Guaranteed Energy Savings Project
Southeast CERT Workshop November 1, 2018
Introductions
Minnesota State University Project Team

Front Row: Commissioner Looman, Greg Borchert (MSU), Paul Corcoran (MSU), Pete Berger, DOC
Back Row: Steve Ardolf (MSU), Todd Kadoun (Ameresco), Terry Lewis (MSU), Dawn LaSota (Ameresco), Kevin Morgan (MSU), Terry Webster (DOC), John Neville (Ameresco)
The Project Team

- Minnesota State University, Mankato
- Minnesota State System Office
  - Board approval of contract
- Department of Commerce
  - Master contract – coordinator of process
- AMERESCO project management team
  - Audit team
  - Design team
  - Implementation/construction team
Scope of the MSU,M Project

• $7,173,548 Contract financed payback 18 years (2.43%)

• 2 million GSF campus interior lighting, VFD’s, chilled water control, boiler controls

• All outdoor lighting – Street, parking lot and sidewalks
Basic concept and process

• ESPC is a powerful tool that:
  • uses private capital to;
  • reduce energy use and greenhouse gas emissions;
  • addresses deferred maintenance needs and;
  • creates jobs in the process

• Energy savings pay for the facility improvements over time (2017 statute 16C.144)

• Maximum length of agreement is 25 years
Basic concept and process

- Selection of Prime contract is an RFP process
- Pro Forma based on facility audit and estimates
- Final agreement is based aggregate pay-back
- Sub-contractors are competitively bid (by prime)
- Residual funds are returned to the University
Basic concept and process

Utility cost $4.3 Million

Utility budget $4.3 Million
MSU Mankato Results

• Ameresco selected via RFP as prime contract
• Competitively bid sub contracts came in $1.1 million under estimate (mostly lighting)
• Guaranteed 5,983,084 kWh reduction
• Over $500,000 in rebate funds made available to address other deferred maintenance
• Annual CO2 reduction of 4,434 metric tons
MSU Mankato Notable Results

• Parking lot lighting improved – dual level lighting for extra savings and security.
MSU Mankato Notable Results

- Clean Energy Award – March of 2018
MSU Mankato – The Process

• Contact Peter Berger in Department of Commerce.
• RFP to select ESCP provider. (MSU - Ameresco)
• Preliminary Audit – general look at all opportunities.
• Investment Grade Audit – detailed inventory and analysis on selected opportunities. (MSU - $300,000)
• Lease purchase Agreement – for selected items and payback period. (MSU - $8.1 million and 18 years)
MSU Mankato – The Process

• Bid document development and campus input.
  • Target light levels (Illuminating Engineering Society) IES Standards.
  • Selected 4000 Kelvin color. (cool white)
  • Lighting level for outdoor lighting. (.5 fc average)
• ESCO vendor performs bidding – open book
• Project moved into implementation.
  • October 2016 to October 2017. (on schedule)
  • Academic buildings predominately evening work.
MSU Mankato – The Process
Each week we sent a notice to the building of plan. Each day the contractor showed completed areas.
MSU Mankato – The Process
MSU Mankato Results

• Guaranteed annual energy savings amount
  • 5,983,084 kWh and 2,048 therms

• Additional benefit during summer months due to reduced cooling load – 242 Tons

• Final project cost $7,173,548
  • Financed at 2.43% for 18 years
MSU Mankato Results

• Very few complaints - (over 2 million square feet and 2600 different rooms) only a few issues.

• General perception is that the lighting improved with the 3500K to 4000K color change.

• Fluorescent lamp disposal process eliminated.

• Difficult to access fixtures will have long life LEDs.

• Reduced labor for multiple trades (electricians, repairmen, custodial).
MSU Mankato Results
MSU Mankato Results

- Schellberg Gym
- Taylor Center
- Bresnan Arena
MSU Mankato Results – Challenges

• Few complaints were usually “lights are too bright”.
• Not zero maintenance – still need cleaning.
• Lease language not flexible enough for scope change. Bid savings could not be expanded past lighting.
• Requests for dimming capability - would have factored in dimming for classrooms from the start.
Questions?