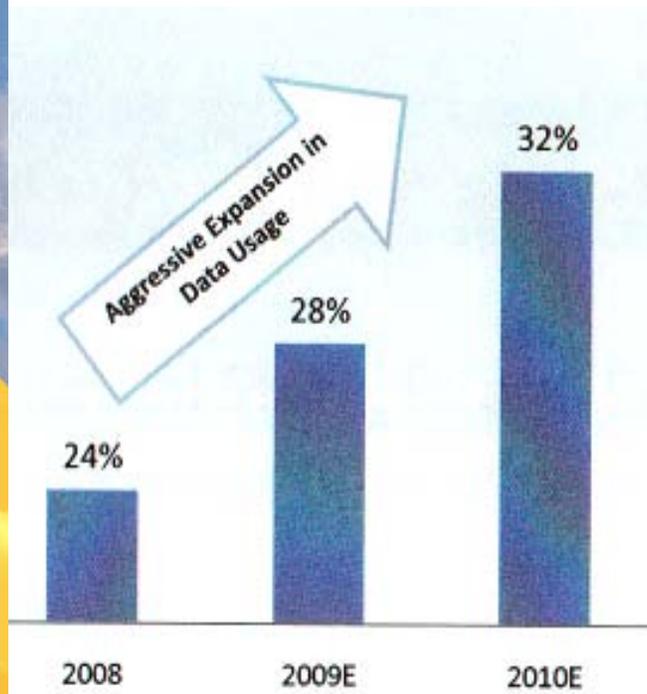
Constant 2009 dollars. Sources: FCC; Telecommunications Industry Association; Wilkofsky Gruen Associates; Forbes.



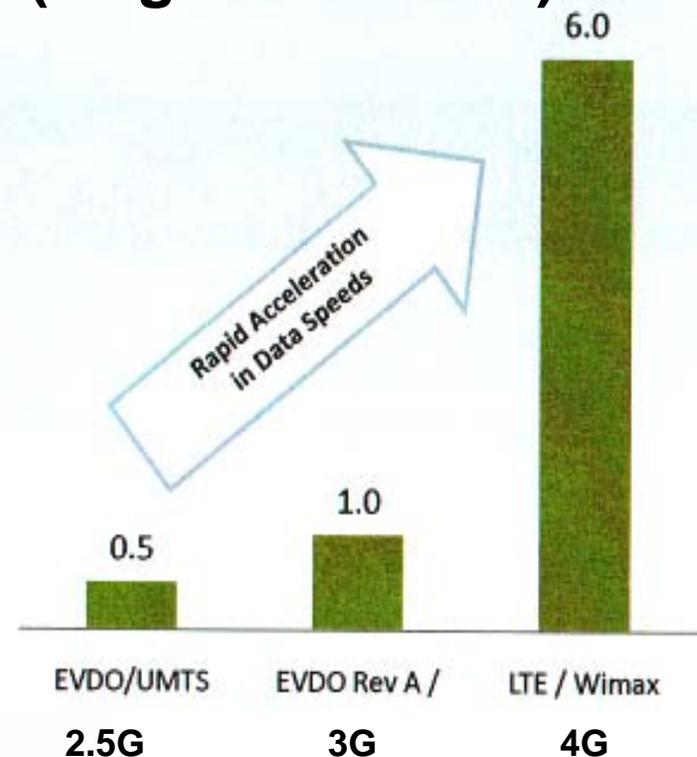
# ...and using more Wireless Data as wireless networks get faster...



