



**King County**

# **2010 King County Energy Plan**

**June 2010**

# King County 2010 Energy Plan

# 2010 King County Energy Plan

## Introduction

King County has long recognized that it can reduce operating costs and emissions of greenhouse gases and other pollutants by reducing its energy use, meeting more of its energy needs with local renewable resources, and taking advantage of opportunities to produce energy where practical. Energy continues to be a major cost to the county, and reducing this expense will contribute to the county's ability to maintain services. King County must commit itself to continuous improvement in the ways it produces and uses energy in the next 20 years.

This 2010 King County Energy Plan (Energy Plan) builds on the county's past efforts, defining guiding principles, goals and strategies to increase the county's energy efficiency and use of renewable and greenhouse gas-neutral energy in the years ahead.

The Energy Plan reflects the proposed King County Strategic Plan's emphasis on improving the efficiency of county operations, reducing the county's environmental footprint, encouraging a growing and diverse King County economy, and empowering employees to identify improvements. Implementation of the Energy Plan is also critical to meeting the county's goals for reducing greenhouse gas emissions.

The following principles help to guide the goals and strategies outlined in the Energy Plan:

1. *Measure it to manage it* – Continuously measuring energy performance provides information to identify and prioritize opportunities for improved energy strategies and gauge the success of its energy-focused improvements.
2. *Efficiency first* – Saving energy is usually the lowest cost resource, and there are always more ways to save. Saving energy benefits the county four ways: by saving money, reducing environmental impacts, increasing asset values and improving working conditions.
3. *Increase Transit fleet efficiency and grow market share* – Sustainable energy savings in the region can be realized by increasing Transit market share and ridership, using as efficient a fleet as practicable. Increased transit use should correspond to a reduction in car trips. Although achieving this principle will likely lead to an increase in total energy use by Transit, it should also result in a reduction in community-wide energy use.
4. *Consider use, production and procurement of renewable energy* – King County is a major regional producer of renewable energy. The county's contribution of renewable energy to the region is equally as environmentally beneficial as buying and using renewable energy – and can provide county revenue.

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5. *Integrate goals and strategies for energy efficiency with goals and strategies for reducing greenhouse gas emissions* – The actions the county takes to reduce energy use, particularly the burning of fossil fuels, are tightly linked to the ability to make progress toward meeting the county’s long-term county’s climate goal of reducing greenhouse gas emissions by 80 percent between 2007 and 2050.

Strategies for achieving these and other important energy goals include the following:

- Incorporating energy efficiency and resource-use guidelines into the Green Operations and Maintenance Guidelines.
- Developing energy management plans for large, energy-intensive facilities.
- Conducting a countywide campaign to encourage employees to adopt energy conservation measures at work.
- Aggressively pursuing grant funding to supplement county funds for energy efficiency efforts.
- Seeking to achieve LEED Gold certification on all new county construction as defined in King County “Green Building and Sustainable Development” Ordinance 16147.
- Increasing the efficiency of lighting used in county buildings.

King County must make best use of its energy assets and opportunities, but the government’s operational use of energy represents only a fraction of the energy used by the county community as a whole. The county’s decisions about transportation, land use, and promotion of new technologies in the energy arena set the stage for meeting both operational and community-level greenhouse gas emissions reduction goals.

The county also has a role to play in reducing energy use at the community scale by:

- Linking transportation and land use planning;
- Helping develop, test, and support early nascent markets through early adoption of transferable, innovative energy solutions; and
- Advocating for federal resources to support ongoing local investments in energy efficiency and green jobs.

## History

The county has adopted a number of policies mandating energy conservation and efficiency over the past three decades, starting with Ordinance 5770 in 1981. (See Appendix A for a list of relevant policies and codes). Over the last three decades, King County has actively worked to save energy in accordance with these policies. Most of the county’s conservation projects during this period were financed using county capital or

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operating funds and were managed by county staff. In recent years, local electric utilities have supported the conservation efforts by offering incentives.

The county's energy efficiency projects have had a large impact on energy consumption. For example, between 2000 and 2007, 60 substantial electricity conservation or efficiency projects were completed, costing a total of approximately \$6.7 million, earning utility incentives of \$2.3 million (34 percent of cost), and saving 24.8 million kilowatt-hours and \$1.3 million in energy costs per year in all the years since.

The county increased its emphasis on energy efficiency in 2006, when the County Executive issued the Executive Order on Renewable Energy and Related Economic Development and the Metropolitan King County Council passed Motion 12362 with similar provisions. The county produced the 2007 Energy Plan pursuant to these directives. Since the 2007 plan was prepared, the county has initiated 46 large energy-saving projects that are projected to yield a total of more than \$3.9 million in utility incentives and over \$2 million per year in energy-cost savings.

King County has also consistently led local governments in testing and early adoption of new energy saving and renewable energy technologies, and supported market adoption of successful technologies; examples include purchasing the first fleet of efficient hybrid-electric transit buses and capturing renewable energy from sewage digester gas to displace traditional fuels. Embracing new technology has and will continue to be a critical strategy component in meeting the county's ambitious energy goals.

The 2010 King County Energy Plan reflects updates to the goals, strategies, and implementation plans based on the county's experience executing the 2007 Energy Plan as well as changes in energy technology, the economy and other factors.

### **Energy Profile and Trends**

Operationally, the Transit Division is the largest King County user of energy, comprising 53 percent of total energy use, with diesel representing 43 percent of that amount. The next three largest energy users are Wastewater Treatment, Fleet, and Solid Waste Divisions. Approximately a quarter of the energy use comes from electricity. Please see Figure 1, below, and Appendix C for more information on King County's energy profile.

The 2007 Energy Plan included the following goals:

- Achieve a countywide, 10 percent normalized net reduction in energy use by 2012;
- Utilize 50 percent of King County non-transit energy from renewable sources by 2012;
- For Transit, utilize 35 percent from renewable sources by 2015, and 50 percent by 2020.

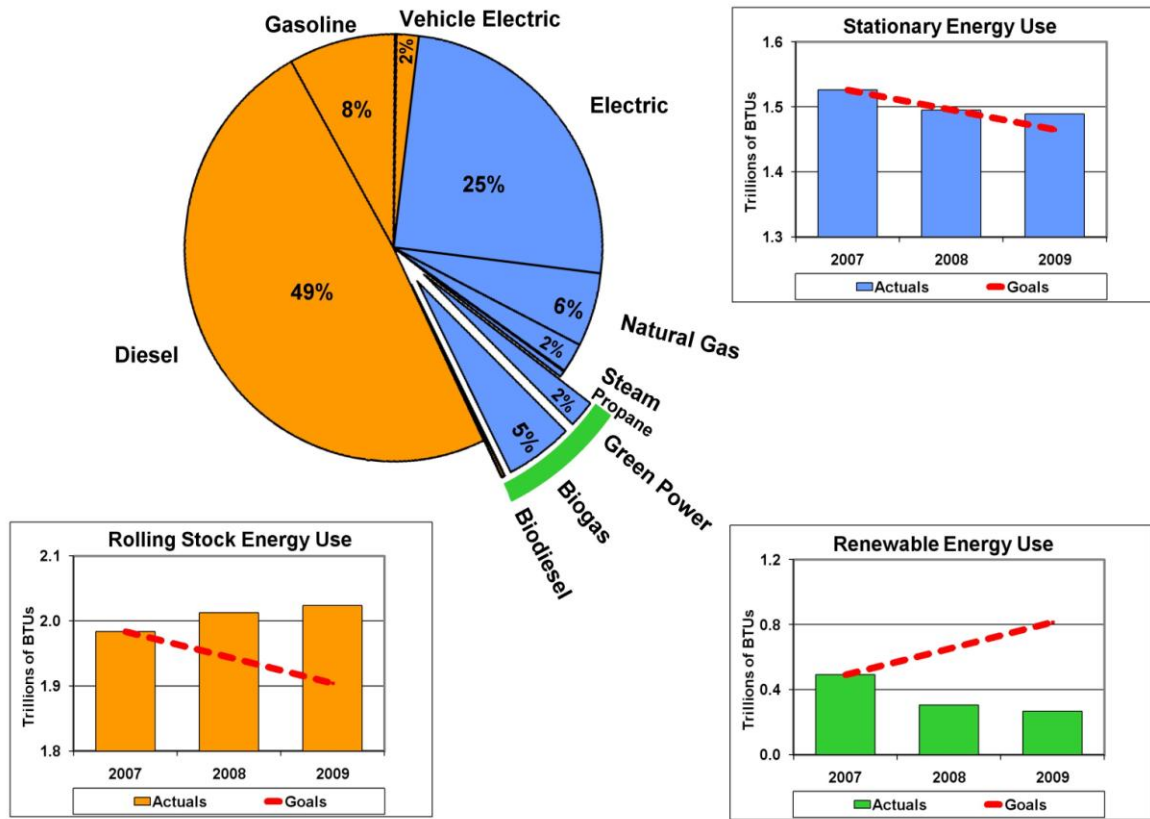
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The county is on track to achieve a 10 percent reduction in energy use by 2012 in buildings and facilities. In the “rolling stock” sector, which includes transit and fleet vehicles, growth in transit service has resulted in an overall increase in Transit energy use. In general, such increases in public transportation energy usage are offset by community-level reductions in private vehicle energy usage, and so are considered beneficial. The county is actively working with the American Public Transportation Association to develop standardized energy efficiency goals for transit systems that more accurately capture the community-level energy efficiency benefits of increasing transit ridership.

