

MANAGING INTEGRATION

MORE THAN EVER, recycling program managers are faced with the challenge of juggling multiple methods of managing solid waste. They must manage the cost impacts that diversion efforts have on other parts of the system, and they must do it with significantly limited resources. Under these conditions, strong management principles are needed to keep programs on track.

The challenge of how to manage an ever more segregated waste stream, more intricate systems, and larger solid waste budgets and staffs boils down to deciding the appropriate level of reduction and recycling for each community, and its cost to ratepayers. Accordingly, the term "cost-efficient" rather than "cost-effective" descriptively recognizes that during implementation the question is not which program to use, but rather how to keep a particular program efficient (low cost per ton or household) while achieving specified goals.

Communities in western Washington offer a microcosm of the decision-making and implementation process. Through their Comprehensive Solid Waste Management Planning (CSWMP), most have done a thorough job of studying options and setting a direction for the future. Yet modification of these options will continue through every step of plan implementation.

Based on the experiences of jurisdictions that have seen diversion programs through implementation and modification, a number of guiding principles have emerged. These principles can help new managers be effective and can offer managers of existing programs a checklist against which to measure their approach to implementation.

PLANNING STATUS

The 1993 BioCycle West Coast Conference was a benchmark, because it represented just over the halfway point between the passage of the Waste Not Washington Act in May 1989 and the mandated 1995 "deadline" for the state's 50 percent diversion goal. While the *state* has set an aggressive diversion goal, *local government* must deliver the results. The complex fiscal and administrative implications of rapidly increasing diversion is one reason why 17 of 21 Western Washington CSWMP's required under the Waste Not Washington Act were just submitted in the last half of 1992 or are yet to be completed. (Spokane County is included in these statistics, other Eastern Washington plans are due in July 1994.)

Even as planning processes in Western Washington wind down, the real work has only begun. Whether a jurisdiction is in the early or advanced stages of the process, the

COST EFFICIENT RECYCLING PROGRAMS

full ramifications of achieving a 50 percent diversion rate are only now becoming apparent as existing programs are refined and more aggressive ones are studied and implemented. Even as debate over the appropriate level of diversion continues at all levels of government, local officials in Washington are making decisions in the trenches that are redefining the issues and generating solutions.

Recycling coordinators have evolved from being community educators and program champions to being equal parts economist, demographer, financier, enforcement officer, contracts specialist, negotiator, and political "savant." Program managers must respond with defensible answers to questions now commonly asked at meetings of city and county councils, and by Solid Waste Advisory Committees (SWACs). Are actual expenditures commensurate with planned or anticipated costs? Do achieved diversion rates (by program) meet or exceed expectations? Is the diversion worth the cost? Who thinks so? Does diversion largely continue to cost more than other management options, especially disposal? What ultimate level of diversion is appropriate for the community? How fast should we get there? Are there reasons to study further or delay implementation?

DIVERSION AND COST TRENDS

Understanding the comprehensive picture of where diversion programs in Western Washington are headed provides insight into the management strategies that will enhance individual program performance. The CSWMPs recently submitted by each jurisdiction offer the information that forms this collective overview of the demands of reaching 50 percent.

Each jurisdiction's *own* estimate of its 1992 diversion rate, or tonnage diverted as a percent of total generation range is

Communities in western Washington are on various routes to achieve a 50 percent diversion goal.

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from a low of eight percent to a high of 45 percent.

A jurisdiction's own estimate usually differs from diversion estimates produced by the Department of Ecology. While figures are not presented here, Ecology estimates are consistently higher than most county's own estimates because of two primary factors: Inclusion of additional waste streams such as vehicle hulks and recycled batteries; and an proportional allocation of reported, albeit unattributable, recycled tonnage to a County's generation.

Each jurisdiction's projected 1995 diversion rate ranges from a low of 10 percent to a high of 54 percent. In most cases, these forecasts are the jurisdiction's best estimate of what recommended programs will divert, and do not correspond to state or even county goals. It is immediately apparent that only five jurisdictions of the 21 surveyed anticipate they will break (by their own measurement) the 50 percent barrier by 1995, including the City of Seattle and the Counties of Clark, Pierce, Skagit and King. One county forecasts it will achieve between 30 and 50 percent, while the remainder anticipate they will fall somewhere in the 10 percent to 30 percent range. Several counties are not counted in these figures.

