

Governmental Aspects of Sanitation in the Urban Fringe

FLOYD B. TAYLOR, M.P.H.

THE PUBLIC HEALTH engineer in the State or local health department is in a position to assume leadership in attacking the sanitary engineering problems of metropolitan or urban development. As so many of these problems concern the environment, a field in which he has professional competence, it is natural that he provide guidance and stimulation in obtaining for urban dwellers adequate water supply, sewerage, housing, health department inspection services, and other public health measures.

The public health engineer may be highly proficient in the technical aspects of sanitary engineering. However, in the nonsanitary engineering phases of urban area work, such as planning, economics, and governmental relationships, he is often in need of counsel. At a conference held by the Public Health Service in January 1958, the consensus was that the technical aspects of urban area sanitary engineering were becoming known but that the non-technical phases, such as governmental relationships and economics, were not well known and needed to be better understood by the worker in this field. It is upon these phases that progress in solving urban area problems hinges.

A case in point is found in the work of the Joint Legislative Committee on Metropolitan Area Study to the Legislature of the State of New York. In their appraisal of metropolitan problems in that State, water supply occupied

a prominent place. It was stated that planning, economics, and governmental arrangements were of more consequence than engineering solutions to the problem. They said: "Answers to these problems in a metropolitan area almost invariably entail governmental adjustments and working relations among various political subdivisions which are not in every instance readily achieved. Waterworks engineers have complicated formulas for measuring 'friction loss' in the velocity of water delivered through mains. There is also 'friction loss' in arriving at satisfactory governmental arrangements for water supply and distribution in metropolitan centers" (1).

The material which follows on the relationship of government to the urban fringe is intended to aid the public health worker by presenting the fundamentals of governmental relationships. References are given for further study. A question that may well be asked is, what place does a sanitary engineer have in establishing any governmental arrangement or change thereof? The answer is that although he does not usually have a direct role in shaping political circumstances, he may be influential in political decisions and he also may be, and frequently is, instrumental in obtaining the enactment of legislation. He may also be instrumental in obtaining cooperation between separate governmental groups. At the local level the public health engineer can become acquainted with the fundamentals of the governmental arrangement under which he works and the potential use of other arrangements. He can be thoroughly familiar with the purpose and content of various ordinances such as

Mr. Taylor serves as chief of the Special Studies Unit in the Technical Services Section of the General Engineering Branch, Public Health Service.

those that regulate housing, zoning, and subdivisions. At the State level he should be aware of all permissive and regulatory statutes which in any way affect the provision of sanitary engineering services to the urban area. This is also true of the worker at the Federal level.

Fundamentals

The relationship of government to urban fringe sanitation problems is best viewed in the light of the excellent fundamental concepts of government under which Americans live. These are that government has three functions: legislative, executive, and judicial. These three are closely bound together and interwoven, yet each is an entity.

Legislation is required to establish the legal framework within which urban area problems can be attacked. It is the medium for expressing the will of the people. Legislation is needed at the State level to authorize the use of local forms of urban area government as the State has sovereign power over the municipalities within its borders. Local ordinances are required to permit the adoption of governmental forms.

From the legislative proceedings stem the executive arrangements under which the method of choice or use is administered. These arrangements vary with the form used and will be discussed below.

Court action on contested legislation or executive decisions shape the plans chosen to deal with subsequent problems or in designing a new approach to solving a problem by the means first selected.

It must be recognized that urban fringe sanitation problems are a part of a larger problem of which the solution is primarily political. Hence the importance of understanding governmental functions. This larger problem is that of coordinating the actions of fragmented government—in 1957 there were in the United States more than 102,000 units of government (2)—operating in an area of such population density that political boundary lines do not contain the common needs of the people. Besides sanitation requirements there are the common needs of transportation, highways, schools, hospitals, fire and police protection, and storm

drainage. Sanitation requirements include water supply, sewage disposal, refuse collection and disposal, and health department inspection services in such categories as milk and food supply and service, radiation, and nuisances.

Governmental Arrangements

In the United States the following governmental arrangements have been used in recent years, singly or in combination, in dealing with urban fringe problems (3): annexation; extension of central city services; transfer of functions; special districts or authorities, single service and multiservice; city-county consolidation; incorporation; and mutual cooperation.

Definitions of these follow, along with a brief, tabulated description of the conditions which are favorable to a particular method, some of its advantages and disadvantages, and some locations where it has been used. The advantages and disadvantages pertain to the method described and are not necessarily considered from an overall standpoint such as the comparison of one method with another.

Annexation

Annexation is the acquiring by a governmental unit of additional territory adjacent to and outside its political boundaries. In practice it means moving a municipal boundary line to encompass more land. Sometimes a pocket of land called an enclave, entirely within a city boundary, but not a part of the city, is annexed (4).

