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Issues to Consider in the Solid Waste Management District Decision

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Department of Agricultural Economics

Introduction

The 1990 Indiana General Assembly passed House Enrolled Act 1240, which requires each county to form or join a solid waste management district. By July 1, 1991 each county must either join with others to form a multi-county district, or declare itself to be a single county district. The decision is enacted by an ordinance of the county commissioners. Counties that fail to pass an ordinance will be declared to be single county districts by the Indiana Department of Environmental Management (IDEM). Each district will be administered by a board which is comprised of elected officials from the counties, cities and towns in the district.

A waste management district is a new government, with most of the powers of a governmental unit. The county commissioners’ district decision determines what the boundaries of this new government will be. It is an unusual decision for commissioners, because new governments are rarely formed. This paper is intended to help local officials consider the issues involved in the district decision they must make.

Two Functions of Solid Waste Management Districts

It is helpful to think of solid waste management districts as having two functions, "political" and "managerial." The political function is figuring out what citizens want. It is district board members acting as elected politicians, assessing the demands of their constituents, assembling coalitions, devising a platform, reaching a consensus, coming to a decision about what citizens want and are willing to pay for. The political function includes determining what waste needs to be disposed of, whether citizens will support recycling or composting, whether to build facilities or contract with others, and what taxes and fees to charge.

The managerial function is delivering the services the district board has decided to provide. It is district board members acting as managers, hiring and supervising employees, buying equipment, renting buildings, in order to dispose of waste. The managerial function could include running a landfill or a recycling operation, or managing the day to day collection and disposal of trash.

Political Satisfaction

One guide to drawing waste management district boundaries is improving county citizen satisfaction with their local leaders’ political decisions.
Like-minded citizens. Satisfaction with a decision is more likely to occur when the citizens in the district have similar ideas about what they want. If people have similar opinions about composting and recycling, if taxpayers show a similar willingness to pay for a landfill or incinerator, if counties have similar waste-streams, board decisions are more likely to produce satisfaction. If opinions are dissimilar, disagreement and dissatisfaction are more likely to occur. For example, your county’s residents may want more frequent trash pickup than do your neighboring county’s residents. If the counties combine into one district and a single policy decision is made for the whole district, then either your citizens will be dissatisfied with too infrequent pickup, or your neighboring county’s citizens will be dissatisfied with higher fees needed for too frequent pickup.

Suppose your county’s citizens support recycling, while your neighbor’s do not. If a single district decides to have recycling, citizens who don’t want it may not cooperate and the program may fail. If the decision is made not to have a recycling program, those who want it will be dissatisfied.

If your county is rural, it may not generate much yard waste, while a neighboring suburban county does. In a combined district, your constituents may object to paying for tax supported composting services that they don’t use.

Finally, suppose your county’s industry needs specialized waste disposal facilities, while your neighboring county has no industry. A combined district might choose to provide for industrial disposal, charging all citizens for construction and operation. Your neighbors’ citizens may object to this expense.

Like-mindedness implies that counties with similar wants and waste-streams should combine into districts, while dissimilar counties should not combine. According to this criterion, counties without similar neighbors should form single county districts.

Inclusive boundaries. Citizens are more likely to be satisfied when the district’s boundaries include all who are affected by the board’s decisions. Citizens may be affected by unsatisfactory decisions about waste issues, but if they live outside the district’s borders, they cannot vote for changes or pay taxes to support changes. Satisfaction could be increased if these citizens are included in the district whose facilities they use. For example, your county’s citizens may be using a landfill owned by a nearby district. If your county does not belong to that district, decisions to close the landfill, limit out-of-district waste, or forbid expansion of capacity will be made without taking into account your county’s needs.

Suppose a nearby county has the best geological site in the region for a landfill. As a single county district, they contract with a private landfill elsewhere and do not exploit their prime location. Your citizens would be willing to pay taxes and fees to have a landfill there, but they had no say in the decision.

A large district nearby may contract with a private landfill in your county to dispose of their waste. Your citizens don’t like this, but you are unable to stop it. Had you been a member of the district, perhaps your county’s opinions would have been taken into account.

Finally, suppose a nearby district gets approval to site a landfill on your county’s border. The landfill’s neighbors in your county object, but their opinions were not considered in the siting decision.

