3.0 PROGRAM ANALYSIS

3.1 Assumptions -- The following assumptions have been made in defining the requested project:

1. EWU is committed to the development and construction of state-of-the-art facilities that meet current campus standards and teacher/student expectations for teaching media.

2. The identity and presence of Patterson Hall must be strengthened due to its prominent location on the center core of EWU.

3. Patterson Hall should create an identity and presence for the College of Arts and Letters and its program departments whose offices are currently housed within Paterson Hall. Likewise, the building should create an identity and presence for the College of Social and Behavioral Sciences and its program department whose offices will be housed within Patterson Hall.

4. Student gathering, informal meeting and study spaces similar to those currently located in Patterson Hall and that further promote student to student and student to faculty interaction are a high priority as expressed in meetings by stakeholders, as expressed in the September, 2000 master plan and to further the goals set forth in EWU’s mission.

5. The EWU education mission and goals are to be supported.

6. New classrooms within the Patterson Hall should be constructed to be flexible to change as teaching and learning methods and technology equipment and delivery methods evolve.

7. EWU facility construction goals for low long-term maintenance, serviceability, and efficiencies must be met.

8. The new facilities are to be sized to accommodate projected future growth in each department. Flexibility in the design of spaces is a priority, not only for changes in current programs, but also for future use by other programs.

9. The added classrooms will fill the needs for classroom shortages campus wide, as well as classroom needs for departments housed in Patterson Hall.

10. The existing building square footage of Patterson Hall will not limit the identified campus wide and department needs for instructional and office space. An addition to Patterson Hall is feasible and may be required to meet these needs.

11. Infrastructure, utility, and telecommunications services should be easily accessible and of high quality. Systems components should be standardized and integrated with other campus systems.

12. A pleasing environment with HVAC, lighting, ambience, and appropriate character is necessary for those entering the facility, as well as for those employed and/or housed within the facility.

13. The project will be LEED registered and built and constructed with the goal of obtaining a minimum LEED Silver certification.

3.2 Existing Facilities Inventory --

3.2.1 Existing Facility Program Spaces

The administrative offices for both the College of Arts and Letters and the College of Social and Behavioral Science are currently housed within Patterson Hall. Offices for department programs in each College are also currently located in Patterson Hall: Modern Languages,
English Language Institute, Philosophy, English, and English Composition from the College of Arts and Letters; and Criminal Justice, Economics, Government and History from the College of Social and Behavioral Sciences.

Each of the above departments also utilizes classroom space currently located in Patterson Hall.

3.2.2 **Condition Assessment/Serviceability** --

Patterson Hall was originally constructed in two phases approximately from 1969 to 1973. It is the largest general use classroom building on the EWU campus. Small remodel projects have taken place within the building over the life of the facility to accommodate minor changes in use.

The steel structure frame, composite floor system and roof system meets current building codes. The building does not meet current life safety and ADA accessibility codes. The exterior walls are not insulated. The exterior windows are single glazed. The building does not meet the Non-residential Energy Code. The mechanical heating, air-conditioning and ventilation system are inadequate leading to the discomfort of all occupants and do not meet current codes. The telecommunications and electronic teaching media within the classrooms and offices does not meet current EWU standards and is inadequate for current teaching practices and expectations for both students and faculty. Lighting systems are outdated and inefficient and not conducive to a pleasant learning environment. Interior finishes are worn and dated.

The building is approximately 45 years old. The building is not known to be on any historical registers as a landmark or historically significant structure.

3.2.3 **Other Existing Facilities Affected** -

Besides affecting Patterson Hall, there will be a temporary affect on other campus buildings at EWU during the construction period requiring relocation of existing classroom and office space currently in Patterson Hall. Surge space is extremely limited and may be available in Hargreaves Hall basement and Cheney Hall. Other possibilities and their associated cost impacts are being explored by EWU.

3.3 **Space Needs Assessment** -- Spaces to be included in the renovated Patterson Hall and required square footages are listed in the Program Summary table included at the end of this section. The Program Summary includes spaces in the following categories:

- Administrative offices and support spaces for the two Colleges
- Administrative offices and support spaces for specific departments within each College
- Academic/Classroom space
- Computer and other Specialty Labs
- Teaching and Research Resources
- Faculty Offices
- Services

Within these categories, the various departments and the individual spaces within the departments are identified. Program spaces are illustrated with Individual Space Diagrams which are included in Appendix D.