CONDITIONS FAVORABLE TO THE METHOD

The area outside the core city should have no incorporated municipalities and must be immediately adjacent to the city boundaries.

ADVANTAGES

Total area subject to city taxes will increase.

Lowers cost of municipal services for annexed areas.

City may receive larger share of State sales and gasoline taxes.

City codes may uplift housing face of surrounding area.

Prevents further fragmentation of government.

DISADVANTAGES

Promotes incorporation of unincorporated areas outside core city.

City may suffer a "net tax loss" if it has to provide

services at existing city rates and at increased cost caused by expansion of equipment and facilities.

Usually inapplicable where urban area crosses a county line and not at all where it crosses a State line.

Annexation laws may be difficult to use.

Seldom takes in the entire fringe so the problem may continue though smaller in area.

SOME PLACES WHERE USED

Mesa, Ariz., Milwaukee, Wis., Fairfax, Va., Alexandria, Va., Dallas, Tex., Kansas City, Mo., Louisville, Ky., Roanoke, Va., Tampa, Fla., Seattle, Wash., Wichita, Kans., Atlanta, Ga., Madison, Wis.

Extension of Central City Services

Extension of central city services refers to the core city's extension, usually through contract agreement with outlying areas or communities, of its water mains, acceptance of incoming sewerlines, or allowing use of its incinerator or sanitary landfill for disposal of refuse.

CONDITIONS FAVORABLE TO THE METHOD

Central city services, especially the waterworks, sewage disposal plant, or incinerator are of adequate capacity.

A definite limit can be set beyond which the city will not be expected to furnish services.

Adequate time for farsighted planning is available.

State statutes do not hinder effectiveness of this form of providing services.

ADVANTAGES

Do not need to build additional plants in outlying areas.

Do not need to set up another administrative and legal structure of government for outlying areas to handle sanitary services.

Urban dwellers avoid capital financing problems.

DISADVANTAGES

Many cities do not have adequate facility capacity for this method.

As existing systems tend to become smaller as they recede from the plant, it may be necessary to construct new water mains and trunk sewers with resultant high cost.

The suburb is completely dependent upon city for services without having a voice in their administration.

SOME PLACES WHERE USED

Grand Rapids, Mich., Auburn, Maine, Peekskill, N.Y., Bloomsburg, Pa., Aurora, Ill., Atlanta, Ga., Fort Worth, Tex., Rochester, Buffalo, and Syracuse, N.Y.

Transfer of Functions

In transfer of functions existing incorporated communities or State legislatures assign the

right and responsibility of providing services or functions, such as water supply and sewerage, to another order of government, frequently higher, such as the county. Transfer of functions may also occur laterally, that is from one community to another.

CONDITIONS FAVORABLE TO THE METHOD

A number of incorporated communities which will not consolidate politically.

An efficient functional operation at the level of government to which the transfer is made.

ADVANTAGES

Larger scale operation may produce more efficiency.

Per capita operating costs are lower due to single administration of operation.

County may be kept as a partner in administering functions common to many municipalities.

Community political boundaries remain intact.

DISADVANTAGES

People often fear surrender of any governmental rights from the local level to any other unit of government.

Not easily accomplished where a considerable number of city-type functions are transferred.

SOME PLACES WHERE USED

Dade County, Fla. (also called a federation type), and Los Angeles.

Special Districts

The special district is an independent administrative arrangement endowed with certain specified governmental rights. It may transcend political boundaries, has the power to issue bonds, sometimes to levy taxes, and to contract for construction, but is created for a specific purpose or purposes. It may provide either single or multiple services. It does not have political power of government outside of its specified purpose.

CONDITIONS FAVORABLE TO THE METHOD

Legal debt limits are reached in local communities.

Legal authority is granted by State legislation to establish districts.

Impossible to achieve informal cooperation between existing governments.

ADVANTAGES

May finance operations from revenue bonds.

Circumvents legal debt and tax limits.

Does not change any existing political boundaries.

Can be highly efficient.

Authority bonds may pledge only expected income and not property as security.

DISADVANTAGES

Authority bonds may carry higher interest rates.

Authority may grow to the point where it is non-responsive to the desires of the people it serves.

Adds another unit of government to existing maze.

When a revenue-producing function is given to an authority, existing governments lose that revenue.

SOME PLACES WHERE USED

North Jersey Water District; Washington Suburban Sanitary Commission (Md.); Allegheny County, Pa.; Sanitary Authority, Louisville-Jefferson County, Ky.; St. Louis, Mo.; Boston Metropolitan District; Passaic Valley Sewage District, Newark, N.J.; Akron Metropolitan Housing Authority, Akron, Ohio; Hampton Roads Sanitation District, Norfolk, Va.; Greater Greenville Sewer District, Greenville, N.C.