The inclusive boundary criterion implies that counties should form districts to include a whole “waste-shed;” that is, all counties that use the same facilities to dispose of waste. Under this criterion only counties that are self-sufficient, with all the waste facilities they need within their borders, should consider forming single county districts.

The like-mindedness and inclusive boundaries criteria form a basic political tradeoff between large and small districts. Single-county or small multi-county districts have the advantage of greater similarity of opinion. Consensus on policy may be easier to reach, and the policies will be more satisfactory to more people. But small districts may be
excluded from decisions about important waste facilities in neighboring counties. Large multi-county districts allow counties to participate in decisions about waste facilities, but at a cost of possibly having to accept decisions that do not satisfy the county’s citizens.

**Decision-making costs.** Satisfaction is more likely when decision-making costs are low. Decision-making costs include planning costs, staff pay, building rents, travel and other costs. In general, they are the costs incurred by the district board in meeting together and in making decisions. Not all of these costs can be expressed in dollars: they also include missed opportunities due to turf battles, or time lost due to the inability of large bodies to make decisions. For example, suppose two adjacent counties form their own districts. Each has a seven-member board, each hires a consultant and taxes their citizens to pay them, each holds dozens of meetings and pays the board’s travel costs. If the two operated as a single district, one nine-member board would require only one set of meetings and one plan, which might cost less than two.

On the other hand, suppose five counties form a single district with a 21-member board. They cannot agree to form a smaller executive committee, so the whole board attempts to make planning decisions. The meetings are contentious. The board is ridiculed in the press, deadlines are missed, opportunities are lost. Two districts with two smaller boards might have found planning easier.

Decision-making costs form another political tradeoff between large and small districts. Large boards may find it difficult to make decisions. But several small boards will together have more members, may duplicate many activities, and cost more to operate in total.

**Managerial Efficiency**

Waste disposal is managed efficiently when costs are as small as possible, and environmental and other regulatory requirements are met. The size of a waste management district, and the counties included, can affect managerial efficiency.

**Exploit Economies of Scale**

Costs can be reduced if economies of scale are exploited. Some waste management technologies can be used at low cost with a small volume of waste. Others are very expensive to use when waste volume is low, but costs per ton drop as volume rises. When costs drop as volume rises, a disposal facility has economies of scale. Often, scale economies are greatest for technologies that require more equipment. Disposal costs will be lowest if each technology is used at its lowest cost scale. There may also be marketing economies of scale, for example if buyers of recyclables offer higher prices for larger volumes.

Technologies and regulations change, but at present, the ranking of disposal technologies and functions by scale economies is shown in Table 1.

**Managerial Costs**

Disposal costs can be reduced by using each facility at its lowest cost scale. But using many facilities with many different managers can increase the managerial costs, perhaps enough to offset the benefits of exploiting scale economies. For example, suppose a district contracts with another district’s incinerator, runs two landfills, contracts with three private landfills, assists twelve not-for-profit groups in running composting and recycling operations, allows rural residents to contract individually for trash pickup, and agrees that each municipality will pick up its own trash. Each of these production options is at a low-cost scale, but the county finds that the cost of managing and coordinating two dozen operations is high.

If the district will dispose of its own citizens’ waste by operating disposal facilities itself, then managerial criteria are very important for drawing district boundaries. If the district will operate a landfill or an incinerator, the district must be large enough to exploit economies of scale. Operating such facilities with a low volume of waste is likely to be very costly to a small district’s citizens. If the
district envisions only composting, recycling, or trash collection operations, then smaller waste volumes may be feasible.

Table 1. Ranking of Waste Disposal Technologies by Economies of Scale.

<table>
<thead>
<tr>
<th>Large Scale Economies</th>
<th>Costs lowest at high waste volume</th>
<th>Incinerators</th>
<th>Landfills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some Scale Economies</td>
<td>Costs become low at medium waste volume</td>
<td>Transfer stations</td>
<td>Big recycling operations</td>
</tr>
<tr>
<td>Small or No Scale Economies</td>
<td>Costs are low at small waste volume</td>
<td>Small recycling operations</td>
<td>Small composting operations</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Trash collection</td>
</tr>
</tbody>
</table>

Political-Managerial Combinations

The political and managerial functions of a waste management district can be performed by the same people. But they don’t have to be. While the district will be a political unit, it may or may not manage its own facilities.

