THE UNIVERSITY OF NEW MEXICO

Facilities Master Plan
2016 - 2025

September 2015

Architectural Research Consultants, Incorporated
Acknowledgements

UNM-G Facilities Master Plan Steering Committee
  Dr. Christopher Dyer, Executive Director
  Christy Butler, Executive Assistant
  Ara D. Green, Community Outreach Coordinator
  Rick Goshorn, Business Operations Director
  Ron Petranovich, Physical Plant Manager
  Abigail Montoya, Physical Plant Facilities Coordinator
  Bruce Klewer, Zuni Senior Operations Manager
  Carmen E. Wellborn, Senior Web Designer
  Constance Torres, Middle College High School Principal
  Jeannie M. Baca, Director of Student Affairs
  Jim Blackshear, Information Services Manager
  Kenneth R. Roberts, Dean of Instruction
  L.D. Lovett, Community Based Education and Workforce Development Chairperson
  Marie Quiahuítl Julienne, Institutional Researcher
  Rebecca Romero, Early Childhood and Family Center Site Manager
  Sharon Jackson, Grants Coordinator
  Sylvia Hunt, Human Resources Administrator
  Walter Feldman, Middle College High School Principal

University of New Mexico
  Amy Coburn, University Architect
  Taudy Miller, Planning, Design & Construction

Planning Consultants
  Architectural Research Consultants, Incorporated (ARC), master planning
    Guy Robert Johns, landscape architecture
  High Mesa Consulting Group, civil engineering
  ArSed Engineering Group, LLC, mechanical engineering
  AC Engineering Enterprises, LLC, electrical engineering
Contents

1 Introduction ................................................................................................1-1

2 Plan Overview ............................................................................................2-1
  2.1 Summary ............................................................................................... 2-1
  2.2 Background .......................................................................................... 2-3
    2.2.1 Location ....................................................................................... 2-3
    2.2.2 History ............................................................................................ 2-4
    2.2.3 Governance ................................................................................ 2-4
    2.2.4 Vision, Mission, and Core Values ............................................... 2-4
    2.2.5 Programs ...................................................................................... 2-6
    2.2.6 Strategic Plan............................................................................... 2-8
  2.3 Demographics and Enrollment .......................................................... 2-9
    2.3.1 Service Area Demographic Context ........................................ 2-9
    2.3.2 Historic Enrollment ................................................................. 2-11
    2.3.3 Projected Enrollment ................................................................. 2-11
    2.3.4 UNM-G Enrollment Compared to other New Mexico Institutions ........................................................................ 2-12
    2.3.5 National and Regional Trends ..................................................... 2-13
    2.3.6 Site and Facility Existing Conditions ......................................... 2-14
  2.4 Implications for the Future ................................................................. 2-19
    2.4.1 Future Facility Needs ................................................................. 2-19
    2.4.2 Future Program Needs ................................................................. 2-19
    2.4.3 Development Framework ........................................................ 2-20
  2.5 Capital Needs .................................................................................... 2-23

3 Appendices................................................................................................3-1
  3.1 Existing Conditions ................................................................................ 3-1
    3.1.1 Content Index .............................................................................. 3-1
    3.1.2 Structural Organization ............................................................... 3-2
    3.1.3 Facility Planning Decisions .......................................................... 3-3
    3.1.4 Facility Master Plan Process ....................................................... 3-4
3.1.5 Survey Responses ................................................................. 3-5
3.1.6 Room Utilization ................................................................. 3-9
3.1.7 Capital Resources ............................................................... 3-10
3.1.8 Capital Funding History and Approach ......................... 3-11
3.1.9 Instructional Use of Existing Facilities ............................ 3-13
3.1.10 Site, Facilities, and Infrastructure Assessments ............. 3-35
3.1.11 Service Area Demographics ............................................ 3-49
3.1.12 Student Locations ............................................................ 3-68

3.2 Future Conditions ................................................................. 3-69
3.2.1 Enrollment Projections ....................................................... 3-69
3.2.2 Development Goals and Concepts ..................................... 3-71
3.2.3 Sustainability Concepts ..................................................... 3-74
3.2.4 Development Framework .................................................. 3-75

3.3 Capital Planning ................................................................. 3-83

3.4 Landscape, Civil, Mechanical, and Electrical Engineering Reports .................................................. 3-87
List of Exhibits

Exhibit 2-1 Location of UNM-G ............................................................. 2-3
Exhibit 2-2 Degrees and Certificates Offered ..................................... 2-7
Exhibit 2-3 McKinley County Historic Population .............................. 2-10
Exhibit 2-4 McKinley County Projected Population ............................ 2-10
Exhibit 2-5 UNM-G Historic Enrollment ........................................... 2-11
Exhibit 2-6 UNM-G Projected Enrollment ......................................... 2-12
Exhibit 2-7 Regional Enrollment Comparisons .................................. 2-13
Exhibit 2-8 Existing Topography: View of Calvin Hall Center Built into Main Ridge ................................................................. 2-14
Exhibit 2-9 Summary of Existing UNM-G Facilities ......................... 2-15
Exhibit 2-10 UNM-G Main Campus Site and Facilities ...................... 2-16
Exhibit 2-11 UNM-G North ABE Site and Facility ............................. 2-17
Exhibit 2-12 UNM-G Zuni Site and Facility ....................................... 2-17
Exhibit 2-13 UNM-G Instructional Capacity Used ............................. 2-19
Exhibit 2-14 UNM-G Development Framework ............................... 2-21
Exhibit 2-15 UNM-G Capital Needs Summary .................................. 2-23
Exhibit 3-1 Matrix Matching Report Format to Former HED Requirements ................................................................. 3-1
Exhibit 3-2 UNM-G Organizational Structure ................................... 3-2
Exhibit 3-3 Facility Planning Decisions ............................................ 3-3
Exhibit 3-4 FMP Process ................................................................. 3-4
Exhibit 3-5 Survey Participants .......................................................... 3-5
Exhibit 3-6 Best Spaces Question ..................................................... 3-6
Exhibit 3-7 Ability to Serve Question ............................................... 3-6
Exhibit 3-8 Most Important Improvement Question .......................... 3-8
Exhibit 3-9 Educational Experience Question ................................. 3-8
Exhibit 3-10 Room Utilization .......................................................... 3-9
Exhibit 3-11 Funding Strategy Diagrams ......................................... 3-11
Exhibit 3-12 Capital Funding History .............................................. 3-12
Exhibit 3-13 Classroom Inventory ................................................................. 3-13
Exhibit 3-14 Existing Facility Use by Building ........................................... 3-15
Exhibit 3-15 Gurley Hall - Basement ............................................................ 3-16
Exhibit 3-16 Gurley Hall - First Floor ........................................................... 3-17
Exhibit 3-17 Gurley Hall - Second Floor ...................................................... 3-18
Exhibit 3-18 Calvin Hall Center - First Floor .............................................. 3-19
Exhibit 3-19 Calvin Hall Center - Second Floor .......................................... 3-20
Exhibit 3-20 Construction Technology ....................................................... 3-21
Exhibit 3-21 Gymnasium ....................................................................... 3-22
Exhibit 3-22 Health Careers Center 1 ....................................................... 3-23
Exhibit 3-23 Health Careers Center 2 ....................................................... 3-24
Exhibit 3-24 Zollinger Library ................................................................... 3-25
Exhibit 3-25 Child Center ....................................................................... 3-26
Exhibit 3-26 Child Center Basement (Physical Plant Department) .... 3-27
Exhibit 3-27 Pump House ....................................................................... 3-28
Exhibit 3-28 Lions Hall ........................................................................... 3-29
Exhibit 3-29 SSTC - First Floor ................................................................. 3-30
Exhibit 3-30 SSTC - Second Floor ............................................................. 3-31
Exhibit 3-31 North Campus ABE Facility .................................................. 3-32
Exhibit 3-32 Zuni Campus Facility .............................................................. 3-33
Exhibit 3-33 Sites and Facilities Renewal Summary ............................... 3-35
Exhibit 3-34 Construction Dates of Main Campus Facilities ............... 3-37
Exhibit 3-35 Facilities Condition Summary ............................................. 3-38
Exhibit 3-36 Site Drainage .................................................................. 3-42
Exhibit 3-37 Supply Water .................................................................. 3-43
Exhibit 3-38 Sanitary Sewer ................................................................. 3-44
Exhibit 3-39 Natural Gas Utility Easement Violations ......................... 3-45
Exhibit 3-40 Natural Gas .................................................................... 3-45
Exhibit 3-41 Primary Electrical Distribution Diagram ....................... 3-46
Exhibit 3-42 Primary Electrical Distribution ........................................... 3-46
Exhibit 3-43 Telecommunications Distribution Diagram ...................... 3-47
Exhibit 3-44 Telecommunications Distribution.............................................. 3-47
Exhibit 3-45 Historic Population Growth............................................................. 3-49
Exhibit 3-46 Historic Population Growth - Census Estimates ......................... 3-50
Exhibit 3-47 McKinley County Land Status ...................................................... 3-51
Exhibit 3-48 McKinley Count, Navajo Nation Chapters ...................................... 3-51
Exhibit 3-49 Navajo Nation Population Changes ........................................... 3-52
Exhibit 3-50 City of Gallup Ethnicity ................................................................. 3-52
Exhibit 3-52 McKinley County Population Distribution Projections: 2020 and 2035 ......................... 3-53
Exhibit 3-53 McKinley County Median Age ...................................................... 3-53
Exhibit 3-54 McKinley County Birth Rates ....................................................... 3-55
Exhibit 3-55 McKinley County Household Size ............................................... 3-55
Exhibit 3-56 Median Income .......................................................................... 3-56
Exhibit 3-57 Families in Poverty ........................................................................ 3-56
Exhibit 3-58 McKinley County Employment ................................................... 3-57
Exhibit 3-59 McKinley County Unemployment ............................................... 3-57
Exhibit 3-60 McKinley County Employment by Industrial Sector ..................... 3-58
Exhibit 3-61 Gallup Area Major Employers ...................................................... 3-58
Exhibit 3-62 McKinley County Educational Attainment .................................... 3-59
Exhibit 3-63a Gallup Residential Building Permits .......................................... 3-59
Exhibit 3-63b Gallup Residential Development .............................................. 3-60
Exhibit 3-63c Gallup Residential Development ............................................... 3-61
Exhibit 3-64 Gallup Market Area ...................................................................... 3-64
Exhibit 3-65 McKinley County Population by Community ................................. 3-64
Exhibit 3-66 Navajo Nation Casino Locations .................................................. 3-65
Exhibit 3-67 Gallup Visitor’s Spending Breakdown .......................................... 3-65
Exhibit 3-68 Net Wins from NM Casinos ............................................................ 3-65
Exhibit 3-69 Gallup Existing Land Use................................................................. 3-66
Exhibit 3-70 Gallup Proposed Land Use ............................................................... 3-66
Exhibit 3-71 U.S. 491 Widening Project................................................................. 3-67
Exhibit 3-72 Navajo / Gallup Water Supply Project............................................. 3-67
Exhibit 3-73 Gallup Land Partners Holdings ....................................................... 3-67
Exhibit 3-73a Student Proximity to Gallup ......................................................... 3-68
Exhibit 3-73b Student Locations ........................................................................... 3-68
Exhibit 3-74 UNM-G Enrollment Projection Range (Table)................................. 3-70
Exhibit 3-75 UNM-G Main Campus Development Zones .................................... 3-79
Exhibit 3-76 UNM-G Development Framework.................................................... 3-80
Exhibit 3-77 Preferred Parking Modifications at Gurley Hall............................ 3-81
Exhibit 3-78 Additional Parking Modification Studies for Gurley Hall ................ 3-82
Exhibit 3-79 UNM-G Capital Needs 2016 - 2015 Diagram ................................. 3-83
Exhibit 3-80 UNM-G Capital Needs 2016 - 2020 Diagram ................................. 3-84
Exhibit 3-81 UNM-G Capital Needs 2021 - 2025 Diagram ................................. 3-84
Exhibit 3-82 Capital Improvements Planning Worksheet..................................... 3-85
Exhibit 3-83 Proposed Primary Electrical Loop Distribution ............................. 3-121
Exhibit 3-84 Proposed Primary Electrical Radial Distribution ......................... 3-122
Exhibit 3-85 Proposed Master Plan Primary Electrical Distribution.................... 3-123
1 Introduction

This document is a facilities master plan for the University of New Mexico-Gallup (UNM-G). It is a collaborative plan developed by UNM-Gallup administrators, faculty, and steering committee in cooperation with the UNM Office of Planning, Design & Construction. The purpose of this plan is to identify and guide capital improvements for facilities and sites serving UNM-Gallup.

A major goal of the plan is to develop and clearly communicate a long-range development strategy and capital requirements to meet the expected program and enrollment growth of the college.

The plan is organized in three parts:

- **An Introduction**
- **A Plan Overview** that discusses:
  - Background information about the mission, programs and existing facilities
  - Expected service area and enrollment
  - Expected facility needs
  - Implications for the future and the chosen development strategy
  - Capital needs and resources required to make the plan a reality
- **An Appendix** that provides supplemental information including:
  - Existing conditions
  - Future conditions
This page is intentionally blank.
Plan Overview

2.1 Summary

This document is a Facilities Master Plan to guide capital improvements at UNM-G. It identifies specific and general needs anticipated from 2016 to 2025. The plan updates planning data and strategies developed in the previous UNM-G Facilities Master Plan (2006 to 2013).

• UNM-G enrollment will slowly grow, or at least remain stable. Architectural Research Consultants, Incorporated’s (ARC’s) mid-range projection for UNM-G predicts enrollment growth will be about 1% annually. The recent decline in higher education enrollment is a national trend that experts assume to be temporary and not a long-term shift.
  - The overall quantity of existing instructional space at UNM-G can accommodate projected enrollment. UNM-G’s focus will be on the quality of instructional space to meet strategic goals.

• UNM-G will continue to focus on the delivery of high quality, academic and career technical programs relevant to regional workforce demands and transferable to bachelor’s degrees. UNM-G’s strategic plan states that the college will:
  - Focus on and define clear programs and paths allowing students to progress to bachelor’s degree programs
  - Develop clearly defined professional programs tied to economic development of the region and the aspirations of students

• UNM-G will focus on capital improvements that:
  - Improve the quality of instructional space to best align with program needs
  - Support renewal of existing building systems and infrastructure

• The proposed Career Technical Education Center (CCTE) facility is central to UNM-G’s strategy to develop workforce training in regional construction technologies, sustainable green building, mechanical and electrical training, allied health, welding, construction engineering, architectural engineering, and energy-related careers.

• The proposed Physical Plant Department (PPD) facility is critical to UNM-G’s ability to support existing instructional facilities and infrastructure. The current PPD facility is inappropriately located in the basement of the Child Center and has various other deficiencies.

• Capital needs will be met through a combination of local general obligation bonds and state matching funds. Improvements to address capital needs are organized into 2 bond cycles:
  - Cycle 1 (2016 - 2020) Total: $ 23.8 million
  - Cycle 2 (2021 - 2025) Total: $ 16.4 million
• **Summary of proposed Cycle 1 improvements:**
  - New Construction (CCTE and PPD): $ 8.5 million
  - Renovation / Remodel: $ 8.4 million
  - Site Infrastructure Improvements: $ 2.9 million
  - Site Improvements: $ 4.1 million

• **Summary of proposed Cycle 2 improvements:**
  - New Construction: $ 2.4 million
  - Renovation / Remodel: $ 7.6 million
  - Site Infrastructure Improvements: $ 5.8 million
  - Site Improvements: $ 0.6 million
2.2 Background

2.2.1 Location
The UNM-G main campus is located in Gallup, New Mexico. The main campus is in the developing south side of Gallup, and primary access to the site is via New Mexico Highway 564. UNM-G’s adult basic education (ABE) north facility is located in downtown Gallup, just north of Interstate 40. The Zuni campus is located in the pueblo of Zuni, adjacent to the high school.

Exhibit 2-1
Location of UNM-G
2.2.2 History

The University of New Mexico has offered courses through extension to Gallup since 1959. In 1968, UNM gave final approval for the establishment of the Gallup branch with classes held at Gallup High School. In 1969, as a service project, the Lions Club donated six acres of piñon-wooded land and a building to the branch; shortly thereafter, Mr. and Mrs. Clair Gurley donated 90 acres of land.

Today, nearly 50 years later, UNM-G is the largest of UNM’s branch campuses and serves approximately 5,000 students per year in credit and 2,560 students in non-credit and adult basic education programs. UNM-G graduates more Native American students earning associate degrees and certificates than any other public post-secondary institution in the United States.

The UNM-G branch operates from three campuses: a main campus located on the southern end of the city of Gallup, a facility for adult basic education (ABE) classes located in Gallup north of I-40, and a satellite campus located in Zuni, NM. The architectural style of the facilities is generally southwestern. Buildings on the main campus are laid out in a primarily linear arrangement on the flat top of a ridge.

2.2.3 Governance

UNM-G has an operating agreement with the University of New Mexico. The agreement empowers the local UNM-G board, comprised of five elected members, to serve in an advisory capacity to the UNM regents and to work directly with the UNM-G executive director. According to the agreement, the UNM-G branch local board will be responsible for carrying out specific duties and responsibilities relative to the overall operation of UNM-G. For example, the local board will approve and recommend an annual budget for the UNM-G branch to the UNM Board of Regents; approve and certify the tax levy, as required by law, to the McKinley County Commission; and call elections for tax levies for the Gallup branch, after approval by the UNM Board of Regents.

2.2.4 Vision, Mission, and Core Values

UNM-G is a branch campus of UNM and operates as a community college. UNM-G’s vision, mission, and core values are as follows:
Vision
The University of New Mexico - Gallup will be a nationally recognized leader in community focused, regionally specific and culturally vibrant education.

Mission
The University of New Mexico - Gallup prepares people to achieve their educational and professional goals in a context of respect for the traditions and values of the many groups it serves.

Values
We value EXCELLENCE by providing quality decisions and actions through our people, programs and outcomes.

We value INTEGRITY through our commitment to managing our resources wisely, keeping our promises and ensuring accountability to our students, the community and all who serve UNM-Gallup’s mission.

We value DIVERSITY by striving to strengthen our university, our community and our society through the respectful treatment of all people. UNM-Gallup recognizes, accepts and values differences of culture, ethnicity, gender, sexual orientation, nationality, religion, language and academic discipline and embraces diversity as a learning opportunity.

We value FREEDOM by encouraging inquiry, candor, creative activity, and the pursuit of ideas.

We value SUSTAINABILITY by meeting the needs of the present while preserving the well-being of future generations.

We value ACCESS WITH SUPPORT TO SUCCEED by offering all who desire the opportunity to take full advantage of the wealth of UNM-Gallup resources and be fully included in the UNM-Gallup community.

We value RESPECTFUL RELATIONSHIPS as demonstrated by our commitment to building trust, inspiring collaboration, and ensuring teamwork essential to UNM-Gallup’s success.

Source: http://www.gallup.unm.edu/main/about/vision-mission.php
2.2.5 Programs

UNM-G is a comprehensive vocational and transfer institution. As a UNM branch, the college is accredited by the North Central Association of Colleges and Secondary Schools. To fulfill its mission, UNM-Gallup offers five types of educational divisions:

- **Technical Education** for:
  - Computer-aided drafting
  - Information technology
  - Certified nursing assistant
  - Medical coding
  - Office and business technology

- **Certificates and/or Associate of Arts, Associate of Science, and Associate of Applied Science degrees** for: (Exhibit 2-2)
  - Business administration
  - Early childhood multicultural education
  - General science
  - Human services
  - Liberal arts
  - Studio art
  - Health information technology

- **Basic skills** assistance is available so that students who are not adequately prepared for admission for college-level study can improve their skills and meet their educational goals. Developmental credit courses are available in:
  - Reading
  - Writing
  - Math

- **The Community Education Services Program** is comprised of several unique programs providing learning opportunities for citizens of all ages. Programs include:
  - Workforce training
  - Professional development
  - Cultural enrichment
  - Off-campus instruction

- **The Small Business Development Center** provides individual counseling, training workshops, seminars, and individual counseling. Development of course content is in conjunction with the community education program and area economic development groups. The center offers certification to businesses and individuals upon completion of entrepreneurship courses.
UNM-G also provides opportunities for high school students to be concurrently enrolled and earn dual credits. Opportunities include:

- **Middle College High School (MCHS)**
  - MCHS is a New Mexico public charter school with a rigorous academic- and career-focused program. Students are enrolled both in the high school program to earn their diploma as well as with UNM-G to earn college credits.

- **Center for Career and Technical Education (CCTE)**
  - Area high schools participate in the CCTE program. CCTE course content aligns with UNM-G coursework and college credit is earned concurrently with credit applicable towards a high school diploma.