Of interest is also the marginal increases in diversion planned by each jurisdiction,

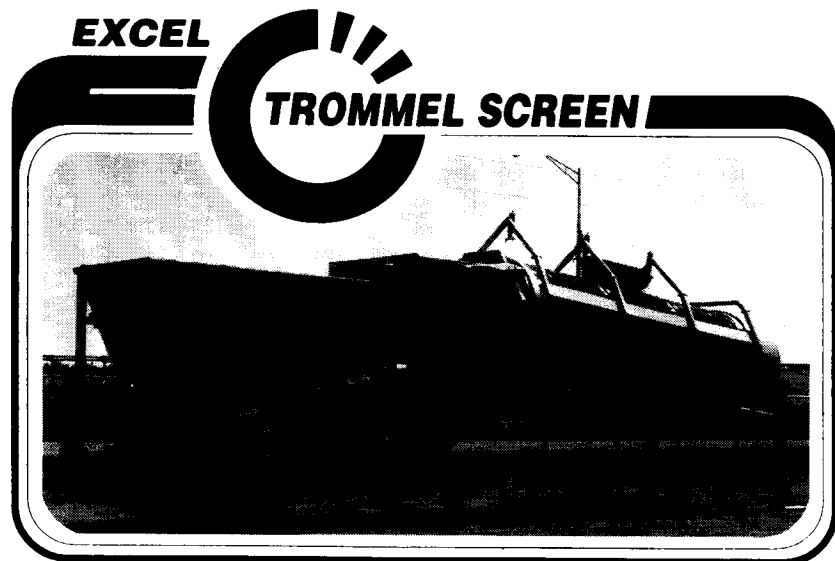
and what resources will be required to extract these materials from the waste stream. Several counties anticipate increasing their diversion by an annual average in excess of four or five percent of their waste stream each year between 1992 and 1995.

While many possible routes may be taken to achieve the same goal, diversion programs in Washington State are proving to have various levels of diversion potential. If only planning level costs, the direction and level of many programs has been set based on this type of projection. The potential for surprises is high.

As part of the planning process, system cost assessments are completed for review by the Washington Utilities and Transportation Commission (WUTC), in accordance with a standard format. While the WUTC primarily evaluates the impacts that plan implementation will have on refuse collection rate payers, some valuable cost information also is available on diversion programs. However, few cost assessments or plans have attributed cost information to projected tonnages such that program cost per ton can be estimated. Some of the assessments estimate local government expenditures, but do not estimate the full costs of diversion programs. For the purposes of this report, the trends listed below provide a good summary of the information available in these cost assessments.

RECYCLE IT!

Top Soil
Wood
Gravel
Compost
Asphalt
Scrap
Mud
Demolition
Landfill Material

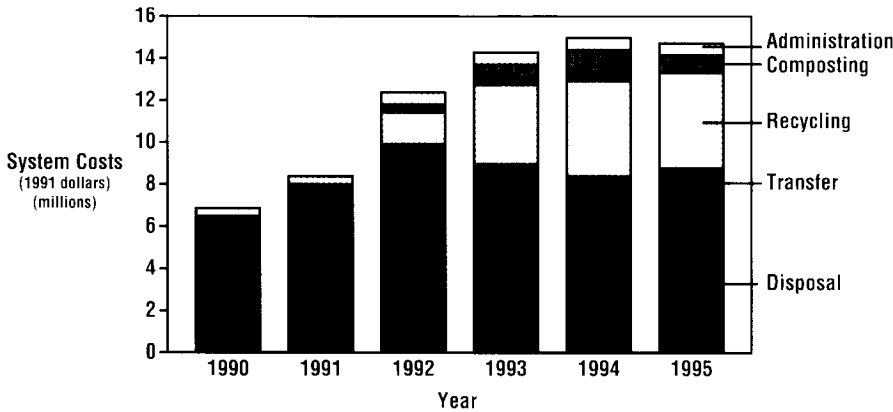


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Figure 1. Kitsap County solid waste system costs



TRENDS SUMMARY

Several clearly emerging trends will shape future recycling in Western Washington: 1). Recently submitted solid waste plan cost assessments indicate that recycling programs are expected, by virtually every Western Washington jurisdiction, to continue to cost ratepayers significantly more (per ton) than disposal. Nevertheless, most CSWMPs lay out aggressive plans to increase diversion and move the State towards its 1995 goal.