With regard to the County's renewable energy goals, some divisions have made significant progress toward the goal of obtaining 50 percent of their energy from renewable resources by 2012. Both the Facilities Management Division (FMD) and Road Services Division (RSD) are currently purchasing “green power” (renewable electric power), in accordance with the 2007 Energy Plan goal. Road Services has purchased green power for all of its maintenance building facilities and outlying buildings in the Puget Sound Energy service area since 2007, while FMD has purchased green power for 44 percent of electric loads in the facilities that it operates since 2009. However, the county as a whole has not met this goal due to financial constraints and limited available technologies. Given the large volume of diesel fuel used for Transit, the current incremental cost of using biodiesel rather than conventional diesel is high enough that meeting the 50 percent goal would necessitate transit service cuts. Further, the curtailment of biodiesel use by Transit masks gains in renewable energy use in stationary buildings and facilities.

These general trends are illustrated below, in Figure 1.

Figure 1  
King County 2009 Energy Use



### Revised Energy Goals

This revised Energy Plan has three main goals for achieving progress from the 2007 base year in the near term (2012). These goals define the most important outcomes the county must achieve to continue its history of leadership in local government energy policy. The goals also provide direction and flexibility for county divisions to reduce energy use and increase energy efficiency, as well as produce and procure renewable energy— in ways that minimize both costs and environmental impacts.

It should be noted that the past renewable energy goal focused only *use* of renewable fuels, and failed to take into account the environmental and economic benefits of using the waste byproducts of certain operations, like wastewater treatment and waste disposal, to produce renewable energy.

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In the near-term:

1. Achieve a 10 percent normalized<sup>1</sup> net reduction in energy use in county buildings and facilities by 2012, and a 10 percent normalized net reduction in energy use by county vehicles by 2015.
2. Produce, use or procure renewable energy equal to 50 percent of total county energy requirements by 2012.
3. Maximize the cost-effective conversion of waste to energy.

In practical terms, meeting the target reduction in energy use for county vehicles (including Transit) given current or expanded Transit service levels means that when conventional diesel buses are scheduled for replacement, the county would need to purchase hybrid diesel-electric coaches with lower fuel demand. The county will continue to aggressively pursue grant funding to support purchase of the hybrid diesel electric buses.

### Looking to the Future

The long-term energy and climate challenges facing the Pacific Northwest and King County are significant, requiring a shared vision that incorporates innovation, flexibility, and leadership. Current technologies, while developing rapidly, may be inadequate to meet these challenges, and for this reason, the County must also set long-term goals that promote innovation and experimentation and provide flexibility for implementation plans to be adjusted based on new technologies. Developing new, cost-effective technologies is a prerequisite for defining and achieving some long-term goals. New technologies will require multiple incentives including private investment, government investments and subsidies, and changes in individual and employee practices. The following principles will guide the county's energy efforts over the long term:

1. Be a leader in the testing and early adoption of new, innovative and cost effective energy technologies, systems, strategies, and conservation methods that will sustainably reduce energy consumption and long-term costs for county operations.
2. Continue the county's legacy of leadership in developing cost-effective and sustainable renewable energy and waste-to-energy projects in both county government operations and in King County's communities.

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<sup>1</sup> Normalization of energy use is common practice in conservation, to remove confounding factors in energy accounting and provide more meaning to the value of energy use. Essentially, energy normalization provides a measure of the energy use per unit of service value delivered (units of energy / units of service delivered). This function is typically unique to each organization or enterprise. The Energy Task Force will agree on appropriate normalization factors for various energy end uses and functions. Normalization is intended to reveal actual energy use reductions under varying conditions, but should not diminish or slow progress toward the goal of reducing net county energy use.

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3. Be a leader in the procurement of new fleet technologies that are commercially viable, including supporting market development of electric vehicles.
4. Utilize the county fleet in the most efficient manner possible.
5. Promote transportation choices as an alternative to driving alone including public transportation, bicycling, carpools, vanpools, and walking.

It is critical that long-term energy efficiency goals be informed by, and integrated with both operational and community-level greenhouse gas emissions reduction targets. The Growth Management Planning Council (GMPC) has initiated work to update Countywide Planning Policies to be consistent with Multi-County Planning policies by the end of the 2010. Once the GMPC makes their recommendations for climate policies, the King County Energy Task Force, an interdepartmental committee that leads the county's energy plan implementation, will define medium- and long-term energy goals consistent with the Countywide Planning Policies.

### **Organization to Implement the Plan**

Execution of the Energy Plan will be a countywide effort; all departments and divisions are called on to save energy and to obtain more of the energy they need from renewable resources.

County divisions will continue to develop and execute energy strategies and plans that are consistent with this Energy Plan. The interdepartmental Energy Task Force will review and coordinate these plans to ensure that they comply with county goals, will encourage collaboration and resource sharing among departments, and will coordinate reporting to the County Executive and County Council. The task force includes representatives from county departments that use most of the energy the county government consumes, including the Department of Executive Services (DES), the Department of Transportation (DOT), and the Department of Natural Resources and Parks (DNRP), as well as others when appropriate. The directors of these departments are executive sponsors of the task force, which was authorized by Executive Order FES 9-2 (AEP) in 1998.

Specific chartered goals of the Energy Task Force are detailed in Appendix B.

### **Strategies for Achieving the Goals**

While divisions will develop and pursue specific strategies to achieve the Energy Plan goals, a number of strategies will be pursued countywide. These are described below.

#### **Measuring and Reporting Energy Use and Production**

King County has implemented a consolidated countywide database of utility costs and consumption. This energy accounting system aggregates information from more than 1,000 utility accounts, as well as information about liquid fuels. The database allows the county to benchmark energy and resource consumption data for its facilities, buildings

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and equipment, including rolling stock. Such detailed energy tracking is essential for King County to actively and strategically manage energy consumption. With this action, the county has and will continue to:

- Compile and maintain a master list of all county utility accounts, meters, services and rates.
- Identify billing discrepancies and facilitate tracking credits and incentives.
- Prioritize energy related needs and quantify expected savings from activities proposed.
- Establish facility baselines and goals and provide regular feedback to departments on project and program progress.
- Identify consumption anomalies that may relate to operational issues such as leaks or failed controllers.
- Track consumption patterns to verify the success of implemented savings programs.
- Make accurate use projections to help create budgets and forecasts.

As part of this effort, division staff, finance managers and accounts payable personnel with responsibility for energy matters must be trained on the system. They also must understand the process of utility bill auditing to identify billing errors, dormant and non-county accounts, and opportunities to save money through rate changes. The DNRP technology unit currently houses and maintains the database and analytical software systems. The DNRP energy group is currently responsible for training county staff on the system and for establishing utility accounting and bill auditing procedures to ensure consistent and accurate data. Cost savings achieved through these activities will be tracked and reported annually to demonstrate the added value of utility accounting and bill auditing.

### ***Strategy 1***

**Continue countywide utility accounting practices for energy use, billing services and cost savings.** The county's consolidated countywide database of utility costs and consumption will support this function.

