

Making Joint Public Services Work in the 21st Century

Financing Joint Public Ventures: Alternatives and Consequences

December 2003

SEMCOG . . . *Local Governments Advancing Southeast Michigan*

Southeast Michigan Council of Governments

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Mission

SEMCOG's mission is solving regional planning problems — improving the efficiency and effectiveness of the region's local governments as well as the quality of life in Southeast Michigan. Essential functions are:

- providing a forum for addressing issues which extend beyond individual governmental boundaries by fostering collaborative regional planning, and
- facilitating intergovernmental relations among local governments and state and federal agencies.

As a regional planning partnership in Southeast Michigan, SEMCOG is accountable to local governments who join as members. Membership is open to all counties, cities, villages, townships, intermediate school districts, and community colleges in Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne Counties.

Responsibilities

SEMCOG's principle activities support local planning through use of SEMCOG's technical, data, and intergovernmental resources. In collaboration with local governments, SEMCOG has responsibility for adopting regionwide plans and policies for community and economic development, water and air quality, land use, and transportation, including approval of state and federal transportation projects. Funding for SEMCOG is provided by federal and state grants, contracts, and membership fees.

Policy decision making

All SEMCOG policy decisions are made by local elected officials, ensuring that regional policies reflect the interests of member communities. Participants serve on one or both of the policymaking bodies — the General Assembly and the Executive Committee.

Prior to policy adoption, technical advisory councils provide the structure for gaining input on transportation, environment, community and economic development, data analysis, and education. This deliberative process includes broad-based representation from local governments, the business community, environmental organizations, and other special interest citizen groups.

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Dear SEMCOG Members,

In response to the growing economic uncertainty facing governments and school districts in Michigan, SEMCOG members are forced to look into alternative or innovative funding sources and arrangements. Intergovernmental cooperation and joint public services are an option for service provision that governments may wish to consider during these fiscally challenged times. To assist SEMCOG members, we will revise and reprint a series of reports on intergovernmental cooperation. We are pleased to announce the reports included in the *Making Joint Public Services Work in the 21st Century* series, scheduled for completion during 2003:

Making Joint Public Services Work in the 21st Century

- Intergovernmental Cooperation
- Michigan's Legal Tools for Cooperative Arrangements
- Financing Joint Public Ventures: Alternatives and Consequences
- Intergovernmental Cooperation: Strategies for Overcoming Political Barriers
- Summary of Conditional Land Transfer Agreements, P.A. 425
- Intergovernmental Cooperation: Case Studies in Southeast Michigan

If you wish to obtain copies of these reports, please contact SEMCOG Information Services.

If you have any questions about SEMCOG's efforts in joint public services and intergovernmental cooperation, contact Naheed Huq in SEMCOG's Community and Economic Development Department, (313) 961-4266.

Sincerely,



Paul E. Tait
Executive Director
SEMCOG

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December 2003

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Abstract

Local governments in Southeast Michigan face difficult fiscal choices and, in response, are learning to work smarter and most cost effectively. SEMCOG and the Metropolitan Affairs Coalition encourage intergovernmental cooperation as a way to provide services to citizens in fiscally challenged times. To that end, SEMCOG and MAC have launched the *Making Joint Public Services Work in the 21st Century* series. The series includes reports that address a variety of issues related to intergovernmental cooperation. These reports were originally printed in the early 1990s and have been reviewed and updated, where appropriate. This report was originally produced in September 1994 and revised in December 2000 under the title, *Joint Public Ventures Cost Allocation: Alternatives and Consequences*.

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Introduction

Public discourse over the last several years has focused on privatization of state and local government services as a means of improving production and provision of services. The discussion on privatization has been fueled by the perception of critics that the production and provision of services by the public sector has led to inefficiencies and higher tax prices for services. It is assumed that privatizing services previously produced in the public sector automatically leads to gains in efficiency and, thus, lower costs to the consumer. The privatization debate has often ignored alternative production and provision methods that accomplish the same objective of reducing costs of services. Joint public ventures, joint production, intergovernmental contracting, and private/public ventures represent feasible alternatives to the production and provision of services. Some services do not lend themselves to private market production; therefore, only focusing on privatization tends to further muddy the waters and introduce more uncertainty to the discussion. Policymakers must first understand the nature of public services prior to selecting the organizational arrangement to be used in service production and provision.

Once the nature of public services is determined, the organizational arrangement options can be explored, including private market options. Allocating costs and determining funding methods represent key issues to be resolved especially when joint ventures are considered. Sustaining joint ventures requires an investment of time and the expenditure of political capital. Successful joint ventures, both public and private, require patience, perseverance, and an open mind.

Nature of Public Services

A basic question that must be asked is "How does one determine whether a good or service ought to be produced and provided in the public versus the private sector?" It should not be assumed that the public sector selectively determined which services are termed "public services." Exploring factors that influence where services are to be produced will assist in answering the question above. While the factors generally identified as reasons for public versus private market production are the subjects of college courses in economics and political science, for the purpose of this discussion they can be identified as *market failure, free riders, unwilling riders, high exclusion costs, externalities, economies of scale or size, transaction costs, and health and welfare issues*. Other factors could be discussed as well, but for the purpose of this discussion on the nature of public service, we will limit the discussion to these factors.

Market failure is often identified as the reason for public production and provision of services. What does market failure mean? Generally, economists say market failure means that a private market failed to evolve due to the inability to extract rents (profit) from the economy. That is, firms could not generate profits or a rate of return on their investment, thus no incentive exists for the market to develop for the good or service in question. The reasons why profits could not be generated may be due to the inability to determine quantity of service demanded and/or the price consumers were willing to pay for the good or service. In private markets, consumers vote with their dollars, which signals producers how much to produce and what price to charge. For some services, determining consumer demand is not feasible. For example, how would one determine how much fire protection or police protection each citizen desired and how much would they be willing to pay for the service? Some citizens would place a high value on police services and be willing to pay accordingly. Others may not desire police protection of any kind and, therefore, would be unwilling to contribute to the production of police services.

