



City of Knoxville

Energy & Sustainability Initiative

Budget Retreat

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Sustainability Leadership



- Reduce vulnerability to rising energy prices
 - Reduce local contribution environmental harm
 - Provide transportation choices and reduce congestion
 - Preserve and protect natural beauty
 - Pursue economic development
- Quality of life
- Competitiveness
- Stewardship





Energy Services Performance Contract



an independent energy solutions company



- Investment grade audit underway – results and project development plan due in May.

Facilities

- ~ 100 Buildings
- ~ 40 Parks
- 3 Golf Courses
- Streetlights

Utilities

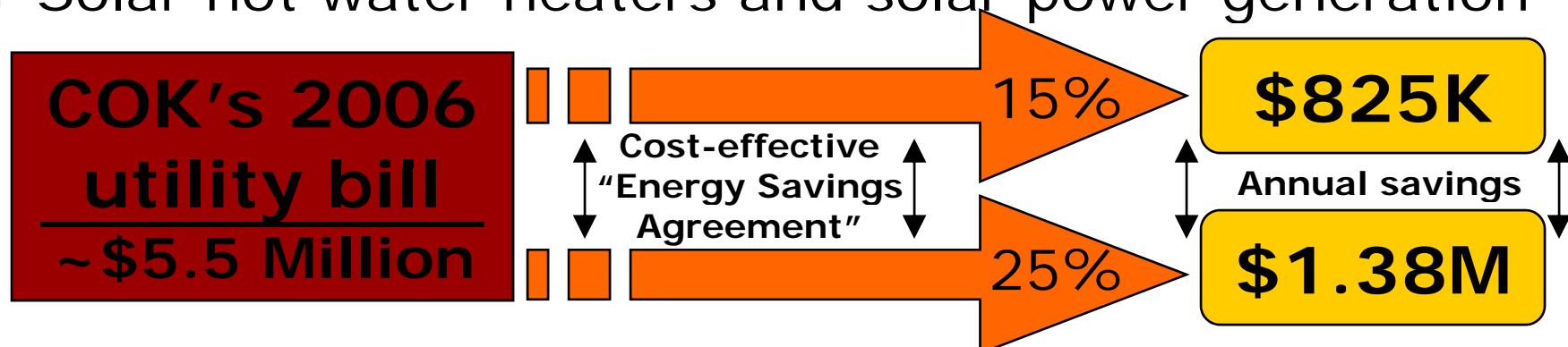
- Electricity
- Natural Gas
- Water
- Wastewater



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Potential ECM's and benefits

- Lighting retrofits and upgrades
- Water conservation upgrades
- Energy controls – HVAC, programmable thermostats, vending machines
- Replace inefficient boilers, chillers, pumps
- Building envelope – windows, doors
- Water treatment optimization at city pools
- Biogas digester
- Solar hot water heaters and solar power generation





2009 Economic Stimulus Opportunity

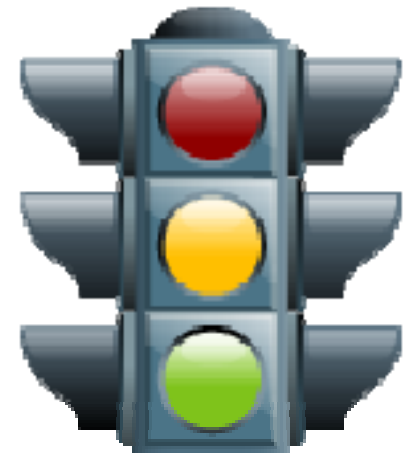
- \$Billions available for energy efficiency and renewable energy.
- Project is “shovel ready” – construction to begin August 2009.
- ~200 jobs (Chamber estimate, *Implan* model) – includes direct, indirect and induced.

Lots of questions remain about how funds will be allocated and which projects will be eligible.



LED Traffic Signals

- Invested \$781,500 from the '07-'08 budget surplus to fund LED signals.
- ~45% complete... anticipate completion Summer 2010.
- Use 90% less energy. When complete, energy savings ~\$280K/year plus maintenance savings.
- Reduce 3.8 mill kWh/year (roughly equivalent to 316 households).
- Reduce city government carbon emissions by 3.5%



Coming soon to downtown... pilot project with EPRI, TVA, KUB to field test and certify LED streetlights.



Downtown Transit Center LEED-NC



Knoxville Station Transit Center
Knoxville, Tennessee

***A view from the parish hall of
First Presbyterian Church looking east***

Intermodal Associated Architects
a joint venture of IAA, Inc. and MIMM Inc.
with Von Grossmann & Co.

12/06/2007



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Selected Features LEED-Silver

- 42% better energy performance versus ASHRAE baseline.
- 30% water use reduction.
- Geothermal and solar energy.
- Materials – recycled content, regional, non-toxic.
- AVL and diesel particulate filters.
- Exhibit highlighting archeology, sustainable building components.



KAT's Transit Development Plan will provide short-term guidance plus long-term vision for enhancing public transit in Knoxville.



City Vehicle Fleet

- Putting tools in place to better manage fuel consumption.
 - Fuel data system – automatically downloads mileage.
 - AVL system – route analysis, idling reduction.
 - Design fuel delivery systems so that new fuels can be added at lower cost.
 - All new vehicles are flex-fuel... can use E85.
- “Right-sizing” vehicles for their purpose.