Figure 1 shows four political and managerial combinations. The first, called “in-house,” is the traditional method of delivering most local government services. The district performs its political role by assessing citizen needs and raising funds, and it performs a managerial role by acquiring and operating its own disposal facilities. If waste is to be disposed of in-house, then the district decision must keep both managerial and political criteria in mind. Districts must be large enough to generate a sufficient volume of waste to exploit economies of scale.

The second combination is labeled “contracting.” Here the district assesses needs and raises funds, but contracts with another district or a private firm to manage disposal facilities. If this option is taken, the district decision does not need to be based on managerial criteria. The owners of the facility worry about economies of scale; the district is concerned with satisfying citizen demands.

Figure 1. Waste Management District Political-Managerial Combinations

<table>
<thead>
<tr>
<th>Political</th>
<th>Managerial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your District</td>
<td>Another District</td>
</tr>
<tr>
<td>1. In-house</td>
<td>2. Contracting</td>
</tr>
<tr>
<td>3. Service Supplier</td>
<td>4. Withdrawal</td>
</tr>
</tbody>
</table>

The third political-managerial combination is a “service supplier.” In this case the district owns the disposal facility, which another district (or other customer) has contracted to use. Though the district manages a disposal facility, district boundaries in this case should not necessarily be drawn to exploit economies of scale. The option of supplying to others means a small district could operate a large facility at low cost, if it is willing to accept out-of-district waste. Again, district boundaries would be drawn based on political criteria.

The final combination is called withdrawal. Since districts must write a plan, this is not an option for most of what districts do. Here districts withdraw from waste disposal, leaving it to private sector firms and individual citizens. Withdrawal does characterize some disposal options, for example when a district does not collect waste nor contract with a hauler for collection, but instead leaves citizens to hire private haulers for household waste disposal.

Ten Questions About Waste Management District Formation

These political and managerial considerations lead to a number of questions for county officials. Ten questions are listed here, with likely answers for single and multi-county districts.

Are citizens like-minded? In a single county district, citizens are likely to be more like-minded in their opinions on solid waste needs and solutions. The waste stream will probably be less varied. Citizen desires may be easier to identify, consensus easier to reach, and decisions more likely to satisfy. There is little danger that district decisions will not reflect the county’s interests, and no danger of loss of control by the county’s elected
officials.

Public opinion about waste issues is likely to be more diverse in a multi-county district. The waste stream may be more varied. Citizen desires may be less easily identified, consensus less easily reached, and decisions less likely to satisfy. There is greater danger that the county’s interests may not be served, if its representatives are out-voted on the board (see Table 2). Multi-county districts containing like counties (for example rural with rural, urban with urban, residential with residential, etc.) are likely to provide more satisfactory decisions. Those with dissimilar counties (urban with rural, residential with industrial) are likely to provide decisions less satisfactory to more citizens.

**Will other district’s decisions affect your disposal choices?** If a single county district is using out-of-county disposal facilities, policy decisions about these facilities (for example, whether to close down or expand) may be made without the county’s needs being taken into account. This is less of a problem if the county is self-sufficient in waste disposal, using no out-of-county facilities and accepting no out-of-county waste.

Multi-county districts are more likely to include the whole “waste-shed.” All county citizens using particular disposal facilities will be represented in decisions about those facilities. This is less of a benefit if a county is self-sufficient in waste disposal.

**Can the district afford administrative costs?** A single county district will have to support costs of administration alone. If there are no final disposal facilities in the county, tipping fees cannot be used to finance the district plan. The state offers planning loans of $20,000 for each county in a district, so a single county district would be limited to $20,000. A property tax used to pay for the plan will be levied only on the county’s tax base. Other staff, materials, and meeting costs must be met by the county’s resources.

**Table 2. Votes in Solid Waste Management Districts.**

<table>
<thead>
<tr>
<th></th>
<th>Single County District</th>
<th>Multi-County District</th>
<th>Total 2 County District</th>
<th>Total 3 County District</th>
</tr>
</thead>
<tbody>
<tr>
<td>County</td>
<td>County 1 (Largest)</td>
<td>County 2</td>
<td>County 3</td>
<td></td>
</tr>
<tr>
<td>County</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Officials</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Municipal</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Officials</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>9</td>
</tr>
</tbody>
</table>

a. One municipal official selected by county commissioners.
b. Additional county commissioners can be added to give counties with larger populations more votes. All counties must agree.
c. Board can negotiate interlocal agreement with different board membership. In districts with 4 or more counties, board can delegate authority to a smaller executive committee.