Let's assume that an enterprising individual decided to establish his or her own police service in a community that does not have police service of any kind available. The entrepreneur sets a price based on the cost of production and a desired rate of return on investment. The entrepreneur contacts each residence in a neighborhood soliciting business (that is, signing up subscribers). Assume that one-half of the homeowners subscribe, or purchase, police service from the enterprising individual. The owner of the police service desiring to maximize profits repeatedly calls on potential subscribers in neighborhoods, indicating to residents that many of their neighbors have purchased a police protection plan, and do they wish to sign up for police protection services as well? A rational economic answer would be, "No, why should I, if my neighbors have signed up, I can still receive the benefits of police services without paying a cent since the police car cannot be invisible in front of my home." Additionally, I would benefit from having police personnel doing vacation checks of my neighbors' homes since the mere visibility of police officers in an area is thought to deter criminal activity. The non-payers become **free riders** since the police service producer has no way to enforce payment from non-subscribers who receive some residual benefit from the service purchased by others. Free riders are eliminated through taxation, that is, everyone contributing to the collective production of the service. Although taxation eliminates free riders, **unwilling riders** are created — individuals who do not demand the service but are forced to pay for the service.¹

¹ Schmid, A. Allan, *Property, Power, and Public Choice*, 2nd Edition, Praeger Publishers, New York, 1987, pp. 46-48.

Some services have the property of **high exclusion costs**, that is, other users cannot be excluded from enjoying the benefits of the service or good without incurring very high costs (in some cases it is impossible to exclude non-paying beneficiaries). In the police protection example, non-payers would enjoy the same benefits from a neighborhood road patrol as those who signed up. A classic high exclusion cost good is national defense where one cannot be excluded from receiving the benefits from national defense.

Another factor as to why some business activities are not able to extract profits from the market is related to the concept of externalities. The actions of individuals, businesses, or communities can create costs, or provide benefits, that extend beyond political boundaries. These costs/benefits are referred to as **externalities**². Examples are crime, education, development that creates congested highways, air and water pollution. Joint or collective action is required to address the problems since the action by one individual, business, or community cannot correct the problem. Government, acting on behalf of all impacted parties, initiates remedial action. If a lake or underground water aquifer is polluted, the costs are not just borne by the polluter, but by all users. The reverse is also true — individuals cannot be excluded from enjoying a clean environment. Government can regulate individual and business behavior by adopting laws that prohibit specific behavior (pollution) and imposing penalties for violations. Government can also foster collective production by organizing the service and collecting taxes to cover the cost of production and provision, as in the case of public education. No one community or individual totally captures the benefits or pays the costs of having an educated citizenry; therefore, education is publicly produced, although a private education market co-exists in the economy. When problems emerge that spill over political boundaries, collective or joint action is required. The same concept is applied to services that provide benefits beyond political boundaries, private action fails, and, therefore, government intervention is necessary.

Certain services possess the property of **economies of scale**; thus, government involvement is needed to produce the service. The definition of economies of scale is "declining average costs as output increases." For example, water and sewer systems require not only a large capital investment to develop needed capacity, but such a service requires a large number of users to make the service production possible due to the high fixed costs. As more users are added to the system, fixed costs are spread over more users, and the costs for all users decreases. While examples exist of privately produced water and sewer systems, natural gas distribution, and electrical distribution, government is still involved through its role in allocating service areas and controlling prices that can be charged through a Public Service Commission.

Government becomes involved and is often asked to intervene in cases where the **health and welfare of citizens** are concerned. Private health care is widely available in society, but we still produce public health services. Both for economic and welfare reasons, the U.S. maintains a dual health care system. Non-users of private health care can impose costs on private health users through spread of infections, lost productivity, and income due to illness. Society bears the cost of this. Thus, it is in the best interests of society to have a healthy citizenry even if it means allocating public funds to care for those unable or unwilling to access private health care. Government assumes the role of ensuring equity of access to services.

Furthermore, requiring individuals and communities to hook-up to public water and sewer systems is an example of government intervention to protect the health and welfare of individuals. But, in issuing such a requirement of compulsory use of sewer and water services, the community creates unwilling riders, folks who desire to maintain their own well and septic system but who are forced to use the municipal

² Fisher, Ronald C., *State and Local Public Finance*, Scott, Foresman and Company, Glenview, IL, 1988, pp.30-31.

system. Government involvement in housing either directly through the construction of low-income housing or provision of subsidies, cash, or vouchers; or indirectly by providing tax credits or adjusting income taxes (for property taxes and mortgage interest) is another example of health and welfare concerns impacting production of certain public services. It is doubtful that individuals or businesses in a community would provide housing to low-income citizens if they were unable to make a positive return on investment; thus, a community need (housing) could go unfulfilled.

In some cases, once governmental services are created, private markets may evolve to assume the production and distribution of the service (privatization). In most cases when a private market evolves, public production of the service ceases. A good example is highway construction. Most interstate and toll roads are built by private companies. The public may maintain the highways after construction, but the initial construction is done by private firms on a bid basis.

The decision as to what services to produce, how to produce, and for whom to provide services is a complex decision influenced by law (constitutional and statutory), past practice, and community mandates. Given a choice, most communities prefer to be self-producers and self-providers of services. **Transaction costs** — the costs of reaching a decision and managing a service — are lower under self-production/provision arrangements, but total costs may be higher. The financial condition and situations for many communities dictate that alternative production and provision options be pursued as a means to maintain or expand the quantity and quality of community services. The ability to separate the production of a service from the provision of a service makes it possible to explore joint ventures.

