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**An Institutional Perspective on Regional Cooperation
in Municipal Solid Waste Management**

by

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ABSTRACT

This paper identifies institutional arrangements and characteristics which either facilitate or impede regional cooperation in municipal solid waste management. The research draws upon an examination of five solid waste regions formed in Tennessee in 1992 in response to state legislation requiring development of comprehensive solid waste management plans. Characteristics and institutional arrangements are found to impact region formation decisions and resulting management of solid waste through their contribution to potential average operational cost savings, transaction costs, political risk, autonomy risk, or binding constraints.

Key Words: cooperation, municipal solid waste, waste management, regionalization

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INTRODUCTION

Traditionally, the management of municipal solid waste (MSW) has been the responsibility of local governments, with landfilling the most common method of disposal. New federal regulations affecting traditional methods of solid waste disposal are increasing the cost dramatically. Additionally, most states have recently passed recycling laws, or adopted recycling, diversion, or waste reduction goals, and many states have passed comprehensive waste management legislation requiring long-term solid waste planning (Steuteville, 1995). As MSW management (MSWM) has grown increasingly complex and expensive, one strategy some communities have adopted to meet new MSWM challenges is regional cooperation. In addition to potential economies of scale financial advantages associated with many aspects of cooperatively managing MSW, many states have included incentives, provisions, and/or mandates for formation of solid waste regions as an element of legislation addressing MSWM.

As MSWM has evolved over the last decade, there have been numerous examples of successful regional cooperation addressing solid waste needs and goals. There have also been numerous cases of potential economic savings through cooperation, where neighboring communities have failed to adopt a cooperative strategy. This research was conducted to identify institutional arrangements and characteristics that either facilitate or impede regional cooperation in MSWM. This objective is accomplished through examination of five in-depth case studies of solid waste regions formed in Tennessee in 1992. Two of the five cases are single-county regions, one is a three-county region, one is a ten-county region, and one was a three-county region that split into a two-county region and a single-county region. The cases vary widely in composition and characteristics, past experience in solid waste management, and outcomes. In addition to providing insight into the process whereby the counties decided to form the particular regional arrangement observed, the cases also allow examination of the implications the regional structure has had upon subsequent management of MSW.

SETTING THE STAGE

This section is included to provide information about the setting in which the cases are framed. Tennessee's 1991 Solid Waste Management Act (T.C.A. §68-211-801 et seq.) required each of Tennessee's 95 counties to form a solid waste region and to develop a comprehensive ten-year solid waste plan for the region. The legislation was the first effort by the state to require all counties to meet a minimum standard level of service in the area of solid waste management. Elements of the legislation addressed solid waste planning, collection, disposal, recycling, education, and funding as well as collection and disposal of

problem waste. One required element of the plan was reduction in the per capita amount of waste entering landfills or incinerators by 25%; another was that at least 90% of all residents have a minimum of convenience center drop-off collection service available. Additionally, each county was required to establish a minimum of one collection center for recyclable materials.

As a first step in region formation, solid waste advisors in each of nine development districts were charged with identifying “rational waste disposal areas”, based on geography, existence of a viable disposal facility that would likely remain in operation, any existing cooperation, and volume of waste disposed. After the findings were presented in September 1992, each county then had three months to form a solid waste region. According to the Act, “The preferred organization of the regions shall be multi-county. Any county adopting a resolution establishing a single county region shall state the reasons for acting alone in the resolution.” In addition to statutory language, monetary incentives were added to the planning grant structure to encourage formation of multi-county regions, where single-county regions received a \$15,000 planning grant and each county in a region of three or more counties received \$20,000. State-employed technical staff also encouraged formation of multi-county regions. The decision each Tennessee county made regarding formation of a solid waste region and the resulting action toward MSWM provide a natural experiment in which regional cooperation in MSWM may be examined qualitatively through case studies.

