New Mexico State University

College of Agricultural, Consumer, and Environmental Sciences



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New Mexico State University College of Agricultural, Consumer, and Environmental Sciences

FACILITIES MASTER PLAN REPORT

Executive Summary | July 2023

OVERVIEW

New Mexico State University Facilities Group (NMSU) commissioned Nine Degrees Architecture and Design, Inc. (NDA&D) in the Fall of 2021 to perform a facility assessment study and master plan of the institution's agricultural research centers that are located throughout the State of New Mexico. As identified in this report, this consortium of twelve agricultural research facility locations is an integral part of the College of Agricultural, Consumer, and Environmental Sciences (ACES) academic, research, and public service program for the New Mexico State University System. These assessment efforts required NDA&D to complete this evaluation plan under an open and transparent methodology to ensure a fair data-driven Facility Master Plan (FMP) effort. The Facilities Master Plan is intended to inform NMSU of the College of ACES agricultural research facilities building conditions for operations, use, and future capital investment decisions that may be needed for these agricultural centers' next five years of operations. Together with the College of ACES administration, NMSU Facilities and Services Department Staff, and ACES research centers' staff, our architectural staff members undertook an assessment effort and outreach process that included extensive field visits and data gathering at all twelve research center locations.

The Facilities Master Plan (FMP) findings that informed our team of the specific recommendations are summarized in this document, thus providing NMSU with an outsider's snapshot of the state of operations, facilities conditions, and functional suitability to maintain the center's successful operations. Our team's expectations are that, as this plan is implemented, it will assist the staff at NMSU College of ACES to continue its educational and research vision and mission by having their centers equipped and capable of meeting the needs of their academic endeavors for upcoming research grants and being able to achieve a balance of their existing needs. Through this balance ACES will be able to increase capacity utilization, and by being able to improve their research programs – both being crucial and beneficial issues to all New Mexico State University College of Agricultural Consumer Environmental Sciences students today and in the future.

FINDINGS

After a series of on-site visits and through visual assessment of each facility, the findings included in this Facility Master Plan (FMP) begin to illustrate that many of the College of ACES research center facilities appear to be in relatively poor condition and/or declining conditions. These conditions can be attributed to the historically low level of state funding for critical maintenance and capital investment for basic building maintenance, structural repairs, facility erosion control, mechanical systems repairs, and roof replacement. In addition, based on the data that was discovered during our assessment process, it appears that all research centers, in some form or another, have suffered from issues such as a shortage of maintenance personnel, staff attrition, and financial cutbacks, which have exacerbated their por facilities' conditions. The annual maintenance and operation budget awarded to each of the agricultural centers has directly impacted the number of repair projects required to improve and maintain each of the centers to perform to their optimal capabilities.

After evaluating demographic information for the State of New Mexico from 1990 to 2020, as reported in the annual assessment by the State of New Mexico Economic Development Department, the state increased its population by an average of 240,000 citizens per decade since the 1990s. It leveled off in 2020 for a total of 2.1 million citizens. Over the past three years since, the population has continued to grow but at a slower and smaller pace. Current assessment predicts a smaller but steady increase in population, with a projected student enrollment for the next 2 to 3 years that will continue to remain relatively level with smaller incremental growth. Additionally, the assessment describes that there will be growth and/or decline in specific geographic areas as the state experiences regional population immigration or interstate migration.

NMSU AC	CES
FACILITY DEFICIENCY C	COST - PRESENT \$17,604,854.00
5-YEAR LIFE CYCLE FOR	RECAST- ESCALATION \$6,402,251.14
TOTAL 5-YEAR NEEDED	- OVERALL BUDGET \$24,007,105.46

