

**Hennepin County, Minnesota  
Pilot Project**

**performed for  
Northern States Power Company**

**In collaboration with  
The Consortium for Energy Efficiency**

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## A. Background and Perspective

Hennepin County is an urban county with a population of 1,074,907, encompassing about one quarter of Minnesota's total population. Its labor force size is 674,179, with an unemployment rate of 1.5%, down from 2.4% in 1997. The per capita income in the County is \$36,000. Hennepin County's principal commercial industries are manufacturing, retailing, banking and educational development. The County is 611 square miles, and includes 45 cities and one township. The major city, and the County seat, is Minneapolis. The largest employers in the County are the State of Minnesota, the University of Minnesota, 3M Company, Northwest Airlines, and Dayton Hudson Corporation.

The governing body in the County is the seven member Board of Commissioners, with one Commissioner elected from each district. The County Administrator reports to the Board and, as chief executive officer, is responsible for County operations. Assistant County Administrators report to the County Administrator.

Hennepin County's government has 26 departments, plus a county attorney, sheriff, court system, and public defender. The County has been given a AAA bond rating by the major rating agencies.

Hennepin County owns approximately 75 buildings. The County also leases some smaller facilities.

### I. Organization and Staffing Levels

Both the Procurement and Equipment unit and the Property Service unit are part of the Public Service department (see Attachment 1; the numbers in parentheses are staffing levels). Public Service is managed by an Assistant County Administrator who reports directly to the County Administrator.

#### Procurement

The Procurement unit in Public Service is the County's central purchasing unit and it is responsible for commodity purchases. A Manager oversees the unit and supervises five buyers. The Manager also serves as a part-time buyer.

#### Capital Projects

The Property Service department includes both the Design and Construction unit and the Facilities Management unit, each of which is overseen by a manager. Design and Construction is organized into teams, one dedicated to Justice, one to Health, and a third to all other agencies. The fourth team provides engineering support to the other three. Facilities Management has four facility supervisors, each of whom directs the work of between three and seven building managers.

II. Highlights of the Procurement Function

Procurement

Procurement is responsible for registering bidders and maintaining bidder lists, preparing Invitations to Bid, processing bids, selecting the best vendor(s), and preparing and administering contracts. There are approximately 1,200 purchasing contracts. The organization also processes purchase requisitions and makes non-competitive purchases. It is specifically responsible for preparing product specifications or assisting the user with their preparation. Most information technology product specifications are set by the Chief Information Officer, Central Services sets copier specifications, and Property Services is responsible for determining specifications for many products used in buildings.

The user department is responsible for ensuring that product specifications are met. It is also responsible for quality and performance testing and bill payment.

Capital Projects

The Design and Construction unit of the Property Services department is responsible for administering facility construction or modification contracts. On all but the smallest projects, Design and Construction employs third party architectural/engineering (A/E) firms to do schematic and detailed design work. These A/E firms normally have their own "standard" specifications for the required products and systems. Design and Construction then manages the work of the A/E firm. Normally, the department requires its consultants to use certain energy-efficient products and systems, including lighting and ballasts, waste water recycling systems, and heat recovery systems.

The Facilities Management organization is also part of Property Services. Four facilities supervisors oversee about seventeen of the County's buildings. Building managers report to the facilities supervisors and oversee operations engineers and others. In most cases, the building managers are responsible for "like in kind" replacements of products and equipment.

III. Annual Capital and O&M Budgets

The Office of Budget and Finance administers the budgeting process, assists with problems, and provides guidelines. Each year, the process begins around February with the distribution of forms and instructions, and it ends in December with the Board of Commissioners' approval of the final budget and required tax levies. Hennepin County is on a calendar year. The annual and long-term budgeting processes of the County are integrated.

The Capital Budgeting Task Force (CBTF) reviews departments' capital project requests and makes recommendations to the Board of Commissioners. The CBTF consists of eleven citizens, one appointed by each of the Commissioners, and the remaining four appointed by a majority of the Board of Commissioners. It focuses on long-term issues and, accordingly, its recommendation relates to the Capital Improvement Program that is a five-year plan for proposed capital projects. The first year of the Capital Improvement Program is approved by the Board of Commissioners as the annual Capital Budget.