REGIONAL COOPERATION DECISION MODEL

The research hypothesizes that individual decision making units adhere to a general decision framework when forming regions and determining the extent and procedures for subsequently acting cooperatively. A summary of the decision model is included in this paper; an extensive discussion of the regional cooperation decision model may be found in Tiller (1996). For simplicity, the model assumes the base jurisdictional unit to be a county, although applicable to other forms of jurisdictional division.

It is assumed that each county’s preferences are represented by a utility function where a county receives utility from consumption of a vector of goods and services and a vector of solid waste services. The county receives disutility from an autonomy risk level, where autonomy risk is a measure of a county’s ability to prevent undesirable solid waste management practices from occurring within its borders, and a political risk level, where political risk is a measure of the probability of intense political conflict within the county or between counties. While autonomy risk focuses on a risk perception on the part of all citizens collectively, political risk focuses on the contribution to county utility (disutility) contributed by the perception of risk on the part of a small subgroup of elected political leaders, decision makers, or other interested political figures. The level of autonomy risk and political risk are determined by selection of a vector of characteristics associated with the one or more contiguous counties that represent potential partners for formation of a multi-county solid waste region, conditioned on the characteristic vector of the individual county. This vector of characteristics might include elements such as population, per capita income, per capita revenue, assessed value, disposal assurance, past cooperation experience, presence of a

cooperation entrepreneur, distance, highway infrastructure, tenure of legislative and executive elected officials, bureaucratic structure, or the state of the current MSWM system.

A county allocates expenditures among solid waste services and all other goods and services it provides based on the respective prices. The price of solid waste services may be decomposed into operational costs of providing solid waste services, characterized by economies of scale, and transaction costs associated with organizing and administering a decision making unit for the provision and management of solid waste services. Both the operational costs and transaction costs are assumed to also be a function of the characteristic vector of alternative region arrangements given the county's own characteristics.

A constraint forcing the level of solid waste services to be at or above a specified level may also be a binding consideration in choosing the utility maximizing levels of the choice variables (solid waste services, other goods and services, and characteristic vector for the cooperative arrangement) as a function of the exogenous variables: the price of other goods and services, the county's own characteristic vector, and the total expenditure level for the county. The county chooses an optimal level of each element of the characteristic vector for cooperative partners by balancing potential average cost savings from economies of scale operational costs against offsetting increased autonomy risk, political risk, and transaction costs. For example, a county which disposes of less than 50 tpd of MSW and provides no garbage or recyclables collection opportunities may be able to take advantage of significant average cost savings by joining a neighboring county which operates a 500 tpd high-technology facility below capacity and has a well-developed recycling and collection program. But the potential cost savings could likely be attained only by relinquishing some autonomy and by increasing political risk, and through an investment of transaction costs such as time, opportunity, travel or communication associated with organizing the cooperative provision of solid waste services. Thus a county will choose a positive level of each characteristic element only if the marginal gain from lowering average operational costs outweighs the marginal loss from increasing transaction costs, autonomy risk, and political risk.

Levels of the choice variables are selected to yield the county maximum utility. However, these *optimum* levels may not be feasible available to a county. For example, a county may achieve maximum utility by cooperating with a county or group of counties with a population of 150,000, substantial past experience in cooperation, a high per capita revenue, certainty in disposal assurance, and well-developed collection and recycling programs. But an arrangement including these characteristics may not be a feasible consideration due to limitations of the choice set, which may include decision maker preferences, legislated requirements, or norms and values. For example, if a county limits their feasible choice set to cooperation among counties with which it shares a border, their *ideal* partner(s) may not exist as a feasible alternative.

So the county begins the second task of comparing the utility outcomes *feasibly* available to the maximum achievable utility, i.e., their "wish-list" outcome. Each county emerges from the process with a

ranking of region formation alternatives according to their difference from maximum utility. Once a county identifies an arrangement which is feasible and minimizes the difference between optimal utility and achievable utility, they may pursue this alternative, but cannot unilaterally choose it, since a cooperative strategy requires mutual selection.