### ***Strategy 2***

**Maintain an accurate baseline and ongoing benchmarks of energy use for the entire county's operations to measure progress toward the 10 percent reduction goal.** (See attached energy data in Appendix C.)

### ***Strategy 3***

**Assess compliance with goals and objectives of the Energy Plan.**

### **Reducing Energy Use through Efficiency and Conservation**

The King County Comprehensive Plan (KCCP), Renewable Energy Order and Council Motion 12362, and the proposed King County Strategic Plan all emphasize the need to pursue continuous improvements in energy efficiency and conservation.

**Strategy 1**

**Incorporate energy efficiency and resource-use guidelines into the Green Operations and Maintenance Guidelines.** (Specific operating requirements for specialty facilities are addressed in Strategy 2, below.)

The King County Green Building Team will establish energy efficiency and resource use operating guidelines for county occupied facilities, with assistance and review from the Energy Task Force. The guidelines will cover topics such as heating and cooling temperatures, building HVAC schedules, lighting expectations, plug load management including computer power management settings, operation of office equipment, and use of personal appliances. These energy efficiency and resource-use guidelines will be incorporated into the Green Operations and Maintenance Guidelines developed under the Green Building and Sustainable Development Ordinance 16147 (2008). The Green Building Team and Energy Task Force will review and update the guidelines periodically.

**Strategy 2**

**All divisions will develop specific energy management plans for large, energy-intensive and/or special-purpose county facilities.** Examples of these types of facilities are the wastewater treatment plants, the King County Correctional Facility and the Cedar Hills Landfill. Plans for these facilities will focus on practical energy saving measures within the framework of least-cost management. They will include specific approaches for each facility's use and, where appropriate, the production and sale of energy.

The Energy Task Force will identify facilities requiring specialized energy management plans and work with facility staff to identify operating parameters and best practices to be incorporated into the Energy Plan. All special-purpose facility energy management plans will be completed no later than June 30, 2011.

**Strategy 3**

**Conduct a countywide campaign to encourage employees to adopt energy conservation measures at work.** The practices of people who occupy, operate, and maintain our buildings affect how much energy a facility consumes. By educating and motivating people to use energy resources wisely, the county can reduce waste and generate savings. Behavior modification has been shown to cut resource use by up to 10 percent from a typical building baseline. This is a low-cost strategy that should be launched in 2011. The County will also seek to reduce emissions from employees through the use of public transportation, telecommuting, flex scheduling, and other methods.

**Strategy 4**

**Conduct and/or update efficiency audits of all major county buildings by 2012 and create a prioritized action plan for reducing energy use at each building or facility.** These audits will identify both operating measures and equipment replacement measures to conserve energy.

Operational and maintenance assessments will focus on low-cost opportunities to

optimize the performance of existing systems. These audits will analyze historical energy data for trends, perform daytime and nighttime walk-throughs as needed, and analyze set points, control strategies, and equipment performance in relationship to system design and occupancy needs to identify opportunities to reduce the building's operating costs and/or environmental footprint.

Equipment assessments will investigate existing building or facility equipment and systems for opportunities to save energy and reduce costs by replacing equipment.

Energy conservation measures will be prioritized and may be implemented using division operating or capital funds where cost effective; energy savings performance contracting may also be used.

**Strategy 5**

**The county will seek to recover waste heat from all water, air, exhaust and other sources wherever this can be done in a cost-effective manner and use every opportunity to productively use waste energy to reduce overall energy consumption.**

**Strategy 6**

**Aggressively pursue grant funding to supplement county funds for energy efficiency efforts.** Utilities in King County provide incentive grants for design, purchase, and installation of equipment that will save energy or other resources. The county has obtained additional funds from federal grants and low-interest bonds for energy-related work. The Energy Task Force will strive to take full advantage of utility incentives, and seek other sources of funding on an ongoing basis.

**Strategy 7**

**Seek to achieve Leadership in Energy and Environmental Design (LEED) Gold certification on all new county construction as defined in King County Green Building and Sustainable Development Ordinance 16147.** Under the ordinance, buildings that are seeking a LEED rating shall place the greatest emphasis on energy efficiency. As a goal, project teams should plan to construct buildings that use at least 20 percent less energy than required by local building energy codes.

The county will report energy savings and incremental costs for each above-code element that result from our green-building efforts.

**Strategy 8**

**Reduce the use of inefficient lighting and prepare for product changes as a result of 2009 federal lighting standards** In 2009, the federal government passed laws requiring increased efficiency product standards for many types of lighting equipment, beginning in 2012.

Ordinance 16769 called for development of an implementation plan for the cost effective replacement of lighting that does not meet the new federal energy standards. Review of the applicable federal statutes indicates that these standards will result in phased in changes in the selection of available lighting products (some lighting fixtures will no

longer be available). The county will need to plan for lighting replacements considering the phased implementation of these new federal standards.

This strategy will include the following specific actions:

- The Energy Task Force will produce guidelines for phased replacement of lighting using new lighting products as federal product standards are enacted and implemented. These guidelines will be prepared by December 1, 2010.
- The county Finance Business Operations Division will produce standards for purchasing lighting that minimizes replacement costs while ensuring use of lighting compliant with federal lighting efficiency standards as they are phased in.

Ordinance 16769 also called for a report on the disposal of lights and related toxic metals. The Energy Task Force has prepared a report summarizing activities conducted by the Solid Waste Division to educate citizens on the proper disposal of fluorescent lighting; an analysis of a policy to establish mercury and lead content standards for all new lighting products purchased by King County; and a summary of “lamp take-back” activities. This report is attached as Appendix D.

Finally, Ordinance 16769 called for development of a plan and recommendations for reducing outdoor light pollution. This work will be coordinated with scoping for the 2012 KCCP update, which will take place in second half of 2010. The Energy Task Force will work with divisions most reliant on outdoor lighting to develop a report and recommendations to the Council by December 1, 2010.

### ***Strategy 9***

#### **Reduce county direct emissions from vehicles through the purchase of fuel efficient vehicles**

The County’s public transportation fleet and non-revenue vehicles are major consumers of energy through their use of diesel and gasoline. The county will seek to utilize the most efficient commercially viable vehicles for its fleet and will seek to deploy those vehicles in an efficient manner. The County will also pursue grants for electrification or other innovation technologies for use in public fleets.

### ***Strategy 10***

#### **Provide transportation choices that reduce overall King County energy and emissions.**

The provision of a range of transportation choices including public transportation, vanpools, ridesharing, bicycling, walking and other modes can lead to increases in the county’s internal energy use but lead to reductions in overall energy consumption for residents of King County. Leveraging partnerships with jurisdictions, employers and community groups will increase awareness and change travel behavior to be more energy efficient.

### ***Strategy 11***

#### **Promote public adoption of new vehicle technology with a focus on electric vehicles.**

The County will encourage the launch of commercially available electric vehicles by seeking to procure electric vehicles and promote the installation of vehicle charging stations in public and private locations. The county will continue to collaborate with other local governments, federal and state agencies, developers, and community groups to pursue coordinated planning for installation of charging stations. As part of the 2012 KCCP update, the county will review existing policies for transportation, land use, and energy to ensure that they are supportive of the strategic planning and location of charging stations for electric vehicles.

### **Increasing Production and Use of Renewable Energy**

The KCCP, proposed King County Strategic Plan, Renewable Energy Order, and Council Motion 12362 all include strong direction for maximizing the conversion and use of waste for energy.

Historically, most renewable energy used in King County has been produced by the county itself, in “waste-to-energy” systems that recover valuable resources from sewage. Generation of biogas from sewage projects alone has consistently provided energy equivalent to between 5 and 8 percent of the county’s total energy used. DNRP’s Wastewater Treatment Division (WTD) has focused on renewable energy efforts for many years; this strategy began in 1966 when the West Point Wastewater Treatment Plant was constructed using pumps powered by its own digester gas. These pumps have saved an enormous amount of electricity since that time—more than 83 million kilowatt-hours. Since this pioneering initial effort, WTD has been a leader in waste-to-energy projects. Cogeneration (combined heat and electric power plants), installed at West Point in 1985 and at the Renton treatment facility in 2005, are the most notable developments. In addition, the Renton facility installed gas refining capability in 1985, allowing the sale of cleaned and concentrated digester gas to utilities. WTD is currently rebuilding its cogeneration power plant at West Point, with a new 2.5 average megawatt plant that is scheduled to come on line in 2012. This power plant will sell premium-priced renewable electricity to Seattle City Light. Together, these gas energy plants maximize the productive use of available digester methane gas to generate plant heat, natural gas for sale, and valuable green electric power.