The decision to provide a community service is a separate decision from how to and who should produce the service, and what financial arrangements need to be made. Separating each step permits exploration of alternative institutional arrangements including co-production or joint production arrangements, contractual relationships (public and private), public-private partnerships, and privatizing services. Each alternative production/provision arrangement exhibits a dimension of consolidation.

Organizational Structure and Issues Related to Joint Ventures

The term "consolidation" is a red flag to many policymakers and citizens. The cry of "bigger is not better" is often used to counter suggestions that services be consolidated. There are essentially three types of consolidation — **functional, geographical, and political**.

Functional consolidation is the consolidation of a specific service function such as fire, police, sewer/water, assessing, road maintenance, solid waste collection. Such arrangements would involve consolidating two or more units, with the legislative body of each (or an appointed oversight board) maintaining control over the service.

Geographic consolidation, which includes the consolidation of school districts as political boundaries are not usually consistent with the new district. A separate governing body (school board) is established to provide oversight.

The most difficult consolidation to achieve is political, that is, merging two separate units of government into a new government. Two examples of political consolidation can be cited in the State of Michigan. The first occurred under the auspices of state annexation law when Battle Creek Township and the City of Battle Creek merged. The other example of a true political consolidation occurred in the Upper Peninsula. Effective July 1, 2000, three municipalities in the Upper Peninsula consolidated into a new home rule city. The cities of Iron River and Stambaugh along with the village of Mineral Hills formed the new city of Iron River. The consolidation became the first such city consolidation in state history. Whereas in the Battle Creek consolidation, the threat imposed by the Kellogg Company to relocate its headquarters if the township-city merger did not occur, it was the historical uniqueness of the UP communities that made possible the municipal consolidation. All three municipalities' borders were contiguous, thus making merger possible. Incidentally, two other cities are also contiguous to the new city of Iron River, but the cities of Caspian and Gaastra opted not to join the consolidation plan. Preliminary economic analysis indicates that economies of scale in service production and management will be attained through the political consolidation. While economics may be the incentives for consolidation, social and political reasons can often impede consolidation efforts. As one would expect, political consolidation is difficult to achieve since a sense of community and community identity is involved.

Legal Basis for Joint Ventures

The State of Michigan has permissive legislation enabling local governments to engage in contracting, consolidation, and joint ventures for service provision. A broad array of service-specific statutes have been adopted as well as two broad statutes — Urban Cooperation Act (P.A. 7, 1967 Extra Session) and Intergovernmental Transfers of Functions and Responsibilities Act (P.A. 8, 1967 Extra Session).³ Suffice it to say, that local governments are not legally constrained from entering into joint ventures either contractually or by forming new institutional arrangements.

³ For an excellent review of legal authority of local governments for joint ventures read *Michigan's Legal Tools for Cooperative Arrangements*, prepared by Miller, Canfield, Paddock and Stone, P.L.C., for the Metropolitan Affairs Corporation and the Southeast Michigan Council of Governments, April 2003.

Joint Production Arrangements

Examples of joint production arrangements abound in Michigan. Such arrangements may take the form of districts, authorities, or formal contractual relationships and involve a city-township, township-village, city-city, county-county, or school-city arrangement for service production and provision, to name a few. Examples can be identified involving every conceivable public service that is produced or provided through a joint arrangement.

In the mid-1990s, six municipalities in Macomb County proposed forming a fire authority that would merge six existing full-time fire departments into one new fire authority. The proposed Metro Macomb Fire District⁴ involving five cities and one township is an example of functional consolidation. The proposal recommended establishing a fire authority⁵ complete with operating by-laws and an authority board responsible for overseeing production and provision of fire services in the six municipalities. Each of the municipalities would transfer the responsibility of fire protection to the fire authority. The consolidation was never achieved due to political opposition encountered with the city councils and township board. While elected representatives in municipalities ultimately refused to support creation of the authority, it is interesting to note that the unionized fire personnel and command staff initiated the concept of merging the six departments.

Creating an "authority" — a special purpose local government, for the production and provision of a public service — is a viable option for functional consolidation. The authority concept can apply to emergency services (police, fire, and ambulance) as well as sewer and water services, ports, and airports. Cities have adopted the authority concept to enhance downtown development (Downtown Development Authorities).

The advantage of an authority centers on the legal organizational framework which requires development of clear and concise by-laws or operating procedures; the inherent power to finance the authority through property taxes (voter approval required); and the power to bond to finance capital projects. Legislative bodies often perceive establishing an authority as diminishing their legislative oversight. In cases where large capital investments are required to develop the necessary infrastructure for the production and delivery of services, organizing as an authority is an advisable alternative.

It is not uncommon for joint fire departments, for example, to be organized as a district. Creating a district provides administrative oversight as well as a financing option through the establishment of a special assessment district. Millage is then levied to generate revenue to support the fixed and operating costs of the service district⁶. Administrative oversight is provided through the creation of an administrative board, yet legislative control is maintained by the participating local units. For example, P.A. 365, 1982, provides for the appointment of an administrative board for a joint or multi-unit fire department. The law dictates the size of the board, the appointment procedure, and terms of appointment. The Urban

⁴ "Metro Macomb Fire District: An Exploratory Report," prepared by fire officials in Roseville, Fraser, Mt. Clemens, Eastpointe, St. Clair Shores, and Harrison Township, March 1994. Report is available from SEMCOG.