The programming process was initiated by asking the appropriate owner representative to fill out detailed questionnaires regarding the department as a whole and the requirements of the individual spaces within the department. The questionnaire requested information in the categories of Function, Relationships, Special Requirements, Performance Requirements, Area Requirements,
and Future Requirements as outlined by the OFM Predesign Study. In addition, information regarding special finishes, furniture, equipment, cabinets, utilities, aesthetic characteristics, and overall goals was solicited. Interviews with current users were then conducted to confirm and elaborate on the information obtained from the questionnaires. Individual Space Diagrams were completed for each program space. Throughout the process, the information was continually reviewed and evaluated by the Project Planning Committee and other Owner representatives to assure consistency, maximize sharing of spaces, avoid duplication of functions, reach compromises, and discuss fulfillment of overall project goals and EWU goals. Applicable information noted on the Program Data Sheets and Individual Space Diagrams included in Appendix D is as follows:

3.3.1 **Function** -- See information noted under the heading “Purpose/Function/Activities Occurring in the Space” on the Program Data Sheets in Appendix A.

3.3.2 **Relationships: Internal and External** -- See information noted under the heading “Relationships to Other Spaces” on the Program Data Sheets in Appendix D.

In addition to the information included on the Program Data Sheets, the relationships between spaces were investigated further and the results illustrated with a Bubble Diagram and Suite Diagrams which are included in Appendix D. The primary purpose of the diagrams is to illustrate the desired and important relationships for spaces in the facility.

3.3.3 **Special Requirements** --

3.3.3.1 **Voice, Data and Video Communications**

3.3.3.2 **Energy Management Systems**

3.3.3.3 **Power Supply**

3.3.3.4 **Other as required by the Project**

Special requirements for systems within the facility are identified in Section 5.2, Outline Specifications. Special requirements for individual rooms, where necessary, are noted on the Program Data Sheets in Appendix D. Standard requirements for HVAC, Plumbing, Lighting, Power, Voice, Data, and Video Communications which would typically be included in this type of facility are not necessarily described.

3.3.4 **Performance Specifications** -- Descriptions of specialized systems within the facility are included in Section 5.2, Outline Specifications.

3.3.5 **Area Requirements** --

3.3.5.1 **Net** – An analysis of the existing building was completed to understand the current ratio of instructional teaching space and office/support space. An analysis of the existing building is as follows:

<table>
<thead>
<tr>
<th>Floor Level</th>
<th>Instructional SF</th>
<th>Office/Support SF</th>
<th>Total SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Flr:</td>
<td>12,326 SF</td>
<td>2,882 SF</td>
<td>34,328 SF</td>
</tr>
<tr>
<td>Second Flr:</td>
<td>7,594 SF</td>
<td>11,077 SF</td>
<td>34,322 SF</td>
</tr>
<tr>
<td>Third Flr:</td>
<td>8,671 SF</td>
<td>11,019 SF</td>
<td>33,697 SF</td>
</tr>
<tr>
<td>Totals:</td>
<td>28,591 SF</td>
<td>24,978 SF</td>
<td>102,347 SF</td>
</tr>
</tbody>
</table>

The proposed building program increases the total assignable square footage for instructional space by 67% to a total of 47,795 square feet. This increased area addresses a campus wide shortage of large classroom spaces and significantly increases the number of student seats available for large lecture classes, enabling the university to increase its teaching efficiency.
The increase in office and support space is much smaller by percentage at 14% with 28,420 square feet of office and support space proposed for the project. Though the SF percentage is relatively small, the number of faculty offices proposed to support the increased instructional space increases from 135 to 160. Further increases in efficiency occur with more shared support spaces such as conference rooms, work rooms, etc in the proposed program when compared to the existing building.

Net area requirements for each individual space are noted on the Program Summary at the end of this section and the Program Data Sheets in Appendix A. In addition to considering EWU standards, the net area indicated is based on the intended occupancy and the functional requirements of the space. Both of these criteria are described on the Program Data Sheets. The Individual Room Diagrams were utilized to establish and validate the net square footage requirements.

