Objectives for Today

- Why investment in energy reduction practices / technology is important
- Show tools / ways to lower barriers to investment
- Clarify the roles that various players have in making this possible
- Set expectations from the Executive
Executive Priorities

Fred Jarrett, Deputy Executive
Priorities for Investment

Dwight Dively, PSB Director
Environmental Sustainability and Cost Reduction Overview

Tricia Davis, PSB Budget Manager
Policy Guidance

- **2010 KC Strategic Plan Goals:**
  - Minimize environmental and carbon footprint of KC operations
  - Exercise sound financial management

- **2012 Strategic Climate Action Plan (SCAP) goals, objectives, strategies, actions to:**
  - Reduce greenhouse gas (GHG) emissions
  - Prepare for the effects of climate change

- **Executive Priorities**
  - Best run government: efficient with dollars and energy
  - Climate change
  - Equity and Social Justice
Did you know??

In 2013, King County spent almost $80 million on energy!

- Over $26 million on utilities to operate our facilities
  - Over $22 million of this (80%+) was for electricity
- Over $51 million on fuel for our vehicles
  - Over $39 million (75%+) was diesel fuel
- Since 2010, our conservation efforts are saving the county over $2.6 million per year.
Current State

- Have made progress, but can and should *do more*
  - Have reaped some low hanging fruit
  - But changes in costs and technology create new opportunities

- We know that there are barriers:
  - Culture and institutional practices
  - Data and analysis
  - Technical tools and guidance
  - Accountability structures
  - *Cash for up-front investments*

- So, as a first step, we have created the *Environmental Sustainability and Cost Reduction (ESCR) Program*
ESCR Program Objectives

- Achieve energy savings in support of energy and climate targets
  - Internalize energy conservation into existing operations
  - Help finance the installation of energy saving measures, including those that may not receive other incentives
- Reduce expenses
  - Make operations more resilient to rising energy costs
  - Incentivize continuous improvement and efficiencies
  - Be able to document a return on investment for energy efficiency projects
- Change our Culture: implement innovative environmental projects as a part of normal way of doing business
  - Educate employees and the public and institutionalize environmental stewardship
ESCR Program Overview

- **Loan money** to help agencies implement projects/initiatives that result in energy use/cost and emission/waste reductions
- Eligible to any **KC agency** in 2015/2016 budget
- Loan repayment over a **10-year period**
- Funding for any costs
- Projects/initiatives selected using established criteria as part of 2015/2016 budget development process
- Can propose previously appropriated/approved projects, but must go through selection process
Decision Criteria/Considerations

- **Threshold Criteria**
  - Reduction of energy usage
  - Positive Net Present Value (NPV) for energy costs
  - Does not violate labor agreements/MOUs

- **Scoring Criteria**
  - Reductions in energy use, GHG emissions, solid waste/ wastewater generation/water use
  - NPV value, payback period, savings to investment ratio

- **Other Considerations**
  - Other environmental impacts, financial benefits, labor implications
  - Political feasibility and implementation risks
  - Equity and Social Justice and economic development impacts
  - Alignment with other KCSP goals
## ESCR Application Process

<table>
<thead>
<tr>
<th>Activity</th>
<th>Step Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete and Submit Project Proposal Form with the 2015/2016 Budget Request</td>
<td>July 3, 2014</td>
</tr>
<tr>
<td>Release Committee Reviews Proposals Against Criteria</td>
<td>August 1, 2014</td>
</tr>
<tr>
<td>Release Committee Recommends Projects and Loan Amounts to the Executive</td>
<td>August 15, 2014</td>
</tr>
<tr>
<td>Executive Makes Final Decisions on Projects and Loan Amounts</td>
<td>August 29, 2014</td>
</tr>
<tr>
<td>Agencies Notified of Project Selection</td>
<td>September 8, 2014</td>
</tr>
<tr>
<td>County Council Makes Final Budget Decisions</td>
<td>November 24, 2014</td>
</tr>
<tr>
<td>Funds Distributed/Available for Use</td>
<td>January 1, 2015</td>
</tr>
</tbody>
</table>
Benefits to Agencies

- **Level payments** over time for up front costs
- Agencies *keep savings above loan repayment* amount(s)
- Life Cycle Cost Analysis tool available to support analysis as well as general agency decision-making
- Provides support to projects that may not receive other incentive funding
- Supports infrastructure/equipment upgrades
- Provides avenue to tap into subject matter experts
- Makes energy project needs *more visible/supports prioritization of energy/emission reduction projects*
There Are Several Other KC Programs with Environmental Focus

Each individual program has its own specific requirements and goals, but they are not mutually exclusive.

