

**AVAILABILITY OF ADVANCED TELECOMMUNICATIONS  
CAPABILITY IN PUBLIC BODIES**

**YEAR 2008 REPORT**

Economic Research and  
Financial Analysis Division

Public Utility Commission of Oregon

November 2008

## **Availability of Advanced Telecommunications Capability in Public Bodies - 2008**

Among the amendments HB 2577 enacted in 2003, was the requirement for the OPUC to develop information on "The number of public bodies, as defined by ORS 174.109, providing basic telecommunications infrastructure so that private entities may use that infrastructure to provide advanced information and communications services."

According to ORS 285B.486, "advanced telecommunications facilities" means high-speed, dedicated, or switched broadband telecommunications infrastructure or equipment that enables users to send or receive high quality voice, data, or video telecommunications using any technology.

While the statutory requirement to conduct the survey has sunset, in order to monitor and analyze the market for telecommunications services, during fall 2008, the OPUC staff identified and surveyed public bodies in Oregon to gather information on the existence and use of advanced telecommunications facilities.

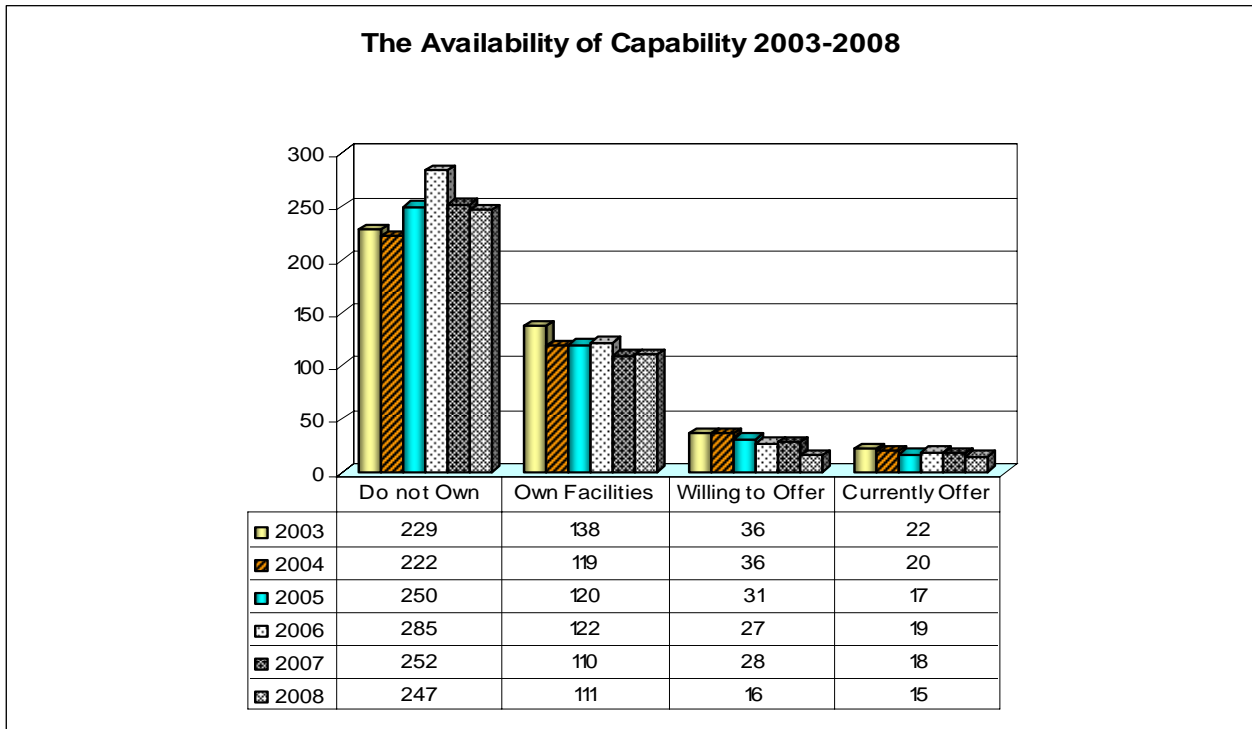
### **Survey Results:**

#### **I. Market in General - Statewide**

This is the fourth annual survey of public bodies on the availability of advanced telecommunications capability. The survey was sent to 524 public bodies in Oregon of which 358 were completed and returned for a response rate of 68 percent.