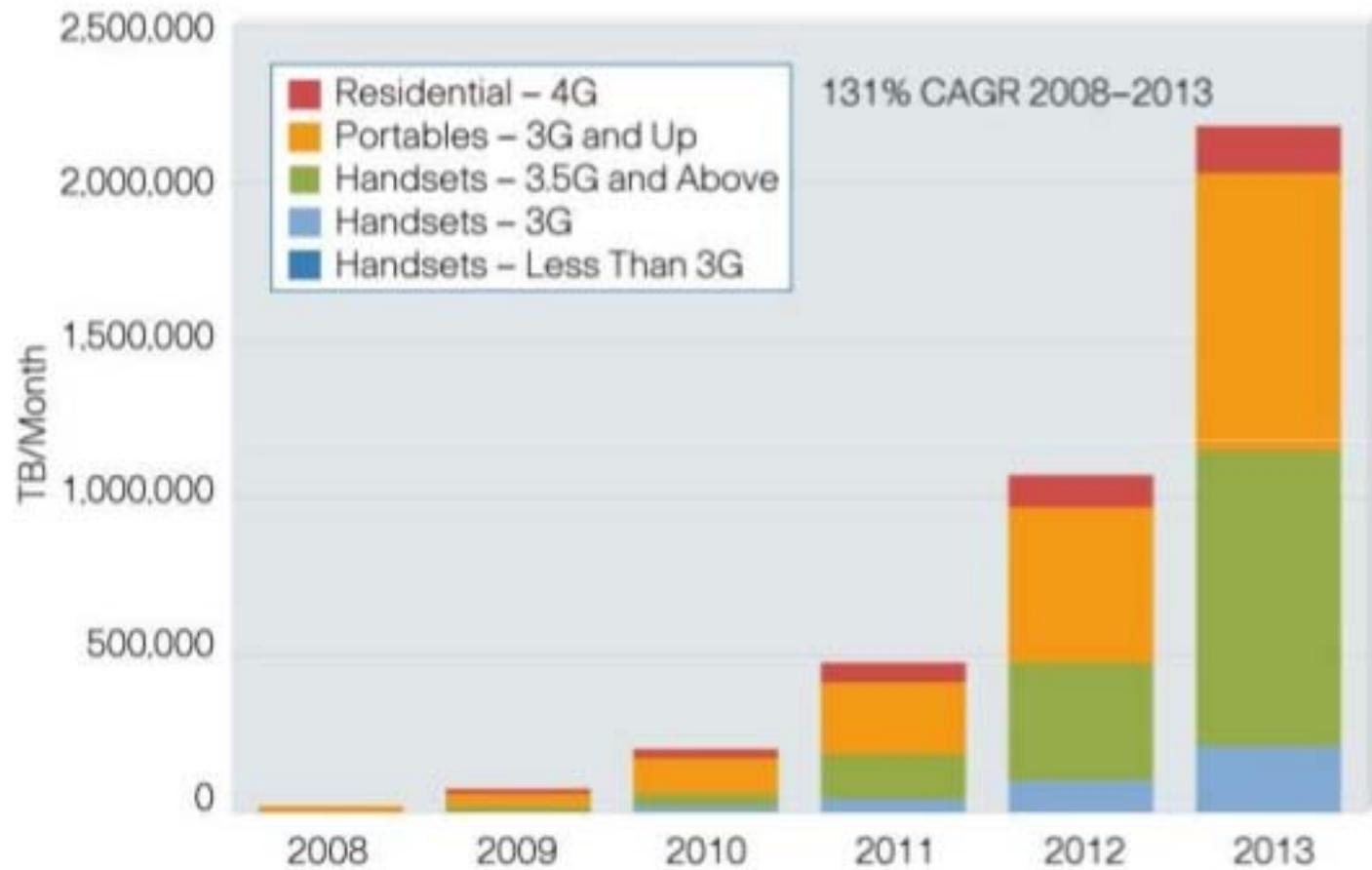
## Data as a % of US Carrier Service Revenue



## Typical Smartphone Data Rates (Megabit/Second)



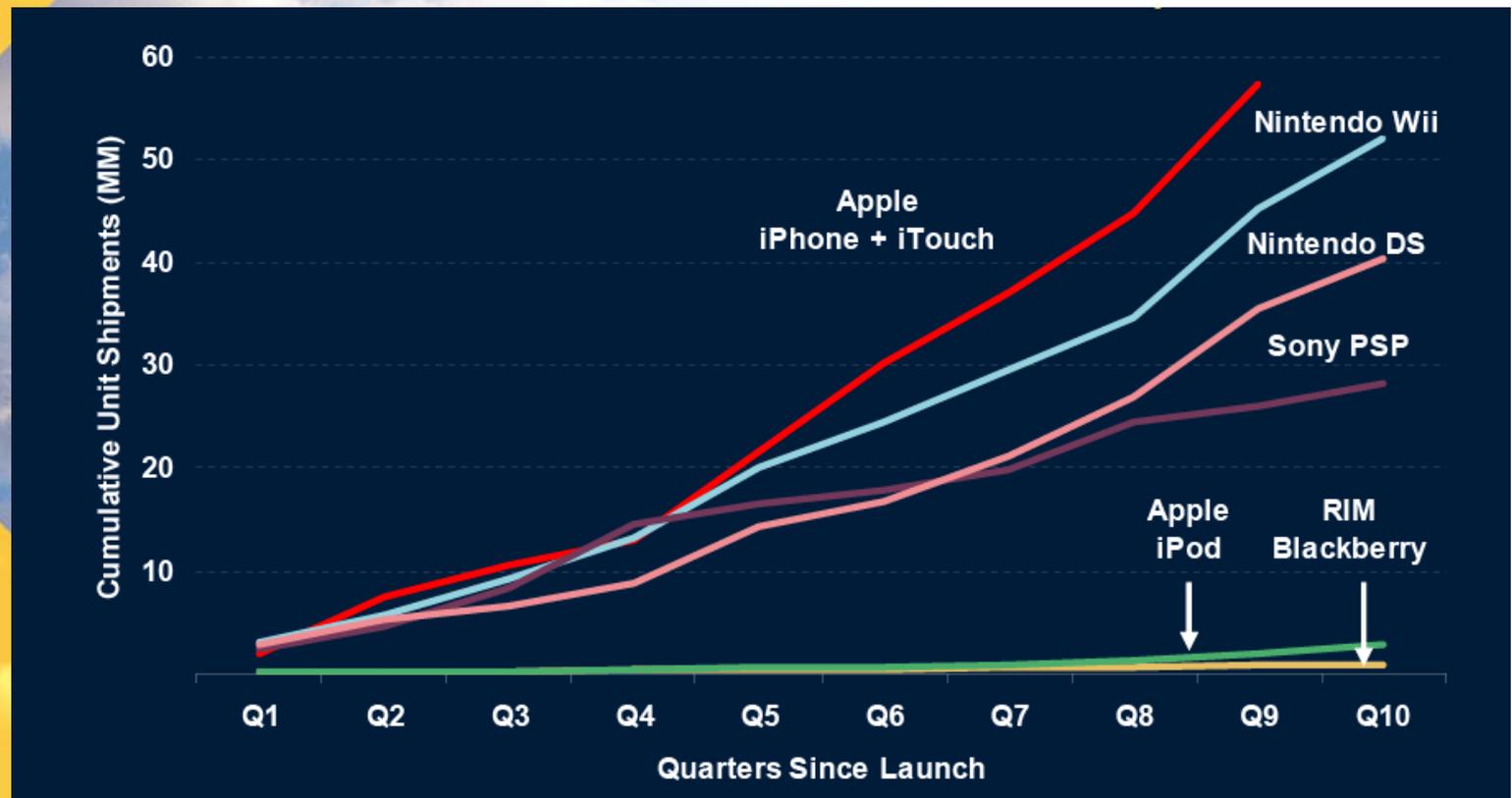
# Wireless laptops & mobile phones will soon drive traffic growth to unprecedented levels