ESCR Program

DNRP Carbon Neutral

Green Building

All of these programs require up-front planning, cost/benefit analysis, and measurement to ensure that we are getting the anticipated benefits from our investments.

The bottom line: we want to invest in projects and programs that reduce the county’s energy footprint.
There are a number of resources available to help with the program

**Budget and Business Planning Sharepoint site:**
- Budget and Business Plan Instructions
- Life Cycle Cost Analysis (LCCA) Tool
- Environmental Sustainability and Cost Reduction (ESCRF) Program Evaluation Criteria
- ESCRF Proposal Form

**County Energy Managers:** David Broustis, DNRP; Ben Rupert, FMD
- LCCA Tool Training
- Energy Savings Opportunity Identification
- Energy Audits

**Performance, Strategy, and Budget (PSB) Staff:** Tricia Davis; Shelley De Wys
- Budget and Business Plan Instructions
- ESCRF Program Application Assistance
Energy Initiative Examples

David Broustis, DNRP Energy Manager
Ben Rupert, FMD Energy Manager
Examples – Lighting

- **LED**: (Light Emitting Diodes)
  - Quickly evolving and good for most locations
- **T12 to T8/T5 linear fluorescent lamps**
- **Bi-level lights for stairwells and garages**
- **Controls**
  - Daylight/photocell and occupancy sensors
  - Dimming systems for non-peak/off hours
Examples – Mechanical Systems

• Insulation above code requirements
• Heat recovery
• High efficiency “condensing”:
  • Hot water boilers
  • Gas-fired heating units
  • Hot water tanks
• “VFDs” (Variable Frequency Drives) for motors and pumps
• “VRF” (Variable Refrigerant Flow) heating systems/heat pumps
• Cooling: High efficiency chillers or chilled beams
Examples – Plumbing/Vehicles

• Efficient toilets and urinals
  • 1.28 gallon per flush (gpf) toilets, 1/8 gpf urinals

• Water reuse

• Rainwater harvesting

• Drought-tolerant landscaping

• Vehicles:
  • Propane
  • Driver Training
Case Study:
North Transit Base Fans

*Scope: Air quality-based operation of garage ventilation fans. Sensors monitor carbon monoxide and other contaminants.*

- $1,718,193 total project cost
- $459,759 rebate
- $147,212/year savings
  - 2,336,697 kwh/year savings - *exceeds estimate*

8.5 year payback after rebate
Case Study: Environmental Lab Lighting

Scope: Lighting retrofit project throughout the facility

- $24,332 total project cost
- $14,717 rebate
- $5,981/year savings
  - 94,932 kwh/year savings

1.6 year payback after rebate
ESCR Potential Project Example:
Orcas Fleet Maintenance Facility

*Scope: Proposed retrofit to high efficiency LED lighting*

*Estimates*
- $34,000 cost
- $7,000 rebate
- $4,174/year savings
  - 34,000 kwh/year savings

6.4 year payback
ESCR Potential Project Example: Orcas Fleet Maintenance Facility

Applying for ESCR Funding: Straightforward Process

- Basic Inputs
- LCCA Tool
- Application Form
- Project Review
ESCR Potential Project Example: Orcas Fleet Maintenance Facility

Applying for ESCR Funding: LCCA Tool

- Based on inputs, LCCA tool provides a project summary detailing all critical financial data.
ESCR Potential Project Example: Orcas Fleet Maintenance Facility

Applying for ESCR Funding: ESCR Application Form

- Form allows applicant to provide additional project details and rationale for investment
- Form is intended to be brief and provide critical information only
Barriers to Investment

Rhonda Berry, Assistant Deputy County Executive
Small Group Discussions
Thank you!
Energy Goals

- **2010 King County Energy Plan:**
  - By 2015
    - 15% reduction in energy use in KC buildings
    - 10% reduction in energy use in vehicles
  - By 2012 – Produce/use/procure renewable energy = 50% of total County energy requirements

- **2012 King County Strategic Climate Action Plan (SCAP):**
  - Partner with stakeholders to reduce countywide greenhouse-gas emissions by 80% below 2007 levels by 2050
  - Reduce greenhouse-gas emissions compared to a 2007 by:
    - 15 percent by 2015
    - 25 percent by 2020
    - 50 percent by 2030