There were no significant changes in the 2008 availability of high-speed and advanced telecommunications capability in public bodies compared to prior years' survey results. Of the 358 respondents, 69 percent (247) do not own advanced telecommunications facilities, while 31 percent (111) of the respondents own some types of facilities. About 14 percent (16/111) of respondents who own some types of facilities are willing to offer some type of high-speed telecommunications services. About 13 percent (15/111) of respondents currently offer high-speed telecommunications services (see Figure 1).

**Figure 1. The Availability of High-Speed and Advanced Telecommunications Capability in Public Bodies**



The survey included three questions.

**1. Do you own the following telecommunications facilities?**

- a. DSL (digital subscriber line)
- b. Coaxial Cable
- c. Fiber Optics (DS-1, DS-3, OCn, SONET, includes Dark Fiber)
- d. Copper Cable (T-1, DS-1)
- e. Satellite or Fixed Wireless
- f. High Bandwidth Switches
- g. Other

Following are descriptions of the various types of advanced telecommunication facilities:

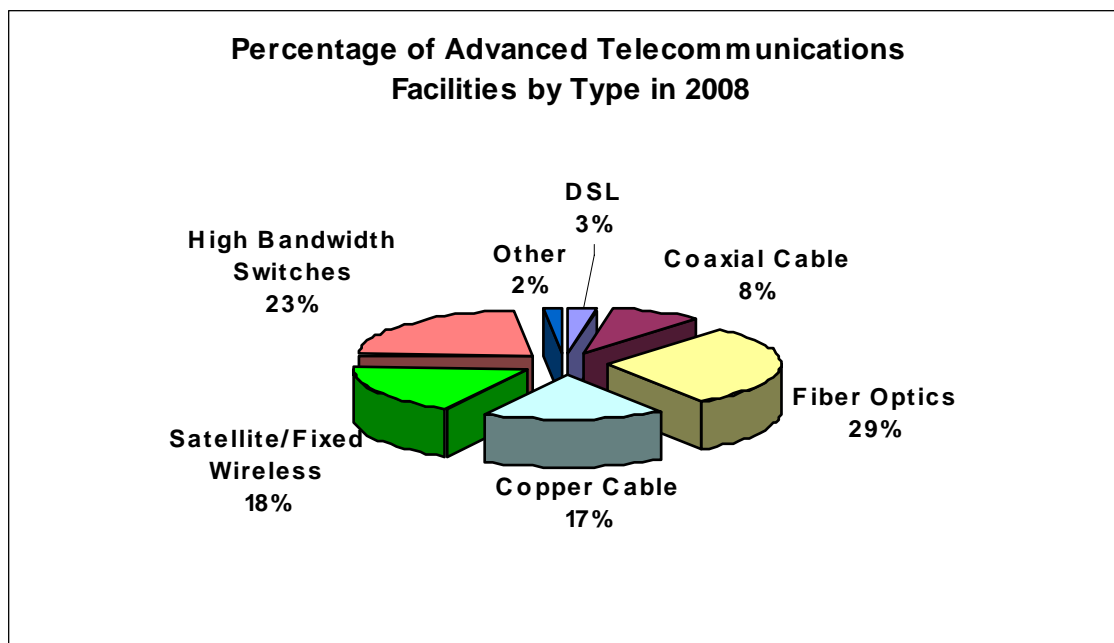
- a. **DSL:** Digital Subscriber Line - is a communication technology that uses existing twisted-pair telephone lines to transport high-bandwidth data, such as Internet, multimedia, and video.
- b. **Coaxial Cable:** Typically used to connect a television to cable TV services, coaxial cable consists of a small copper tube or wire surrounded by an insulating

material and another conductor with a larger diameter, usually in the form of a tube or copper braid.