⁵ The terms "district" and "authority" are often used interchangeably. As used in local government, a "district" often refers to the legal arrangement for financing the service, such as a special assessment district. An "authority" is a form of local government. Various state statutes enable the formation of authorities both as a legal organization form of government for service delivery and permitting the use of property taxes to finance the new arrangement. The Metro Macomb Fire District as proposed would have been organized under the *Municipal Emergency Services Act, P.A. 57, 1988*.

⁶ Special assessment millage is levied on all classes of property with the exception of the personal property class.

Cooperation Act (P.A. 7, 1967 - Extras Session) provides for creation of an administrative board but leaves the particulars of such things as duties, length of term, and appointment procedures to be negotiated by the respective local governing bodies.

Intergovernmental Contracting Arrangements

A majority of services produced and provided by local governments exhibit the property of economies of scale. Therefore, in generating the capacity to provide services to community residents, excess capacity is often created. Excess capacity is costly since costs can be lowered by spreading fixed costs over a wider service area that encompasses more users. Fire and sewer/water services are good examples where excess capacity is present not only for the service itself but also for the associated administrative oversight. Selling excess capacity through an intergovernmental arrangement has the potential to lower costs to the producer as well as to the buyer. Research has generally found that buy/sell arrangements result in buyers receiving the service at a price less than the cost of self-production. In Michigan, if a unit of government has the authority to provide a service or activity, the law permits the unit to enter into buy/sell or contractual arrangements with other political entities⁷. A variety of state statutes specifically address intergovernmental contracting. Due to the permissive nature of the legislation, the Urban Cooperation Act and the Intergovernmental Transfer of Functions and Responsibilities Act (previously cited), can be used for any intergovernmental contracting arrangement. Agreements must be filed with the Secretary of State's Office of the Great Seal.

A review of the P.A. 7 and 8, 1967 (Extra Session) agreements on file, indicated that of the 249 service agreements, 27 percent dealt with emergency services (police, fire, ambulance, and central dispatch); public transportation agreements were second in frequency. The author suspects that numerous other P.A. 7 and 8 agreements have been developed in the state but have not found their way to the Secretary of State office. A 1989 survey of 233 cities, villages, and townships in nine southwest Michigan counties found 342 intergovernmental agreements involving 14 types of services; 33 percent involved fire or ambulance service⁸.

A 1983 national survey by the Advisory Commission on Intergovernmental Relations⁹, identified the 10 most frequently contracted services by cities and counties. The survey listed in descending order the following services — jails and detention homes, sewage disposal, animal control, solid-waste disposal, water supply, police/fire communications, fire prevention, tax/utility billing and processing, and sanitary inspection. The survey did not distinguish whether the contracted services were from another public jurisdiction or private firm.

As research indicates, emergency services (fire, police, and ambulance) represent services that are frequently provided through intergovernmental contracts or through joint ventures. The substantial capital

⁷ Local governments in Michigan have restrictive powers. In order for a local government to produce or provide services and to collect revenues for such services, authority must have been granted by the legislature. This contrasts to some states where local governments can engage in activities as long as the legislature has not adopted prohibitions.

⁸ Winchester, Lucy, Mark Abeles-Allison, William Knudson, Patrick Patterson, Eric Trachtenberg and George Mansell, *Survey of Collaborative Arrangements Among Local Governments in Southwest Michigan*, Kellogg Leadership and Local Government Project, Michigan State University, East, Lansing, MI, October 1989.

⁹ *Advisory Commission of Intergovernmental Relations* A-103, Washington, D.C., 1983, Table 4.2, pp. 28.

investments¹⁰ required provide incentives for local governments to seek additional users of the service to reduce the per-unit cost of the service. The same incentives can be applied to other services such as sewer, water, transportation, central dispatch, solid-waste collection/disposal, and public utilities.

The benefits to contracting for services are numerous. Benefits to purchasers include reduced costs due to economies of scale, specialization, and bulk purchases; and reduced duplication of services. For producers, there are reduced fixed costs, and the potential for improving the quantity and quality of services. Political and social benefits to contracting include improving the capacity to address spillover problems, improving a unit's ability to respond to specific articulated demands of citizens for specialized services (e.g., rural bus transportation for the elderly), and improving the equity of access to services. Successful collaborative efforts expand the sense of community, reduce the problem of jurisdictional boundaries, and create an environment for future joint ventures.

Public/Private Ventures

Community services can also be produced and provided through joint ventures between the public and private sectors — a form of privatization. As mentioned earlier, the decision to provide a service does not necessarily mean that the unit of government produces the service. The kinds of services that a community decides to make available is a separate decision from how and who produces the services. Thus, a local government may decide to provide solid-waste collection as part of its governmental service package to residents, but may contract with a private firm to produce the service. Alternatively, a local government may grant monopoly franchises to a private firm, such as in the case of cable TV. Governments can introduce a degree of competitiveness into the public market by bidding out service contracts. Illinois has experimented with privately managed sewer/water systems. While such an example is held up as a privatization model, it should be pointed out that contracting with a private firm to manage a sewer/water system is a joint public-private venture, not total privatization.

Governments define the "rules of the game" for the marketplace. Even with total privatization, government assumes a role in the marketplace. In some cases, government involvement can increase a private firm's efficiency in producing and providing services. In my neighborhood, solid-waste collection is provided by private firms. Each township resident contracts with one of three solid-waste-disposal firms operating in the township. I live on a dead-end street with 14 homes; three different firms' garbage trucks traverse the street between Monday and Wednesday servicing residences, resulting in duplication of services, additional noise, and wear/tear on the roads. Here, township officials want solid-waste collection to occur in a competitive market. The township could improve the distributional efficiency of solid waste collection and lower total costs to the firms by granting franchises by area to private firms. Franchises could be allocated on a competitive bid basis, with each firm being granted a monopoly for a given designated service area. Collection costs and congestion would be reduced since collection routes would not be duplicated.¹¹

¹⁰ Fire protection is an example of a service where "lumpiness" in service capacity is noted, meaning that a unit in order to have adequate suppression capacity may need 2.5 fire trucks but purchase three since it is impossible to buy half a fire truck, thus excess capacity is generated. Alternatively, a unit short on capacity can purchase the additional capacity from another unit producing fire services. Another example can be found with specialized equipment. A unit may experience an infrequent need for a ladder truck, an expensive piece of fire equipment, neighboring units may have the same low level of need. To reduce costs for all, one ladder truck can be purchased and shared by contract with neighboring units.

