

AVAILABILITY OF ADVANCED TELECOMMUNICATIONS  
CAPABILITY IN PUBLIC BODIES

YEAR 2007 REPORT

Economic Research and  
Financial Analysis Division

Public Utility Commission of Oregon

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### **Availability of Advanced Telecommunications Capability in Public Bodies - 2007**

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.

During fall 2007, the OPUC staff identified and surveyed public bodies in Oregon to gather information on the existence and use of advanced telecommunications facilities.

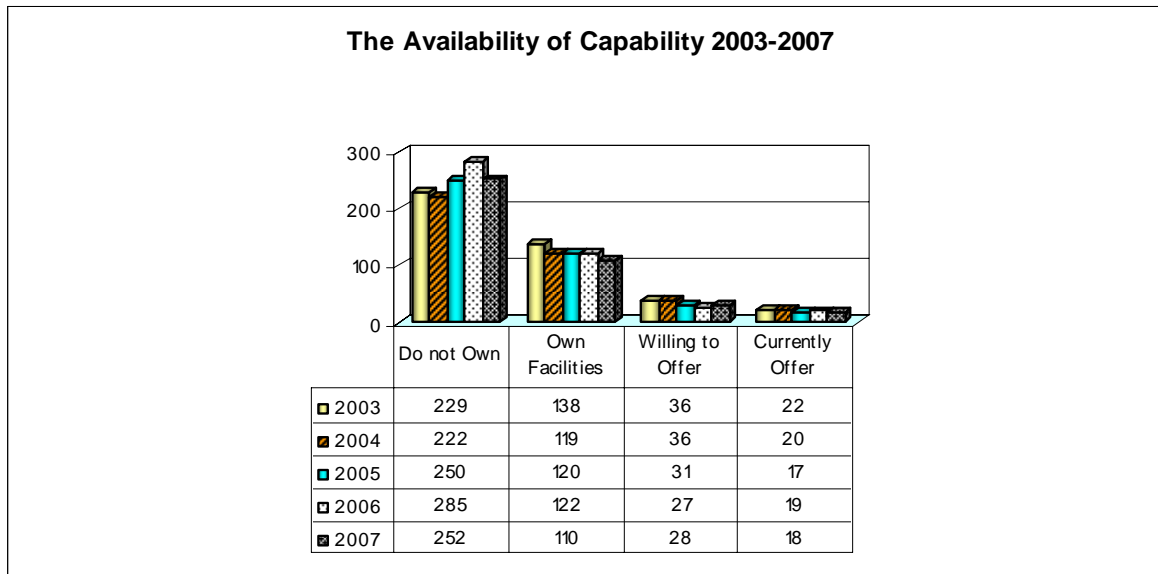
#### **Survey Results:**

##### **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 530 public bodies in Oregon of which 362 were completed and returned for a response rate of 68 percent.

There were no significant changes in the 2007 availability of high-speed and advanced telecommunications capability in public bodies compared to prior years' survey results. Of the 362 respondents, 70 percent (252) do not own advanced telecommunications facilities, while 30 percent (110) of the respondents own some types of facilities. About 7.7 percent (28) of respondents are willing to offer some type of high-speed telecommunications services. About 5 percent (18) 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:

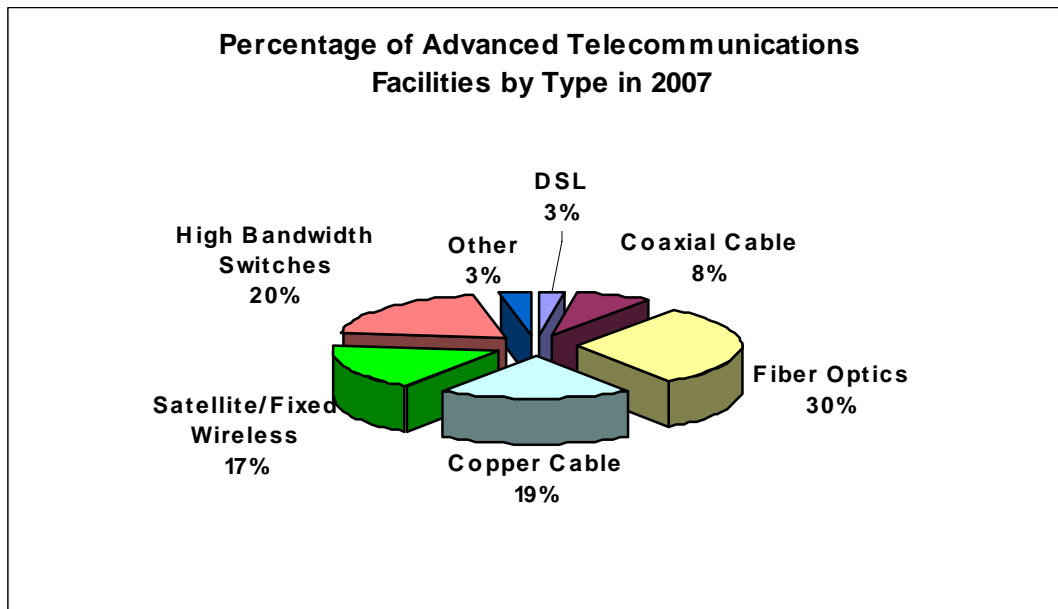
- a. **DSL:** Digital Subscriber Line - is a communication technology that uses existing twisted-pair telephone lines to transport high-bandwidth data, such as Internet, multimedia, and video.
- b. **Coaxial Cable:** Typically used to connect a television to cable TV services, coaxial cable consists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

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- 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 530 public bodies in Oregon, 110 own some type(s) of advanced telecommunications facilities. Seventy-two respondents own fiber optics, 48 own high bandwidth switches, 45 own copper cable, 41 own satellite or fixed wireless connections, 18 own Coaxial Cable, 6 own DSL, and 7 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 2007**

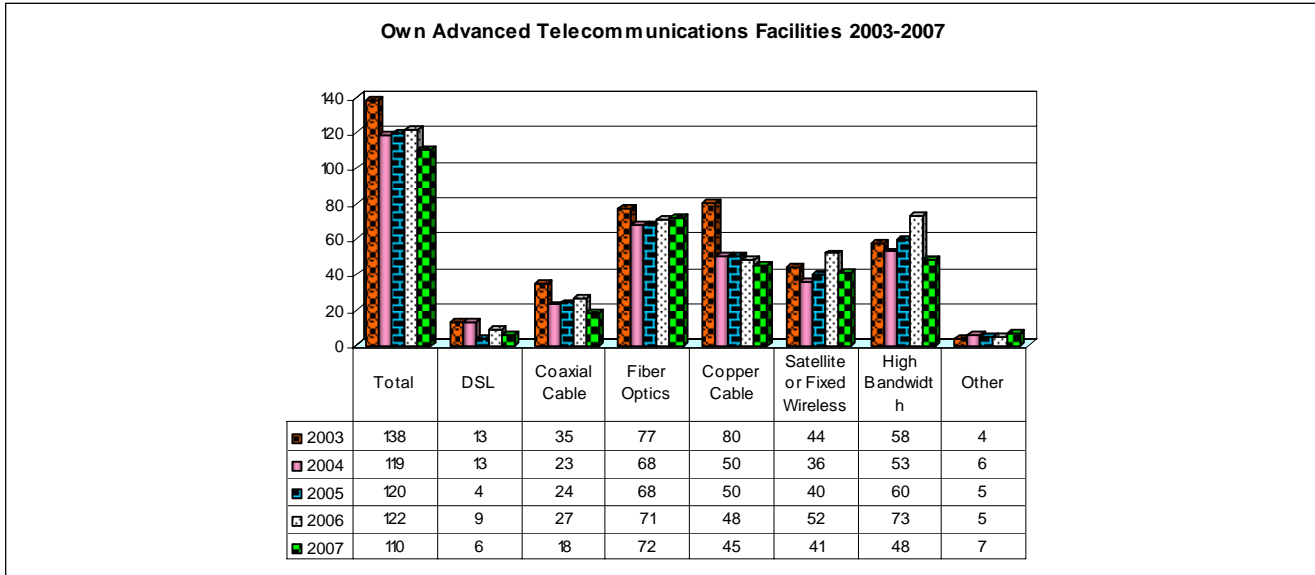


The pie chart of Advanced Telecommunications Facilities by Type shows that 20 percent was High Bandwidth Switches, 3 percent was DSL, 30 percent was Fiber

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Optics, 19 percent was Copper Cable, 8 percent was Coaxial Cable, and 17 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.