The Solid Waste Division recently developed a facility at the county's Cedar Hills Landfill that is producing more energy than any other county facility; landfill gas from this facility is classified as a renewable resource. The pipeline-quality gas output from Cedar Hills is estimated to be more than 1.4 trillion BTUs of gas per year for 20 years. This is equivalent to 40 percent of all the county’s energy requirements in 2009, including liquid fuels for vehicles, continuing. Gas from this facility will be sold to Puget Sound Energy. The renewable energy attributes of Cedar Hills gas currently belong to King County, and the best application of these rights is under review.

#### ***Strategy 1***

**The county’s Wastewater Treatment and Solid Waste Divisions will continue to explore environmentally acceptable and cost-effective ways to further increase the energy generated from waste at wastewater and solid waste facilities.**

**Strategy 2**

**The county will continue to regularly evaluate the potential to use renewable energy applications in new construction, retrofit construction and specific applications where benefits exceed costs.**

**Strategy 3**

**The county will continue to partner with third parties to design and implement cost-effective rural biogas, biomass, and other renewable energy projects.**

As noted earlier in this plan, both FMD and RSD are currently purchasing “green power” (renewable electric power) in accordance with earlier Energy Plan goals. The relatively large purchases by these agencies have also allowed the county to secure a substantial discount on green power premiums purchased from Puget Sound Energy. Perhaps most important, FMD has more than offset the cost premiums associated with the use of green power by implementing large energy efficiency projects first—demonstrating that increasing efficiency and increasing the share of our energy that comes from renewable power are compatible goals.

**Strategy 4**

**County divisions responsible for electricity purchasing will transition to purchasing renewable energy as cost-effective resources become available on a schedule that takes into consideration available funding and public benefits associated with such purchases.** Such purchases will not only increase the county’s use of renewable energy but will also further stimulate the market to increase the availability of renewable power.

**Reinvesting in Sustainable Energy and Climate Mitigation Projects**

Conserving energy and reducing waste saves the county money. By actually producing energy, the county can reduce energy expenditures and even generate revenue. By quantifying, verifying and reinvesting these savings and revenues directly into the organizations where the activities take place, the county can improve energy and resource management. Direct rewards to divisions for their efforts will create additional opportunities and motivation for them to reinvest funds in their operations and facilities.

The following are general policy recommendations:

- To the maximum extent practical, divisions will reinvest revenues from county energy projects, utility incentives and sale of other types of environmental credits to support ongoing and increasing investments in sustainable energy and climate mitigation projects.
- Divisions should be allowed to retain a portion of energy cost savings from energy conservation or efficiency projects for investment in similar projects that reduce energy use and/or reduce climate emissions. King County will research options and, if appropriate, establish a process whereby some portion of utility savings generated from specific documented and verified division efforts may be retained for further investment in sustainable energy projects.

## Appendices

### Appendix A – King County Energy and Climate Change Related Policies and Codes

King County Comprehensive Plan, Chapter 8, Section III. Energy and Telecommunications

<http://www.kingcounty.gov/property/permits/codes/growth/CompPlan/2008.aspx>

King County Code – Title 18 Energy Management

[http://www.kingcounty.gov/council/legislation/kc\\_code.aspx](http://www.kingcounty.gov/council/legislation/kc_code.aspx)

Motion 12362 - County to Reduce Greenhouse Gases

<http://mkcclegisearch.kingcounty.gov/custom/king/legislation.htm>

Ordinance 15988 Promotion of Energy Efficiency and Clean Vehicle Technology

<http://mkcclegisearch.kingcounty.gov/custom/king/legislation.htm>

Ordinance 16147 – Requiring Use of Green Building Practices

<http://mkcclegisearch.kingcounty.gov/custom/king/legislation.htm>

Motion 12744 – Motion to Control County Efforts on global Warming

<http://mkcclegisearch.kingcounty.gov/custom/king/legislation.htm>

Motion 12795 - Motion Use of Bio-Fuels in Transit

<http://mkcclegisearch.kingcounty.gov/custom/king/legislation.htm>

Motion 12921 – Motion Endorsing Electric Vehicles

<http://mkcclegisearch.kingcounty.gov/custom/king/legislation.htm>

## **Appendix B – Energy Task Force Charter (2008)**

A countywide task force is convened to carry out the Energy Plan and ensure a consistent and continued focus on energy efficiency and use of renewable energy resources. This task force will be authorized and overseen by the Director or designee from the Departments of Natural Resources and Parks (DNRP), Transportation (DOT), and Executive Services (DES). A small staff with expertise in energy and sustainability representing each of these departments will be drafted as the working Energy Task Force (ETF) and will implement the Plan, including the following:

- a. Coordinate intra-county efforts regarding energy issues;
- b. Finalize the Energy Plan with updates and modifications from time to time as determined necessary by the ETF, and incorporate policies as part of the Comprehensive Plan;
- c. Monitor compliance with the Plan and the Renewable Energy Order;
- d. Support and coordinate the development and sustained use of aggregated county-wide energy and carbon databases and energy baseline data as a basis for measuring facilities' performance and progress to goals;
- e. Develop and implement a program for strategic county-wide energy efficiency improvement including behavioral, O&M, and capital measures to achieve conservation goals;
- f. Monitor the implementation of energy efficiency and conservation measures and benchmarks within county facilities and operations;
- g. Review annual reports regarding energy use by the Departments of Natural Resources and Parks and Transportation provide to the Executive;
- h. Ensure county energy policies and practice are coordinated with policies on greenhouse gas mitigation, green building and other sustainability initiatives;
- i. Adopt work plans to study and increase renewable energy use;
- j. Advise the Executive on energy matters and recommend new energy initiatives;
- k. Monitor energy policy, development and supply markets for their effect on present and future energy costs. Advise Departments and the Executive on best acquisition/sales practices;
- l. Monitor new energy technology development and recommend pilot tests, participation in trials, education, early adoption, etc., as appropriate;
- m. Develop partnership arrangements with other local jurisdictions and/or private businesses as appropriate to improve energy use and acquisition strategies, reducing waste and costs while improving energy market positions.

## **Appendix C – King County Energy-Use Profiles**

In the designated baseline year, 2007, King County used approximately 3.45 trillion BTUs of energy. The major categories of energy consumption are transit vehicles (52 percent), wastewater treatment, buildings, county vehicles, and solid waste processing.

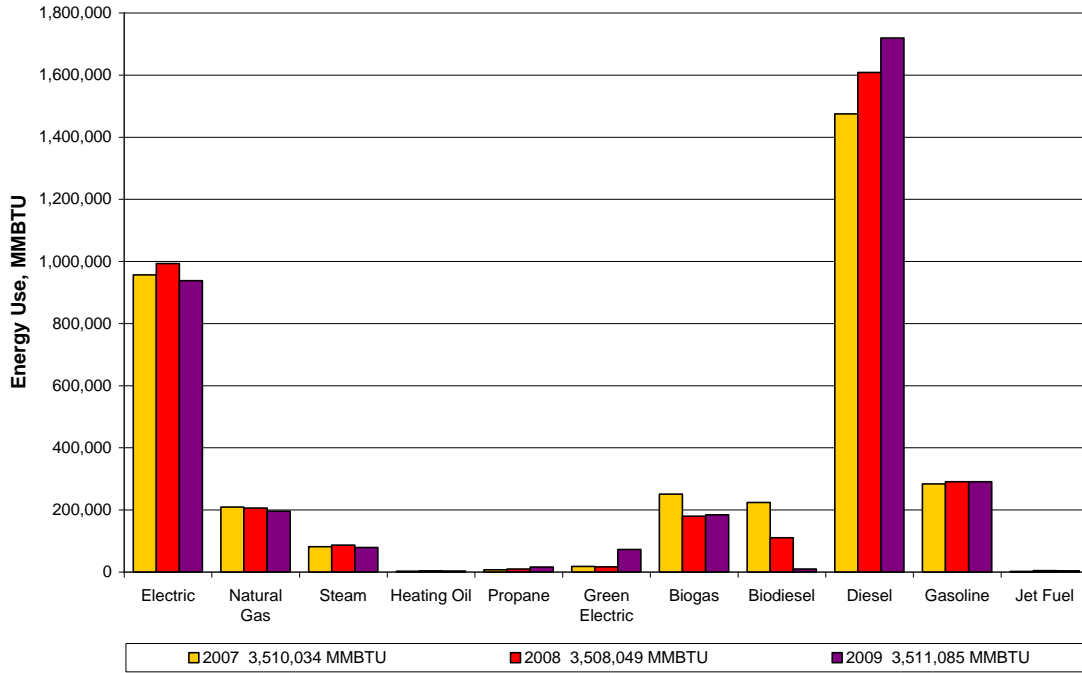
More detailed information follows (all figures are approximate):