In a multi-county district, many counties will share the costs of administration, with each county’s share less than it would have been in a single county district. The district is more likely to have a final disposal facility, so financing the plan with tipping fees will be possible. A bigger property tax base is available to finance planning. The district can draw on expertise from many counties.

**How easily can decisions be made?** As shown in Table 2, a single county district board is small (seven, in most counties), so decisions may be easier to reach. Legal procedural requirements may be easier to fulfill.

The district board is larger in a multi-county district (four members from each county, plus one “tie-breaking” member), so decisions may be more difficult to reach. Legal procedural requirements may be more difficult to fulfill in a multi-county district. A smaller executive committee can be appointed to act for a large board in districts with four or more counties.

**Is the district large enough to exploit economies of scale?** Large counties that become single county districts may be able to exploit economies of scale for most disposal facilities. But small counties may not produce enough waste to exploit large scale disposal technologies, especially landfills and incinerators. Small scale technology for recycling, composting, transfer stations, and trash collection can probably be exploited cheaply by smaller counties, although there may be large scale technologies for high-density areas. Buyers or recyclable materials may pay more for larger volume.
A multi-county district is more likely to be large enough to exploit economies of scale for most disposal facilities.

**Will the district need to accept out-of-district waste?** Small counties that form single-county districts and own their own large scale facilities will probably have to accept out-of-district waste to offset high costs. For some technologies, large counties in single county districts also will have to accept out-of-district waste. Counties face the risk of whether their facilities will find enough customers. District-owned facility fees can be set so that in-district fees are lower than out-of-district fees. This may provide some compensation for being a host county, although residents may still object to out-of-county trash. Landfill capacity will be reached sooner, and new facilities will have to be planned.

A multi-county district would generate a large volume of waste, so there is less likely to be a need to accept out-of-district waste in order to operate facilities at lowest cost. Accepting out-of-district waste is an option, however, if the district wants to offset some of its own disposal costs.

**Is bond financing feasible?** Bond financing of large new district-owned facilities is likely to be needed. Bonds may be repaid from facility fees or taxes. If bonds are backed by fees, investors will look to see if there will be customers so enough fee revenue is generated. Investors may see this as a risk, particularly since district boards do not have "flow control," the legal ability to direct the district's waste to its facilities.

Large single county districts and multi-county districts with a larger number of customers are more likely to be able to sell bonds. Small single county districts may have difficulties. Bonds may have to be backed by property taxes, at least in part, especially in small districts. The size of the district's assessed value will influence the tax rate which property owners will pay.

**Will new facilities be sited in the county?** In a single county district, district owned facilities, such as landfills or incinerators, will have to be sited in the county. A single county district may have less difficulty with objections to sites within their jurisdictions. But single counties may have fewer acceptable sites to choose from.

Siting new facilities in multi-county districts is likely to be contentious. Many counties will probably want to avoid hosting a facility. Before a plan is approved by IDEM, counties can withdraw from districts, so those that are threatened with hosting facilities may withdraw. Districts cannot override county zoning, so district boards will have to obtain cooperation from potential host counties. Political tradeoffs may be possible, for example one county taking an incinerator if another takes a landfill. There may be more acceptable sites available in a multi-county district. Counties with the best geological sites for landfills may find it difficult to argue against locating the facility in the county. Possibly some counties will want facilities for the economic development benefits. Are other districts' facilities available at reasonable cost?

Other districts may be willing to accept a single county district's waste into their district-owned facilities on contract. Waste from small counties may be more acceptable to other districts than waste from large counties or from multi-county districts. Small county volume is smaller and the visibility of its waste may be less. However, citizens in other districts might ask why a multi-county district does not dispose of its own waste.

The price a district charges for out-of-district waste disposal might be higher than the price charged for in-district waste. Price or volume limits may be set to exclude out-of-district trash from district-owned facilities. A district may have little or no control over how the other district's facility is operated, though large districts may have some leverage if they are major customers of the facility.