---

### Exhibit 2-2
Degrees and Certificates Offered

<table>
<thead>
<tr>
<th>Associate of Arts</th>
<th>Certificates</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Art Studio</td>
<td>• Automotive Technology</td>
</tr>
<tr>
<td>• Business Administration</td>
<td>• Bookkeeping</td>
</tr>
<tr>
<td>• Criminal Justice</td>
<td>• Collision Repair Technology</td>
</tr>
<tr>
<td>• Early Childhood Multicultural Education</td>
<td>• Construction Technology</td>
</tr>
<tr>
<td>• Human Services</td>
<td>• Construction Technology - Carpentry</td>
</tr>
<tr>
<td>• Liberal Arts</td>
<td>• Construction Technology - Electrical</td>
</tr>
<tr>
<td>• Pre-Professional Education</td>
<td>• Cosmetology/Barbering</td>
</tr>
<tr>
<td>• Psychology</td>
<td>• Dental Assisting</td>
</tr>
<tr>
<td>• Associate of Science</td>
<td>• Diabetes Prevention Specialist</td>
</tr>
<tr>
<td>• Health Information Technology</td>
<td>• Drafting Technology</td>
</tr>
<tr>
<td>• Medical Laboratory Technician</td>
<td>• Early Childhood Multicultural Education</td>
</tr>
<tr>
<td>• Nursing</td>
<td>• Entrepreneurship</td>
</tr>
<tr>
<td>• Science</td>
<td>• Green Building (ineligible for FAFSA)</td>
</tr>
<tr>
<td>• Associate of Applied Science</td>
<td>• Health Information Technology – Coding</td>
</tr>
<tr>
<td>• Automotive Technology</td>
<td>• Human Services</td>
</tr>
<tr>
<td>• Collision Repair Technology</td>
<td>• Information Technology</td>
</tr>
<tr>
<td>• Construction Technology</td>
<td>• Organizational Management &amp; Public Administration</td>
</tr>
<tr>
<td>• General Studies</td>
<td>• Welding Technology</td>
</tr>
<tr>
<td>• Legal Assistant</td>
<td></td>
</tr>
<tr>
<td>• Tribal Court Advocate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.2.6 Strategic Plan

UNM-G has a strategic plan, updated in 2012, that serves as a framework for planning and budgeting. Some selected elements of this plan that potentially influence physical planning include:

- Strengthen Programmatic and Instructional Excellence and Innovation
  - Focus on and define clear programs and paths allowing students to progress to bachelor’s degree programs
  - Develop clearly defined professional programs tied to economic development of the region and the aspirations of students
- Develop Robust Technology Infrastructure and Applications
  - Develop networks supporting distance learning and e-learning instruction in all areas
  - Develop funding plan for IT infrastructure development and maintenance
- Enable Professional Development for Faculty and Staff, and Support Organizational Development
  - Review existing data to identify key areas of staffing
- Focus Outreach to the Community and Region
  - Explore partnerships with other institutions to foster community development
  - Engage with communities in educational, cultural, and other initiatives to achieve support for UNM-G
- Strengthen the Management and Acquisition of Resources
  - Update the campus master plan, including south and north campuses
  - Strengthen additional revenue streams beyond tuition and state-appropriated funds
- Enhance Student Academic Experience
  - Institute a Student Life Function with full range of activities and services
2.3 Demographics and Enrollment

2.3.1 Service Area Demographic Context

UNM-G’s primary service area is McKinley County. Following 90 years of growth from 1910 to 2000, the county’s population contracted between 2000 and 2010. The Census Bureau estimated population declined from 2000 to 2007, then started growing during 2008 to 2010. ARC projects population growth to continue in the future with an annual increase rate of 0.6%. ARC’s projections consider the following:

- While the overall county population declined in recent years, the city of Gallup’s population grew 0.7% annually from 2000-2010 (an increase of 1,469 persons).
- The pueblo of Zuni also grew from 2000-2010, adding 133 persons.
- In 2000, Native Americans became the largest ethnic group in the city of Gallup. The Native American population in Gallup continues to grow and contributes to the overall growth of the city.
- Gallup Land Partners (GLP) has expressed interest in developing additional rail-served operations and a business park with warehousing and offices spaces northwest of Gallup.
- The Navajo Gallup Water Supply Project will provide San Juan River water to Navajo communities and the city of Gallup. Improved water supply and reliability will allow economic growth and development.
- Widening of U.S. 491 will improve the vehicular connection from Gallup to Shiprock, Navajo communities, and the Farmington metro area.
- Public school district enrollment in both Gallup/McKinley County Schools and Zuni Public Schools has declined since 1993.
- Residential development in McKinley County is slow. Only one project is currently active: a 42-unit affordable family housing complex and an18 single-resident occupancy units at Coal Avenue and 2nd Street.
- Birth rates in McKinley County have decreased drastically since 1990, and are continuing to fall. The McKinley County birth rate is still higher than the U.S. rate, and still creates a natural population increase.
- UNM Geospatial Population Studies (GPS) projects the college age cohort in McKinley County to remain relatively the same or increase slightly through 2020 (although it will decrease in proportion to the total population). After 2020, GPS projects the college-age population to decrease.
Exhibit 2-4 shows:

- In 2000, McKinley County’s population was about 74,800 and UNM projected an annual increase rate of 0.7%.
- In 2010, McKinley County’s population had decreased to 71,500 and UNM projected a revised annual increase rate of 0.07%.
- ARC’s 2015 projection is for an annual increase rate of 0.6%.
2.3.2 Historic Enrollment
UNM-G FTE enrollment has fluctuated since 2000, but overall, the 2015 FTE enrollment is similar to that of 2000. This enrollment reflects state and national trends of slow growth and the 2008 economic downturn.

2.3.3 Projected Enrollment
The master plan projects that FTE enrollment at UNM-G will reach 1,665 FTE students by 2020-21 (mid-range projection) in response to service area growth, UNM-G marketing efforts, and program alignment with career opportunities (see Exhibit 2-6). This projection assumes that:
- ARC’s projected McKinley County population growth will create continued demand for UNM-G programs.
- Declining enrollment has reached its lowest level, suggested by national studies.
- Market penetration (as measured by the FTE participation rate per general service population) remains at historical averages (about 44 FTE per 1,000 people).
2.3.4 UNM-G Enrollment Compared to other New Mexico Institutions

- ARC tracked enrollment at UNM-Gallup, UNM-Albuquerque, UNM-Valencia, and Central New Mexico Community College. All institutions exhibit similar enrollment trends. (See Exhibit 2-7.)
  - While still declining, UNM-G’s enrollment decreased at a slower rate starting in 2013.
2.3.5 National and Regional Trends

- Since 2011, national post-secondary enrollment has decreased by about 1 million students to 18.6 million.
- From spring 2014 to spring 2015:
  - Post-secondary institutional enrollment was down 1.9% nationally.
  - New Mexico saw the largest drop in post-secondary institutional enrollment in the nation. New Mexico’s enrollment decreased 8.3% (a loss of about 10,915 students).
  - Declining post-secondary enrollment was recorded in 41 states, while just nine states saw post-secondary enrollment increases.
  - The National Student Clearinghouse Research Center reports that nationally, the drop was greatest at four-year, for-profit colleges, 4.9%, and at two-year public colleges, 3.9%. Both sectors tend to attract larger numbers of older students.
- Experts cite a variety of factors that affect enrollment:
  - For the first time in two decades, the number of high school graduates is decreasing.
  - The improving economy has enabled students to leave school and return to work.
  - New Mexico’s population is decreasing.
- Education officials expect enrollment swings to level off in coming years, then gradually increase.
- According to projections, New Mexico’s high school graduating classes will increase by about 1% annually for the coming decade and reach a high of 22,300 before decreasing again.

(Source: Albuquerque Journal, May 17 and 24, 2015)
2.3.6 Site and Facility Existing Conditions

Site Conditions

UNM-G’s main campus occupies about 80 acres. The topography of the campus is hilly. The challenging terrain focuses development on one main ridge and surrounding “valley” areas. Runoff pathways and low wet areas separate buildable areas. Parking facilities tend to be located downhill from the ridge-top developments. Connections between parking areas and buildings are sloped and require ramps and stairs for access. The change in grade creates opportunities for breathtaking vistas and much of the landscape surrounding the core of buildings on campus is undeveloped native vegetation and scenic.

One vehicular access point to the campus creates congestion at peak times. The existing walkways and plazas are aesthetically pleasing, but require rehabilitation. Parts of the campus (Lions Hall and gym areas) are not part of the walkway system and pedestrian pathways are on roads or through unpaved areas. Connections between lower parking lots and the upper ridge present difficulties for pedestrian access, due to elevation differences.

As the campus grows toward the northeastern part of the site, additional access points onto campus should be a consideration. The topography will create greater challenges in accessibility as development moves further along the ridge where the height above the valley increases.

Exhibit 2-8
Existing Topography; View of Calvin Hall Center Built Into Main Ridge
UNM-G Facilities

UNM-G occupies 15 buildings at main campus. The campus has grown incrementally, starting with the donation of Lions Hall in 1969 and construction of Old Gurley Hall in 1975. Recent construction at main campus includes the Health Careers 2 building (2007) and the Student Services and Technology Center (2012). The total building area at main campus is about 310,000 GSF.

The Zuni Campus consists of one building of approximately 25,000 GSF. The North Campus consists of one building for adult basic education (ABE). Including the 2008 building addition, the ABE facility is about 5,700 GSF.

Exhibit 2-9 summarizes UNM-G facilities.

<table>
<thead>
<tr>
<th>ID</th>
<th>Facility</th>
<th>Dates of Construction</th>
<th>Age</th>
<th>NSF*</th>
<th>GSF*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Old Gurley</td>
<td>1975 / Renovated</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>New Gurley</td>
<td>1984-1985</td>
<td>30</td>
<td>63,210</td>
<td>111,415</td>
</tr>
<tr>
<td>3</td>
<td>Career Education</td>
<td>1978</td>
<td>37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Construction Tech</td>
<td>1985</td>
<td>30</td>
<td>5,025</td>
<td>6,125</td>
</tr>
<tr>
<td>5</td>
<td>Calvin Hall A</td>
<td>1979-1980</td>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Calvin Hall B</td>
<td>1996</td>
<td>19</td>
<td>42,385</td>
<td>67,670</td>
</tr>
<tr>
<td>7</td>
<td>Calvin Hall C</td>
<td>2000</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Physical Education</td>
<td>1981 / Addition 1999</td>
<td>34</td>
<td>17,060</td>
<td>20,305</td>
</tr>
<tr>
<td>9</td>
<td>Health Careers Center 1</td>
<td>2002</td>
<td>13</td>
<td>8,250</td>
<td>11,525</td>
</tr>
<tr>
<td>10</td>
<td>Zollinger Library</td>
<td>2001</td>
<td>14</td>
<td>16,335</td>
<td>20,440</td>
</tr>
<tr>
<td>11</td>
<td>Child Center / Physical Plant</td>
<td>1993</td>
<td>22</td>
<td>4,055</td>
<td>9,030</td>
</tr>
<tr>
<td>12</td>
<td>Lions Hall</td>
<td>1954</td>
<td>61</td>
<td>3,355</td>
<td>5,780</td>
</tr>
<tr>
<td>13</td>
<td>Pump House</td>
<td>1988</td>
<td>27</td>
<td>710</td>
<td>710</td>
</tr>
<tr>
<td>14</td>
<td>Health Careers Center 2</td>
<td>2007</td>
<td>8</td>
<td>12,175</td>
<td>18,380</td>
</tr>
<tr>
<td>15</td>
<td>Student Services and Technology Center (SSTC)</td>
<td>2012</td>
<td>3</td>
<td>19,100</td>
<td>38,235</td>
</tr>
<tr>
<td>16</td>
<td>North Campus</td>
<td>1998 / Addition 2008</td>
<td>17</td>
<td>3,960</td>
<td>5,700</td>
</tr>
<tr>
<td>17</td>
<td>Zuni South Campus</td>
<td>2001</td>
<td>14</td>
<td>17,575</td>
<td>24,930</td>
</tr>
</tbody>
</table>

**Totals (All Facilities)** 213,195 340,245

**Total Gallup Main Campus** 191,660 309,615

*NSF and GSF obtained from UNM Planning, Design, and Construction documents*
Exhibit 2-10
UNM-G Main Campus
Site and Facilities

Existing Buildings
1  Old Gurley Hall
2  New Gurley Hall
3  Career Education
4  Construction Technology
5  Calvin Hall Center A
6  Calvin Hall Center B
7  Calvin Hall Center C
8  Gymnasium
9  Health Careers Center 1
10 Zollinger Library
11 Child Center / Physical Plant
12 Lions Hall
13 Pump House
14 Health Careers Center 2
15 Student Services and Technology Center
Exhibit 2-11
UNM-G North ABE Site and Facility

Exhibit 2-12
UNM-G Zuni Site and Facility
Site Utilities

Development of the utility systems that comprise the main campus infrastructure has been incremental along with the buildings they serve. Site utilities are of mixed condition and capacity.

- **Stormwater and Drainage**
  - The majority of the campus does not have storm drainage infrastructure, and runoff flows freely to surrounding streets and two existing arroyos. Due to topography and current density of campus, opportunities are limited to add stormwater infrastructure to serve existing facilities. No significant known problems exist that would warrant the addition of stormwater measures to serve existing facilities.

- **Domestic Water Supply**
  - This system has been improved since 2006. The City of Gallup and UNM-G are currently involved in joint improvements that will increase capacity and reliability to the main campus. Part of this water supply improvement project includes installation of fire suppression in existing campus facilities.

- **Sewer**
  - The campus has a single outfall to the public (Gallup Joint Utilities [GJU]) sanitary sewer system that is reportedly near or at maximum capacity. The limitations are downstream of the main campus.
  - Based on campus topography, the higher portions of the campus currently reach the outfall directly by gravity, while the lower areas require lift stations to pump the runoff to higher areas where they then continue under gravity conditions. The nature of lift stations is that their outflow is controlled by the rate of the pumps. As a result, adding facilities using lift stations would impact downstream flow rates less than adding facilities that use gravity systems.

- **Natural Gas**
  - The New Mexico Gas Company provides gas to separate meters at various buildings on campus. UNM-G has installed site work and facilities on some NMGC easements. According to the 2013 Utility Master Plan by WHPacific, the condition of buried natural gas piping is unknown, but 50 years is the standard industry lifespan.

- **Electrical Service**
  - Electrical service enters the site at one location near Zollinger Library (except for Lions Hall which is fed with a separate overhead line). The distribution system from Zollinger is radial and consists of four branches. Some distribution infrastructure is about 30 years old, with a 40-year life expectancy. The existing radial distribution system has limited additional capacity and lacks redundancy.

- **Telecommunications (Data)**
  - UNM Main Campus ITS Department upgraded the campus telecommunications system in 2014. Site upgrades included replacement of all copper cable and installation of new fiber-optic cable to all buildings using existing infrastructure, construction of a main distribution room (MDR) in Calvin Hall, and renovation of the IT center in Gurley Hall. Recent improvements improve system reliability and capacity, but lack redundancy.
2.4 Implications for the Future

2.4.1 Future Facility Needs
ARC’s utilization analysis (see Appendix Section 3.1.6) shows that there is ample instructional space capacity to accommodate existing and projected enrollment. Facility improvements should focus on renewing existing building systems and infrastructure. Construction of new facilities should focus on providing specific kinds of space to meet programmatic needs and educational goals.

2.4.2 Future Program Needs
UNM-G will build on its tradition of providing high quality, academic and career technical programs relevant to regional workforce demands and transferable to four-year institutions. UNM-G requires the right kinds of space to deliver these programs. The spaces need to be:
- Flexible to adapt to changing workforce demands
- Equipped for current technology
- Appropriately located

UNM-G’s 2015 submittal to the New Mexico Higher Education Department requests facilities to support future program needs. Priority projects in the HED submittal include:
- Center for Career Technology Education Phase 1 (CCTE)
- Physical Plant Department Facility (PPD)

The CCTE will support the construction technologies program and regional workforce demands. The proposed facility will include woodworking; HVAC/mechanical instrumentation technologies; drafting/pre-engineering and sustainability design and construction technologies labs; and classrooms for student jobs training in the growing sustainable construction and green technologies industries.

The existing PPD facility is poorly located and ill-equipped to support maintenance of existing facilities. Location of the PPD facility in the basement of the Child Center limits PPD’s ability to perform work activities that are noisy, produce fumes, or involve other hazards, such as painting and welding. The facility is poorly sited for deliveries and accessibility. The basement has low overhead clearance, and insufficient office space. Exterior storage is extremely limited. A new PPD building will improve UNM-G’s ability to maintain existing facilities.
2.4.3 Development Framework

The 2015 FMP steering committee reviewed and endorsed the campus planning goals and development framework established in the 2006 FMP. The framework and planning goals will guide future growth and change on the campus, including the location of new facilities and related infrastructure.

Campus planning goals are summarized as follows. Additional descriptions are located in the Appendix, Section 3.2.2.

**Campus Planning Goals**

- **Functional Organization**: Organize college functions in a clear and efficient manner reflecting the needs of students, staff, and visitors
- **Wayfinding**: Create a clear and uniform wayfinding system that adds value to the appearance of the campus
- **Student Life**: Create places around campus to encourage informal student interaction
- **Campus Character**: Retain and enhance campus architectural character
- **Outdoor Resources**: Provide more opportunities to use outdoor resources
- **Access / Parking**: Provide safe and convenient pedestrian and vehicular access to all campus areas
- **General Development**: Develop the site in a manner that balances long-term facilities needs and the protection of the unique site environment
- **Sustainability**: Become a model for sustainability practices locally and regionally
2.5 Capital Needs

The total identified capital need for UNM-G for 2016 to 2025 is approximately $40.3 million.

The adopted strategy for improvements to address capital needs is based on a planning framework implemented in increments, and using a combination of local general obligation bonds and state matching funds. The plan will be evaluated and adjusted on a yearly basis to meet UNM-G needs as required.

Organization of improvements to address capital needs is in two bond cycles, summarized in Exhibit 2-15. UNM-G will consider asking voters to approve local general obligation bonds in 2016 and in 2021 for $6 million each.

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Title</th>
<th>Project Category</th>
<th>Estimated Total Project Cost (TPC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Center for Career Technology Education and Innovation (CCTEI)</td>
<td>New Construction</td>
<td>$6,480,000</td>
</tr>
<tr>
<td>2.0</td>
<td>Physical Plant Department (PPD) Facility</td>
<td>New Construction</td>
<td>$2,000,000</td>
</tr>
<tr>
<td>3.0</td>
<td>Re-Roofing and HVAC Equipment Replacement</td>
<td>Renovation</td>
<td>$3,550,000</td>
</tr>
<tr>
<td>4.0</td>
<td>Restroom and Plumbing Upgrades</td>
<td>Renovation</td>
<td>$1,560,000</td>
</tr>
<tr>
<td>5.0</td>
<td>Building Interior Renovations</td>
<td>Renovation</td>
<td>$1,820,000</td>
</tr>
<tr>
<td>6.0</td>
<td>Zuni Building Re-Roofing and Structural Improvements</td>
<td>Renovation</td>
<td>$1,390,000</td>
</tr>
<tr>
<td>7.0</td>
<td>Site Utility Upgrades</td>
<td>Site Utilities</td>
<td>$2,940,000</td>
</tr>
<tr>
<td>8.0</td>
<td>Site Paving, Access, ADA, and Landscape Improvements</td>
<td>Site Improvements</td>
<td>$4,100,000</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td><strong>$23,840,000</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Title</th>
<th>Project Category</th>
<th>Estimated Total Project Cost (TPC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.0</td>
<td>Re-Roofing and HVAC Equipment Replacement</td>
<td>Renovation</td>
<td>$1,060,000</td>
</tr>
<tr>
<td>10.0</td>
<td>Restroom and Plumbing Upgrades</td>
<td>Renovation</td>
<td>$1,010,000</td>
</tr>
<tr>
<td>11.0</td>
<td>Building Interior Renovations</td>
<td>Renovation</td>
<td>$5,610,000</td>
</tr>
<tr>
<td>12.0</td>
<td>Site Utility Upgrades</td>
<td>Site Utilities</td>
<td>$5,800,000</td>
</tr>
<tr>
<td>13.0</td>
<td>Site Paving, Access, ADA, and Landscape Improvements</td>
<td>Site Improvements</td>
<td>$560,000</td>
</tr>
<tr>
<td>14.0</td>
<td>Community Education Center</td>
<td>New Construction</td>
<td>$2,440,000</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td><strong>$16,480,000</strong></td>
</tr>
</tbody>
</table>

**Total** $40,320,000
This page is intentionally blank.
### 3.1 Existing Conditions

#### 3.1.1 Content Index

The index below cross-references the contents of the UNM-G Facilities Master Plan with New Mexico Higher Education Department (HED) previous Five-Year Institutional Master Plan components. Although HED no longer publishes requirements for institutional master plans, the former requirements identify critical components of the plan and this index shows where the components are located within this report.

**Exhibit 3-1**
Matrix Matching Report Format to Former HED Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Background</th>
<th>Demographics and Enrolment</th>
<th>Implications for the Future</th>
<th>Capital Needs</th>
<th>Existing Conditions</th>
<th>Facility Infrastructure Assessment</th>
<th>Future Conditions</th>
<th>Capital Planning Workbook</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Facility Planning Decisions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II. Needs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>III. Assessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Instructional Facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Adequacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Room Utilization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Non-Instructional Facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV. Projects and Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V. Bonding Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VI. Funding Sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VII. Maps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Required Maps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Current Campus Buildings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Anticipated Changes Resulting from New Projects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Campus Master Plan Map (10-20 years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Other Possible Maps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.1.2 Structural Organization

The exhibit below shows UNM-G’s structural organization.
3.1.3 Facility Planning Decisions

The recommendations in this report result from a planning process involving key administrative, instructional, and support personnel, with periodic briefings to the local board. ARC facilitated this process. Exhibit 3-3 shows the decision-making flow with regard to capital outlay planning, and the list below describes roles and responsibilities.

- **Local Board** - The local board advises on the administration’s capital outlay recommendations. The board is updated about the progress of the FMP at each board meeting. UNM-G, assisted by ARC, will make a full presentation to the board of recommended courses of action and for endorsement of the FMP.

- **Executive Director** - The executive director establishes an ongoing planning process, organizes the parties involved in the effort, and makes recommendations to the local board regarding future courses of action. The director of business operations assists the executive director in this endeavor.

- **FMP Steering Committee** - The steering committee is an ongoing committee with an advisory role to the executive director and the planning consultant. The steering committee prepared the development framework which provides overall guidance for future UNM-G development. This committee is composed of key members of administration, instructional, and support areas. It meets periodically to review material developed by the planning consultant and advise on capital projects and priorities.

- **UNM Planning, Design and Construction** - This UNM department participates in FMP workshops and reviews master plan recommendations.

- **Planning Consultant** - The planning consultant acts in an advisory role to the executive director. The consultant facilitates the planning process by developing a database of existing and projected conditions. The consultant also develops preliminary concepts regarding future courses of action and prepares verbal and written presentations describing this information.

Exhibit 3-3
Facility Planning Decisions
3.1.4 Facility Master Plan Process

1. **Project Organization**

   Project stakeholders met to discuss the scope of the FMP update and identify project goals and issues. The team identified participants and established a decision-making process. It agreed on the project scope, schedule and budget. The discussion identified background information, including existing plans, reports, organizational charts, space allocation standards, utilization data and other relevant data.

2. **Inventory / Analysis of Conditions**

   The planning consultant collected project facts, including county demographics/economics, instructional program needs and trends, enrollment history, building and site information and issues, classroom utilization, future facility needs, and financial resources. ARC collected information using questionnaires, interviews, and on-site evaluations. The FMP Steering Committee and UNM-G leadership validated project facts in a workshop.

3. **Development of Alternatives and Strategies**

   This step built on the project facts by identifying and exploring development scenarios for meeting future needs. The team developed a capital improvement plan based on the preferred scenario as well as the information collected in previous steps.

4. **Final Report**

   The report documents the work completed in the previous steps.
3.1.5 Survey Responses

ARC solicited input from students, faculty, staff, and administrators via a web-based survey from spring 2015; 52 people completed the survey. The following exhibits summarize the results of the survey.