- c. **Fiber Optics:** High-speed transmission using light to send images (in telecommunications: voice or data) through a bundle of glass fibers.
- d. **Copper Cable:** Copper cable is a pair of traditional copper telephone lines using electric current to carry signals.
- e. **Satellite or Fixed Wireless:** A satellite that is used to relay telecommunications information. Fixed wireless means the use of radio or microwaves to connect any two stationary points.
- f. **High Bandwidth Switches:** Bandwidth, in digital systems, refers to data speed usually measured in bits per second (bps). High bandwidth is often equated with high-speed. ATM (Asynchronous Transfer Mode) is a high bandwidth, low-delay, connection-oriented, packet-like switching and multiplexing technique.
- g. **Other:** Item "other" includes video telecommunications equipment.

Currently, of 524 public bodies in Oregon, 111 own some type(s) of advanced telecommunications facilities. Seventy-five (75) respondents own fiber optics, 58 own high bandwidth switches, 43 own copper cable, 45 own satellite or fixed wireless connections, 21 own Coaxial Cable, 7 own DSL, and 4 own other telecommunications facilities. (See Figure 2 for the percent of advanced facilities by type).

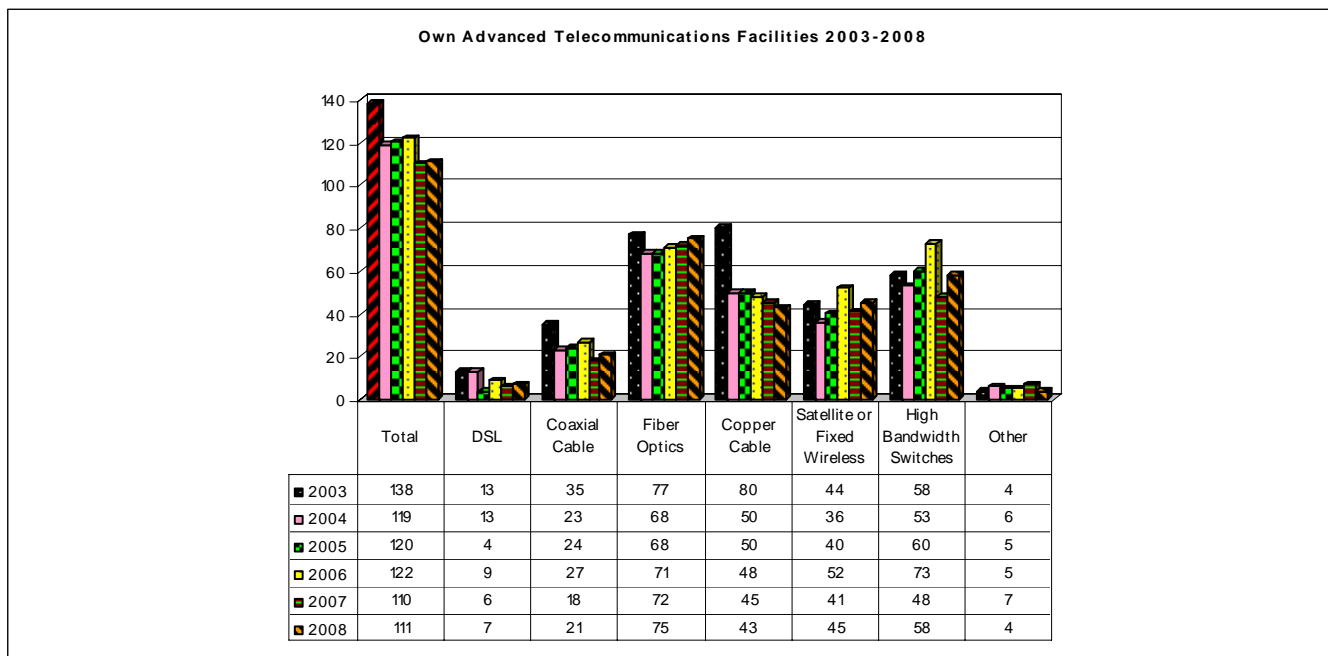
**Figure 2. Percentage of Advanced Telecom Facilities by Type in 2008**



