OPTIMIZING ENERGY AND WATER MANAGEMENT IN LOCAL GOVERNMENTS

Texas City Efficiency Leadership Council Best Practice

Description of Best Practice

Increasingly, cities are leading the way on energy efficiency. Throughout Texas, cities are becoming more proactive about reducing energy and water costs. Some are driven by climate goals; more are striving to reduce waste – of energy, of water and of public dollars. Wasted energy and water cost money; across the portfolio of large and mid-size cities, those costs can be substantial.

Too often, though, opportunities for savings are lost because key parts of the efficiency chain are segregated or "siloed." For example, the finance department pays the bills while the facility manager maintains the building but never sees the bills.

In recent years, many cities have begun institutionalizing energy and water management functions. Ideally, a local government would have a single department or person identified and publicized to others within the governmental entity as responsible for energy and water efficiency. In reality, most cities have at least two departments responsible.

All those involved should work to break down silos, share information and best practices and ensure that the local government's goals are tracked, achieved and shared. In very different ways, Texas' six largest cities all have taken steps to institutionalize and organize efficiency efforts. We asked representatives of these cities — El Paso, Fort Worth, San Antonio, Houston, Dallas and Austin — to share information about how they organize their water and energy management functions.

This survey grew out of their desire to know how their peers were organized following several meetings to discuss their various structures. The focus of the survey was on the department within each city government that is primarily responsible for energy and water management, as well as the role of the various departments responsible for managing the city's operational resource consumption. This information is intended not only for those cities but also for small and mid-size cities that want to better organize their efforts to increase efficiency.

The following chart delineates by city which departments are responsible for each key energy and water management function.

DEPARTMENTAL RESPONSIBILITY FOR KEY ENERGY/WATER MANAGEMENT FUNCTIONS (BY CITY)

FUNCTION	AUSTIN	DALLAS	EL PASO	FORT WORTH	HOUSTON	SAN ANTONIO
Utility bill analysis	Department of Sustainability, Facility/ Building Services	Facility/Building Services	Facility/Building Services	Facility/Building Services	Department of Sustainability, Facility/ Building Services, Finance Department	Department of Sustainability
Utility bill payment	Finance Department	Facility/Building Services	Facility/Building Services	Finance Department	Facility/Building Services and Finance Department	Finance Department
Energy procurement/ contracting	Public Utility (Austin Energy)	Facility/Building Services	Facility/Building Services	Facility/Building Services	Department of Sustainability, Facility/ Building Services, Finance Department	Finance Department
Benchmarking and auditing buildings	Department of Sustainability, Facility/ Building Services	Public Works	Department of Sustainability, Facility/ Building Services	Facility/Building Services	Department of Sustainability, Facility/ Building Services	Department of Sustainability
Low-/no-cost project development	Facility/Building Services	Public Works	Department of Sustainability	Facility/Building Services	Department of Sustainability, Facility/ Building Services	Department of Sustainability
Renewable energy project development	Public Utility	Public Works	Department of Sustainability, Facility/ Building Services	Facility/Building Services	Department of Sustainability	Public Utility (CPS)
Capital project development	Facility/Building Services	Public Works	Facility/Building Services	Facility/Building Services	Department of Sustainability	Department of Sustainability, Facility/ Building Services, Finance Department

Working Across Departments

While these cities have made great strides to increase efficiency and achieved significant results, improvement is needed to increase collaboration across departments and further institutionalize efforts. As the table above demonstrates, the survey found that energy management duties are shared across at least two or three departments in each of the cities. City staff respondents indicated that communication and data sharing mechanisms often are lacking. Most of the cities indicated that there is no formal process in place; communication is ad hoc and issue specific. However, we did find that some of the cities currently are considering or implementing processes to improve communication and collaboration.

Primary Source for Energy Data

Among cities' many energy management responsibilities is compiling and sharing energy data. Several cities indicated that they use the U.S. Environmental Protection Agency's (EPA) Portfolio Manager as their main way to share data across departments. All of the cities indicated that the primary source for energy data is utility bills or data directly provided by their utilities in spreadsheets. Only the City of San Antonio is using submeters to collect utility data. None of the cities surveyed use Smart Meter Texas as the primary source for their energy management data, although the City of Houston does receive Smart Meter Texas data through Schneider Electric's Resource Advisor software.

Managing received data is another aspect of energy management responsibility. All of the cities surveyed indicated that they use EPA Portfolio Manager, and all but one use it in conjunction with an Excel spreadsheet. Many of the cities also use a third-party vendor service in addition to EPA Portfolio Manager and Excel. The number of systems used by cities to manage their data may be a clear indication of the lack of a comprehensive application that cities currently are aware of and using.

Funding

Funding is always a topic of interest during tight fiscal times. The survey found that more than half of the six cities received funding for improvements from multiple sources, including internal budgets, state and federal grants and energy project savings. The City of San Antonio is the only city that is funded solely from energy project savings.

Building Capacity

To ensure that cities are operating effective energy management programs, it is important to have opportunities for learning and the sharing of best practices. The cities were asked what resources are most effective in helping them improve their overall operations; e.g., peer exchange calls, guidebooks and/or stakeholder advisory groups. All of the cities except one indicated that peer exchange calls are vital to learning and sharing between staffs. A couple of the cities also suggested that greater internal leadership and support is needed before any additional new ideas are introduced. Lastly, another city suggested it would be helpful to have more classes on and professional development opportunities for energy management.

Third-party Management

The survey indicated that all of the cities except the City of Austin have third parties managing a portion of their energy management activities. The primary role of the third parties is to conduct building audits. Half of the cities also indicated that they had third parties assisting with or managing energy performance contracts, energy data management, low-cost/no-cost projects, energy procurement and renewable energy. None of the cities surveyed indicated they had third parties involved with paying utility bills; only one city, Houston, had a third party managing utility bill analysis responsibilities. San Antonio is only using third parties to conduct building audits; all other responsibilities are managed internally.

Conclusion

Cities are focusing more and more on management of energy and water consumption. Traditional facilities management departments have embraced more efficient operation of buildings. Many cities have created sustainability departments to focus on energy and water management in city operations. The survey of the six largest Texas cities demonstrates that, although attention has shifted toward greater operational efficiencies, considerable work may still need to be done to improve communication and remove institutional barriers that are hindering the implementation of greater efficiency.

One of the more obvious findings of this analysis is that multiple city departments typically handle major energy and water efficiency management processes. Without proper leadership, this can become an issue. A lack of collaboration – e.g., Accounts Payable not sharing utility bills or the Finance Department not including the Sustainability Department in energy procurement decisions – will hinder efforts to improve efficiency within city government. Strong coordination and communication among departments focusing on the energy and water management roles outlined above, with one department leading the effort, is more likely to ensure greater success.