



# NEW MEXICO STATE UNIVERSITY

## FACILITIES MAINTENANCE MANAGEMENT ASSESSMENT

### FINAL REPORT

BY

**HUNTER CONSULTING AND TRAINING**

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# NEW MEXICO STATE UNIVERSITY FACILITIES MAINTENANCE MANAGEMENT ASSESSMENT FINAL REPORT CONTENT



**EXECUTIVE SUMMARY**



**WORK PROCESSES**



**INFORMATION TECHNOLOGY**



**FINANCIAL INDICATORS AND STUDENT POPULATION TRENDS**



**STAFFING ANALYSIS**



**FINANCIAL ANALYSIS**

# NEW MEXICO STATE UNIVERSITY FACILITIES MAINTENANCE MANAGEMENT ASSESSMENT FINAL REPORT CONTENT



**FIVE-YEAR FTE/EXPENDITURE HISTORY**



**FY 15-16 WORK ORDER HOURS AND EXPENSES ANALYSIS**



**PREVENTIVE MAINTENANCE ANALYSIS**



**ORGANIZATION ANALYSIS**



**FY 15-16 APPA FPI COMPARATIVE ANALYSIS**



**NEXT STEPS**

# NEW MEXICO STATE UNIVERSITY FACILITIES MAINTENANCE MANAGEMENT ASSESSMENT FINAL REPORT CONTENT



FINDINGS AND RECOMMENDATIONS LIST



QUESTIONS



SUPPORTING SLIDES



REFERENCE SLIDES



FTE AND BUDGET ESTIMATING PROTOCOL



APPENDIX



# EXECUTIVE SUMMARY

## EXECUTIVE SUMMARY

### MAJOR THEMES

Detailed facilities maintenance management analysis reveals four unique *'Major Themes'* of opportunities for improved performance:

#### A. Maximizing worker productivity

- Streamline work processes;
- Streamline material management;
- Avoid work interruptions due to perceived urgencies;
- Take advantage of mobile technology (paperless);
  - Reduction of shop time (administrative overhead);
  - Reduction of maintenance worker travel time (parts and material acquisition);

#### B. Maximizing performance reliability and predictability

- Implement work planning and scheduling;
- Implement work prioritization;
  - Workers will be interrupted only for true emergencies;

#### C. Creating transparent and ubiquitous work status communication for all stakeholders

- Configure AiM to produce work status alerts;

## EXECUTIVE SUMMARY

### MAJOR THEMES (CONT.)

#### D. Space versus student FTEs

- It appears the campus may be burdened with an over abundance of building space. Space capacity beyond the needs of the current student population and research mission add per student cost to maintaining the facilities portfolio;
- The research activities has also been on a downward trend further pointing to a judgment that there might be an over abundance of space;
- Student population trends and institutional facilities expenditure data support this hypothesis. This is illustrated by:
  - APPA AFOE/CRV and AFOE/GIE;
    - APPA Maintenance Cost/CRV and Maintenance Cost/GIE
  - Building space inventory GSF/Student FTE
  - Facilities maintenance Cost/Student FTE.

**The data and observations described in this report will support the four '*Major Themes*' and all defined engagement deliverables.**

## EXECUTIVE SUMMARY BACKGROUND

**Hunter Consulting and Training (“Consultants”) conducted a Facilities Maintenance Management assessment for the New Mexico State University (NMSU) Las Cruces campus in September 2017 under the following scope of work:**

- An evaluation of the organizational staffing levels and the overall effectiveness in supporting the facilities maintenance functional area;
- Recommendations on the number of staff that is appropriate to maintain the Las Cruces campus facilities at a desired APPA level;
- An assessment of the key facilities maintenance work processes;
- An appraisal of the supporting information systems (both automatic and manual) including the current state of information technology support for maintenance functional area;
- An evaluation/comparison of the current cost structure for the facilities maintenance function against peer institutional data contained in the FY 15-16 APPA FPI report;
- Recommendations to maximize service and most effectively lead, manage and execute maintenance activities at the Las Cruces campus.



## EXECUTIVE SUMMARY

### INSTITUTIONAL INFORMATION AND FM WORK'S PROFILE

#### **Institutional Information and FM's Work Profile:**

NMSU Facilities and Services Department (FS) provides Facilities Maintenance full maintenance services for 198 administrative, academic, housing, athletics, and research buildings totaling 4.55 million gross square feet (GSF);

- FM is mission-funded to provide full maintenance services for Instructional and General (I&G) spaces;
- FM provides full maintenance services for non-I&G spaces for *Housing, Athletics, and Auxiliaries* departments, and *Research* units under Service Level Agreements (SLA) – *SLA customers*;
- FM also provides on-demand repair services ('work-order-only') upon customer request for additional buildings totaling 340,077 GSF on a reimbursable basis;
- FM provides renovation project services to all campus customers upon request on a reimbursable basis;
- FM provides other campus operation support services (such as event support and moving services) to all campus customers upon request on a reimbursable basis;
- FM provides moving services to all campus customer – some on a reimbursable basis;
- These services are delivered by an in-house staff in the FS Facilities Maintenance (FM) work unit and supplemented by contracted services.

