Designing for Implementation

You give an order around here and if you can figure out what happens to it after that, you're a better person than I am.
Harry S. Truman, President of the United States, 1945-1953

The challenge is how to coordinate stormwater services and standard operating procedures involving stormwater across all city departments. City employees should know not only what, but why certain practices create stormwater benefits.
Water Resources Department Staff, City of Lynchburg, Virginia, 2013

It is important to have a comprehensive program; every department has a relationship to stormwater management; staff should become aware, commonly, of this fact, and it should become a shared mindset.
Borough and Township Staff, Lancaster County, Pennsylvania, 2013

Your purpose in designing for implementation is to incorporate adopted changes to stormwater management in your local jurisdiction. Although the suggestions for a change agent in this section apply broadly to public program implementation efforts, assume your intent is to implement a stormwater utility to gather revenues for environmental improvements. Success will mean addressing implementation challenges, such as creating a cost-effective billing system, smoothly and rapidly. You will avoid major causes for failure such as:

1. Ideological resistance (perhaps because the program was mandated by your state authority);
2. Personnel problems;
3. Poorly designed incentives, both inside government and out;
4. Inadequate implementation resources to administer the utility;
5. Communications problems
6. Distractions created by new priorities; and
7. The absence of rules and resources to resolve the challenges.

Designing for implementation is a task on par with formulating a problem or creating a solution, and as such it deserves similar attention, effort, and strategic thought. Several methods will help ensure your success in the implementation phase:

Communication and Education

Creating an effectively designed dedicated funding mechanism such as a stormwater utility takes significant time, so it isn't uncommon to have a year or more pass following its adoption before it is fully implemented. By investing heavily in communications and education – for example, by working with the media and using signage on BMPs to inform citizens and decision makers about the new services that a utility will provide – you can avoid and reduce resistance during the start-up period by people who did not participate in the adoption of the utility or who have divergent attitudes.

Green infrastructure has distinct communication advantages over gray. Green is visual, while much of gray is underground; and green is attractive while, for that portion of the general public who are not civil engineers and concrete business people, gray is not. Green infrastructure also has significant educational possibilities. Not only is it visual and attractive, it is scalable, so that individual property owners can see how, as managers of their homes and businesses, they can assist in solving stormwater environmental problems.

It will assist your communication and educational efforts if you can develop a guiding vision of success and establish clear goals and objectives for your stormwater management program. For example, the City of Lynchburg, Virginia states that the "ultimate goal of its stormwater management program," which is now funded largely by its new utility, "is to help maintain its pristine water sources" – the James River and a nearby reservoir. On its website (*www.**lynchburg**va.gov/)*, the city provides a slide show, which highlights its water sources and is titled, *This is Our River…Our Future…* A vision for success will relate to, but may not be the same as, the vision you created in the initial agreement or your strategy to take action. A vision for success will evolve as your program does. It will be your description of attainable excellence for the foreseeable period of time and act as your guiding principle; as such it will offer the public both a conception of success and an affirmation of your community's future.

Personnel

Implementation of a utility will be aided if the people who establish it are highly qualified, committed, and maintained as employees of your government by adequate compensation and the provision of career paths. Staff people who have been involved in previous phases that led to the adoption of the utility should be able to provide additional support throughout the implementation process. Your jurisdiction may include some employees who are not likely to aide implementation efforts, for whatever reason, and thus need to be avoided, worked around, or eased out of positions from which they could obstruct change. During the implementation phase, you will also want to assure close and frequent liaison with top administrators in your government. This may mean that you should find as many opportunities as possible to update, educate, and engage others who could influence the process. This includes getting in front of elected officials for brief updates and also making sure that information about the proposed fee structure or process is shared at regular internal staff meetings. There is a point where a little information goes a long way in terms of not overwhelming top administrators with too much data but it is important to keep them involved throughout the process and avoid last minute questions right before things are about to be implemented. Keep in mind that elected officials must be as knowledgeable about what is being proposed so that they can articulate to citizens and businesses why a dedicated funding mechanism is essential to the community and how it will be managed. If your elected officials and key staff can't explain it, you'll have a very difficult time getting the message understood and supported within the community.