2). The cost of providing other basic solid waste system services has risen and is expected to continue to rise, including costs for collection, transfer and disposal. While these increases enhance the opportunity to capture avoided costs as an economic benefit of diversion, few CSWMP's lay out plans for adapting collection, transfer, and disposal systems to respond to impacts caused by decreasing tonnages.

3). Total program costs are highly sensitive to the implementation schedule planned by each jurisdiction. In many cases, initial program implementation has experienced high start-up costs and then gained economies as participation and diversion increase. It is expected that as more aggressive programs are implemented, total program cost per ton can rise again. These programs tend to expend more effort diverting materials of lower quality and market value. Expected costs are thrown further into question by changing regulations and market conditions — particularly for developers of composting, mixed waste, and MRF facilities.

4). Few jurisdictions believe they will reach 50 percent, as they measure their own waste stream. Their CSWMP's focus on targeting more materials, getting generators in all sectors to separate wastes, providing a variety of processing facilities, and finding unobstructed access to markets. However, the state as a whole may reach 50 percent because of the state methodology for measuring diversion percentage.

This section describes strategies for designing, implementing, and modifying diversion programs, with the goal of keeping them cost-efficient. These are techniques for “managing integration.” While each diversion program has unique implementation characteristics, these guiding principles should always be applied. The ultimate goal is to divert a higher percentage of your waste stream for a lower cost per ton or household. These strategies fall within the following themes: Keep diversion rates in perspective; Formulate a management approach; manage the impacts of diversion programs; and Evaluate, adapt, and change.

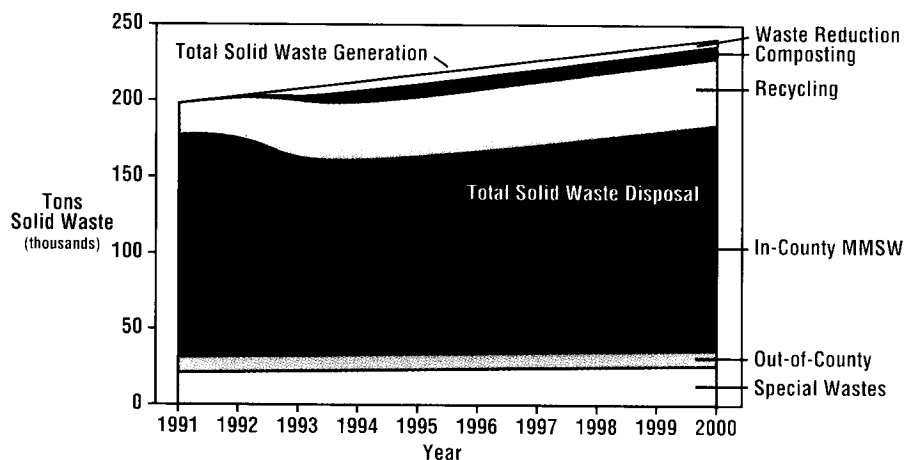
Whether or not 50 percent is attained is far less important than what is accomplished along the way. For example, it is important to foster public trust and awareness, ensure that facilities are developed with long-term needs and flexibility in mind, and foster effective private sector initiatives and alliances. Recognize that a well-run, cost-efficient program that diverts a little less may actually accomplish more than an expensive program that diverts materials impossible to process or market. There is a point at which more resources are wasted by collecting materials impossible to process or market than if they were simply discarded in the first place. Conclusion: diversion rate is not the only measure of program success.

Each community has a different appropriate level of diversion. Avoid allowing recycling rates to become a status symbol. For example, avoid being like the politician who when posed the issue of setting a recycling goal responded: “What is everyone else doing? I'll go five percent higher!” Competition between localities to achieve high recycling rates creates its own share of problems. Comparisons will not even be valid until standard accounting methods are established. Recognize that unique socioeconomic factors affect cost, and try to be less attuned to comparisons than to whether programs are successfully adapted for your community.