## EXECUTIVE SUMMARY

### ASSESSMENT METHODOLOGY

#### Consultant's activities for this engagement were as follows:

- Reviewed current documents of staffing levels, organization charts, management reports, and FM budgets, etc.;
- Interviewed management, supervisors, project management, and staff personnel in focus groups and individuals to gather information on the current state of work processes, roles, and responsibilities;
- Mapped and analyzed key facilities maintenance processes;
- Completed a Cost Profile Analysis of current facilities maintenance operations (\$/gross square foot (GSF), \$/student FTE);
- Analyzed current maintenance staffing coverage of campus space (GSF/FTE);
- Provided comparative analysis with summary benchmarks and institutional cohort;
- Through onsite interaction, discussion, and completing this final report, the Consultants assisted in positioning FM to answer critical questions as listed in the **Support Slide** section in the slide titled [The Critical Baker's Dozen Questions](#).

## EXECUTIVE SUMMARY

### DEPARTMENTAL STRENGTHS

**The facilities maintenance department possesses several important strengths. These should be recognized and sustained in any future development.**

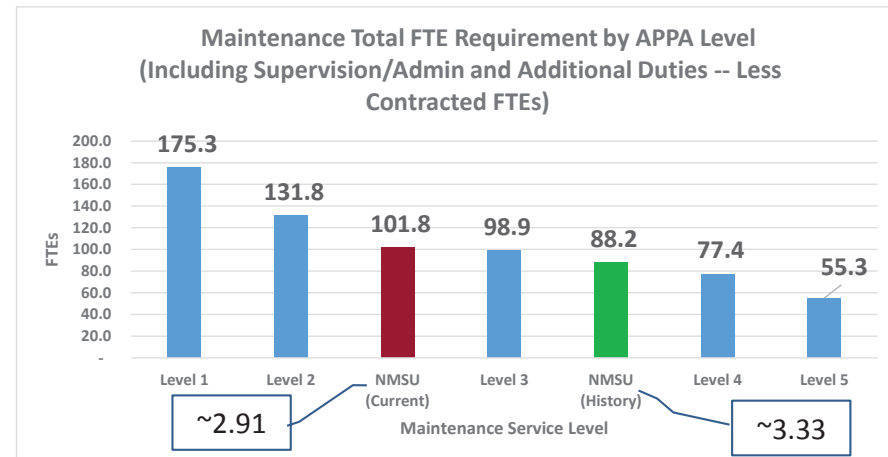
- A loyal and dedicated work force; employees committed to NMSU;
- There has been a consolidation of resources into FS and the development of service level agreements to support the important non-I&G maintenance activities;
- History in completing the APPA Facilities Performance Indicators Survey;
- FS has a leading Integrated Workplace Management System (IWMS) to support facilities maintenance activities;
- Positive relationship with administration IT department for the support of AiM;
- Building space inventory is detailed, complete and well supported;
- There is a recognition of the benefit of continuous improvement culture.

## EXECUTIVE SUMMARY

### CURRENT FACILITIES MAINTENANCE STAFFING STATUS – IN-HOUSE FTE REQUIREMENT

#### In-House FTE Requirement:

- The graph represents the total In-House FTEs required by FM for the indicated APPA service levels including supervision and management to provide full maintenance service for *I&G, Housing, Athletics, Auxiliaries and Research* spaces and to perform additional duties (on-demand pay-for-service work) taking into account contracted services;
- FM currently has 101.8 **Authorized FTEs**<sup>1</sup> based current organization chart;
- Based on the current *Authorized FTEs (Current)*, FM is staffed better than APPA Level 3 (2.91);
- Five-year historical **Available FTEs**<sup>2</sup> (*History*) have been less than Authorized FTEs due to vacancies pushing available staffing to below APPA Level 3 (3.33) – based on APPA FPI report.



**Important Note: APPA protocol estimates FTE requirements for average maintenance organizations operating at average productivity and effectiveness rates. High performing organizations achieve better than average results through the use of best practices including refined processes and technology.**

<sup>1</sup>Authorized FTEs – the fulltime equivalent of the number of position authorized and funded in the budget.