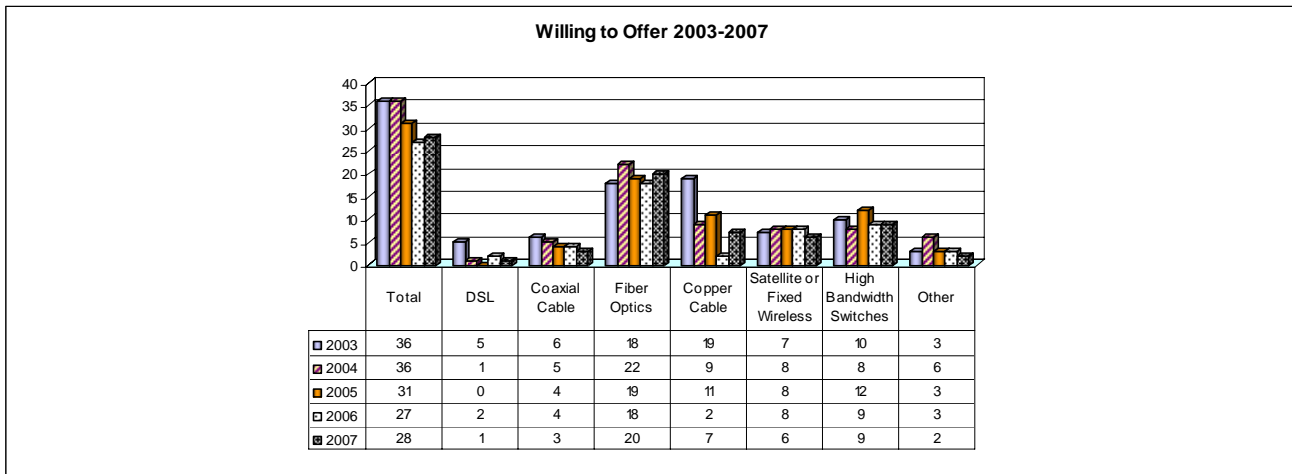
**Figure 3. Number of Public Entities Owning Advanced Telecommunications Facilities by Type 2003-2007**



**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 25 percent (28 public bodies) said they are willing to offer their facilities for use by private entities. Twenty respondents are willing to offer fiber optics, while seven are willing to offer Copper Cable, six are willing to offer satellite or fixed wireless, and nine 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**

