Innovation Economy Comes to Eight Towns: The GCT Process and the Triple Bottom Line

by Ann Ruzow Holland

Community, economy, and the environment are the "triple bottom line." Today's local governments resemble socially responsible businesses and are concerned about all three. A group of eight local governments in five states spent the past three years "walking the walk" and seriously changing the impact of their community actions on the local economy and environment. These communities were not only concerned about the escalating price of energy and the toll it takes on budgeting and planning, but also about new ways to organize and manage their capital assets in the public interest.

They shared a sense of frustration with aging infrastructure, limited resources, and an overwhelming responsibility to maintain facilities and services that were not meeting town needs today, nor would they in the future. Linking local government with the right kind and fit of technical assistance moved the group of eight from dilemma to action, bringing environment, economy, and community together in a dramatic new way.

The hardest step is getting started and moving away from crisis-to-crisis planning. The Green Community Technologies℠ (GCT) process is an innovative inventory, analysis, and planning process that helps organize and identify the most pressing problems local governments are facing. Funded by the United States Department of Agriculture's (USDA) Small Business Innovative Research program, a private sector company from Vermont created the GCT process to help communities access the best state-of-the-art technologies to solve their infrastructure problems. Through GCT, and with USDA's financial assistance,

Five Reasons Why Your Local Government Should Green Up Its Public Facilities and Manage Public Assets

1. Facilities cost taxpayers money and avoidance comes with a cost.
2. Taxpayers want high-quality services and better services for less money.
3. It makes political sense; the people want a cleaner environment, improved quality of life. It gives meaning to the phrase "sustainable community."
4. Thoughtful and creative planning is good government.
5. Oversight agencies and taxpayers want the kinds of accountability that can be achieved through GASB 34.
6. It supports environmental technology entrepreneurs and can lead to local job and/or business benefits.

eight local governments instituted a planned progression to more efficient, more environmentally responsible cost-saving technologies and practices.

GCT applies a systems approach to inventory and to the analysis of public facilities and infrastructure, and it identifies areas where alternative approaches have significant potential to save money, protect the environment, and improve service delivery. Based on community priorities, the process provides customized research into alternative proven approaches that match community needs, conditions, and constraints. When communities are ready to implement changes, GCT can help identify a roster of qualified contractors.

GCT culminates the process by identifying capital allocation opportunities that provide sustainable solutions to community problems. The results are compelling for public officials and taxpayers alike. By moving from dilemma to action, governments are able to report substantial cost and energy savings, improved bond ratings, regulatory compliance, job generation, and environmental protection at the same time as they improve community quality of life.

GETTING ONE'S HOUSE IN ORDER

Capital asset inventories do not appear to rate high on a local government's list of key management objectives, but the Governmental Accounting Standards Board (GASB) and state comptrollers believe these inventories are essential and play a critical management function. It is stunning that many localities do not possess a comprehensive and up-to-date inventory of the assets they hold in trust for the taxpayers. The GCT inventory process can address this critical gap while meeting GASB requirements.

A GCT inventory promotes communication between decisionmakers and asset managers that can lead to better management of government assets. Improved communication leads to increased shared understanding of conditions and a willingness to consider feasible alternatives. Sustainable communities rely on well-managed public facilities that are cost effective, affordable, and environmentally friendly.

Some local governments have already compiled or maintain comprehensive capital asset inventories and have met GASB requirements. GCT enables communities to start with an inventory or not, depending on their circumstances.

Where Green Community Technologies℠ (GCT) Community Pilots Were Held

Vermont:
Richmond
Hinesburg
Thetford
New Hampshire:
Hancock
Maine:
Litchfield
Massachusetts:
Barnstable County
Richmond
New York:
Franklin

COMPREHENSIVE ASSET ASSESSMENTS IN CASE STUDY COMMUNITIES

Richmond, Massachusetts, is a moderate-sized community nestled in the Berkshire Mountains. Thetford, Vermont, is a hill town within commuting distance of Dartmouth College in Hanover, New Hampshire. Both Richmond and Thetford are thriving communities that are experiencing moderate residential growth and development.

GCT began with a comprehensive assessment of each town's material assets such as sidewalks and roads, streetlights, buildings and equipment, vehicles, town-owned forests, and water resources.