Forward and Backward Mapping

Mapping implementation processes can be done in either in a forward or a backward manner; or, the two methods can be combined. Forward mapping is the typical top-down, linear

method, which sets goals and plans for future actions. The standard questions are: What will be done and by when? Who will be responsible? And what measures of success will be applied to planned actions?

Backward mapping, in contrast, is "bottom up." It begins with a statement of specific behaviors to be achieved at the lowest level of implementation. For example, you might state, "Residential property owners will receive their first billing statement for the utility by (a date certain) and at that time they will understand:

1. Why they are being billed;
2. How their fee relates to the volume of runoff from their property;
3. How they can reduce their fee by installing BMPs; and
4. In general, what fees other classes of property owners will pay."

This statement provides the backward-mapping team with a set of objectives such as: coordination measures across departments to set up billing and credit procedures; and educational programs for property owners. Next, the team can work back up through your governmental organization by asking the questions: "What units of our government can help achieve our objectives?" And, "What rules, resources, and relationships do those units need?" By beginning with behavioral statements at the lowest level of implementation, backward mapping readily brings to mind incentives.[16] Thus, for example, it raises the question: What credits, of a certain amount and time, would incentivize property owners of various classes to remove impervious surfaces, or install rain gardens or green roofs on their properties?

Interviews with staff officials of local governments in Bel Air, Maryland, Lancaster County, Pennsylvania, and Lynchburg, Virginia (See Appendix B) indicated, in all three places, that difficulties with the maintenance of stormwater BMPs installed on properties managed by homeowner associations (HOAs). The difficulties imply the need for a backward design, including consideration of incentives for property owners and managers of BMPs in HOAs, to improve their level of maintenance.

Ideally, your team will be able to combine forward and backward mapping in its implementation effort. The two are complementary methods and are much more likely to be effective when used together than when one is used alone.

Documenting Your Work

As with other phases of the policy change cycle, writing about your work and dating and saving documents is highly recommended. Documents will help focus the attention of people and organizations on important subjects for implementation. They will help to surface areas of common agreement and of needs for negotiation. They will preserve a record of progress, which you will be able to draw upon when communicating with others, such as state authorities or the EPA, and they will provide data you will need to assess progress in your implementation efforts.

[16] An emerging branch of economics focuses on incentives, popularly known as "nudges," to solve environmental problems and other social issues. See, for example, Thayer and Sunstein (2008).

Phasing in Program Changes

A common implementation strategy is to begin with what is easiest, most rapid, and most visually appealing. For example, you might quickly decide, internally, that stormwater fees should be issued via water bills, although the details to operationalize that decision are critical and may take a significant amount of time to work through. Deciding a billing procedure is not something that is visually appealing, but the green infrastructure you can create with stormwater utility fees can be highly attractive. Also, given the time required to create the utility, you can spend some resources, perhaps with your municipal planners in the lead, communicating and educating about visually and emotionally appealing concepts, such as using trees and plants to absorb and filter rainfall, and interconnecting greenways, wetlands, parks, and forests to capture water. You might decide to involve relevant advisory groups in your jurisdiction, as well as other citizens, in discussing and advising how to remove barriers to green infrastructure such as: parking requirements; road widths; storm sewer connection requirements; and low impact development practices. Other related topics for discussion could be: setting benchmark standards for on-site stormwater retention; requiring green infrastructure designs for government projects; and reducing impervious areas by various means, such as setting foot-print caps, and providing incentives for infill and compact development (See American Rivers, 2013).

Your local decision makers may be hesitant about implementing the stormwater utility. Focusing public attention on the ultimate benefits of the utility may help ease their concerns. If the decision makers remain hesitant, however, they may become supportive if implementation of the utility is staged – for example, by using a reduced fee during its first year of existence.

Lessons Learned

- Understanding how to create an effective stormwater utility billing system was complex beyond our expectations. **Water Department Officials, City of Lynchburg, Virginia**
- The most important lesson we have learned about creating a stormwater utility is that we need to hire people who are passionate about stormwater. **Water Department Officials, City of Lynchburg, Virginia**
- A major challenge for me is to make room for stormwater management among day-to-day responsibilities and avoiding having other demands on my time that crowd-out stormwater and put it on a back burner. **Township Official in Lancaster County, Pennsylvania**