¹¹Research by Steve Duprey, a graduate student in the Department of Agricultural Economics, Michigan State University in Spring 2000 on the solid waste collection in Delhi Township, Ingham County found that moving from three firms collecting

Joint public-private ventures have been initiated between schools and local communities for recreation programs, incarceration facilities, health care (hospital), road construction and maintenance, transportation, maintenance of physical plant and infrastructure. When deciding on production/provision options, local governments are encouraged to seek partners from the private sector. In the case of the much-discussed privatization of jails and prisons¹², the privatization is actually a joint public-private venture. State or local governments put up the capital for construction through bonding or construct the facility, then contract with a private firm to operate the facility. A number of municipalities have privatized the maintenance of municipal vehicles (trucks, buses, and maintenance equipment) yet upon further examination, the operation is a public-private venture. Local governments provide tax breaks and incentives for the recipient firms and, in some cases, put up municipal capital to foster the operation. Such partnerships are not to be minimized since they represent viable solutions to producing and providing desired community services.

Obstacles to Contracting and Joint Ventures

The benefits of contracting for services are identifiable and quantifiable, yet opportunities to collaborate or engage in joint ventures often fail to materialize due to political, economic, and social stumbling blocks. The obstacles to contracting and joint ventures are numerous but not insurmountable. Joint or contractual partnerships may be impeded due to transaction costs — the costs of reaching joint decisions. The fear over the perceived loss of control, turf protection, "skeletons in the closet," uncertainty of the sustainability of the joint agreement, and the perception that "hidden agendas" are present may serve to constrain viable partnerships from materializing. Local residents and public officials often shy away from joint production arrangements due to the perception that service quality and quantity will change once the unit engages in a joint or contractual venture. The inability to resolve price and cost allocation issues under a co-production arrangement is often the reason that an alternative institutional arrangement failed to reach fruition. But in order for any degree of privatization to occur, private firms willing to engage in the venture must be present in the marketplace and willing to assume risks.

solid waste to one firm or franchising the territory would result in an increase of \$184,507 net revenue to the firm that either would be translated into increased profits or could be used to reduce monthly service charges for the 6,900 households.

¹² Harvey, Lynn R. "Reinvesting in the Social Infrastructure of Communities." *Increasing Understanding of Public Problems and Policies: 1992*, pp.119-129. Farm Foundation, Oak Brook, IL. January 1993.

Methods of Cost Allocation Under Joint Production Arrangements

The method of sharing and allocating cost shares under a joint production or contractual arrangement is often critical to the success or failure of a joint venture. The selected cost-share allocation method must be transparent, that is, local officials reading the agreement must be able to understand the method for establishing costs and how the appropriate cost shares are allocated among participating members. The lack of transparency in a joint agreement leads to more frequent conflicts and political unrest. As the composition of legislative bodies change over time due to elections, agreements that lack clarity in how costs are determined and allocated result in pressure to renegotiate or dissolve long-standing relationships, and to explore self-production/provision options. Therefore, a necessary step in negotiating sustainable joint ventures involves developing a clear rationale of why a particular cost allocation method has been selected.

Allocating cost shares is a decision separate from selecting a method to finance the service. In joint production arrangements, sharing costs and generating needed monies to finance a service can become somewhat muddled. In contractual buy/sell agreements, how the buyer of a service decides to finance the service rendered by the seller should be the buyer's decision. The strengths and weakness of a number of cost allocation methods will be discussed to illustrate how the distributional consequences change under each method.

Relating Benefits to Costs

A basic guiding principle in allocating cost shares is to relate benefits (services received) to the costs of producing and providing the service, where possible. In most cases, beneficiaries can be identified and service demand determined through using historical demand information (examining demand over a period of years). Identifying service demand gets complicated with such services as police, fire, animal control, emergency response services, economic development activities, or services that are oriented to prevention and emergency response. Individual demand is difficult to determine, thus presenting problems in allocating individual tax prices (costs). Therefore, governments rely on broad forms of taxation to finance services. Other services such as sewer and water services, streets, sidewalks, curb/gutters, street lighting, inspection, tax assessing, etc. lend themselves to easier identification of beneficiaries and demand. It is easier to determine sewer and water usage, which makes it possible to price services on a per-unit basis. Similarly, curb and gutter cost can be charged to homeowners on a per-foot basis.

Types of Costs

Determining costs can be difficult but, in most cases, the per-unit cost of service can be calculated. Two types of costs need to be quantified — **fixed costs**, which do not change with the level of output; and **variable costs**, which change with the level of output. Examples of fixed cost are buildings, capital equipment (e.g., police cars, fire trucks, sewer treatment plant, and the accompanying distribution system for water and sewers), and land, to name a few. In determining fixed costs on an annual basis, depreciation can serve as a proxy for fixed costs. Failure to recognize and account for fixed costs is often the Achilles heel of local government financing, especially in joint ventures and buy/sell agreements. If the allocated cost shares only include the variable cost while ignoring fixed costs, service producers find themselves unable to fund additional capital purchases in future years. Failure to include capital or fixed costs leads a firm to consume the depreciation without setting aside monies to replace worn-out

equipment or assets. Therefore, it is critical that units establish depreciation schedules for each piece of equipment or capital-investment items used in producing and providing services and include depreciation as an annual cost.

