APPENDIX A

EPA's Unit Pricing Roundtable Discussion: Questions & Alternatives

This appendix presents a selection of proceedings from EPA's Unit Pricing Roundtable, held in December 1992. These proceedings include descriptions of different programs from around the country, experiences of solid waste officials who have spearheaded unit pricing programs, and ideas on managing program costs and challenges. The discussions provided in this appendix are organized around a number of specific questions and are divided into four general sections:

- *Getting started*
- *Exploring program options, issues, and experiences*
- *Integrating unit pricing and complementary programs*
- *Accommodating groups with special needs*

The first section explores issues involved in starting a unit pricing program, such as education, communication, and changing the status quo. The second section compares the essential components of a unit pricing program, including container choices, pricing models, and billing systems. It then moves on to financial issues, including cash flow and enterprise funds, and discusses enforcement issues. The third section focuses on integrating unit pricing and complementary programs, such as yard trimmings and household hazardous waste collection programs. The last section shares some of the Roundtable proceedings on accommodating groups with special needs, such as senior citizens, large families, and low-income households.

Getting Started

Changing the Status Quo

How do you convince citizens that unit pricing is a good idea in the first place? That has been a real obstacle.

Seattle, WA: *I think getting some good public support by working on it early is very important. Contact not only recycling groups but also community councils, people whom you might not expect to be big advocates of a unit pricing program.*

State of IL: *The public opposition question comes up for communities that currently pay for their garbage collection out of general taxes (e.g., property taxes). In a sense, that's a hidden cost, and people perceive garbage collection as a free service. But if they have a monthly bill (instead of paying through property taxes, for example), they know that garbage collection costs something and there's "no free lunch." Then, in moving to a unit pricing program, they can actually see that the cost of garbage collection comes down. Whereas if the costs are hidden as property tax or general*

Unit Pricing Roundtable Participants

The EPA-sponsored Unit Pricing Roundtable was moderated by Jan Canterbury of the EPA Office of Solid Waste and attended by over a dozen individuals who have been involved in successful unit pricing programs. The participants included:

Nancy Lee Newell of the City of Durham, North Carolina

Peggy Douglas of the City of Knoxville, Tennessee

Barbara Cathey of the City of Pasadena, California

Bill Dunn of the Minnesota Office of Waste Management

Nick Pealy of the Seattle Solid Waste Utility, Washington

Jody Harris of the Maine Waste Management Agency

Jamy Poth of the City of Austin, Texas

Jeanne Becker of Becker Associates, Illinois

Lisa Skumatz and **Cabell Breckinridge** of Synergic Resources Corporation (SRC)

Lon Hultgren of the Town of Mansfield, Connecticut

Greg Harder of the Pennsylvania Department of Environmental Resources

Thomas Kusterer of the Montgomery County Government, Maryland

Robert Arner of the Northern Virginia Planning District Commission

revenue, then no matter how far waste collection costs drop, they see unit pricing as an added cost.

State of MN: *What I have found in Minnesota, and it's true with a lot of waste issues, is that we have the true believers and then we have the skeptics. The two groups are pretty much cemented before the discussion even begins. So, how do you get them to move? I'm not sure. But mandates at either the state, county, or city level can work.*

SRC: *Maybe one of the ways to help get past public opposition is to work with members of citizen groups or "green groups" to start a groundswell of support for the program. Have some success stories from other communities. This can help make it so that the politicians supporting unit pricing are going with the tide rather than bucking the system.*

Citizen Education

Did you use ad hoc citizen advisory groups, focus groups, surveys, and things of that sort before you got started?

Austin, TX: *Yes, in fact, the way we introduced the program (this takes a lot of leg work but is extremely important) is that we contacted neighborhood and civic associations, as well as our recycling block leaders. Just coming up with the list of associations was a task. We produced an eight-minute video on unit pricing and played the video at the neighborhood meetings. We had real people talking about what was about to happen. We got a lot of feedback by showing that tape. We carried out two focus group surveys, including one on larger families, an issue that many people want to hear more about. We experimented with soliciting feedback that was recorded on a telephone voice mail system. This is effective because, believe it or not, people are not that hesitant to record their views. It is also cost-effective, since we use the telephone answering tree for our other programs as well. The voice mail is a call-automated system, so the caller presses "7" to find out when our brush pick up date is or "2" to find out how to exchange carts. Many of the questions asked are just that simple. As you review your communications and outreach system, it makes sense to look into voice mail.*

Costs of Public Education

How much money was budgeted for unit pricing education? Also, in developing your outreach efforts in-house, how many staff members did you devote to education and public relations?

Austin, TX: *Our educational costs ranged from $6 to $8 per household per year in the early years. Most of those costs were start-up costs. We saved a lot of money by doing all of our work in-house—designing a user-friendly name and a regular way of communicating in our pilot program. However, this in-house approach meant that we were constrained from using mass media such as TV and radio. We did not have the capacity to develop a TV commercial that said, "Here is how you participate in the new program." I really doubt that many communities phasing in their unit pricing program will find a mass media program useful because unit pricing can require a complex explanation. Instead, we use mass media only with our generic recycling and*

yard trimmings messages—simple messages such as "Either leave it on the lawn or compost it." We had three full-time staff members for education. One person was assigned to public relations, another was a graphic artist that participated in many things, and I was the planner. Also, we utilized volunteers (such as recycling block leaders or neighborhood association presidents) who provided the leg work in getting the word out. You would be surprised how interested the volunteers are in doing something. We produced our video out-of-house because we didn't have the necessary cameras.