Litchfield, Maine; Barnstable County, Massachusetts; and Hancock, New Hampshire, wanted to focus their initial inventory on a select set of capital assets. Hancock, for example, wanted to combine the GCT inventory and assessment with its highway database to develop a maintenance plan based on road condition and use. Hancock officials wanted to understand how well different road segments were meeting community needs today and whether they would be adequate in the future.

The inventory process itself provided a great benefit to these five communities because it detailed holdings and their condition and also promoted shared knowledge of assets among town officials. In one case study, conducting an asset inventory revealed that several heating systems were in need of replacement. Rather than stagger their replacement, the community could consider bulk purchase, cooperative energy systems, or higher efficiency alternatives, including alternative fuel use.

In another community, it became clear that both culverts and roads were inadequate in certain locations that were adjacent to the next town.

Yes, it [the GCT inventory and assessment] actually may have exceeded my expectations. The information on heating costs of existing buildings per square foot is telling and useful, especially if we consider another new town hall or town hall/library combination. You have also made me think for the first time that a new, consolidated building, including town garage or barn storage functions might make sense. I also was interested on the comments regarding culverts and vehicles.

I'm going to forward the draft report to the selectmen, finance committee, DPW super, fire chief, and a few other town officers so they can also see it and am going to try like heck to finish my part of the inventory.

—Bruce Garlow
Town Manager
Richmond, Massachusetts

This offered an opportunity to confer with neighbors so the solutions become "win-win." Without the inventory, these options might not have been discovered and evaluated.

Some of the inventories were also designed to address the GASB Statement No. 34 (GASB 34), which requires communities to report municipal infrastructure as an asset. As a result, roads, bridges, drainage systems, and the like are now subject to depreciation. Estimating cost depreciation requires extensive historical data collection that can be prohibitively expensive and labor intensive for small local governments. Communities must meet GASB standards if they want to be in a position to finance municipal projects through bonding. In addition to its other benefits, the inventory cost-effectively allowed Richmond to meet this important administrative benchmark.

Towns that have already complied with GASB 34 can incorporate this information into the GCT inventory. Results of the inventory and assessment go beyond GASB compliance and help identify areas in which alternative approaches should be considered to achieve better economic, environmental, and social outcomes. A systems analysis of community infrastructure leads to specific recommendations for improved management or replacement of infrastructure with more efficient, environmentally friendly technologies. At the conclusion of the inventory and assessment, communities receive an asset management tool in the form of an electronic database that can be updated as needed for the long term.

JUMPING AHEAD ON THE FAST TRACK: HOT-BUTTON ISSUES

Sometimes communities choose to forgo the inventory process in favor of a hot-button issue that comes to the forefront and requires immediate attention. The GCT process is flexible and allows alternative applications. Hinesburg and Richmond, Vermont, and Franklin, New York, identified issues of immediate concern in order to start researching alternatives. In these three cases, GCT worked with community decisionmakers who had already identified assets most in need of repair, improvement, or replacement. In keeping with the triple bottom line, the process identified potential cost savings and environmental benefits to each community.

Generally, when communities face infrastructure issues, they turn first to engineers or architects who provide them with a limited set of solutions based on their own expertise. Conventional solutions typically do not open the door to innovative solutions that have been effectively implemented in other places. With GCT, communities define their needs and learn about a wide range of proven solutions in use in the United States and beyond. From its library of technologies and technologists, alternatives are identified that provide for the wisest and most affordable decision for each community.

HINESBURG, VERMONT

Hinesburg, Vermont (population 5,000), is nestled against the edge of the Green Mountains about 15 miles southeast of Burlington and about 10 miles east of Lake Champlain. In close proximity to metropolitan Burlington, Hinesburg has seen its share of growth over time, but as growth moves out from Burlington, Hinesburg will see even more.

Hinesburg was faced with growing residential demand that would force expansion of its wastewater treatment system. With a multimillion-dollar capital project looming, the GCT process helped the town by identifying opportunities to reduce input into the treatment plant by diverting gray water from a single source that does not require expensive secondary treatment. In addition, GCT identified opportunities for water conservation in new construction that will reduce wastewater flows per unit and alternative treatment technologies that will

I think it was money well spent. In our case, we settled on the wastewater upgrade project, but it could apply to a whole number of projects.