This facilities assessment has identified the need for a minimum expenditure of around \$24,007,105.46 million in projected Operations & Maintenance funding for facility-related needs within the next five years (in 2022 dollars), comprised of \$13,843,194.00 million for the repair of current deficiencies, and additional \$3,761,660.00 million for instructional technology infrastructure improvements. Furthermore, an add is anticipated over the next five years for end of life-cycle repairs

of \$6,402,251.14 million premium to the O&M Budget. This budget does not include any additional funding that may be required to transition each center to a renewable energy system as currently being studied by NMSU Facilities Team. Each agricultural center's physical condition and functional adequacy were determined by thoroughly inventorying all buildings and accessory structures against their current scheduled use. By comparing the operational capacity of each center against current and projected enrollment predictions based on existing utilization capacity, utilization percentages were developed to inform our assessment team on how to develop individual strategies for facility repair and replacement efforts. These strategies created the best use and value for all college of ACES research facilities. It is certain that continued degradation of the research facilities will financially strain NMSU College of ACES's academic and research mission. The operational expenditures, such as utilities, annual maintenance, and growing extensive repairs caused by buildings and operational systems reaching the end of their life-cycle, will become overwhelming and create greater difficulty to repair the existing buildings.

RECOMMENDATIONS

To determine whether an asset is critical to the continuation of the mission of the University, a needs assessment must be scheduled and performed every five-years and, in some facilities, even sooner, when regulations, curriculum shift, or just a change in the facilities conditions, warrants a new assessment. Our recommendations are based on a mixture of both basic general building systems performance and institutional priorities. Institutional priorities are based on academic necessities as they are balanced against the maintenance and maintenance budgets provided within the annual system's expenditure strategy. Our observations of the buildings' performance were based on assessing the life expectancy of the building systems as they are collectively beginning to reach their end of the life-cycle or by analyzing the systems' age. Based on the field conditions and facility historical data, Nine Degrees Architecture and Design, Inc., recommends to the NMSU College of Agricultural, Consumer, and Environmental Sciences and NMSU Facilities Planning Team to begin taking additional operational and capital funding steps that will provide opportunities for improving each Ag Center and create the possibility for a more balanced utilization program for each of their research centers.

These additionl operational and capital actions are detailed below.

OPTION ONE: Divest Surplus Landholdings.

Divesting surplus landholdings with strategic time-to-market transactions will replenish the NMSU College of Agricultural, Consumer, and Environmental Sciences funding budget and create additional resources for potential reinvestment into their current research center facilities. This recommendation directly aligns with research center staff recommendations towards enhancing the center's mission and vision.

OPTION TWO: Review Land Use for the Surplus Landholdings.

Rethinking and reallocating surplus landholdings with strategic lease transactions to the private sector to create wind farms, grazing farms, solar farms, or any other public-minded use that will allow for a cash flow increase while still retaining land ownership that should replenish NMSU College of Agricultural, Consumer, and Environmental Sciences fund balance and create financial resources for additional reinvestment into each research center facility and infrastructure. This recommendation directly aligns with each research center's mission and vision.

OPTION THREE: Explore Public Bond Support.

The evaluation team advises the institution to consider using non-state funding sources and develop a plan for a multi-million bond referendum to fund facility improvements at each of the twelve research centers. If approved by the voters, these funds would optimize the immediate safety concerns and modernization of the research centers while addressing top-priority facility repair and infrastructure needs in the near term. Consequently this would defer the remaining \$6,402,251.40 million in lower priorities for future implementation due to construction escalation over the next 5-year cycle. In an effort to assist the bond steering committee, the planning team defined a list of recommended high-importance/ high-impact enhancements for each research center focusing on critical facility replacements, repairs, and high technology needs.

OPTION FOUR: Explore Public-Private Partnership.

The evaluation team also recommends that the NMSU College of Agricultural, Consumer, and Environmental Sciences team and the institution consider identifying and developing specific strategic public partnerships aligned with their 5-year cycle to secure targeted sponsorship and ventures with key industry leaders that each center serves. This proposed association can work with donors or sponsors with a vested interest in the success of the research agenda of each center. This option will require a more detailed analysis to engage the private sector in identifying suitable candidates for each research center.