Source: Cisco, 2009

1/21/201

# The iPhone has the fastest hardware user growth rate in tech history

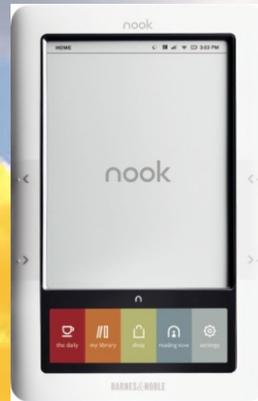


**60 million users in 8 quarters**

# Mobile Computing is driving demand



Mobile Internet  
Devices



Counter clockwise:  
Amazon Kindle Barnes  
& Noble "Nook",  
Garmin GPS, Garmin  
Phone, Google Phone,  
iPhone, Blackberry,  
Verizon USB, Asus  
notebook.

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# Wireless at Home

Always connected to the Internet

Remotely controlled

Receive software updates



MOBILE TECHNOLOGY



# 4G Wireless Networks are 5x Faster than Broadband



Worldwide Interoperability for  
Microwave Access



Long Term Evolution



clearwire<sup>®</sup>  
wireless broadband



Clearwire wants to be your “total” wireless provider

**As Broadband/Cable companies compete with  
Wireless Companies, lower prices will result.**



**Broadband & Cable Providers**



**Wireless Providers**

**This will narrow the "Digital Divide"**

# “Search Rings” are getting smaller





# RF Safety

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# Wireless RF Health

**Study demonstrated the Schools sites with the highest RF had NO Towers**

## **Jan 2005 FCPS RF Health Study Completed**

Doug O'Neill, FCPS health officer tests radio frequencies

- ❖ 7 existing tower locations \*
- ❖ 8 randomly selected school sites
- ❖ 30 different measurements at each school location.
- ❖ Results = All sites over 1,000 x lower that FCC standard
- ❖ Sites w/ highest RF had NO TOWER..close to TV/AM/FM stations.



## **Dec 2009 FCPS RF Health Study Update**

Study updated by Site Safe Inc with Doug O'Neill review)

- ❖ 4 Sites tested (Centreville, Langley Thomas Jefferson & Chantilly)
- ❖ Results = All sites still over 1,000 x lower than FCC Standard

\* (Schools tested : Centreville, Chantilly, Langley, South Lakes Thomas Jefferson, Westgate, Lorton)



The maximum levels measured from **all** the wireless carriers at any of the Fairfax County Schools are similar to what you would be exposed to a couple of feet from a single home wireless (WiFi) access point.



**Milestone**  
COMMUNICATIONS

# FCPS Tower Program

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# Public Sites

## 2232 Faster Approval Times

Speed to Market:

Fairfax County Land Use Policies favor public sites as locations for new towers over private sites