Recycling

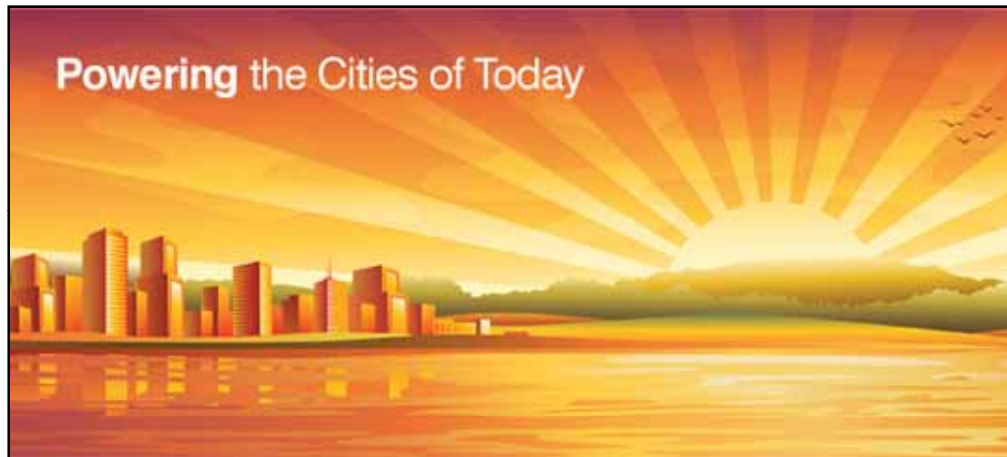


- Single-stream recycling in CCB.
 - Partnering with PBA and County.
- Selected by Climate Group and American Beverage Association for “Model City” initiative.
 - Goal: Improve recycling participation and diversion of recyclable materials city-wide.
 - \$200,000 in technical services: public option survey, waste audit, financial analysis. Results expected in Spring.

The global economic downturn has resulted in a total collapse in the market for recycled materials.



Knoxville Solar America Cities Program



Knoxville's Goals:

To facilitate mainstream adoption of solar power. Achieve local deployment of 3 MW by 2015.

- High visibility demonstration projects
- Workforce development
- Public outreach
- Research and analysis to reduce barriers to deployment.





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Solar PV and the ESPC



- TVA – December solicitation for clean power resources
- 1.2 MW
- Foot in the door



Energy Affordable Housing

- Building only Energy Star certified new homes (20-30% more efficient).

CAC and KHP built seven new LEED-gold affordable homes through CD's blighted properties program.



Economic Stimulus opportunity: weatherization and efficiency



Growing Inward

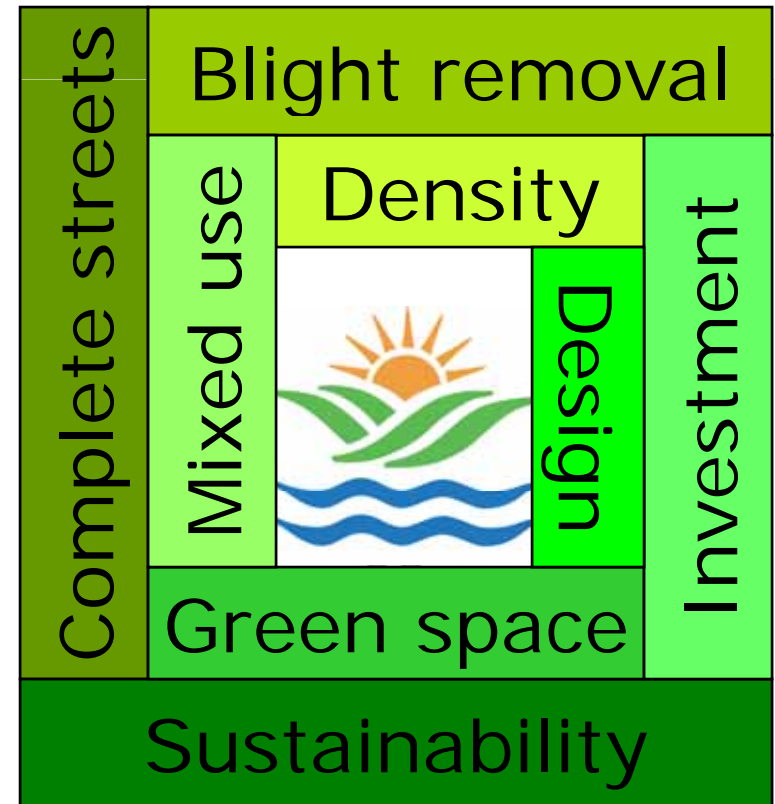
Disinvestment



to

Investment

- Downtown
- South Waterfront
- Cumberland Avenue
- Downtown North
- Magnolia-Warehouse District





Other Projects

- Parks and greenway development
- Storm water management
- Environmentally-preferable purchasing
- International Energy Code enforcement
- Green Power Switch®
- Green energy jobs focus
- "Brown Bag, Green Book"
- Electric vehicle charging infrastructure

Next steps include continuing implementation of existing programs, releasing inventory analysis and strategic planning reports, setting targets, bringing Task Force together for ongoing planning and implementation assistance.