INTRODUCTION AND METHODOLOGY

In concurrence with the academic offering by New Mexico State University, the College of Agricultural, Consumer, and Environmental, the expected outcome for this assessment effort is to provide the New Mexico State University Planning and Design team with a snapshot assessment of the "present day" state of their existing facilities with the expectations of developing a sound strategy for the maintenance, upgrades, and/or replacement of their agricultural centers' building facilities. This assessment also serves as an inventory of the building conditions of each center intended to inform the College of Agricultural, Consumer, and Environmental Science leadership as they continue to prioritize their needs for academic, research, and public service. In order for the system to help fulfill the NMSU College of ACES educational and research vision, the NMSU Board of Regents and Administration determined the necessity to develop the Facility Master Plan (FMP) and assessment that will inform and guide the potential of needed facility rehabilitation and capital investment decisions for the next 5-year cycle. Entrusted with first putting College of ACES research excellence in the forefront and then emphasizing the effective stewardship of the university's assets, NDA&D engaged and undertook an exhaustive visual assessment of every research center facility, evaluated demographic studies, and facilitated a transparent assessment and planning process. This process included the participation of staff members from the NMSU team and administrative members of each agricultural center.

The Facility Master Plan findings and recommendations from our assessments and reviews are summarized within this document, providing the NMSU Board of Regents with an independent, unbiased snapshot and near-term forecast of all ACES facilities' condition, suitability, and utilization. This document summarizes the results of a comprehensive assessment performed in the Fall of 2022 through the Summer of 2023, culminating in this Facility Master Plan with recommendations for NMSU College of ACES that identifies options for future investments in the enhancement and maintenance of its agricultural centers'. We have included a review of the entire facility portfolio, an educational/ research adequacy assessment, a facility condition assessment, a five (5) year life-cycle forecast, and a review of College of ACES's current enrollment statistics.

NMSU ACES RESEARCH AT EACH SITE

NMSU CORONA RANGE AND LIVESTOCK RESEARCH CENTER County Road CO2O - #4 University Rd, Corona, N.M. 88318

The research mission of the Corona Range and Livestock Research Center (CRLRC) is to enhance the understanding of woody brush invasion, hydrology, livestock production, wildlife management, and discover innovative solutions to improve economic development in rangeland-bound communities. The Corona Range and Livestock Research Center is a collaborative effort between animal, range, and wildlife scientists, economists, land and wildlife agency personnel, and ranchers

Future research efforts – continuation of current research efforts including interdisciplinary research/teaching regarding renewable energy (wind and solar) on ranch lands.

NMSU Corona Range and Livestock Research Center - WAYFINDING



NMSU Corona Range and Livestock Research Center - WAYFINDING



NMSU Agriculture Centers Facilities Master Plan



NMSU Corona Range and Livestock Research Center



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NMSU Corona Range and Livestock Research Center -LOCATIONS



NMSU Corona Range and Livestock Research Center - LOCATIONS



Property Boundary



NMSU Corona Range and Livestock Research Center

- 1. Section 1
- 2. Section 2
- 3. Section 3



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NMSU Corona Range and Livestock Research Center - SECTION 1 LOCATIONS





NMSU Corona Range and Livestock Research Center

- 1. Headquarters Residence 418H (FCI Score 0.456)
- 2. Office 418J (FCI Score 0.015)
- 3. Hay Barn 418E (FCI Score 0.046)
- 4. Headquarters Pump House 418R (FCI Score 1.0)
- 5. Livestock Barn 418Q (FCI Score 0.019)
- 6. Scale Barn 418N (FCI Score 0.1387)





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Architecture + Design, Inc.

NMSU Corona Range and Livestock Research Center - SECTION 2 LOCATIONS





NMSU Corona Range and Livestock Research Center

7. Ranch Dormitory 670 (FCI Score 0.026)

8. Cabins 650 (FCI Score 0.005)

9. SW Center for Rangeland Sustainability 634 (FCI Score 0.004)

10. Storage Building 677





NMSU Corona Range and Livestock Research Center - SECTION 3 LOCATIONS





NMSU Corona Range and Livestock Research Center

11. North Camp Main Bunkhouse 418A (FCI Score 0.555)
12. North Camp Lab 418C (FCI Score 1.067)
13. North Camp Worker's Bunkhouse 418B (FCI Score 1.098)
14. North Camp Barn 418P (FCI Score 1.908)
15. North Camp Pump House 418F (FCI Score 1.933)
16. Residence 418I (FCI Score 0.029)
17. North Camp Storage (Old hanger) 418D (FCI Score 0.767)





NINE DEGREES Architecture + Design, Inc.

