CHAMPAIGN COUNTY BOARD
FACILITIES COMMITTEE
County of Champaign, Urbana, Illinois
Tuesday, March 3, 2015 6:30 pm

Lyle Shields Meeting Room
Brookens Administrative Center
1776 E. Washington St., Urbana

Committee Members:

Gary Maxwell - Chair
Giraldo Rosales – Vice-Chair
Jack Anderson
Josh Hartke
Jeff Kibler
James Quisenberry
Rachel Schwartz

Facility Tour: Emergency Management Agency, 1905 E Main, Urbana - 5:15 pm – Meet at the Brookens Administrative Center Parking Lot. We will car pool to the Emergency Management Facility. Tour will start at approximately 5:30 pm.

AGENDA

I. Call to Order

II. Roll Call

III. Approval of Minutes
   A. Facilities Committee Meeting – February 3, 2015

IV. Approval of Agenda/Addenda

V. Public Participation

VI. Communications

VII. Approval of Army Corp of Engineering Lease

VIII. Discussion of Sheriff's Operation Master Plan – next steps (*Please bring your Sheriff's Operations Master Plan Book)*

IX. Facilities Director's Report
   A. Review GHR's Nursing Home Mechanical Study
      i. Review GHR's Report
      ii. Review Physical Plant's Priorities of GHR Report
      iii. Review Physical Plant 5 or 10 year Mechanical and Building Envelope Expense Projections
   B. Update on Courthouse LED Light Replacement
   C. Update on Courthouse Window Replacement

X. Other Business

XI. Chair's Report
   A. Future Meeting – THURSDAY, April 9, 2015 at 6:30 pm, ILEAS Building, Executive Conference Room
   B. Tour of the ILEAS Building, 1701 E. Main Street, Urbana. Meet at 5:45 pm in the Executive Conference Room prior to the Thursday, April 9, 2015 Facility Committee Meeting

XII. Semi-Annual Review of Closed Session Minutes

XIII. Designation of Items to be Placed on the Consent Agenda

XIV. Adjournment

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Champaign County Board Facilities Committee
County of Champaign, Urbana, Illinois

MINUTES – SUBJECT TO REVIEW AND APPROVAL

DATE: Tuesday, February 3, 2015
TIME: 6:30 p.m.
PLACE: Lyle Shields Meeting Room
Brookens Administrative Center
1776 E. Washington, Urbana, IL 61802

Committee Members

Present	Absent
Gary Maxwell (Chair)	
Giraldo Rosales (Vice Chair)	
Jack Anderson	
	Josh Hartke
Jeff Kibler	
James Quisenberry	
Rachel Schwartz	

County Staff: Dana Brenner (Facilities Director); Deb Busey (County Administrator); Van Anderson (Deputy County Administrator of Finance); Sheriff Dan Walsh & Chief Deputy Allen Jones (Sheriff's Office); Linda Lane (Administrative Assistant)

Others Present: Stan Harper, John Jay, Jim McGuire, Pattsi Petrie, and Pius Weibel (Champaign County Board); Chuck Reifsteck (Gorski Reifsteck Architects); Dennis Kimme, Shawn Bott and Kevin Price (Kimme & Associates); Jim Gleason (GHR Engineers); members of the public

MINUTES

I. Call to Order

Committee Chair Maxwell called the meeting to order at 6:31 p.m.

II. Roll Call

A verbal roll call was taken and a quorum was declared present.

III. Approval of Minutes

A. January 6, 2015

MOTION by Mr. Rosales to approve the minutes of the January 6, 2015 meeting; seconded by Mr. Anderson. Upon vote, the **MOTION CARRIED unanimously.**

IV. Approval of Agenda

Mr. Maxwell said that item X will be moved to item XII-C. **MOTION** by Mr. Kibler to approve the agenda as amended; seconded by Mr. Rosales. Upon vote, the **MOTION CARRIED unanimously.**

V. Public Participation

Mr. Stuart Levy read a statement on behalf of Robin Arbiter stating that two years ago stakeholders in the neighborhood advocated for alternatives to incarceration. He said that when they asked about the County's intention to raise $20 million they were assured that wasn't the amount the Board and staff planned to spend. Ms. Arbiter stated she was surprised the County is entertaining jail construction projects costing over $32 million. Ms. Arbiter felt that half of that money could transform the county's

services to those inappropriately incarcerated and at risk of incarceration. She mentioned several of those services and said she is opposed to any funding on any jail project.

Ms. Dorothy Vura-Weis said she was disappointed the report has no breakdown of costs for the board to decide which items could be approved and which should go. She expressed disappointment that there was no option of building lower security housing or an option for the smaller jail population if recommendations for alternatives for incarceration were implemented. Ms. Vura-Weis said that she is grateful for the report because it shows a shift if needed to ensure the safety of residents. She recommended several resources and programs that could be put in place. She noted the Sheriff and local police have already expressed interest in some of the alternatives.

Mr. Mark Enclin underlined the point in Ms. Arbiter's statement that half of the $32 million could transform the county services. He cited several of the programs and services she mentioned.

VI. Communications

None

VII. Sheriff's Operations Master Planning: Gorski Reifsteck Architects and Kimme & Associates, Inc. Presentation of the Master Plan

Mr. Maxwell asked the committee to hold all questions until the end of the presentation.

Mr. Reifsteck summarized Part 1 of the report and mentioned that although the downtown jail wasn't being looked at for corrections, it was still being considered for law enforcement. He said they also looked at the satellite for not only corrections, but for law enforcement as well. He said Part 2 of the report has two options: 1) jail renovation/addition at the satellite site and law enforcement renovation at the downtown site; or 2) jail renovation/addition at the satellite site and a law enforcement addition at the satellite jail.

Mr. Kimme explained they identified a series of objectives that they wanted to obtain based on the mission from the County. He said the first was that they were going to present long-term solutions. He stated they wanted to reinforce the Sheriff office's mission for the jail and law enforcement as well as the new inmate classification system. Mr. Kimme said they wanted to address the jail housing needs not being met by the existing facilities. He noted they wanted to improve the safety, security and environmental quality of the facilities. He said they also wanted to solve specific identified building and support problems. Mr. Kimme said they wanted to address problems revealed by architectural engineering and corrections walk-throughs conducted by their team.

Mr. Kimme summarized some of the housing and building issues and some of their recommendations for correcting the issues. He said they addressed the deficiencies, plus the additional needs generated by consolidating populations. He remarked that the non-housing components square footage requirements in the proposal are almost the same as they currently have, but they are getting more out of the space. Mr. Kimme said they are addressing inadequacies on the law enforcement side as well and stated the most critical need is in evidence processing and storage and record storage.

Mr. Kimme showed the proposed building plan of Option 1 with the additions proposed. He summarized the changes. Mr. Kimme said Option 2 is basically the same in terms of the jail addition but the big difference is the law enforcement addition. He said a lot of the solutions are common to both options because the satellite jail will be the same. He went through each solution.

Mr. Kimme noted that the southwest quadrant might be the most interesting renovation. He said that the proposed changes are driven by the lobby location. He said the changes would include a legitimate administrative area, a public meeting room, storage linked to the old sally port, re-entry programs space, electronics home detention operation space, and professional contact visiting space.

Mr. Kimme next pointed out the differences between Option 1 and Option 2. He said the biggest difference is that the downtown jail would need to be closed for 12-15 months, creating the need for 17,000 sq. ft. of rental space. He summarized costs involved with a rental space. Mr. Kimme said the

upper level would remain basically the same but they would convert locker space to records storage, and the current booking space in the lower level would be converted to an evidence area. He noted the old visiting area would become part of a training area and the old work release would become staff lockers and showers. Mr. Kimme said the only difference between the options at the satellite jail is in the northwest quadrant. He said they are suggesting expanding the laundry area and extending the garage. He noted the current locker area could be turned into dry goods storage and a commissary.

Mr. Kimme stated the options result in a savings of 7.7 in FTE. He explained that even with less staff it is a safer and more efficient environment.

Mr. Kimme stated that Option 1 has a projected completion date of June 2020 while Option 2 is projected to be completed in August 2019. He talked about the pros and cons of both options. Mr. Gleason gave a utilities cost comparison for both options. Mr. Reifsteck talked about maintenance and repair costs needed at both facilities. Mr. Gleason stated this will only keep downtown on life support and the deferred maintenance items will continue to increase. He also commented that the intercom system at the satellite needs replaced.

Mr. Reifsteck summarized construction costs for both options. He said there are options to rent in the Champaign area but they may need improvements. He stated Option 1 is roughly $26.8 million while Option 2 is about $27.4 million. He listed several soft costs estimated at $3.4 million that would be in addition to the hard construction costs, bringing the total base project cost to $30.2-$30.8 million in today's dollars. He explained that since the project won't be bid for two years they've added escalation costs bringing the total estimate to $32.1-$32.6 million. Mr. Reifsteck noted not all the details are known and contingencies are built in, so they are giving a range for Option 1 of $29-$36.9 million and for Option 2 of $29.4-$37.6 million.

Mr. Reifsteck stated that Option 2 saves almost $1 million in utility costs over 20 years, would be done 10 months sooner, is simpler, is more flexible, and has more efficient law enforcement space. He stated that their recommendation is Option 2 and asked for any questions.

Mr. Quisenberry wanted to know if either option would approach any certifications. Mr. Gleason said the new geothermal at the satellite would definitely qualify and there are other options that might qualify for DCEO incentives. Mr. Quisenberry asked if it included any heat recovery wheel technology. Mr. Gleason said they have proposed it but it would be harder to do on existing buildings. Mr. Quisenberry said that some space for family contact seems to be in the future. Mr. Kimme said that is one thing that is still to be determined. Mr. Quisenberry noted there is a significant amount of training space and wondered if it was really necessary with having PTI and ILEAS here. Mr. Kimme said the advantage is being able to run more focused programs and not wait on others. Mr. Quisenberry said he sees that as nice-to-have rather than a necessity. He said he was surprised that additional project costs for Option 1 are more expensive than Option 2 since Option 2 has more new construction. Mr. Reifsteck said design is more expensive for renovations.

Mr. Kibler said he noticed that the door to the administrative storage area goes into a secure area and asked if this was a common trend. Mr. Kimme said this is the route that supplies come from. Mr. Kibler asked for clarification on what the storage was for. Mr. Kimme replied it was for things such as paper towels and linens. Mr. Kibler commented that he would like to see family visiting space as a priority. He felt the new design doesn't have any better line of sight and seems to increase staffing. Mr. Kimme explained that the beds are on the perimeter with each pod having its own sick, exercise, and visiting components that can be monitored by one officer.