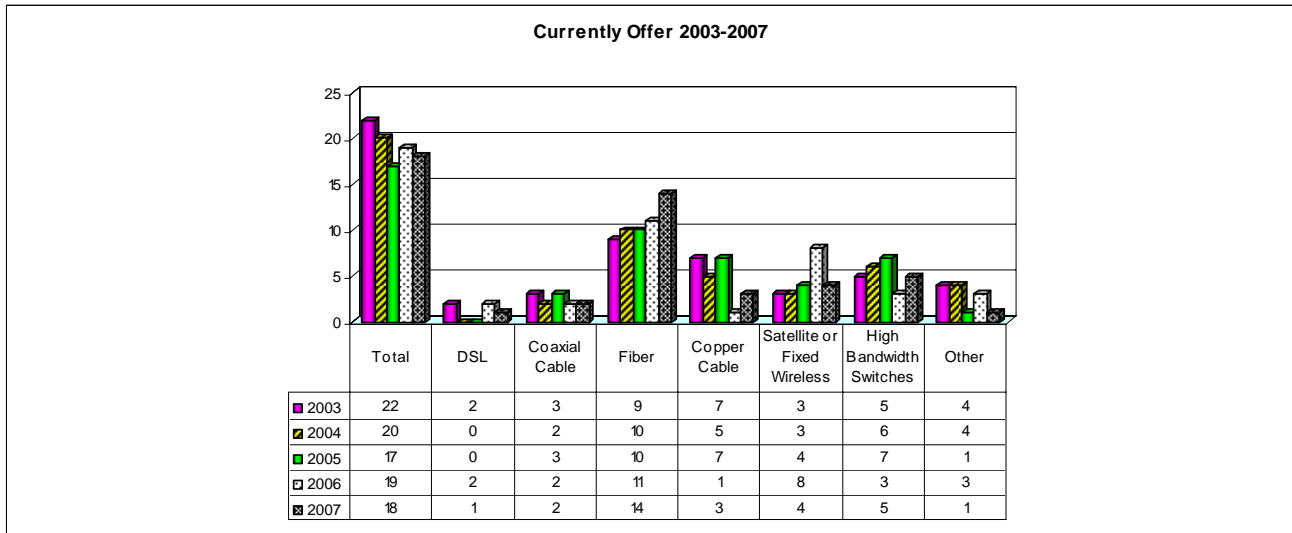


Twenty-eight percent of Fiber Optics owners (20/72) are willing to offer those facilities to private entities, followed by 19 percent for High Bandwidth Switches, and 15 percent for Copper Cable.

**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?**

Sixteen percent (18/110) of the public bodies with advanced facilities said they currently offer those facilities to private entities for their use for advanced telecommunications services. Fourteen respondents currently offer Fiber Optics, four offer Satellite or Fixed Wireless, and five offer High Bandwidth Switches facilities. As Figure 5 indicates, there has been little change over the last four 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**

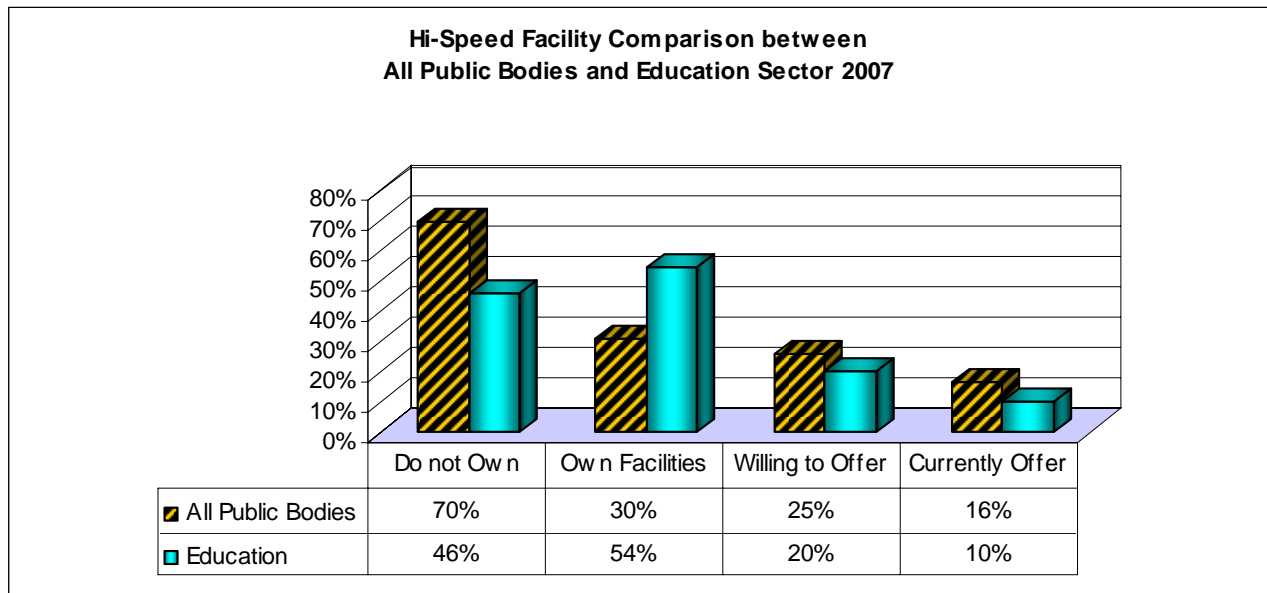


## II. Education Sector

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 among 362 respondents, 150 (41%) are school districts, colleges, and universities. Findings show that of the 150 respondents in the education sector, 54 percent (81 schools) own some form of advanced telecommunications facilities, compared to 30 percent of public bodies statewide. Twenty percent (16 schools) of the education sector respondents that own advanced facilities are willing to offer use of those facilities to private entities, compared to 25 percent of all public bodies statewide. Ten percent (8 schools) of respondents currently offer high-speed telecommunications services, compared to 16 percent of all public bodies statewide (see Figure 6).