City-County Consolidation

The arrangement called city-county consolidation consists of constituting the county or the city as the single administrative, legal center for providing the essential common services and government required by urban dwellers. Neither city nor county completely loses its identity.

CONDITIONS FAVORABLE TO THE METHOD

A large city occupying most of the area of the county.

Equity in the relationship between city and county.

Action required due to expanded functions of both units in the same geographic area.

ADVANTAGES

Substantially eliminates dual governments.

Urban dwellers obtain services under one management.

Regarded by political scientists as one of the best answers to governmental difficulties.

DISADVANTAGES

Difficult to put into effect because of required State legislation.

Suburban dwellers fear they may be absorbed by the central city and fear assumption of added costs.

Not the answer where an urban area of more than one county is involved, also not the ultimate answer as urban areas cross county lines.

SOME PLACES WHERE USED

Philadelphia, Pa.; Boston, Mass.; New Orleans, La.; Baton Rouge, La.; New York, N.Y. (In recent years, only Baton Rouge in 1949.)

Incorporation

Incorporation is the establishment of a political unit of government with geographic bound-

aries in an unincorporated area, for a closely settled population.

CONDITIONS FAVORABLE TO THE METHOD

An unincorporated area of good size containing population densities of at least 2,200 per square mile.

Economic level of area is high enough to produce the tax base needed to finance the government and its functions.

ADVANTAGES

Resists city annexation.

Retains rights of the individual citizen.

Enables a group of citizens to establish tax basis for funds to provide services they desire.

DISADVANTAGES

Urban dwellers will probably pay higher taxes.

Taxes collected may not be adequate to finance improvements with result that services are ultimately inadequate.

May hinder the overall development of the area.

SOME PLACES WHERE USED

Dallas County, Tex.; Du Page County, Ill.; St. Louis County, Mo. Widely practiced except in the New England States.

Mutual Cooperation

Mutual cooperation is not a form of government. It is the working together of people in existing incorporated places with groups of people in unincorporated areas or with each other, within the existing legal framework, to accomplish the job of providing to all urban dwellers the common services they require.

CONDITIONS FAVORABLE TO THE METHOD

Legal obstacles to other forms.

The prior failure of other forms.

A spirit of cooperation among the people.

ADVANTAGES

Can function within existing legal framework.

No other layer of government is established.

No new taxes are imposed.

Possibly the best of all methods.

DISADVANTAGES

Inherent difficulty of getting groups of citizens to work together.

SOME PLACES WHERE USED

Tulsa, Okla.; Fairfax County, Va.; Metropolitan Area Regional Conference, Washington, D.C.; Salem, Ore.; Los Angeles, Calif.

There has appeared on the North American continent another form known as federation. So far its use has been only in Toronto, Canada,

and in a modified version it has recently been established in the Montreal area. The Dade County, Fla., venture is sometimes called federation and some times functional transfer, under which it has been listed.

Under this system a new metropolitan government is established which generally has the territorial jurisdiction of the total of that of the lower orders of government. The lower orders of government continue in existence and have control over local functions. This method is related somewhat to functional transfer but with the important difference that many political rights of individual communities are surrendered to the larger government.

CONDITIONS FAVORABLE TO THE METHOD

A muddle of embattled incorporated-unincorporated fringe settlements.

State constitutional authorization can be obtained.

ADVANTAGES

Single control increases efficiency of operation.

Per capita cost of services is lower.

Community boundaries remain intact.

DISADVANTAGES

Some individual community rights are surrendered to a higher order of government.

Because of its vast size, quality of services may deteriorate due to logistical difficulties.

SOME PLACES WHERE USED

Toronto and Montreal.

In choosing, using, or advocating any of these arrangements, careful consideration must be given to three points: there will be resistance to changing any existing governmental pattern; the economics, tax structure, and bond market of any area is a key factor; land use and subdivisions should be carefully regulated.

Legislative

Legislation for the accomplishment of municipal government must be established at the State level and ordinances at the local level. Traditionally, the local government has won increasing autonomy from the State which, however, has never entirely relinquished its control over local governmental arrangements. Thus the establishment of a local governmental form is based upon State statute authorizing

this procedure. It is here, therefore, at the State level, that the foundations of the local governmental process are laid. For example, before an authority, annexation procedure, federation, or functional transfer may be established at the local level there must be enabling State legislation. Even the right of contiguous communities to cooperate with each other in providing services is sometimes regulated by State statute.