- The Transit division used 1.8 trillion BTUs (204 billion BTUs from biodiesel) to provide more than 110 million passenger trips, or 348 BTUs per passenger trip.
- DNRP's Wastewater division used 780 billion BTUs, or 12 BTUs per gallon, to process the county's wastewater.
- County buildings used 668 billion BTUs, or a countywide average of 121,000 BTUs per square foot per year. (These figures exclude Public Health, the Sheriff's Office and the Transit, Wastewater, Solid Waste, and Fleet Administration divisions, whose energy use was not predominately in buildings.)
- Facilities Management managed some of the buildings counted above, accounting for 60 percent of the total floor space. Annual energy use in these buildings was 314 billion BTUs, or 95,000 BTUs per square foot per year.
- Road Services used 34 billion BTUs, or the equivalent of 146,000 BTUs per square foot per year, primarily in building and road lighting systems. Nearly all of this energy—97 percent—was green power purchased from Puget Sound Energy.
- King County International Airport used 27,766 million BTUs, or 61,000 BTUs per square foot per year, largely in buildings.
- County vehicles managed by Fleet Administration used 206 billion BTUs of liquid fuels (8 billion BTUs from biodiesel) to travel 18 million vehicle miles, or 11,196 BTUs per mile.
- DNRP's Solid Waste division consumed 182 billion BTUs, or about 90 BTUs per pound, to process solid waste.

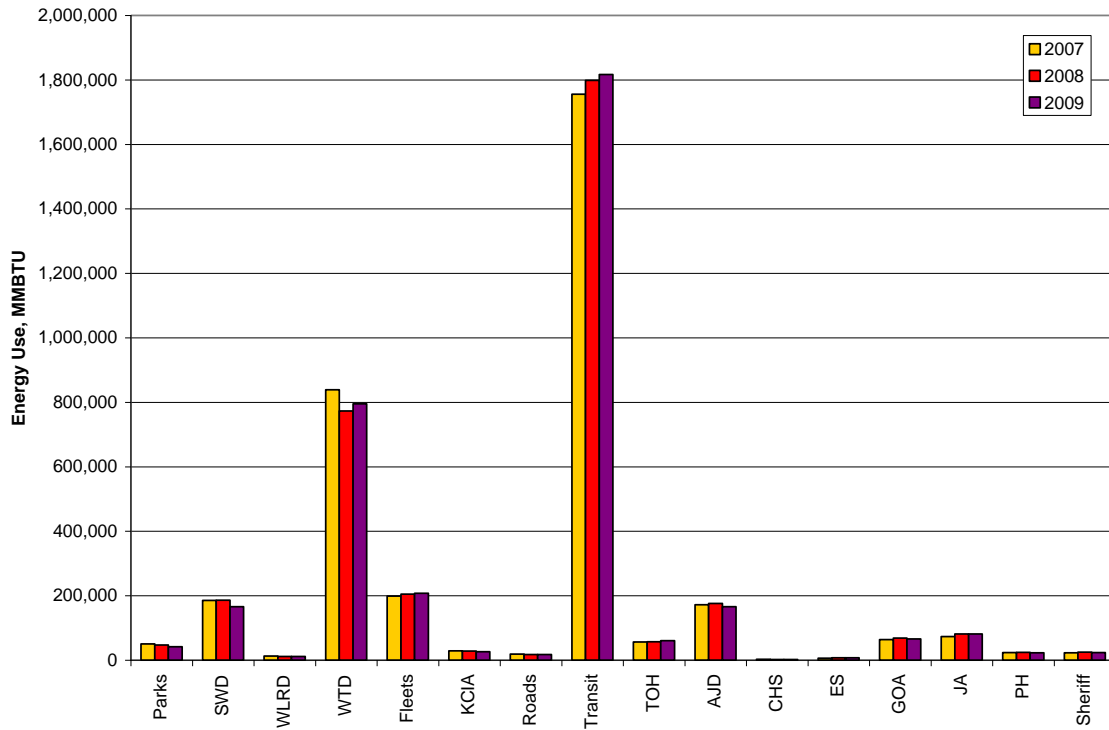
Graphic and tabular format details of the 2007 energy use baseline are provided on the following pages. More are available in electronic format from DRNP's Energy Group.

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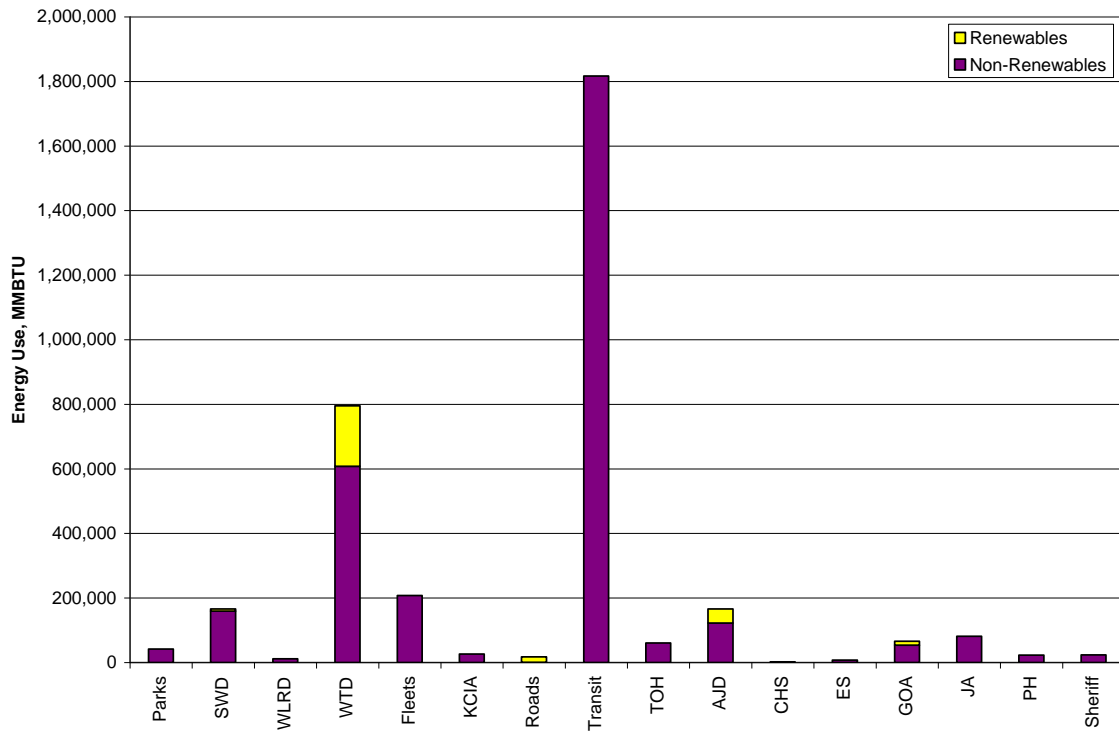