Advanced Telecommunications  
 Capability in Public Bodies - 2008

The pie chart of Advanced Telecommunications Facilities by Type shows that 23 percent was High Bandwidth Switches, 3 percent was DSL, 29 percent was Fiber Optics, 17 percent was Copper Cable, 8 percent was Coaxial Cable, and 18 percent was Satellite or Fixed Wireless. The bar chart below displays the data (see Figure 3). The total of the numbers in each row in Figure 3 exceeds the number of responding public bodies with advanced facilities because some own more than one type of advanced telecommunications facilities.

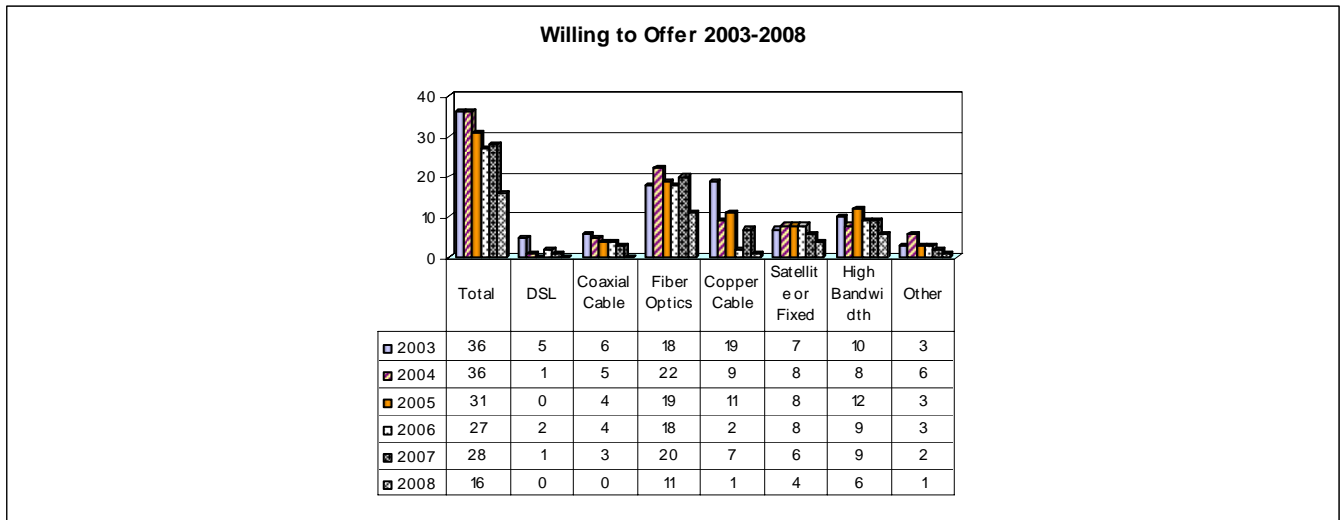
**Figure 3. Number of Public Entities Owning Advanced Telecommunications Facilities by Type 2003-2008**



**2. If you own telecommunications facilities above, are you willing to offer telecommunications facilities to private entities for their use for advanced telecommunication services? If yes, indicate which facilities from the above list?**

Of the respondents who own facilities 14 percent (16 public bodies) said they are willing to offer their facilities for use by private entities. Eleven respondents are willing to offer fiber optics, while one is willing to offer Copper Cable, four are willing to offer satellite or fixed wireless, and six are willing to offer high bandwidth switches. (See Figure 4).