Mr. Quisenberry wanted to know why the capacity for women is twice what the peak numbers are. Mr. Kimme said the female/male pod is a changeable pod that can expand or reduced in order to maintain a good staff to inmate ratio. Mr. Quisenberry pointed out that there has been a lot of talk about an adult assessment center and that the numbers don't take that into account. Mr. Kimme said that is correct and that if the population falls, the multiple occupancy cells can become single occupancy.

Mr. Jack Anderson said he noticed there is no increase in face to face visiting but there is in video visiting. Mr. Kimme replied that is correct because much of the visiting is by video. Mr. Anderson said that while on the tour he noticed that all of the face-to-face seating was occupied and may not be adequate. Mr. Kimme said at the conceptual stage they felt it would work but it is something that could be changed in the programming phase.

Mr. Kibler asked about the video conferencing location. Mr. Kimme said that most arraignments take place within 72 hours and would be in the pre-classification pod. He said the officer would have direct line of sight. Sheriff Walsh asked if Mr. Kibler was asking about inmate visitation video or video arraignment. Mr. Kibler replied for inmate visitation. Mr. Kimme said they are focused on the pods and the goal is to have the video visitation acoustically private.

Mr. Weibel asked if they had looked at renting cells at other facilities. Mr. Kimme stated that in part one of the study they had an estimate of 45 inmates per day at $70 per inmate with a cost of $1.5 million for one year.

Mr. Quisenberry said he understands what they asked for and what they received but is concerned the proposal exceeds the capability to fund and is beyond the capacity for public support. He said he didn't see the ability to trim it down based on what they want to expect with regards to reduced incarceration or to what they can afford. He felt they have been put in a difficult position as a board.

VIII. Direct County Administrative Staff to Proceed with the Concrete Panel Investigation at the Satellite Jail

MOTION by Mr. Kibler to approve; seconded by Mr. Quisenberry. Mr. Quisenberry asked Mr. Brenner if he had anything to add. Mr. Brenner stated they had received two varying expert opinions and felt they needed to investigate what is causing the concrete to crack. He said the study would examine three panels of the engineer's choice. Mr. Brenner explained that they would receive help from the Highway Department and maintenance staff for digging in order to save some costs. He said they will also need to get roof and concrete contractors. He believed this is a must to maintain the facility at a high level.

Mr. Kibler asked if the County is providing laborers for the digging, what they will lose by not having those people available for other things. Mr. Brenner replied it's a short period of time and that some costs are unknown. He said they don't have a quote on the roofing yet and that highway and maintenance crews should take no more than half a day to dig. Mr. Kibler asked if the project could be done without roofing and have that done later. Mr. Brenner said it should all be done at the same time to be able to make the building water tight. Mr. Kibler noted that in the recommended action it states TSI Advanced Roofing. Mr. Brenner explained that is because TSI installed the roof, has done the repairs on it, and are the most familiar with it. He said he didn't think they were talking about a lot of money. Mr. Kibler said he wants to understand what is being voted on. Discussion continued.

Mr. Maxwell called for a vote. Upon vote, the **MOTION CARRIED unanimously.**

IX. Update on the US DOJ ADA Compliance Audit for Champaign County

Ms. Busey said in June 2011 they were contacted and randomly selected to have an ADA compliance audit done on all of their facilities. She reported that they shared a lot of information with the DOJ during the summer of 2011, the DOJ brought a team in September 2011, and that they heard back from them in December 2014 with their findings.

Mr. Van Anderson stated they received 200 pages of information on their findings and a proposed agreement. He said the County is a unique entity because with elected officials they need to have more involvement in determining policies and how they will accommodate people with disabilities. He provided a handout explaining what is needed and who is responsible. He noted that within each section are multiple issues that need to be addressed. Mr. Anderson said that they will meet with groups and develop responses, and noted that some of the issues could have changed within the last 3 ½ years. He said they will have to hire an independent licensed contractor for certification and that it will be an intense process. He said they are starting to put dollars to it and coordinate with department heads and elected officials. He indicated that the DOJ expects a quick response and will have a phone conference

the end of next month. Mr. Anderson stated that when the agreement with DOJ is finalized, it will be presented to the committee.

Mr. McGuire asked what the timeline for response and compliance is. Mr. Anderson said it varies with the issue, that some annual reporting is required, and some items require immediate action.

X. Approval of Courthouse LED Lighting Replacement from Courts Construction Fund
Moved to XII-C

XI. Approval to Bid Courthouse Window Replacement Project
MOTION by Mr. Kibler to seek bids for certain courthouse windows; seconded by Mr. Rosales. Mr. Brenner explained that the windows in the original courthouse were installed in 1986 and many are different shapes and sized. He noted that some severely leak when it rains, some have no seal, and they are not very efficient. He proposes they be replaced with low E glass and thermal frame to match the new addition. Mr. Maxwell pointed out that they had received the proposed bid schedule and this will have to come back to the committee for action.

Ms. Petrie asked for a rough calculation of the bid amount. Mr. Brenner replied $180,000 - $210,000. Ms. Busey pointed out that $215,000 is already budged for this project in the courts construction fund. Upon vote, the **MOTION CARRIED unanimously.**

XII. Facilities Director's Report

A. Update on Brookens Mechanical Controls Project
Mr. Brenner reported that the last piece of this project was installed today and that they are 100% up and running. He said they will get the paperwork ready and send it to DCEO.

B. Update on the IT Services Back-up Generator Project at Brookens
Mr. Brenner said this project is 99% complete. He said there is one final piece of the project that will be done tomorrow and they will be 100% complete. He said they will sit down with GHR to go over the punch list and he expects the invoice from Barber DeAtley next week.

C. Approval of Courthouse LED Lighting Replacement from Courts Construction Fund
Mr. Brenner noted that there are several decorative T8 fluorescent lights in the lobby, near the Circuit Clerk's office and on the 2nd and 3rd floors in front of the courtrooms. He said there are 510 lights, most of which require a 12-16 foot ladder to get to and about 120 bulbs require a scissor lift to reach. He noted these areas collect large amounts of dust and about 75% are burned out. He felt they hadn't been replaced because they are difficult to reach and have to be done during off hours. Mr. Brenner said he would like to replace those hard-to-get-to lights with LED bulbs that have a life span of 15-20 years. He stated the project cost is $12,831. He indicated that the savings should pay for the cost of the bulbs in 56 months but they will keep burning for 15 plus years, with an overall electric savings of around $40,000 over 20 years. Mr. Brenner explained that these LED lights can be put into T8 ballasts, but that some of the ballasts may need replaced. He said this project will be funded out of the courthouse R&M fund.

Mr. Quisenberry asked if the LED would extend the life of the ballast. Mr. Brenner said it would. Mr. Quisenberry asked if the regularly scheduled use of ladders would now be used for cleaning the fixtures. Mr. Brenner said that was correct. Mr. Quisenberry asked if many of them are burned out do they really need to replace all of them. Mr. Brenner replied that it doesn't look good and that if they were to replace every other one it would look odd.

XIII. Other Business
Mr. Quisenberry asked if tonight's seating arrangement was specifically for the presentation or if it was an experiment for future meetings. He said if it was an experiment he recommended that it not be used again. Ms. Busey replied that it was for the presentation.

XIV. Chair's Report

A. Future Meeting – Tuesday, March 3, 2015 at 6:30 pm

B. Tour of EMA, 1905 E Main, Urbana at 5:15 pm Prior to the March Facilities Committee Meeting

C. Discussion of a Strategic Plan for Facilities

Mr. Maxwell stated that the strategic plan for facilities would be put on the back burner until the overall strategic plan for the County is further along.

D. Sheriff's Operations Master Plan Review Schedule

Mr. Maxwell felt everyone was a little shell-shocked and they needed more time to review. He said they have a lot of work ahead and noted that there will likely be more public participation at the study session. Mr. Maxwell said they may discuss at the next facilities meeting and this is something that will be ongoing.

- February 24, 2015 – County Board Study Session
- March 3, 2015 – Facilities Committee Review and Recommendation to the County Board
- March 19, 2015 County Board Approval of Recommendation for Master Plan

XV. Designation of Items to be Placed on the Consent Agenda

Mr. Maxwell stated that there are no items to be placed on the consent agenda.

XVI. Adjournment

There being no further business, Mr. Maxwell adjourned the meeting at 8:43 p.m.

CHAMPAIGN COUNTY ADMINISTRATIVE SERVICES
1776 East Washington Street, Urbana, Illinois 61802-4581
ADMINISTRATIVE, BUDGETING, PURCHASING & HUMAN RESOURCE MANAGEMENT SERVICES
Debra Busey, County Administrator

Champaign County Jail Facilities Review and Master Planning: Process Overview
February 20, 2015

The County Board began the process of reviewing its jail facilities in 2011. The County Board has cautiously and thoroughly engaged in the development of that review. In 2012, the County Board appointed a Community Justice Task Force to provide recommendations, and hired the Institute for Law and Policy Planning (ILPP) to conduct a Criminal Justice System Assessment.

Pursuant to the recommendations of the ILPP and Community Justice Task Force Reports, the County Board has engaged in the establishment and planning for additional programming, and completely supports plans for programs that provide alternatives to incarceration for non-violent offenders and people afflicted with mental health and substance abuse issues.

- In 2014, the County Board began funding a Re-Entry Program and awarded an annual grant of $100,000 to Community Elements for the development and implementation of a re-entry program - which is now entering into its 2nd year of funding and operation.
- In FY2015, the County Board is actively engaged in identifying how an Adult Assessment Center could be created to better serve the needs of individuals with mental health and/or other issues which result in their being brought to jail because there is no other community resource for local police agencies to take them to when they are engaged in disturbing the peace. The County Board is committed to working with municipalities, health care providers and social service organizations in the development of a plan for this initiative. (A model for such an assessment center for juveniles exists in Champaign County with the Youth Assessment Center, which is primarily funded by the County Board.)