Gaining control of the solid waste system is the only way to achieve the goals specified in a solid waste plan. First work within your sphere of influence, then work to expand it. For example, waste reduction is the top priority, but packaging redesign is largely beyond the control of solid waste managers. Market development is one area where local government in Washington State is seeing an increasing ability to influence, especially when working with the Clean Washington Center (CWC). Other areas where control can be increased include contract negotiations and rebids, consolidation of disparate solid waste functions within your public works and health departments, minimum service level ordinances, flow control, and reporting requirements.

Implementing a plan requires an effective mix of staff and technical expertise. The solid waste staff in Tompkins County, New

Kitsap County Tonnage Forecast



York that I worked with grew from two managers to 20 specialists in only two years. The benefits of strong in-house resources include ownership in the process of integration, close oversight of diverging specialties, and greater institutional memory. Staff must be coordinated to allow for cross-discipline communication to fully address program impacts. At the same time, large staffs can be difficult to coordinate and may not be appropriate for longer term needs after initial plan implementation. Outside technical expertise can act as an adjunct staff to address pressing or technical needs.

IMPACTS OF DIVERSION PROGRAMS

Solid waste systems are inextricably connected; decisions in one area (recycling) will affect many others (collection, disposal). Avoided costs can be captured to some extent when managed correctly, but beware of the "death spiral" effects that lower tonnages can have on other system components. Rising unit costs of other programs can indicate diversion program success! The economic benefits of recycling, except for market revenues, must be extracted from other solid waste programs. Recognize that avoided costs are only realized when services are purchased on a unit basis and it is possible to reduce costs as waste quantity decreases. As diversion reaches high levels, the economics of the other systems are significantly impacted.

Try to establish early on a clear set of priorities and criteria that will be used to both implement and evaluate plan components. Many plan recommendations require further study before they are implemented, and once implemented must be evaluated to ensure success. The importance of evaluation is underscored in light of the lack of emergence of any system as the best. While a plan generally sets a policy direction, during implementation increased financial and social analysis of programs is required beyond

that conducted during the planning process. Before implementing a program, firmly satisfy the following: Technical Feasibility — Will the program work well in your community, even if it has been implemented elsewhere? Political Feasibility — Can approvals be secured? Social Feasibility — Is the public behind it, will they use it and become more aware of the issues because of it? Economic Feasibility — Do the benefits outweigh the costs? Is the program likely to be cost efficient? How will market changes impact your programs? Financial Feasibility — Can the money be raised? Are tax exempt financing options available?

The first three of these may have largely been proven during the CSWMP process, while the latter two will be more rigorously tested during implementation. Also, think ahead to establish a set of more detailed criteria that will be applied and scrutinized prior to implementation.

Try to attribute the full costs of each program to that program. Manage the system as a whole as an enterprise fund, or costs will not be fully accounted. Account for the full costs and benefits of recycling, and for the full costs of alternative handling and disposal methods. Proper cost accounting, interpretation, comparison, and disclosure should be made before citizens and elected officials reach improper conclusions, based on partial or misleading information. For example, recycling can only be compared with the true cost of disposal when estimates include revenues needed for the closure of old landfills and preclosure funds.

Planning is most often done on a limited knowledge of the waste stream. Experience is rife with MRF's and composting facilities that received a different mix of materials than expected. A better understanding of your local waste stream characteristics will yield valuable information for meaningful development of recycling programs. For example, Pinellas County, Florida discovered the vast majority of recyclable materials to be contained in the commercial waste stream, and that it could recycle the most waste for the lowest cost by concentrating first on commercial recycling programs. Also, recognize that different levels of waste stream analyses, ranging from simple waste audits to extensive multi-season sampling programs, are appropriate for different applications.

Stay plugged into community concerns, needs, desires. As programs are expanded and refined, monitor public willingness and ability to pay. Reconcile programs with available public resources rather than trying to meet a target diversion rate regardless of expense. ■

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