Exhibit 3-5
Survey Participants

Q1A: I am a:

<table>
<thead>
<tr>
<th># of Responses</th>
<th>Students</th>
<th>Staff</th>
<th>Faculty</th>
<th>Admin</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q1B: My division, department, program, or functional area is:

<table>
<thead>
<tr>
<th>Functional Area</th>
<th>Student</th>
<th>Staff</th>
<th>Faculty</th>
<th>Admin</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Basic Education</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Sciences</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business &amp; Applied Technology</td>
<td>1</td>
<td>1</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Center for Career &amp; Technical Education</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Education, Health &amp; Human Services</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executive Director</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Resources</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>IT</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Radio Station (KGLP)</td>
<td></td>
<td>1</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Physical Plant</td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Services</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Teaching</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Zuni</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>No Functional Area indicated</td>
<td></td>
<td>8</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
Exhibit 3-6
Best Spaces Question

Q2: Which UNM-G facilities or spaces do you like the most?*

- Zollinger Library: 3 [Student] 3 [Other]
- HCC (I and II): 4 [Student] 1 [Staff] 1 [Other]
- Gurley Hall: 4 [Student] 2 [Staff] 1 [Other]
- Exterior Spaces: 6 [Student] 6 [Other]
- SSTC: 1 [Staff] 10 [Faculty] 9 [Admin] 4 [Other]

*TOP 5 RESPONSES

Exhibit 3-7
Ability to Serve Question

Q4A: What physical building or site related improvements do you recommend to increase UNM-G's ability to serve students, staff, faculty, administration, visitors, and the community at main campus?*

- Maintain/renew existing facilities and infrastructure: 2 [Student] 6 [Staff] 4 [Facility] 3 [Other]
- Improve technology and make it more available: 5 [Student] 2 [Staff] 1 [Other]
- Improve parking: 1 [Student] 4 [Staff] 1 [Other]
- Improve tutoring and student support services: 4 [Student] 2 [Other]
- Improve athletic/recreational amenities: 3 [Student] 2 [Staff] 1 [Other]
- Improve accessibility: 1 [Student] 2 [Staff] 1 [Other]
- Improve site (landscape, shade, courtyards, etc): 1 [Student] 2 [Staff] 1 [Other]
- Increase food options: 1 [Student] 2 [Other]
- Construct a new PPD facility: 1 [Student] 2 [Other]
- Improve wayfinding: 1 [Student] 1 [Other]
- Improve service (phones, mail, reception): 1 [Other]
- Increase recycling and sustainability: 1 [Other]
- Provide a performance space: 1 [Other]

*HIGHEST NUMBER OF RESPONSES (DOES NOT INCLUDE ITEMS WITH ONE RESPONSE)
### Exhibit 3-7 Continued
#### Ability to Serve Question

**Q4B: What physical building or site related improvements do you recommend to increase UNM-G's ability to serve students, staff, faculty, administration, visitors, and the community at the ABE center?**

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Student</th>
<th>Staff</th>
<th>Faculty</th>
<th>Admin</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain/renew existing facilities and infrastructure</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Improve site (landscape, shade, courtyards, etc)</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Improve wayfinding</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase recycling and sustainability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Improve technology and make it more available</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve parking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Move the ABE program to main campus</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construct a bus shelter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Exhibit 3-7 Continued
#### Ability to Serve Question

**Q4C: What physical building or site related improvements do you recommend to increase UNM-G's ability to serve students, staff, faculty, administration, visitors, and the community at the Zuni campus?**

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Student</th>
<th>Staff</th>
<th>Faculty</th>
<th>Admin</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain/renew existing facilities and infrastructure</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve site (landscape, shade, courtyards, etc)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve wayfinding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Increase recycling and sustainability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Replace the roof</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide a library</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Restroom improvements - provide a shower</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
### Exhibit 3-8
**Most Important Improvement Question**

**Q5: What do you think is the most important physical building or site related improvement for UNM-G to complete over the next 10 years?**

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Student</th>
<th>Staff</th>
<th>Faculty</th>
<th>Admin</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain/renew existing facilities and infrastructure</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve/expand career and technical training programs</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve athletic and exercise facilities</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide student housing</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide a community building</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve parking</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve student services and academic support</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve technology and computer labs</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Highest number of responses (does not include items with one and two responses)*

### Exhibit 3-9
**Educational Experience Question**

**Q6: What academic program changes do you recommend to help UNM-G improve the educational experience for students and value to the community?**

<table>
<thead>
<tr>
<th>Change</th>
<th>Student</th>
<th>Staff</th>
<th>Faculty</th>
<th>Admin</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve student support services</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Align programs with local industry and community</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Provide more career technical courses</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Provide more health career courses</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide more emergency response courses</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ensure that credits transfer to 4 year institutions</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluate existing programs</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve recruitment</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve remedial courses</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide more language courses</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide more upper level courses</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide more STEM courses</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Highest number of responses (does not include items with one response)*
3.1.6 Room Utilization

Exhibit 3-10 illustrates instructional room use by day and time (fall 2014) as measured by the number of students in classrooms versus available seats (weekly student contact hours based on the master class schedule).

UNM-G has significant facility use for non-credit activities. These activities include community education, adult basic education, workforce development, and community events. The university schedules activities when rooms are not being used for credit-bearing instructional courses. Exhibit 3-10 does not account for non-credit-bearing use of instructional space.

The chart shows that:

- **UNM-G can accommodate enrollment growth** by increasing utilization of existing space. Industry benchmarks recommend 70% to 80% utilization for higher education institutions.
- **Utilization is higher on Mondays through Thursdays**, and lower on Fridays and Saturdays.
- **Demand for room use is generally level**, without extreme peak demand times that would suggest the need for scheduling adjustments for demand relief.

Exhibit 3-10
Room Utilization
3.1.7 Capital Resources

Capital funds are used to:

- Construct new facilities
- Renovate existing facilities
- Purchase and improve lands for educational use
- Purchase instructional equipment

The most prevalent source of capital funds are general obligation (GO) bonds. This debt financing is paid back through a tax levy on property owners in the taxing district. GO bonds can be local or statewide. Rarely, direct legislative appropriations can provide capital funds.

- Local GO bonds are based on local property tax assessments.
- Statewide GO bonds are competitive, issued every other year, and typically used as a match to local funding of up to 75%.

**UNM-G is about 72% bonded to capacity.**

- **The current additional local GO bonding capacity is about $6.6 million.**
- The total local GO bonding capacity is about $24.58 million. This amount is based on 3% of assessed property values. UNM-G currently has about $17.96 million outstanding.

In addition to capital funding, UNM-G receives about $502,000 annually from state funding sources for building renewal and replacement (BR&R) to maintain facilities.
3.1.8 Capital Funding History and Approach

History
UNM-G has a successful history of passing local bonds.
• $16 million approved by voters in 2004
• $8 million approved by voters in 2008

Approach
A cycling approach to funding provides some level of reliable capital funding. This approach:
• Incorporates regular funding cycles (four to eight years) with multiple revenue sources (local and state)
• Maintains an even tax rate (no tax increase)
• Provides the opportunity for a strategic implementation outlook to allow budgeting over an extended period of time

Exhibit 3-11
Funding Strategy Diagrams

Possible funding assuming a $6 million local GO Bond
- Plus any local donations that UNM-G can activate
- Basic infrastructure and facility renewal can often be a 25% local match
- New construction may require more than 25% local match
### Exhibit 3-12
**Capital Funding History**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>PROJECT DESCRIPTION</th>
<th>TOTAL PROJECT COST</th>
<th>FUNDING SOURCE (if known)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>BR&amp;I</td>
</tr>
<tr>
<td>2015</td>
<td>Zollinger Library remodel</td>
<td>$1,350,000</td>
<td>$1,350,000</td>
</tr>
<tr>
<td>2015</td>
<td>Site Water and Fire Suppression Upgrades (main campus)</td>
<td>$1,350,000</td>
<td>$1,350,000</td>
</tr>
<tr>
<td>2015</td>
<td>Childcare Playground Improvements</td>
<td>$250,000</td>
<td>$250,000</td>
</tr>
<tr>
<td>2014</td>
<td>Exterior ADA Improvements (main campus)</td>
<td>$500,000</td>
<td>$500,000</td>
</tr>
<tr>
<td>2014</td>
<td>Gutrey Hall Career Education HVAC Replacement</td>
<td>$1,325,000</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>Network IT Improvements (main campus)</td>
<td>$2,000,000</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>Student Services Tech Center &amp; Classroom</td>
<td>$14,113,242</td>
<td>$555,000</td>
</tr>
<tr>
<td>2011</td>
<td>Volech Dr. Infrastructure</td>
<td>$750,000</td>
<td>$750,000</td>
</tr>
<tr>
<td>2011</td>
<td>GH Backfill</td>
<td>$910,000</td>
<td>$910,000</td>
</tr>
<tr>
<td>2009</td>
<td>Calvin Hall Center Infrastructure</td>
<td>$1,300,000</td>
<td>$400,000</td>
</tr>
<tr>
<td>2008</td>
<td>Land Purchase (Guadagnoli) 6.64 acres</td>
<td>$203,464</td>
<td>$203,464</td>
</tr>
<tr>
<td>2008</td>
<td>Mechanical Industrial Technologies (MIT) Lab Equip</td>
<td>$272,219</td>
<td>$50,000</td>
</tr>
<tr>
<td>2008</td>
<td>Walking Trail</td>
<td>$75,000</td>
<td>$40,000</td>
</tr>
<tr>
<td>2007</td>
<td>Health Careers I remodel</td>
<td>$315,700</td>
<td>$23,700</td>
</tr>
<tr>
<td>2007</td>
<td>Health Careers II &amp; Radiology Tech aka HC I Phase 2</td>
<td>$5,664,652</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>2006</td>
<td>Lift Station Improvements</td>
<td>$71,346</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>North Campus build out</td>
<td>$331,507</td>
<td>$331,507</td>
</tr>
<tr>
<td>2005</td>
<td>Gutrey Parking Lot Repaving</td>
<td>$382,948</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>Health Careers I</td>
<td>$1,760,960</td>
<td>$1,760,960</td>
</tr>
<tr>
<td>2001</td>
<td>Zollinger Library build &amp; Gutrey Hall Old remodel</td>
<td>$3,278,650</td>
<td>$50,000</td>
</tr>
<tr>
<td>2001</td>
<td>Zuni campus</td>
<td>$3,246,233</td>
<td>$3,246,233</td>
</tr>
<tr>
<td>2000</td>
<td>Calvin Hall Center phase C Science labs</td>
<td>$1,531,100</td>
<td>$1,179,649</td>
</tr>
<tr>
<td>1999</td>
<td>Gym addition</td>
<td>$642,211</td>
<td>$642,211</td>
</tr>
<tr>
<td>1998</td>
<td>North Campus - Land donated by Diocese of Gallup</td>
<td>$149,700</td>
<td>Land</td>
</tr>
<tr>
<td>1997</td>
<td>Renovation of Calvin Hall, Gutrey Hall, Career Ed</td>
<td>$376,000</td>
<td>$376,000</td>
</tr>
<tr>
<td>1996</td>
<td>Calvin Hall Center phase B Computer Labs, Auditorium</td>
<td>$2,991,860</td>
<td>$449,360</td>
</tr>
<tr>
<td>1993</td>
<td>Child Care Center &amp; Maintenance</td>
<td>$815,000</td>
<td>$815,000</td>
</tr>
<tr>
<td>1991</td>
<td>Sunwest Bank donated Construction Tech House</td>
<td>NA</td>
<td>House</td>
</tr>
<tr>
<td>1984</td>
<td>Construction Technology Building</td>
<td>All documents were burned in the CDI fire August 2004</td>
<td></td>
</tr>
<tr>
<td>1981</td>
<td>Gymnasium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1979 - 1980</td>
<td>Calvin Hall Center phase A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1974</td>
<td>Gutrey Hall Old</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1973</td>
<td>Gutrey Family donated 16 acres</td>
<td>NA</td>
<td>Land</td>
</tr>
<tr>
<td>1969</td>
<td>Blair Gutrey Family donated 52 acres</td>
<td>NA</td>
<td>Land</td>
</tr>
<tr>
<td>1969</td>
<td>Gallup Lions Club donated 6 acres and clubhouse</td>
<td>NA</td>
<td>Land</td>
</tr>
<tr>
<td>1968</td>
<td>UNM faculty approved proposal to establish UNM-G</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

**SUBTOTAL 2006 - CURRENT**  
$30,782,130

**TOTAL - ALL YEARS**  
$45,956,792
3.1.9 Instructional Use of Existing Facilities

This section includes floor plans of existing facilities with instructional use (classrooms, class labs, computer labs) notated.

Exhibit 3-13 summarizes instructional space by facility.

### Exhibit 3-13

**Classroom Inventory**

<table>
<thead>
<tr>
<th>Building</th>
<th>Classrooms</th>
<th>Class-Labs</th>
<th>Computer Lab</th>
<th>Total</th>
<th>Classrooms</th>
<th>Class-Labs</th>
<th>Computer Lab</th>
<th>Other</th>
<th>Total Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gutley Hall</td>
<td>5</td>
<td>15</td>
<td>20</td>
<td></td>
<td>2</td>
<td>3</td>
<td></td>
<td>25</td>
<td>Unscheduled labs = veterans support and academic resource centers. Other = 3 MCHS classrooms</td>
</tr>
<tr>
<td>Construction Technology</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>High bay shops</td>
</tr>
<tr>
<td>Calvin Hall</td>
<td>21</td>
<td>3</td>
<td>8</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Education</td>
<td>0</td>
<td>0</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>Other = gym, weight room, exercise room</td>
</tr>
<tr>
<td>Health Careers</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Zollinger Library</td>
<td>0</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child Center / PPD</td>
<td>0</td>
<td>4</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>Other = 4 daycare rooms</td>
</tr>
<tr>
<td>Lions Hall</td>
<td>0</td>
<td>4</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>Building is vacant. 4 classrooms are not scheduled.</td>
</tr>
<tr>
<td>Pump House</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Careers 2</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Services Center</td>
<td>6</td>
<td>6</td>
<td></td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 unscheduled computer labs = Compass testing and open for student use</td>
</tr>
<tr>
<td><strong>Total, Gallup Campus</strong></td>
<td><strong>37</strong></td>
<td><strong>29</strong></td>
<td><strong>9</strong></td>
<td><strong>75</strong></td>
<td><strong>4</strong></td>
<td><strong>2</strong></td>
<td><strong>3</strong></td>
<td><strong>10</strong></td>
<td><strong>94</strong></td>
</tr>
<tr>
<td>North Campus</td>
<td>0</td>
<td>4</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Other = ABE: 3 classrooms and 1 computer lab</td>
</tr>
<tr>
<td>Zuni Campus</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>9</td>
<td>1</td>
<td></td>
<td></td>
<td>10</td>
<td>Unscheduled class-lab = resource/tutoring space</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>41</strong></td>
<td><strong>32</strong></td>
<td><strong>11</strong></td>
<td><strong>84</strong></td>
<td><strong>4</strong></td>
<td><strong>3</strong></td>
<td><strong>3</strong></td>
<td><strong>14</strong></td>
<td><strong>108</strong></td>
</tr>
</tbody>
</table>
This page is intentionally blank.
Exhibit 3-14
Existing Facility Use by Building
Exhibit 3-15
Gurley Hall - Basement

BASEMENT FLOOR
NOT TO SCALE

FICM Use
110 - Classroom
115 - Classroom service
210 - Class Lab
215 - Class Lab Service
210 - Computer Lab
XXX - Other Instructional Space
310 - Office
315 - Office service

GURLEY HALL
2015 # SPACES

<table>
<thead>
<tr>
<th>Floor</th>
<th>Classroom</th>
<th>Class Lab</th>
<th>Computer Lab</th>
<th>Other Instructional Space</th>
<th>Subtotal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basement</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>1st Floor</td>
<td>1</td>
<td>15</td>
<td>0</td>
<td>0</td>
<td>16</td>
</tr>
<tr>
<td>2nd Floor</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>25</td>
<td>19</td>
<td>0</td>
<td>3</td>
<td>47</td>
</tr>
</tbody>
</table>
Exhibit 3-17
Gurley Hall - Second Floor

GURLEY HALL

<table>
<thead>
<tr>
<th>Floor</th>
<th>Classroom</th>
<th>Class Lab</th>
<th>Computer Lab</th>
<th>Other Instructional Space</th>
<th>Subtotal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basement</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>1st Floor</td>
<td>1</td>
<td>15</td>
<td>0</td>
<td>0</td>
<td>16</td>
</tr>
<tr>
<td>2nd Floor</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECOND FLOOR

FICM Use
- 110 - Classroom
- 115 - Classroom service
- 210 - Class Lab
- 215 - Class Lab Service
- 210 - Computer Lab
- XXX - Other Instructional Space
- 310 - Office
- 315 - Office service

NOT TO SCALE
Exhibit 3-18
Calvin Hall Center - First Floor

<table>
<thead>
<tr>
<th>FICM Use</th>
<th>2015 # SPACES</th>
</tr>
</thead>
<tbody>
<tr>
<td>110 - Classroom</td>
<td>13</td>
</tr>
<tr>
<td>115 - Classroom service</td>
<td>0</td>
</tr>
<tr>
<td>210 - Class Lab</td>
<td>1</td>
</tr>
<tr>
<td>215 - Class Lab Service</td>
<td>0</td>
</tr>
<tr>
<td>210 - Computer Lab</td>
<td>0</td>
</tr>
<tr>
<td>XXX - Other Instructional Space</td>
<td>0</td>
</tr>
<tr>
<td>310 - Office</td>
<td>8</td>
</tr>
<tr>
<td>315 - Office service</td>
<td>3</td>
</tr>
<tr>
<td>2nd Floor</td>
<td>7</td>
</tr>
<tr>
<td>Subtotal</td>
<td>18</td>
</tr>
<tr>
<td>1st Floor</td>
<td>14</td>
</tr>
<tr>
<td>Subtotal</td>
<td>32</td>
</tr>
</tbody>
</table>

FIRST FLOOR
NOT TO SCALE
### 2015 FICM Use

- 110 - Classroom
- 115 - Classroom service
- 210 - Class Lab
- 215 - Class Lab Service
- 210 - Computer Lab
- XXX - Other Instructional Space
- 310 - Office
- 315 - Office service

### CALVIN HALL CENTER

#### 2015 # SPACES

<table>
<thead>
<tr>
<th>Floor</th>
<th>Classroom</th>
<th>Class Lab</th>
<th>Computer Lab</th>
<th>Other Instructional Space</th>
<th>Subtotal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>13</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>2nd</td>
<td>8</td>
<td>3</td>
<td>7</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>32</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Exhibit 3-19**

Calvin Hall Center - Second Floor
Exhibit 3-21
Gymnasium

Gymnasium

FICM Use

- 110 - Classroom
- 115 - Classroom service
- 210 - Class Lab
- 215 - Class Lab Service
- 210 - Computer Lab
- XXX - Other Instructional Space
- 310 - Office
- 315 - Office service

<table>
<thead>
<tr>
<th>GYM</th>
<th>2015</th>
<th># SPACES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Class Lab</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Computer Lab</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Other instructional space</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3</strong></td>
<td></td>
</tr>
</tbody>
</table>

First Floor

Not To Scale

2015 - 2025 Facilities Master Plan
University of New Mexico-Gallup

ARC 21416
September 2015
Exhibit 3-26
Child Center Basement
(Physical Plant Department)

FICM Use
- 110 - Classroom
- 115 - Classroom service
- 210 - Class Lab
- 215 - Class Lab Service
- 210 - Computer Lab
- XXX - Other Instructional Space
- 310 - Office
- 315 - Office service

CHILDCARE / PPD

<table>
<thead>
<tr>
<th>Basement</th>
<th>2015 SPACES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom</td>
<td>0</td>
</tr>
<tr>
<td>Class Lab</td>
<td>0</td>
</tr>
<tr>
<td>Computer Lab</td>
<td>0</td>
</tr>
<tr>
<td>Other instructional space</td>
<td>0</td>
</tr>
<tr>
<td>Subtotal</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1st Floor</th>
<th>2015 SPACES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom</td>
<td>0</td>
</tr>
<tr>
<td>Class Lab</td>
<td>0</td>
</tr>
<tr>
<td>Computer Lab</td>
<td>0</td>
</tr>
<tr>
<td>Other instructional space</td>
<td>5</td>
</tr>
<tr>
<td>Subtotal</td>
<td>5</td>
</tr>
</tbody>
</table>

TOTAL 5
Exhibit 3-27
Pump House

FICM Use
- 110 - Classroom
- 115 - Classroom service
- 210 - Class Lab
- 215 - Class Lab Service
- 210 - Computer Lab
- XXX - Other Instructional Space
- 310 - Office
- 315 - Office service

<table>
<thead>
<tr>
<th>PUMP HOUSE</th>
<th>2015 # SPACES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Floor</td>
<td></td>
</tr>
<tr>
<td>Classroom</td>
<td>0</td>
</tr>
<tr>
<td>Class Lab</td>
<td>0</td>
</tr>
<tr>
<td>Computer Lab</td>
<td>0</td>
</tr>
<tr>
<td>Other Instrucional space</td>
<td>0</td>
</tr>
<tr>
<td>Subtotal</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>0</td>
</tr>
</tbody>
</table>

FIRST FLOOR PLAN
SCALE: NTS

100
Exhibit 3-28
Lions Hall

FIRST FLOOR
NOT TO SCALE

FICM Use
- 110 - Classroom
- 115 - Classroom service
- 210 - Class Lab
- 215 - Class Lab Service
- 210 - Computer Lab
- XXX - Other Instructional Space
- 310 - Office
- 315 - Office service

LIONS HALL 2015

<table>
<thead>
<tr>
<th>1st Floor</th>
<th># SPACES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom</td>
<td>4</td>
</tr>
<tr>
<td>Class Lab</td>
<td>0</td>
</tr>
<tr>
<td>Computer Lab</td>
<td>0</td>
</tr>
<tr>
<td>Other Instructional space</td>
<td>0</td>
</tr>
<tr>
<td>Subtotal</td>
<td>4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>4</td>
</tr>
</tbody>
</table>
Exhibit 3-32
Zuni Campus Facility
3.1.10 Site, Facilities, and Infrastructure Assessments

This section documents the physical evaluation of UNM-G campus facilities that provided the basis for the 2016-2025 site and facility renewal projects reflected in the facilities master plan. See Section 3.1.10 for an assessment of campus infrastructure (civil, landscape, mechanical / electrical and IT systems).