While recognizing the need for alternative programs, the County Board also faces the challenge of maintaining an appropriate jail facility that will most effectively meet the community's need for incarcerating offenders who are a risk to the public safety; and at the same time to provide appropriate resources to those individuals while they are in custody. Today's jail houses individuals with serious mental health and medical issues, and the current physical facilities lack the resources and space to appropriately meet the needs of that population. To address this statutory responsibility of providing an appropriate jail facility, the County Board has taken the following actions:

- Hired ILPP to conduct a Criminal Justice System Assessment, which report clearly indicates that the County Board should abandon the downtown jail. This recommendation was also made by the National Institute of Corrections (NIC). Pursuant to the ILPP Report, the County Board moved forward by contracting for a Sheriff's Operations Master Plan to be conducted, as a next step in addressing jail facilities issues.
- The results of the Sheriff's Operations Master Plan confirm previous studies, that the County Board is advised to close the downtown facility and replace those beds by

expanding the satellite jail facility, in order to place all jail operations under one roof. This produces economies of operation – most notably in staffing and utilities costs. The Master Plan recommends a total of 307 beds, where the current capacity of the two jail facilities is 313 beds.

- The County Board will, in the months ahead, make decisions about how best to move forward with the jail facilities plan. Delay in moving forward could increase the cost to the taxpayers as there are major renovations and repairs that will have to be made to the downtown facility if the County is required to maintain it as a jail facility for longer than 3-4 years – the amount of time required to plan and construct the consolidation of the jail operation at the Satellite Jail Facility.

As documented in the ILPP Report, Champaign County's rate of incarceration is already low. The County's average daily jail population is 27% lower than that of six peer counties in Illinois. When compared to counties which are considered model counties for programs addressing jail population issues, the County is at 1.1 jail inmates per 1,000 population; Bexar County, Texas is at 1.9; Mecklenburg County, North Carolina is at 2; and Lee County, Florida is at 2.5.

CHAMPAIGN COUNTY ADMINISTRATIVE SERVICES
1776 East Washington Street, Urbana, Illinois 61802-4581
ADMINISTRATIVE, BUDGETING, PURCHASING, & HUMAN RESOURCE MANAGEMENT SERVICES
Debra Busey, County Administrator

To: Chair Gary Maxwell and the Members of the County Facilities Committee
From: Van A. Anderson, Deputy County Administrator of Finance V.A.A.
Subject: Sheriff's Operations Master Planning - Facility Cost Estimates
Date: February 26, 2015
cc: Debra Busey, County Administrator
Dan Walsh, Sheriff
Allen Jones, Chief Deputy Sheriff
Dana Brenner, Facilities Director

Now that the Sheriff's Operations Master Planning report has been distributed and is being discussed, the estimated costs of the proposed facilities have become a focus of the discussion. Therefore, the following information, which echoes information presented at the February 24, 2015, study session, is being provided for your information and consideration.

There are four steps necessary to determine the actual costs of addressing the facilities needs of the Sheriff's Jail and Law Enforcement operations. At each of the first three steps, the cost estimates become more refined and closer to the actual cost of construction. Those cost estimates are instructive, they allow for decisions to be made on how to proceed, and they guide development of possible funding schemes to determine if the project is financially feasible. Therefore, it is important to ensure that a cost estimate, especially in the first two steps, does not become locked-in but remains flexible to account for changes to, and refinements in, the project plan as discussions continue throughout the process.

The first of the four steps is the master planning project work done to date (Activities A – D & F of the Gorski Reifsteck Architects, Inc. contract) that provides an initial cost estimate with a substantial range in cost. The second step is the development of the selected option that provides a detailed space program and schematic designs that allows for a refined cost estimate. [Note: The current Gorski Reifsteck Architects, Inc. contract allows for this second-step work to be done once a project option is chosen (Activity E). At that time, the scope of work and fee proposal would be negotiated. The current contract has up to $40,000 budgeted for the detailed programming and indicates that the schematic design plans are "generally 15% of the full architectural –engineering effort."] The third step is the development of the construction documents (i.e., contractual information; bidding requirements; architectural and construction information; and architectural, structural/mechanical/electrical/plumbing/civil engineering, landscape design, interior design, graphics, and other specialty and shop drawings) that provide cost estimates at the time the project is ready to go to bid. The fourth step is the requests for bids, the results of which identify the actual cost (i.e., the winning bid) of the project as defined by the construction documents.

The first step cost estimates provide "very rough sketches and possible costs" that allow the architect's team to "engage in discussions as to options with the Sheriff and County to refine

ideas and options so that the Sheriff and County can make informed decisions to give guidance as to what options should be included." Public input will provide additional guidance on the option that is further developed. The starting point for the discussion (i.e., the master planning report) has provided an opinion of probable cost for the recommended option (Option 2) which is:

Opinion of Probable Cost
Champaign County Jail and Law Enforcement Master Plan

Satellite Jail Renovation and Addition:	$21,200,996
Law Enforcement:	$6,180,950
Additional Project Costs:	$3,419,200
Inflation (2 years @ 3%/yr to 2017):	$1,875,790
Total Project Cost with Inflation:	**$32,676,936**
Low Cost Estimate:	$29,409,242
High Cost Estimate:	$37,578,476

Apportioning the additional project costs and inflation costs to the Satellite Jail and Law Enforcement components of the projects based on their percentage costs of the project which are 77.4% and 22.6%, respectively, the estimated costs for those components become:

Satellite Jail Renovation and Addition:	$25,300,743
Law Enforcement:	$7,376,192
Total Project Cost with Inflation:	**$32,676,936**

To put those costs in perspective, the Gorski Reifsteck/Kimme & Associates/GHR team was asked to provide estimates of the construction project costs of the Satellite Jail (1995) and the County Courthouse renovation/addition (2000) if those projects were done in 2017, the same year as the estimate for the proposed jail and law enforcement project. The team reported the source of the escalation factors used to be the RS Means Square Foot Cost indexes for Decatur (an index number for Champaign does not exist), and that they used the 3% per year escalation factor used for the master plan estimates to get to the year 2017. Those estimates are:

1995 Satellite Jail Construction

Project cost in 1995:	$10,000,000
Estimated escalated cost if built in 2017:	**$22,650,000**

2000 County Courthouse Renovation and Addition

Project cost in 2000:	$23,800,000
Estimated escalated cost if built in 2017:	**$46,100,000**

Therefore, taking inflation into account to provide a comparable estimated dollar cost, the cost of the proposed Satellite Jail renovation and addition of $25.3 million is 11.7% higher than the estimated inflated cost of the 1995 Satellite Jail project if it were built in 2017. Based on the magnitude of the proposed project, I hope this provides a basis for comparison to put this project into perspective.

Van R. Anderson

Project Name: Champaign County Nursing Home (CCNH)

Meeting Date: July 9, 2014

Meeting Time: 8:30 am

Meeting Location: CCNH

Purpose of Meeting: Review MEP system.

In attendance:

Kirk Kirkland	CCAS
Craig Terven	CCAS
Dana Brenner	CCAS (Present for a Portion of this Session)
Jim Gleason	GHR

Topics discussed

1. Smoke dampers and fire dampers are required by IDPH to be tested by the Owner every three or four years.
   a. Approximately 400 to 500 in the building.
   b. Many dampers were added during construction.
   c. Some areas have rated ceilings.
   d. Companies specialize in this.
   e. No plan of locations exist.
   f. Never got as-builts from the A/E.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The lack of as-builts that document dampers added during the construction phase puts the County at a serious disadvantage when it comes time to test/check them for IDPH compliance.			

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Solutions			
Prepare CAD drawings that document the location and size of all fire and smoke dampers using a system reference. This should include the building fire ratings shown on a CAD drawing.		***$8,000 - $10,000***	

2. Sprinklers

   a. IDPH requires a flow test every three years. An IDPH person opens the "Inspector's Test" valve and simulates the flow expected from a single sprinkler head. The dry systems are expected to show water "flow" within 60 seconds of initiating the test.

   b. Failed last time.

   c. Initially installed by Automatic Fire Sprinkler Company. Then went to Fire Suppression, Inc. for maintenance and testing.

   d. Different "accelerators" have been installed over the years to increase the speed at which the dry systems fill and flow water. These are intended to allow the air to escape more quickly from the dry systems to make way for the in-rushing water.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The flow response has been unacceptable. This compromises the ability to rapidly extinguish a fire and jeopardizes licensing.			
Solutions			
Hire a sprinkler contractor as a benchmark to properly test all four of the dry systems for flow response times. Test witnessed by Owner.		***$900 - $900***	
If flow response time exceeds 55 seconds then replace the four existing dry valves and accelerators.		***$32,000 - $32,000***	

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e. Dry systems except in basement which is wet.

f. Need yearly maintenance and monthly testing.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Quarterly testing required by IDPH.			
Solutions			
Hire a qualified Sprinkler Contractor to conduct quarterly tests. $400 / quarter.		***$1,200 - $1,200***	
Issue			
Yearly testing required by IDPH.			
Solutions			
Hire a qualified Sprinkler Contractor to conduct yearly test. (Note this is in addition to the quarterly tests.)		***$800 - $800***	
Issue			
Flow switch trip testing required every three years by IDPH.			
Solutions			
Hire a qualified Sprinkler Contractor to conduct the three-year tests. (Cost of $1,200 is annualized for purposes of this report.)		***$400 - $400***	

g. The air compressor that fills the dry systems was too small as-installed and was replaced with a much larger one by the County.

h. Four dry valve zones (ground floor).

i. One wet zone (basement).

j. Pre-action system for elevator.

k. Could add fire pump to the building to increase water pressure and reduce flow times but they are very costly and would be doubly costly to retrofit.

l. Very few false alarms.

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m. The Urbana Fire Department is okay with Fire Department Connection (FDC), knox box, etc. They respond to front desk.