Variable costs include wages and benefits, gasoline, equipment repair, disposable or consumable items, insurance, management services, etc. Local governments generally are adept at calculating variable or recurring costs since those have to be funded on an annual basis and, therefore, are quite visible, unlike fixed costs which are not easily apparent to consumers and local officials.

Factors to Consider in Allocating Cost Shares

A variety of options are available to local governments when it comes to allocating cost shares under joint ventures and co-production arrangements. Allocation becomes complicated when factors such as population, tax-base wealth, fiscal capacity, and service demand vary dramatically between participating units. Units that have similar size and demographic compositions and engage in joint ventures will find that an equal sharing of cost shares presents fewer problems. The more dissimilar the communities entering joint production arrangements, the more creative they need to be to ensure that equity in cost sharing occurs. Identifying and considering the variables that influence demand for services and impact cost shares will promote equity. If two units decide to jointly produce and provide fire services, it may not be appropriate to allocate cost shares on an equal basis if variation is noted in the aforementioned factors¹³. Developing a weighted cost-share formula may be more equitable because of the factors that influence demand. An equal sharing method may lead to cross-subsidization between the units. A weighted cost-share formula is, perhaps, more applicable to services such as fire, police, ambulance, library, and recreation. Population density, congestion, household income, or other demographic characteristics may influence demand. An expansion of the weighted-formula concept will be discussed later.

Population size may serve as the appropriate factor in determining cost shares for jointly produced planning and development services. A combination of population size and tax base could also be used since the output from planning and development has applicability to a wide variety of users (governments, private firms, and individuals). Geographical information systems (GIS) are a much-needed service to local governments but to have each local government engage in the development of a GIS is too costly and results in duplication. GIS is an ideal service to be undertaken by coalitions and joint arrangements. Once the GIS is developed, it can be made available to surrounding jurisdictions. The issue with GIS is how to allocate the costs of development and how to price the service to users. The proportionate share could consist of a combination of population and tax base as measured by SEV. A user fee would also be appropriate.

Jointly produced infrastructure services, such as sewer and water, present less of a challenge in the allocation of cost shares since those projects are financed over a long period of time through bonding with property taxes levied to cover the fixed costs. Variable costs are easily identified and are related to consumption. Ready-to-serve charges are frequently assessed to cover the cost of maintenance and upgrade. Therefore, the opportunities for cross-subsidization are minimized.

¹³ Harvey, Lynn R. "Buying and Selling Fire Protection." Staff Paper 94-4, Department of Agricultural Economics, Michigan State University, East Lansing, MI. January 1993. The paper provides an expanded discussion of the different methods of allocating cost shares for fire protection production and provision and the pricing of fire services in buy/sell arrangements.

Buy-sell or contractual arrangements for providing community services present a challenge for both the producer (seller) and buyer. The seller is concerned about covering their total costs of producing and providing services, maintaining service capacity, and establishing the price to charge for the services rendered. Buyers, on the other hand, are concerned that they not be overcharged for the service since many of the services are provided in a monopoly environment. For example, for services such as police and fire, a municipality may have only one supplier of the service available but the buyer may not have the fiscal capacity to become a self-producer. Buyers are also concerned whether the supplier of services will accommodate their specific needs. Especially with emergency-type services, buyers seek guarantees that the seller will give priority to their service requests and not be accorded a secondary-response status. Clearly articulated provisions in the intergovernmental agreement can minimize concern over both price and response.

Uncertainty related to pricing services in a buy-sell arrangement can be reduced by adopting cost share and pricing models that are transparent and flexible to change. Thus, sharing costs and pricing services based on a model that incorporates changing costs and demands provides some assurance that the seller can cover costs and the buyer is not overcharged.

Cost-Weighted Formula

A *weighted formula* pricing method takes into account factors that have the potential to impact the demand for service. For illustration purposes, let us assume that three units of government (two townships and a city) decide to provide fire protection through an intergovernmental agreement with the city producing the services. How are costs allocated? The three units agree to use a weighted formula. The factors determined to be applicable in the formula are *population*, *state equalized value*, and *historical usage*. Each of the variables is discrete and measurable, and gives transparency to the allocated share of fire protection costs, both for the buyer and the seller.

As the **population** of a unit increases, the incidence of fires generally increases. Therefore, including population as a variable accounts for added risk of exposure and the likely demand for fire services. **State equalized value (SEV)** of a governmental unit is included to represent the value of property to be protected. Similar to insurance, the more valuable the property to be protected, the more willing the owner should be to pay for fire protection. Recognition is made in the formula that open space is less costly to protect as opposed to residential, businesses, and commercial structures. **Historical usage** is included in the weighted formula in order to capture historical consumption patterns. To determine usage, the total number of fire personnel hours used in fighting fires and responding to fire calls is calculated using a three-year rolling average. A rolling average is used in order to smooth out peaks and valleys in consumption.

Each of the three factors is assigned a weight; for example, SEV may be given a weight of 30 percent, population 30 percent, and historical usage 40 percent — the actual weights are politically negotiated decisions. In rural areas where a significant percent of SEV is attributed to open agricultural land, only 50 percent of the open-space SEV is added to the SEV of residences and other structures. Ideally, if property record cards are computerized, an actual figure of the SEV of building structures could be determined and an agreed-upon percentage of open-space value added to determine the SEV of the area to be serviced. A percentage of the open-space SEV should be included to reflect the potential of grass and timber fires.

To calculate a formula share for each buyer of fire protection including the seller, the total population for the units or coverage area (if coverage area is different than the political boundaries) is determined and a percentage population share calculated for each unit (buyer). The total adjusted SEV is determined for the service area and a percentage share assigned to each buyer including the seller. A similar calculation is done for historical usage.