Seattle, WA: *Seattle spends $3.25 per household per year on public education, but that is actually high because a portion of that money goes to educating commercial and transfer stations. So it's probably under $3. But if you can piggyback some of these things, you can reduce your costs even further. Postage is very expensive, so if you can tag postage for the unit pricing message along with something else, it's even cheaper.*

Pasadena, CA: *I'd like to emphasize that it is absolutely key to put yourself on the firing line with the customers. They pay the fees. When we went to the community we assured them, "We're not taking anything away from you. We are giving you the opportunity to have more control over your costs. You cut your trash down, you cut your trash bill down." You need to listen, take the abuse, but then once the people actually experience the program, they become converts, they don't want to go back. Either you take the time up front to educate, or you take it later with operational difficulties once the program is underway.*

Getting Ready for Unit Pricing

What about communities that don't have unit pricing now?

Knoxville, TN: *My fear is that a lot of what's being discussed here may be difficult to apply to most cities in the South. In Tennessee, for example, we did a needs assessment of all the counties, and we found, first of all, that the waste composition was very different from the rest of the country. Only about 25 percent to 35 percent of the total waste stream was residential. Also, there is no city-wide curbside recycling, very little yard trimmings recycling, no household hazardous waste collection, and only one regional materials recovery facility. In addition, our landfill tipping fees average only about $25/ton even though we have adopted Subtitle D landfill regulations. Our land values are just a whole lot less than other areas of the country, for now at least. I don't think Tennessee is a lot different than most states in the South.*

EPA: *I'm glad that you raised that because one of the goals of the guide is to provide information for communities that may not yet be at the jumping off point for implementing unit pricing. Any comments?*

Pasadena, CA: *What do you mean they are not ready? What's your objective?*

Knoxville, TN: *Well, to answer the first part of your question, in our needs assessment study, we found that a third of the counties in Tennessee didn't even have collection service, period. So it's hard to talk about unit pricing or recycling. And one of the main reasons why I wanted to go to unit pricing was to be able to finance some of the extra municipal solid waste programs. I can't do it right now, because every time I try*

to get city council to increase property taxes to pay for curbside recycling, I'm competing against stormwater drain programs or something else.

Mansfield, CT: *You can start implementation with a drop-off center. Our community used the closure of the town's landfill to start paying by the bag at the transfer station. Any major facility or system change could act as a catalyst for a unit pricing system.*

Durham, NC: *Well, some of the South is ready, and it's because we have a very progressive state legislation package to push us. We have a 25 percent goal for July 1993, which not many of us are going to reach. And a 40 percent goal by 2001. We have to provide some kind of recycling for our citizens. That's spurring a lot of interest in our state, and a lot of people are looking at all the complementary programs. We are trying to give people as many options as possible (e.g., curbside recycling and garbage collection once a week, yard trimmings collection, a yard trimmings composting facility, and a bulky item pick-up). Anything other than sending it to a landfill. Our landfill is going to close, and our county hasn't been able to site another, so we're going to be shipping our waste out of the county. So we have a real big incentive to make sure we dispose of as little as possible. When you do have a crisis situation, and you have legislation that's pushing you in that direction on a state level, it can push you into the cutting edge of things, so it could be that you need to knock on your state legislature's door.*

Program Options, Issues, and Experiences

Voluntary Versus Mandatory Programs

What are some of the advantages of voluntary programs?

Northern VA: *There are communities like Plantation, Florida, that have voluntary unit pricing. Voluntary programs are more compatible with ideals of personal freedom, and the enforcement costs may be lower. On the other hand, there may be less participation in voluntary programs. A certain amount of good will is associated with mandatory programs, since everyone has to participate. Mandatory programs also provide a greater ability to cover fixed costs and less of an incentive for illegal dumping. If you have to pay for at least some municipal solid waste service, then you may be less inclined to dump your waste.*

Time Factors

Does it take less time for your crews to go down the street and get their work done with the unit-based program?

Austin, TX: *Yes. We went from manual collection to semiautomated and estimate that the collection cost savings will be $5.11 per household per year. And we also went from three collectors to two collectors. That might not sound like much on an individual household basis, but certainly there is a cost savings. Then, we promote the*

educational message of "share your boundary with your neighbor," so we can make fewer stops in your neighborhood.

Seattle, WA: *I think there are economies when you're collecting minicans as opposed to toters. Toters take 20 to 45 seconds apiece, depending on what you've got. The minican takes less time than that, so there are definitely time savings. But, I think that bags are considerably faster than either toters or minicans.*

Bag Programs

What is the largest city with a bag program in Pennsylvania?

