

**2.G.5** Consistent with its mission, core themes, and characteristics, the institution has appropriate and adequate technology systems and infrastructure to support its management and operational functions, academic programs, and support services, wherever offered and however delivered.

#### **2.G.5 Technology Systems and Infrastructure**

Green River provides a comprehensive technical infrastructure to support the College's programs and services. The college's network is made up of one main campus and three remote campuses located in Auburn, Enumclaw and Kent. The network environment supports a variety of voice, video, wireless and data services. The main campus network connects all campus locations securely together and provides connectivity to the Washington State K-20 educational network for access to SBCTC and the Internet.

Green River regularly updates and refreshes network equipment on a 5-7 year refresh cycle, ensuring technology is reliable and up to date. This modern networking infrastructure provides gigabit bandwidth to each desktop with a 10GB backbone between main campus buildings to accommodate increased demand for highspeed connectivity by students and instructional programs. It includes wireless networking to every building and to many outdoor gathering areas and walkways. Remote campuses are connected to the main campus via county managed fiber.

The College supports student computers in 220 computer labs and classrooms in nearly all buildings on campus, as well as off-campus locations. All computers contain modern Intel processors. In addition to general-purpose productivity software, each instructional lab has specialized software for the purpose of instruction that is selected by faculty and reviewed by the Green River Information Technology (IT) department for system requirements, accessibility, and data security. Instructional classrooms are equipped with an instructor workstation that contains a computer, document camera, data projector and audio (amplification, speakers) capabilities. With the help of INTEC, the College has increased both the quantity and the quality of instructional computing.

Technology is selected, acquired, organized and maintained in coordination with the Green River IT department to support the College's educational programs. The IT department is a service organization that supports the mission of Green River College and promotes teaching and learning by providing access to and support for technology such as modern computer hardware, software applications, instructional media, and network services including internal and external databases, online library and instructional services, wireless access, e-mail and the Internet. The IT department monitors the state of all technology infrastructure assets.

The IT department supports approximately 2,200 instructional computers for students and around 1000 administrative computers for employees. IT also installs, configures, troubleshoots and repairs technology. Support services provided by IT include:

### ***Computer Labs and Workstations***

Green River College operates 190 computer labs. Of these, seven labs are open to all students on a walk-in, first-come, first-served basis. The remaining labs are dedicated to support specific vocational, academic transfer and Pre-college programs and are scheduled accordingly. Computers in open and instructional labs are replaced on a four-year replacement plan as budget allows.

Computer labs are equipped with Microsoft Windows-based machines and have the Microsoft Office suite of office productivity software installed. Specialized software used by instructional programs, including graphics applications, CAD applications, software development tools, statistical packages and discipline-specific tutorials, are installed in specific labs. To support the after-hours needs of students in specialized programs, Information Technology equips a number of stations in the open lab facilities with specialized application programs. All laboratory facilities are connected to the campus network and provide access to the Internet. Each computer lab is equipped with one or more Americans with Disabilities Act-compliant workstations. These workstations include appropriate furniture to permit wheelchair access and assistive technologies for hearing and sight-impaired students.

In addition to full-time staff, computer labs with open hours are staffed by some part-time student workers who are selected, trained and supervised by the IT Department. Part-time student workers help students with application questions, printing, accessing network resources and troubleshooting, plus maintaining cleanliness and order in the lab. Part-time student workers are paid with revenue generated by a student technology fee. Technology fee revenues are also used to purchase replacement equipment, application software, and consumable supplies such as paper and toner cartridges.

### ***Course Management Software***

Green River College has operated a course management system to support all courses offered at all campuses since the year 2000. Currently the Canvas™-based system automatically populates course shells for all campus course sections (about 1700 per term) and automatically enrolls the appropriate students and instructors for each course. Instructors who wish to use the course management system for their courses simply activate their shells and begin using the online tools and creating content.

### ***Data Centers***

The college maintains a data center that is located on the main campus. This data center is secured and controlled with dedicated HVAC systems, a room UPS, and an emergency backup generator. Industry-standard temperature monitoring systems are utilized and configured to alert Green River IT personnel of temperature increases. Alerts are sent via e-mail and text message to staff cell phones. Uninterruptible power supply hardware is utilized with all servers to protect against power failures, brownouts, and power spikes and to facilitate an orderly shutdown of server hardware and related systems for extended periods of time.

The data center stores college operational data and provides enterprise services to the campus community. The College employs industry-standard server hardware sufficient in capacity and quantity to meet existing and foreseeable future information system needs. There are currently 181 servers running primarily Microsoft Windows operating systems, with a few Linux and custom virtual machine appliances that run Linux based operating systems. The technical infrastructure of the institution is maintained and upgraded to keep up with changing technological needs and requirements as the college budget allows.

### ***Emergency Operations and Disaster Recovery***

GRC IT has developed incident response plans that should be incorporated into the college emergency operations plan soon. The college has not developed or shared any business continuity plans with IT, but IT has used its best efforts to backup all critical college data to a cloud repository. A robust backup and off-site storage ensures that critical college data is protected and the College is capable of system restoration if needed.