The CBTF has reached several conclusions favorable to the procurement of energy-saving products. Among these are (see the *1998 Hennepin County Capital Budget*):

- *The operating cost implications of all capital projects should be identified by County departments and priority given to those which will result in a reduction in operating costs where feasible.*
- *The CBTF recognizes that considerable operating cost savings can be realized through the application of energy conservation efforts in existing County facilities. As such, the CBTF strongly supports the expenditure of capital funds to carry out such measures. In determining the level and extent of funding for energy conservation projects, however, the CBTF feels that priorities must be established and realistic pay-back periods realized. (Note: It appears that there are no specific policies or procedures on using internal rate of return. However, several interviewees stated that the County is willing to spend up to 10% more to construct a "green" building, and that paybacks are normally required to be 5 to 7 years.)*
- *Further, the CBTF recommends that the occupancy cost of all space should be included in each department's annual budget and a charging system be developed by Property Services and applied to all departments, to be implemented as soon as practical.*

The County's total 1998 budget was \$1.38 billion, and the 1999 budget is \$1.41 billion. The County's actual and projected capital outlays are:

Year	1997	1998	1999	2002
Capital Outlay (\$millions)	\$95.0	\$97.2	\$116.3	\$131.2

The County is currently under a tax levy limit, and this may constrain operating budgets somewhat. Because capital projects may be financed using debt, which has no such limit, there may be some incentive to favor capital spending over using operating dollars.

IV. Importance of Energy Related Products

The following are the estimated dollar amounts of 1999 energy-related product purchases made under contract:

Product	Dollar amount purchased	Percent of total
Copiers	\$1,860,000	15.2%
Lamps and ballasts	116,000	0.9
Microcomputers and peripherals	10,250,000 <sup>1</sup>	83.5
Fax equipment	50,000	0.4
Total	\$12,276,000	100.0%

Note: <sup>1</sup> This number is likely to include mainframe computers and peripherals.

As the table shows, the centralized procurement unit's energy-using product purchases are largely confined to office and lighting products. Other energy-using products are either purchased as one-time items, or are bought in conjunction with a construction project. The dollar amounts of those two types of purchases were not available and are not included in the above table. The annual dollar amount spent on energy-using products as part of new construction and renovation projects is likely to be considerable.

**B. Findings - Procurement Process**

I. Regulations, Analyses and Procedures

Procurement

The key document for the buyers in the Procurement unit is the *Hennepin County Purchasing Rules*, dated March 1999. These rules allow user departments to make small commodity purchases of \$3500 or less on the open market. Emergency commodity purchases may be made in the same way, but subsequently the Board of Commissioners must ratify them. Sole source purchases are also exempt from the bidding requirement. All other purchases require a purchase requisition. If the purchase is under the statutory bid limit of \$25,000, then Procurement goes through an informal bidding process. If the need is ongoing, Procurement prepares a contract (including product specifications), informally opens bids, and awards the contract to the low bid meeting specifications. If it is a one-time purchase, Procurement obtains quotes and awards the purchase order. Formal sealed bids must be obtained for purchases that are over the \$25,000 limit, and the purchase must be advertised for two weeks.

The Board of Commissioners must approve any award that is not made to the low bid meeting specifications, and it must also approve all joint powers or cooperative purchasing agreements. In addition, the County's Chief Information Officer must

approve all information and communication technology purchases over the statutory limit.

Section 6 of the *Hennepin County Purchasing Rules* discusses specifications for commodity products and construction. Certain of these rules are relevant to the procurement of energy-efficient products:

- *...the County should be able to demonstrate a reasonable basis for any restrictive specification.*
- *Evaluation of essential features or levels of quality should consider overall economic advantage to the County.*
- *Direct vendor involvement in writing specifications at the department level is discouraged* (Note: This is the only reference to vendor involvement in the rules. The same rules state that departments should utilize the Purchasing Division for assistance in developing product specifications, and they should use Property Services for assistance with construction contracts.)
- *Departments must utilize the Purchasing Division for assistance in the development of specifications except for construction contracts that are the responsibility of the Transportation and Property Services Departments.*
- *The Office of the Chief Information officer must review and approve all specifications to purchase externally-developed information or communication technologies/ systems.*

That same section states that bid award considerations may include, among other factors:

- *Life cycle costs, including but not limited to operation and maintenance*
- *Other environmental considerations of commodities*
- *Best available technology (BAT) and best environmental alternative (BEA).*

Finally, the section lists some criteria for prequalifying vendors and commodities, which may include, among others:

- *Economic life cycle cost*
- *Length of time the commodity has been on the market and experience with it.*

## Capital Projects

The *Hennepin County Purchasing Rules* also address facility construction and modification. Purchases made for such projects follow guidelines similar to those for large commodity purchases, i.e., Property Services prepares specifications and plans, formal bids are solicited, the purchase is advertised, and bids are opened and evaluated. If a bid is to be accepted that is over the budget, then the Board of Commissioners must approve it. Design and Construction works jointly with the owner agency to prepare a project budget. The Board of Commissioners must approve schematic designs and bid specifications for projects over \$750,000. The Board of Commissioners also approves the construction budget as well as the contract with the general contractor.

There is also a document dated March 1996 and titled *Consultants Handbook, Hennepin County Property Services Policies and Procedures*. This document, which is in a developmental stage, describes the steps in a capital project, from Project Request to Project Close-Out. Two of the steps involve preparing a Schematic Design Report and a Design Development Report, both of which would be appropriate vehicles for specifying energy-efficient products and systems.

In 1997, Hennepin County received a grant from the Minnesota Office of Environmental Assistance to develop a *Sustainable Design Guide and Rating System* for the buildings constructed by the County. The developmental project team included personnel from the University of Minnesota, architectural consultants, and professional organizations. The main goal of the project has been to ensure that new buildings constructed by the County are “green” and that they are managed in an environmentally responsible manner throughout their life cycle.

The project is considering seven environmental topics:

- Site
- Water
- Energy
- Indoor air quality
- Human factors (e.g., health, comfort)
- Materials
- Waste.

The primary goal with respect to energy is to reduce energy consumption for heating, cooling, lighting, and other equipment and systems.

Strategies have been developed to address each of the seven environmental topics during five phases of facility construction and use. These phases are:

- Predesign
- Design

- Construction
- Occupancy
- Next use.

The *Sustainable Design Guide and Rating System* is most complete for the first three phases; additional work is being done to complete the project for the Occupancy and Next Use phases. The University of Minnesota is expanding the system, and it is also helping the County to implement it by providing training to County vendors and piloting the work on several County projects.

The *Guide and System* uses checklists to help ensure that each environmental topic is being appropriately considered during each phase of construction. For example, the Design Development Checklist includes the following Energy strategies that are specifically related to energy-efficient products:

- Provide daylight integrated with efficient electric lighting systems and controls
- Maximize efficiency of HVAC system
- Provide efficient service water system
- Use efficient equipment and appliances (select new equipment and appliances that meet EnergyStar® criteria).

In addition, the following Human Factors strategies could also promote the use of energy-efficient products:

- Provide appropriate thermal conditions
- Provide appropriate quantities of light
- Provide appropriate qualities of light
- Control glare from daylighting and electric lighting.

Related to the above, the Board of Commissioners passed a resolution (No. 99-113) directing the County Administrator to prepare sustainable architecture standards (incorporating the *Sustainable Design Guide and Rating System*) for all County design and construction projects. It also directed County staff to take a leadership role in promoting the *Guide and System* among public and private organizations in the region.

One of the pilot projects is the Hennepin County Public Works Facility (PWF) which was completed in 1998. The PWF was constructed using recycled material, including steel, remanufactured paint, and flooring composed largely of recycled products.

The service center in Brookdale is being doubled in size, and it will be a test subject for the Rating System, as will the Southdale center, which is being renovated. The Weidt Group, whose costs are paid for by Northern States Power (NSP), will be used to model the buildings.

II. Bases for Product Selection/Personnel Involved

If there is a five to seven year payback on an additional investment or cost, the County is likely to accept the greater cost as being reasonable. In addition, Property Service may spend up to 10% more on a facility to make it “green,” and all projects in excess of \$500,000 are to be “green.”

Although a project’s capital budget may sometimes be cut, it is rare that specific items are singled out. Generally speaking, the County is willing to spend the money required to construct a high-quality facility, definitely including energy-efficient and environmentally appropriate products and systems. County staff is largely convinced of the benefits of energy-efficiency, and they are unlikely to try to save money by using less efficient products.