3. Fire Alarm - Edwards EST-2 Network

a. Installed by Bennet Electronics. (Post-Meeting Note: Bennett informed October 15, 2014 they are no longer selling Edwards products.)

b. (Post-Meeting Note: County was told the system was "obsolete". Discussion with Bennett indicated Edwards set a "sunset date" of July 31, 2014 for the existing EST-2 panel. Technically the system is obsolete in that it is no longer manufactured. This will become an issue if the system malfunctions or is somehow damaged.)

c. FE Moran monitors the fire alarm system.

d. It is an addressable system.

e. FE Moran maintains the system.

f. Every two years IDPH requires the Nursing Home to test sensitivity of all the smoke detectors, as well as the overall system itself.

g. When constructed, the system had "ground fault" error on main panel. This is a transitory problem that has not been corrected. It comes and goes for no apparent reason.

h. There is a drawing of device locations. It's on an old computer with proprietary software from Edwards. County should have the software and the drawings.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The inability of the County to access the device drawings complicates maintenance and troubleshooting. Further, it requires the County to depend on a single outdated computer.			
Solutions			
Negotiate with Edwards for purchase of the software. Buy a version that is compatible with typical County-owned computers Cost is estimated. Edwards Representative is Alex Petrovic 630-406-1151, alexander.petrovic@fs.utc.com.			***$5,000 - $5,000***

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Replace the Edwards EST-2 fire alarm control panel with a new Edwards control panel. Reprogram. Cost discussed with Alex Petrovic.			***$11,000 - $14,000***
Replace the Edwards system with a Notifier system. Cost is per Bennett October 15, 2014.			***$104,000 - $104,000***

i. Alarm annunciators are located at front desk and each wing by nurses stations.

j. The resident rooms have automatic door closers with magnetic hold-opens that release by the fire alarm system. The automatic closers are very expensive. These need to be tested.

4. Overall training on the various MEP systems never really happened. Turnover negated some of the training that did occur. In other words, individuals were trained but then left County employment which resulted in the training being lost.

5. Did receive Operation and Maintenance Manuals that cover most of the systems.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The lack of documentation coupled with turnover precludes any institutional memory.			
Solutions			
Digitize the O & M Manuals if they aren't already digitized. This can be done by an intern.			***$10,000 - $14,000***
Use the O & M Manuals to develop Programmed Maintenance schedules.			***$5,000 - $7,000***
Add notes to the materials developed above that incorporate lessons learned on an ongoing basis.			***$0 - $0***

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6. Room numbers changed after completion of the project. The Building Automation System (BAS) graphics shows room numbers that are not the same as the actual numbers. Needs fixed.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Confusion generated by mislabeled room numbers complicates repair efforts, extends response time and opens the door to resident complaints.			
Solutions			
Revise the room names and numbers to correspond exactly with actual designations. (Try to do this at the same time as the fire damper documentation.)			***$2,200 - $2,200***

7. Reduced pressure backflow preventers on the two water services are (domestic and fire) checked every year.

   a. Same for smaller ones.

8. There is no softener on the water supply to the kitchen equipment. The equipment vendors typically require soft water to warranty their equipment.

   a. City water causing dishwasher and booster heater problems.

   b. The electric booster heater limes up quickly. It cost $4,000 to $5,000 to replace it.

   c. The County pays ECO LAB yearly to keep the kitchen equipment functioning. It would cost less if the water was softened.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Failure to soften the hot water supplied to the dishwashing equipment causes premature failure of the booster heater, increased maintenance on the dishwasher and degrades the performance of the dishwasher.			

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Solutions			
Install a water softener on the hot water supply piping to the electric booster heater. Price is for 150,000 grains between regeneration, 51 gpm peak. Exact requirements in terms of flow should be determined.			***$7,000 - $9,000***

9. Laundry sanitization.

   a. Now using ozone to sanitize (this was installed in last six months).

   b. Bleach is only used on white linens.

   c. Allows use of cold water which should reduce natural gas consumption. Uses less overall water. Reduces chemical consumption.

   d. Safety concern - There is no ozone detection in the laundry.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Conversation with Max Redmond indicates he will install ozone detection in the laundry. Ozone exposure is regulated by OHSA. The detector will have dry contacts (1NO and 1NC) that index on alarm.			
Solutions			
Connect the BAS to the alarm and notify maintenance staff of the event.			***$1,000 - $1,000***

   e. Using Exceptional Laundry Systems (www.laundrybyozone.com) for the ozone generation system (Max Redmond, 217-398-3710, is the contact).

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10. Water heaters.

a. One gas-fired water heater in each unit.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
In late January 2015 complaints about lack of domestic hot water led to the discovery that two of the five domestic water heaters were failing. The manufacturer's representative visited the site and determined the two in question are at the end of their service life. The other three aren't far behind.			
Solutions			
Remove the failing heaters and install new heaters. The capacity / recovery rate should be established by calculation. An analysis of heater cost versus efficiency should be conducted before final selection based on a reasonable service life projection. Note the BAS work needed to automatically monitor hot water temperatures and control the recirculation pumps should be done at the same time.		***$90,000 - $105,000***	

b. Recently replaced the one in the basement that serves laundry and kitchen. There are two water heaters plus a large storage tank in the basement that feed the laundry and kitchen. One heater serves as back-up.

c. Considerably less hot water is required following the switch to ozone disinfection in the laundry.

11. The TMV's (Thermostatic Mixing Valves) are a problem.

a. The purpose of the TMV's is to prevent scalding. They are required by State Plumbing Code and by the ADA. None of them hold settings on a continuous basis. Staff has to check temperatures twice a day manually.

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	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Assigning staff to record water temperatures is costly and relies on humans to take measurements and write them down.			
Solutions			
Automate the temperature measurements at all five of the resident wing TMV's. Use the BAS to monitor and record temperatures. Send "out of limits" alarm to building operators if necessary.	***$8,250 - $8,250***		

b. 110°F setting can't be held. Codes consider temperatures in excess of 110°F to be a burn potential. If no one uses hot water at night the temperature will climb past 120°F. Currently addressing this manually. Have reach 130°F in Alzheimer's unit on occasion.

c. The high-low TMV's are very tricky to adjust.

d. Check valves on return lines may be causing a problem.

e. High maintenance. Have replaced five or six. Always using Leonard products.

f. Leonard has been on site to help set up the TMV's. The problem persists and needs to be addressed.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Proper temperature regulation hasn't been achievable with the present set-up. This puts the residents at risk.			

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Solutions			
Automate operation of the five pertinent domestic hot water recirculation pumps using the BAS.	***$8,000 - $8,000***		
Analyze sizing of all five TMV's with the manufacturer. Check maximum flow rate, pressure drop and minimum flow rate. Review pipe arrangement at the TMV's and revise accordingly.	***$5,500 - $8,000***		

12. Hydro Therapy Tubs (whirlpools).

    a. Have "Hydrogard" faucet mixing valves that need 120°F water (which is not available in the facility) to function properly. Can't get proper cartridge. (Note: Apparently these tubs and fittings were provided by the County, according to the construction documents. They were salvaged from the old facility.)

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The mixing valves on these tubs mix hot water and cold water to the desired tub temperature. They won't function properly with the ADA-regulated 110°F "hot water". Efforts to rectify this problem has not been successful.			
Solutions			
Replace all five faucet fittings with new fittings intended to work with 110°F "hot" water.	***$3,800 - $3,800***		

13. Plumbing fixtures.

    a. Sloan fittings.

    b. Okay in general.

14. Sewage ejector in basement (on generator).

    a. No issues to date.

    b. These are duplex pumps but are fed by a single electrical circuit (need on different circuit).

    c. Serves all basement level drains, including the laundry.

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d. Has local alarm. The alarm is visual and audible. It is not tied into the BAS.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
A local alarm is installed but will be ineffective if the mechanical room is not staffed.			
Solutions			
Connect the high water alarm to the BAS. Notify appropriate staff on alarm.		***$1,000 - $1,000***	

15. Sump pump in basement (on generator).

    a. No issues to date.

    b. Like the sewage ejectors these are duplex (need on different circuit).

    c. Has local alarm. The alarm is visual and audible. Not tied into the BAS.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
A local alarm is installed but will be ineffective if the mechanical room is not staffed.			
Solutions			
Connect the high water alarm to the BAS. Notify appropriate staff on alarm.		***$1,000 - $1,000***	

16. Interceptors.

    a. A single grease interceptor for kitchen (located outside by the dock). This needs cleaned at regular intervals to keep the kitchen functioning. Currently this interceptor is cleaned twice a year by the Berg Company.

    b. Special waste interceptor for dental (located in basement mechanical area).

    c. Lint separator (located in laundry area in the basement).

17. There is an oil / water separator outside near the dock area.

    a. The need for this needs to be explored. It's causing problems.

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b. Fills with trash that spills from compactor. The loading dock is cleaned periodically by maintenance staff. It is a never-ending job.

c. Need basket before the separator or someway to easily remove solids before they reach the separator.

d. The dock floods. This is due in part to the separator getting clogged.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Dock flooding has damaged the garbage compactor, spreads loose trash around the area and prevents use of the dock.			
Solutions			
Develop and monitor a program to keep the dock area clean and free of trash and debris.			***$0 - $0***
The separator is thought to be not required by the Illinois State Plumbing Code. Verify this with the State Plumbing Inspector. Assuming the separator is not required, it should be removed.			***$2,700 - $2,700***

18. Storm water drainage.

a. The site is relatively flat. The building floor elevation is only a few inches above ground.

b. There are no gutters on the majority of the building. Rainwater runs to grade where it has to find its way to catch basins.

c. Surface water runs across sidewalk by generator where it's low. Tried tile. Tried French drain. That didn't work. Creates a dangerous ice problem in winter. Two people fell. Ice gets 2" thick. The sidewalk needs to be elevated and the water problem needs to be addressed.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The low spot in the sidewalk is a safety hazard when its ice-covered.			

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Solutions			
Raise the sidewalk enough to keep water off it.		***$2,300 - $3,500***	
Install a properly-sized catch basin on the upstream side of the sidewalk to drain water away before it gets to be a problem.		***$4,000 - $5,000***	

d. Water leaks into control conduit that feeds the chiller and runs into the basement.

e. Basement has drainage tile around it. On this day a steady stream of water was flowing from the tile into the sump pump.

f. Ground water occasionally seeps into the service conduits and then leaks into the building.

g. The utility transformer reportedly stays above water. (Post-Meeting Note: In the very heavy rain of July 12, 2014, this area flooded and water did reach the utility transformer.)

h. Try to reduce both surface water groundwater build-up by adding gutters and downspouts that are piped directly to the storm sewer system.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The massive quantity of rainwater coming off the roof onto the ground is creating problems with surface drainage that exacerbate ground water infiltration into electrical conduits.			
Solutions			
Install gutters on the entire building and pipe them directly into the storm sewers. This assumes the existing storm sewers can handle the flow.		***$98,200 - $127,600***	

i. The catch basins on the site are small diameter, pre-fab fiberglass. It is impossible to get in them to clean them or remove anything that might fall in or impede water flow.

19. Reportedly this building originally was intended to be LEED-certified. Apparently that fell by the wayside due to cost concerns.