The counties then enter a phase of *cooperation negotiation*, where they may be willing to incur higher transaction costs or risk in exchange for economies of scale average operational cost savings. For example, if a county is able to negotiate a cooperative strategy by (1) increasing their autonomy risk level, which yields a utility outcome less than optimal, but greater than if they handled MSWM independently, and (2) reducing autonomy and political risk levels of potential cooperating partners such that they are no worse off, and potentially better off than if they enacted their feasible maximizing strategy, then a cooperative strategy may result. This type of matching and negotiation is assumed to occur among all potential partners until all potential Pareto improvements are exhausted and an optimal feasible arrangement emerges.

The characteristics of counties in the feasible choice set influence a county's cooperation outcome in two ways. First, they directly influence the autonomy and political risk a county would face and the price a county would pay for solid waste services under a cooperative arrangement; thus, they directly influence a county's utility. But all counties undergo the same decision process simultaneously and cooperation requires willingness on the part of all participants. So the characteristics of other counties also impact the final outcome through their influence on *other* counties' utility maximizing preferences and the implications of these preferences on their willingness to cooperate and their leverage in negotiating a cooperative arrangement. Thus, the characteristics of an individual county and potential cooperative partners can be analyzed as they influence cooperation outcomes via five broad categories of influence: potential operational cost savings; transaction costs; autonomy risk; political risk; and binding constraints (budget and service level).

CASE STUDY SELECTION

Cases were selected in an effort to ensure diversity of the cases and to further the understanding of the regionalization process and its outcomes. Elements of the decision process and resulting outcomes the study attempts to capture include single and multi-county regions, small and large multi-county regions, multi-county regions with prior grassroots cooperative experience, dis-banded multi-county regions, rural and metropolitan regions, regions with loose ties and regions with formal legal arrangements. To aid in case selection, an initial interview was conducted with each of nine development district solid waste consultants in the state. Development district staff were able to provide information about how each region was formed and a summary of each region's solid waste activities since region formation.

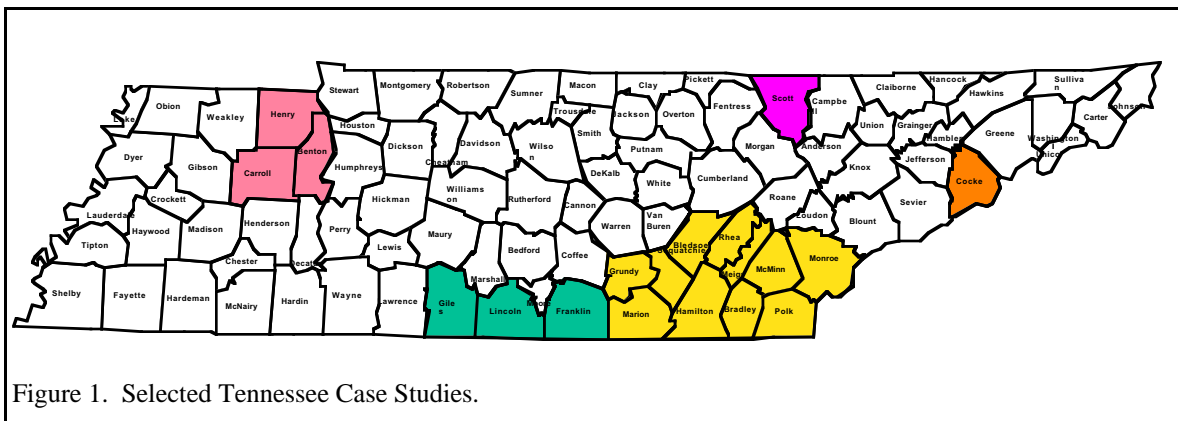
CASE STUDY METHOD

The case studies focus on region formation decisions made in 1992. These decisions were largely political in nature and often elected officials were involved in key decision making roles. With frequent political turnover at the local level, decisions made five years ago often involved a set of players quite different from those currently occupying similar roles. The institutional arrangements of individual counties also influenced the decision making process. Depending on the set of institutional arrangements in place in an individual county, sources of information and decision making channels vary greatly, making it difficult to standardize a method for conducting the case studies.