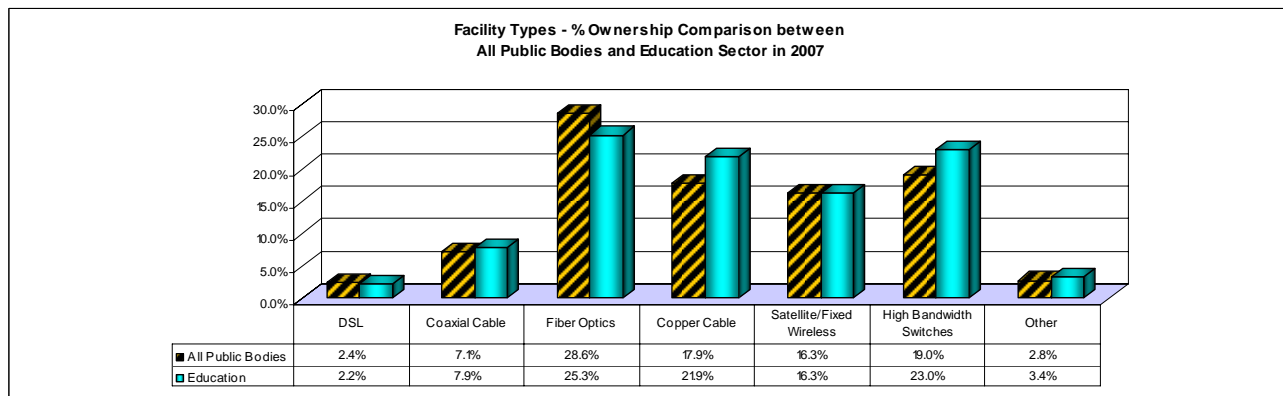
**Figure 6. High-Speed Facility Comparison between All Public Bodies and the Education Sector 2007**



**1. Schools Ownership of Telecommunications Facilities**

Among Oregon Schools, 45 of the survey respondents own fiber optics, 39 own copper cable, 41 own high bandwidth switches, while 29 own Satellite/Fixed Wireless.

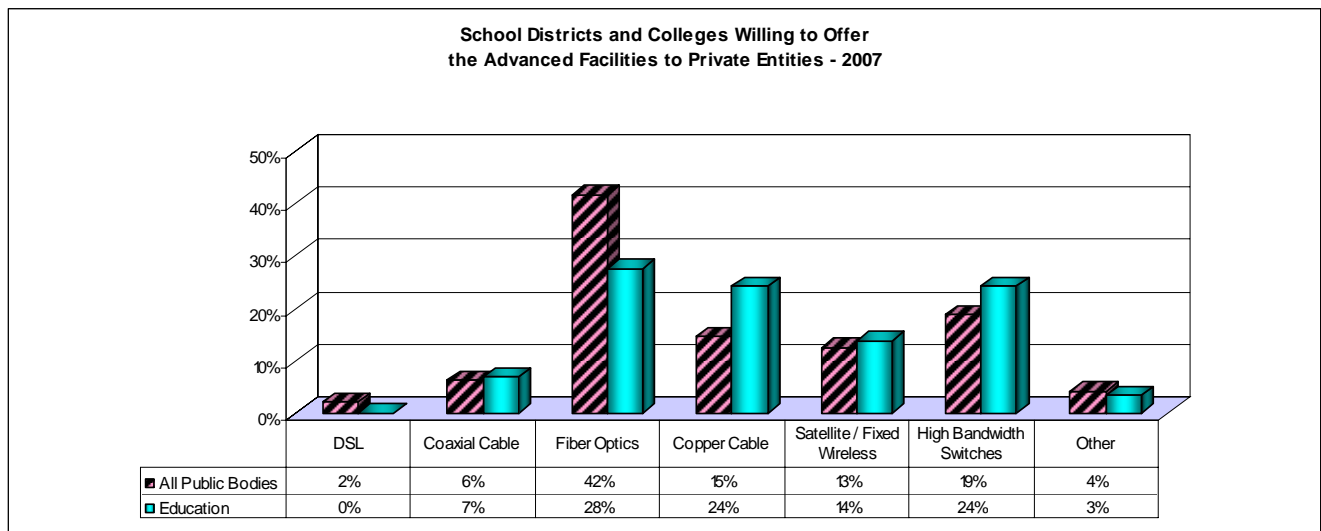
**Figure 7. Distribution of Advanced Telecommunications Facilities Types - Comparison between All Public Bodies and the Education Sector in 2007**