20. DWV (Drain Waste and Vent) piping.

a. Certain kitchen drains overflow and occasionally flood space below.

i. Dishwasher primarily causes this.

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ii. Drains are currently open site per IDPH and health code.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The "open site" drain connections are unable to keep up with the instantaneous flow from the dishwasher and from the three compartment sink.			
Solutions			
Work with the State Plumbing Inspector and local Health Department to review the potential to direct the three compartment sink while using adjacent floor drain to "protect" against sewage back-up.	***$4,100 - $4,100***		
State Plumbing Code specifically prohibits hard-piping a dishwasher. The only solution is a larger floor sink if the discharge rate of the dishwasher can't be slowed.	***$4,900 - $4,900***		

b. Basket strainers need periodic access.

i. One is inaccessible (at prep table).

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The inaccessible basket strainer gets clogged up and results in sewage running on the floor in the kitchen.			
Solutions			
Remove the inaccessible drain. Direct-connect the prep table and provide a floor drain at the prep table to an easily accessible location. Work with State and Local Plumbing Inspectors and local Health Department in advance.	***$4,100 - $4,100***		

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21. Walk-in freezer and cooler.

a. Light fixtures collect water inside. Lack seals on the conduits to prevent infiltration of humid air.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Humid air is drawn into the electrical conduits by the difference in vapor pressure. It then condenses water inside the sealed light fixtures where it can't escape.			
Solutions			
Seal the conduits outside the coolers to prevent the passage of moisture-laden air.			***Fixed 01/15/15***

b. The walk-ins both have insulation under them. Had to be added during construction. The insulation prevents frost heaving under the freezer.

c. The seals on the freezer apparently were not properly re-installed after the freezer was taken apart and then re-assembled following the addition of the insulation.

d. Polar Refrigeration out of Urbana does maintenance.

22. Water piping.

a. There is a domestic water pressure booster system in the basement. It's entirely possible this system is not needed.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The booster pressure system represents an investment and energy that may not be necessary.			

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Solutions			
As an experiment manipulate the valves to bypass the booster system and turn it off. Operate on utility water pressure only on a temporary basis. Monitor system water pressure. If pressure and flow are acceptable then leave the booster system off and save the energy.			***$0 - $0***

b. "Corrosion" reported at water heater connections.

i. Been repiped a couple of times.

ii. Plumbers doing the repiping work have suggested a thin wall type of copper pipe was used. Thicker wall pipe is available.

iii. Leaks caused by pin hole pitting at elbows. Mostly in Adult Day Care.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Pinhole leaks are generally caused by "erosion corrosion". This is caused by localized high velocities which means too much flow in too small of a pipe.			
Solutions			
Analyze pipe velocities at areas with a history of pinhole leaks. Upsize piping and / or reduce flow to keep velocities low enough to preclude erosion.			***$2,500 - $6,000***

23. Natural gas service is from Ameren.

a. Piping is black steel.

b. There are no alarms on the system for leaks. Alarms are not typically installed for natural gas as the tracer (mercaptan) is easily detectable by the human nose.

24. Boilers

a. Have four "Pulse" boilers manufactured by Fulton. Minimum input per boiler is 400,000 Btuh / maximum input per boiler is 2,000,000 Btuh. One is non-functional and can't be repaired due to internal carbon / soot build-up caused by ingesting and burning airborne lint.

b. Lint destroyed that boiler completely and is wrecking the remaining three boilers.

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c. Needed all three of the remaining boilers to heat the building last winter so had no back-up. This is highly undesirable. Another boiler failure will leave the facility without adequate heat.

d. Boiler panel now communicates with BAS as a monitor point only. Can't adjust remotely.

e. Currently do not have reset of hot water temperature based on outdoor air temperature. This feature should be added to conserve energy.

f. Reheat and perimeter heat are the same system.

g. Combustion air intake pipes, which are intended to draw air from outside the building, have been opened to inside the building to avoid ingesting lint. This totally negates the advantage of closed combustion boilers by using room air for combustion. When the lint problem is solved these pipes should be reconnected to outside to conserve energy.

h. Pulse boilers are very efficient at lower water temperatures but have proven extremely vulnerable to the lint.

i. The pulse boilers are noisy and cause noise issues in space above. The noise is detected mostly by staff.

j. The boiler burner pre-purge control cycle dumps natural gas smells in courtyard. This raises health and safety concerns for people in the courtyard.

k. The boilers will be more efficient at lower temperatures. (It is believed they operate at a fixed temperature of 180°F. This totally negates the advantage of condensing-type boilers.)

l. Have local CO (carbon monoxide) alarm in the boiler area. It's not connected to the Building Automation System.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
While CO is typically not an issue with closed-combustion equipment there is a small potential for problems that is not monitored.			
Solutions			
Install remote carbon monoxide sensors in the boiler room and in the clothes dryer chase. Connect them to the BAS.	***$2,800 - $2,800***		

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Issue			
Lack of hot water reset prevents the boilers from ever operating at temperatures lower than 180°F where they are more efficient. Temperature can't be adjusted remotely.			
Solutions			
Install hot water reset on the DDC control system. This will require an interface card between the DDC and the boiler control panel to facilitate.			***$7,000 - $9,000***
Issue			
Recent winter weather required all three of the remaining functional boilers to heat the building. There is no spare in the event of an outage.			
Solutions			
Replace the failed boiler with a new, condensing-type boiler. The County will need to decide if they want another Fulton boiler. Note such a boiler will fit in the available space. Boilers made by other manufacturers may not fit. Cost is for one boiler. Note: Must have lint problem fixed.			***$80,000 - $95,000***

25. Chemical treatment.

    a. Both the heating hot water and the chilled water systems have "pot" feeders to allow chemical treatment.

    b. Currently there is no treatment of either system. Currently there is no freeze-protective glycol in the chilled water system.

    c. An effective chemical treatment regimen needs to be established. Evidence at one of the pipeline drains suggests the circulating water is filthy.

    d. Recommend engaging Garratt Callahan Company to analyze the condition of the water and recommend a treatment program. (Kurt Harper 309-287-1206.)

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	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The circulating water systems need to be kept clean for optimum heat transfer. Water chemistry needs to be regulated to minimize corrosion and minimal deposition.			
Solutions			
Flush both systems with fresh, clean water until the systems are clean. This includes pipeline strainers and pump strainers. Once the systems are clean use the pot feeders to implement a chemical treatment regimen with a reputable firm that specializes in that work.			***$14,400 - $14,400***

26. Have two HW (hot water) heating pumps.

    a. The two pumps share a single VFD (variable frequency drive). It's built into the motor control center.

    b. If that single VFD fails the heating pump will be difficult, if not impossible to operate and, if it does operate, will have no running overload protection.

    c. Pump HWP-1A had a bearing problem in the motor on day of walkthrough (July 9, 2014).

    d. The motor with the bearing problem is a Baldor Super E catalog no. EM2513T. It's not clear if this motor is VFD rated.

    e. One pump will carry the heating load. Note: a pump needs to run year-round because the facility employs reheat systems that must have hot water to avoid overcooling in the summer.

27. No issues with hot water heating piping now that strainers have removed most of the construction dirt out the system. (See comment above regarding chemical treatment.)

28. Not a lot of "spot heating." Mostly forced air.

29. VAV / RH (Variable Air Volume with Terminal Re-Heat) systems are employed in the core. This is not a resident room area. It is predominantly offices and program spaces.

    a. Multiple offices are grouped together on single zones.

    b. These types of systems do a good job of conditioning the spaces albeit at a high cost in energy.

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	Life Safety	Code Compliance to Stay Open	System Efficiency and / or Reliability
Issue			
High energy costs are typical of VAV / reheat systems.			
Solutions			
The energy costs can be reduced by employing sophisticated control strategies. These include static pressure reset , supply air temperature reset, and demand-controlled ventilation (based on carbon dioxide levels).			***$21,000 - $21,000***

30. Residence rooms each have their own reheat coils.

    a. Coils are located above the ceilings. They are not inspected or cleaned unless a problem is detected. There are around 170 resident system reheat coils and around 35 reheat coils on VAV boxes.

	Life Safety	Code Compliance to Stay Open	System Efficiency and / or Reliability
Issue			
Proper reheat coil performances cannot be achieved or maintained with dirty coils.			
Solutions			
Implement a Programmed Maintenance schedule to inspect he coils once a year and clean them when necessary. This will improve temperature control and reduce energy consumption.			***$9,000 - $12,000***

    b. These coils need cleaned to work properly and allow proper airflow.

        i. Filtration is a very important factor in keeping downstream components like heating and cooling coils clean.

        ii. Filters in the Magic Aire air handling units are changed every three months.

    c. With the exception of a couple rooms the resident rooms heat okay. These two rooms are both at the ends of their respective systems so this is thought to be an airflow / balancing issue.

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	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
These two rooms need proper temperature control to keep the residents and their families happy.			
Solutions			
Investigate airflow to the pertinent two rooms as well as hot water flow to the pertinent reheat coils. Address any shortfalls accordingly.			***$3,000 - $7,000***

31. The two VAV air handling units have heating coils. No issues reported.

32. Chillers

    a. Two York packaged air-cooled chillers are located on grade at some distance north from the building.

    b. One compressor is failing and hasn't run "for years". Needs fixed ($50 K). Reportedly there is copper in crank case oil. Mike Schum Entec.

    c. There are two compressors / chillers, so if one compressor is non-functional, the chiller operates essentially at 50% of nominal capacity.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
With one compressor out, the system is reduced to 75% capacity. If and when another compressor fails, the system very likely will not be able to cool a building full of old people.			
Solutions			
Repair or replace the failing compressor.		***$53,000 - $53,000***	

    d. Have service contract with Entec.

    e. There is plain water in these chillers and in the chilled water system.

        i. The lack of glycol (anti-freeze) was a bone of contention with the design A/E who didn't want the modest reduction in system efficiency that results from adding glycol.