**Figure 4. Number of Public Bodies Owning Facilities Willing to Offer Use to Private Entities**

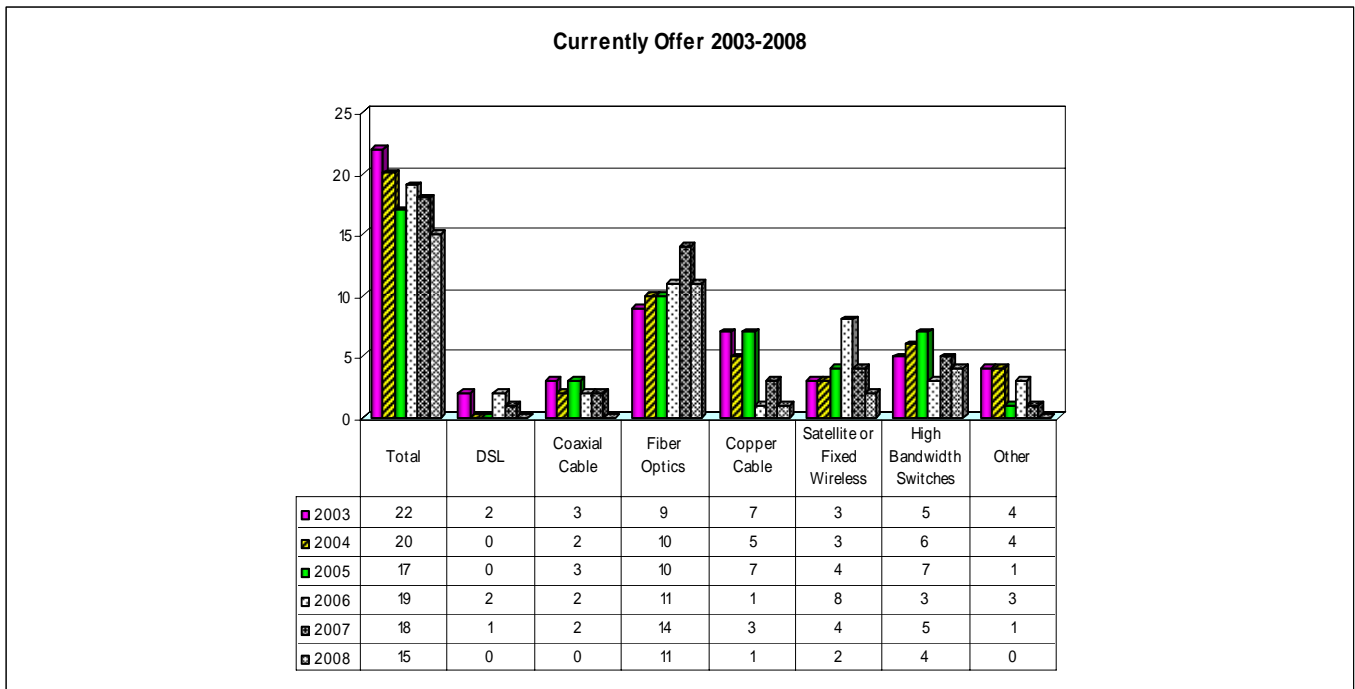


Fifteen percent of Fiber Optics owners (11/75) are willing to offer those facilities to private entities, followed by 10 percent for High Bandwidth Switches, and 10 percent for Satellite or Fixed Wireless.

**3. If you own telecommunications facilities above, do you currently offer telecommunications facilities to private entities for their use for advanced telecommunications services? If yes, indicate which facilities from the above list?**

Fourteen percent (15/111) of the public bodies with advanced facilities said they currently offer those facilities to private entities for their use for advanced telecommunications services. Eleven respondents currently offer Fiber Optics, two offer Satellite or Fixed Wireless, and four offer High Bandwidth Switches facilities. As Figure 5 indicates, there has been little change over the last five years in the number of public bodies that offer the use of their advanced telecommunications facilities to private entities.