NMSU Corona Range and Livestock Research Center - DEFICIENCIES LIST





HEADQUARTERS RESIDENCE 418H

Replace corrugated metal roof panels, repair wood fascia and outriggers and soffit and paint, need gutter and downleaders, concrete apron on all sides, regrade to provide positive flow away from building, repair stucco cracks and repaint, replace rotted wood and repaint all exposed wood trims, repaint all exterior wood doors and replace rotted wood trim at doors, need ADA ramps to entry door and patio door, install missing fascia boars, repair concrete steps leading to basement, repaint basement doors, repaint steel storm door assembly, repair interior plaster spalling and repaint, replace entry gates, remove landscaping next to house



NORTH CAMP RESIDENCE 418I

Site walls are unstable and need to be demo and replace, a new sewer line for whole house is needed including a new septic tank. The building needs a new roof, gutters and downleaders. A new soffit, and fascia board are also required. The site needs to be regraded away from house for positive drainage and a need concrete apron along all sides of house will help management of erosion and drainage. Remove landscaping away from house, and a new garage door assembly, will improve the building. The exterior walls need EIFS system repairs, replace rotted wood around garage doors and repaint. Need ADA ramps at the front and rear doors, new refrigerated AC and ductwork is required, new entry gate, new kitchen cabinets and appliances, new windows and screens, new light fixtures at all house, new restroom fixtures at main restroom room, including new flooring.



NORTH CAMP LAB 418C



NORTH CAMP PUMP HOUSE 418F

This building is a candidate for demolition and replacement due to been unfit for human use due to low roof structure.



NORTH CAMP BARN 418P

This building is a candidate for demolition and replacement due to structural modifications.



SCALE BARN 418N

This building is a candidate for demolition and replacement due to extensive rot on the wood structure.



NORTH CAMP STORAGE 418D

This building is a candidate for demolition and replacement due to foundation erosion and rotted wood structure.



HAY BARN 418E

The building needs roof repairs, gutters and downleaders, a concrete apron along all sides needs to be added and site grading away from the structure, and replace missing roof panels along South side rake. Need to replace doors along East elevation, repair and repaint roof outriggers at soffit, install missing wood fascia board, and new overhead door assembly on both sides.



CABIN 650

Reseal wood slat soffit at entry and porch deck, repaint deck railings, replace rotted and warped wood planks at deck facia and corner, repaint exterior doors, concrete apron around all sides, regrade for positive flow away from building, and reseal exterior wall cladding lap joints and repaint exterior.



OFFICE 418J

Repaint all exterior main doors, Overhead door jambs, need gutter and downleaders at back, regrade the rear to cover eroded foundation, concrete apron on three sides, new overhead door weatherstripping and sweeps, remove trees and landscaping from next to building, ADA hardware at main doors, replace residential door from North side with hollow metal door, need concrete landing at North and South doors with ADA locksets, landing and accessible route.



RANCH DORM 670

The building fascia board needs to be resealed, the site needs to be regraded around to provide positive drainage, reseal wood balustrade and columns, concrete apron around all sides, remove all landscape close to building to improve drainage.



CENTRAL RANGELAND SUSTAINABILITY 634

The building requires to reseal all wood columns and beams at entry veranda, the stucco system needs repairs, reseal wood sliding shutter on the building, and the exterior wall by kitchen needs to be repainted. Additionally, one needs to repair the roof leak at kitchen exhaust fan, and install gutters and downleaders. The existing parking lot needs re-striping.



LIVESTOCK BARN 418Q

The building needs gutter and downleaders, an concrete aprons along front and regrade the front of the building for positive flow away from the building, add a concrete landing at main door and add ADA compliance lockset, landing, and accessible route.

NMSU Corona Range and Livestock Research Center -FLOOR PLANS









1- Headquarters Residence 418H







NMSU Agriculture Centers Facilities Master Plan



- 2- Office 418J
- 3- Hay Barn 418E
- 4- Headquarters Pump House 418R
- 5- Livestock Barn 418Q
- 6- Scale Barn 418N











- 7- Ranch Dormitory 670
- 8- Cabins 650
- 10- Storage Building 677



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Architecture + Design, Inc.