Site Size

UNM-G main campus consists of a large parcel that is about 69 acres and two smaller parcels of about 6 acres each. Gurley Avenue separates the large parcel from the smaller parcels.

Facility Age

The campus was constructed incrementally. Exhibit 3-34 shows the chronological development of facilities on the site.

Facility Condition

UNM-G PPD has maintained existing facilities, reducing the need to repair and replace building system components. However, funding realities cause some deferred maintenance and even properly maintained systems eventually need to be replaced. Exhibit 3-33 quantifies site and facilities renewal needs. Exhibit 3-36 through 3-44 and exhibits in the engineering narratives provide a more detailed description of need.

Exhibit 3-33
Sites and Facilities Renewal Summary

<table>
<thead>
<tr>
<th>BUILDING ELEMENT</th>
<th>GSF</th>
<th>Roofing / Structure</th>
<th>HVAC</th>
<th>Restrooms / Plumbing</th>
<th>Renovation / Remodel</th>
<th>Subtotal, Buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gurley Hall / Career Education</td>
<td>111,415</td>
<td>$5,040,000</td>
<td>$1,030,000</td>
<td>$20,000</td>
<td>$16,000,000</td>
<td></td>
</tr>
<tr>
<td>Construction Technology</td>
<td>6,125</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Calhoun</td>
<td>67,670</td>
<td>$2,570,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$2,570,000</td>
</tr>
<tr>
<td>Physical Education</td>
<td>20,305</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Health Careers 1</td>
<td>11,525</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Zollinger Library</td>
<td>20,440</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Childcare / PPD</td>
<td>9,030</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Lions Hall</td>
<td>5,780</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Pamp House</td>
<td>710</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Health Careers 2</td>
<td>18,380</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Student Service and Technology Center (STC)</td>
<td>38,235</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>North Campus</td>
<td>5,700</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total</td>
<td>24,930</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Roofing / Structure</td>
<td>$5,040,000</td>
<td>$1,030,000</td>
<td>$20,000</td>
<td>$20,000</td>
<td>$1,430,000</td>
<td>$16,000,000</td>
</tr>
<tr>
<td>HVAC</td>
<td>$1,030,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$1,030,000</td>
</tr>
<tr>
<td>Restrooms / Plumbing</td>
<td>$20,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$20,000</td>
</tr>
<tr>
<td>Renovation / Remodel</td>
<td>$16,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$16,000</td>
</tr>
<tr>
<td>Subtotal, Buildings</td>
<td>$16,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$16,000,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Utility Upgrades</td>
<td>$8,740,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$8,440,000</td>
</tr>
<tr>
<td>Accessible, ADA, Landscape</td>
<td>$4,660,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$4,660,000</td>
</tr>
<tr>
<td>Subtotal, Site</td>
<td>$13,400,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$13,400,000</td>
</tr>
<tr>
<td>Total</td>
<td>$29,400,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$29,400,000</td>
</tr>
</tbody>
</table>
This page is intentionally blank.
Exhibit 3-34
Construction Dates of Main Campus Facilities
<table>
<thead>
<tr>
<th>Building ID</th>
<th>Old Gurley</th>
<th>New Gurley</th>
<th>Career Education</th>
<th>Construction Tech</th>
<th>Calvin Hall Center A</th>
<th>Calvin Hall Center B</th>
<th>Calvin Hall Center C</th>
<th>Physical Education</th>
<th>Physical Education Addition</th>
<th>Health Careers Center 1 (HCC 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of Building [years]</td>
<td>40</td>
<td>30</td>
<td>37</td>
<td>30</td>
<td>35</td>
<td>19</td>
<td>15</td>
<td>34</td>
<td>16</td>
<td>13</td>
</tr>
</tbody>
</table>

### General
- UNM-G has an active project to improve site signage, including the marquee sign on Boardman Avenue. The existing marquee sign is dull and faded and the electronics do not work.
- The cramped site compromises access to the high bay shop areas.
- UNM-G installed new ADA parking and access ramp in 2014/15 per OCR recommendations.
- UNM-G provided ADA compliant handrails at the ramp between Gurley Hall and the SSTC building per OCR recommendations.
- UNM-G provided directional signage, handrail extensions, and edge protection at the ramp from the parking area near the loading dock at Calvin Hall Center per OCR recommendations.
- Provide an accessible sloped walkway from the courtyard space between Gurley Hall and Zollinger Library to the Gymnasium.
- UNM-G provided extensions of the handrail from the parking area to the HCC 1 building per OCR recommendations.

### Paving
- Vehicular circulation and parking in front of Gurley is confusing for drivers. Consider modifying the parking layout, circulation, and/or signage.
- Vehicular access for construction equipment is limited by the sloped, angular site.
- Extend Calvin Hall Center Drive to Boardman Avenue for secondary site access/egress.
- Asphalt roofing is in fair to good condition. ARC did not observe evidence of roof leaks inside the building.

### ADA Accessibility
- UNM-G provided ADA complaint handrails at the ramp between Gurley Hall and the SSTC building per OCR recommendations.
- UNM-G installed new ADA parking and access ramp in 2014/15 per OCR recommendations.
- UNM-G provided directional signage, handrail extensions, and edge protection of the ramp from the parking area near the loading dock at Calvin Hall Center per OCR recommendations.

### Structure
- Replace roofing on Career Education. The membrane is old and worn and flashing is dried out. Built-up roofing at Old and New Gurley is in good condition.
- Repair and maintain severely deteriorated EIFS parapets. Roofing membrane is in fair condition.
- Replace roofing at Calvin Hall Center B and C. Membrane is old and worn. missing granule surface, and dry and brittle. Roofing on Calvin Hall Center A is in fair to good condition.
- Asphalt roofing is in fair to good condition. ARC did not observe evidence of roof leaks inside the building.
- Replace roofing. Membrane is old and worn and flashing is dried out. North side roof drains freeze up and clog.

### Exterior Walls
- Repair and maintain EIFS. Exterior building facades have numerous holes in the EIFS and sections of underlying insulation are damaged.

### Fenestration
- The building lacks windows and natural light.

---

**LEGEND**

- □ No significant findings
- □ Observation
- □ Recommendation

Exhibit 3-35
Facilities Condition Summary
### General

- **The Child Center playground was upgraded in 2015 with new equipment and fencing.**
- **The building perimeter has erosion issues, particularly on the south and west sides.**

### Paving

- **Repair sections of loose and broken asphalt.**
- **Exterior concrete steps are cracked and crumbling. Metal pipe railings are rusted.**

### ADA Accessibility

- **Provide accessible, ramped access to the child center and PPD building from the intersection of Gurley Avenue and the access road.**
- **UNM-G completed slope modifications at accessible parking per OCR recommendations.**

### Structure

- **The building has settlement concerns. A structural study is recommended. The study needs to compare the cost of renovation vs new construction.**
- **UNM is in the process of completing a study that includes recommendations and a cost estimate to address differential structural settlement.**

### Roofing

- **TPO is in good condition.**
- **Built-up roofing is in poor condition.**

### Exterior Walls

- **The stucco has some spider cracking. If deterioration continues, repair the stucco and provide a fog coat.**
- **Minor spider cracking observed on west building facade.**

### Fenestration

- **The overhead service door is undersized for equipment and operational support.**
- **Windows are poorly insulated and paint is peeling at exterior metal doors and frames.**

---

### Facilities Condition Summary

<table>
<thead>
<tr>
<th>Building ID</th>
<th>Zollinger Library</th>
<th>Child Center</th>
<th>Physical Plant</th>
<th>Lions Hall</th>
<th>Pump House</th>
<th>Health Careers Center 2 (HCC 2)</th>
<th>Student Services and Technology Center (SSTC)</th>
<th>North Education Building</th>
<th>North Education Building Addition</th>
<th>Zuni South Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age of Building (years)</td>
<td>14</td>
<td>22</td>
<td>22</td>
<td>61</td>
<td>27</td>
<td>8</td>
<td>3</td>
<td>17</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Building ID</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Old Gurley</td>
<td>New Gurley</td>
<td>Career Education</td>
<td>Construction Tech</td>
<td>Calvin Hall Center A</td>
<td>Calvin Hall Center B</td>
<td>Calvin Hall Center C</td>
<td>Physical Education</td>
<td>Physical Education Addition</td>
<td>Health Careers Center 1 (HCC 1)</td>
<td></td>
</tr>
<tr>
<td>Age of Building (years)</td>
<td>40</td>
<td>30</td>
<td>37</td>
<td>30</td>
<td>35</td>
<td>19</td>
<td>15</td>
<td>34</td>
<td>16</td>
<td>13</td>
</tr>
</tbody>
</table>

### Initial Systems

- **Roofing**: Replace worn flooring in Gurley Hall, including in the class labs. Clean and reseal concrete in automotive and welding labs.
- **Ceilings**: Replace some damaged and stained acoustical ceiling tiles. The space is open to structure above (no ceiling).
- **Interior Partitions**: UNM-G recently relocated Student Senate, Student Life, and student lounge areas to the basement. UNM-G also recently renovated the administrative, F Bldg, Workforce Development, Academic Resource Center (ARC), veterans support, math and science tutoring, and student lounge and study areas.
- **Casework and FF+E**: Visual display surfaces are worn and ghosted. Casework in Calvin Hall Center B and C is worn with moderate wear and tear.
- **HVAC**: In Calvin Hall Center A, replace older knob-style door hardware for ADA compliance. In Calvin Hall Center B: reconfigure the combustion air duct. In Calvin Hall Center C, replace roof-mounted air handlers. Replace with high-efficiency units as part of life cycle renewal. The boiler was installed in 2007. Classroom 105 is sometimes too hot.
- **Plumbing**: Some restrooms have been recently renovated, but other require renovation to replace old fixtures and finishes and to meet ADA requirements. The basement men’s restroom has line of sight issues.
- **Fire Suppression**: The building has a fire suppression system. The portion of the system in Career Education is new. It was installed in 2014.
- **Lighting**: Replace older light fixtures with new fixtures for energy efficiency and improved color rendition. The cosmetology hall dryers trip electrical breakers.
- **Other Notes**: Maintain the construction technology building until the new CCCTE facility is complete. The construction technology building may be demolished following completion of the CCCTE.
### Facilities Condition Summary

<table>
<thead>
<tr>
<th>Building ID</th>
<th>Roofing</th>
<th>Ceilings</th>
<th>Interior Partitions</th>
<th>Casework and FF+E</th>
<th>HVAC</th>
<th>Plumbing</th>
<th>Fire Suppression</th>
<th>Electrical</th>
<th>Lighting</th>
<th>Other Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zollinger Library</td>
<td>Finishes are old and dated, but still functional.</td>
<td>The ceiling is low. High bay space would be more practical for shop functions.</td>
<td>The office area is poorly configured to accommodate administrative, managerial, and supervisory staff.</td>
<td>Classroom furniture is old and mismatched.</td>
<td>Complete a load analysis to determine if existing equipment can meet current and anticipated loads.</td>
<td>Fixtures are old and worn, but functional and scaled for children.</td>
<td>The library is included in the 2013 fire suppression installation project.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child Center</td>
<td>Corrugated is torn and stained.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Plant</td>
<td>Infrastructure below raised flooring is difficult to access.</td>
<td>Ceiling is low. High bay space would be more practical for shop functions.</td>
<td>Interior office partitions limit flexibility of space.</td>
<td>Classroom furniture is old and mismatched.</td>
<td>Complete a load analysis to determine if the server room unit is sized appropriately.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lions Hall</td>
<td>Roofing shows moderate wear and tear.</td>
<td>Replace stained ceiling tiles after roof leaks have been repaired.</td>
<td>Replace interior wall surfaces where they have been damaged by flooding from restroom back-ups.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump House</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Careers Center 2 (HCC 2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Services and Technology Center (SSTC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Education Building</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Education Building Addition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zuni South Campus Building</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Age of Building (years) | 14 | 22 | 22 | 61 | 27 | 3 | 17 | 3 | 7 | 14 |

**Exhibit 3-35 Continued***

---

### Note

- PPD uses the Zollinger basement for storage. The current basement remodel project will reduce PPD storage.
- The location of PPD below the Child Center limits PPD's ability to perform work activities such as painting, welding, and noisy tasks. PPD has limited exterior storage areas.
- PFD uses the Zollinger basement for storage. The current basement remodel project will reduce PFD storage.
- Lions Hall is vacant. Located spaces include 4 classrooms and 8 offices.
- The pump house may not be required after supply water improvements are completed jointly by the city and UNM-G.
- This building is LeED Gold Certified.
- The ABE program desires additional classroom and office space. The program recommends adding a portable building to the site and acquiring the adjacent lot for future facility expansion.
- This building has a fire suppression system.
- The building does not have a fire suppression system.
- The building does not have a fire suppression system.
Exhibit 3-36
Site Drainage

STORM WATER MANAGEMENT RECOMMENDATIONS

- Implement Low Impact Development (LID) measures with future development.
- Limit discharge to existing rates with future development.
- Consider channelizing or piping northern arroyo to free up area for development.

LEGEND

- Direction of Surface Flow
- Existing Storm Drain
- Arroyos

2015.005.1

High MESA Consulting Group
6315-B MIDWAY PARK BLVD. NE
ALBUQUERQUE, NEW MEXICO 87109
PHONE: 505.346.4050 • FAX: 505.346.4054 • www.highmesag.com

2015 - 2025 Facilities Master Plan
University of New Mexico-Gallup

3-42
1. **Existing Underground Primary (15KV Cable)** in concrete encased ductbank.
2. **Existing Building Pad Mount Transformer.**
3. **Existing Gallup Joint Utilities Primary Meter and 15KV Pad Mounted Switch.**
4. **Existing Load Break Junction Module Terminal Cabinet.**
5. **Existing Below Grade Manhole.**
6. **Existing Below Grade Pull Box (PB).**
7. **Existing 4"C Stub for Future Extension.**

**Exhibit 3-42**
Primary Electrical Distribution
This page is intentionally blank.
3.1.11 Service Area Demographics

Population Growth
Population in the service area, both city and county, grew every decade between 1910 and 2000.

- The city of Gallup has experienced continuous growth, at an annual rate of 0.7% since 1910, and added 1,469 people from 2000 to 2010.
- From 2000 to 2010, Zuni added 133 people.
- From 2000 to 2007, McKinley County lost 4,000 people.
- From 2007 to 2010, McKinley County grew slowly, gaining over 1,530 people.
- Since 2010, the county’s growth trend has increased and grown at a rate of 0.9% per year until 2014.
- ARC projections show county will grow by an average annual rate of 0.6% from 2010-2030 for the mid-range series, considered the most likely, and 1.4% for the high range.

Exhibit 3-45
Historic Population Growth

McKinley County and City of Gallup Historic Population: 1910-2010

Source: U.S. Census
Selected Demographic Factors

• Ethnicity
  - The county has strong ethnicity: Hispanic, 13.3%, Native American, 75.5%, and other, 11.2%.
  - The majority of land in McKinley County is Tribal Land (Exhibit 3-47).
  - 33 out of 116 Navajo Chapters are located in McKinley County (Exhibit 3-48).
    » Some of the chapters include additional area outside of McKinley County.
  - From 2000 to 2010, population declined in 28 of the 33 Navajo Chapters (Exhibit 3-49).
  - The percentage of Native Americans living in the city of Gallup increased from 37% in 2000 to 44% in 2010, according to the U.S. Census (Exhibit 3-50).
    » Both migration and natural increase (births over deaths) contribute to growth.

• Age
  - The county has a young population: the median age is 30.7 years, compared to 36.7 in the state and 37.2 in the nation.
  - The county population is getting older.
    » The median age in the county has increased faster than the state and the nation since 2000.
    » County population age distribution curves for 1990, 2000, and 2010 indicate an aging population (Exhibit 3-51).
    » UNM Geospatial and Population Studies projections for 2020 and 2035 support the trend of an aging population (Exhibit 3-52).

• Births
  - The birth rate in McKinley County is higher than that of the state and the nation, but is decreasing at a faster rate (Exhibit 3-54).
  - Birth rate decline corresponds to a decrease in household size in McKinley County.
Exhibit 3-47
McKinley County Land Status

Exhibit 3-48
McKinley Count, Navajo Nation Chapters
Exhibit 3-49
Navajo Nation Population Changes

Exhibit 3-50
City of Gallup Ethnicity
Exhibit 3-51
Median Age in McKinley County Compared to State and U.S.

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2010</th>
<th>Change 2000 to 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Gallup</td>
<td>31.1</td>
<td>31.9</td>
<td>0.8</td>
</tr>
<tr>
<td>McKinley County</td>
<td>26.9</td>
<td>30.7</td>
<td>3.8</td>
</tr>
<tr>
<td>Zuni Reservation</td>
<td>28.0</td>
<td>31.0</td>
<td>3.0</td>
</tr>
<tr>
<td>New Mexico</td>
<td>34.6</td>
<td>36.7</td>
<td>2.1</td>
</tr>
<tr>
<td>United States</td>
<td>35.3</td>
<td>37.2</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Source: U.S. Census 2000 and 2010
### Exhibit 3-54
**McKinley County Birth Rates**

Birth Rates in McKinley County, Gallup and United States: 1990-2013

<table>
<thead>
<tr>
<th>Year</th>
<th>Birth Rate per 1,000 Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>28.3</td>
</tr>
<tr>
<td>1991</td>
<td>27.5</td>
</tr>
<tr>
<td>1992</td>
<td>26.5</td>
</tr>
<tr>
<td>1993</td>
<td>24.1</td>
</tr>
<tr>
<td>1994</td>
<td>21.3</td>
</tr>
<tr>
<td>1995</td>
<td>19.8</td>
</tr>
<tr>
<td>1996</td>
<td>18.8</td>
</tr>
<tr>
<td>1997</td>
<td>18.6</td>
</tr>
<tr>
<td>1998</td>
<td>18.4</td>
</tr>
<tr>
<td>1999</td>
<td>18.3</td>
</tr>
<tr>
<td>2000</td>
<td>19.1</td>
</tr>
<tr>
<td>2001</td>
<td>19.1</td>
</tr>
<tr>
<td>2002</td>
<td>18.9</td>
</tr>
<tr>
<td>2003</td>
<td>20.1</td>
</tr>
<tr>
<td>2004</td>
<td>19.8</td>
</tr>
<tr>
<td>2005</td>
<td>19.2</td>
</tr>
<tr>
<td>2006</td>
<td>17.5</td>
</tr>
<tr>
<td>2007</td>
<td>17.7</td>
</tr>
<tr>
<td>2008</td>
<td>16.9</td>
</tr>
<tr>
<td>2009</td>
<td>15.4</td>
</tr>
<tr>
<td>2010</td>
<td>14.3</td>
</tr>
<tr>
<td>2011</td>
<td>13.5</td>
</tr>
<tr>
<td>2012</td>
<td>12.9</td>
</tr>
<tr>
<td>2013</td>
<td>12.5</td>
</tr>
</tbody>
</table>

### Exhibit 3-55
**McKinley County Household Size**

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>1990</th>
<th>2000</th>
<th>2010</th>
<th>Change 1990 to 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Gallup</td>
<td>3.01</td>
<td>2.85</td>
<td>2.79</td>
<td>-0.22</td>
</tr>
<tr>
<td>McKinley County</td>
<td>3.61</td>
<td>3.44</td>
<td>3.22</td>
<td>-0.39</td>
</tr>
<tr>
<td>Gallup-McKinley County Schools</td>
<td>3.46</td>
<td>3.38</td>
<td>3.14</td>
<td>-0.32</td>
</tr>
<tr>
<td>Zuni Reservation</td>
<td>4.16</td>
<td>3.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Mexico</td>
<td>2.74</td>
<td>2.63</td>
<td>2.55</td>
<td>-0.19</td>
</tr>
</tbody>
</table>
Selected Economic Factors

• Income and Employment
  - McKinley County has the highest poverty rate and the lowest per capita income in New Mexico. (U.S. Bureau of Economic Analysis)
    » The median income is 23% lower than the state average (Exhibit 3-56).
    » 30% of families live below the poverty level (Exhibit 3-57).
  - Employment has declined in McKinley County since 2007 (Exhibit 3-58).
    » Unemployment is higher in McKinley County than in New Mexico and the U.S. (Exhibit 3-59).
  - 87% of McKinley County jobs are located in Gallup.
  - McKinley County’s most important employers are in the medical sector. Other sectors that have seen growth from 2001 to 2013 are the gaming industry, social assistance, local government (including schools), and accommodations and food services (Exhibit 3-60).
  - Mining, retail trade, wholesale, construction and real estate declined from 2001 to 2013. The most significant decline in employment by sector was in retail trade, which saw a decrease of over 300 jobs between 2001 and 2013 (Exhibit 3-61).

• Educational Attainment
  - The percentage of McKinley County’s population with an associate’s degree or higher is 17.6%, lower than in other northwest New Mexico counties and significantly lower than in either New Mexico or the U.S. (Exhibit 3-62).

• Residential Development
  - The housing market has not recovered since 2008.
    » Only three residential building permits were issued in 2014, compared to 77 residential permits in 2008. Many residential development projects are stalled (Exhibit 3-63a).
    » Many residential projects have been halted or abandoned (Exhibits 3-63b and 3-63c).


Exhibit 3-56
Median Income

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Annual Income</th>
<th>Difference from New Mexico’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>$53,046</td>
<td>$8,119</td>
</tr>
<tr>
<td>New Mexico</td>
<td>$44,927</td>
<td>-</td>
</tr>
<tr>
<td>McKinley County</td>
<td>$30,458</td>
<td>-$14,469</td>
</tr>
<tr>
<td>Gallup/McKinley County</td>
<td>$30,853</td>
<td>-$14,074</td>
</tr>
<tr>
<td>City of Gallup</td>
<td>$47,932</td>
<td>$3,005</td>
</tr>
</tbody>
</table>


Exhibit 3-57
Families in Poverty

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>11.3%</td>
</tr>
<tr>
<td>New Mexico</td>
<td>15.6%</td>
</tr>
<tr>
<td>McKinley County</td>
<td>30.2%</td>
</tr>
<tr>
<td>Gallup/McKinley County</td>
<td>26.9%</td>
</tr>
<tr>
<td>City of Gallup</td>
<td>18.8%</td>
</tr>
</tbody>
</table>

Exhibit 3-58
McKinley County Employment

McKinley County Employment: 1999-2013

Exhibit 3-59
McKinley County Unemployment

Unemployment Rates in McKinley County, NM and U.S.