The first contact for each case was the solid waste consultant for the development district to which the county belongs. In only one case had the current development district solid waste consultant been in this role since the time region decisions were made in 1992. But in each case, the development district consultant could provide a brief summary of the current MSW management program in place in each region. Included in this interview was a request for identification of individuals who were involved in the decision making process, or who might be able to provide insight into the case. A second target interview was sought with the county executive who was in office in the county during the 1990-1994 term. When this was not possible (and sometimes in addition), an interview was sought with the current county executive, serving a term from 1994-1998. As part of the interview, county executives were asked to identify individuals who played key roles in the decision making process and in the management of MSW. Each subsequent contact was also asked to identify individuals who may be able to provide insight into development of the case, resulting in further contacts. The process was repeated until a clear picture of the case under investigation began to emerge.

DESCRIPTION OF SELECTED CASES

The location and composition of the five regions selected as case studies are presented in Figure 1,



and a brief description of the regions follows. Cocke County, with a population of 29,141, formed a single-county solid waste region. At the time of the region formation decision, Cocke county provided a system of green boxes for drop-off collection of garbage and no recycling opportunities. The county

operated a small landfill (100 tons per day (tpd)) which did not meet Subtitle D requirements and had less than two years remaining life. The county did not seriously investigate a multi-county region option, and planned to construct a new Subtitle D landfill to handle 100 tpd, as decision makers strongly desires a landfill and opposed importation of waste. Realities of siting, financing, and operating a small public landfill have since resulted in informal cooperation (exportation of waste to another county) through a private contract.

Scott County is a rural county also located in East Tennessee, with a population of 18,358. In 1992, Scott county owned and operated a small landfill averaging 30 tpd of MSW. The county had purchased the developed landfill from a private company in 1990, with 15-year disposal capacity, but not compliant with Subtitle D. Subtitle D regulations were in place at the time of the landfill purchase, but few local decision makers viewed Subtitle D as binding and anticipated 15 years of operation. The county operated a green box drop-off collection system and no recycling or education efforts were in existence. The county considered multi-county cooperation as a MSWM strategy, but fears of waste importation influenced their decision to form an independent region. They planned to continue operation of their public landfill, handling 30 tpd, but binding Subtitle D regulations place extreme financial pressure on the county and they turned the landfill over to a private firm which accepts waste from several surrounding counties.

The Inter-local Solid Waste Authority (ISWA) includes: Giles County; Lincoln County; the city of Tullahoma, which is located in both Coffee and Franklin Counties; Franklin County, except the city of Winchester; and Shelbyville, located in Bedford County. Some members of the region had previously worked together to site an incinerator, but were not successful in the effort, primarily due to sluggish progress. At the time the region formation decision was made, each county in the Southcentral Tennessee area operated a small, public landfill which did not meet federal Subtitle D regulations, with the exception of large regional private landfills in Bedford and Marshall Counties. Generally, each of the 17 cities in the Inter-local Region handled MSW collection independently, and counties provided a combination of green boxes, convenience centers and limited household pick-up. A limited amount of recycling was available in the region, primarily through drop-off sites established and operated by individual cities. Through an Inter-local Agreement, the region formed a Part 9 Authority, a binding legal arrangement made available in the 1991 Act. Each member county was required to commit \$100,000 to the Authority, and each city outside those counties was required to commit \$50,000. Under a binding legal arrangement, the ISWA now handles collection and disposal of MSW and recyclables, and has instituted a regional educational program.