**Figure 5. Number of Respondents Owning Facilities Currently Offering Service to Others**

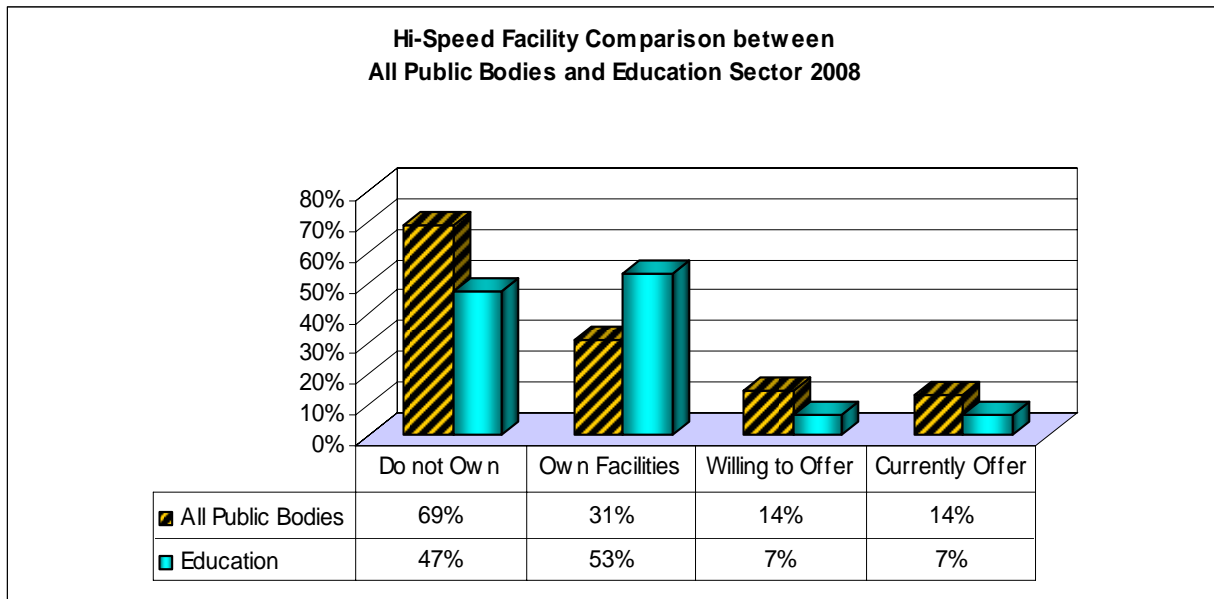


## II. Education Sector

Quality education is driving demand for high-speed connections and faster computers. Advanced high-speed telecommunications infrastructure is crucial in order to achieve the expected growth for the public education sector targeted by the state. The greater bandwidth access and higher speed data transmission will clearly provide a competitive advantage to the quality education and information solutions in Oregon.

The survey showed that 65% of public bodies in Oregon are education groups. Among 358 respondents, 144 (62%) are school districts, colleges, and universities. Findings show that of the 144 respondents in the education sector, 53 percent (76 schools) own some form of advanced telecommunications facilities, compared to 31 percent of public bodies statewide. Seven percent (5 schools) of the education sector respondents that own advanced facilities are willing to offer use of those facilities to private entities, compared to 14 percent of all public bodies statewide. Seven percent (5 schools) of respondents currently offer high-speed telecommunications services, compared to 14 percent of all public bodies statewide (see Figure 6).