State of PA: *Probably the largest city in Pennsylvania that has a bag system is Allentown, but it has a limited per-bag system that is only used for grass clippings. Reading has a population of 78,000, but it has a voluntary system in which haulers are required to offer a variable rate option. Wilkes-Barre has a population of around 48,500, but its program applies only to residents of apartment buildings. The largest mandatory per-bag system is probably Carlisle, which has a population of around 20,000. Carlisle is followed by South White Hall Township, with a population of around 18,000. Most per-bag systems in Pennsylvania use standard size 30-gallon trash bags. And usually they put a weight limit of around 40 pounds on the bags so you can't fill them up with bricks.*

Stickers

How are stickers working out in your unit pricing program?

State of IL: *The advantage of stickers is that there is no billing at all. They're applicable to various types of service, types of containers, and types of waste. With a simple, uniform schedule, stickers could be ordered through the mail. Or somebody could buy 50 stickers at a time from a hauler or from the local grocery store. The stickers are easy to keep and they are not going to rot. Often times, the haulers can't read and write, and so stickers are very simple. Since every second they spend at a stop is money to them, the more data collection or enforcement that you require haulers per stop, the less likely they are to do it. It's a time limit. But stickers are not perfect. The adhesive can be a problem. The hauler might not be able to find them. Stickers can be stolen off of someone else's garbage bag. And maybe the biggest problem is that people could buy a year's worth of bags in January, and then not buy anymore for the next several months. It is really hard to have to predict people's behavior in order to forecast revenue. The largest community in Illinois that has a sticker program is the City of Aurora, which has 100,000 people.*

Durham, NC: *Stickers are interesting because you can take a big bag that you got at the store and put your garbage in it and put a sticker on it. Then you are reusing that bag and not generating another waste product.*

Pricing Models

What unit pricing models have you used? And how are the variable costs of providing services kept low?

State of IL: *In Illinois, communities tend to charge what their neighbors do. The rates vary from $1 to $2 a sticker. I really think they just try it and hope that the price is in the right ballpark.*

State of PA: *Most Pennsylvania communities use a bag-based unit pricing system because they see examples in nearby communities. Carlisle adopted one about three years ago, and people in the neighboring township actually began clamoring for the same. In fact, they actually sued the township to give them a bag-based system instead of a flat-rate system. People like unit pricing because they see it as being very fair and very equitable.*

SRC: *A 30-percent impact on customer costs may be a threshold level at which people begin responding to unit pricing. In contrast, I've seen some communities offer 90-gallon cans as the smallest size and then charge a quarter or a dollar for each additional 30 or 60 gallons. That may be unit pricing in one sense, but it certainly doesn't provide much of an incentive for people to source reduce. You can also use a fairly simple model and then consider some scenarios that give you an idea of what your rates should be. You don't have to have a massive rates model; there are communities working fine with microcomputer spreadsheets.*

Subscription Service Changes

How do you handle it when people want to change their service?

Austin, TX: *Do not underestimate how many people will select the smallest cart. Right off the bat, we went $2,100 in the hole because of all the people who were going to do the "right thing" and picked 30-gallon carts. In other words, be prepared for your program to become successful. Secondly, when it comes to cart exchanges, the start-up costs for this program are really high. You really need to talk to your politicians and everyone and get it all in a nice spreadsheet and realize that you're going to bite the bullet for the first three to six months of the program. We offer a free cart exchange the first time, and then $15 subsequently. But we were estimating that a total of 15 percent ended up changing in Austin. Instead of doing any surveying up front on the carts, we had to rely on the household size for estimates.*

Pasadena, CA: *The thing that my staff keeps coming back to me about is the administrative cost of making changes. Our rule is, you can't change service levels more often than every six months. Only every six months, however, even with 27,000 customers, means that there's somebody changing every single day. We don't charge for changing service right now, but I think that we must begin to charge for changes in order to create a disincentive. Soon, if you want to change, it's going to cost you $15 to $25 to make that change.*

Billing

What elements are needed in a successful billing system?

Seattle, WA: *When you start unit pricing, determine if there are certain reports that you want to be able to generate from the billing system and make sure you get that capability integrated in your billing system right away. Later on, this type of modification can be just horrible and extremely expensive.*

Mansfield, CT: *Mansfield originally had a private system, with the haulers doing the billing. When we implemented our unit pricing program, the town took over billing. We find that one of the side benefits is that we can lien property. The haulers have liked the system very much because they know they are going to get paid every month. And that might be a way to sell it in a community that is also planning to take over the billing.*

Seattle, WA: *That's a double-edged sword for us. We do our combined billing with the city's water department and drainage and waste water utility. We do have the lien authority and essentially can turn off the water if somebody doesn't pay their bill. The problem is that we have to deal with a lot of complaints from their customers, and it doesn't always lead to the best results for us in terms of a quality billing system.*

State of MN: *In some places in Minnesota, we are using a two-tiered (fixed plus variable fee) system that is separate from the garbage collection billing system. The government collects some of the fixed costs to offset it.*

Cash Flow

How did you project your cash flow over a certain period of time?

Mansfield, CT: *We collect quarterly and in advance. That solves a lot of the cash flow problems.*

Seattle, WA: *If you're tight for cash, you need to know what's coming in and what's going out. It's very important to build in lags in your billing system. There's going to be some lag time in how people respond to unit pricing, and that tends to work to your benefit. You need to be conservative about the rate at which people reduce their solid waste, particularly customers using the extra can, especially if you have high extra can rates. And, don't underestimate the portion of the construction and demolition debris in the waste stream. Look really hard at wood waste. Wood waste typically comes to your transfer stations in small loads. It can disappear real fast if you don't flow control it or know what's going on with it.*

Enterprise Funds

What are the key advantages of enterprise funds? Do they help you in tracking costs of services? Do they make it easier to raise rates than taxes?