Unemployment has not recovered from the economic downturn and remains higher than during pre-2008 years and higher than the state rate.

Source: New Mexico Department of Workforce Solutions Economic Research and Analysis (NMDWS), Local Area Unemployment Statistics Program in conjunction with U.S. Bureau of Labor Statistics and NMDWS, Table A: Civilian Labor Force, Employment, Unemployment and Unemployment Rate.
### Exhibit 3-60
McKinley County Employment by Industrial Sector

<table>
<thead>
<tr>
<th>McKinley County Average Annual Covered Employment by Major Industrial Sector</th>
<th>Change 2001-2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grand Total</td>
<td>19,895</td>
</tr>
<tr>
<td>Total Private</td>
<td>13,038</td>
</tr>
<tr>
<td>Ag., Forestry, Fishing &amp; Hunting</td>
<td>0</td>
</tr>
<tr>
<td>Mining</td>
<td>D</td>
</tr>
<tr>
<td>Utilities</td>
<td>155</td>
</tr>
<tr>
<td>Construction</td>
<td>619</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>534</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>672</td>
</tr>
<tr>
<td>Transportation &amp; Warehousing</td>
<td>296</td>
</tr>
<tr>
<td>Information</td>
<td>176</td>
</tr>
<tr>
<td>Finance &amp; Insurance</td>
<td>283</td>
</tr>
<tr>
<td>Real Estate &amp; Rental &amp; Leasing</td>
<td>299</td>
</tr>
<tr>
<td>Professional &amp; Technical Services</td>
<td>D</td>
</tr>
<tr>
<td>Management of Companies &amp; Enterprises</td>
<td>D</td>
</tr>
<tr>
<td>Administrative &amp; Waste Services</td>
<td>363</td>
</tr>
<tr>
<td>Educational Services</td>
<td>330</td>
</tr>
<tr>
<td>Health Care &amp; Social Assistance</td>
<td>1,890</td>
</tr>
<tr>
<td>Arts, Entertainment &amp; Recreation</td>
<td>30</td>
</tr>
<tr>
<td>Accommodation &amp; Food Services</td>
<td>2,278</td>
</tr>
<tr>
<td>Other Services, ex. Public Administration</td>
<td>575</td>
</tr>
<tr>
<td>Unclassified</td>
<td>0</td>
</tr>
<tr>
<td>Total Government</td>
<td>6,857</td>
</tr>
<tr>
<td>Federal</td>
<td>2,444</td>
</tr>
<tr>
<td>State</td>
<td>538</td>
</tr>
<tr>
<td>Local</td>
<td>3,873</td>
</tr>
</tbody>
</table>

**Note:** All years have been revised in accordance with U.S. Dept. of Labor, Bureau of Labor Statistics, databases.

**D:** Withheld to avoid disclosing confidential data

**Source:** U.S. Dept. of Labor, Bureau of Labor Statistics, Quarterly Census of Employment and Wages.

### Exhibit 3-61
Gallup Area Major Employers

<table>
<thead>
<tr>
<th>Area Large Employers</th>
<th>2005 and 2011</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>USPHS Gallup Indian Medical Center</td>
<td>1000*</td>
<td>1,250</td>
</tr>
<tr>
<td>Rehoboth McKinley Christian Hospital</td>
<td>649</td>
<td>420</td>
</tr>
<tr>
<td>City of Gallup (full- and part-time)*</td>
<td>601</td>
<td>390 (full- and part-time)</td>
</tr>
<tr>
<td>Wal-Mart</td>
<td>637</td>
<td>460</td>
</tr>
<tr>
<td>McKinley County</td>
<td>300</td>
<td>280</td>
</tr>
<tr>
<td>El Segundo and Lea Ranch Mines</td>
<td>240</td>
<td>370</td>
</tr>
<tr>
<td>California Supermarket (now Lowe’s)</td>
<td>240**</td>
<td>66</td>
</tr>
<tr>
<td>Pittsburgh and Midway Coal</td>
<td>50**</td>
<td>0</td>
</tr>
<tr>
<td>Fire Rock Casino</td>
<td>0</td>
<td>320</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,717</td>
<td>3,556</td>
</tr>
</tbody>
</table>

**Sources:** Gallup/ McKinley County Chamber of Commerce, 2001 and ARC- calls to employers or published information (* 2005 (**) 2011 and all of 2015 data
Exhibit 3-62
McKinley County Educational Attainment

Educational Attainment of Population 25 Years and Older

<table>
<thead>
<tr>
<th>Education Level</th>
<th>McKinley County</th>
<th>San Juan County</th>
<th>Cibola County</th>
<th>New Mexico</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population 25 years and over</td>
<td>41,857</td>
<td>79,445</td>
<td>18,015</td>
<td>1,358,996</td>
<td>208,797,616</td>
</tr>
<tr>
<td>Less than 9th grade</td>
<td>10.8%</td>
<td>6.6%</td>
<td>6.4%</td>
<td>7.2%</td>
<td>5.8%</td>
</tr>
<tr>
<td>9th to 12th grade, no diploma</td>
<td>15.2%</td>
<td>11.4%</td>
<td>12.3%</td>
<td>8.9%</td>
<td>7.9%</td>
</tr>
<tr>
<td>High school graduate (includes equivalency)</td>
<td>33.2%</td>
<td>32.1%</td>
<td>41.3%</td>
<td>26.4%</td>
<td>28.0%</td>
</tr>
<tr>
<td>Some college, no degree</td>
<td>23.3%</td>
<td>24.4%</td>
<td>20.3%</td>
<td>23.6%</td>
<td>21.2%</td>
</tr>
<tr>
<td>Associate's degree</td>
<td>6.4%</td>
<td>10.7%</td>
<td>8.1%</td>
<td>7.8%</td>
<td>7.9%</td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>6.9%</td>
<td>9.6%</td>
<td>8.2%</td>
<td>14.7%</td>
<td>18.2%</td>
</tr>
<tr>
<td>Graduate or professional degree</td>
<td>4.3%</td>
<td>5.3%</td>
<td>3.3%</td>
<td>11.2%</td>
<td>10.9%</td>
</tr>
<tr>
<td>Associate's and higher degrees</td>
<td>17.6%</td>
<td>25.6%</td>
<td>19.6%</td>
<td>33.7%</td>
<td>37.0%</td>
</tr>
</tbody>
</table>

Source: U.S. Census, American Community Survey 3-Year Estimates, 2013

McKinley County: Lower rate than other NW NM counties, New Mexico and U.S.

Exhibit 3-63a
Gallup Residential Building Permits

<table>
<thead>
<tr>
<th>Year</th>
<th>Single Family</th>
<th>Multi-Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>29</td>
<td>175</td>
</tr>
<tr>
<td>2001</td>
<td>17</td>
<td>125</td>
</tr>
<tr>
<td>2002</td>
<td>29</td>
<td>52</td>
</tr>
<tr>
<td>2003</td>
<td>28</td>
<td>32</td>
</tr>
<tr>
<td>2004</td>
<td>26</td>
<td>32</td>
</tr>
<tr>
<td>2005</td>
<td>29</td>
<td>40</td>
</tr>
<tr>
<td>2006</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>2007</td>
<td>30</td>
<td>72</td>
</tr>
<tr>
<td>2008</td>
<td>17</td>
<td>77</td>
</tr>
<tr>
<td>2009</td>
<td>2</td>
<td>154</td>
</tr>
<tr>
<td>2010</td>
<td>2</td>
<td>77</td>
</tr>
<tr>
<td>2011</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td>2012</td>
<td>7</td>
<td>32</td>
</tr>
<tr>
<td>2013</td>
<td>9</td>
<td>32</td>
</tr>
<tr>
<td>2014</td>
<td>3</td>
<td>23</td>
</tr>
</tbody>
</table>
## Major Residential Developments and Development Areas in McKinley County

<table>
<thead>
<tr>
<th>Developments</th>
<th>Location</th>
<th>Development Status</th>
<th>Current Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>City of Gallup</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hooghan Hozho’ Housing and Liberty Hotel</td>
<td>Coal Avenue and 2nd Street</td>
<td>Project</td>
<td>42 units of affordable family housing (3 bedroom units) in complex under construction and 18 single resident occupancy (SRO) units in Liberty Hotel</td>
</tr>
<tr>
<td>VIRO</td>
<td>Stagecoach Neighborhood</td>
<td>Prospect</td>
<td>Mixed income community concept; has not moved forward</td>
</tr>
<tr>
<td>Rehoboth Foundation Red Mesa (former project name)</td>
<td>East of Hogback</td>
<td>Prospect</td>
<td>Portion in City zoned “planned mixed use” in 2005 has not developed. City annexed school and nearby property. New owner from Tampa, FL, intends to prepare new master plan.</td>
</tr>
<tr>
<td>UNM-Gallup Student Housing Project</td>
<td>South of campus</td>
<td>Prospect</td>
<td>Private property adjacent to campus purchased for project to create housing for up to 300 residents</td>
</tr>
<tr>
<td>Unnamed</td>
<td>Southwest from Mendoza Blvd</td>
<td>Prospect</td>
<td>Prospective subdivision lot configuration may need to change in difficult, hilly terrain</td>
</tr>
<tr>
<td><strong>GLP Subdivision Near UNM-Gallup campus</strong></td>
<td>North and northeast of UNM-Gallup campus</td>
<td>Prospect</td>
<td>Interest in creating 1-acre lots. Gallup Land Partners hold 27,000 acres, some of which may be used for residential development</td>
</tr>
</tbody>
</table>

### Activity in Existing Developments or Identified In Past

<table>
<thead>
<tr>
<th>Location</th>
<th>Status</th>
<th>Current Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mentmore</td>
<td>West end of Gallup</td>
<td>Existing Subdivision</td>
</tr>
<tr>
<td>Sky West Subdivision</td>
<td>North of Miyamura High School</td>
<td>Existing Subdivision</td>
</tr>
<tr>
<td>Rico Menapace</td>
<td>Near Miyamura High School</td>
<td>Prospect</td>
</tr>
<tr>
<td>Stagecoach</td>
<td>West of Hwy. 602 Bypass</td>
<td>Existing Subdivision</td>
</tr>
<tr>
<td>Chartwell Homes</td>
<td>Crestview Court south of Nizhoni, east of 2nd St.</td>
<td>Existing Subdivision</td>
</tr>
<tr>
<td>Mendoza Boulevard Area</td>
<td>South of Airport</td>
<td>Prospect</td>
</tr>
<tr>
<td>South Fork MHP</td>
<td>South end of Patton Drive</td>
<td>Existing Subdivision</td>
</tr>
<tr>
<td>Coyote Canyon</td>
<td>Canyon Drive on east side</td>
<td>Existing Subdivision</td>
</tr>
<tr>
<td>Mossman Subdivision</td>
<td>South of Aztec and west of Boardman St.</td>
<td>Existing Subdivision</td>
</tr>
</tbody>
</table>

Source: C.B. Strain, City Planner, City of Gallup
### McKinley County

#### 2009 New Activity

<table>
<thead>
<tr>
<th>Subdivision</th>
<th>Location/Description</th>
<th>Subdivision Type</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tampico Springs</td>
<td>South of McGaffey</td>
<td>Re-subdivision</td>
<td>Some sales but no building activity; re-subdivision of area to back of subdivision creating 30-35 lots</td>
</tr>
<tr>
<td>Mountain Monks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subdivision</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whispering Cedars</td>
<td>Jamestown</td>
<td>Existing Subdivision</td>
<td>Gradual build-out</td>
</tr>
<tr>
<td>South and east of</td>
<td>Jamestown</td>
<td>Prospect</td>
<td>USFS-private land trade and consolidation of land, owner may subdivide</td>
</tr>
<tr>
<td>Whispering Cedars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diné Estates</td>
<td>China Springs Loop, Red Rock Chapter area</td>
<td>Existing Subdivision</td>
<td>GLP interested in resubdividing into some larger lots and some urban density single family and duplex lots.</td>
</tr>
</tbody>
</table>

#### 2009: Activity in Existing Developments or Identified In Past

<table>
<thead>
<tr>
<th>Subdivision</th>
<th>Location/Description</th>
<th>Subdivision Type</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navajo Housing Authority</td>
<td>Various Sites</td>
<td>Expansion of Existing and Creation of New Subdivisions</td>
<td>Significant housing needs have been identified, however, little activity has occurred in recent years. Navajo Gallup Water Supply Project and 4-laning of U.S. 491 may spur additional housing development.</td>
</tr>
<tr>
<td>Subdivisions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scattered housing on Tribal</td>
<td>Various Sites</td>
<td>Individual Allotments</td>
<td>Allotment holders incrementally build new housing. As the county improves roads, new housing units develop nearby.</td>
</tr>
<tr>
<td>Trust land allotments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Church Rock - Ft. Defiance</td>
<td>Church Rock Chapter</td>
<td>Existing Subdivision</td>
<td>69 units built in 2003 and 2004. No new activity.</td>
</tr>
<tr>
<td>Housing Corp.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sundance Subdivision</td>
<td>Sundance Road/Coal Mine area south of</td>
<td>Existing Subdivision</td>
<td>Incremental growth</td>
</tr>
<tr>
<td>Church Rock</td>
<td>Church Rock Village in Church Rock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chapter</td>
<td>Chapter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Springstead Estates</td>
<td>4 miles north of Church Rock</td>
<td>Prospect</td>
<td>No activity on 900 lot subdivision</td>
</tr>
<tr>
<td>Bread Springs/Pine Haven</td>
<td>Bread Springs Chapter</td>
<td>Individual Properties</td>
<td>Incremental growth on private land within the chapter</td>
</tr>
<tr>
<td>Lindsey Subdivision</td>
<td>Chichiltah Chapter</td>
<td>Existing Subdivision</td>
<td>24 lots on private land within the chapter, only 4 houses built</td>
</tr>
<tr>
<td>Spencer Valley</td>
<td>Spencer Valley/Manuelito Chapter area</td>
<td>Existing Subdivision</td>
<td>Incremental growth</td>
</tr>
<tr>
<td>Gamerco Subdivision</td>
<td>North of Gallup</td>
<td>Existing Subdivision</td>
<td>Some new development</td>
</tr>
<tr>
<td>Timberlake Subdivision</td>
<td>Ramah Area</td>
<td>Existing Subdivision</td>
<td>Some new houses</td>
</tr>
<tr>
<td>Bluewater Lake</td>
<td>South of Thoreau</td>
<td>Existing Subdivision</td>
<td>No new developments; new state park master plan may result in more recreational amenities that could spur growth</td>
</tr>
<tr>
<td>Navajo Township CDC</td>
<td>Navajo, NM</td>
<td>Prospect</td>
<td>New fire station (2015). A homeownership subdivision was proposed in 2005. While infrastructure was built, no housing activity.</td>
</tr>
<tr>
<td>Subdivisions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crownpoint Planned Community</td>
<td>East of Crownpoint</td>
<td>Prospect</td>
<td>Conceptual plan for new town was proposed by NHA in 2005. No activity.</td>
</tr>
<tr>
<td>South of McGaffey</td>
<td></td>
<td></td>
<td>Proposal for subdividing of 5 sections of private land submitted then withdrawn.</td>
</tr>
</tbody>
</table>

According to Navajo Housing Authority's recent NAHASDA Annual Performance Reports, construction of 76 new units in FY 2009 and at least 46 new units in FY 2010. Locations were not identified.

Source: Doug Decker, McKinley County Attorney
• **Gallup and the Area Economy**
  - Gallup is the only major trade and employment center in a radius between 50 and 200 miles (Exhibit 3-64).
    - Halfway between Albuquerque and Flagstaff, Gallup serves an extensive area of rural communities and is an important center for culture and commerce.
  - Gallup has about twice as many residents as the county’s second most populous area, Zuni. All other communities in the area have fewer than 200 residents (Exhibit 3-65).
  - The 2009 City of Gallup Growth Management Master Plan identified several large areas of targeted residential development, representing significant room for growth in the city. Before the economic downturn in 2008, there was substantial interest in developing in the Gallup area.
  - As an economic hub for such a large area, visitor expenditures are an important part of the economy in Gallup. The majority of expenditures are for lodging, food and beverage, and retail, but spending is also notable for transportation and second homes. Recreation spending accounts for about as much as second homes and may represent a growth sector (Exhibit 3-67).
  - The gaming economy has had two significant additions in the last few years. In 2007, the Navajo Nation opened the Fire Rock Casino outside Gallup which, by 2010 was producing over $40 million in winnings annually. In 2011, the Northern Edge casino opened near Farmington. Although not in McKinley County, the casino is on the Navajo Nation and has brought the total winnings at Navajo Nation casinos to over $80 million per year (Exhibits 3-66 and 3-68).
• **Infrastructure Projects and Potential Development**

  - **U.S. Highway 491**
    » The current widening of the connection between Shiprock and Gallup from two to four lanes will improve the connection to the Gallup metro area from Shiprock, Navajo communities, and Farmington. The schedule for completion of the final 28 miles is within two years.

  - **Navajo-Gallup Water Supply Project**
    » This major infrastructure project will convey a reliable municipal and industrial water supply from the San Juan River to the eastern section of the Navajo Nation, southwestern portion of the Jicarilla Apache Nation, and the city of Gallup, New Mexico via about 280 miles of pipeline, several pumping plants, and two water treatment plants.
    » The project will improve water supply reliability to allow economic development and population growth in Gallup and other areas.
    » Expected completion of the project is by 2020 - 2025.

  - **Gallup Land Partners: Energy Logistics Park**
    » This potential project includes development of the Gallup Energy Logistics Park just outside of the city of Gallup on land currently held by Gallup Land Partners. The site currently maintains a rail spur and coal transportation services. Potential development may include additional rail-served operations and a business park with warehousing and office spaces. Fully developed, the site could cover 3,000 acres.

  - **The Greater Gallup Economic Development Committee (EDC) and community leaders have identified industries to target for expansion:**
    » Oil/gas/mining equipment
    » Plastic products production
    » Warehousing/distribution
    » Industrial machinery
    » Food processing
    » Medical services, research, and manufacturing
Exhibit 3-64
Gallup Market Area

Exhibit 3-65
McKinley County Population by Community

McKinley County Population by Community

Population with shoppers and visitors can swell to 75,000 on big shopping weekends

Exhibit 3-69
Gallup Existing Land Use

SOURCE: 2009 CITY OF GALLUP GROWTH MANAGEMENT PLAN

Exhibit 3-70
Gallup Proposed Land Use

2009 City of Gallup Growth Management Master Plan:

- 1,200-1,600 acres of new development land (+24-34%) over next 20 years
- Room for development near UNM-G campus

SOURCE: 2009 CITY OF GALLUP GROWTH MANAGEMENT PLAN
Managing Water for the West

Exhibit 3-71
U.S. 491 Widening Project

Exhibit 3-72
Navajo / Gallup Water Supply Project

Exhibit 3-73
Gallup Land Partners Holdings

Note: Pumping Plant designations reflect FEIS designations. Some pumping plants in original FEIS design have been combined and/or eliminated as a result of additional analyses and optimization studies.
3.1.12 Student Locations

- Based on Fall 2014 enrollment:
  - 60% of UNM-G students live within 20 miles of campus (Exhibit 3-a)
  - 96% of UNM-G students are from McKinley County (Exhibit 3-b)
3.2 Future Conditions

3.2.1 Enrollment Projections
The master plan projects that FTE enrollment at UNM-G will grow in response to service area growth, UNM-G marketing efforts, and program alignment with career opportunities. The low, middle, and high range projections assume different rates of increase, all of which are possible based on historical trends. Existing instructional square footage is sufficient to accommodate all projected enrollment ranges through 2025, so UNM-G should focus providing space that aligns with program needs rather than significant increases to overall square footage.

Space Projection Method

1. Assess Service Area Growth
   ARC assessed the overall growth of the service area population (see demographic analysis)

2. Project Full-Time Equivalent (FTE) Enrollment
   ARC calculated FTE, based on the projected participation rate (number of FTE per 1,000 of the service population). The projected participation rate is based on past trends and examination of peer institutions in New Mexico.

3. Identify Classrooms/Labs Required
   ARC calculated the number of classrooms and laboratories required to satisfy program needs for each projection period by assessing historic pattern of weekly student contact hours per FTE, and assigning a maximum enrollment

4. Identify Total Square Footage Required
   ARC calculated the net assignable square feet (NASF) required by assigning square footage to each space type and multiplying by number of instructional spaces required. Calculation of gross square feet (GSF) for instructional space and total space is by commonly accepted norms.