9- SW Center for Rangeland Sustainability 634







NMSU Agriculture Centers Facilities Master Plan



- 11- North Camp Main Bunkhouse 418A
- 14- North Camp Barn 418P
- 17- North Camp Storage (Old Hanger) 418D











NORTH CAMP PUMP HOUSE SCALE 1/8" = 1'-0" **418F** 16'

NMSU Agriculture Centers Facilities Master Plan



NMSU Corona Range and Livestock Research Center

- 12- North Camp Lab 418C
- 13- North Camp Worker's Bunkhouse 418B
- 15- North Camp Pump House 418F







418I CORONA N. CAMP RESIDENCE SCALE 3/32" = 1'-0"

16' 24' 0 \square



NMSU Corona Range and Livestock Research Center

16- Residence 418I





NMSU Corona Range and Livestock Research Center -CANDIDATES FOR DEMOLITION



NMSU AG CENTERS FACILITIES MASTER PLAN CANDIDATES FOR DEMOLITION AND REPLACEMENT

CORONA

The following buildings are candidates for replacement:



The goat barn is rotted extensively. Building beyond feasible repair.





The tool shed is rotted extensively, has erosion undermining foundation. Building beyond feasible repair.



NMSU AG CENTERS FACILITIES MASTER PLAN CANDIDATES FOR DEMOLITION AND REPLACEMENT



The pump house is inaccessible and has rotted roof structure. Building beyond feasible repair or expansion.





The shop building is inappropriate for current storage function. Structure has been modified and suffered metal roof blowoffs. Building is beyond feasible repair.



NMSU Corona Range and Livestock Research Center -INVENTORY COMPARISON



NMSU AG CENTERS FACILITY INVENTORY ANALYSIS BASED ON FIELD VISITS

CORONA

The following structures are not included in the current inventory for this site:



Central camp storage building:

Needs: Skirting repairs, exterior wall siding repairs/repaint, reseal accent bands, repaint side door, new metal R panel roof, replace with ADA door hardware locks, rain gutters and down leaders.

NMSU AG CENTERS FACILITY INVENTORY ANALYSIS BASED ON FIELD VISITS



South camp Boxcar Storage: Needs: Repainting, access stairs/ramp at entry.

NMSU AG CENTERS FACILITY INVENTORY ANALYSIS BASED ON FIELD VISITS



Metal Storage Shed: Needs: concrete entry stoop, rain gutter and down leader.

NMSU Corona Range and Livestock Research Center -UTILITY OVERVIEW



Address: 8 miles east of Corona on County Road CO2O - #4 University Rd P.O. Box 392, Corona, New Mexico, 8831

Contact: Chad Cox, Superintendent - (575) 849-1015 shadcox@nmsu.edu



Description:

As described by the NMSU System, the Corona Range and Livestock Research Center is a 27,886-acre working ranch laboratory located near the geographical center of the state of New Mexico, just east of the village of Corona. Land within the research center is characterized by rolling hills alternating with undulating to flat areas with the elevation ranging from 5,720 to 6700 feet. A transitional area runs the length of the ranch with the southern half predominately pinon juniper woodland and the northern half described as a short grass prairie. The research center is operated by New Mexico State University's Animal and Range Sciences Department. Research programs, as well as graduate student studies are a major part of the research centers activities and are incorporated into the normal production cycle of the cattle and sheep commercial operations, a registered Angus seedstock herd, a native mule deer population and an introduced herd of pronghorn antelope. Its mission is described as follows:

•The primary mission of the Corona Range and Livestock Research Center (CRLRC) is to enhance the understanding of woody brush invasion, hydrology, cow-calf production, and big game management and to discover innovative solutions to improve economic development in rangeland-bound communities.

 \cdot The ongoing research involves improvements to conventional land and animal management schemes as well as the use of emerging technology for sensing hydrology, livestock and big game distribution and nutrition and reproduction processes in the young beef female.

 \cdot Education and hands-on opportunities for undergraduate and graduate students are key components of CRLRC.