**Are private facilities available?** Districts may also contract with private facility owners. Costs to customers of using a private facility may be lower, because private production is often less costly than public production. The
district may negotiate price breaks for indistinct waste, or for the host county, in exchange for allowing siting or expansion. Other contractual concessions might also be gained. Contracting with an out-of-district private landfill may be more expensive, if another district has negotiated a discount for its own waste at the expense of out-of-district customers. Private suppliers are more likely to be available within a larger multi-county district, if siting is allowed, simply because there are more potential sites in a larger district.

Districts have less control over private facilities than over district-owned facilities. At this time, counties or districts are not permitted to regulate the source of waste going to private disposal facilities. Out-of-state waste cannot be excluded. District owned facilities can exclude out-of-state waste. Contract compliance must be monitored to make sure regulations are being followed and charges are correct. Once a private landfill is established and the district is dependent on it, private owners may have greater leverage in negotiations. If a large district is using several disposal facilities, competition may prevent abuses. The potential for service interruption through strikes should be considered. If county owned facilities are currently used, shifting to private facilities may create resistance from county employees. If several in-house, contracting and supplying options are used, the costs of managing and coordinating may be high.

**Information to Collect Before the District Decision is Made**

Forming multi-county districts will require negotiations among county officials. Counties that form single-county districts may do so after finding that they are not compatible with surrounding counties. The above ten questions indicate the kinds of information that county officials should collect before the district decision is made.

**Population.** County officials should know their county's population and the projected population for the next 20 years. The size of the population is often the only clue to the amount of waste a county generates. The volume of waste must be known in order to assess whether a county is large enough to exploit economies of scale, or whether it must join with others or accept out-of-district waste to use district-owned facilities at low cost. The composition of the waste-stream will help counties know whether they are compatible with other counties.

**Inventory of current facilities.** County officials should find out about the facilities currently being used to dispose of county waste. Are these facilities inside or outside the county? This information will be needed to know whether other district's decisions about their facilities will affect the county's choices. It may indicate which counties should be considered for a multi-county district. Do in-county facilities accept out-of-county waste; and if so, from which counties? Again, this will help determine the extent of the county's "waste-shed."

Are the facilities publicly or privately owned? This influences how much control a county has over disposal decisions, and it may indicate whether private facilities will be available in the future. How much capacity remains in in-county facilities? If little capacity remains, the extent of the waste-shed may soon change. The county may soon be dependent on another county's facilities, and other counties may look elsewhere for disposal of their waste. Remaining capacity will also help officials know whether a location decision for a new facility will have to be made. How much capacity remains in out-of-county facilities used by the county? Again, this will help tell how extensive the waste-shed is likely to be in the future. Are public and private in-county facilities environmentally acceptable? This provides clues about future availability and costs.

**Potential facility sites in the county.** How many potential landfill or other facility sites are there in the county? Landfill sites require particular environmental and geological characteristics. This information is essential in negotiations about future landfill sites, which could influence decisions about forming districts.
Current recycling and composting efforts. What recycling and composting programs and facilities is the county currently using? What volume of waste is being disposed of by these programs? Are they in-county or out-of-county? Do other counties use the facilities? These questions will again help define the extent of the waste shed. Also, they indicate the experience the county can offer in operating programs that districts must consider. For example, including a county with experience in recycling should reduce the administrative costs of starting such a program district-wide.

Assessment of public attitudes. What disposal programs and facilities will the public support, and what are they willing to pay for? Answering these questions requires the county official's political knowledge of the attitudes of his or her constituency. Will the public support volunteer recycling and composting programs? Will they allow a disposal facility to be located in the county? Are they willing to pay higher property taxes and disposal fees to support new facilities? Knowing the answers to these questions allows judgements of like-mindedness -- whether the attitudes of one county's people are compatible with another's. Knowing public opinion about locating facilities will tell officials how much weight to put on potential facility sites in making the district decision.

Assessment of county capabilities. How much expertise and experience does the county have in dealing with solid waste disposal? Answers to this question help officials assess the potential administrative costs. Does the county have the management skills to run a single-county district, or should it join with other more experienced counties? Have the county's officials worked with those in other counties? Knowing how well officials work together will help determine how easily district decisions could be made.

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