Austin, TX: *It's never easy to raise rates, enterprise or not, but from a marketing point of view, if we have a program that may be a little more sophisticated than what a council member had thought about doing and if we can justify that we can pay for it, certainly it's easier to get quality proposals for rate changes approved. I think that is the key: it must be performance-based and used to justify budgets.*

Pasadena, CA: *It also can be used as a point of leverage, in the sense that we can say we are an enterprise. We are a business and we have to charge full costs for our operations.*

Seattle, WA: *I think it's easier to get analytical staff, because there is a perception that if you've got big capital programs and big resource acquisition programs, then it tends to be easier to support getting people like that. The same is true with computer systems. It tends to be easier to support those, which is real helpful.*

Mansfield, CT: *Our municipal solid waste enterprise fund has grown, matured, and is now supporting other activities, such as litter control. The downside to this is that policy makers may look to healthy off-line funds for support in the struggle to fund various other community programs.*

Municipal Versus Private Haulers

Does a municipal program have more of a revenue-cost cushion than a private hauler?

Mansfield, CT: *I wouldn't say more cushion, but definitely more control over costs. We took over a private system and added recycling collection and still kept the rates the same. Our unit pricing program provided more service for the same price as the "free market" system. Mansfield contracts with two private haulers to implement its system.*

Pasadena, CA: *You can't assume that there are a lot of cushions. In Pasadena, we operate like a business and must be competitive. Now, if your municipality owns a landfill, you can find a little subsidy. But, if you do full cost accounting, then you know your true cost of operation. Then if you decide you need a cushion, that is part of the decision-making process. Another thing is, don't underestimate the sophistication of the private haulers. If you work very carefully with them, then you can learn a lot together. For example, I'm working with my commercial haulers very closely, because we have commercial recycling requirements. We're planning to adopt unit pricing in the commercial sector for the same reason—to encourage waste reduction and recycling. So commercial haulers need some help from us, but they also should be part of the process of gathering and sharing information.*

State of IL: *One of the differences between municipal systems and private haulers is that with the municipal system, you have a captive audience, and you can reach economies of scale. This is especially important for some of the programs we've talked about, such as Austin, Pasadena, and Seattle: all are larger population bases where a hauler can*

reach economies of scale. This is not the situation, however, in the Midwest. In Minnesota, Wisconsin, and Illinois, outside of the metropolitan areas, the problem is that you have much smaller communities of several hundred or a few thousand people. Second, many of these communities use multiple private haulers. The goal of some communities is to keep every hauler in business, even if it's only one guy with one truck.

State of PA: *A few months ago, I talked with a group representing waste haulers from Pennsylvania. I wasn't sure what their attitudes would be toward unit pricing. It turns out they actually like the idea, but their great fear was the uncertainty and risk from having a straight price per bag (proportional) program. They were much more favorable toward the idea of having a two-tiered system (i.e., fixed rate plus a per bag fee) that would better allow them to recover their fixed costs.*

Ways To Use Local Ordinances

How can your local government, city council, or state legislature help?

Pasadena, CA: *In order to protect business for waste haulers and recyclers, communities can pass ordinances that require a franchise to do business. In this way, local governments can help create a level playing field. We designed an ordinance that makes haulers buy franchises from the city. We put as much flexibility into the ordinance as possible, but, at the same time, established some sort of guidelines. This assures that everyone's working under the same terms and conditions, whether it's one person, one truck hauler, or a bigger hauling firm.*

Seattle, WA: *Another way to help smaller haulers is by stabilizing transfer station rates and disposal rates for reasonably long periods of time. This approach uses authority from state and local governments to insulate haulers from a lot of risk.*

State of MN: *If your goal is to encourage source reduction, you might have to employ mandates. This is especially important when budgets are tight, since both composting and recycling cost real money. As an example, in Minneapolis and St. Paul, they enacted ordinances that require food establishments to have food packaging that is either returnable, reusable, or recyclable—that's really a cutting edge area. Also, don't forget to amend your solid waste ordinance to allow for backyard composting and set up some standards and advertise them to protect against rodents and odor.*

Methods of Enforcement

Are you finding that illegal dumping is a big issue?

Pasadena, CA: *I think the key here is not to associate illegal diversion with variable rates. There is always going to be some amount of illegal dumping, especially in hard economic times. So you have a multitude of factors that are contributing to what is generally called illegal dumping. The key here is education and providing alternatives such as legal diversions (for example, recycling and composting) and constructive source reduction actions.*

State of ME: *Enforcement efforts can be made more cost-effective through publicity. It only takes one enforcement instance along with a lot of big publicity to send a loud message to people who might be thinking about illegally dumping. In Maine we had a very large investigation on private haulers who were hauling to other municipal landfills with lower fees. The investigation was blown up in the press, with nightly TV coverage. It stopped a lot of the illegal dumping in other communities.*

Mansfield, CT: *We have a part-time garbage enforcement agent who works a couple days a week on enforcement and public education.*

State of MN: *In all fairness, I want to stress that it's not unit pricing per se that is driving illegal dumping. It is also driven by growing restrictions on what you can put in the garbage can. I believe restrictions may have more effect on illegal dumping than unit pricing.*

What People Really Do With Their Trash

People say, "My neighbor is the last one who goes to work, and he's going to put his garbage in my can." I have also had professional people say that they are planning to take their trash to work. So how do we address these concerns?

