Kickoff with Steering Committee
Utility and Communication Infrastructure
3/23/11

Present: Nancy Nusbaum, Perry Moore, Bill Nance, Juan Guerra, Sheri Lara, Mike Krzywonski, Gordie Green, Chris Rice, Catherine Sckerl

Consultants: Ray DuBose, Jerry Schuett, David Haley

The following are notes taken from this meeting.

Associate Vice President for Facilities presented the following:

- His staff compiled all of studies done in the last 5-10 years into one Utilities Master Plan
  - Studies by: Carter Burgess, Shaw Smith, and Goetting
  - Helped to chart the future for growth – hot water, steam, electric, chilled water, natural gas, condensate
- Created a 10 year deferred and planned maintenance list to include in the MP 2, Coordinating Board requires utility infrastructure be included in the 5 year list of projects
- Bath Engineering was commissioned to do a management and technical audit focused on all the plants - Harris, Cogen, East Chill Plant, and standalones
  - They assessed the condition of the equipment and capabilities
  - They looked at management capabilities – for today’s discussion, only the technical audit will be addressed
- Currently have no model of thermal capacity
- Commissioned EEA to assess – chilled water, steam and condensate systems
- Created a hydraulic model of thermal system
- Will be doing same for potable water
- This helps to identify what the future should look like
- Developed project schedule in Utility Master Plan which reflects deferred maintenance and capital schedule
- Developed summary of equipment replacement, repair and upgrade
  - Have already started improvements
- Keeping in mind sustainability
  - Applying LEED standards but not seeking certification
  - Using a holistic approach
- Electrical Infrastructure
  - Setting at 18 MW demand – PAC will need 3.5 MW
  - Adding an Engineering building, Music building and Residence Halls will require 32 MW demand over next 5-6 years
  - Working with City of San Marcos – have two primary feeders of 800 amp each; working to get two more feeders with 800 amps service each
  - Have no redundancy – if lose one substation will be problem, if lose two substations major problem (Achilles heel).
  - Have 15KV system and no plans to upgrade.
  - Have an Upgrade Project in the works designed by Bath Engineering, will be replacing 25% of transformers on campus and switch
- Power demands need to be included in the cost of the building
Electrical Upgrade Project will cost $11.5 million – not for new capacity but for failure and pending failures, only for main campus and not Round Rock

Cogen has been shut down since 2007, not economical to keep, only one unit, not two, so when down for maintenance every 1000 hours lost its cost efficiency, need to determine if even want to cogenerate in future and/or if city doesn’t have capacity.

Chilled Water – need to increase capacity 5K tons all three plants have room to add

Steam System – nearly at near peak capacity, need additional boiler capacity with new residence halls

See “Utility Master Plan Presentation: Texas State University-San Marcos Facilities Department”

Provost - Projections need to be looked at very closely as we will grow in enrollment but not buildings. If we grow to 40,000 students we will have to do a lot of online courses because no buildings are likely in the future because of insufficient funding (UNC Chapel Hill - charges the users, Provost pays for academic buildings, but needs supplementary funds since legislature doesn’t provide enough)

Assessment overall of steam distribution system is very poor, 60% - 70% needs to be replaced

Have a lot of contamination of potable water

Contaminated condensate eats up steel

Only recover 50-60% condensate; need to get to 75-80%, used for housing and dining primarily and space heating from October to March, small loads in summer but provide year long

Chillers run year round, at least one chiller at all three plants

East Chill – provides steam, convert to hot water, provides space heating to JCK and few other buildings

If we are going to make an investment, need to focus on steam first

Plan to remove standalone buildings and tie into system – steam and chilled water

NALCO chemicals on campus – working with other providers to get some competition to do water assurance and water quality testing, do different areas with different providers (Chapel Hill uses NALCO, does own water quality testing)

Need to add another cooling tower at East Plant but currently have no plans to add to the plant, serves JCK, Education, Jowers

South Chill plant will serve new buildings

Cannot get to Tier I Data Center because of flood plain, even if Data Center is on 7th floor, all supporting equipment (emergency generator) and east chill plan are in 50 year flood plain

12-13 transformers in fail mode based on oil tests

Well water good quality but hard, have to treat, appears to be enough water available for Texas State but need to conserve and manage, be better stewards, not cost driven

Issues and Constraints

Funding – how do we pay for something we know we need

Have System Bonds instead of institutional bonds

Old Debt expiring will take care of new debt but already allocated

Looking at energy performance contact as possible way to finance, looked at it in the 90’s, have been taking care of things over 10 years on our own
❖ Shouldn’t be prioritizing by distribution system, should be prioritizing distribution of funds across systems
❖ Competition for tuition dollars will be intense
❖ No pay increases last year, faculty last in state in terms of salary, least amount of staff in state