Once the percentage share for each factor, **population**, **SEV**, and **historical usage** is determined, the assigned weights are multiplied by the percentage share for each factor. The result represents the weighted share to be used to determine each unit's financial share for fire protection services. The factor is used to determine both the operating cost share and fixed-cost share for participating units.

Example: Applying the weighted formula pricing method

Assume that the city produces excess fire protection capacity and sells fire services to two townships. The negotiated weights for each of the factors are population (30 percent), SEV (30 percent), and usage 40 percent. The following tables demonstrate how financial shares for fire services are determined using the *weighted formula*.

Table 1: Population

Unit	1990 Popl'n	% Total Popl'n
City	4,575	53.5
Township A	2,225	26.0
Township B	1,750	20.5
Total	8,550	100.0

Table 2: State Equalized Value

Unit	1993 SEV Adjusted	% SEV
City	65,000,000	57.0
Township A	27,000,000	23.7
Township B	22,000,000	19.3
Total	114,000,000	100.0

Table 3: Usage (Three-Year Average - Total Hours)

Unit	Usage (3 Year Avg.)	% Usage
City	640	41.8
Township A	480	31.4
Township B	410	26.8
Total	1,530	100.0

**Table 4: Factor Share
(Factor Weight X Percent Factor)
(Cross-Multiplication)**

Unit	Popl'n 30% (1)	SEV 30% (2)	Usage 40% (3)	Sum Weights (1+2+3)
City	0.161	0.171	0.167	0.499
Township A	0.078	0.071	0.126	0.275
Township B	0.061	0.058	0.107	0.226
Total	0.300	0.300	0.400	1.000

The "sum weights" in Table 4 represent the formula share for each of the three units and are used to determine cost shares for each unit. For example, Township B's weighted factor share is 22.6 percent and would be used to determine their cost share for fire protection services.

If the total annual costs of fire services (variable cost + fixed cost) for the city is \$86,000; Township B's share would be \$19,436 [0.226 x \$86,000].

While the weighted formula appears to be a bit more complex as opposed to other pricing strategies discussed, the weighted formula more accurately reflects the benefits and costs of fire protection services. The factors (population, SEV, and usage) can be adjusted annually to reflect changes. Normally, population figures are only available every 10 years unless a special census is taken, however, local officials may wish to adjust the population figure every five years if information is available. Since SEV and usage changes annually, the new data can be inserted into the formula for updating the weighted factor share for each unit.

Additional uses of weighted formulas

The above example illustrates how the weighted formula concept is applied to fire protection in a buy-sell arrangement. The technique could also be used in a joint venture or joint production/provision agreement. If policymakers perceive that additional factors should be captured by the formula, they can be added and adjustments made. The weighted formula concept is applicable to other services such as police, ambulance, and parks/recreation where demographics may vary and impact demand for services. The greatest strength of the weighted formula is the flexibility and adding clarity to how costs are distributed thereby reducing uncertainty.

Other Models of Cost Allocation

Obviously the weighted formula is not the only model for allocating cost share when services are produced and provided through a joint venture. Many examples can be found where participating parties simply allocate share based strictly on SEV. Using tax bases as the determining allocation factor assumes that the demand for service is a function of the value of the property. While simple to administer, such an approach fails to capture additional factors that influence demand. However, if units determine that they are going to finance the service through property taxes by levying extra-voted millage, then using SEV as a determining factor may be appropriate despite the inherent weaknesses. Some units sell emergency services (fire, police, ambulance) on a run charge. Experience has shown that run charges reflect average cost pricing (total costs divided by number of runs). The advantage of this approach is that it is simple to administer and understand. However, cross-subsidization often occurs since the approach may not capture

the variability in the consumption of services present. For example, an average fire run charge of \$750 may over-price the fire call for a washdown resulting from a vehicle accident but under-price a call for a structure fire. The method can be strengthened by adding a "standby" service charge, similar to a readiness-to-serve charge assessed by sewer/water producers, with the standby fee being deposited in a capital equipment or replacement fund.

Local units may have to resort to more traditional cost share allocation methods for services such as, recreation that are produced through a joint venture, and do not have an easily identifiable discrete output measure attached, unlike fire runs, police road patrol, or ambulance calls. Factors such as population or number of households could be used to allocate cost shares.

Financing Joint Ventures

The previous section centered on allocating cost shares between partners when producing or buying services under a joint agreement. However joint ventures are more complex. Financing joint ventures represents a critical decision point, for the selected finance method has far-reaching distributional consequences (who benefits and who pays the costs). Local governments have at their disposal the use of general-fund revenues, extra-voted property taxes, special assessment, user fees, third-party payments, grants, and donations/contributions to fund community services. Each financing strategy carries a differing set of issues to be resolved by the body politic. Although grants and donations will not be discussed here, it should be noted that communities have used these monies to either serve as matching dollars or to substitute for other revenue sources to finance community services.

General-fund revenues are used to finance services available to all community residents. Units engaging in co-production arrangements to provide services are certainly free to use general-fund money (if available) to support such activities, but with stressed budgets, local governments have sought alternative sources of funding.

Extra-voted property taxes have become a common means of supporting local services and often looked to as the means to expand service delivery. Local governments frequently go to the voters requesting additional millage levies for police and fire protection, library, buildings, recreation, and/or purchase of new computers, all aimed at maintaining or expanding the level of services provided. Extra-voted revenues become restricted revenues and are treated as special-revenue funds meaning that their use is limited for a specific activity. Joint ventures are often funded through the levy of extra-voted millage with the perception that everyone is paying their fair share by using property taxes as the revenue source. While guaranteeing revenue for the activity, inequities may be created since the value of property and the demand or use of the service is not equated.