Mansfield, CT: *Again, I would like to underscore that in our experience, neighbors have not put their garbage in the cans of other neighbors. We have had some calls—not many—from people who swore that their neighbor had put additional recyclables in front of the caller's bins. We investigated and found out it was the hauler who had put all the bins on one side of the street so that he could make one stop.*

Austin, TX: *We did a study that measured what households would do with garbage that could not fit in their subscription cans. Extra trash had to be labeled with stickers that were purchased for $2 each. We received 554 responses to our survey and got the following results:*

- *32 percent used the stickers and paid for their excess trash disposal.*
- *29 percent never had excess garbage and never had to use stickers.*
- *14 percent saved their excess garbage until the next trash pickup.*
- *11 percent stomped the extra garbage into their carts.*
- *5 percent threw their extra garbage out at a neighbor's or friend's.*
- *3 percent threw the extra garbage away at work.*

We also found that most excess garbage came from households that subscribed to larger, 90-gallon carts. We knew that most 90-gallon carts were purchased by households with five members or less, so we decided that excess garbage was not a problem created by large households that might not be able to reduce waste. Instead, we think some families simply choose not to respond to unit pricing—some families decide that they would rather pay more for larger carts and extra disposal than recycle or reduce waste.

Integrating Unit Pricing With Complementary MSW Programs

Yard Trimmings Programs

What's the most effective complementary program that you've used with unit pricing and would recommend?

State of IL: *Yard trimmings systems (pay-by-the-bag) can easily be implemented as programs that are complementary to unit pricing. If the household properly manages its yard trimmings by composting or keeping grass clippings on its lawns (grasscycling), it can avoid disposal costs without much effort. Second, a yard trimmings system costs almost nothing for the community, except relatively low infrastructure costs. And a yard trimmings system can reduce the total amount of residential waste by up to 30 percent, depending on where you live and how great a quantity of yard trimmings you have initially. I would say that if you had only one program to go along with unit pricing, it should focus on yard trimmings. Illinois instituted a ban on yard trimmings. Everyone thought we'd need a lot of new compost sites and thousands of bags to pick up yard trimmings. In fact, about 60 percent of all homes started grasscycling. Overnight, households just stopped picking up grass clippings, and costs for picking it up plummeted.*

Knoxville, TN: *In our little city, we generate 20,000 tons of large brush and limbs every year, but we haven't budgeted for composting equipment. Any suggestions?*

State of IL: *Instead of buying chippers, you can stockpile the brush at the compost site. It doesn't smell so you can store it for a long period of time. Also, you can rent a big chipper or tub grinder several times a year and then use your mulch for landscaping.*

Pasadena, CA: *In Pasadena, 15 to 20 percent of the population has signed up for separate collection of yard trimmings. They put out an average of 50 pounds per household per year. If I could increase my participation in this program to 30 percent and everybody put out 50 pounds, then that's a big savings on landfill tipping fees. In addition, yard trimmings are dense compared with plastic, which is light relative to its volume. If your ultimate goal is to keep tonnage out of the landfill, then, dollar for dollar, you have a lot bigger bang for the buck with a yard trimmings program.*

State of PA: *In Pennsylvania, many municipalities use their bag system to collect yard trimmings, too. In Carlisle, residents put the leaves in plastic bags and the hauler dumps them out of the bags. Then the hauler actually puts the bags back on the curb so that people can reuse the bags. And, in Allentown, they use paper bags that break down in the composting process. Some communities use a vacuum system. It varies from place to place, but plastic bags are pretty widely accepted in Pennsylvania.*

Austin, TX: *Our yard trimmings do not get burned or go into a landfill. We mix them with our sewage sludge and create a product called "Dillo Dirt" (short for Armadillo). We bag*

it and sell it at nurseries or use it for our city parks. The Dillo Dirt program is very popular. People like to know that their grass will be used to deflect program costs. It's not a big money maker, but it does do a little better than break even.

Seattle, WA: *I'm surprised that people are talking about leaving their yard trimmings on their lawns, because in Seattle that's not a real common phenomenon. Households either compost or use curbside collection. We distribute free compost bins, which could be one reason; another could be differences in climate.*

Recycling Programs

What about adding a recycling program?

Pasadena, CA: *If you don't have curbside recycling in place, you might look at other alternatives. It is extremely expensive to put in curbside recycling.*

Mansfield, CT: *Well, we found a big increase in recycling participation when we went from drop-off recycling to curbside pickup, so I don't think our unit pricing program would work as well without curbside pickup of recyclables.*

Seattle, WA: *I think that on the issue of cost of services, you need to know, as best you can, what services customers are willing to pay for. Then, if you provide a broad enough range of services at different prices and levels of convenience, you can best serve the majority of people's needs. I think people are willing to pay for convenience, and don't underestimate that.*

Also, Seattle has risk-sharing clauses built in to its recycling contract where the haulers either receive an extra payment or pay us a credit, depending on whether the economy indices and market prices are good or bad. That actually increased our financial exposure beyond what we like, but we felt that it was the appropriate thing to do, given the state of markets right now.