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| 2009 Fuel Sources               | Utility Manager Database |                    |            | Renewable Energies |                   |              | Utility Manager Database |                    |            | Totals       |
|---------------------------------|--------------------------|--------------------|------------|--------------------|-------------------|--------------|--------------------------|--------------------|------------|--------------|
|                                 | Electric kWh             | Natural Gas Therms | Steam Mlbs | Electric kWh       | Biodiesel Gallons | Biogas MMBTU | Electric kWh             | Natural Gas Therms | Steam Mlbs |              |
| Parks & Recreation Division     | 7,260,716                | 167,692            | 0          | 0                  | 0                 | 0            | 0                        | 0                  | 0          | \$884,132    |
| Solid Waste Division            | 8,556,755                | 0                  | 0          | 19,346             | 956,874           | 0            | 50,723                   | 0                  | 0          | \$700,912    |
| Water & Land Resources Division | 1,487,504                | 64,269             | 0          | 0                  | 0                 | 0            | 0                        | 0                  | 0          | \$151,729    |
| Wastewater Treatment Division   | 157,280,855              | 144,446            | 0          | 174,040            | 318,899           | 0            | 21,816                   | 184,039            | 0          | \$9,696,185  |
| DNRP Subtotal                   | 174,585,830              | 376,207            | 0          | 174,040            | 1,275,773         | 0            | 72,090                   | 184,039            | 0          | \$11,434,958 |
| Fleet Administration            | 221,711                  | 14,349             | 0          | 0                  | 1,285,862         | 440,163      | 44                       | 0                  | 0          | \$29,237     |
| King County Airport             | 4,380,132                | 81,867             | 0          | 0                  | 19,889            | 6,358        | 0                        | 0                  | 0          | \$336,379    |
| Road Services                   | 6,653                    | 0                  | 0          | 0                  | 0                 | 0            | 4,915,747                | 0                  | 0          | \$738,455    |
| DOT Subtotal                    | 35,023,068               | 769,171            | 208        | 0                  | 1,082,424         | 11,619,193   | 0                        | 0                  | 0          | \$2,985,996  |
| Adult & Juvenile Detention      | 9,249,345                | 872,140            | 208        | 0                  | 2,388,274         | 12,065,714   | 44                       | 0                  | 0          | \$943,680    |
| Community and Human Services    | 480,708                  | 36,052             | 0          | 0                  | 0                 | 0            | 12,742,350               | 0                  | 0          | \$3,062,272  |
| Executive Services              | 210,543                  | 13,936             | 0          | 0                  | 0                 | 0            | 0                        | 0                  | 0          | \$11,804     |
| General Office Administration   | 12,808,720               | 66,913             | 2,760      | 0                  | 0                 | 0            | 3,498,950                | 0                  | 0          | \$79,125     |
| Judicial Administration         | 13,659,660               | 20,700             | 27,552     | 0                  | 0                 | 0            | 0                        | 0                  | 0          | \$894,999    |
| DNRP Subtotal                   | 36,966,187               | 623,200            | 66,164     | 0                  | 0                 | 0            | 16,241,300               | 0                  | 0          | \$892,684    |
| Public Health                   | 3,441,961                | 33,116             | 0          | 0                  | 47,845            | 16,823       | 0                        | 0                  | 0          | \$265,350    |
| King County Airport             | 2,454,268                | 54,190             | 0          | 0                  | 44,922            | 2,053        | 0                        | 0                  | 0          | \$214,348    |
| Road Services                   | 5,936,230                | 87,906             | 0          | 0                  | 92,677            | 18,876       | 30,248                   | 0                  | 0          | \$479,698    |
| Sheriff's Office                | 1,958,853                | 66,372             | 0          | 174,040            | 22,597            | 2,518,207    | 13,360,363               | 30,248             | 0          | \$218,952    |
| Subtotal                        | 27,844,190               | 1,958,853          | 66,372     | 174,040            | 22,597            | 2,518,207    | 13,360,363               | 30,248             | 0          | \$2,187,168  |
| TOTAL                           | 27,844,190               | 1,958,853          | 66,372     | 174,040            | 22,597            | 2,518,207    | 13,360,363               | 30,248             | 0          | \$2,187,168  |

| 2009 Energy                     | Utility Manager Database |                   |             | Renewable Energies |                 |              | Utility Manager Database |                   |             | Totals  |
|---------------------------------|--------------------------|-------------------|-------------|--------------------|-----------------|--------------|--------------------------|-------------------|-------------|---------|
|                                 | Electric MMBTU           | Natural Gas MMBTU | Steam MMBTU | Electric MMBTU     | Biodiesel MMBTU | Biogas MMBTU | Electric MMBTU           | Natural Gas MMBTU | Steam MMBTU |         |
| Parks & Recreation Division     | 24,774                   | 16,749            | 0           | 0                  | 0               | 0            | 0                        | 0                 | 0           | \$27,42 |
| Solid Waste Division            | 29,196                   | 0                 | 0           | 4,250              | 0               | 0            | 6,611                    | 0                 | 0           | \$24,01 |
| Water & Land Resources Division | 5,075                    | 6,427             | 0           | 0                  | 0               | 0            | 0                        | 0                 | 0           | \$14,81 |
| Wastewater Treatment Division   | 536,642                  | 14,445            | 0           | 15,925             | 6               | 41,042       | 2,689                    | 184,039           | 0           | \$17,78 |
| DNRP Subtotal                   | 595,887                  | 37,621            | 0           | 15,925             | 2,976           | 4,300        | 164,192                  | 0                 | 0           | \$18,46 |
| Fleet Administration            | 756                      | 1,435             | 0           | 0                  | 148,400         | 56,649       | 6                        | 0                 | 0           | \$15,12 |
| King County Airport             | 14,945                   | 8,197             | 0           | 0                  | 2,295           | 818          | 0                        | 0                 | 0           | \$16,04 |
| Road Services                   | 0                        | 665               | 0           | 0                  | 0               | 0            | 16,773                   | 0                 | 0           | \$11,80 |
| DOT Subtotal                    | 119,988                  | 76,917            | 247         | 0                  | 124,912         | 1,495,900    | 0                        | 0                 | 0           | \$15,62 |
| Adult & Juvenile Detention      | 195,888                  | 87,214            | 247         | 0                  | 0               | 275,807      | 1,552,857                | 0                 | 0           | \$15,60 |
| Community and Human Services    | 31,559                   | 48,071            | 42,530      | 0                  | 0               | 0            | 0                        | 0                 | 0           | \$20,59 |
| Executive Services              | 718                      | 1,184             | 0           | 0                  | 0               | 0            | 0                        | 0                 | 0           | \$9,83  |
| General Office Administration   | 43,793                   | 4,694             | 0           | 0                  | 0               | 0            | 0                        | 0                 | 0           | \$16,43 |
| Judicial Administration         | 46,743                   | 2,070             | 32,494      | 0                  | 0               | 0            | 0                        | 0                 | 0           | \$23,24 |
| DNRP Subtotal                   | 126,128                  | 62,520            | 78,693      | 0                  | 0               | 0            | 0                        | 0                 | 0           | \$22,54 |
| Public Health                   | 11,744                   | 3,312             | 0           | 0                  | 5,521           | 2,165        | 0                        | 0                 | 0           | \$19,10 |
| King County Airport             | 8,510                    | 5,419             | 0           | 0                  | 5,184           | 264          | 3,975                    | 0                 | 0           | \$25,99 |
| Road Services                   | 20,254                   | 8,731             | 0           | 0                  | 10,705          | 2,429        | 3,975                    | 0                 | 0           | \$25,99 |
| Sheriff's Office                | 60,988                   | 195,888           | 78,850      | 15,925             | 2,978           | 290,613      | 1,719,479                | 3,875             | 0           | \$29,68 |
| Subtotal                        | 937,768                  | 1,958,853         | 78,850      | 15,925             | 2,978           | 290,613      | 1,719,479                | 3,875             | 0           | \$29,68 |
| TOTAL                           | 937,768                  | 1,958,853         | 78,850      | 15,925             | 2,978           | 290,613      | 1,719,479                | 3,875             | 0           | \$29,68 |