MILESTONE TOTAL TIMELINE = 8 MONTHS



PRIVATE SITE TOTAL TIMELINE = 12 MONTHS



# Lightpole Towers

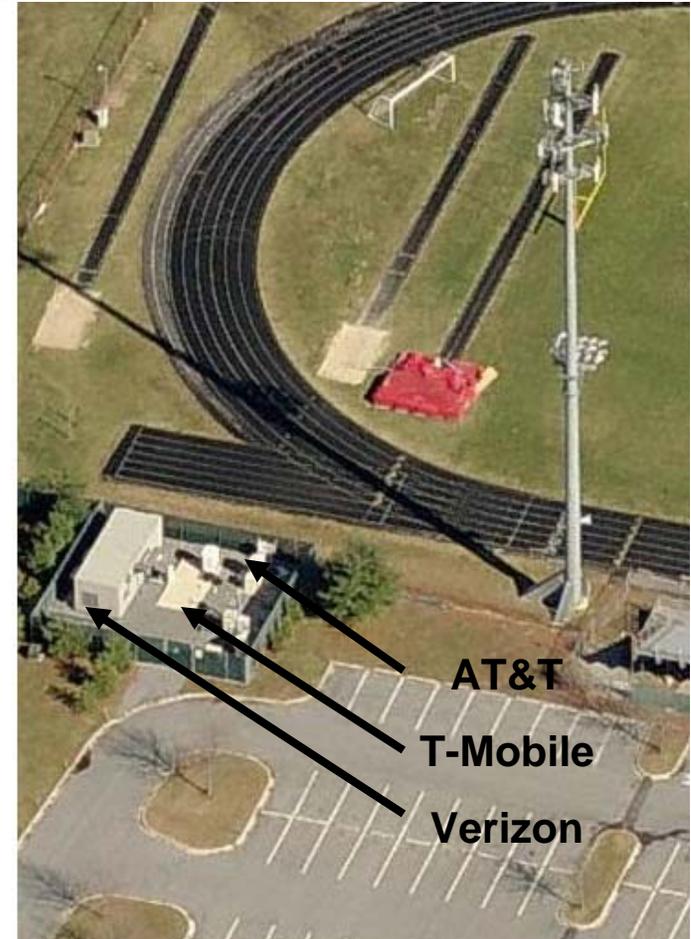
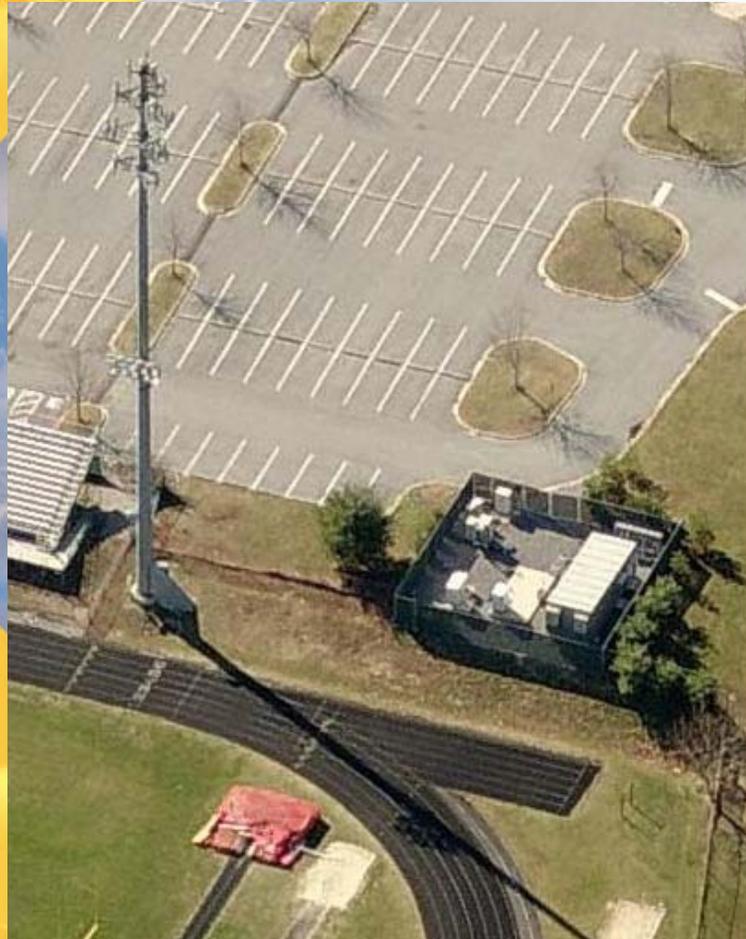
- ❖ Milestone replaces athletic field lighting structures with new wireless tower.
- ❖ Field lights are “re-mounted” & space above is leased to wireless carriers.
- ❖ Poles are designed for up to 5 wireless carriers who pay rent to Milestone.
- ❖ Milestone collects rent and shares revenue with the school