5. Identify Strategy to Accommodate Needs
   The facilities master plan steering committee identified a strategy to supply instructional square footage to meet future needs. The strategy may involve a combination of existing square footage and proposed new construction.
Exhibit 3-74
UNM-G Enrollment Projection Range (Table)

<table>
<thead>
<tr>
<th>Year (Fall)</th>
<th>McKinley County Population</th>
<th>Fall UNM-G FTE</th>
<th>Service Pop (1,000) / FTE Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>73,633</td>
<td>1,524</td>
<td>48.32</td>
</tr>
<tr>
<td>2000</td>
<td>74,798</td>
<td>1,376</td>
<td>54.36</td>
</tr>
<tr>
<td>2001</td>
<td>73,972</td>
<td>1,316</td>
<td>56.21</td>
</tr>
<tr>
<td>2002</td>
<td>73,145</td>
<td>1,544</td>
<td>47.37</td>
</tr>
<tr>
<td>2003</td>
<td>72,319</td>
<td>1,584</td>
<td>45.66</td>
</tr>
<tr>
<td>2004</td>
<td>71,492</td>
<td>1,715</td>
<td>41.69</td>
</tr>
<tr>
<td>2005</td>
<td>70,666</td>
<td>1,652</td>
<td>42.77</td>
</tr>
<tr>
<td>2006</td>
<td>70,831</td>
<td>1,631</td>
<td>43.43</td>
</tr>
<tr>
<td>2007</td>
<td>70,996</td>
<td>1,602</td>
<td>44.32</td>
</tr>
<tr>
<td>2008</td>
<td>71,162</td>
<td>1,688</td>
<td>42.16</td>
</tr>
<tr>
<td>2009</td>
<td>70,388</td>
<td>1,861</td>
<td>37.82</td>
</tr>
<tr>
<td>2010</td>
<td>71,492</td>
<td>1,965</td>
<td>36.38</td>
</tr>
<tr>
<td>2011</td>
<td>71,994</td>
<td>1,892</td>
<td>38.06</td>
</tr>
<tr>
<td>2012</td>
<td>72,495</td>
<td>1,827</td>
<td>39.69</td>
</tr>
<tr>
<td>2013</td>
<td>72,997</td>
<td>1,742</td>
<td>41.92</td>
</tr>
<tr>
<td>2014</td>
<td>73,498</td>
<td>1,564</td>
<td>47.00</td>
</tr>
<tr>
<td>2015</td>
<td>74,000</td>
<td>1,481</td>
<td>49.96</td>
</tr>
</tbody>
</table>

**Low Projection**

<table>
<thead>
<tr>
<th>Year (Fall)</th>
<th>McKinley County Population</th>
<th>Fall UNM-G FTE</th>
<th>Service Pop (1,000) / FTE Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015-16</td>
<td>74,000</td>
<td>1,565</td>
<td>47.28</td>
</tr>
<tr>
<td>2020-21</td>
<td>76,000</td>
<td>1,571</td>
<td>48.37</td>
</tr>
<tr>
<td>2025-26</td>
<td>77,500</td>
<td>1,550</td>
<td>50.00</td>
</tr>
</tbody>
</table>

**Mid Projection**

<table>
<thead>
<tr>
<th>Year (Fall)</th>
<th>McKinley County Population</th>
<th>Fall UNM-G FTE</th>
<th>Service Pop (1,000) / FTE Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015-16</td>
<td>74,000</td>
<td>1,584</td>
<td>46.73</td>
</tr>
<tr>
<td>2020-21</td>
<td>76,000</td>
<td>1,665</td>
<td>45.64</td>
</tr>
<tr>
<td>2025-26</td>
<td>77,500</td>
<td>1,761</td>
<td>44.00</td>
</tr>
</tbody>
</table>

**High Projection**

<table>
<thead>
<tr>
<th>Year (Fall)</th>
<th>McKinley County Population</th>
<th>Fall UNM-G FTE</th>
<th>Service Pop (1,000) / FTE Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015-16</td>
<td>74,000</td>
<td>1,612</td>
<td>45.91</td>
</tr>
<tr>
<td>2020-21</td>
<td>76,000</td>
<td>1,829</td>
<td>41.55</td>
</tr>
<tr>
<td>2025-26</td>
<td>77,500</td>
<td>2,214</td>
<td>35.00</td>
</tr>
</tbody>
</table>

* Actual Fall FTE
**Fall FTE Per 1,000 Service Population
*** Projections assume a 65% ratio of FTE to Headcount
3.2.2 Development Goals and Concepts

The 2015 master plan steering committee reviewed the development goals and concepts established in 2006 and concurred that they are still applicable and well suited for adoption into the 2015 FMP update. Development goals and concepts are as follows:

**Functional Organization**

**Observations:**
- Some departments are scattered rather than colocated with their instructional areas.
- Some “public” functions are not clearly visible to visitors.

**Goal:**
- Organize college functions in a clear and efficient manner, reflecting the needs of students, staff and visitors.

**Concepts:**
- Consolidate and colocate academic departments with their instructional areas in a manner that addresses functional and operational requirements and capacity for future growth.
- Centralize common student use facilities.
- Locate public and visitor functions near main entrances with accessible parking.
- Consolidate campus support functions.

**Wayfinding**

**Observations:**
- Major streets adjacent to the campus do not have enough campus signs.
- Many out-of-date signs are still displayed and are confusing to visitors and new students.
- The building naming system is confusing. Students need to know building functions as well as names.
- Students have difficulty finding faculty offices.

**Goal:**
- Create a clear and uniform wayfinding system that adds value to the appearance of the campus.

**Concepts:**
- Install additional monument signs at the edges of campus to direct visitors on to campus.
- Establish a clear labeling system for buildings.
- Update building and wayfinding signage around campus.
- Provide campus location maps.
Student Life
Observations:
• The campus does not have enough public areas for students to gather for social and impromptu group studying.
• Commuting students need spaces to study and relax in between classes.
Goal:
• Create places around campus to encourage informal student interaction.
Concepts:
• Create study areas scattered throughout campus.
• Create comfortable, sheltered outdoor spaces for group study and activities.
• Create lounge areas in every building near faculty offices to encourage faculty-student interaction.

Campus Character
Observations:
• The campus gives a very good impression.
• The campus has Southwestern-style architecture.
• The campus has pedestrian orientation.
• The site has natural landscaping and trees, open space, views, walking trails, and an undulating topography.
Goal:
• Retain and enhance campus architectural character.
Concepts:
• Retain and enhance campus character features:
  - Southwest architecture
  - Defined color pallet
  - Integrated pedestrian walkways and plazas

Outdoor Resources
Observations:
• The campus outdoor environment is an asset, but underused
• There are not enough places outdoors to gather in groups for study or recreation.
• No outdoor space exists for large gatherings.
• No outdoor spaces exist adjacent to food service.
• The campus has no sheltered outdoor areas.
• The campus has an excellent outdoor walking / running trail.
Goal:
• Provide more opportunities to use outdoor resources.
Concepts:
• Create an amphitheater for outdoor events that draw large audiences.
• Retain “natural” areas.
• Create spaces for outdoor learning and studying, including areas for cultural expression.
• Create opportunities to combine curriculum and hands-on learning with natural resources on campus.
• Create an outdoor eating/seating area adjacent to the new food service venue.

Access/Parking
Observations:
• Vehicular access to the ridge areas is challenging and limited.
• An opportunity exists to create an additional campus entrance on the north and east.
• Parking can be improved by increasing the number of spaces distributed closer to facilities and by improving lighting.
• While the central pedestrian spine is an excellent unifying feature, some campus areas are not connected and existing topography makes access to some areas difficult.

Goal:
• Provide safe and convenient pedestrian and vehicular access to all campus areas.

Concepts:
• Continue to develop the site in a manner that:
  - Provides safe and clear vehicular access to the site
  - Separates vehicular and pedestrian circulation
  - Provides accessible pedestrian connections to all campus areas
  - Provides emergency vehicle access to all campus areas
  - Provides safe and convenient parking and drop-off areas

General Development
Observations:
• Challenging site topography creates opportunities and constraints.
• Opportunities include spectacular views and multistory building.
• Sites take advantage of the slopes. Constraints include:
  - Increased development cost, access, and drainage issues.

Goal:
• Develop the site in a manner that balances long-term development with protection of the unique site environment.

Concepts:
• Adopt a flexible development framework that:
  - Seeks to acquire selected, contiguous land parcels for long-term expansion and improved access
  - Focuses building development to ridge and valley areas with low to moderate slopes
- Protects sensitive drainage and native landscape areas

3.2.3 Sustainability Concepts

The 2015 master plan update adopts the sustainability concepts developed in the 2006 master plan:

The UNM-Gallup campus is located in a natural setting that is, for the most part, undisturbed by development activities, and the campus’ ecology is relatively fragile, subject to erosion and drought. Other natural systems are affected by the development and operational activities of campus life. Awareness of the negative effects of non-renewable energy consumption and environmental pollution has heightened around the country, and this awareness is encouraging preventative measures on campuses nationwide. UNM-G can become a model and teaching tool for sustainability practices locally and regionally.

Sustainable Concepts

- Site
  - Create standards for future property development that minimize negative impacts on the natural environment: erosion, habitat destruction, storm water runoff, and light/heat pollution.
- Water
  - Create methods for capturing and utilizing storm water runoff for nonpotable uses.
  - Strive to include water-efficient systems in all new buildings and site development projects: a grey water treatment and recycling system, low-water-use plant materials, low-water-use irrigation systems, and low-water-use fixtures.
- Energy
  - As existing heating/cooling equipment becomes obsolete, replace it with energy-efficient equipment. Eliminate refrigerant products that contribute to global warming and ozone depletion in all refrigerated air cooling systems.
  - Create a strategy to reduce campuswide energy use.
  - Install zoned digital controls at all new buildings.
  - Promote alternative vehicle use by students and employees by providing special parking accommodations.
  - Continue to promote bicycle commuting by providing more bicycle racks and shower facilities.
  - Discuss with local transit companies opportunities to improve transit links for commuting students and employees.
- Materials and resources
  - Create a campuswide recycling system for solid waste such as paper, metals, plastic and glass, and provide staff to manage the program.
- Indoor air quality
- Examine exhaust and filtration equipment to determine if improvements in ventilation and air filtration can be made to create cleaner indoor air quality.
- Examine all products used in cleaning, maintenance and photocopying and plan to eliminate products that contain volatile organic compounds that contribute to indoor air toxicity.

• Teaching sustainability
  - Create curricular opportunities to teach sustainability.
  - Create opportunities to encourage sustainability through community outreach activities and continuing education.

3.2.4 Development Framework

The 2015 master plan steering committee reviewed and endorsed the development framework established in 2006. The development framework identifies areas of the site that are potentially developable (Exhibit 3-75), and overlays circulation and infrastructure associated with the development (Exhibit 3-76). Recent site development, including the Health Careers Center II (2007) and the SSTC (2012) followed the framework. Future improvements, such as the proposed Center for Career Technical Education and Physical Plant Department building should be developed within the framework.

The 2006 FMP identified the following site constraints and opportunities and they remain applicable in the 2015 update:

Site Characteristics and Development Challenges
- Challenging terrain focuses development on one main ridge and selected "valley" areas.
- Ridge development is more expensive due to topography, soils, and access.
- Runoff pathways and low wet areas separate buildable areas.
- Pedestrian pathways require negotiating grades via slopes, ramps, and stairs.
- Sloped pathways can be dangerous for pedestrians during winter months.
- Vehicular access and parking in the ridge areas are limited.
- Much of the undeveloped areas are used for recreation (i.e., running and walking trails).
- Much natural landscaping remains throughout the site.
- UNM-G has the opportunity to acquire adjacent sites contiguous to the existing campus.
- The sloped site creates opportunities for breathtaking vistas.

Site Access
- Access to Development Areas
  - The areas identified as potentially developable would require associated paved access drives and parking. Site topography will challenge development, but also create unique opportunities.
• **Vehicular Access**
  - The campus has one point of access for vehicles. UNM-G would like to develop a second point of access by continuing Calvin Hall Drive to Boardman Avenue at the northeast portion of the property. This access would decrease congestion and provide additional emergency access.

• **Pedestrian Access**
  - Exterior pedestrian walkways connect most of the campus. The walkways and exterior courtyards are aesthetically pleasing, but have some limitations and deficiencies:
    » Some exterior areas are deteriorated and need rehabilitation.
    » Parts of the campus (Lions Hall, Child Center, PPD, and the gymnasium) are not part of the ADA walkway system.
    » Connections between lower parking lots and the main ridge are challenged by elevation differences.

• **Parking**
  - UNM-G has successfully completed an ADA parking study and improvements to comply with Office of Civil Rights requirements.
  - Interviews and surveys suggest that the overall amount of parking meets UNM-G’s needs, but that many parking areas are inconvenient because they are located far from buildings served. Users cite a need to improve exterior lighting. The distance is a safety concern for some drivers, especially during shorter, winter days.
  - Users cite that the parking area in front of Gurley Hall is limited and awkwardly configured.

**Utility Development**

This section summarizes utility improvement recommendations. The engineering narratives in this FMP update and the 2013 Utility Master Plan by WHPacific provide additional details.

UNM-G’s Physical Plant Department is effective. Good maintenance has reduced the need to repair and replace building system components. However, funding realities cause some deferred maintenance and even properly maintained systems eventually need to be replaced.

• **Stormwater and Drainage**
  - No significant known problems exist that would warrant the addition of stormwater measures to serve existing facilities. Future projects should implement stormwater detention and retention measures to offset increases in runoff attributable to added impervious areas.

• **Domestic Water Supply**
  - The current joint project between UNM-G and the City of Gallup will provide main campus with a reliable water supply and pressures to meet the needs of existing facilities. Additional supply line looping will be required to serve future expansion and development.
- **Sewer**
  - Sewer limitations are downstream and off site of main campus. Future campus development in lower areas will use lift stations, and these stations will minimize the impact to downstream flow rates.
  - Beyond UNM-G, downstream limitations are a challenge for the City of Gallup’s overall development. Community stakeholders could benefit from a collaborative approach to resolve infrastructure limitations.

- **Natural Gas**
  - The 2015 FMP update recommendation aligns with the 2013 Utility Master Plan recommendation to create a database of the existing natural gas system in order to facilitate future system renewal.

- **Electrical Service**
  - Upgrade and replace the existing primary electrical distribution system to provide redundancy and capacity for future growth.

- **Telecommunication Service**
  - UNM-G significantly upgraded the telecommunication system in 2013 with new fiber-optic cable to all buildings on the main campus. In the future, UNM-G should expand the system to provide redundancy.
Exhibit 3-75
UNM-G Main Campus Development Zones

Existing Buildings
1. Old Gurley Hall
2. New Gurley Hall
3. Career Education
4. Construction Technology
5. Calvin Hall Center A
6. Calvin Hall Center B
7. Calvin Hall Center C
8. Gymnasium
9. Health Careers Center
10. Zollinger Library
11. Child Care Center / Physical Plant
12. Lions Hall
13. Pump House
14. Health Laboratory (2)
15. Student Services Center

Acquire
Potentially developable
Proposed development by others

Preliminary site identified for proposed Construction Technologies Career Center and Physical Plant Department Building.

Proposed Residential Care 4.38 ac
Proposed Student Housing 8.96 ac
Exhibit 3-76
UNM-G Development Framework
Exhibit 3-77
Preferred Parking Modifications at Gurley Hall

UNM-GALLUP
Proposed Parking at Gurley Hall
Option A: ~ 222 Spaces, Total
Exhibit 3-78
Additional Parking Modification Studies for Gurley Hall

UNM-GALLUP
Proposed Parking at Gurley Hall
Option B: ~ 222 Spaces, Total

UNM-GALLUP
Proposed Parking at Gurley Hall
Option C: ~ 235 Spaces, Total

UNM-GALLUP
Proposed Parking at Gurley Hall
Option D: ~ 243 Spaces, Total
3.3 Capital Planning

The total identified need is approximately $40.4 million. The 2015 facilities master plan steering committee prioritized and organized the projects to address capital needs into two funding cycles, 2016 - 2020 ($23.9 million) and 2021 - 2025 ($16.4 million). Exhibits 3-77, 3-78 and 3-79, and the capital improvements planning worksheet describe the strategy for addressing capital needs.

Exhibit 3-79
UNM-G Capital Needs
2016 - 2015 Diagram
Exhibit 3-80
UNM-G Capital Needs
2016 - 2020 Diagram

- **New Construction (cycle 1)**: $8.5 m
  - PPD $3.0 m
  - Center for Career Technical Education + Innovation (CCTE) $6.5 m
  - Community Education Center $2.4

- **Renovation/Remodel (cycle 1)**: $8.4 m
  - Restroom + Plumbing Upgrades $1.6 m
  - Re-Roofing + HVAC $3.6 m
  - Re-Roofing + Structural Improvements $1.4 m
  - Interior Renovations $5.6 m

- **Site Improvements (cycle 1)**: $4.1 m
  - ADA + Landscape $6.6 m

- **Infrastructure Improvements (cycle 1)**: $2.9 m
  - Site Utility Upgrades $2.9 m
  - Site Utility Upgrades $5.8 m

Total Project Cost for Cycle 1 Projects: $23.9 m

Exhibit 3-81
UNM-G Capital Needs
2021 - 2025 Diagram

- **New Construction (cycle 2)**: $2.4 m
  - PPD $3.0 m
  - Center for Career Technical Education + Innovation (CCTE) $6.5 m
  - Community Education Center $2.4

- **Renovation/Remodel (cycle 2)**: $7.6 m
  - Restroom + Plumbing Upgrades $1.6 m
  - Re-Roofing + HVAC $3.6 m
  - Re-Roofing + Structural Improvements $1.4 m
  - Interior Renovations $5.6 m

- **Site Improvements (cycle 2)**: $0.6 m
  - ADA + Landscape $9.6 m
  - ADA + Landscape $4.1 m

- **Infrastructure Improvements (cycle 2)**: $5.8 m
  - Site Utility Upgrades $2.9 m
  - Site Utility Upgrades $5.8 m

Total Project Cost for Cycle 2 Projects: $16.4 m
<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Title</th>
<th>Project Category</th>
<th>Estimated MACC (rounded)</th>
<th>Estimated TPC (rounded)</th>
<th>Local Share %</th>
<th>Local $</th>
<th>State Share %</th>
<th>State $</th>
<th>Project Narrative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>Center for Career Technology Education and Innovation (CCTE)</td>
<td>New Construction</td>
<td>$4,760,000</td>
<td>$6,480,000</td>
<td>25%</td>
<td>$1,625,000</td>
<td>75%</td>
<td>$3,850,000</td>
<td>Plan, design, construct, furnish and equip the Center for Career Technology Education and Innovation (CCTE) classrooms and lab fabrication facility. Include a feasibility study for Lions Hall to determine the programmatic use and whether to renovate Lions Hall or build new. Programs that could potentially be accommodated in Lions Hall include Workforce Training, Career Technology, Adult Basic Education, and Child Center. Align the programmatic fit for Lions Hall with planning of the CCTE for effective space utilization.</td>
</tr>
<tr>
<td>2.2</td>
<td>Physical Plant/Department (PPD) Facility</td>
<td>New Construction</td>
<td>$1,600,000</td>
<td>$2,000,000</td>
<td>25%</td>
<td>$500,000</td>
<td>75%</td>
<td>$1,500,000</td>
<td>Construct a new, appropriately sized PPD building to better support existing facilities. The existing PPD space in the basement of the Child Center facility limits the type of work that PPD can do because of空间, fumes, low clearances, and site access. As part of the project, include a feasibility study to determine how to reuse the Child Center basement once PPD vacates the area.</td>
</tr>
<tr>
<td>3.0</td>
<td>Re-Roofing and HVAC Equipment Replacement</td>
<td>Renovation</td>
<td>$2,830,000</td>
<td>$3,500,000</td>
<td>25%</td>
<td>$870,000</td>
<td>75%</td>
<td>$2,682,500</td>
<td>Re-roof facilities. Membranes are old and worn, city and brittle, and missing granule surface. Replace HVAC equipment that is at the end of useful life. Coordinate replacement of roofing equipment with re-roofing projects.</td>
</tr>
<tr>
<td>4.6</td>
<td>Restroom and Plumbing Upgrades</td>
<td>Renovation</td>
<td>$1,240,000</td>
<td>$1,580,000</td>
<td>25%</td>
<td>$390,000</td>
<td>75%</td>
<td>$1,190,000</td>
<td>Remove restrooms, including those in the ABE facility, Calvin Hall Center B-1-C, Galley Hall, and Career Education, to replace worn and fixtures and finishes and to meet ADA requirements. As part of the ABE restroom renovation, complete a plumbing study and make corrections to resolve the plumbing back-up problems.</td>
</tr>
<tr>
<td>5.6</td>
<td>Building Interior Renovations</td>
<td>Renovation</td>
<td>$1,450,000</td>
<td>$1,820,000</td>
<td>25%</td>
<td>$450,000</td>
<td>75%</td>
<td>$1,380,000</td>
<td>Replace interior finishes and lighting fixtures in Galley Hall. Replace interior finishes and fixtures in the art, jewelry, and photography class lab areas.</td>
</tr>
<tr>
<td>6.6</td>
<td>Zuri Building Re-Roofing and Structural Improvements</td>
<td>Renovation</td>
<td>$1,110,000</td>
<td>$1,360,000</td>
<td>25%</td>
<td>$347,500</td>
<td>75%</td>
<td>$1,042,500</td>
<td>Complete structural improvements to resolve building settlement, then re-roof the facility and repair stucco and architectural elements damaged by building settlement.</td>
</tr>
<tr>
<td>7.7</td>
<td>Site Utility Upgrades</td>
<td>Site Utilities</td>
<td>$2,200,000</td>
<td>$2,840,000</td>
<td>25%</td>
<td>$730,000</td>
<td>75%</td>
<td>$2,050,000</td>
<td>Upgrade the primary electrical system for reliability, capacity, and demand. Document the natural gas system for future system upgrades.</td>
</tr>
<tr>
<td>7.8</td>
<td>Site Paving, Access, ADA, and Landscape Improvements</td>
<td>Site Improvements</td>
<td>$3,200,000</td>
<td>$4,100,000</td>
<td>25%</td>
<td>$1,025,000</td>
<td>75%</td>
<td>$3,075,000</td>
<td>Improve site paving, landscape, vehicular access, and development opportunities.</td>
</tr>
</tbody>
</table>

**Total, 2016 - 2020** | $10,800,000 | $23,040,000 | $5,906,000 | $17,680,000

**2015 - 2025 Bond Cycles (Projects to be considered)**

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Project Title</th>
<th>Project Category</th>
<th>Estimated MACC (rounded)</th>
<th>Estimated TPC (rounded)</th>
<th>Local Share %</th>
<th>Local $</th>
<th>State Share %</th>
<th>State $</th>
<th>Project Narrative</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.6</td>
<td>Re-Roofing and HVAC Equipment Replacement</td>
<td>Renovation</td>
<td>$850,000</td>
<td>$1,060,000</td>
<td>25%</td>
<td>$265,000</td>
<td>75%</td>
<td>$795,000</td>
<td>Re-roof facilities. Membranes are old and worn, city and brittle, and missing granule surface. Replace HVAC equipment that is at the end of useful life. Coordinate replacement of roofing equipment with re-roofing projects.</td>
</tr>
<tr>
<td>10.6</td>
<td>Restroom and Plumbing Upgrades</td>
<td>Renovation</td>
<td>$810,000</td>
<td>$1,010,000</td>
<td>25%</td>
<td>$252,500</td>
<td>75%</td>
<td>$757,500</td>
<td>Remove restrooms to replace worn out fixtures and finishes and to meet ADA requirements, including the gymnasium restrooms and locker areas.</td>
</tr>
<tr>
<td>11.6</td>
<td>Building Interior Renovations</td>
<td>Renovation</td>
<td>$4,490,000</td>
<td>$5,510,000</td>
<td>25%</td>
<td>$1,402,500</td>
<td>75%</td>
<td>$4,207,500</td>
<td>Study, design, and renovate instructional spaces for program needs. Consider renovating spaces in Galley Hall and Career Education for educational program needs including ABE and the Child Center.</td>
</tr>
<tr>
<td>12.6</td>
<td>Site Utility Upgrades</td>
<td>Site Utilities</td>
<td>$6,840,000</td>
<td>$8,100,000</td>
<td>25%</td>
<td>$2,025,000</td>
<td>75%</td>
<td>$6,075,000</td>
<td>Expand the existing fiber optic system to provide redundancy for seamless continuity and uninterrupted use of the campus telecommunications system. Refer to electrical narrative in the RFP and the 2013 Utility Master Plan by Verizon.</td>
</tr>
<tr>
<td>12.7</td>
<td>Site Paving, Access, ADA, and Landscape Improvements</td>
<td>Site Improvements</td>
<td>$440,000</td>
<td>$500,000</td>
<td>25%</td>
<td>$140,000</td>
<td>75%</td>
<td>$360,000</td>
<td>Improve site paving, landscape, vehicular access, and development opportunities.</td>
</tr>
<tr>
<td>14.6</td>
<td>Community Education Center</td>
<td>New Construction</td>
<td>$1,900,000</td>
<td>$2,440,000</td>
<td>30%</td>
<td>$732,000</td>
<td>70%</td>
<td>$1,108,000</td>
<td>Construct a building to house all community education classes. This project is included in the 2015 HED submittal.</td>
</tr>
</tbody>
</table>

**Total, 2021 - 2025** | $15,100,000 | $16,480,000 | $4,788,000 | $11,750,000

**Total, All Cycles** | $26,900,000 | $39,520,000 | $10,690,000 | $29,630,000

**Capital Improvements Planning Worksheet**
3.4 Landscape, Civil, Mechanical, and Electrical Engineering Reports

Landscape and engineering planning team members conducted site evaluations, interviewed facilities personnel, and documented findings in individual reports, presented in the following section. The campus development framework and in the capital plan include recommendations from these reports.