The Southeast Tennessee Solid Waste Region (STSWR) is comprised of the ten counties belonging to the Southeast Tennessee Development District: Bledsoe, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Rhea, and Sequatchie Counties. The region is very diverse in terms of population, geography, rurality, and economic activity. The city of Chattanooga (population 152,466) is located in metropolitan Hamilton County, and other region partner counties range from very rural (Sequatchie,

Bledsoe, Polk) to mixed rural and urban (Bradley, McMinn, Marion). Prior to passage of the 1991 Act, MSWM in the region varied greatly. On one end of the spectrum, Hamilton County produced 1,800 tpd and had a private Subtitle D landfill, curbside garbage and recyclables collection, a full-time solid waste director, and a full-time recycling and waste education director. On the other end of the spectrum, Grundy County produced 18 tpd of MSW and operated a small public landfill not compliant with Subtitle D, a few green boxes for drop-off of garbage, and no recycling opportunities. Primarily through their Development District relationship, the STSWR was formed through a rather loose legal arrangement. Some activities are handled regionally (education), while most are either independent, or are a cooperative effort among a subset of the ten STSWR member counties.

The Benton-Carroll-Henry Solid Waste Region (BCHSWR) is located in West Tennessee, and is comprised of three small, rural counties (all under 28,000 in population), under a rather loose legal arrangement. All three counties were serviced by small, public landfills that were facing closure under Subtitle D regulations. Benton County had recently sold a large tract of land to a private landfill developer, and the intent of the BCHSWR was for the three counties to work together to address collection (since none had collection available beyond green boxes), and for Carroll and Henry to address disposal jointly. The BCHSWR was able to negotiate a collection contract for all three counties and each made collection mandatory for residents, which was the first source of conflict. After determining that they could not feasibly construct a landfill for the 178 tpd produced by Carroll and Henry Counties, these two entered a contract with a private disposal company located outside the BCHSWR. Benton County had “free” disposal, as part of their agreement with the private landfill located in the county. When the private landfill began importing over 2,000 tpd of waste from metro Davidson County (Nashville), the county wanted the BCHSWR to exercise flow control. But it was not in the power of the BCHSWR to institute or monitor flow control, and following intense political tension, the region split to form the Benton County Solid Waste Region and the Carroll and Henry Solid Waste Region.

CASE STUDY FINDINGS

As previously noted, the characteristics of a county and its potential cooperative partners are hypothesized to directly and indirectly influence cooperative outcomes as they influence potential average operational cost. The research The five cases previously described are then examined from these five perspectives to determine how specific characteristics were valued.

Potential Operational Cost Savings

In all cases, operational costs played a significant role in the decision process, and in the resulting management of MSW. However, the way in which individual cases assimilated cost information into the decision process varied greatly. On one end of the spectrum, the Southeast Tennessee Development District, with the trust and respect of all member counties, presented potential cost savings to individual

county commissions through short, easy to understand written summaries containing quantitative estimates, and accompanied by a seminar-type presentation. These estimates were widely accepted by individual commissions, and were cited as the primary reason why member counties chose to join the STSWR. The time required and educational effort required to gain acceptance varied among member counties, but even in the case of one county where the cost estimates were initially disbelieved, persistent education efforts eventually led to acceptance.

On the other end of the spectrum, the Scott County case provided an example of a decision process absent wide acceptance of future operational cost estimates. While crude estimates of future costs under alternative scenarios were available to some decision makers, there was widespread denial about the degree to which Subtitle D regulations and state legislated MSW regulations would be binding. The degree of doubt was great enough that potential operational cost savings were essentially discounted when the region formation decision was being made. Since that time, information regarding true costs has been very effectively communicated through actual fiscal strain. Once potential operational cost savings were seriously considered by decision makers responsible for the handling of MSW, they began to consider cooperation as a strategy to address MSWM. The cases provided evidence that the manner in which operational cost projections are communicated to decision makers, the source from which they are communicated, and the degree of acceptance on the part of decision makers have direct implications for the decision process. For decision makers to embrace cooperation as a waste management strategy, potential operational cost savings due to economies of scale in disposal or collection or education must be not only available, but also effectively communicated and widely accepted.