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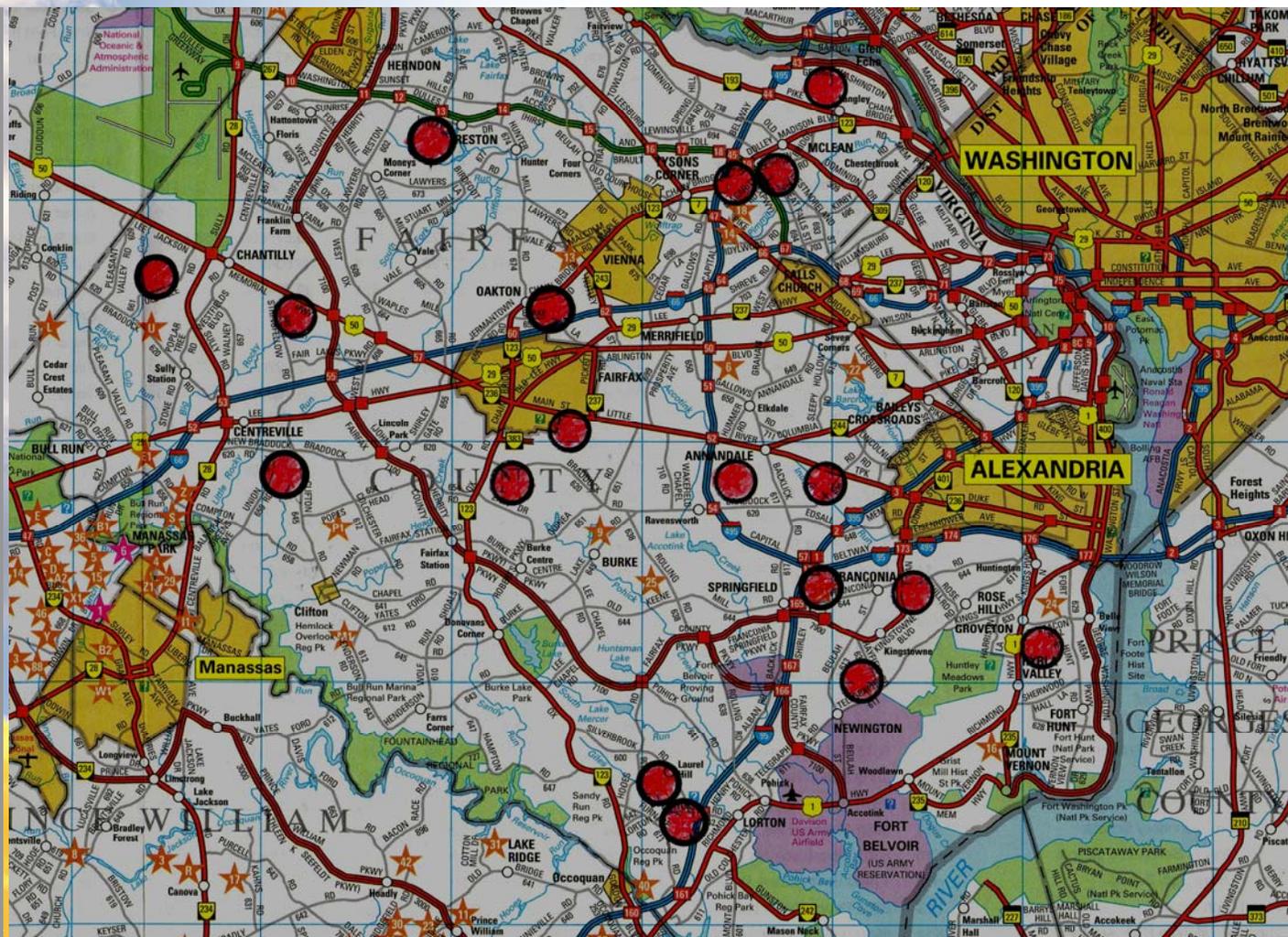
# Tower and Equipment Compound



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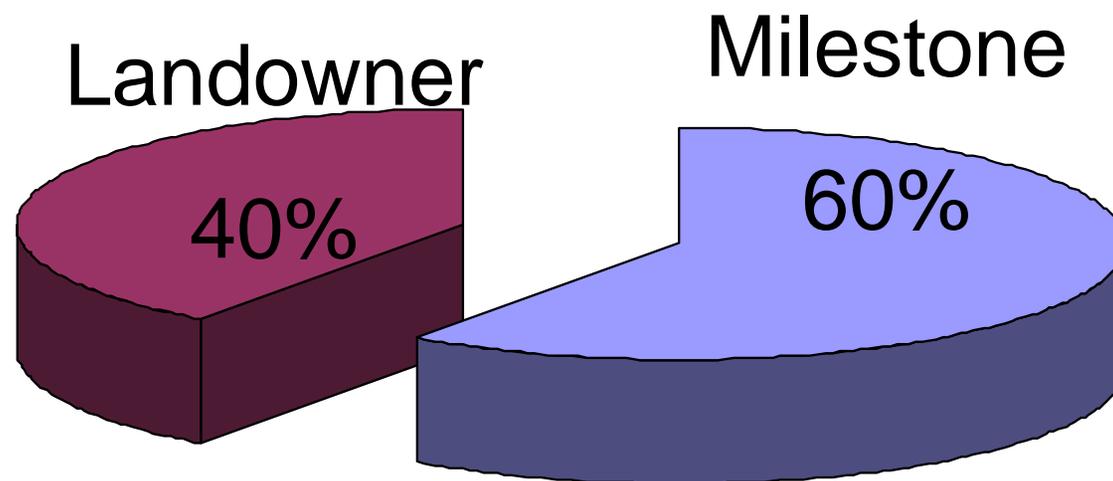
# Fairfax County Public School Tower Locations