Landscape Report
Completed by: GRJ Landscape Architect

INTRODUCTION
The UNM-G campus is located on a high mesa overlooking the city of Gallup with outstanding views to the north and east. Over the years, this mesa location with steep side slopes has created a challenge for building siting, pedestrian and vehicular access, location of utilities and landscaping. Further complicating landscaping are poor soil such as shale, coal and expandable clay, some of which are erodible.

Installation of campus landscaping, in general, has been piecemeal with new building projects at the recently completed Student Services & Technology Center and Health Careers 2 buildings. A comprehensive landscape plan for the campus has never been prepared. Such a plan could serve as a guide for future landscaping (planting, irrigation, access and materials) as well as identify opportunities for outdoor uses and activities.

2006 LANDSCAPE GOALS:
The 2006 facilities master plan identified four campus-planning goals relating to landscape. The planning team recommends that these goals continue to be included in the current master plan:
• Wayfinding – create a uniform system for the campus.
• Student Life Center – create places to encourage student interaction.
• Outdoor resources – provide opportunities to use outdoor resources.
• Sustainability – become a model for sustainability practices.

RECOMMENDATIONS FOR FUTURE:
Retain services of a registered landscape architect to prepare a comprehensive landscape plan of the UNM-G campus. The plan should:
• Conduct a detailed landscape survey identifying conditions, needs and opportunities.
• Define landscaping zones (close-in highly used, mid-zones, around the buildings and natural undisturbed areas). Identify materials and uses for each zone.
• Identify plants historically used by Native American communities.
• Identify site sustainability opportunities such as water harvesting, water retention and appropriate plant selection.
• Identify possible outdoor learning and socializing spaces.
• Define landscaping priorities, depending on space and need.
• Address landscape maintenance issues (cost to replace and/or repair, planting, irrigation, pavement and site furnishings).
• Determine yearly operating budget for grounds maintenance as a separate line item within the university’s annual budget.

POTENTIAL LANDSCAPE PROJECTS:
• Construct a water feature, pedestrian ramp and slope repairs north of Zollinger Library.
• Install shade structures with seating (ramadas) on Central Plaza. Make repairs to pavement, walls and plant materials.
• Make landscape improvements such as irrigation and planting east and west side of Calvin Hall buildings A, B and C.
• Complete minor landscape improvements throughout the campus as may be identified.
• Construct a large outdoor gathering space for graduation, lectures and concerts.

POTENTIAL PEDESTRIAN/VEHICULAR ACCESS PROJECTS:
• Continue to improve handicapped access throughout the campus as required.
• Implement new building, traffic and wayfinding signage.
• Improve vehicular entry to main campus at Gurley Hall and provide entry plaza with pedestrian drop-off to address safety issues.
• Install campus identity sign at intersection of College Drive and Gurley Avenue.

PROPOSED ANNUAL BUDGET:
• Services by a landscape architect to prepare a landscape plan, a one-time-only expenditure - approximately $8,000
• Annual landscape maintenance budget for personnel, materials and equipment (planting, irrigation and related landscape repair) - $30,000
• Miscellaneous yearly landscape improvements and additions (planting, irrigation, paving, site furnishings, etc.) - $40,000
• 2% of any new building cost to be allotted for landscaping of project site

End of Landscape Report
Civil Engineering Report
Completed by: High Mesa Engineering Consulting Group

INTRODUCTION
The purpose of this study is to provide an update to the Civil Engineering Components of the 2006-2013 UNM Gallup (UNM-G) Master Plan for which High Mesa Consulting Group (HMCG) was a sub-consultant to ARC. This update included the following tasks:

• Visit the Campus and Talk with the Facility Director and his Staff
  - We conducted an initial telephone interview with Ron Petranovich, UNM-G Physical Plant & Facilities Director, followed by a site visit and meeting held April 6, 2015. Through these efforts, we reviewed plans and record drawings of all construction that has occurred since 2006 that did not involve HMCG (for which we have record plans), and also obtained and reviewed the plans for the current water line and fire protection improvements project.

• Review the Changes that Have Been Done Since 2006
  - HMCG has been involved in many projects at UNM-G since 2006, and has first-hand knowledge of many recent projects, including preparation of a campuswide pavement conditions survey and evaluation in December of 2013. During the time since the last update, HMCG has conducted several partial topographic and utility surveys at UNM-G to support site paving, storm drainage, and utility infrastructure projects where we were the Civil Engineering consultant directly for UNM, and also for the building design and construction for the Health Careers 2 and the Student Life & Technology Center as members of the Contract Architect’s A/E team.

• Review the Previous Master Plan Recommendations
  - HMCG reviewed the previous Master Plan Recommendations contained in the 2006-2013 Facilities Master Plan. We also obtained and reviewed the 2013 Utility Master Plan Prepared for UNM by WHPacific dated November 6, 2013.

• Recommend any Course Corrections Necessary along with Updated Cost Estimates as Applicable
  - The following narrative summarizes recommendations identified through this task.

• Miscellaneous Meetings/Reviews with the Owner and [our] Office
  - In addition to the site meeting with Ron Petranovich, HMCG held a meeting with Gallup Joint Utilities (GJU) on April 6, 2015. GJU provides water and sanitary sewer service to the campus, and the status of their current and future service capabilities and projects were discussed.

• Document the Work in a Format Provided by ARC
  - Exhibits 3-36, 3-37 and 3-38, and the following narrative summarize the preceding information.

CIVIL NARRATIVE
The focus of HMCG’s efforts to support this update were to update the previous status and recommendations for Stormwater and Drainage, Domestic and Fire Protection Water, and Sanitary Sewer.
• Stormwater and Drainage
  - Except as noted below, the campus does not have any significant storm drainage infrastructure, and developed runoff flows freely to surrounding streets and two existing arroyos; the “North Arroyo” to the north, and “Martha Z’s Arroyo” to the south. The campus does have some storm drain facilities that drain to these arroyos, with a main system in Vo-Tech Drive (constructed with recent HMCG project), and with two smaller systems that run between Gurley Hall and Zollinger Library, and between Calvin Hall Centers A and B.
  - Due to topography and current density of campus, opportunities are limited to add stormwater infrastructure to serve existing facilities, and there are no significant known problems that would warrant stormwater measures being added to serve existing facilities.
  - Future projects should implement stormwater detention and retention measures to offset increases in runoff attributable to added impervious areas. Not increasing existing runoff rates is a responsible approach to drainage management, and is the City’s policy (although UNM is exempt). It would also eliminate the possibility of unintentionally causing new drainage problems that might result from added runoff. This approach would also be in keeping with current EPA policies regarding stormwater quality.

• Sanitary Sewer:
  - The campus has a single outfall to the public (City) sanitary sewer system that is reportedly near or at maximum capacity. The known limitations are a reach of sewer within the golf course, and also the area north of the high school where the lines are old, relatively flat, and in unknown condition.
  - Based on elevations, the higher portions of the campus currently reach the outfall directly by gravity, while the lower areas require lift stations to pump the runoff to higher areas where they then continue under gravity conditions. A definitive determination of whether there is additional capacity to serve the campus will be required prior to adding any new loads that would have free gravity outfalls. This is a limiting factor when considering construction of new facilities that would not physically be capable of draining without lift stations.
  - According to Gallup Joint Utilities, they do not plan to undertake or fund a study to determine downstream capacity, which would be a “developer” cost for anyone proposing to add to current flow rates.
  - Development in the lower areas that are incapable of gravity drainage would require new lift stations. The nature of lift stations is such that their outflow is controlled to the rate of the pumps. As a result, added facilities using lift stations would not necessarily result in added flow rates downstream, similar to filling a bathtub half-way or all of the way, but the outflow rate would be the same when opening the drain for both cases.

• Domestic Water and Fire Protection:
  - The current City water lines supplying the site do not have adequate flow and pressure to serve most of the campus on their own. UNM has a private pump station that increases the pressure and flow rates, however, it is limited in capacity to serve current fire protection needs.
- The current UNM fire protection project is the first step in providing more reliable flow rates and pressures while also adding sprinklers that will reduce the required flow rates. This project will also facilitate a single point of metering for the campus, as opposed to the current multiple connection points.

- A City project, to which UNM has reportedly contributed $500K, will provide a new higher pressure line in Gurley Road that will eliminate the need for the UNM pump station. This line will initially be fed by a City booster pump, as opposed to the reservoir tank that currently serves the campus. The current UNM project is providing stubouts for future connection to the proposed City line that will result in increased pressure, eliminating the need for the booster pumps. As described during our April 6, 2015 meeting with Gallup Joint Utilities, the design is 90% complete and funded. Construction is anticipated in 2016, pending archaeological clearances.

- A subsequent City project will construct a new reservoir tank at a higher elevation. Once operational, the feed to the University will be switched over from the City booster pump to this reservoir, resulting in additional pressure and volume beyond that which will be provided by the interim City booster pump condition. In the absence of the proposed City projects (if they do not go to completion), UNM would need to upgrade and expand their private booster station to meet current and future conditions.

- As previously recommended, additional campus looping will be required to serve expansion and development to the east of the existing facilities.

COST ESTIMATES

- The preceding analysis and recommendations do not identify any specific improvements in the foreseeable future, as existing infrastructure can serve the campus for the foreseeable future upon completion of the current UNM Fire Protection project and the City water system upgrades. The future water line loop routing to the east will be a function of the timing and location of future facilities and should be implemented as a staged construction as projects occur. Similarly, future sanitary sewer lines or lift stations will need to be designed and constructed as a specific function of individual projects.

- A sanitary sewer capacity study is needed to accommodate additional gravity outfalls. Although the City has indicated that it is not their responsibility, we recommend that the University work with the City to re-evaluate this position, as it would seem appropriate that the analysis would benefit their entire service area above and beyond the needs of the University. The WHPacific 2013 Master Utility Plan identified several options for downstream gravity lines to City systems, but without a study to support them, they cannot be implemented. WHPacific identified a preliminary estimate of this study to be $33,000, but after talking with the City, we feel that this cost may be low as they will require a complete survey of their downstream system to the treatment plant, including elevations, inverts, pipe sizes, materials, and conditions. A study that includes those requirements would likely cost $100,000.
This page is intentionally blank.
Mechanical Systems Study
Completed by: ArSed Engineering Group LLC

Mechanical Systems

General
The purpose of this study is to review the existing campus HVAC systems. This report is based on field surveys, review of the available construction drawings and interviews with maintenance and administrative personnel. A previous Master Plan Study was completed in November of 2005 by ArSed Engineering Group, LLC. Based on our initial review of construction documents, the campus construction began in the early 1970’s and continues to the present. Each building is provided with its own self-supporting heating and cooling systems. It does not appear that the intent was to serve individual buildings from a central campus heating and cooling system.

HVAC
The campus is divided into two areas, the north campus and the south campus, divided by the main access road. The south campus has Lion’s Hall, Pump House and the Child Care Building. The Child Care is located on the upper level and the Maintenance and Operations department is located on the lower level. The north campus has the main educational buildings, cafeteria, gymnasium and the administrations offices (Gurley Hall, Construction Technology, Calvin Hall Center, Gymnasium, Health Careers Center, Health Careers Center 2, Student Services Building and Zollinger Library).

South Campus
Lions Hall
Lions Hall is served by four ground mounted DX cooling/natural gas heat, package units. Supply air and return air distribution ductwork from the units to the building is exposed. Units are controlled by thermostats associated with each unit. Lions Hall is also connected to an Automated Logic Controls System. The building has not been occupied in the last year. The temperature is set at a minimum to prevent freezing and conserve energy.
Child Care/Maintenance and Operations Area

Child Care and Maintenance is located within the same building. Childcare is located on the top floor. Maintenance and Operations is located on the ground floor/basement area.

Child Care is heated with up-flow natural gas fired furnaces. Cooling is provided with roof mounted evaporative coolers. The control is local to the building with manual switches for operation.
Maintenance and Operations Area

The Physical Plant offices are heated and cooled with a ground mounted package natural gas heating and DX cooling single zone unit. The distribution is side wall through the building and ducted through the office area only. The package unit is controlled by local thermostat controls. The work area of the Physical Plant is heated with natural gas fired unit heaters.

Pump House

The Pump House is heated with two electric unit heaters. There is no cooling provided for the Pump House.
North Campus

Gymnasium

The Gymnasium was constructed in two phases. The main gym is served by a central heating and ventilating air handling unit, hot water heating coils and heating hot water boiler, with two hot water pumps, air washers, and fan coil. Evaporative cooler serves individual office area. The addition is served by a separate roof mounted furnace and evaporative cooler and two roof mounted furnaces with air washer sections. No refrigerated air is provided for this facility. The Gymnasium is controlled by Automated Logic Controls.

Health Careers Center

The Health Careers Center is served by a roof mounted DX cooling/natural gas heat units with VAV boxes with hot water reheat. The hot water is provided by a boiler. Automated Logic provides controls for the building.

Zollinger Library

The library is served by an interior air handling unit located in the basement with a remote condensing unit and hot water heat. VAV boxes throughout building have hot water reheat coils. Heating hot water is provided from two recent replaced natural gas hot water high efficiency boilers. There are two heating hot water distribution pumps. The basement is currently unoccupied. The basement is currently being used as storage. Tracer Summit controls the air handling unit. The Tracer Summit Controls are integrated into the Automated Logic front end.
Calvin Hall

Calvin Hall is divided into three phases, A, B, and C. Each has their own independent HVAC system. All systems have had Automated Logic Controls integrated.

Calvin Hall A, 1st and 2nd floors are served with an air handling unit with hot water heat and remote air condensing unit. Heating hot water is provided by a natural gas boiler. Hot water distribution is provided by two hot water pumps.
Calvin Hall A has a server room that is served by a Mitsubishi City Multi Variable Refrigerant Flow System. The system is a recent addition to the building and only serves the server room.

Calvin Hall B is served by five rooftop units with hot water heat and air washers for cooling. The terminal VAV boxes are also served by hot water reheat. Heating hot water is provided by a natural gas boiler.
Calvin Hall C is served by two rooftop units with hot water heat and air washers for cooling.
Gurley Hall

The old portion Gurley is served by two roof mounted Multi Zone units, DX cooling and natural gas heat. The East zone has 6 zones and the West unit has 4 zones with the corresponding number of remote condensing units. Automated Logic has been integrated into the HVAC system.

![Figure 14: Gurley Hall Multi Zone Unit](image)

![Figure 15: Gurley Hall East Multi Zone Condensing Units](image)

Newer areas of Gurley Hall are served by air handling units with hot water heat, air washers and terminal VAV boxes. Air handling units are located within building mechanical rooms. Hot water heat is provided by natural gas boiler. Automated Controls has been integrated into the building control system.
Career Education

An extension of Gurley hall is Career Education. The Career Education building had a complete HVAC redesign in 2013/2014. The building is served by three air handling units. There is one Air Handling Unit with hot water heat and DX cooling. The other two Air Handling Units are heating only by hot water. Hot water is provided by new high efficiency boilers. Evaporative cooling is also used within the building. Terminal unit VAV boxes with hot water reheat are located throughout the building. HVAC equipment is controlled with Automated Logic Controls.
Figure 18: Career Education High Efficiency Boilers

Figure 19: Career Education Mechanical Room

Construction Technology
The construction technology building is served by structure mounted electric unit heaters and roof mounted evaporative coolers. The office area has a fan powered electric unit that is ducted to each office.

Health Careers Building
The Health Careers Building is provided with three package roof top units with natural gas heating and DX cooling. The rooftop units have a 15 ton cooling capacity. Units are controlled with Automated Logic Controls.
Health Careers 2 Building

Health Careers 2 Building is served with an air handling unit with hot water heat and remote air condensing unit. Hot water is provided by a natural gas boiler. There are two heating hot water circulation pumps. Building controlled by Automated Logic controls. The server room has a dedicated rooftop package unit, natural gas heating/DX cooling unit.
Student Services Building

The Student Services Building is the newest building on campus. It is approximately three years old. The HVAC is completely automated by Automated Logic controls. Student Services is served with two air handling units with hot water heat and two remote air condensing units. Heating hot water is provided by two high efficiency boilers with two heating hot water pumps. All mechanical equipment is located within basement mechanical room with exception to the remote condensing units located outside.
Findings

General

In General, the Maintenance and Operations has done a good job at maintain, replacing mechanical equipment and integrating building into the Automated Logic as the front end controls system. There have been many examples of old inefficient equipment having been replaced within the last ten years with new high energy efficiency equipment. A few minor items were noted through the inspection of the campus. Most of the mechanical equipment is in good to fair operating condition. The condition of the equipment directly relates to the maintenance performed by Maintenance and Operations personnel. Most of the issues found during the inspection are routine maintenance items that should be corrected as part of normal maintenance. Normally, maintenance budgets could be used to correct any found problems; this includes equipment replacement.

Lions Hall

There were no problems reported from maintenance personnel at Lions Hall. The building has been unoccupied for the last year. It was reported that the building is inspected weekly to determine is all systems are still functioning. The units were manufactured in 1993. The units look to be in fair/poor condition. There is some damage to the unit due to no hail guards. It does not appear that there is an outside air source for outside air ventilation.
Child Care
There are no problems reported from maintenance personnel at Child Care. The evaporative cooler condition is unknown. The gas fired furnaces look to be in good condition with proper combustion air and flue connections.

Maintenance and Operations
There are no problems reported from maintenance personnel at Maintenance and Operations. The work area of the Maintenance and Operations department only has unit heaters. There is not a source of mechanical outside air ventilation. There is a garage door that can be opened.

Pump House
There are no problems reported from maintenance personnel at Maintenance and Operations. There is no ventilation within the pump house.

Gymnasium
The central heating and ventilating unit was replaced approximately three years ago. The evaporative coolers were recently replaced as well. The boiler is the original boiler and appears to be in fair condition. It was noted that there is insulation missing on the heating hot water piping that is connected to the boiler.

Health Careers Center
There are no problems reported from maintenance personnel at Maintenance and Operations at the Health Careers Center.
Zollinger Library

It is reported by maintenance that the unit does not seem to have enough capacity to serve the building properly. There are also reports of the building being warm. The controls program also reports that the air flow requirements at the VAV boxes are not being met. The fan motors for the air handling unit have also been replaced. The fan motors have burned out in the past. The fan motor replacement has been necessary multiple times. The basement is currently being used as storage. There are future plans to expand the Library into the basement into an occupied space.

The existing high efficiency heating hot water boilers were recently replaced within the past year. The boilers are in new condition.

Calvin Hall

Calvin Hall A
There are no problems currently reported from maintenance personnel at Calvin Hall A and equipment appears to be in fair condition. Hot water coils were replaced approximately four years ago in the air handler. The campus’ natural gas supply was shut off. The hot was coils froze. There have been no issues reported with the coils since the replacement.

The remote condensing unit has had many service calls with compressor leaks. The condensing unit is an ongoing issue for the Maintenance and Operations Department.

Calvin Hall B
There are no problems reported from maintenance personnel at Calvin Hall B and equipment appears to be in fair condition.

The combustion air duct has been obstructed by maintenance personnel placing cardboard under the combustion air duct. This has been done to prevent the heating hot water pumps and piping from freezing.

Calvin Hall C
The rooftop units serving Calvin Hall C have a considerable amount of calcium build-up and rust. Maintenance personnel aside from the condition of the units, no other problems have been noted. The build-up is apparent inside and outside of the unit.
Figure 28: Calvin Hall C Roof Top Unit Rust and Calcium

Gurley Hall
The Multi Zone units and remote condensing units were replaced approximately four years ago serving the old Gurley Hall. The units look to be in new condition. No issues are being reported by maintenance personnel.

It is reported by maintenance staff that the kitchen is always warm in Gurley Hall. The exhaust hood does not seem to have the capability to remove the heat from the kitchen. Maintenance has been called to service the short circuit hood, exhaust and evaporative cooler make-up air unit several times. There has been no resolution.

There are no issues to report in the new Gurley Hall. There was a sewer smell noted in the mechanical room located in the penthouse. Maintenance report that the smell comes and goes.

Career Education
There were no issues reported from Maintenance personnel for Career Education. All equipment is new and is good working condition. It was noted that the duct from AHU -201 was emitting heat that could be felt when standing next to the duct. It is believed that the leaving air temperature set too high. The temperature should be set to 90 to 100 degrees F.

The building air compressors located in the mechanical room do not seem to have a ducted vent to the outside. This was an item that was in the construction documents.

Construction Technology
The electric unit heaters are approximately two years old and in good condition. The evaporative coolers are reported to be in fair condition per maintenance personnel.

Health Careers Building
There were no issues reported from Maintenance personnel for Health Careers main mechanical equipment. Equipment is in fair conditions. Rooftop units are approximately fourteen years old.