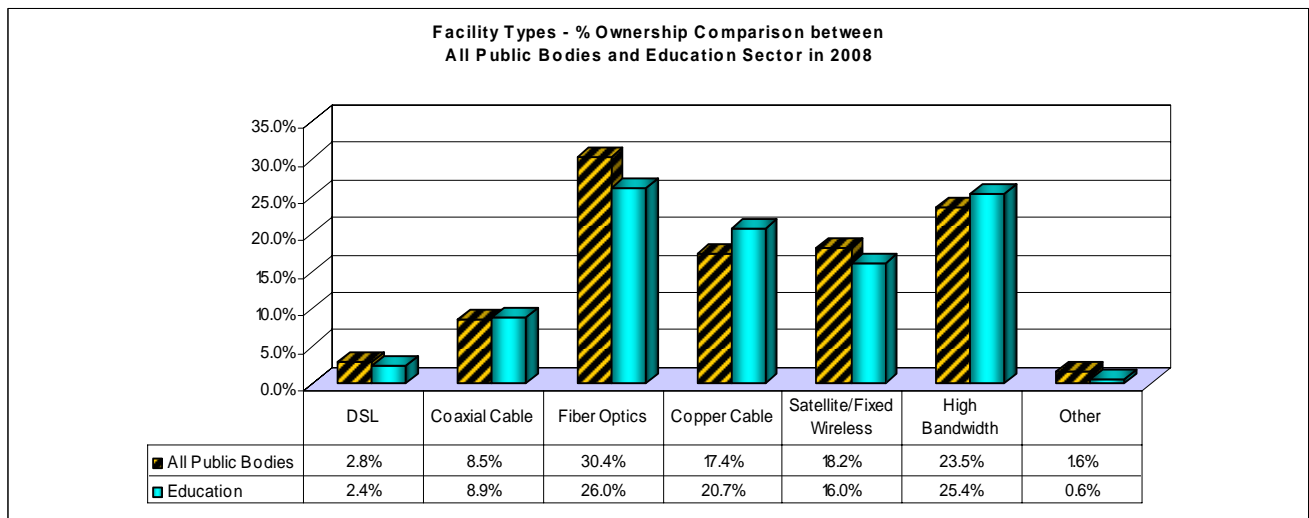
**Figure 6. High-Speed Facility Comparison between All Public Bodies and the Education Sector 2008**



**1. Schools Ownership of Telecommunications Facilities**

Among Oregon Schools, 44 of the survey respondents own fiber optics, 35 own copper cable, 43 own high bandwidth switches, while 27 own Satellite/Fixed Wireless.

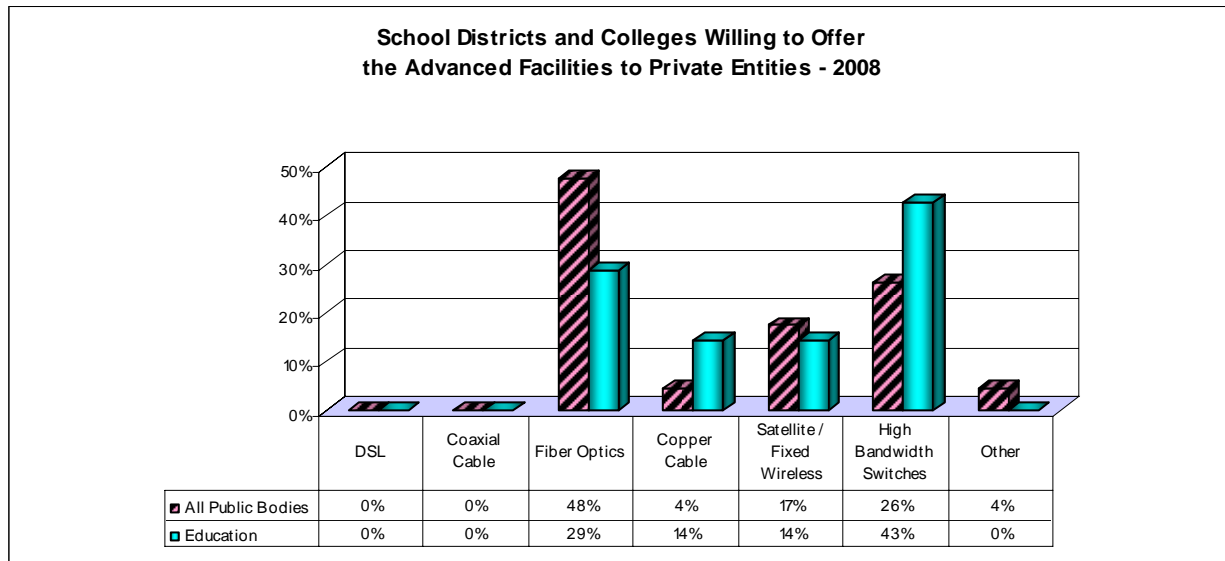
**Figure 7. Distribution of Advanced Telecommunications Facilities Types - Comparison between All Public Bodies and the Education Sector in 2008**



## 2. Schools Willingness to Offer the Telecommunications Facilities

Seven percent (5) of the school respondents said they are willing to offer their owned telecommunications facilities to private entities. This compares to 14 percent (16) of all public body respondents that are willing to offer their owned telecommunications facilities to private entities.

