City of Chandler
Municipal Utilities Dept.
Efforts Regarding Energy Audits
For ASU GIOS SCN Solar & Energy Efficiency Workgroup - Robert Goff, R.G.
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Caveats / Disclaimers

- This is an Overview – intentionally non-inclusive
- Everything is subject to change in the future
  - Snapshot of a work in progress
  - One of many possible paths
- Designed for discussion purposes
- Reflects Bob’s thoughts at the moment of writing
  - Not necessarily what anyone currently associated with Chandler currently thinks or supports
- Not an official Chandler document
  - Is just a formatted information sharing tool
Audits

• First formal Energy Audit for Department – HDR 2004
• Listing of facilities – matched with electrical accounts
• List of recommendations by facility type
Audit - findings

• Bills went to accounting
  – few tracked individual facility usage
  – was difficult to get power usage information

• Some facilities were billed at wrong rate
  – Pumps on SRP E-36, not E-47

• Load factors and max KW were not tracked
  – Determines billing rate for next several months
Follow-up to Energy Audit

• Master Plan Modeling
  – Looked at all equipment and pump curves
• Well and pump efficiency testing
  – All pumps tested quarterly
  – Have replaced inefficient equipment
• Monthly tracking and reporting on energy use for all MUD facilities
• Are developing optimization strategies
Citywide Energy Tracking

• Carbon footprint calculation
  – Every facility looked at annually
  – Internal energy reduction goals

• Building and Facilities group routinely tracks energy bills
  – Also pays bills out of dedicated budget

• Everyone’s energy usage posted on intranet

• $2.2 million EECBG grant to address major issues
Investment Grade Audit

• In 2009 APS Energy Services conducted investment grade audits on 31 municipal buildings (630,120 sqft)
  – 90% as of 1/25/10

• Proposed variety of energy conservation measures
  – Lighting and mechanical upgrades, solar, direct digital control systems
  – Option to finance improvements thru APSES
Conclusions / Recommendations

• Track Energy usage in-house
  – Pays for itself; and is the first thing auditors ask for

• Understand your rate plans
  – Utilities tend to work with large customers

• Most corrections are simple and straightforward

• Include energy efficiency, lifecycle costs, return on investment and sustainability into scopes of work and bid documents.