| 2009 Energy                     | Utility Manager Database |                   |             | Renewable Energies |                 |              | Utility Manager Database |                   |             | Totals  |
|---------------------------------|--------------------------|-------------------|-------------|--------------------|-----------------|--------------|--------------------------|-------------------|-------------|---------|
|                                 | Electric MMBTU           | Natural Gas MMBTU | Steam MMBTU | Electric MMBTU     | Biodiesel MMBTU | Biogas MMBTU | Electric MMBTU           | Natural Gas MMBTU | Steam MMBTU |         |
| Parks & Recreation Division     | 41,951                   | 0                 | 0.0%        | 1.2%               | 217,842         | 0            | 193                      | 0                 | 0           | \$11,44 |
| Solid Waste Division            | 159,189                  | 6,611             | 4.0%        | 4.7%               | 871,018         | 0            | 95.2                     | 0                 | 0           | \$9,83  |
| Water & Land Resources Division | 11,502                   | 11,902            | 0.3%        | 0.3%               | 43,025          | 0            | 267                      | 0                 | 0           | \$17,87 |
| Wastewater Treatment Division   | 608,160                  | 18,907            | 23.5%       | 22.6%              | 61,164          | 13.0         | 13.0                     | 0                 | 0           | \$23,24 |
| DNRP Subtotal                   | 850,703                  | 193,518           | 19.4%       | 26.9%              | 61,164          | 13.0         | 13.0                     | 0                 | 0           | \$22,54 |
| Fleet Administration            | 207,240                  | 0                 | 0.0%        | 3.9%               | 207,240         | 0            | 0                        | 0                 | 0           | \$19,10 |
| King County Airport             | 689                      | 26,259            | 96.2%       | 0.9%               | 17,638          | 0            | 51                       | 0                 | 0           | \$25,99 |
| Road Services                   | 689                      | 16,773            | 96.2%       | 0.9%               | 17,638          | 0            | 157                      | 0                 | 0           | \$25,99 |
| DOT Subtotal                    | 1,816,965                | 16,773            | 0.0%        | 51.7%              | 49,634,803      | 0            | 36,507                   | 0                 | 0           | \$25,99 |
| Adult & Juvenile Detention      | 60,988                   | 0                 | 0.0%        | 1.7%               | 60,988          | 0            | 0                        | 0                 | 0           | \$11,80 |
| Community and Human Services    | 122,059                  | 43,477            | 26.2%       | 60.6%              | 2,128,402       | 0            | 0                        | 0                 | 0           | \$11,80 |
| Executive Services              | 7,499                    | 0                 | 0.0%        | 4.7%               | 1,166,686       | 0            | 142                      | 0                 | 0           | \$9,83  |
| General Office Administration   | 53,674                   | 11,938            | 18.2%       | 0.2%               | 84,450          | 0            | 256                      | 0                 | 0           | \$16,43 |
| Judicial Administration         | 81,307                   | 0                 | 0.0%        | 1.9%               | 1,331,552       | 0            | 49                       | 0                 | 0           | \$23,24 |
| DNRP Subtotal                   | 267,051                  | 55,415            | 17.2%       | 2.3%               | 722,222         | 0            | 113                      | 0                 | 0           | \$22,54 |
| Public Health                   | 22,742                   | 0                 | 0.0%        | 0.6%               | 130,398         | 0            | 174                      | 0                 | 0           | \$19,10 |
| King County Airport             | 23,253                   | 0                 | 0.0%        | 0.7%               | 87,228          | 0            | 267                      | 0                 | 0           | \$25,99 |
| Sheriff's Office                | 45,995                   | 0                 | 0.0%        | 1.3%               | 45,995          | 0            | 0                        | 0                 | 0           | \$25,99 |
| Subtotal                        | 3,245,373                | 265,712           | 7.6%        | 100.0%             | 3,511,083       | 0            | 9,488                    | 0                 | 0           | \$25,99 |
| TOTAL                           | 3,245,373                | 265,712           | 7.6%        | 100.0%             | 3,511,083       | 0            | 9,488                    | 0                 | 0           | \$25,99 |

| ENERGY TOTALS, MMBTU            |                          |                   |             |                    |                 |              |                          |                   |             |         |
|---------------------------------|--------------------------|-------------------|-------------|--------------------|-----------------|--------------|--------------------------|-------------------|-------------|---------|
| 2009 Energy                     | Utility Manager Database |                   |             | Renewable Energies |                 |              | Utility Manager Database |                   |             | Totals  |
|                                 | Electric MMBTU           | Natural Gas MMBTU | Steam MMBTU | Electric MMBTU     | Biodiesel MMBTU | Biogas MMBTU | Electric MMBTU           | Natural Gas MMBTU | Steam MMBTU |         |
| Parks & Recreation Division     | 41,951                   | 0                 | 0.0%        | 1.2%               | 217,842         | 0            | 193                      | 0                 | 0           | \$11,44 |
| Solid Waste Division            | 159,189                  | 6,611             | 4.0%        | 4.7%               | 871,018         | 0            | 95.2                     | 0                 | 0           | \$9,83  |
| Water & Land Resources Division | 11,502                   | 11,902            | 0.3%        | 0.3%               | 43,025          | 0            | 267                      | 0                 | 0           | \$17,87 |
| Wastewater Treatment Division   | 608,160                  | 18,907            | 23.5%       | 22.6%              | 61,164          | 13.0         | 13.0                     | 0                 | 0           | \$23,24 |
| DNRP Subtotal                   | 850,703                  | 193,518           | 19.4%       | 26.9%              | 61,164          | 13.0         | 13.0                     | 0                 | 0           | \$22,54 |
| Fleet Administration            | 207,240                  | 0                 | 0.0%        | 3.9%               | 207,240         | 0            | 0                        | 0                 | 0           | \$19,10 |
| King County Airport             | 689                      | 26,259            | 96.2%       | 0.9%               | 17,638          | 0            | 51                       | 0                 | 0           | \$25,99 |
| Road Services                   | 689                      | 16,773            | 96.2%       | 0.9%               | 17,638          | 0            | 157                      | 0                 | 0           | \$25,99 |
| DOT Subtotal                    | 1,816,965                | 16,773            | 0.0%        | 51.7%              | 49,634,803      | 0            | 36,507                   | 0                 | 0           | \$25,99 |
| Adult & Juvenile Detention      | 60,988                   | 0                 | 0.0%        | 1.7%               | 60,988          | 0            | 0                        | 0                 | 0           | \$11,80 |
| Community and Human Services    | 122,059                  | 43,477            | 26.2%       | 60.6%              | 2,128,402       | 0            | 0                        | 0                 | 0           | \$11,80 |
| Executive Services              | 7,499                    | 0                 | 0.0%        | 4.7%               | 1,166,686       | 0            | 142                      | 0                 | 0           | \$9,83  |
| General Office Administration   | 53,674                   | 11,938            | 18.2%       | 0.2%               | 84,450          | 0            | 256                      | 0                 | 0           | \$16,43 |
| Judicial Administration         | 81,307                   | 0                 | 0.0%        | 1.9%               | 1,331,552       | 0            | 49                       | 0                 | 0           | \$23,24 |
| DNRP Subtotal                   | 267,051                  | 55,415            | 17.2%       | 2.3%               | 722,222         | 0            | 113                      | 0                 | 0           | \$22,54 |
| Public Health                   | 22,742                   | 0                 | 0.0%        | 0.6%               | 130,398         | 0            | 174                      | 0                 | 0           | \$19,10 |
| King County Airport             | 23,253                   | 0                 | 0.0%        | 0.7%               | 87,228          | 0            | 267                      | 0                 | 0           | \$25,99 |
| Sheriff's Office                | 45,995                   | 0                 | 0.0%        | 1.3%               | 45,995          | 0            | 0                        | 0                 | 0           | \$25,99 |
| Subtotal                        | 3,245,373                | 265,712           | 7.6%        | 100.0%             | 3,511,083       | 0            | 9,488                    | 0                 | 0           | \$25,99 |
| TOTAL                           | 3,245,373                | 265,712           | 7.6%        | 100.0%             | 3,511,083       | 0            | 9,488                    | 0                 | 0           | \$25,99 |