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ii. The design A/E added heat tape to the chillers and exposed chilled water piping. They also added a control system to operate the chilled water pump if the exposed piping got too cold and turned on an alarm.

f. Froze a chilled water coil in the VAV AHU last winter that cost approximately $8,000 material only. Labor was expected to be around $4,000 for a total repair on the order of $12,000. The outdoor air damper actuator broke and let too much cold air into the unit.

g. Used to drain the systems, but had issues with dirty water and with the expense to drain and refill several times a season, so quit draining it and relied on the heat tape to protect the chiller evaporator barrels and piping from freezing.

h. The chillers have to run in colder temperatures than normal since MagicAires don't have free cooling. This needs a second look.

i. Glycol should be added to the chilled water system to protect against freeze-up. There is a modest performance penalty to operate with glycol but that penalty is offset by the cost to repair accidental freeze-ups.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Chilled water is subject to freezing conditions in the air handling units when controls malfunction. Further, anything that compromises the heat tape exposes the chillers and the piping to freeze-ups that are very costly to repair.			
Solutions			
Flush the entire chilled water system with clean water. When the system is clean, refill it with a 30% solution (by volume) of corrosion-inhibited ethylene glycol. Monitor inhibitor concentrations as part of the chemical treatment program recommended elsewhere.		***$18,000 - $21,000***	

j. The condenser coils on both chillers are packed with dirt and need to be cleaned to develop full capacity at best efficiency. At a minimum these coils should be cleaned twice a year. It's not clear why these aren't being cleaned under the service contract. (Post-Meeting Note: It was subsequently reported that Entec has cleaned the condenser coils.)

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	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The condenser coils on the chillers exchange heat with the atmosphere. Like the radiator on a car they rely on the free flow of air for that exchange. Coils packed with dirt are seriously compromised. This has a major impact on energy consumption.			
Solutions			
Implement a Program Maintenance program and clean these coils. Use quarterly intervals to begin and adjust according to conditions. Cost is per year.	***$1,300 - $2,200***		

33. AHU-3 (VAV) runs with supply fan on VFD variable speed control, but with the return fan RF-3 on manual speed control. This mode of operation will create airflow and pressure imbalances. The building operators need training on setting up the VFD's.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Airflow imbalance leads to decreased comfort, odor transfers, and increased energy consumption.			
Solutions			
Repair the VFD for RF-3 and troubleshoot the controls to restore automatic controls.		***$3,000 - $3,000***	

34. AHU-5B (MagicAire) was reported to continually blow fuses on one of the three phase conductors. (Post-Meeting Note: Subsequent transformer replacement in the starter coupled with discovery and replacement of a nicked wire appears to have resolved the fuse blowing problem.)

    a. The contactor chatters. The unit only runs on "manual." It won't run under automatic control. 7 amp load, 15 amp fuse.

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	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The inability to run on "hand" puts the system at the mercy of the "automatic" controls. If the automatic functions fail, then the residents will have no heating or cooling.			
Solutions			
Troubleshoot the electrical aspect of these controls. Check voltage and the coil. Check the contactor, etc.			***Completed 01/15/15***

35. Kitchen has heating-only MUAU (Make-Up Air Unit) on roof.

    a. Interlocked with range hood and dishwasher.

    b. Gas-fired.

    c. This unit ingests lint from the dryers and needs continual attention to the filters.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The underlying issue is the lint. See below. Any lint that makes it past the filters gets blown into the kitchen.			
Solutions			
Continue to change filters with properly fitting products. Assume quarterly changes.			***$800 - $1,100***

36. Kitchen has heating / cooling unit on roof (RTU-1).

    a. The condenser fins are shot. They're brittle and have lost proper contact with the tubes. (There is a suggestion that cleaning solution used to remove lint may have caused this damage.)

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	Life Safety	Code Compliance to Stay Open	System Efficiency and / or Reliability
Issue			
The conditions of the condenser coil fins suggests the ability of this unit to cool the space is seriously compromised.			
Solutions			
Have a competent refrigeration mechanic test heat transfer at the condenser coil. If, as suspected, the coil is shot, then replace the coil (In the alternate, replace the entire unit). Cost is for condenser coil.			***$5,000 - $6,500***

b. This unit has had filter issues. Due to the lint problem the air filters absolutely must fit properly to protect the cooling coil from lint build-up.

	Life Safety	Code Compliance to Stay Open	System Efficiency and / or Reliability
Issue			
Improperly-fitted filters will allow lint to deposit on the cooling coil where it chokes off airflow and reduces efficiency.			
Solutions			
Address the lint problem.			***$0 - $0***
Institute Programmed Maintenance on the filters to ensure properly fitted filters that are clean are in place at all times. Assume quarterly changes.			***$800 - $1,100***

c. Reportedly, getting 40° temperature drop in cooling but that's not enough to keep the kitchen cool when it's 95° OAT (this may be due more to reduced airflow than anything else).

d. It is assumed that kitchens are hot places and this kitchen will be hot even with this unit performing at its maximum output.

37. Laundry has its own air handling unit AHU-9. This is a MagicAire unit. No issue reported with this system other than the unsuitability of MagicAire equipment. Proper operation of this unit is particularly important now that the laundry uses ozone.

38. AHU-8 serves basement. This is a reheat system with duct-mounted coils. The air handling unit is a MagicAire. No issues reported with this system other than the unsuitability of MagicAire equipment.

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39. VAV AHU-3 serves east half of core. The AHU and RF are located in the basement by the laundry.

    a. Motors that are powered by VFD's need special ratings to prevent premature bearing failure.

    b. This is the unit that has the chilled water coil freeze-up.

40. AHU-2 (VAV / RH) serves dining room and adjacent spaces. The AHU and F are located in the basement northeast corner.

    a. Just replaced RF-2 motor. Not clear if it was inverter-rated.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Motors powered by Variable Frequency Drives need a special rating to prevent premature bearing failure or winding failure. Motor failure this soon suggests the need for investigation.			
Solutions			
Motor data from the VAV systems should be checked to see if they are "Inventor Rated" or "VFD enabled" or something similar. When existing motors reach the end of their service life, they should be replaced with motors expressly sold as suitable for this use.			***$0 - $0***

41. Magic Aire air handling units typically serve the resident rooms.

    a. These units are not suitable for this application. The manufacturer does not warrant them for this application.

    b. Experienced bowed casing problems due to excessive negative pressure.

    c. Condensate drains not properly installed because there isn't adequate elevation of the pans above the floor. This causes occasional overflows of the pans.

    d. Broke bearing brackets on some of the Magic Aire's.

    e. The original A/E added in-line return fans (RF's) and modified the ductwork as part of a negotiated settlement with the County after the MagicAire units were unable to move required airflows. The "return fans" are more correctly denoted as return air assist fans.

    f. The Magic Aire systems were then re-balanced to meet IDPH airflow requirements.

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g. Access to the Magic Aire units and to the retrofitted return fans is very difficult (some through shower rooms).

h. The air filters in these units are Viskon Corp 16" x 25" x 2" rated for 700 cfm with a MERV rating of 13 (80 to 90% efficiency).

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The MagicAire units are totally unsuitable and are already failing. The booster fans are an unwanted complication.			
Solutions			
Replace the MagicAire air handling units with institutional grade equipment intended for this application. Remove the booster fans. Cost is for construction only. This will be difficult.			***$315,000 - $360,000***

42. Resident room toilet exhaust fans generally okay. There's approximately nineteen of them.

a. There is no energy recovery from these fans.

b. No issues reported with these fans.

43. Range hood exhaust system.

a. Hood is exhaust only (i.e., no short-circuit provisions).

b. Need grease ducts cleaned every six months (hood as well). Had to add at least one access door to the grease duct to allow cleaning.

c. Has Anusl dry chemical fire suppression system.

d. Cooking equipment can now be manually shut down. Two emergency stop switches to shut all equipment off were added after a fire in the wall resulted in an unintended release of the Ansul system chemicals.

e. Grease filters cleaned when needed by a third party (as opposed to kitchen staff).

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	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Clean grease filters keep the exhaust duct and exhaust fan cleaner, which increases safety and reduces the cost to clean the duct and fan.			
Solutions			
Task the kitchen staff with removing, cleaning and re-installing (perhaps nightly) the grease filters at regular intervals.			***$0 - $0***

44. Dryers

    a. Lint screens are cleaned by laundry staff every second or third use. There's a differential pressure switch that senses if the screens are loaded with lint and prevents the dryers from operating until the screens are cleaned.

    b. Staff keeps the lint screens clean since it takes longer to dry the laundry when screens are dirty.

        i. Significant quantities of lint get through the screens, go up the vents, and are deposited on the roof.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The lint emissions on the roof have ruined one boiler and are in the process of ruining the other three. The condenser coil on the RTU serving the kitchen was ruined when attempts were made to get the lint off it. Lint deposition on RTU and MUAU filters is costing serious money to address.			
Solutions			
Install an automatic lint filtration device on the roof to capture the lint. Project cost is listed and is based on scope identified in "Lint Remediation Study" dated December 5, 2012.	***$230,000 - $322,000***		

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c. Staff cleans the fan wheels manually to keep them from getting out of balance.

d. The dryers have provisions to clean the wheels automatically but there is no source of compressed air. This came up during construction and someone made the decision to not buy a compressor for this purpose.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Lack of an air compressor dedicated to keeping the dryer wheels clean and in balance automatically requires valuable staff time to do it manually.			
Solutions			
Provide a dedicated air compressor (DO NOT use the dry sprinkler system air compressor!). Pipe to the dryers per written instructions.			***$3,000 - $4,000***

e. The dryers have internal sprinkler heads to extinguish a fire in the drum. These were never connected to anything. These heads would not be considered part of the required building sprinkler system.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The dryer could be damaged if a fire develops in the drums.			
Solutions			
Provide a water connection to the internal sprinkler head per written instructions. Install a single flow switch and wire to the BAS.			***$2,000 - $2,400***

f. Milnor is manufacturer. Loomis Bros out of Peoria does repair and maintenance.

g. Can't clean the dryer vent "pipe" that goes through the roof since there's no access into those vents. (This is addressed in "lint filtration" above.)

45. Controls

a. Originally installed as Honeywell Tridium direct digital control (DDC) system.

b. System taken over by Entec (Peoria - Steve O'Crasky).