State of IL: *For some very rural communities it is prohibitively expensive to do curbside collection once a week. In central Illinois, communities have curbside collection of recyclables once a month, and they found that it's actually working quite well. When they went to unit pricing, they just offered refuse bag collection once a week and recyclables collection once a month.*

Household Hazardous Waste Programs

Some communities already have household hazardous waste pickup or drop-off. How can these programs work with a unit pricing program?

Durham, NC: *You may be able to share expenses with other city agencies. In addition to our yard trimmings, curbside recycling, and bulky item pickup programs, we have a household hazardous waste program. The payment for this came from our wastewater treatment department, not from our landfill tipping fee. The waste staff are just as concerned about hazardous waste going into the wastewater system as we are about it going into the landfill. We may have to change that in the future and split it, rather*

than let them pay the whole bill. But it was a cushion for some time. We are also working on a permanent collection system on a regional basis. We hope to get a four-county region together and see if we can get a price break. We would set up permanent sites and negotiate with a contractor, saying, "We're going to give you a million people's worth of household hazardous waste. Can you give us a better price than dealing with one county, or one city"? Then we can reduce our costs and provide more frequent service to more people.

Keeping the Message Simple

How do you avoid confusing your customers when you add a program to your unit pricing system?

Austin, TX: *Through mass media we talk about complementary programs such as recycling and our Dillo Dirt program. But for unit pricing, and specifically how to participate in "Pay-As-You-Throw," we targeted our audiences more directly by using direct mail, a newsletter, and doorhangers. In these, we explained how to set out your wheeled cart, where it should face, and how to share with a neighbor (i.e., go ahead and pull two carts together on a neighbor boundary at the yard so that it's fewer stops for the collector). So, we steer topical information to specifically reach the affected audience. We choose to use easy terms to promote the program. It's important to keep messages simple and clear.*

Accommodating Groups With Special Needs

Older Households

How do you cater to the needs of senior citizens?

Pasadena, CA: *Our older population began to have some concerns about their ability to actually move their trash and pay for their trash. What we came up with seems to be working well. We sent a note that said, "If you are over 62 years of age or if you are disabled, call for special rates." Almost 10 percent of our population has called and about 5 percent are on the special rates right now. The special rate for senior citizens is a 10-percent discount. They can choose any service option they want, because we found that their needs varied.*

Durham, NC: *What about the people who don't have driver's licenses, or are temporarily disabled; they broke their leg and it will be six months before they are mobile again? And, also, do you go back and check to see if the older person has died or if a young person is now living there and getting this service?*

Pasadena, CA: *First, if they don't have a driver's license, we ask for some kind of ID card or birth certificate. People send all kinds of things; they're very good about wanting to show you that they qualify. Secondly, our eligibility criteria say that if there is a younger person in the home that can roll the trash for the disabled, then that household does*

not qualify. You have to be disabled, and you can't have a caregiver who is able to do this. A lot is based on trust, although we do expect that we will do some followup, depending upon how many people subscribe to the service. As far as people with temporary needs, our basic message is if your need is less than six months, the administrative costs of making that change are greater than the actual discount that we could provide. But we do make exceptions on a one-to-one basis. Our customer service reps do a tremendous amount of talking, asking a lot of questions and dissuading people. The idea behind their asking questions is as much to help as to provide disincentives to taking advantage of the system. So we try to do it in a very courteous, polite way. After a while, most people get tired of answering the questions, but if they can answer all the questions then we do try to help them.

How large is your customer service department?

Pasadena, CA: *For 27,000 residences, we have three people. One person answers the phones out front and dispatches on the radio for very basic questions. For more detailed questions, I have two more individuals who can respond. But, if the question is very difficult, it goes up to another level.*

Low-Income Households

How do folks handle the low-income issue?

Seattle, WA: *We don't have any family rates, but we do have a low-income rate. This summer we qualified low-income, elderly, and handicapped customers for rate assistance. We include all households who are under the federal poverty line.*

Pasadena, CA: *I would concur that if you're looking for standards, try to find something that is an established standard—not something that you create for your city. That's where we had problems because Pasadena is a more expensive place to live than other places in the nation. It's difficult to defend a low-income standard if it's not already established.*

Large Households

Could you address the perception that a unit pricing program bashes the family?

SRC: *That is a very common question at conferences. I guess to me, that's an education issue. People who have larger homes pay more for electricity. People who have more people in the house pay more for water and more at the grocery store. The question is not so much aren't we going to be hurting these families but rather should small families continue to subsidize these large families? I think that you need to turn the question around.*

Inner Cities

What about our inner cities?

Seattle, WA: *Monthly reports in Seattle show that illegal dumping is more concentrated in certain areas than others, and it tends to be in lower income areas of the city.*

Mansfield, CT: *Our toughest enforcement problems are in multi-family housing because of the transient population and difficulty in communicating with individual tenants, as opposed to single-family residents.*

Pasadena, CA: *Pay special attention to any area of more transitory populations. They are going to have special needs and special demands. We may need more frequent neighborhood cleanups there.*

Seattle, WA: *Also, it is effective to use community groups, and to provide grants to community councils. Often, they can do it for less money, and there is a lot of community pride in dealing with the problem. City government is not great at doing it, but community groups can do it.*

Multi-Family Units

What has been your experience with applying unit pricing to multi-family housing?