### ***Employee Workstations***

The College provides access to a (typically Windows-based) computing device, e-mail, voice mail, and printing services for employees.

### ***Networking***

Network devices at Green River are standardized on a single vendor platform. Fiber optics are used for connections between buildings, as well as between floors in a building. CAT6 copper wire is used for the last leg to the end device. VLANs (virtual local area networks) and ACLs (access control lists) are used to separate the network traffic of different roles that end devices have (e.g., staff computers, student computers, servers, printers). Servers sit separated from client networks by a firewall for security. Green River's network is connected to the Internet via a 5000Mbit connection to CTCNet, the regional Internet service for all SBCTC colleges. Green River uses an Active/Passive pair of firewalls to prevent unauthorized access to internal devices. The configuration of these firewalls follows best practices.

### ***Physical Security***

Green River IT keeps and maintains all server hardware and related systems in enclosed environments with industry standard access control methods. Key card access or physical key access methods are utilized where appropriate.

### ***Standardized Equipment and Software***

As much as possible, Green River standardizes on Microsoft products college-wide. Server hardware is standardized on a single vendor platform to deliver information services to students, staff, faculty and administrators. Hardware and software standardization allows the college IT department to keep maintenance of server hardware and software at manageable levels. Server systems of sufficient capabilities are deployed as deemed necessary by IT and configured and secured according to Microsoft security best practice standards.

### ***Telecommunications***

The College's voice communication system utilizes current technology and provides enhanced functionality to address a wide range of needs. This voice communication system is versatile and will support both expansion and new technologies as the need arises. On campus analog needs are also provided for separately.

**2.G.6** The institution provides appropriate instruction and support for faculty, staff, students, and administrators in the effective use of technology and technology systems related to its programs, services, and institutional operations.

**2.G.6 Instruction and Support for Users**

The college provides appropriate instruction and support for faculty, staff, students, and administrators in the effective use of technology and technology systems related to its programs, services and institutional operations.

The Green River IT department creates or obtains necessary training materials based on an observed need or requests from faculty, students, staff or administrators when introducing new services and technologies in the environment. The institution uses a variety of training resources, including instructor-led training, training delivered via web-based services, and training provided via other mediums.

Training content is of industry-standard quality and is readily available upon request. An orientation is also provided to new employees at the time of hiring to address any training for technologies required by the individual's position in an office or classroom environment. The college provides an information technology help desk, accessible through a website, a single phone extension, or via e-mail. Employees can contact the help desk with a variety of requests, ranging from network logon questions to software/hardware support and printing questions. All requests are logged in an online intake tracking software application from where work orders are subsequently assigned to individuals within the department. The help desk also utilizes a remote diagnostic software program to identify and resolve computing questions without dispatching a technician to the site of the call. This results in quicker response times from IT in addressing many technology problems and questions for employees.

IT assists employees with hardware and software selections and with preparation of documents for purchasing IT-related items. All computing purchases must be made through IT to ensure accurate inventory and licensing controls. This policy also ensures elimination of purchase duplication and that products meet minimum system requirements and all state requirements.

With this expanse of technological support, the College's information resources are sufficient to accomplish the College's mission and goals.

**2.G.7** Technological infrastructure planning provides opportunities for input from its technology support staff and constituencies who rely on technology for institutional operations, programs, and services.

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Green River's IT department consults with staff, students, faculty and administrators via various institutional committees for input when considering architectural changes to technical infrastructures that significantly impact the quality and ability of the institution to deliver on its mission statement. Some of these committees include the student-led Technology Fee Committee, the Instructional Technology Committee (INTEC), and the Administrative Systems Committee. These committees serve as the primary mechanism to involve faculty, staff and students in the planning and development of information resources. External resources such as the SBCTC, a computing consortium of community and technical colleges statewide, and vendors are also frequently consulted.

Policies, regulations and procedures such as the IT technology purchasing plan are documented and maintained and made available on the college's Intranet site. Hard copies are available by request. When a technology need is identified, IT staff work with the departments or individuals involved to create a clear and shared understanding of the need. IT staff then research potential solutions to meet the need and determine whether the most appropriate route is to purchase a solution or develop one in-house. Extensive planning is undertaken to ensure proper adoption levels are achieved when new services and technologies are introduced. Feedback generated by these institutional committees is evaluated and changes are made as necessary.

**2.G.8** The institution develops, implements, and reviews regularly a technology update and replacement plan to ensure its technological infrastructure is adequate to support its operations, programs, and services.

**2.G.8 Technology Updates and Replacement Plans**

The College regularly develops, implements and reviews for updates a technology equipment replacement plan to ensure its technological infrastructure is adequate to support its operations, programs and services.

Green River's IT department maintains constant communication with all academic, administrative and operational departments to ensure proper needs are forecasted for technology. Collaborative efforts ensure the technical infrastructure has sufficient capabilities to meet college needs. A hardware replacement plan based on industry standards replaces end of life hardware on a rotating four to six year schedule.