It was reported that the roof drains on north wall have frozen. It is not known if the roof drains are insulated with vapor barrier.
Health Careers 2 Building
All equipment reported to be in good condition. The server room unit seems to be undersized per maintenance personnel comments. There were no issues reported from Maintenance personnel for Health Careers main mechanical room. The hot water pumps were recently replaced. The combustion air has been reconfigured to prevent freezing of heating hot water pumps. The server room has its own decided unit. However, it was reported by maintenance personnel that the unit does not seem to have enough capacity to satisfy the demands of the server room.

Student Services Building
All equipment reported to be in good working condition. The building is approximately three years old. The boiler room did not have any ventilation. The boilers were direct vent. Therefore, no ventilation air is introduced into the boiler room. Boiler room doors remain open to make sure room does not get overly hot. The boiler pumps have been replaced.

RECOMMENDATIONS
General
Maintenance and Operations should continue, as they have, on replacing old equipment with new high efficiency equipment and maintaining existing equipment on a regular schedule. Maintenance and Operations has done a good job at maintain, replacing mechanical equipment and integrating building into the Automated Logic as the front end controls system. There have been many examples of old inefficient equipment having been replaced within the last ten years with new high energy efficiency equipment. A few minor items were noted through the inspection of the campus.

Lions Hall
It is recommended that the existing package unit be replaced when and if there is a new purpose for the building. The building system should follow the similar mechanical systems that have been found across the campus of central located air handling unit, with high efficiency boilers and remote air cooled condensing unit.

Child Care
There are no recommendations for Child Care at this time. Regular maintenance should continue.

Maintenance and Operations
Ventilation should be introduced into the work area of Maintenance and Operations. The work area is an occupied space and per code requirements, should have ventilation.

Pump House
Exhaust and air intake should be added to the pump house. This will prevent excess heat and will exhaust any fumes that may be in the space.
Gymnasium
The heating hot water piping should have the insulation repaired and patched as needed. The boiler can follow along the maintenance schedule and eventually be replaced with a similar high efficient boiler that has been installed in other campus buildings. Regular maintenance should continue.

Health Careers Center
There are no recommendations for Health Careers at this time. Regular maintenance should continue.

Zollinger Library
A complete load analysis should be completed on Zollinger Library to determine the current heating and cooling loads. This will determine if the existing mechanical equipment can handle the existing loads and potential future loads. Regular maintenance should continue.

Calvin Hall
Calvin Hall A
There are no recommendations for Calvin Hall A at this time. Regular maintenance should continue.

Ongoing maintenance for an existing unit can be costly. It may be more cost effective to replace the condensing unit if recurring issues continue.

Calvin Hall B
Calvin Hall B combustion air should be modified. The combustion air duct should be relocated away from any piping that has the potential of freezing. Regular maintenance should continue.

Calvin Hall C
Rooftop units should be to be replaced. With the amount of calcium and build-up on the units, indoor air quality can be compromised.

Gurley Hall
There are no recommendations for old and new Gurley Hall at this time. Regular maintenance should continue.

Career Education
AHU-201 controls should be checked and determine if the exiting temperature of the air handler is too high. Regular maintenance should continue.

The compressor manufacture installation manual should be verified if the vent is required to be ducted to the outside. Different manufactures have different requirements and an outside air vent may not be required by the manufacture of the installed equipment.

Construction Technology
There are no recommendations for Construction Technology at this time. Regular maintenance should continue.
Health Careers Building
The rooftop units should continue to have regular maintenance. If increased maintenance is becoming apparent, it is recommended that the rooftop units be replaced. They are fifteen years old and are reaching the end of their life cycle. The replacement of high efficiency units would benefit with saved energy cost.

Health Careers 2 Building
The heating/cooling load analysis should be performed on the server roof to determine if the unit is appropriately sized for the equipment. Regular maintenance should continue.

Student Services Building
An exhaust fan and an outside air intake louver should be added to the boiler room and be controlled by a thermostat to prevent excess heat from building up in the boiler room. All regular maintenance should continue.

End of Mechanical Systems Study Narrative
Electrical and Special Systems Engineering Report
Completed by AC Engineering Enterprises, LLC

INTRODUCTION
The purpose of this study is to review the existing campus electrical systems, and make recommendations and define budgets for future improvements to meet the functional needs of UNM-G facilities. A previous Facilities Master Plan Study was completed in November of 2005 by Architectural Research Consultants, Incorporated for the years 2006 through 2013. A Utilities Master Plan 2013 was previously prepared by WHPacific. Both Master Plans focused primarily on site electrical systems (primary power distribution and telephone/data).

EXISTING CONDITIONS
Refer to the 2013 Utility Master Plan by WHPacific for descriptions of existing power, telephone, and data systems.

UPDATES SINCE THE 2006 FACILITIES MASTER PLAN
- Telecommunications:
  - UNM Main Campus ITS Department upgraded the campus telecommunications system with a $2M construction project that included replacement of all copper cable and installation of new fiber-optic cable to all buildings utilizing existing infrastructure. The new fiber-optic installed was Berk-Tek SM 24 Fiber plenum rated with interlocking armor, Part No. LTPKOKO24AB040. Refer to the attached Telecommunications drawings for location and routing of the fiber-optic cable. All Telecommunication work is properly reflected in the 2013 Utility Master Plan prepared by WHPacific.
- Primary Power Distribution:
  - The only electrical load added to the primary distribution system, since the 2006 Facilities Master Plan was completed, was the Technology/Classroom Building, which was constructed in 2010. The electrical load is reflected in the 2013 Utility Master Plan prepared by WHPacific.

RECOMMENDATIONS FOR FUTURE AND COST ESTIMATES
- Telecommunications:
  - It is recommended that a fiber-optic loop be constructed to provide redundancy for seamless continuity and uninterrupted use of the campus telecommunication system. Refer to the 2013 Utility Master Plan prepared by WHPacific, Sheet TS101 which identifies the future underground ductbank, conduit and fiber optic routing for creating the fiber-optic loop system. The recommended budget (MACC) for this improvement is $3,775,000.
- Exterior Lighting Upgrades:
  - It is highly recommended to replace all existing exterior lighting, both pedestrian and roadway lighting, with new LED type Luminaires, similar to the standards that have been developed for the UNM Main Campus. Numerous upgrades projects have been completed on the UNM Main Campus, including all pedestrian lighting at the Duck Pond, along the “super pedestrian highway” from...
the Student Residence Center to west end of Hokona Hall. The recommended budget (MACC) for this improvement should be phased, based upon available funds.

- **Interior Lighting Upgrades:**
  - It is recommended to upgrade and replace interior lighting throughout all buildings, as funds become available, with new LED-type luminaires, including lighting controls such as occupancy sensor switches, wireless remote switches, daylight controls, etc. A similar project was recently completed at the Career Education Building.

- **Secondary Electrical Distribution:**
  - It is recommended to upgrade and replace electrical distribution equipment in the older buildings as funds become available. The buildings most appropriately requiring upgrades would be the Gym, Old Gurley Hall, Calvin Hall, and Career Education.

- **Primary Power Distribution:** The electrical Master Plan for the Primary Distribution System will present three (3) electrical upgrade recommendations:

  - **RECOMMENDATION NO. 1: PRIMARY SELECTIVE (DUAL RADIAL):**
    - Highly recommended. Provides redundancy of primary feeders; provides capability for manual or automatic source transfer; and provides flexibility for future electrical load growth.
    - The dual radial primary selective system would normally be provided with two (2) primary sources and two (2) independent switchgears and associated redundant feeders. A single power source, however, can be used with this system. The benefit of this option is that the system provides a redundant backup in power sources, main switchgear, feeders and distribution cable system in the event of a main switchgear or cable failure. In other words, it provides redundant power source availability down to the building transformer. The dual feeders are installed in a common ductbank, preferably with redundant manholes, and cables are terminated at the load in a primary selector switch, normally provided with kirk-key interlock (to prevent simultaneous primary source energization — either source can be selected to energize a building transformer). The dual primary radial selective system provides a high degree of reliability, however, the cost for such a system is relatively higher than the other systems, described below.
    - Based upon the critical nature and functions of the buildings and the need for redundancy in the power distribution system, this system would strongly be recommended

  - **RECOMMENDATION NO. 2: LOOP PRIMARY DISTRIBUTION SYSTEM:**
    - Provides capability to isolate a cable fault and to allow all loads to remain energized once switching is complete.
    - The looped-primary distribution system can consist of either a single or preferably a dual source of primary power. A single primary feeder extends from one fusible switch and "loops" from transformer to transformer, through loop feed switches of 15kV pad-mounted gear. The primary feeder loops around the campus and terminates back at the primary source gear. There
is one normally open sectionalizing point installed near the center of the loop so that the building transformers are not fed simultaneously from two power sources. Interruptions due to cable failures can therefore be restricted to half of the loop, and correspondingly half of the buildings. Additional sectionalizing points are provided within the loop to allow power to be supplied to each load from either end of the loop. In the event of a failure within the loop, manual switching can be performed to isolate the failed section and simultaneously provide power to all of the loads in the loop.

The looped primary distribution system has good benefits, but lacks the capability of implementation due to existing conditions with numerous radial feeds in the distribution system.

**RECOMMENDATION NO. 3: RADIAL DISTRIBUTION SYSTEM:**

- Provides no flexibility; cost effective and easy to maintain and understand.
- The radial primary distribution system consists of a single primary source terminating in distribution switchgear. Single primary feeders extend from the distribution switchgear, in a radial fashion, to individual loads (or transformers). This system has no redundancy. If a cable fault occurs, there is no option to provide an immediate medium voltage system back-up source. Only standby engine generators, installed on the secondary side of the building transformers, would provide power to critical building loads (emergency and egress lighting and other life safety functions such as fire alarm systems). This is the distribution system which is presently installed, but is in extremely poor condition, due primarily to the age and to the initial “poor quality” of equipment provided. A radial primary distribution system, although the least expensive, is not recommended due to its less reliable operation and operating characteristics.

**GEAR OPTIONS**

Options for medium voltage distribution gear, recommended to be used for the electrical upgrade, are as follows:

- **METAL-CLAD SWITCHGEAR (MCS):** Metal-clad switchgear, with power circuit breakers is considered the premium gear to use for medium voltage distribution, however, because of initial cost and maintenance requirements, it is not being considered for this application.

- **FREE STANDING METAL ENCLOSED SWITCHGEAR (MES):** This gear is unitized and compartmentalized and provides individual bays with overcurrent protection and circuit switching features. Metal enclosed switchgear nominal size is 42"x48"x90" high for each bay and can be installed indoors or outdoors. If installed outdoors, the gear can be of the walk-in type, with front access only. Metal enclosed switchgear provides greater system flexibility by allowing interrupter switches, power fuses, automatic source transfer equipment, etc. to be incorporated into a single line-up. Metal enclosed switchgear consumes a larger footprint than pad-mounted switchgear and is considerably more expensive.

- **PAD-MOUNTED GEAR (PMG) with Fusible Protection:** This gear is compact in design and can be provided with a maximum of four bays, with a combination of gang-operated switches and fuses. This type of gear is conventionally provided for the
majority of exterior medium voltage campus distribution systems, due to its compact size, cost and flexibility. Pad-mounted gear is commonly provided with gang-operated in-coming and out-going switches and fuses for overcurrent protection. The pad-mounted gear provides readily visible components to allow the operator the ability to visualize the circuit arrangement and all of the components being operated. Pad-mounted switchgear is front and rear accessible and requires minimum 10'-0" clearance on all sides where doors are provided. There are several disadvantages with type of gear:

- 1) Pad-mounted gear is front and rear accessible and therefore cannot be installed in areas of limited access or areas where space is limited.
- 2) Pad-mounted gear cannot prevent single phasing on feeders (i.e., if there was a cable fault on one phase, the other phases would still be energized, possibly creating single phasing downstream and potentially damaging large three-phase motor loads).

• SF6 GEAR (Electronic protection): This gear is similar in design to the pad-mounted fusible gear, with several major differences. The switch construction consists of a fuseless, electronically controlled, resettable overcurrent protection, utilizing deadfront SF6 gas insulated device. Overcurrent protection is provided with vacuum interrupters integrated with electronic fusing. The SF6 gear provides greater flexibility in protection over the pad-mounted gear. The SF6 switches can be provided in either vault style construction, with front access design. Automatic source transfer can be supplied with SF6 switch. The SF6 gas is a nontoxic, non-flammable medium used in the construction of the gear. The SF6 gear offers numerous benefits including totally dead-front construction, no routine maintenance, no fuse replacement, and no risk of dielectric (SF6) contamination. The SF6 style of gear was installed on the UNM Main Campus, North Campus, and South Campus Electrical Upgrade Projects. SF6 gear, with front access, requires the least space requirement when compared to the alternate pad-mounted gear and is recommended for use at all critical loads and buildings.

• CABLE:
  - a. Medium voltage cables manufactured today are many times superior to those installed in the 1960s. The available insulation types and jackets presently used on the UNM South Campus include the following:
    » INSULATION TYPE  JACKET TYPE
    » EPR (ethylene propylene rubber)  PVC
    » XLPE (cross-linked polyethylene)  Hypalon
  - b. There are pros and cons to using the different types of insulation and jackets, however, for the UNM Gallup campus, it is recommended to utilize an ethylene-propylene rubber (EPR) cable and a PVC jacket. The EPR method of construction utilizes a superior thermosetting compound, triple tandem extruded product, and provides the optimum balance of electrical and physical properties. The additional cost for an EPR cable, when compared to an XLPE cable, are far exceeded by the benefits of longevity and problem free service. The EPR cable was used for the UNM Main Campus, North Campus and South Campus Electrical Upgrade Projects.
• CABLE SYSTEM FLEXIBILITY:
  - a. LOAD BREAK JUNCTION MODULES (LBJM): Load break junction modules are utilized in the primary electrical distribution system, at junction points. They provide an economical method for tapping the primary cable and extending cables to additional loads. The modules can be removed under load, in the event of an emergency situation. The load break junction modules can be installed in either manholes or above grade in terminal cabinets appropriately sized.

• MANHOLES:
  - a. Manholes are utilized in the medium voltage distribution system as pulling points between termination of cable at electrical gear. Manholes are normally constructed of either poured-in-place concrete or pre-cast concrete, and sized 10'x10'x8' deep.
  - b. In the dual radial primary selective system, it is common to provide two (2) manholes, one for each of the radial system cable feeders. The purpose of this is to be able to work in a manhole with one dual radial feeder de-energized, as the need occurs. A single manhole can be utilized in the dual radial selective system, however, it does present a safety concern since either one of the cables would be energized, if for any reason access was required to the manhole by maintenance personnel.

DISCUSSION OF RECOMMENDATIONS:
A. DISTRIBUTION SYSTEM UPGRADE RECOMMENDATIONS: In review of the existing primary electrical distribution system, there are several options that are recommended, based upon time frame, construction cost, budget constraints, and phasing.

• 1. RECOMMENDATION NO.1 -- DUAL RADIAL PRIMARY SELECTIVE SYSTEM: This option involves a rather extension upgrade of the primary electrical distribution system, including new metal enclosed switchgear, new underground ductbanks, feeders, and new concrete pads. This recommendation includes the following:
  - The existing GJU source of power will be utilized. New 15kV metal enclosed switchgear would be located in the vicinity of the existing electrical equipment and would be provided with two (2) line-ups, one for each of two sources of primary power.
  - There will be three (3) dual feeders for each line-up (Feeders 1A/1B, 2A/2B, and 3A/3B). Dual radial primary feeders 1A/1B will be extended to the northeast to feed Career Education, Calvin Hall, Health Career Center and HCC2. Dual radial primary feeders 2A/2B will be extended to the west to feed Zollinger Library, Gurley Hall, and Technology Classroom Building. Dual radial primary feeders 3A/3B will be extended to the south to feed the Pump House, Child Care, Lions Hall and proposed new building, including CCTE and PPD.

• 2. RECOMMENDATION NO.2 -- LOOP PRIMARY DISTRIBUTION SYSTEM: This recommendation involves a major upgrade of the primary electrical distribution system, including new underground ductbank and feeders, and new 15kV pad-mounted switchgear.
  - a. The existing point of service will be reused (from the existing GJU primary meter). New metal enclosured switchgear would be provided and would include
a single gang operated switch and four fuse bays. Fuse Bay No. 1 and Fuse Bay No. 2 would provide the loop provisions for all buildings on the campus with the exception of the Gym and the buildings on the south campus. Fuse Bay No. 3 would back-feed the existing Gym, and Fuse Bay No. 4 would back-feed buildings on the south campus (Pump House, Child Center, Lions Hall, and proposed future buildings.

3. RECOMMENDATION NO. 3 -- PRIMARY RADIAL DISTRIBUTION SYSTEM: This recommendation involves a minor upgrade of the existing primary electrical distribution system.

- The existing point of service will be reused (from the existing GJU primary meter). New free-standing metal enclosed switchgear would be provided with a single gang operated switch and three fuse bays. Fuse Bay No. 1 will back-feed existing radial circuit No. 1 for the Gym. Fuse Bay No. 1 will back-feed existing radial circuit No. 2 for Zollinger Library, Gurley Hall, and Technology Classroom Building; Fuse Bay No. 3 will back-feed existing radial circuit No. 3 for the south campus to feed the Pump House, Child Center, Lions Hall and proposed new building, including CCTE and PPD.

- The 2006 Facilities Master Plan recommended a “open loop 15kV” electrical distribution system for isolating buildings. A primary distribution “loop” system is not recommended due to the fact that the existing primary distribution system consists of a multiple radial feeders terminating at load break junction modules, either above grade in sectionalizing enclosures or below grade in manholes. The existing primary distribution system could be converted to a “partial” loop system involving a major upgrade including a new 15kV pad-mounted switchgear at the service entrance location and other 15kV pad-mounted switchgear at various other locations on the campus, with a new 15kV feeder installed between the existing transformers at the Technology/Classroom Building, at the west end of the campus and the HHC2 Building at the northeast end of the campus, approximately 950’, to complete the “partial” loop. Unfortunately, the campus primary electrical distribution system was never fully conceptualized from the beginning, and as buildings were constructed, radial feeders were extended from existing manholes and from existing pad-mount transformers, making a “loop” distribution system impractical.

- The recommendation identified in the 2013 Utilities Master Plan is more practical, however, it does not provide an electrical distribution system that allows for some form of redundancy. The recommendation was identified as follows:

  » “The existing arrangement indicates that the City can provide 3200 KW more than the UNM distribution system is capable of handling. The short range improvement is to insert a 15KV switch board with three 200 Amp switches. New 4/0 Aluminum, 15 KV wires would leave each switch to provide three distribution circuits, each capable of handling up to 200 amperes or 4115 KW of demand. A second phase revision would be to extend one of the circuits to the new areas of potential physical growth of the campus. This ultimate arrangement is shown on primary distribution map (ES102).”

- It is also recommended to upgrade the primary distribution system with a dual radial primary selective system, also for redundancy and reliability, similar to the fiber-optic telecommunications recommendations. The probable construction cost for the dual radial primary selective system is estimated to be approximately
$1,250,000, which includes new 15kV metal-clad free-standing switchgear, new 15kV SF6 switchgear, new dual radial feeders, new manholes, and new terminations.

End of Electrical Engineering Narrative
Exhibit 3-83
Proposed Primary Electrical Loop Distribution

1. EXISTING UNDERGROUND PRIMARY (15KV CABLE) IN CONCRETE ENCASED DUCTBANK.
2. EXISTING BUILDING PAD MOUNT TRANSFORMER.
3. EXISTING GALLUP JOINT UTILITIES PRIMARY METER AND 15KV PAD MOUNTED SWITCH.
4. EXISTING LOAD BREAK JUNCTION MODULE TERMINAL CABINET.
5. EXISTING BELOW GRADE MANHOLE.
6. EXISTING BELOW GRADE PULL BOX (P/B).
7. NEW 15KV PRIMARY AND NEW EXTENSION TO FROM EXISTING 4"C STUB TO NEW 15KV PAD MOUNTED SWITCH (PMS).
8. NEW 15KV UNDERGROUND FEEDER BETWEEN BUILDING PAD MOUNT TRANSFORMERS AS SHOWN WITH PULL BOXES AT 300' ON CENTERS.
9. REMOVE EXISTING LOAD BREAK JUNCTION MODULE TERMINAL CABINET AND PROVIDE NEW 15KV PAD MOUNT SWITCH (PMS) WITH LOOP FEED SWITCH AND FUSE BAYS FOR RADIAL FEED TO EXISTING BUILDING PAD MOUNT TRANSFORMERS.
10. EXISTING PRIMARY FEEDERS REMAINS AS RADIAL FEED (NO LOOP FEE PROVISIONS).
1. EXISTING UNDERGROUND PRIMARY (15KV CABLE) IN CONCRETE ENCASED DUCTBANK.
2. EXISTING BUILDING PAD MOUNT TRANSFORMER.
3. EXISTING GALLUP JOINT UTILITIES PRIMARY METER AND 15KV PAD MOUNTED SWITCH.
4. EXISTING LOAD BREAK JUNCTION MODULE TERMINAL CABINET.
5. EXISTING BELOW GRADE MANHOLE.
6. EXISTING BELOW GRADE PULL BOX (P/B).
7. EXISTING 4"C STUB FOR FUTURE EXTENSION.
8. REMOVE EXISTING LOAD BREAK JUNCTION MODULE TERMINAL CABINET AND PROVIDE NEW FREE STANDING METAL ENCLOSED 15KV SWITCHGEAR WITH FOUR (4) FUSE BAYS FOR RADIAL FEEDERS NO. 1 THROUGH NO. 4.

Exhibit 3-84
Proposed Primary Electrical Radial Distribution
1. EXISTING UNDERGROUND PRIMARY (15KV CABLE) IN CONCRETE ENCASED DUCTBANK.
2. EXISTING BUILDING PAD MOUNT TRANSFORMER.
3. EXISTING GALLUP JOINT UTILITIES PRIMARY METER AND 15KV PAD MOUNTED SWITCH.
4. EXISTING LOAD BREAK JUNCTION MODULE TERMINAL CABINET.
5. EXISTING BELOW GRADE MANHOLE.
6. EXISTING BELOW GRADE PULL BOX (P/B).
7. EXISTING 4"C STUB FOR FUTURE EXTENSION.
8. OPTION NO. 1 FOR EXTENSION OF THE EXISTING PRIMARY DISTRIBUTION SYSTEM FEEDER FROM THE EXISTING LOOP-FEED PAD MOUNT TRANSFORMER AT THE CHILD CARE BUILDING.
9. OPTION NO. 2 FOR EXTENSION OF THE EXISTING PRIMARY DISTRIBUTION SYSTEM FEEDER FROM THE EXISTING MANHOLE.