Annandale High School  
Bryant High School  
Centreville High School 1 & 2  
Chantilly High School 1 & 2  
Edison High School  
Hayfield Secondary School  
Langley High School 1, 2 & 3  
Lee High School  
Lorton Administrative Center  
McLean High School  
Oakton High School  
Robinson Secondary School  
South County High  
South Lakes High School 1 & 2  
T. Jefferson High School 1 & 2  
Westfield High School  
Westgate Elementary School  
Woodson High School

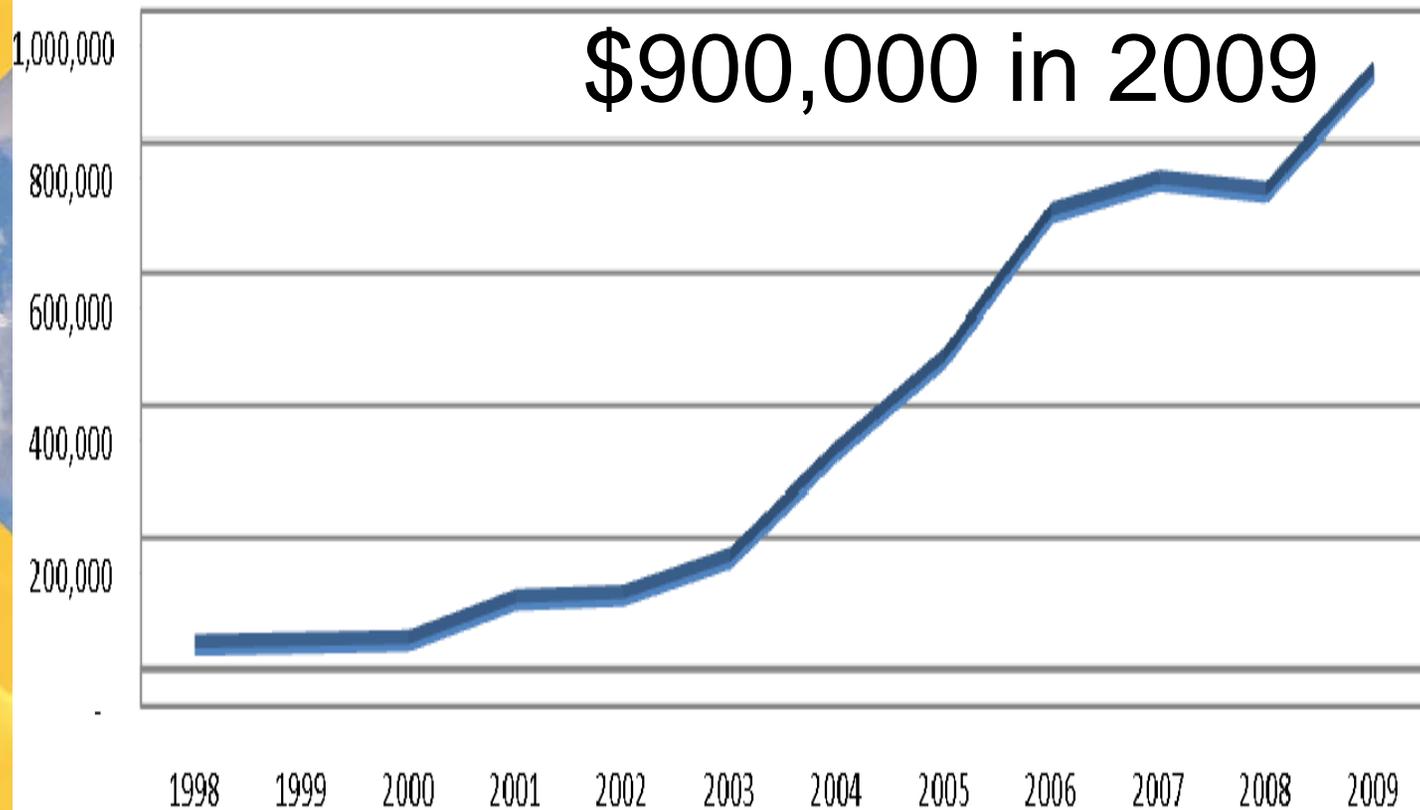


# Tower revenue is shared with Fairfax Schools

*Between  
\$10,000 to \$50,000  
per Year /Per Tower*



# Revenue from Wireless Tower Program 1998 to 2009



# Proposed Fairfax County Middle & High School Sites

- |                        |                  |
|------------------------|------------------|
| 1. Madison High        | Vienna , VA      |
| 2. Sandberg Middle     | Alexandria, VA   |
| 3. Longfellow Middle   | Falls Church, VA |
| 4. Thoreau Middle      | Vienna, VA       |
| 5. Key Middle          | Springfield, VA  |
| 6. Carson Middle       | Chantilly, VA    |
| 7. Holmes Middle       | Springfield, VA  |
| 8. Stone Middle        | Chantilly, VA    |
| 9. Sprague Tech Center | Annandale, VA    |
| 10. Irving Middle      | Springfield, VA  |



