NC State University
Unit Goal Status Reporting Worksheet
FY 2013/2014
Repair & Renovation
David Hatch

Initiative Title: Bell Tower Lighting Controls

Descriptive Summary: Update the existing phone dialer lighting control unit to a web based controller. The web based controller will be accessible to the on call administrator. The controller will provide controls for red, white and off. A live video feed will provide real time status of the Bell Tower lights. The on call administrator will change the light status upon victories of qualifying sporting events. Planned events qualifying for red lights will be controlled by an automated calendar function. We would like to explore the possibility of automating the red light status for qualifying sporting events in the future.

Breakdown of Primary Tasks:	**Start Date**	**Completion Date**
1. Review site conditions and meet w/ stakeholders	3/13	4/13
2. Prepare scope statement & negotiate cost	4/13	5/13
3. Demolish old equipment. Rough in new equip.	5/13	6/13
4. Test equipment	6/13	8/13
5. Train staff and adopt new controls	8/13	ongoing

Measurement: The ability to control the Bell Tower via the web and monitor status via webcam.

Interactions Required: BM&O Controls Shop. R&R Projects Group. R&R Construction Shop.

Resources: $32,000.

<u>Status as of April 1, 2014</u>

Phase I

The infrastructure for the lighting controls and video monitoring has been updated according to plan. A training module was prepared in PowerPoint and has been incorporated into the on-call admin manual. The planned event calendar has been

managed by the FO Senior Admin with 100% success. The lightings for sports victories have been managed by the on-call administrator. Phase I is complete.

Phase II (14-15 Unit Goal)

The second phase of the project will be proposed for 2014 – 2015. Work has begun in anticipation of approval for the unit goal. The objective of this phase of the project is to automate the lightings celebrating sports victories for regular season play. The tasks are as follows:

1. Prepare pseudo code for qualifying NCSU ACC sporting events
    - Establish criteria for events
    - Screen scrape team, score, win/loss
    - Introduce at least redundant sources for screen scrape process
    - Compare results, flag if results are inconsistent
    - Send signal to controller for Wolfpack win
2. Determine programing language (probably Java)
3. Develop code
4. Test on stand-alone computer to determine reliability
5. Prepare text message for on-call admin phone
6. Send text messages for Wolfpack victories to determine reliability
7. Send signal to light controller when Wolfpack wins
8. Establish PM program to review code

Phase III

1. Develop program for post season/championship/series play.

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Initiative Title: Business Processes and Reports

Descriptive Summary: The purpose of this goal is to partner with Business Services to continuously improve business processes and reports. Members of a working committee will meet bimonthly to coordinate and improve procurement procedures, AiM standards and standard business reports. The group will work towards solving the problem of small purchases accumulating to one vendor in excess of $5k and triggering an exception from university Purchasing.

Breakdown of Primary Tasks:	**Start Date**	**Completion Date**
1. Establish committee members and agenda	7/13	7/13
2. Work to solve small purchases adding to $5k	8/13	11/13
3. Create dashboard in AiM and broadcast	10/13	12/13
4. Review standard reports e.g. unpaid	10/13	1/14
5. Review AiM and other processes	1/14	3/14

Measurement: Improvement in small purchases, consistency in AiM utilization, more informative reports and a wider understanding of AiM and our processes.

Interactions Required: Business Services, University Purchasing

Resources: Time

Status as of April 1, 2014

Business Services and R&R work closely to maximize the benefits of using AiM to do our work. This goal provided the framework for the two business units to come together regularly to continuously improve business processes.

To begin with, the team wanted to address an issue with a university policy that prohibits purchases over $5,000 to a single vendor without competitive bidding. Due to the common need for similar products from a relatively small pool of vendors,

multiple purchases under $5k would be made in a given month giving the appearance that purchases were being manipulated to circumvent the policy. The actions taken by members of the team documented the mechanism causing the appearance of violation, met with University Purchasing to clarify the actual events taking place, and rectified the problem. There has not been one incident of reprimand since the meeting with University Purchasing.

The Aim administrators worked with the PM, Management and Supervisory staff to understand their needs for information from the system and to provide a “dashboard” on their desktops to easily access the information needed for efficient processing of work requests.