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c. The front end program hasn't been receiving yearly updates and is several revisions behind.

d. There currently is no service agreement between Entec and the County for the DDC system.

e. Operators report they don't have a lot of control. This is a training deficiency as Steve O'Crasky reports the operators have access to setpoints.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Inability to change set-points and control variables reduces the effectiveness of the control system and costs the County money to hire Entec to make changes.			
Solutions			
Work with Entec to train qualified County staff how to change set-points and control variables. Training must be documented for the benefit of future County Staff.			***$0 - $3,000***
	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The programs driving the control system needed to be upgraded at periodic intervals to remain effective.			
Solutions			
Catch up with the various upgrades that have been deferred since the system went into operation.			***$2,000 - $5,000***
	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The HVAC system employs reheat strategies throughout the building. Such systems produce excellent temperature and			

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humidity control but at the cost of high energy consumption for both gas and electricity. Implementing sophisticated control strategies that minimize overcooling and reheating will save considerable dollars.			
Solutions			
Conduct a detailed audit of energy consumption along with all the systems that consume that energy. Identify the costs to implement those strategies. Explore possible incentive payments available from DCEO. Cost listed is for the energy audit.			***$6,000 - $8,000***

f. Entec reported the thermostats in the shower rooms have been problematic. The thermostats contain the circuitry that controls the associated reheat coils. Their location in a humid / wet environment results in corrosion failures and loss of control.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Improperly applied thermostats in the shower rooms fail prematurely in that wet environment.			
Solutions			
Install the controllers in dry areas and use remote bulb sensors in the shower rooms that are suitable for the environment. Seven locations.			***$4,500 - $6,000***

g. Recently lost remote access function. This is thought to be an issue with the County network as opposed to a DDC issue. (Post-Meeting Note: Remote access function has been restored.)

h. Have good graphics.

i. There are no pneumatic controls anywhere in this facility (which is good!).

j. Need training for current staff. This is an ongoing issue. The staff who originally received training are no longer working at the Nursing Home.

k. Have night setback that is not used. This is only valuable in core / staff areas. The residential wings are not suitable for night setback. It should be implemented as an energy efficiency issue.

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	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
An opportunity to save energy is being missed by not employing setback in the core/people areas.			
Solutions			
Put the night setback (aka program control) into operation in these areas.			***$200 - $200***

l. Steve O'Crasky is reportedly hard to reach. This results in delays addressing problems. (Post-Meeting Note: This may be due to the lack of service contract with Entec.)

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Delays in response time antagonizes residents and their families. Delays in response time put the facility at risk.			
Solutions			
Discuss the matter with Entec service representatives and explain expectations.			***$0 - $0***
Assuming a satisfactory relationship exists with Entec hire them on a service contract to periodically test and correct defects.			***$8,000 - $20,000***

46. Electric service is from Ameren.

    a. Underground primary conductors feed a pad-mounted transformer located north of the dock. It's perilously close to an area that routinely floods. Staff reports the transformers have not been flooded to date. It is important that site drainage be addressed to prevent problems.

    b. Service conductors from the transformers are conduit and wire underground to main switchboard.

47. The Main Switchboard (MSB) is in the basement.

    a. 2500 amp, 277/480 volt, 3 phase, 4 wire

    b. Has a single main breaker.

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c. All breakers, including the main, have ground fault protection.

48. Post-Meeting Note: Staff reports lightning damage August 25 - 26, 2014 that involved delayed egress door control circuit boards, nurse call system and fire alarm system door releases. These are all noted as fed from 120 / 208 volt panels.

a. No building is immune to lightning strikes or lightning-induced failures.

b. Near-misses or cloud-to-cloud strikes can induce voltages in building wires and systems without ever touching them.

c. Voltage spikes caused by lightning on incoming power lines are hard to catch / clamp before they travel to vulnerable systems.

d. The Main Service Board (MSB) distribution panel appears to have a Transient Voltage Surge Suppressor (TVSS) that was intended to intercept surges coming in from the utility.

e. The sprawling one-story floor plan of the facility guarantees long lengths of electrical feeders downstream of the MSD that are vulnerable to induced over voltage.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Lightning-caused voltage surges cause thousands of dollars in damage.			
Solutions			
Search for a pattern of damage. Make sure stepdown transformers are properly grounded. Make sure the neutrals of the 120 / 208 volt panels are properly bonded. Assuming all is well install high quality TVSS devices on the 120 / 208 volt panels that feed the affected loads. These appear to be the "CCK" panels. The TVSS devices should be high quality similar to Square D "Surelogic". Assume six panels.			***$6,000 - $9,000***

49. There are three open-transition Automatic Transfer Switches (ATS) in the Main Switchboard. These correspond to the three branches of emergency power.

a. Critical Care branch

b. Life Safety branch

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c. Equipment power branch

50. Post-Meeting Note: On September 11, 2014, the generator was started and run under load in a scheduled test. Staff experienced great difficulty transferring back to utility power. GFI-protected main breakers for both the life safety and the critical care branches tripped reportedly before reset could be accomplished successfully. Nurse call system components (transformer in the power supplies) were damaged in this process.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
This is thought to be a problem with the open-transition automatic transfer switches. It appears utility power is re-established slightly out of phase with generator power.			
Solutions			
Involve an electrical engineer and the ATS manufacturer (Asco) to develop a thorough understanding of the problem and how to fix it. Worst-case this would involve replacing the three automatic transfer switches with		***$3,000 - 60,000***	

51. When the building was put into operation, Coleman Electric had to reset the sensitivity on the Life Safety ground fault interrupter to prevent nuisance tripping but it didn't solve the problem completely. This needs to be investigated and fixed.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
"Nuisance tripping" means the circuiting takes the life safety power off-line for no apparent reason. This compromises the safety of all the building occupants.			
Solutions			
Hire a qualified electrical contractor to systematically evaluate everything that is fed by the Life Safety panel LSC. Find the offending load and fix it. (It may be a setting issue.)		***$400 - $2,400***	

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Perform a gfi coordination study to ensure a problem downstream of the branch switches in the Main Switchboard doesn't take the main switch (i.e. the entire building) off-line.		***$1,200 - $3,000***	

52. 750 KW Generator is located outside, north of the dock.

    a. Diesel with underslung fuel tank.

    b. Load tested once a year.

    c. Exercised once a month for thirty minutes.

    d. ATS indexed to put loads on the generator.

    e. Need to test batteries monthly.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
The lead/acid batteries require maintenance while the gel cell batteries are "maintenance-free."			
Solutions			
Replace the lead/acid batteries with gel cell batteries when the lead/acid batteries reach the end of their life.			***Completed 01/15/15***

    f. The engine is reportedly quite loud.

53. Kitchen equipment occasionally trips on overload or gfi. This is not thought to be a major problem.

54. Need training on VFD's (Variable Frequency Drives). Staff lacks the training to set up, adjust or troubleshoot them.

    a. The drives power numerous pieces of equipment that are essential to building operation.

    b. The VFD's are tied into Entec DDC system.

    c. The VFD's are manufactured by GE. It appears most of them are built into motor control centers.

    d. Bill Heinz from Davis-Houk Mechanical normally does maintenance on the VFD's.

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	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Inability of County staff to troubleshoot the drives increases response time to problems and requires the County to rely on outside vendors.			
Solutions			
Obtain documentation on all the drives. Have a product service representative come to the site and train County staff. Document the training for future use.		***$400 - $800***	

55. Lighting is primarily 277 volt with T8 lamps.

    a. No occupancy sensors were installed as this building was constructed prior to adoption of energy codes that now require occupancy sensors.

56. Emergency lighting is provided by standard light fixtures that are on 24 x 7. These fixtures are powered by the Life Safety branch of the generator.

57. CCTV Surveillance Camera system (installed by Bennett Electronics).

    a. Camera coverage at exterior doors.

    b. Exterior camera coverage at delayed egress doors.

    c. Exterior camera coverage in courtyard.

    d. Camera coverage in kitchen.

    e. System is currently full (i.e., won't accept new cameras). There are 14 cameras now.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Want 22 new cameras.			
Solutions			
To serve.		***$83,000 - $90,000***	

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f. System is monitored at:

i. Front door reception area.

ii. Unit 2 nurse desk.

iii. Admin area.

iv. Maintenance office.

v. Control room (not sure where this is).

g. Records are kept for twenty-eight days.

h. Preparing for wireless.

58. Replace outdated analog CCTV system with new IP-based (Internet Protocol = IP) system that provides better access and ability to add additional cameras. Replace the lead end. Provide an encoder to incorporate some of the existing cameras. Replace the exterior PTZ (Pan Tilt Zoom) cameras with IP-based models. Provide certain new cameras. Cost is based on Bennett October 15, 2014 proposal.

59. Door alarm system (installed by Bennett Electronics).

a. All exit doors are alarmed.

b. Crash bars with microswitches are very expensive.

c. Have card key readers on certain doors.

d. Craig Terven prints the cards.

e. Delayed egress doors tied into this system.

f. Certain doors have physical keys.

g. The IdentiPass Software is functional, but hasn't been updated. It is now outdated and can't be replaced. (Per Bennett October 15, 2014.)

h. The series 9000 door hardware is now obsolete as well according to Bennett October 18, 2014. Apparently the hardware can be used in a new system.

i. No back-up at this point. If the system crashes the control function is lost.

j. Running on original computer. It is outdated as is the computer operating system.

k. The entire door alarm system needs updated with software that allows the system to run on the County network.

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	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Outdated software and the inability to run that software puts the system at risk.			
Solutions			
Replace head end controller and field panels with new Premisys system. Re-use all field equipment, locking hardware, power supplies and all existing field cabling. Provide new software with license to the County. Software must be compatible with any "standard" County-owned computer. Provide training. Cost is estimated in the absence of a proposal from Bennett.		***$40,000 - $60,000***	

60. Call buttons (installed by Bennett Electronics).

a. It's a Rauland Responder 4000 system.

b. Hard to troubleshoot.

c. There is no audio capability. The system has the ability to incorporate speakers but speakers were not specified according to Bennett.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Lack of communication (i.e. speakers) requires staff to physically travel to the call source to respond. Much time is wasted.			
Solutions			
Change out the existing stations for new audio bed stations and change out the corridor lights to allow staff to respond appropriately and effectively. Reprogram the system and provide training. Cost is based on Bennett October 15, 2014 proposal.			***$77,000 - $77,000***

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d. Pushbutton in room lights up on corridor wall and at nurse station.

e. Pullstring in bathroom. Cords can be pulled out of the wall and not replaced properly.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Didn't buy software module to track history of response time. This could be important if a resident or family member brought the County to court over response time allegations.			
Solutions			
Purchase the software module to track response time and keep records. Cost is based on Bennett October 15, 2014 proposal.			***$5,200 - $5,200***

61. Copper system phone okay (Champaign Telephone Company).

a. E-phone (Emergency Phone) in parking lot needs checked weekly.

b. Ditto E-phone in elevator.

c. E-phone needs to go to 911 call center (does it?).