Seattle, WA: *We've had a broad range of problems providing unit pricing to residents of multi-family housing. These include contract relations, design, enforcement, and deciding whether the city or haulers will serve these units. Also, if you're going to do unit pricing in a big city with lots of multi-family housing, you have to have a reliable billing system that the customer service reps can use. We've got 9 inspectors and 22 customer service representatives, so we've got a big staff. But we have 300,000 collections a week, so even 1 percent of that turning up as phone calls can be a problem. We get about 650 calls a day from customers, and we can deal with that.*

Pasadena, CA: *I have a problem with landlords who call me when their units are empty. They say, "I'm not using the unit because I'm remodeling it right now, so I shouldn't have to pay for trash." But I still have to have the same operation; I still have to pass by the unit. So, when you set up a unit pricing program, be sure to educate your landlords about this.*

APPENDIX B

Putting the Blocks Together: Additional Examples

In Part III of this guide, a six-step process for assembling a unit pricing program entitled "Putting the Blocks Together" was introduced. The six steps demonstrated how to combine projections of cost, demand, and service levels in order to arrive at a tentative rate structure for a unit pricing program. The six steps provided a general introduction to the process of designing a rate structure but did not demonstrate how to accommodate the specific needs of your community when designing a unit pricing program.

This appendix consists of three examples to assist decision-makers in tailoring their programs to the specific waste management goals and needs of their communities. Each of the three examples outlines a community goal and the modifications to the design and assembly process considered necessary to meet that goal. The three examples are:

- *A community that wants to keep revenues higher than costs as it moves from a traditional waste collection program to a unit pricing program (the transition period.*
- *A community that wants to provide complementary solid waste services such as a recycling collection program.*
- *A community that decides to accommodate citizens with special needs within its unit pricing program.*

Designing a rate structure that meets the particular goals and concerns of your community is important. Use the three examples to get a sense of how to customize the six-step process to better meet the demands of your community.

- **Step 1: Demand**. Estimate total amount of waste generated in the "steady-state."
- **Step 2: Services**. Determine the components of your unit pricing program.
- **Step 3: Costs**. Estimate the costs of your unit pricing program.
- **Step 4: Rates**. Develop a tentative unit pricing rate structure.
- **Step 5: Revenues.** Calculate the revenues from unit pricing.
- **Step 6: Balance**. Evaluate and adjust your preliminary unit pricing program.

Focusing on the Transition Period

During the transition from a traditional waste management program to a unit pricing program, households gradually adjust their habits to the new opportunities and costs introduced by unit pricing. The demand for services from local municipal solid waste agencies might settle to new, lower levels during this time. The result can sometimes be a drop in revenues for the local agency. Many communities introducing unit pricing need to know that revenue shortfalls, however, will not be excessive during the transition period, nor in the subsequent steady-state.

If a community requires the revenue from its unit pricing rates to cover costs during both the transition period and the steady-state period, it needs to focus on Steps 1 and 3 of "Putting the Blocks Together." During Step 1, the community needs to produce a detailed and accurate estimate of the degree to which households will reduce solid waste generation to better anticipate changes in revenues that will result from the unit pricing program. To acquire reliable estimates for this step, the community can draw on the experience of other communities that have introduced similar complementary programs, public education efforts, container options, and special services.

A detailed estimate from Step 1 will also help the community accurately anticipate the rate at which costs will settle downward. In Step 3, the community needs to look at how a reduction in waste volume will lower costs, such as transportation and tipping fees. Unit pricing planners then need to test tentative rate structures to find the correct balance between decreasing revenues and decreasing costs and to keep the local solid waste agency's revenues in line with costs during each quarter of the transition period, as well as the subsequent steady-state.

Adding Complementary Services

Communities that have a clear mandate for waste management can sometimes pursue a program that combines source reduction and recycling. For example, the citizens of a community might demand a combined program of unit pricing and curbside pickup of recyclables. To develop a rate structure that would accommodate a complementary curbside recycling program, the community would need to accurately identify all of its waste management costs and carefully weigh all of its revenue-raising options to determine if such a program was feasible.

In Step 3 of "Putting the Blocks Together," the community can explore the potential for combining equipment, crews, billing, and routes for both trash collection and recycling pickup. Careful scheduling or innovative use of equipment could significantly reduce costs. The community should also use this step to examine the financial trade-offs of the two programs; for example, a recycling pickup program could lower the total amount of waste being landfilled or combusted, reducing the community's tipping fees to help cover the costs of providing recycling collection.

In Step 4, the community is presented with a variety of pricing options. These should be examined in light of your overall goals for unit pricing. For example, if one of your primary goals is to significantly reduce household waste generation, you can consider charging for all collection services. Setting substantial per-bag charges for both trash and recyclables will encourage households to reduce waste. If, however, recycling is provided for free, citizens would have less incentive to reduce the amounts of recyclables it generates and the municipal solid waste stream (trash plus recyclables) could actually rise in volume, driving collection costs up. Another pricing option consists of setting the per-bag charge for trash higher than the per-bag charge for recyclables. This rate structure encourages households to separate recyclables from other trash, thereby reducing the portion of their household waste that the community sends to the landfill.