Business Services has been very consistent in producing billing and unpaid reports. These reports are consistently used to reconcile AiM with WRS.

The two units achieved these results by meeting on a bi-monthly basis. Each month an email was sent out to solicited ideas and issues to be covered in the meeting. The responses to the email resulted in an agenda to be used in the meeting.

It is likely the regular meetings and interactions between the units will continue after this goal has been completed.

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Initiative Title: FCAP Second Cycle

Descriptive Summary: A facilities condition assessment has been completed for all 292 state appropriated buildings on campus. The master plan for condition assessments includes renewing major building assessments on a three year cycle and minor buildings on a 5 year cycle. The financial forecast is for continued underfunding of maintenance and renewal budgets. The second cycle of assessments will be guided by a knowledge based approach which has been identified as best practice by higher educational facilities managers. A model has been developed under the guidelines published by the National Research Council and Standard and Poor's structured criteria.

This goal will include support of the infrastructure asset assessment project as work becomes available to the unit.

Breakdown of Primary Tasks:	**Start Date**	**Completion Date**
1. Prepare knowledge based model 4/13	6/13	
2. Prepare updated worksheets	4/13	7/13
3. Identify first phase of assessments	10/13	11/13
4. Perform assessments and load data	11/13	6/14
5. Evaluate first phase and prepare report 6/16	8/14	

Measurement: Completion of first phase of second cycle of assessments. Load data into ISES. Generate updated reports. Create Annual report and evaluation of second phase effort.

Interactions Required: None

Resources: Time

Status as of April 1, 2014

To simplify assessments of low priority, minor and simple buildings, the team prepared worksheets that were used to accelerate the assessment process. The worksheets used a checklist approach and standardized unit pricing quickly produce order of magnitude pricing for deficiencies. The worksheets include photographs and narratives to further explain the building condition.

The FCAP team worked successfully to complete the minor and low importance buildings prior to the publication of the annual report in October. This milestone marks the completion of 6 years work and 292 reports covering $364M in deferred maintenance projects.

A knowledge based model was prepared to prioritize the sequence of building assessments. The criterion for prioritization of buildings is made based on the buildings' size, the age, the condition index and the building type. All 292 buildings were subject to the model and a new sequence was made based on the output.

The second phase of assessments included 8 major buildings totaling 575,000 square feet. These new reports have replaced the older reports. This process will continue using the prioritized sequence.

The database and the estimating tools are continuously evaluated and updated as necessary to provide accurate deferred maintenance projects.

To assist R&R, the team has been assigned other work including warranty investigation & resolution and some members of the team handle year end project management duties.

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Initiative Title: Facilities Operations Portal

Descriptive Summary: The Facilities Operations Portal was initiated at the beginning of the Higher Education Bond program to provide a consistent dissemination of information from OUA, CPM and DCS to the various stakeholders in Facilities Operations and in turn, to provide a consistent return of information from FO.

This unit goal is to revisit the Portal process with the intention to streamline the process and utilize any new technologies or procedures now available.

Breakdown of Primary Tasks:	**Start Date**	**Completion Date**
1. Review current process	3/13	6/13
2. Meet with stakeholders	5/13	8/13
3. Research peers for best practice	6/13	8/13
4. Develop process improvements	7/13	9/13
5. Implement improvements & monitor	9/13	6/14

Measurement: Higher reliability of Portal process. Participation of first level staff.

Interactions Required: BM&O, Housekeeping, Business Services, Utilities

Resources: Staff Time

Status as of April 1, 2014

The FO portal process was reviewed over a series of meeting with all of the stake holders in FO, OUA, DCS and CPM. The group worked to identify the types of information best conducted through the FO Portal process. The information types included:

Design Documents

Construction Documents
Construction Submittals
Above Ceiling and Owner Inspections
Construction Guidelines

The group reviewed and refined the notification and feedback process. The group considered technological alternatives to the process and visited UNC CH to review that institutions process.

The group settled on a process and eliminated a parallel notification that had developed informally.

Joe Riley in the FCAP shop headed up the FO Portal and as of April 1, 2014 processed 81 individual pieces of information.