62. Fiber optic loop okay. The loop communicates with virtually all units of government in Champaign County.

63. Data network run by County IT (Information Technology) Department (Andy Rhodes).

a. There is no WiFi in the building.

b. Want to go wireless. Wheels are in motion.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
WiFi is an expected amenity in facilities like this. Family members will use it as much as the residents.			
Solutions			
Install WiFi in the building.			***$26,000 - $26,000***

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64. CATV (installed by Premier Sound) Andy _____

a. Direct TV via dish.

b. Forty boxes correspond to forty channels.

c. The Direct TV equipment is obsolete.

d. Replacing obsolete boxes with obsolete boxes now.

	Life Safety	***Code Compliance to Stay Open***	***System Efficiency and / or Reliability***
Issue			
Obsolete equipment will soon be impossible to obtain. This will take the TV system down station by station.			
Solutions			
Replace the obsolete equipment with new updated equipment. Cost has been represented as approximately $10,000			***$10,000 - $10,000***

65. Can broadcast building and event schedules.

a. Senior Net.

66. Oxygen is held in individual tanks.

a. Third party transfers to small bottles for use by residents.

Totals	$272,750 - $368,150	$441,800 - $581,600	$756,303 - $867,800

Jim Gleason

JNG/smh

cc: 6846 Corr

Report Reformated Revised 021715.JNG.wpd

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GHR Engineering Study of Nursing Home Mechanicals - Physical Plant Prioritization

Project	Priority 1	Priority 2	Priority 3	Cost	GHR Categories
1. Smoke and Fire Dampers		$ 10,000.00		$ 10,000.00	2
2. Sprinklers		$ 35,300.00		$ 35,300.00	2
3. Fire Alarm			$ 123,000.00	$ 123,000.00	3
4/5. MEP Training and Operation Manuals			$ 21,000.00	$ 21,000.00	3
6. Room Number Project			$ 2,200.00	$ 2,200.00	3
7. Pressurized Back Flow Preventers				$ -	
8. Water Softener			$ 9,000.00	$ 9,000.00	3
9. Laundry Sanitization - Ozone Detection			$ 1,000.00	$ 1,000.00	3
10. Water Heaters	$ 105,000.00			$ 105,000.00	2
11. Thermostatic Mixing Valves	$ 24,250.00			$ 24,250.00	1
12. Hydro Therapy Tubs	$ 3,800.00			$ 3,800.00	1
13. Plumbing Fixtures				$ -	
14. Sewage Ejector		$ 1,000.00		$ 1,000.00	2
15. Sump Pump		$ 1,000.00		$ 1,000.00	2
16. Interceptors				$ -	
17. Oil/Water Separator			$ 2,700.00	$ 2,700.00	3
18a. Storm Water Drainage		$ 8,500.00		$ 8,500.00	2
18b. Rain Gutters		$ 127,600.00		$ 127,600.00	2
19. LEED				$ -	
20a. Drain Waste and Vent Piping	$ 9,000.00			$ 9,000.00	1
20b. Basket Strainers	$ 4,100.00			$ 4,100.00	1
21. Walk-in Freezer and Cooler - **COMPLETED**				$ -	3
22b. Water Piping Corrosion			$ 6,000.00	$ 6,000.00	3
23. Natural Gas				$ -	
24i. Boilers - Carbon Monoxide Sensors	$ 2,800.00			$ 2,800.00	1
24b. Boilers - Hot Water Reset			$ 9,000.00	$ 9,000.00	3
24c. Boilers - Replace four units	$ 380,000.00			$ 380,000.00	3
25. Chemical Treatment of Hot & Cold Water			$ 14,400.00	$ 14,400.00	3
26. Hot Water Heat Pumps (two)				$ -	
27. Hot Water Strainers				$ -	
28. Spot Heating				$ -	
29. VAV/RH			$ 21,000.00	$ 21,000.00	3
30a. Residence Room Reheat Coils			$ 12,000.00	$ 12,000.00	3
30c. Address two rooms w/ proper temps			$ 7,000.00	$ 7,000.00	
31. Two VAV Air Handling Units				$ -	
32c. Chiller - Replace Compressor		$ 53,000.00		$ 53,000.00	2
32i. Chiller - Flush water and add glycol		$ 21,000.00		$ 21,000.00	2
32j. Chillers - Clean Coils Annually	$ 2,200.00			$ 2,200.00	1
33. AHU-3 - Repair		$ 3,000.00		$ 3,000.00	2
34. AHU-5B - Trouble Shoot Electricals - **COMPLETED**				$ -	3
35. Kitchen Heating-only MUAU - quarterly filter change			$ 1,100.00	$ 1,100.00	3
36a. Kitchen RTU-1			$ 6,500.00	$ 6,500.00	3
36b. Annual Maintenance Program			$ 1,100.00	$ 1,100.00	3
37. Laundry AHU-3				$ -	
38. AHU-8				$ -	
39. VAV AHU-3				$ -	
40. AHU-2 (VAV/RH)				$ -	
41. Magic Air Handling Units - 14 units			$ 360,000.00	$ 360,000.00	3
42. Resident Room Toilet Exhaust Fan				$ -	
43. Range Hood Exhaust				$ -	
44b. Dryers - LINT PROBLEM	$ 322,000.00			$ 322,000.00	1
44d. Dedicated Air Compressor			$ 4,000.00	$ 4,000.00	3
44e. Water Connection Switch			$ 2,400.00	$ 2,400.00	3
45. Controls - ENTEC BAS			$ 42,200.00	$ 42,200.00	3
46. Electric Service				$ -	
47. Main Switch Board				$ -	
48. Lightning Damage			$ 9,000.00	$ 9,000.00	3
49. Automatic Transfer Switch				$ -	
50. Generator Tripping - ATS		$ 60,000.00		$ 60,000.00	2
51. Life Safety Ground		$ 5,400.00		$ 5,400.00	2
52. Generator - Replace Batteries - **COMPLETED**				$ -	
53. Kitchen Equipment Tripping				$ -	
54. Training on VFD		$ 800.00		$ 800.00	2
55. Lighting				$ -	
56. Emergency Lighting				$ -	
57. CCTV Surveillance System		$ 90,000.00		$ 90,000.00	2
58. CCTV System - included in CCTV Surveillance Quote				$ -	
59. Door Alarm		$ 60,000.00		$ 60,000.00	2
60. Call Buttons			$ 82,200.00	$ 82,200.00	3
61. Copper System Phone				$ -	
62. Fiber Optic Loop				$ -	
63. IT Network			$ 26,000.00	$ 26,000.00	3
64. CATV			$ 10,000.00	$ 10,000.00	3
65. Internal TV - Schedules				$ -	
66. Oxygen Transfer	$ -	$ -	$ -	$ -	
TOTALS	$ 853,150.00	$ 476,600.00	$ 772,800.00	$ 2,102,550.00	

	Nursing Home - Expense Projection FY 2015 through FY 2024										
GHR Number	**Project**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**
21	Walk-in Freezer and Cooler - **COMPLETED**										
34	AHU-5B - Trouble Shoot Electricals - **COMPLETED**										
52	Generator - Replace Batteries - **COMPLETED**										
10	Water Heaters	$105,000.00									
24b	Boilers - Hot Water Reset	$9,000.00									
24c	Boilers - Replace four units	$380,000.00									
11	Thermostatic Mixing Valves		$24,250.00								
12	Hydro Therapy Tubs		$3,800.00								
14	Sewage Ejector		$1,000.00								
15	Sump Pump		$1,000.00								
18a	Storm Water Drainage		$8,500.00								
18b	Rain Gutters		$127,600.00								
20a	Drain Waste and Vent Piping		$9,000.00								
20b	Basket Strainers		$4,100.00								
24i	Boilers - Carbon Monoxide Sensors		$2,800.00								
32c	Chiller - Replace Compressor		$53,000.00								
32i	Chiller - Flush water and add glycol		$21,000.00								
33	AHU-3 - Repair		$3,000.00								
50	Generator Tripping - ATS		$60,000.00								
51	Life Safety Ground		$5,400.00								
1	Smoke and Fire Dampers			$10,000.00							
22b	Water Piping Corrosion			$6,000.00							
25	Chemical Treatment of Hot & Cold Water			$14,400.00							
29	VAV/RH			$21,000.00							
30a	Residence Room Reheat Coils			$12,000.00							
30c	Address two rooms w/ proper temps			$7,000.00							
36a	Kitchen RTU-1			$6,500.00							
63	IT Network			$26,000.00							
48	Lightning Damage				$9,000.00						
8	Water Softener					$9,000.00					
17	Oil/Water Separator					$2,700.00					
60	Call Buttons					$82,200.00					
2	Sprinklers						$35,300.00				
57	CCTV Surveillance System						$90,000.00				
3	Fire Alarm							$123,000.00			
59	Door Alarm							$60,000.00			
64	CATV							$10,000.00			
4/5	MEP Training and Operation Manuals								$21,000.00		
44b	Dryers - LINT PROBLEM								$322,000.00		
6	Room Number Project									$2,200.00	
68	Tuck Pointing									$ 45,000.00	
	Multiple-Year Projects										
32j	Chillers - Clean Coils Annually	$2,200.00	$2,200.00	$2,200.00	$2,200.00	$2,200.00	$2,200.00	$2,200.00	$2,200.00	$2,200.00	$2,200.00
35	Kitchen Heating-only MUAU - quarterly filter change	$1,100.00	$1,100.00	$1,100.00	$1,100.00	$1,100.00	$1,100.00	$1,100.00	$1,100.00	$1,100.00	$1,100.00
36b	Annual Maintenance Program	$1,100.00	$1,100.00	$1,100.00	$1,100.00	$1,100.00	$1,100.00	$1,100.00	$1,100.00	$1,100.00	$1,100.00
41	Magic Air Handling Units - 14 units			$72,000.00	$144,000.00	$144,000.00					
67	Parking Lots			$ 95,000.00				$ 65,000.00			
	TOTALS	**$498,400.00**	**$328,850.00**	**$ 274,300.00**	**$157,400.00**	**$ 242,300.00**	**$129,700.00**	**$262,400.00**	**$347,400.00**	**$51,600.00**	**$4,400.00**
	Totals are based on 2015 dollars. 2016 through 2024 have been increased by an estimated CPI of 2%		$ 335,427.00	$ 279,786.00	$ 160,548.00	$ 247,146.00	$ 132,294.00	$ 267,648.00	$ 354,348.00	$ 52,632.00	$ 4,488.00