## 2. Schools Willingness to Offer the Telecommunications Facilities

Twenty percent (16) of the school respondents said they are willing to offer their owned telecommunications facilities to private entities. This compares to 25 percent (28) 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 2007**



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

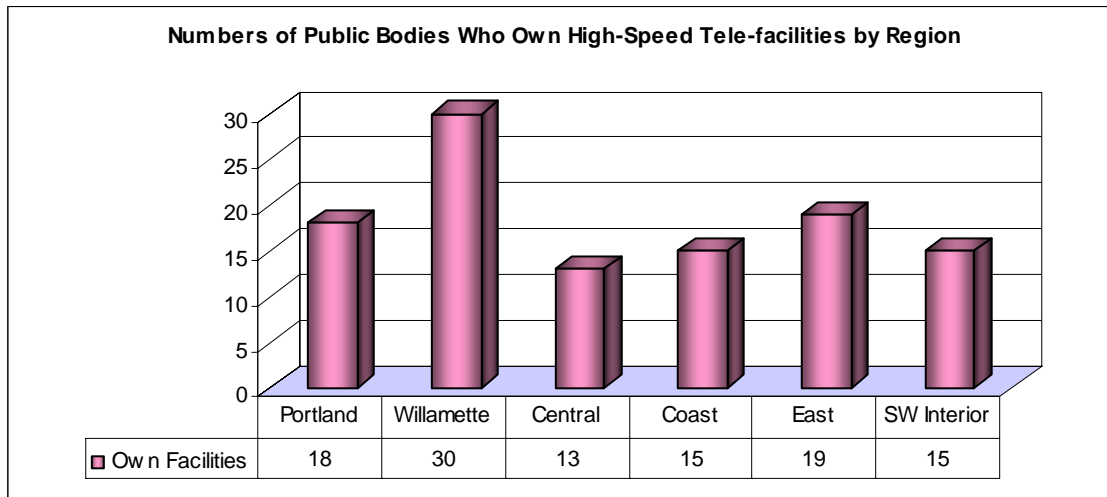
Ten percent (8 Schools) of all school respondents currently offer advanced telecommunications facilities compared to 16 percent (18) of all public bodies. Twenty-Eight percent of schools offer fiber optics compared to 48% of all public bodies, 48% offers Satellite / Fixed Wireless compared to 31% of all public bodies.

## III. Market Distribution – by Region

The 530 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 110 public entities that own some type of advanced telecommunications facilities is as follows: Willamette 41, East 21, Portland 17, Central 17, Coast 11, and Southwest 15 (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 110 public bodies that own high-speed facilities, 28 (25%) are willing to offer their facilities to private entities to use, and 18 currently do offer use of their facilities.

Of the 110 public bodies that own advanced facilities, 27 percent (30) are in the Willamette Valley; followed by the East (17%), Portland (16%), Central (12%), Southwest Areas (14%) and Coast (14%).

Of the 22 public entities that are willing to offer their advanced facilities for use by private entities, 29 percent (8) are in Willamette Valley, followed by the Southwest and East, at 18 percent, Central at 14 percent, and the Coast, and Portland areas with 11 percent each.

Of the 18 public entities that currently offer advanced facilities to others to use, 28 percent (5) are in the Willamette area, 28 percent are in the East, Central, and Southwest areas are 17 percent each, Portland and Coast areas are 6 percent each.