Transaction Costs

Several elements of the individual cases contributed toward an understanding of how transaction costs influence the decision making process and resultant solid waste management practices. As evidenced by the STSWR and ISWA cases, a history of cooperation among potential partners, even if the outcome was less than satisfactory, aids in reducing transaction costs associated with region formation by building relationships of trust and comraderie and developing a communication network link. They also reveal goals, norms, and values of potential cooperative partners, which lower transaction costs. An individual(s) serving as a cooperation entrepreneur(s) reduces transaction costs by taking charge of the tempo of the decision process and serving as a focus point for new interest, as was the case in the ISWA. Similarly, transaction costs are minimized in the presence of an institutional arrangement in place which serves as a cooperation cornerstone, as was the role of the development district in the STSWR. An institutional arrangement with the resources required to evaluate options, coordinate meetings, establish cooperation rules, and resolve conflict, while maintaining full trust and confidence of members. Homogeneity among potential participants, or perception of homogeneous problems, significantly reduces transaction costs, as

evidenced by the ISWA and BCHSWR cases. Conversely, if the institutional structure for decision making is restricted to a narrowly defined framework, as was the case in Cocke County, transaction costs are higher.

The formality of the legal bond among partners may influence transaction costs in different ways. Higher initial transaction costs may be required to develop a formal legal commitment, as did the ISWA. But in the long run, existence of a tight bond may actually reduce transaction costs associated with re-education, continuity, and conflict resolution. This temporal tradeoff is also evidenced by the loose arrangements of the STSWR and BCHSWR. The STSWR invested heavily in transaction costs associated with defining the flexible arrangement they desired. The BCHSWR invested minimally in defining their relationship initially. The initial investment in transaction costs associated with establishing the agreement were negatively related to the transaction costs required in the long run in both cases. Thus, a temporal tradeoff of transaction costs appears with respect to transaction costs invested in establishing formal ties. High transaction costs invested early, whether the arrangement is for a tight or loose bond, may reduce future transaction costs associated with conflict resolution, education, and continuity.

The private sector influences transaction costs associated with the decision process and management of MSW, although the role of the private sector may be to either increase or decrease transaction costs. The Cocke County region is an example of how the private sector may reduce transaction costs associated with cooperation, where the private sector served as a neutral third party facilitating informal cooperation between two neighboring counties. In the case of the ISWA, the private sector actually increased transaction costs by attempting to lure individual entities already involved in a cooperative arrangement into breach of contract, since the larger cooperating group had significant leverage in negotiating private contracts.

Political Risk

One factor which appears to minimize political risk associated with cooperation is past experience in a successful cooperative effort, as evidenced by the STSWR. Decision makers involved in the decision process had gained confidence and trust in the intentions and abilities of potential partners, based on past experience, so their individual political risk was reduced. While use of a formal commitment to establish regional arrangements may increase political risk in the short run, it reduces political risk in the long run. In the ISWA, decision makers accepted a high level of risk by forming the authority and making a sizable financial commitment to the effort. But in the long run, this commitment reduced the political risk to a tolerable level even in the issue of siting a regional landfill. The converse was evidenced by the BCHSWR, where little risk was accepted initially, i.e., no formal binding commitments were made to regional agreements, and the long run result was overwhelming political risk when the boundaries of the region's authority were called into question among heated debate on sensitive issues.

The cases also revealed that the perception of equal representation on solid waste boards, and equal distribution of costs and benefits among entities under a board reduces political risk. Another factor which contributed toward reducing political risk was shown to be homogeneity among potential partners, where Scott County and Cocke County perceived the political risk associated with the potential loss of autonomy to be related to their perceived differences in goals and values of neighboring counties., Finally, institutional arrangements which spread political risk over a large number of individuals also appear to reduce risk levels.