| Normalizaton                    |                          |                   |             |                    |                 |              |                          |                   |             |         |
|---------------------------------|--------------------------|-------------------|-------------|--------------------|-----------------|--------------|--------------------------|-------------------|-------------|---------|
| 2009 Energy                     | Utility Manager Database |                   |             | Renewable Energies |                 |              | Utility Manager Database |                   |             | Totals  |
|                                 | Electric MMBTU           | Natural Gas MMBTU | Steam MMBTU | Electric MMBTU     | Biodiesel MMBTU | Biogas MMBTU | Electric MMBTU           | Natural Gas MMBTU | Steam MMBTU |         |
| Parks & Recreation Division     | 41,951                   | 0                 | 0.0%        | 1.2%               | 217,842         | 0            | 193                      | 0                 | 0           | \$11,44 |
| Solid Waste Division            | 159,189                  | 6,611             | 4.0%        | 4.7%               | 871,018         | 0            | 95.2                     | 0                 | 0           | \$9,83  |
| Water & Land Resources Division | 11,502                   | 11,902            | 0.3%        | 0.3%               | 43,025          | 0            | 267                      | 0                 | 0           | \$17,87 |
| Wastewater Treatment Division   | 608,160                  | 18,907            | 23.5%       | 22.6%              | 61,164          | 13.0         | 13.0                     | 0                 | 0           | \$23,24 |
| DNRP Subtotal                   | 850,703                  | 193,518           | 19.4%       | 26.9%              | 61,164          | 13.0         | 13.0                     | 0                 | 0           | \$22,54 |
| Fleet Administration            | 207,240                  | 0                 | 0.0%        | 3.9%               | 207,240         | 0            | 0                        | 0                 | 0           | \$19,10 |
| King County Airport             | 689                      | 26,259            | 96.2%       | 0.9%               | 17,638          | 0            | 51                       | 0                 | 0           | \$25,99 |
| Road Services                   | 689                      | 16,773            | 96.2%       | 0.9%               | 17,638          | 0            | 157                      | 0                 | 0           | \$25,99 |
| DOT Subtotal                    | 1,816,965                | 16,773            | 0.0%        | 51.7%              | 49,634,803      | 0            | 36,507                   | 0                 | 0           | \$25,99 |
| Adult & Juvenile Detention      | 60,988                   | 0                 | 0.0%        | 1.7%               | 60,988          | 0            | 0                        | 0                 | 0           | \$11,80 |
| Community and Human Services    | 122,059                  | 43,477            | 26.2%       | 60.6%              | 2,128,402       | 0            | 0                        | 0                 | 0           | \$11,80 |
| Executive Services              | 7,499                    | 0                 | 0.0%        | 4.7%               | 1,166,686       | 0            | 142                      | 0                 | 0           | \$9,83  |
| General Office Administration   | 53,674                   | 11,938            | 18.2%       | 0.2%               | 84,450          | 0            | 256                      | 0                 | 0           | \$16,43 |
| Judicial Administration         | 81,307                   | 0                 | 0.0%        | 1.9%               | 1,331,552       | 0            | 49                       | 0                 | 0           | \$23,24 |
| DNRP Subtotal                   | 267,051                  | 55,415            | 17.2%       | 2.3%               | 722,222         | 0            | 113                      | 0                 | 0           | \$22,54 |
| Public Health                   | 22,742                   | 0                 | 0.0%        | 0.6%               | 130,398         | 0            | 174                      |                   |             |         |

## **Appendix D – Report: Recycling and Disposal of Lighting and Toxics Management**

King County Council Ordinance 16769 requested information from the Solid Waste Division (SWD) of the Department of Natural Resources and Parks related to disposal of fluorescent lighting, as follows:

- A summary of the current and planned activities of the solid waste division related to educating citizens on the proper disposal of spent compact fluorescent light bulbs and linear tubes.
- An analysis of a policy to establish mercury and lead content standards for all new lighting products purchased by King County; including a recommended content standard and a financial analysis of the costs to the county of such a standard.
- A summary of activities related to working with the state to solicit vendors for the state lamp and ballast contract who will take back spent lamps, preferably at no additional cost.

### **Current and Future Plans to Educate Citizens About Proper Disposal**

1. During 2010, SWD will continue to promote proper recycling of spent fluorescent bulbs and tubes through its private sector network of 68 recycling sites called the Take it Back Network. This program includes a Web site ([www.takeitbacknetwork.org](http://www.takeitbacknetwork.org)), brochure and direct mail advertising promoting proper recycling and listing the location of 68 sites in King County.
2. The King County Master Recycler Composters program will provide education about recycling fluorescent bulbs and tubes at selected events in King County including Issaquah Salmon Days, the SeaTac International Festival, Renton River Days and farmers markets.
3. SWD will promote fluorescent bulb and tube recycling at the household hazardous waste collection facilities, through direct mail advertising to residents, and through its Web site postings and post cards, among other outreach efforts.
4. The division also works with the garbage haulers in King County to educate residents about proper recycling of fluorescent lighting through its annual collection calendars and information on their Web sites.

### **Analysis of a Policy to Establish Mercury and Lead Content Standards**

In 2011, rulemaking activities will begin for ESSB 5543 (Recycling Mercury-containing Lights) which passed during the 2010 legislative session and creates a convenient statewide recycling program for mercury-containing lighting from Washington State residents starting in 2013. The rulemaking process will be an opportunity to engage other local government agencies in Washington and educate their residents about proper recycling of mercury-containing lighting.

## King County 2010 Energy Plan

Below is an analysis of a policy to establish mercury and lead content standards for all new lighting products purchased by King County, including a recommended content standard and a financial analysis of the costs to the county of such a standard.

The amount of mercury and lead in lighting products varies by lamp type and manufacturer. It varies by lamp type because of the functional properties and characteristics of the various types of lamps. It varies by manufacturer because of the techniques and quality control mechanisms used to dose or insert mercury into the lamps.

### Background

The European Union (EU), through its Restriction of Hazardous Substances (RoHS) Directive, has been the most active government entity setting mercury limits on lamps. The EU has a 5 mg mercury limit for most compact fluorescent lamps (CFLs) and a 5-10 mg mercury limit for linear fluorescent lamps. New lower mercury limits have recently been developed and will take effect in 2012. Most CFLs and some linear fluorescent lamps will have a 3.5 mg maximum per lamp. The EU is also phasing out lead solder under RoHS, and U.S. manufacturers are eliminating lead solder to comply.

In the U.S. there are no federal limits on mercury in lamps, and only a few limits exist at the state and local levels.

Lead and mercury content standards are one component of model lighting procurement policies used by federal, state, county, city and university programs across the United States. Model policies include provisions on energy conservation and efficiency, persistent, bioaccumulative and toxic chemicals (PBTs) including lead and mercury, supplier mercury content disclosure, and lamp recycling. Content standards have been established in the states of California, Maine and Oregon.

In King County, many lighting products are purchased through a State of Washington contract (#00802) for lamps and ballasts with Consolidated Electrical Distributors (CED), a multi-state contract negotiated through the Western States Contracting Alliance (WSCA) for industrial supplies and equipment with Grainger (#11305) and through retail stores.

Currently, Washington State Department of Ecology (Ecology) staff is evaluating both of these contracts. Ecology is considering replacing the current state contract (#00802), which expires March 27, 2011, with a new contract through WSCA that would allow the vendor to only offer its most energy-efficient, low-mercury, lead-free, long-lasting lighting equipment. This contract adopts the State of Oregon environmental specifications which are the most comprehensive specifications in the nation. Ecology is also working with the West Coast Environmentally Preferable Purchasing Collaborative to add environmental specifications to the current Grainger (#11305) contract which will improve the quality of lamps procured through this contract by requiring energy-efficient, low-mercury, lead-free, and long-lasting equipment. These changes will result in the purchase of additional environmentally preferable lighting products in King County and allow purchasing agents in King County to buy these products at discounted prices.

Standards

As a result of the anticipated contract changes, King County may not need a separate mercury and lead content standard. The Solid Waste Division will continue to monitor this issue and the development of the contracts. If a separate King County standard is needed, SWD would recommend the following:

King County shall adopt rules establishing mercury and lead content standards for lighting purchased on or after January 1, 2012. The standards shall be based on the most stringent lamp mercury and lead content standards established in other states, and shall be revised as needed to reflect the promulgation of new state standards. If one or more categories of lamps are not covered by other state mercury and lead content standards, King County may adopt standards minimizing the mercury content of lamps within such categories, including adoption of a no-mercury standard when non-mercury alternatives are available at comparable costs.

**Summary of Activities Related to Working with the State to Solicit Vendors**

Washington State currently holds separate contracts for the procurement of lamps and ballasts and for the recycling and disposal of spent lamps. King County staff discussed the possibility of adding recycling and disposal services to the existing contracts for procurement of lamps and ballasts with Ecology staff and found there are no plans to combine the contracts but they may consider listing recycling vendors as a part of the procurement contract.