The result of this was that we put together an actual RFP for engineering design for the wastewater upgrade, and we've included this report as part of the materials that engineers have been receiving before they're preparing their proposals. So this is sort of outlining a number of different alternatives that we've already investigated a little bit… it was a broad brush look at some of these alternatives. But we felt it was a pretty important part of this whole request package.

I think there are a number of different projects that would be well served by this process. If a town hasn't done an inventory, this would be a perfect opportunity. I would recommend this. I found it very useful.

—Rocky Martin
Director
Department of Building and Facilities
Hinesburg, Vermont

We are enthusiastic about setting an example for other communities in New York State. This is the first time we will undertake a comprehensive evaluation of our buildings, and these facilities house activities that are the main service we offer to our taxpayers. Growing fuel and electricity costs, accessibility for everyone, and court mandates are all town concerns. GCT will bring this all together for the town and provide a set of recommendations for us to consider.

—Mary Ellen Keith
Town Supervisor
Franklin, New York

improve efficiency at the plant. As a result, Hinesburg expects to avoid having to invest millions of dollars in expansion in favor of much less expensive pretreatment upgrades and a smaller and more efficient wastewater treatment system.

Solutions such as this one are most likely to emerge when problems are considered in a systems context rather than as stand-alone issues. The stand-alone solution would have been to expand the treatment plant, not look at the quality of flows it was treating or at opportunities for conservation and redirection. Without GTC, comprehensive solutions would likely not have been considered. The traditional process of hiring expensive architects and engineers to implement conventional, business-as-usual solutions does not leave room for thinking outside the box and addressing the triple bottom line.

FRANKLIN, NEW YORK

Franklin, New York (population 1,218), is in the Adirondack region of New York State. The town is at a pivotal point in planning for its facility needs, having identified a variety of issues with respect to existing buildings. The town has also been considering constructing a new building to meet specific town needs. Over the years, the town's building committee collected a variety of information on its buildings. To date, however, the information collected was insufficient to provide a clear path forward. This is a common problem in local governments and one that GCT was developed to address. Providing external and objective technical assistance often leads to improved decision making and subsequent action.

Franklin was in need of a new approach that could address the timing and demand of multiple needs. As a result, GCT conducted a multifacility assessment, researched green-building alternatives, and identified the regulatory issues and resources associated with the project. GCT maximized the use of existing assets and minimized the amount of new construction required to meet town goals.

The more compact spaces are, the easier and less expensive they are to heat and maintain. GCT introduced town decisionmakers to principles and practices of green building and gave them conceptual designs to bring to an architect. GCT will locate professionals qualified to implement green-building practices for the town to include on its bid lists. Franklin will consider addressing its building needs in phases in order to address the most critical needs first and move functions around temporarily without running out of space for them.

Most important, phasing will allow the town to focus its limited resources on one or two projects at a time without becoming overwhelmed. In the words of Dave Decker, member of the Franklin Building Committee: "We need a new community house, and thanks to this we're doing it the right way. I'm really impressed." Franklin is now working on recruiting green architects, contractors, and supplies as well as constructing a capital finance plan for the four facilities.

RICHMOND, VERMONT

Richmond, Vermont (population 4,100), is located in the western foothills of the Green Mountains on the eastern edge of the Lake Champlain Valley. As in many communities, parts of Richmond's infrastructure are nearly a hundred years old, requiring costly improvements in the near future. Although the town is faced with numerous priorities for infrastructure repair and replacement, resources available for these improvements are limited, as is the capacity to consider alternative options.

As in many communities, the town's capital assets had never been completely inventoried, so Richmond prepared a GCT capital asset inventory and assessment that satisfied GASB 34 requirements. Local leaders took advantage of this effort to map and digitize all infrastructure locations to create a capital asset overlay in their geographic information system (GIS). Richmond's auditors commended the town on completing the fixed-asset requirement.

Once the inventory was completed, a team from Yellow Wood Associates conducted a participatory review process in collaboration with town administrators and the Richmond Planning Commission.