•Outreach activities through field days, workshops, and information/technology transfer are emphasized. •CRLRC is a collaborative effort among animal, range, and wildlife scientists, economists, land and wildlife agency personnel, and ranchers.

Findings

Water System:

Based on the information provided, The Corona campus has a dedicated well, Ortiz East, with a CPC system. The NC component of the facility receives its water from the Ortiz West well through the Ortiz pipeline system. While the HQ component of the facility utilizes a pipeline and storage system off of the New Mesa well and then a jet pump and pressure tank to provide water. This facility has multiple wells at its disposal. Most of the existing wells are used for the Livestock functions of the facility. In contrast, the New Mesa well assists the Ortiz East and West wells to provide water services to the residential component of this facility. The NM Office of the State Engineer does not regulate the current wells on this campus. Presently there are no plans to either increase utilization of the existing wells or plans for expansion of the existing facilities.

Electrical System:

Based on the information provided, the Corona Facility is connected to the SWCRS grid through the existing overhead power grid. The facility underwent a slight renovation in the service infrastructure in 2011. Presently there are no plans to either increase power demands driven by the facility needs and no plans for expansion of the existing facilities.

Waste Water System:

Based on the information provided, the Corona Facility manages its wastewater needs through multiple septic tanks on the property. As reported, there are no apparent proposals to enlarge or increase the number of septic tanks or the capacity of the existing tanks that serve the facility.

Corona Range and Livestoc	k Research Center			
Well Number 1	RA08267	Ortiz West well-Waters center of ranch	34°15'52.7"N	05°25'51.4"W
Well Number 2	RA08268	Ortiz East well - Dedicated to SWCRS with emergency hook up for Ortiz pipeline emergency	34°15'52.7"N	105°25'51.4"W
Well Number 3	RA08269	North Camp well - Waters north end of ranch	34°17'43.9"N	105°23'36.7"W
Well Number 4	RA08270	Oil Well - Temporary Cap for future emergency need - open field well	34°16'38.5"N	105°20'58.5"W
Well Number 5	RA08271	Chute well - Currently down waiting for solar pump install supplements Ortiz pipeline - open field well	34°16'18.9"N	105°23'05.2"W
Well Number 6	RA08272	Trout well - Temporary Cap for future emergency need - open field well	34°16'25.3"N	105°18'59.7"W
Well Number 7	RA08457	Johnson well - Waters East end of ranch - open field well	34°16'31.9"N	105°14'38.8"W
Well Number 8	RA08458	Generator well - Temporary Cap for future emergency need - open field well	34°15'01.8"N	105°20'05.2"W
Well Number 9	RA11099	New Mesa well - Waters west end of ranch - open field well	34°14'14.5"N	105°29'20.1"W
Well Number 10	RA11100 POD1	Rock well - Temporary Cap for future emergency need - open field well	34°15'39.6"N	105°24'32.3"W
Well Number 11	RA11101 POD1	South St. Peters well - Temporary Cap for future emergency need - open field well	34°15'33.6"N	105°26'39.9"W
Well Number 12	RA11102 POD1	Adams well - Temporary Cap for future emergency need - open field well	34°15'26.7"N	05°28'22.8"W
Well Number 13	RA11103	Headquarters well - Abandoned	34°15'27.0"N	105°27'19.6"W

NMSU Corona Range and Livestock Research Center -INFORMATION TECHNOLOGY



NMSU Corona Range and Livestock Research Center Information Technology

Network and Wireless LAN

Wireless Network Coverage	Main Building		
Condition of Physical Cabling	Rewire		
Distribution Closet	Closet		
Central Tower	No		
Monthly Estimates			
Registered Devices	12		
Upload	15.25 GB		
Download	15.35 GB		

Corona's auxiliary buildings are spread far and wide.



IT Spaces/Network Closets

Recommended:

Network space is needed at this ASC and needs to meet standards. It is our recommendation to build out an IT/network space for this ASC. If there is no room that can be modified into this space, it is our recommendation to build a separate IT/network space outside, close to the existing DMARC, that is cooled, isolated only for IT needs, has proper lighting, floor loading, power, network racks and equipment, airflow, and meets standards.

