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## Elements of Knoxville Energy & Sustainability Strategic Plan

### City Government

#### Lighting

- Complete traffic signal transition to LEDs by target date
- Conduct pilot study of LED streetlight technology with TVA, KUB, EPRI.

#### Buildings and Facilities

- Energy Services Performance Contract
  - o Anticipated benefit: 15-25% energy/water cost reductions
  - o Achieve Energy Star where feasible.
  - o Publicize benefits, share RFQ / RFP and lessons learned with other interested entities.

#### Fleet

- Improve fuel management and route management systems to reduce fuel consumed, miles driven, and number of vehicles.
- Select most efficient vehicle that adequately serves job and maintenance requirements.
- Purchase hybrid, alt-fuel, electric vehicles, where feasible
- Evaluate new sources of clean fuel, i.e. cellulosic ethanol (UT-ORNL project)
- Phase out or retrofit pre-2007 diesel engines

#### Employee Commute

- Join SmartTrips – evaluate alternative commute incentive options.

#### Garbage & Recycling

- Institute comprehensive recycling program in City-County Building. Set waste-reduction goal. Replicate successful model in other facilities.
- Develop protocol for recycling at city-sponsored special events.

#### Materials

- Build sustainability and efficiency priorities into purchasing practices. Develop educational materials about environmental choices city staff can make at the department level. Export purchasing protocol to other interested entities.

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## Knoxville Community Opportunities

### Buildings

- Build market demand for certified green buildings in Knoxville.
  - o Require LEED certification for municipal buildings – starting with Downtown Transit Center (silver certification)
  - o Determine incentive structure for private projects
    - TIFs, PILOTs, partial fee rebates
      - new construction – LEED
      - renovation – Energy Star
  - o Educate professionals and customers about benefits
  - o Promote energy efficiency resources available through TVA and KUB

### Homes

- Grow recognition of Home Energy Rating System (HERS) measure within Knoxville residential real-estate market as indicator of value.
- Generate local participation in DOE's Building America Challenge. Set local targets for numbers of new and renovated High Performance Homes (HERS 70 and above) and Net Zero Energy Homes.

### Energy Affordable Homes

- Achieve Energy Star rating for city-funded affordable homes.
- Conduct pilot building project – 7 LEED certified affordable homes.
- Develop and institutionalize protocol for energy efficient construction, renovation, weatherization and renewable energy in local affordable homes.

### Solar Cities

- Install and exhibit solar in downtown transit center and south waterfront near-zero energy home. Improve on-site interpretation at Ijams Nature Center
- Build work force training program for installers at Pelissippi State. Provide training for Knoxville, Knox County, KUB inspectors and codes officials.
- Develop well-designed, clearinghouse website. One-stop shopping for Knoxville community on renewable energy & energy/water efficiency information, incentives, resources, contractors, etc.
- Develop educational materials and workshops for the general public on solar technology.
- Compile list of local businesses in renewable energy/energy efficiency industries. Conduct survey regarding business development hurdles.
- Evaluate potential for power purchase agreements.
- Analyze current market conditions and available incentives. If financial barriers prevent market growth, consider the need for additional incentive programs.

### Green Power Switch

- Build demand for green power within Knoxville. Establish overall switch target – use challenges, outreach, education to achieve target.
- Generate local participation in TVA's Generation Partners program.

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- Build momentum and awareness through the 2008 Downtown Green Power Switch Campaign.

### Land Use

- Increase density in the center city. Continue to support for infill development, especially downtown Knoxville and first tier neighborhoods: South Waterfront, Cumberland Avenue, Downtown North, Magnolia Avenue.
- Use form-based zoning to encourage mix of uses.
- Support residential/commercial density along identified transit corridors.

### Transportation Alternatives

- Support “complete streets” design to promote walkability, bikability, public transit.
- Continue to build greenways and parks network – emphasize connectivity.
- Support public transit service enhancements along identified transit corridors.
- Support commuter-oriented programs through SmartTrips.

### Water

- Reduce off-street parking requirements through form-based code in center city.
- Encourage water-friendly development features, i.e. drought-tolerant landscaping, pervious pavement treatments, curbless medians and street design, green roofs, grey water recovery systems.