3.3.5.2 **Efficiency** – The existing building contains many over-sized and single loaded corridors creating inefficient over-all building floor plans. A typical general classroom building in a 4-year institution would be designed to be 62-68% efficient net assignable space to overall gross square feet. Patterson Hall is currently only 52% net to gross efficient.

EWU understands the importance of increasing the efficiency of its current capital assets. The proposed solution assumes increasing the efficiency of Paterson Hall by 8% to 60%. While the total instructional and office/support spaces increase by a total of 42%, the gross square footage of the total building is only increasing 24%.

3.3.5.3. **Gross** – Because the proposed project increases the efficiency of Patterson Hall by 8%, the proposed building’s gross is only 127,125 square feet, which is shown indicated on the Form C-100. This will require 24,778 square feet of additional floor area to the existing building.

3.4 **Future Requirements** -- Reasonable anticipated future growth for each department has been considered in the development of the program areas for the renovation of Patterson Hall. Flexibility for future change and technological advancements has also been considered. Fixed components will be evaluated and designed to minimize the limitations on modifications within each space. Systems furniture will be utilized where it is appropriate to easily allow reconfiguration as needs or occupants change. Electrical and telecommunication raceways will be sized and designed to allow for expansion and revisions to the systems. Spaces will be positioned within the building to allow fluctuation in the size of the various departments. Other flexibility aspects are specifically noted on the Program Data Sheets. Flexibility in the design of spaces is a priority, however, the function of a space should not be sacrificed purely to attain flexibility.

3.5 **Codes/Regulations** --

3.5.1 **Building Codes** -- The primary building code occupancies for the renovation of Patterson Hall are A-3 for large classrooms over 50 occupants and B for the offices, classrooms under 50 occupants, computer laboratories, and support spaces. A rated separation between A-3 and B occupancies is not required.

Because the existing building is steel frame construction and is anticipated that classrooms with over 50 occupants is desired on the third floor, the building will be Type II-A construction. It is further recommended that the building be sprinklered, eliminating the need for additional fire protective measures that increase cost while decreasing flexibility.
This construction type requires structural elements to be of steel, concrete, or masonry. In addition to these basic code requirements, the size, number, and location of exits from each space, each level, and through other levels needs to be considered during design. The connection of a fire alarm monitoring system throughout the building needs to be integrated into the design. Because Patterson Hall does not exceed a height of 75’-0” above grade to an occupied space, the provisions for high rise construction life safety are not required.

The City of Cheney and Eastern Washington University currently require adherence to the following construction codes:


b. *National Electrical Code*, latest adopted edition or code

c. *International Mechanical Code*, latest adopted edition or code

d. *Standards for Installation of Gas Appliance and Gas Piping, etc.*, latest adopted edition, published by the Inland Empire Natural Gas Association


g. *Uniform Plumbing Code*, latest adopted edition


3.5.2 **Energy Code** -- The Washington State Energy Code will need to be addressed as either a prescriptive or systems approach. Based on the scale of the building and amount of glazing desired, a systems approach may be considered if it is determined that it is the best alternative to benefit the operating budget. This will allow an investigation of alternatives such as phasing of starter motors, electronic ballasts, low emissivity glass, percent of glazing, R value for insulation and study of solar heat gain. With the systems approach, the most affordable options can be chosen to incorporate these energy saving ideas.

3.5.3 **Environmental/Growth Management** – The State Environmental Policy Act (SEPA) requirements will be followed. An Environmental Checklist will be prepared during Design Development. This will identify any major environmental elements to consider, such as traffic, excavations, noise, light, etc. There will be a threshold determination after review of the checklist. Depending on the circumstances, a Determination of Significance or Determination of Non-Significance will be issued, with appropriate steps taken based on SEPA Rules. The element that will most likely need further study is the traffic impacts of this project.

3.5.2 **Sustainability/Green Building Criteria** - As required by Washington State Bill 5509 for High Performance State Buildings, this project will designed, constructed and certified to meet LEED Silver certification level or better.