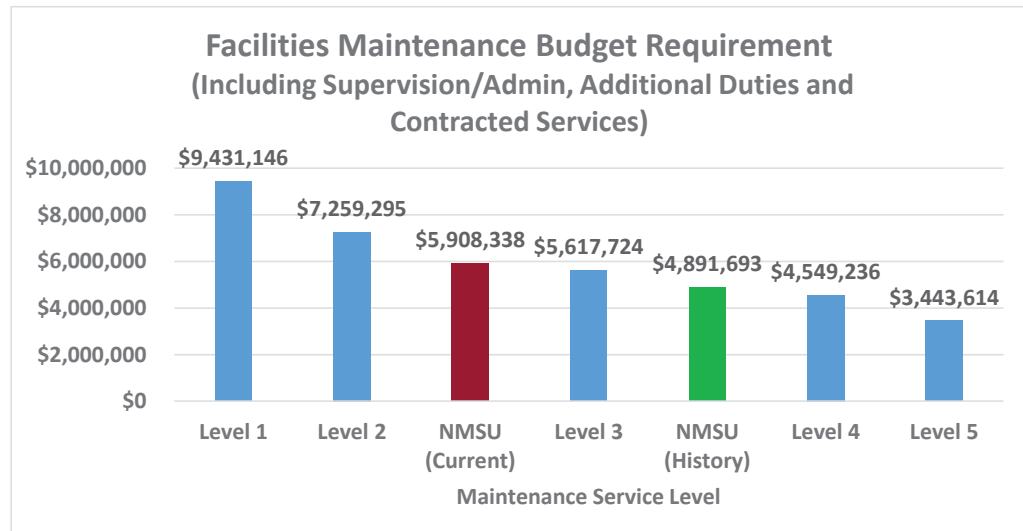
<sup>2</sup>Available FTEs – the fulltime equivalent of the total hours of workers available to perform work after subtracting availability lost to vacant positions.

## EXECUTIVE SUMMARY

### CURRENT FACILITIES MAINTENANCE FUNDING STATUS – COST REQUIREMENT

#### Cost Requirement (salary, benefits, part & materials excluding overhead plus cost of contracted services):

- This graph indicates the cost of the FTEs required to maintain all spaces at the indicated APPA service level;
- The estimated cost requirement is based on estimated FTEs, average wage rates with fringe benefit, non-labor cost comparable to common benchmarks and contracted services cost. Overhead is not captured in the cost requirement estimate;



- As indicated in the above graph, FM is funded slightly above APPA Level-3.

**Important Note: APPA protocol estimates cost requirements for average maintenance organizations operating at average productivity and effectiveness rates. High performing organizations achieve better than average results through the use of best practices including refined processes and technology.**

## EXECUTIVE SUMMARY

### FTE AND FUNDING GAP FOR ADOPTED SERVICE LEVELS

#### FTE and Funding Gap For Adopted Service Levels:

- FM is generally expected to provide full maintenance service for I&G spaces at APPA Level 3;
- FM is expected to provide full maintenance service for Housing, Athletics, Auxiliaries, and several Research units under service level agreements requiring APPA Level 2 service – SLA Customers;
- Based on the above adopted service levels, FM is short 8 FTEs and \$256.2K.

Customer	FTE Requirement	Cost/Budget
Housing at APPA Level 2	23.6	\$1,175,182
Athletics at APPA Level 2	3.4	\$170,909
Auxiliaries at APPA Level 2	9.7	\$484,193
Research at APPA Level 2	0.9	\$43,877
<b>SLA Customer</b>	<b>37.6</b>	<b>\$1,874,160</b>
<b>I&amp;G at APPA Level 3</b>	<b>72.2</b>	<b>\$4,290,423</b>
<b>Grand Total Requirement</b>	<b>109.8</b>	<b>\$6,164,583</b>
<b>Current Authorized FTE/Funding</b>	<b>101.8</b>	<b>\$5,908,338</b>
<b>FTE/Budget Gap</b>	<b>(8.0)</b>	<b>(\$256,245)</b>

The 101.8 current FTEs is based on current organization chart and position roster.

The \$5,908,388 current funding is based on expenditures reported in the APPA FY 15-16 FPI survey.

**Note: See discussion on budgeted recovery in the slide titled [Budgeted Recovery FTE Shortfall](#) in the Supporting Slide section for FTE implication of NMSU budgeted recovery practice/policy.**

# EXECUTIVE SUMMARY

## SUMMARY OBSERVATIONS

### Summary Observations:

- FM is staffed and funded to deliver a solid maintenance service APPA Level 3 or better operating as an average maintenance organization;
- However, FM is generally expected to provide full maintenance service for I&G space at APPA Level 3 and required to deliver APPA Level 2 service for **SLA Customers**;
- FM provides **Additional Duties** services above and beyond its mission-funded and service level agreement work;
- FM executes work using In-House FTEs and contracted services;
- There are opportunities for FM to achieve performance results greater than that of an average organization through the use of process redesign and enhanced use of technology;
- Further detail of the *Work Type* and *Execution Method* displayed in the graphic is contained in the **Supporting Slide** section beginning with the slide titled [Work Type and Execution Method](#);
- **Maintaining I&G spaces at APPA Level 3 while maintaining SLA customers spaces at APPA Level 2 requires staffing for an aggregate service level target between APPA Level 2 and APPA Level 3 – See previous slide.**