GCT identified six areas in which alternative approaches could make a real difference in outcome and cost. GCT researched the differences in cost, performance, capacity, and impact between conventional and alternative approaches. Six recommendations were made in which alternative

Every construction or rehabilitation project, no matter what size, should be evaluated for long-term cost benefits, even if more effort and funding must be expended in the selection process. The benefits of a thorough technology assessment are significant when the right technology is chosen for public investments.

In the sense of a positive outcome, it's instilled a collective thought of at least asking these questions at those critical points when you're making decisions, whether they're small or large, about how things are done and is there a better way.

—Ron Rodjenski
Town Administrator
Richmond, Vermont

Richmond, Vermont, chose to focus on alternative fuels for town vehicles, such stormwater source reduction options as alternative paving regimes, retrofit of its town building for increased energy efficiency, more efficient pumps and motors for a planned upgrade to the wastewater treatment plant, and repair and replacement technologies for water and wastewater pipes.

technologies would provide superior overall economic and environmental performance. Planning was tailored to meet the requirements of Richmond's triple bottom line and of engaged officials and citizens as they charted the town's future. This process also equipped them with an analysis of options based on the latest technologies and life-cycle economics.

GCT found a grant to help offset the cost of highly efficient pumps and motors for the new sewage treatment plant. The town is in the process of retrofitting its historic town hall to increase energy efficiency and is taking steps to upgrade underground pipes. Richmond's latest interest is in generating local energy using renewable fuels.

LESSONS LEARNED: MOVING FROM THOUGHT TO ACTION

For each of these eight communities, taking the time to analyze alternative approaches was not only in the communities' best interests, but also served to conserve taxpayer dollars and improve environmental impacts, thus addressing the triple bottom line. Introduction of a systems approach brought new choices to local government officials who needed to move from dilemma to concrete action. In the long term, implementation of GCT recommendations depends on towns' financial management capacity. The process, however, equips administrators with baseline data, asset management tools, information about emerging technologies, and a methodology for decision making as opportunities arise. Once implemented, GCT is successful at saving tax dollars, improving bond ratings, and helping assure citizens' access to basic services. What is different about the GCT process is that it accomplishes these goals while reducing environmental impacts, conserving resources, and preserving quality of life.

By linking information on asset conditions with the extent to which they meet community needs today and will continue to meet them in the future, municipal leaders can take a proactive approach to their infrastructure. Officials can plan replacements well in advance and identify opportunities for cost savings through combined purchases. Understanding the pros and cons of alternative approaches helps public officials explain their decisions and choices to the electorate and improves accountability for municipal infrastructure. Proactive planning combined with intelligent capital allocations will contribute to enhanced fiscal stability and physical security.

Public accountants, auditors, and comptrollers recommend that municipalities take a long-term view of their infrastructure investments. Communities know that it is also in their best interests. The process of analysis can be daunting and complex. GCT uses a life-cycle-costing approach to compare the total costs of alternative versus conventional approaches. Life-cycle costing is the process of considering alternatives that satisfy all performance requirements (for example, code, safety, comfort, reliability) on the basis of all costs spent over the life of the longest-lived alternative. These costs include purchase price, operation and maintenance, replacement costs for shorter-lived alternatives, and disposal cost. GCT enables communities to take a long-term view of their infrastructure by making the process accessible, affordable, and successful.

GCT is one of many new approaches available to local governments to improve their asset management. The Cities for Climate Protection Campaign (CCP) of the International Council for Local Environmental Initiatives (ICLEI) is another successful model for placing local governments on a "low carbon" diet.

CCP is a formalized and popular international program for local governments. ICLEI provides technical assistance (fee for service) to more than 800 local governments to inventory their exising greenhouse gas emissions and then integrate reduction and monitoring programs into government operations (www.iclei.org).

Participation in ICLEI's Climate Protection Campaign continues to gain strength among medium and large cities around the globe, and its impact and overall carbon emission reductions will contribute to global targets in respective countries.

Communities attain sustainability by design or they fail by default. The decisions towns make today will profoundly affect their ability to function in a near future in which energy supply and environmental impact become crucial concerns. A new kind of approach is required for municipalities to make use of the emerging technologies and new practices that assure financial solvency, energy efficiency, natural resource conservation, and the capacity to meet citizens' basic needs. **PM**

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