III. Potential Efficiency Gains

Procurement

While efficiency gains within the Division of Purchasing are still possible, it appears that they would not be major. As shown by the table in §A.IV, most of the energy-using products purchased under contract by Procurement are already specified to be energy-efficient (like lamps and ballasts) or are inherently energy-efficient (like microcomputers). The major opportunity in the procurement area is likely to be for products that are bought on a one-time basis and that are not under contract.

Capital Projects

In 1994, the County began a five-year energy conservation program in partnership with NSP. Relamping with T8 lamps and electronic ballasts was done in 37 buildings, energy-efficient drives and motors were installed, and adjustable-speed motor controls were placed in ventilation and pumping systems. The program cost over \$5.7 million dollars. However, NSP assisted the County in obtaining 0% government loans to finance \$3.7 million of the cost, and NSP also provided \$898,000 in rebates. (Reportedly, the 0% loan program has ended, but some rebates are still available.) The program has resulted in annual savings of 11.4 million kWh of electricity, equating to \$731,000 per year. At the same time, the work environment has improved because of better lighting and reduced glare. This same type of renovation can be done in other County buildings.

IV. Other

Barriers

There do not appear to be many barriers to buying energy-efficient products in Hennepin County. However, budget constraints are one potential barrier. For example, the new jail will require about \$96 million and could put pressure on other projects’

budgets. Another possible barrier is inertia or lack of knowledge. Also, Design and Construction has sometimes had difficulty in gaining support from third party consultants for the County's energy-efficiency and other "green" programs.

### Additional Contacts

The original plan for this site visit included several more interviews that were not conducted because the interviewees were unavailable. Two of these individuals are in very important positions as they relate to energy efficiency, and both are strong supporters of energy efficiency and the "green" building program.

Mr. Randy Johnson is Chair of the Hennepin County Board of Commissioners. He is an authority on environmental issues, and he has been very instrumental in instituting the County's environmental and energy-efficiency initiatives. Mr. Johnson is clearly a champion for these issues, and his support extends beyond the County. He was President of the National Association of Counties (NACo) for 1997-1998, and in that position he encouraged a wide audience to develop or support the same type of programs that Hennepin County has undertaken.

Mr. Vern Genzlinger is the Assistant County Administrator for Public Service. As such, both Property Services and Procurement and Equipment report to him. He, too, is a strong supporter of energy-efficiency, and he has communicated its importance to the departments that he oversees. Another relevant department, Environmental Services, also reports to Mr. Genzlinger. This department is responsible for consolidating the County's solid waste, recycling, hazardous waste, and environmental protection programs. The sustainable architecture program described earlier in this report is part of Environmental Service's responsibility.

## **C. Recommendations**

The Procurement and Equipment unit and the Design and Construction unit have both made many significant steps toward implementing energy efficiency programs. In particular, the major hurdle of generating interest in, and support for, energy efficiency has clearly been overcome. The Commissioners are actively interested in energy-efficiency, and the Assistant County Administrator for Public Service is a strong supporter. With this support, County staff is in an excellent position to integrate energy-efficiency into all of its activities. These two units have already begun implementing some of the recommendations listed below, and are most likely aware of the need to carry out many of the rest.

### Overall

- Utilize all available 0% or low interest financing for energy-efficient product purchases.

- Make energy efficient product specifications an explicit part of governing documents, including the *Hennepin County Property Services Policies and Procedures* document and the *Hennepin County Purchasing Rules* document.
- Educate user agencies about the benefits of specifying and using energy-efficient products.
- Either separately, or in conjunction with the University of Minnesota and other like-minded organizations, consider sponsoring an ongoing energy-efficiency forum. It would include representatives from Hennepin County government and other organizations in the area that are interested in energy-efficient product procurement. The meetings would allow for the sharing of ideas, information sources, success stories, and so forth.

#### Procurement

- Learn the volume of the “other” types of energy-using products that are not included in the table in §A.IV, and then educate the end users about the benefits of buying those that are energy-efficient.
- Develop a formal guideline about using life cycle costing when deciding what products to purchase. Define a payback period, internal rate of return, or present value that is acceptable to the County.
- Continue the process of educating procurement personnel about energy-efficient products.
- Continue introducing EnergyStar® product specifications into Invitations to Bid and other procurement documents.