Special-assessment levies are the preferred financing strategy when special assessment districts are established or created by legislative bodies. Special assessment districts are formed when the beneficiaries of a service or public improvement are clearly identified, for example, streets, sidewalks, street lighting, drains, and curb/gutters. Increasingly, local governments use special assessment districts for providing fire, police, ambulance, and recreation. Technically, special-assessment levies are not considered property taxes although property value is used as the base for which the levy is assessed. But special assessments are considered as part of the taxing effort of cities, villages, and townships when calculating the relative tax effort for the state revenue sharing program. Therefore, some incentive exists for units to utilize special assessments. Special assessments encounter the same problems as the property tax in relating the service received to means of financing. Some improvements require that special assessment levies be used as the financing means. For example, if a local unit sells bonds to finance a sidewalk project, a special assessment district is created and the annual levy paid to retire the incurred debt.

Economists often refer to the incidence of taxation (who ultimately bears the cost). With some methods of finance, the beneficiaries of a service may not be the ones who actually bear the cost of the service. For example, assume that a unit decides to support a joint police service by creating a special assessment district, whereby all real property owners financially contribute to the production of police services. Visitors to the communities benefit from having police protection but bear zero cost for the service. Many service examples exist in local governments where the payers of a service are different from beneficiaries. This is not unusual, but when selecting financing mechanisms local officials should be aware of the relationship between the benefits and who bears the ultimate costs.

User fees and service charges, in large part, eliminate the problem of benefits not being related to costs of the service received. The trend in local governments beginning in the mid-1980s was a higher reliance on user fees and service charges to support community services. This was especially true after the demise of the federal revenue sharing program in 1986 as units scrambled to replace federal monies. User fees increase administrative costs due to collection, monitoring, and accounting, but help to regulate demand for the service. Municipalities frequently see water usage per household drop once water is sold on a per-unit basis versus a lump-sum payment each month. Municipalities have found that revenue can be maximized and demand regulated by having a two-tiered pricing system for services for which user fees are attached. Higher prices can be charged during peak-demand periods versus off-peak periods (e.g., bus transportation, toll bridges, launch ramps, and golf courses). Providers of such services are able to take advantage of differing demand elasticities of consumers.

While user fees and service charges offer a viable option for financing services, they raise several issues including equity of access, regressivity, and uncertainty of revenue. Establishing a user fee may eliminate some users from access to the service due to income. User fees are a regressive form of taxation, as one's income goes down the percent of one's income paid to the user fee increases. User fees and charges, unless the good or service is inelastic, impact the use of the service and, therefore, revenue yields are less certain.

User fees are increasingly being used to support fire-run calls, selected police services (e.g., obtaining an accident report for an insurance carrier), and ambulance calls. Even if a governmental unit produces and provides a service through the general fund or special millage, local units may assess a user fee.

Third-party payments represent a source of revenue for local governments. Emergency services, police, fire, and ambulance, can be supported, in part, through third-party payments. Homeowners and auto insurance policies, in most cases, contain provisions for reimbursing policyholders for costs incurred in ambulance transport and fire suppression calls. Though local governments incur additional costs in billing customers who use emergency services, third-party payments can assist in offsetting costs of service provision. Collection rates on third-party payments average around 50-60 percent. If a unit determines that residents or users of emergency services are going to be billed for emergency response, an informational campaign should inform citizens of the new strategy. Residents may have to check with their insurance carriers to see if such coverage is provided or if a rider can be purchased.

Obviously, local governments can combine financing options to produce and provide community services. Utilizing extra-voted millage to support a service does not preclude third-party payments. Or, a base level of service can be financed through general-fund revenues, and additional levels of service provided through collecting user fees and service charges. Local officials need to examine each revenue option and determine which method matches community needs.

Sustaining Joint Ventures

Once joint ventures, co-production, or buy-sell agreements are developed, sustaining the relationship in the long run takes effort. The key to successful collaboration is written agreements and establishing a policy board to oversee operation of the joint effort.

Written agreements should contain the legal basis for the contractual relationship, method of cost sharing, the quantity and quality of service to be provided, and the time period covered. Agreements need to be long enough in length so that uncertainty is reduced over the availability of the service. Periodic review or renewal clauses ensure that policy bodies re-examine the terms and conditions of the agreement on a regular basis. Additionally, exit clauses or early termination procedures should be detailed in the agreement along with evaluation and reporting procedures.

Administrative oversight is critical to smooth functioning and long-lasting joint ventures. Participating units need a forum for problem resolution other than the city council or township board meeting. Administrative oversight boards may be required under some authorizing statutes but, in other cases, a board should be appointed. While board composition and responsibilities are subject to negotiation in most cases, boards that contain equal representation perform better than boards that have unequal representation. The tendency exists in negotiating agreements that if one unit is responsible for paying 60 percent of the costs that they receive an additional representative or vote. Agreements so structured tend to be short-lived since the unit with fewer votes perceives that they are "steam-rolled" in the voting process.

Administrative oversight bodies are responsible for making frequent reports to the respective participating legislative bodies. This not only ensures constant communication but also alerts the legislative bodies to potential problems. Legislative bodies, on the other hand, have to empower their representatives to act on behalf of their communities. Nothing destroys the integrity and confidence of an administrative oversight board than to have the legislative body constantly countermanding recommendations developed by the oversight group.

Joint ventures will increasingly become a sought-after option in the production and delivery of community services, but cost will dictate the approach. For some units, maintaining service, improving quality and quantity, and expanding services is only feasible by lowering costs or forming new partnerships. Remember, successful collaborative efforts require **perseverance, patience, compromise, and an open mind**, with the latter the most difficult to achieve.

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