### Garbage & Recycling

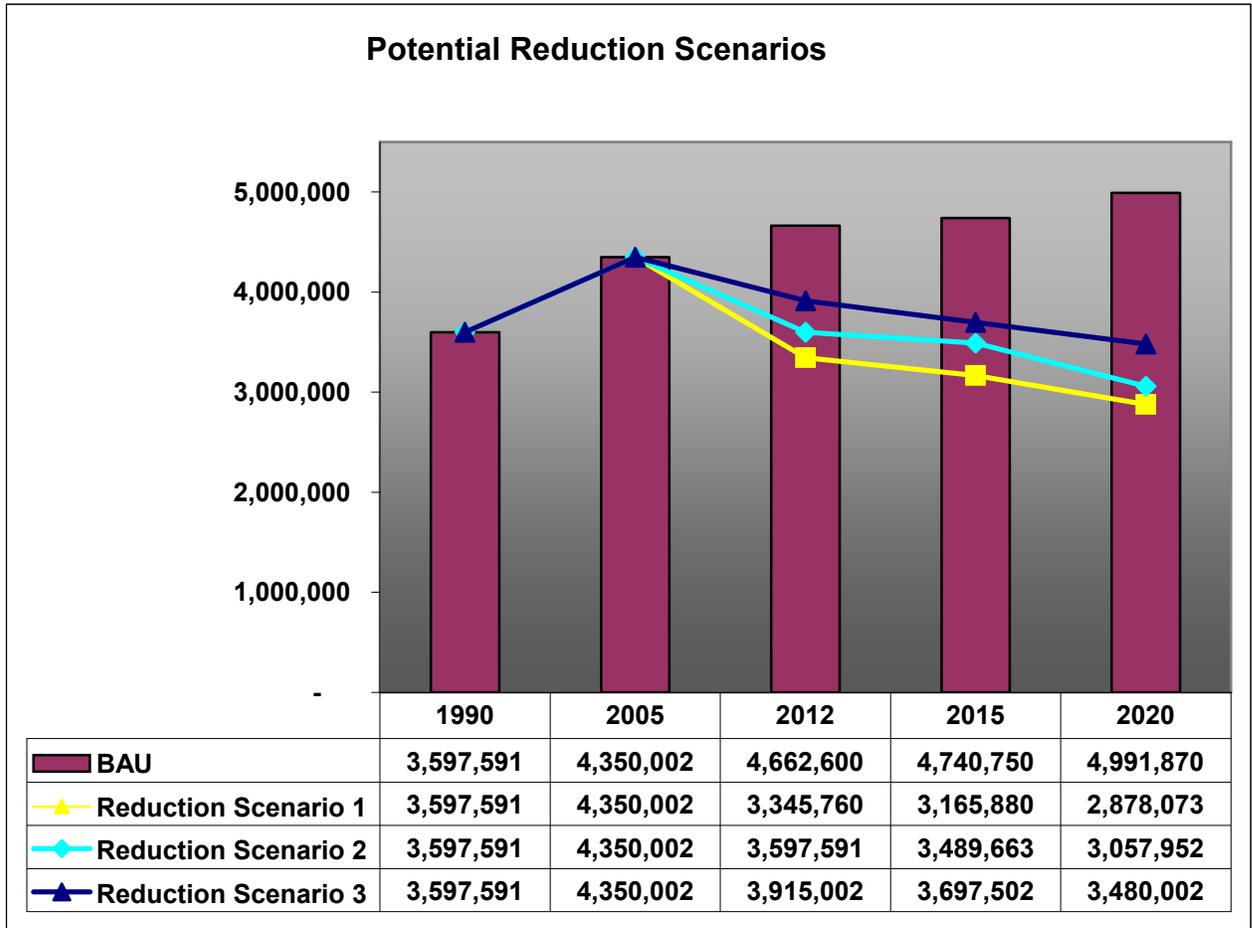
- Select community-wide recycling target.
- Evaluate options for expansion of curbside recycling program with goal of free, curbside recycling. Analyze pay-as-you-throw, recycle bank program models from other cities.
- Catalyze efforts to increase recycling among certain sectors, i.e. special events, restaurants, apartment & condo buildings.
- Develop market for recycled glass.

### General

- Publicize benefits/costs of efficiency/sustainability efforts through outreach and education. Share models, lessons-learned with other institutions and municipalities.
- Support energy efficiency/sustainability incentives and resources at the utility, state and federal level.
- Develop Mayor’s green awards program to recognize outstanding innovation by community partners.

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Potential Reduction Scenarios- For Discussion Only



	1990 Levels	2005 Levels (Baseline)	BAU Levels
<b>Reduction Scenario 1</b>			
2012	7% Below	23% Below	28% Below
2015	12% Below	27% Below	32% Below
2020	20% Below	34% Below	42% Below
<b>Reduction Scenario 2</b>			
2012	At 1990 Level	17% Below	23% Below
2015	3% Below	20% Below	26% Below
2020	15% Below	30% Below	39% Below
<b>Reduction Scenario 3</b>			
2012	9% Above	10% Below	16% Below
2015	3% Above	15% Below	22% Below
2020	3% Below	20% Below	30% Below