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Initiative Title: R&R Sustainability Initiatives

Descriptive Summary: R&R and the Campus Sustainability Office have initiated a program to enroll the shop employees in sustainable job practices. Each shop provided a sustainability champion to act as a conduit to communicate sustainable concepts to their coworkers and to communicate potential sustainable work practices to the sustainability office. This unit goal is to continue that work to cement the practices and to keep sustainability at the forefront of the work that goes on every day.

Breakdown of Primary Tasks:	**Start Date**	**Completion Date**
1. Meet bimonthly to share ideas	9/12	6/14
2. Publish R&R sustainable practices	3/14	6/13

Measurement: Report of the shop employee's sustainable achievements.

Interactions Required: Office of Sustainability

Resources: Reduced resources. More sustainable practices.

Status as of April 1, 2014

The R&R sustainability champions met regularly with the Sustainability Office reps to first, understand what sustainability meant to each individual on the team. The Champions then each hosted a visit from the Sustainability Office for a visit to their respective shops to further the inquiry and understanding of sustainable practices and what it might mean to their work and lives.

Each R&R shop then reviewed work practice with the intention of identifying existing or opportunities for sustainable practices. Examples included:

- Breaking down large quantities of roofing adhesives and solvents from gallon to pint sizes to reduce evaporation and oxidation of the material.
- Using durable and disposable bags to contain concrete washout, filter the water and make recycling of the concrete waste easier and faster.

- Reporting directly to large scale jobs to reduce petroleum use and non-productive time.
- Using electronic tablets to issue work orders for roofing and to collect roofing data from the worksite.
- Recycling carpet, ceiling tile and other building materials.

To heighten awareness of the activity, the Sustainability Champions prepared posters including photos and a short narrative of the sustainable activity. The posters were hung on the R&R bulletin board.

One of the champions, Rodney Holmes, joined Carla Davis to prepare and present a PowerPoint at the NCAPPA conference at Campbell University thereby further spreading the ideas and initiatives generated in this unit goal .

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Initiative Title: Simple K and Campus Rekey (Continued)

Descriptive Summary: Thus far, 15 buildings have been completely rekeyed and all of the key holders enrolled in the Simple K database. Based on current funding and resource levels, we plan to rekey 8 existing buildings this FY. Additionally, the Simple K team plans to update the market study for patent keys, continue the deployment of police (chit) boxes. Finally, the team plans a pilot rekey of roof access and perimeter doors (perimeter doors of buildings unlikely to receive card access but important to improve key control and accountability).

Breakdown of Primary Tasks:	**Start Date**	**Completion Date**
1. Meet with SAT, EHS and Lock Shop	10/13	10/13
2. Evaluate progress and determine priorities	10/13	10/13
3. Continue Rekey. Begin roof assessment	7/13	10/13
4. Evaluate market for patent keys	10/13	12/13
5. Complete phase of rekey & prepare report	5/14	6/14

Measurement: 8 additional buildings rekeyed for a total of 23. Roof pilot and report completed. Perimeter project evaluated and addressed. Police box program continued.

Interactions Required: SAT, Campus Police, Campus Fire, Lock Shop.

Resources: $95/door.

Status as of 4/1/14

In the fall of 2013, the Lock Shop met with SAT and Campus Police to discuss the security priorities of the campus and possible overlaps with the SimpleK rekeying project. The working group identified the roof access doors and the perimeter doors of buildings which are a low priority for card access. The working group decided to pursue roof access points to allow SAT time to identify qualifying parameter doors.

Repair and Renovation surveyed and documented all of the roof access points on campus. The Lock Shop analyzed the roof access points and decided to lay out a rekey plan based on the zone maintenance boundaries. This will support continued access by qualified personnel and break the keying into small enough areas to minimize cost in the event of a lost key.

The Lock Shop continues to monitor the market for patent keys. The shop prepared a report comparing the patent life and security features of Schlage, Best, Kaba and Medico. The report found advantages in the availability of codes and the longevity of patents available if adding the Medico line to the alternatives were to be considered. The plan was presented to the AVC for FO and set aside due to concerns the addition of another manufacturer at this late date would confuse our customers and the preferred alternates now specified.