These examples show how important it is to treat unit pricing rates as part of a comprehensive pricing system that takes into account all solid waste services. Charging citizens for both recycling and waste removal adds complexity and cost to providing municipal solid waste services. The alternative, however, a unit pricing rate structure that does not integrate waste collection charges with those for curbside recycling, can prove expensive, inequitable, and ineffective at achieving the community's goals.

Addressing Special Needs

A community that wishes to assist low-income households that might have trouble paying for unit pricing needs to make several adjustments to the basic model to develop a rate structure that meets its goals.

In Step 1, the community must first determine how to qualify households for lower collection charges. To make this decision, the community should collect information on the number of low-income households that could qualify for lower charges. The community can use these numbers to adjust revenue estimates and finally arrive at a rate structure that provides sufficient revenue. Rates should be set to provide an incentive for source reduction in both low- and high-income households. However, the community might anticipate that lower rates for low-income households will provide less incentive to use source reduction. If this is the case, estimates of the drop in demand for waste collection services should be revised to meet the effect of the low-income rate.

In Step 3, the community needs to examine the potentially greater costs of introducing a low-income rate. Such a rate not only will decrease anticipated revenues but also require additional administrative costs to identify and separately bill low-income households. Administrative costs can be kept down if an established income cutoff is used or other local agencies have already identified the low-income households in the community. Rent assistance or income assistance programs might have already identified the low-income households in a community.

APPENDIX C

Definitions

Bulky waste items - Large items of refuse including, but not limited to, appliances, furniture, large auto parts, nonhazardous construction and demolition materials, and trees that cannot be handled by normal solid waste processing, collection, and disposal methods.

Commercial sector - Includes schools, hospitals, retail establishments, hotels, and restaurants.

Compost - Discarded organic material that has been processed into a soil-like material used as a soil amendment or mulch.

Construction and demolition (C&D) debris - Includes concrete, asphalt, tree stumps and other wood wastes, metal, and bricks. (C&D debris is excluded from the definition of municipal solid waste used by EPA and the National Recycling Coalition.)

Disposal - Landfilling or combusting waste instead of recycling or composting it.

Diversion rate - A measure of the amount of waste material being diverted for recycling/composting compared with the total amount that was previously thrown away.

Enterprise fund - An independent budget dedicated for a special purpose or activity, such as a local municipal solid waste program. The local agency becomes reliant on the revenue it raises through unit pricing or tipping fees and does not receive financial support from the general fund of the local government.

Flow control - A legal or economic means by which waste is directed to particular destinations (for example, an ordinance requiring that certain wastes be sent to a particular landfill facility).

Full cost accounting - The total accounting of all costs and revenues involved in municipal solid waste management, allowing for a standard treatment of the capital costs, future obligations, and indirect costs.

Household hazardous waste - Products containing hazardous substances that are used and disposed of by individuals, not industrial consumers. These products include, but are not limited to, certain kinds of paints, solvents, batteries, and pesticides.

Integrated waste management - The complementary use of a variety of practices to handle municipal solid waste safely and effectively. Integrated waste management techniques include source reduction, recycling (including composting), combustion, and landfilling.

Landfilling - The disposal of solid waste at engineered facilities in a series of compacted layers on land that is covered with soil daily. Fill areas are carefully prepared to prevent nuisances or public health hazards, and clay and/or synthetic liners are used to prevent releases to ground water.

Municipal solid waste (MSW) - Waste generated in households, commercial establishments, institutions, and businesses. MSW includes used paper, discarded cans and bottles, food scraps, yard trimmings, and other items. Industrial process wastes, agricultural wastes, mining wastes, and sewage sludge are not MSW.

Participation rate - The portion of households that take part in a given program. Often refers to households actively participating in a curbside collection program for recyclable materials.

Recyclables - Products or materials that can be collected, separated, and processed to be used as raw materials in the manufacture of new products. The recyclable option should be available to the majority of residents through curbside recycling programs or fixed recycling centers.

Recycled content - The portion of a package's weight (excluding coatings, ink, labels, stickers, adhesives, or closures) that is composed of postconsumer recycled material.

Residential waste - Waste from single-family and multi-family residences and their yards.

Source reduction (Waste prevention) - The design, manufacture, purchase, or use of materials to reduce the amount and/or toxicity of waste. Source reduction techniques include reusing items, minimizing the use of products that contain hazardous compounds, using only what is needed, extending the useful life of a product, and reducing unneeded packaging.

Tipping fees - The fees, usually dollars per ton, charged to haulers for delivering materials at recovery or disposal facilities.

Waste generated - Sum of waste recovered and waste disposed of.

Waste stream - A term describing the total flow of solid waste from homes, businesses, institutions, and manufacturing plants that must be recycled, burned, or disposed of in landfills; or any segment thereof, such as the "residential or recyclable" waste stream.

Yard trimmings - The component of solid waste composed of grass clippings, leaves, twigs, branches, and garden refuse.

APPENDIX D

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