#### Capital Projects

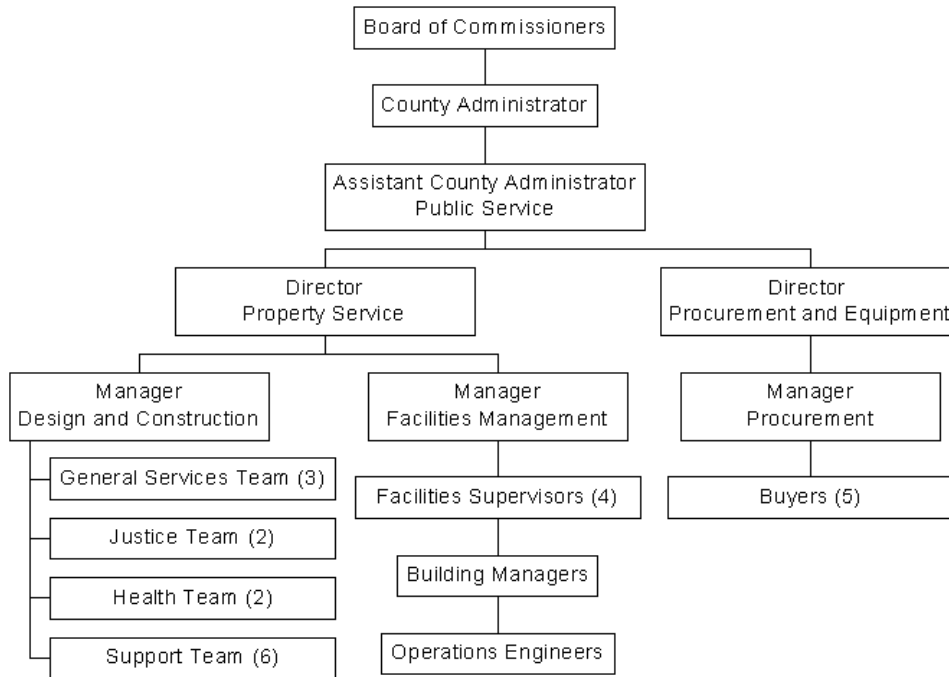
- Formally require the use of energy-efficient products for “like in kind” replacements and for building renovations.
- Continue the energy conservation program in any additional buildings where a net saving is still possible.
- Educate third party architects and engineers about the value of using energy-efficient products in construction and renovation projects

### **D. Implementation Plan**

The following table lists the above recommendations that Hennepin County could follow to build upon the considerable energy-efficiency work it has already done:

<b>Step</b>	<b>Status</b>	<b>Time Frame</b>
Utilize available financing	Ongoing	Continuous
Include energy-efficient specifications in formal documents	Begun	6 months
Educate user agencies	Just begun	1 to 2 years
Sponsor an energy-efficiency forum	Not yet begun	3 months
Encourage the purchasing of energy-efficient products that are not on contracts	Not yet begun	1 to 2 years
Develop formal life cycle guidelines	Not yet begun	3 months
Educate procurement personnel about energy-efficient products	Begun	3 months
Introduce Energy-Star® product specifications into procurement documents	Begun	Continuous
Formally require energy-efficient products for “like in kind” replacement	Begun	6 months
Continue energy conservation program in existing buildings	Ongoing	Continuous
Educate third party A/E firms about energy-efficient products	Begun	Continuous

### Hennepin County Property Services and Procurement



Note: This chart does not include organizational units that are uninvolved in the procurement of energy-efficient products.

Attachment 2

List of Hennepin County Interviewees

Roy Earl  
Senior Mechanical Engineer/Project Manager  
612-348-7758

Judy Hollander  
Director, Property Services  
612-348-3897

Greg Karr  
Acting Manager, Design & Construction  
612-348-3897

David Lawless  
Investment and Debt Management Officer  
612-348-4860

Barbara Sutey  
Director, Procurement & Equipment Department  
612-348-7930

Other Key Contacts

Vern Genzlinger  
Assistant County Administrator, Public Service, and County Engineer  
612-348-4306

Randy Johnson  
Chair, Board of Commissioners  
612-348-7885