UPS

Recommended:

Multiple, 2 minimum, network UPS's are needed for the network equipment at the Corona ASC. There are two locations that would need the two UPS's at this center.

Network Tower

Recommended:

70 – 80 ft network tower erected to provide broadband INTERNET to different parts of the center. This network tower would also need to be installed with power to provide power to the network devices on the tower.

The location of the tower can be close to the main building on the site where the DMARC is to allow the easier network access to be broadcast. If that is not possible, another location can be determined by the availability of line of site from the main building to the tower.

NMSU Corona Range and Livestock Research Center Information Technology POP/PtMP

Recommended:

Corona ASC needs one PtMP, point to multi point, and at the minimum seven POPs, point of presence, to help saturate different parts of the center with wireless. The POPs are mobile and can be moved and adjusted as needed. This center is covers a lot of land which is why multiple POPs are needed to expand and broadcast wireless into different parts of the center.

Cable Plan

Recommended:

Existing cabling, jacks, ports, patch cables and patch panels be upgraded to Category 6, at minimum. Connectivity between buildings can be accomplished by trenching and laying conduit, or to create wireless bridges through line of sign wireless broadband devices.

VoIP

Recommended:

It is recommend replacing antiquated phone systems and currently, the standard is VoIP. VoIP phones will tie into the network infrastructure and allow us to control the phones off of one system, and gives us the availability to manage the phone systems from each ASC remotely.

Conference Room/Collaboration Spaces

Recommended:

Smart screens, interactive touch displays, conference room cameras, speakers and mics, etc. can all be implemented to help bring these conference room spaces into the modern era and allow them to be utilized on a moments notice.

This conference room should include one smart interactive display, either Dell or Samsung, laptop or mini computer to be mounted on the display, a wall mount or portable mount, at least one Stem wall speaker/ mic and Stem Hub, one Huddly camera, a Logitech Swytch for BYOD (bring your own device), a PoE Ethernet switch, and an AV station/equipment rack.

Security & Surveillance Systems

Recommended:

This ASC should have a minimum of four cameras, one showing the entrance/exit when vehicles arrive, and one on the main office building. This ASC would benefit from multiple cameras across the center to deter theft and increase visibility. Different locations at the center would allow for cameras to be installed and configured.

NMSU Corona Range and Livestock Research Center Information Technology





UBIQUITI ROCKET 5AC PTMP (2) Installation Height: 8 m (26 FT) OUTPUT POWER: 28 DBM CHANNEL WIDTH: 40 MHz ANTENNA GAIN: 22 DBI

UBIQUITI ROCKET 5AC

SPECS: - 56HZ WIDE BAND OPERATING FREQUENCY - Point-to-Multipoint Links (PTMP) - dedicated Management Radio



SPECS: - 45' ISOLATION ANTENNA - Superior Throughput up to 450 MBPS - High Capacity and Scalability - Capable of High-Speeds

UBIQUITI ISOSTATION 5AC Installation Height: 3 m (10 ft)

OUTPUT POWER: 25 DBM

CHANNEL WIDTH: 40 MHz

ANTENNA GAIN: 15.5 dBi

UBIQUITI MESH PRD INSTALLATION HEIGHT: 2 M (6 FT) Maximum Power: 20 dbm Power Supply: 24 V, 0.5A ANTENNAS: 2.4 GHz, 5 GHz

UBIQUITI MESH PRO ACCESS POINT

P

SPECS: - UMNINIECTIONAL 380" CUVERAGE - LONG RANGE SYMMETRICAL TRANSMISSION UP TO 183 METERS - 802. 1140 WAVE I WIFI - 24. 4942 (802. 1110 BAND WIFIH A 450 MBPS THROUGHPUT RATE - 5 GHZ (333 MIMD) BAND WIFIH A 1.3 GBPS THROUGHPUT RATE



NMSU Corona Range and Livestock Research Center Energy Report



NMSU Corona Range and Livestock Research Center Information Technology

Energy Audit:

For detail information regarding conservation strategies for the Corona Range Agricultural Center please refer and review the AAE Energy Master Plan study.