# Tree Pole Towers



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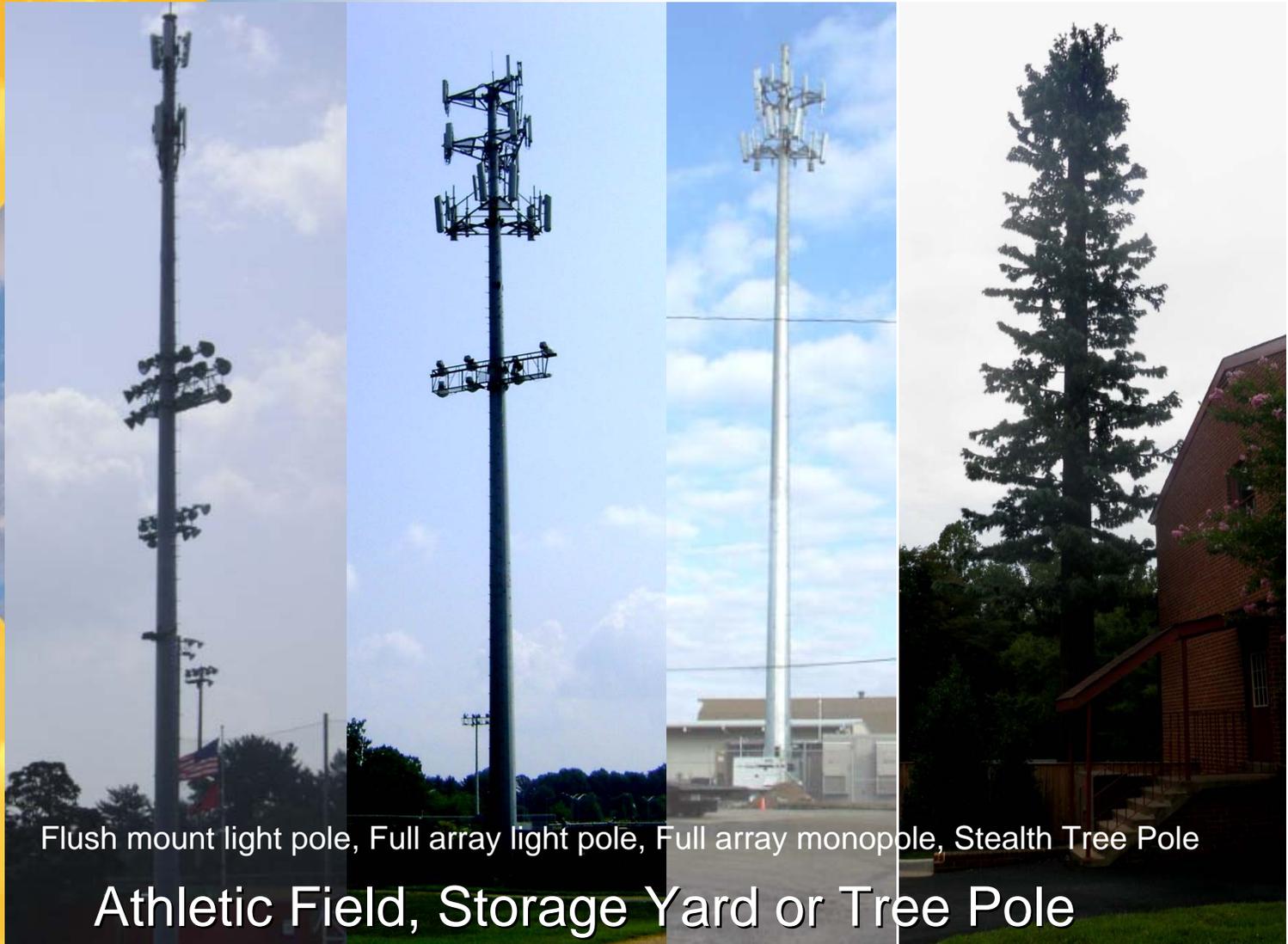
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# Tower Design Options



Flush mount light pole, Full array light pole, Full array monopole, Stealth Tree Pole