**Figure 8. Distributions of Advanced Facility Types - Owners Willing to Offer to Private Entities – All Public Bodies vs. Education Sector in 2008**



## 3. Percentage of Responding Schools That Currently Offer use of their Telecommunications Facilities to Private Entities

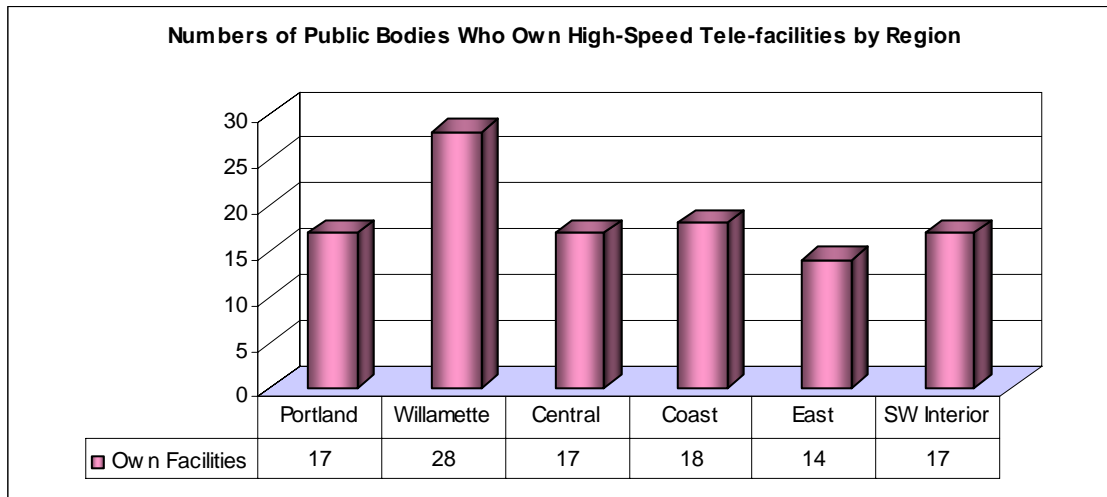
Five schools) of all school respondents currently offer advanced telecommunications facilities compared to 15 of all public bodies. Two schools offer fiber optics compared to 11 of all public bodies, three schools offers High Bandwidth Switches compared to 4 of all public bodies.

## III. Market Distribution – by Region

The 524 public entities were grouped into six regions based on geographic locations. The six regions are: Portland Metropolitan, Willamette Valley, Coast, Central, East, and Southwest Interior.

Distribution across the state of the 111 public entities that own some type of advanced telecommunications facilities is as follows: Willamette 28, East 14, Portland 17, Central 17, Coast 18, and Southwest 17 (see Figure 9).

**Figure 9. Numbers of Public Bodies Who Own Advanced Tele-Facilities by Region**



The survey identified advanced facilities currently owned, those public entities willing to offer use of their advanced facilities to private entities, and those who currently do offer use of their facilities by geographic area. Statewide, of the 111 public bodies that own high-speed facilities, 16 (14%) are willing to offer their facilities to private entities to use, and 15 currently do offer use of their facilities.

Of the 111 public bodies that own advanced facilities, 25 percent (25% = 28/111) are in the Willamette Valley; followed by the East (13%), Portland (15%), Central (15%), Southwest Areas (15%) and Coast (16%).

Of the 16 public entities that are willing to offer their advanced facilities for use by private entities, five are in the Willamette Valley, seven in the Southwest and East, and four in the Central, Coast, and Portland areas..

Of the 15 public entities that currently offer advanced facilities to others to use, five are in the Willamette area, six are in the East and Southwest, and four in the Central, Coast, and Portland areas