In addition to the activities directly related to SimpleK, the Lock Shop team participated with EH&S in the development of a Lock and Key PRR which was published in January 2014 culminating 4 years of effort.

The Lock Shop is also continuously evaluating processes and standards related to the shop and delivery of services to campus. The team reviewed and updated the NCSU Key Architecture Manual. This was the second edition, the first being in 2009. The Manual is available in the Lock Shop and will be published online in the coming year.

The Lock Shop has been concentrating effort on the keying of Tally and Wolf Ridge. The SimpleK effort will resume when these projects are completed.

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Initiative Title: Trade Shops Expansion

Descriptive Summary: Over the years of the bond projects, the R&R shops increased staffing as M&O monies became available to fund new positions. However, the supervisory structure has remained unchanged during the same time period. This unit goal will seek to reduce staff to supervisor ratio and to refine the range of responsibilities for each shop.

The goal will monitor the performance of the new shops and make corrections as required for the most efficient organization possible.

Breakdown of Primary Tasks:	**Start Date**	**Completion Date**
1. Assess work loading and geo. distribution	3/13	5/13
2. Meet with stakeholders and management	4/13	9/13
3. Prepare work plans and rosters	5/13	7/13
4. Update work management system	8/13	8/13
5. Monitor progress and revise as needed	8/13	6/14

Measurement: Equitable work distribution. Reduced aging reports. Higher employee and customer satisfaction.

Interactions Required: Business Services

Resources: Two new supervisory positions

Status as of April 1, 2014

The trades shop expansion project has and continues to yield many useful and efficient work processes, work culture shifts and engagement by the employees.

As we approached this project we researched the AiM work management system and the campus master plan to find where the work is concentrated and where and

when growth is expected on the campus. We also compiled and analyzed the supervisor/employee ratio in FO. Our work is most like that in the BM&O shops and our goal was to achieve similar ratios.

We wanted to physically locate the expansion shops in Broughton Hall on original campus and secured approval from the space committee to do so.

The largest shops were the General and Carpentry shops. These shops included 20 or more FTE each. These were the shops we wanted to tackle.

We prepared the necessary paperwork to establish two new supervisors, made the necessary changes to AiM and prepared the space in Broughton. We decided to locate the new Roofing and Waterproofing shop and the carpentry maintenance shop in the temporary space.

We met with the staff of the General and Carpentry Shops. The General Shop had organized along roofing/waterproofing skills and concrete, masonry, asphalt and general skills. The Supervisor had appointed a second-in-command with roofing skills. The transition to separate shops was expected to go smoothly. Three internal candidates and many outside candidates applied for the new position. The committee selected Joe Hill to supervise the shop.

The Carpentry Shop had recently undergone an investigation by HR which did not find discrimination as alleged but did find very poor culture where teasing, name-calling, practical jokes and mistrust was rampant. The shop staff was made up of long time employees and included some members who had recently received full time jobs after working UTS in the Construction Shop. Establishing the rosters for the maintenance vs the project oriented projects was made based on qualifications.

Considerable work was necessary to overcome the bad habits and behaviors that had been discovered. Some staff were reassigned to the Construction Shop to allow a fresh start. Some retraining and discipline was necessary to correct conduct problems.

The outcome thus far is predominantly positive. The 90 day backlog for these shops averages in the 5 – 15 range. The throughput for these shops is approximately 20 work requests per week.

We have learned that there are advantages to locating on original campus. Many of the carpentry maintenance work requests are within walking distance and some staff have assembled a basic kit of tools in a backpack to quickly correct minor problems.

The morale in the General, Roofing and Carpentry Projects remains high with the staff participating in many initiatives such as sustainability improvements and customer service. The Carpentry Maintenance Shop is working to overcome some performance issues and Management is working to support improvement.

Remaining work includes preparing for the shop expansion and renovation at the CBC complex. This project will provide new space for our shops at CBC and allow us to move into space in Sullivan II once the current occupants move to CBC.

It is recommended that we undertake further study of the feasibility of a combined services shop on original campus.