Athletic Field, Storage Yard or Tree Pole

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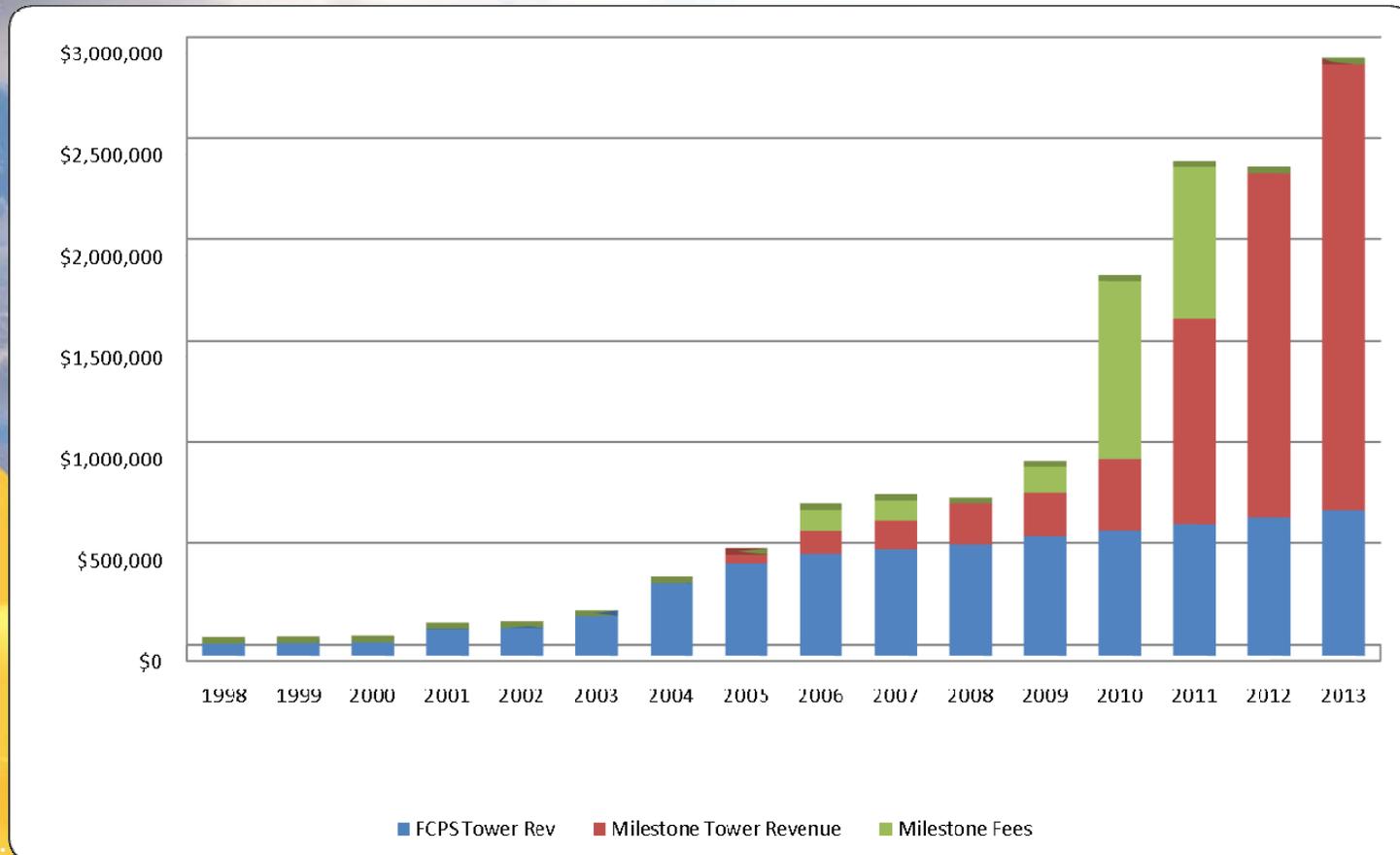
# Fairfax County Public School Sites

1. Langley High 1	McLean VA	1997
2. South Lakes 1	Reston VA	1997
3. Westgate School	McLean, VA	2001
4. Lorton Center	Lorton VA	2001
5. Centreville High 1	Centreville VA	2002
6. Chantilly High 1	Chantilly VA	2002
7. Langley High 2	McLean VA	2002
8. South Lakes High 2	Reston, VA	2002
9. Thomas Jefferson 1	Falls Church VA	2002
10. Oakton High	Oakton, VA	2004
11. Edison High	Springfield, VA	2005
12. Annandale High	Annandale, VA	2005
13. Robinson High	Fairfax, VA	2005
14. McLean High	McLean, VA	2005
15. Bryant Alt High	Alexandria, VA	2006
16. Hayfield High	Alexandria, VA	2006
17. Woodson High	Fairfax, VA	2006
18. Centreville High 2	Centreville VA	2009
19. Langley High 3	McLean VA	2009
20. South County High	Lorton VA	2009
21. <b>Lee High School</b>	<b>Springfield VA</b>	<b>2010</b>
22. <b>Chantilly High 2</b>	<b>Chantilly VA</b>	<b>2010</b>
23. <b>Westfield High</b>	<b>Chantilly VA</b>	<b>2010</b>
24. <b>Thomas Jefferson 2</b>	<b>Falls Church VA</b>	<b>2010</b>



**Milestone anticipates building 70 new towers in the next 2 - 3 years on FCPS locations**

**Potential Annual Revenue = \$3 million by 2013**





**Presentation to the  
Fairfax County VA Planning Commission  
January 21, 2010**

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