Autonomy Risk

Individual entities perceive autonomy differently and value autonomy differently. For some jurisdictions, such as Cocke County or Rhea County (in the STSWR), existence of and autonomy over a disposal facility were extremely important factors in the decision process. For others, such as Scott County, autonomy may be highly valued until financial strain begins to raise the level of political risk, and then the impact of an autonomy loss is reduced to a level which causes them to actually relinquish nearly all autonomy over a facility. The flexibility of regional arrangements may also influence the perception of autonomy. in the STSWR, member counties perceived that the loose agreement they negotiated ensured autonomy for *individual* interests while in the ISWA case, member counties perceived that the tightly-constructed agreement they negotiated ensured autonomy for the *authority* as a whole.

Binding Constraints

The BCHSWR case provides an example of how a binding service level constraint can encourage multi-county cooperation. in this case, all three counties perceived a similar collection problem: each would have to move from their current level of collection service (green box and some private pick-up) to a mandatory household pick-up in order to meet the state's collection requirement. Since all three counties would be pursuing the same path toward compliance with the collection mandate, they recognized potential gains in negotiating a joint solution to their similar collection problems. Another example of their influence of a binding service level constraint on the willingness to cooperate is provided by Giles County, in the ISWA. Giles County was not one of the initial target counties identified as a potential cooperating partner. But when they were eventually approached about the possibility of cooperating, the significant changes they would be required to make to their existing solid waste service program to bring it into compliance with the state guidelines was a major contributing factor to their decision to join the authority.

Similarly, a binding budget constraint was also shown to influence cooperation decisions. In Scott County, cooperation was only considered (informal cooperation brokered by a private firm) when fiscal strain became significant. In this case, it appears that the value placed on political and autonomy risk is a function of the degree to which the budget constraint is binding. Scott County was adamant about

maintaining autonomy and minimizing political risk, until they could no longer “afford” this luxury, and then accepted an increased level of autonomy and political risk in return for some relief of the fiscal strain.

CONCLUSIONS AND POLICY IMPLICATIONS

This paper has identified conditions under which cooperation is feasible, factors which contribute towards successful cooperation in MSWM, and policies and institutional arrangements which facilitate cooperation. The decision model developed and the cases examined support the hypothesis that cooperation is not desirable in every situation. Operational cost savings associated with disposal are generally available to most local governments through cooperation with neighboring entities. However, each individual local government responsible for provision of MSWM services has a complex utility function they seek to maximize. Included in this function are nonmonetary considerations such as political risk and autonomy risk. Also influencing utility-maximizing choices are transaction costs associated with cooperation which are difficult to quantify. There may be situations where fiscal considerations alone would appear to indicate a cooperative solution, but consideration of other utility influences associated with cooperation indicate otherwise. Thus, policies designed to impose cooperation upon local governments based purely on fiscal considerations will not necessarily produce optimal results for the management of MSW.

The paper has also identified characteristics of local jurisdictions which may reduce transaction costs, reduce political risk, or reduce autonomy losses associated with cooperation. These include past experience cooperating in MSWM or on other issues, presence of a cooperation entrepreneur or a cooperation cornerstone, and homogeneity among potential partners. Another aspect of cooperation facilitation is having policies and institutional arrangements in place that encourage cooperation by clearly communicating benefits of cooperation and reducing transaction costs, political risk, or autonomy losses associated with cooperation. One of these policies is sufficient time for educating decision makers about alternatives and allowing exploration of alternative options. Another is a policy designed to allow flexibility in region formation. Individual jurisdictions need to be able to tailor agreements to minimize costs operating as a barrier to cooperation. Policies including monetary incentives for regional cooperation are only effective if the particular constraint they attempt to relieve is binding. One institutional arrangement which facilitates successful cooperation is establishment of an efficient communication link between local decision makers and entities encouraging cooperation. The requirements of the policies must be clearly defined and local decision makers must be educated with respect to these policies and their implications. To the extent possible, taking the decision making process out of the political realm may also facilitate cooperation. Policies and institutions sensitive to the conditions required for successful cooperation may lead to more efficient provision of MSW services, and also facilitate cooperation on other issues.