At the local level, municipal ordinance is invariably required to permit use of any governmental form and to delineate the provisions for administering it. Also State legislation will usually specify or control the administrative or executive procedure used by the local government.

A search was made to determine which States legally sanctioned which types of local governmental forms, and although no central summary was found some generalizations may be made. Many States permit incorporation and annexation under a variety of legal provisions. Among States having legislation authorizing formation of special districts are California, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Kansas, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Jersey, Oregon, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Virginia, Washington, and Wisconsin.

Constitutional amendments are usually needed to authorize consolidation, federation, or functional transfer, and exist in only a few States. Extension of central city services by contract with outlying areas is legal in many States.

Auxiliary legislative tools needed in coping with metropolitan problems are subdivision regulations (5), zoning ordinances (6), building and housing codes, and health regulations. A model subdivision regulation entitled "Suggested Land Subdivision Regulations" was published in 1952 by the U.S. Housing and Home Finance Agency. Forty-three States have enabling legislation authorizing municipalities and many counties to regulate land subdivision.

Examples of State-level legislation enacted to enable the provision of suburban sewers, one

phase of the urban area sanitation problem, have been described by Richards (7).

Federal legislation affecting urban area problems exists in the form of certain assistance programs. Also a variety of Federal programs of interest to the urban area worker are outlined in the U.S. Department of Commerce publication, "Federal Activities Helpful to Communities."

Executive

Except for the authority or special district governmental arrangement, the remainder of local forms are administered by traditional methods: commission, council-manager, and mayor-council. The mayor-council form is further described as weak-mayor and council, and strong-mayor and council (8).

These forms of administration have jurisdiction over all functions and responsibilities of the local government. Under them departments or divisions may be established to carry on the day-to-day work of providing the city with services. The department heads, of which the health director or commissioner is one, act as staff to the executive.

COMMISSION

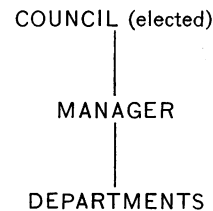
The people elect a commission, each member of which is made responsible for a section of the city governmental functions. The commissioner who received the most votes may be chosen by the commission as mayor. He is frequently made the head of the government and supervises the most important department. The commission may appoint heads of departments to execute their work. An example of the arrangement is shown as follows:



COUNCIL-MANAGER

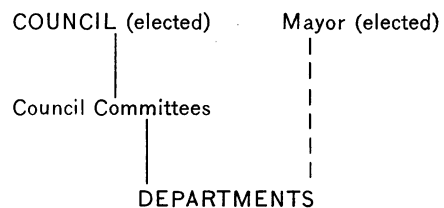
Under the council-manager form the voters elect a council by popular vote. The council employs a professional municipal administrator or manager as its executive in handling the functions of government. He is an appointed

individual who is subject to dismissal by the council, which retains the basic responsibility for proper discharge of the duties of government.



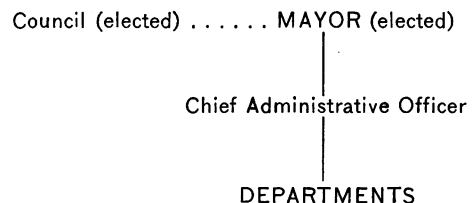
WEAK-MAYOR AND COUNCIL

In the weak-mayor and council form the council and the mayor are each elected by the people. However, the mayor acts in an advisory capacity in matters of administration and is the government's political head. The council, sometimes through a series of committees, actually administers the affairs of the municipality. The council committees in turn run the departments.



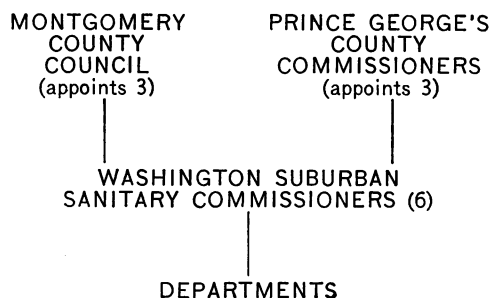
STRONG-MAYOR AND COUNCIL

Again, as in the weak-mayor and council, the people elect a mayor and council but under this form of government the mayor has direct charge of operating city functions. He may employ an executive to do the actual work, and a typical arrangement is as follows:



The various weaknesses and strong points of these forms are not discussed in detail as volumes on the subject have been written by political scientists and opinions differ as to their relative merits (8).

Under the authority or special district plan, an executive mechanism is established which has only specifically stated governmental jurisdiction (9). The administrative responsibility may be single or multiple in coverage. For example, some districts are limited to providing only water supply, and other districts are authorized to administer water, sewerage, and refuse jointly. The governing bodies of special districts or authorities are either elected or appointed. Members of the body, usually odd in number, may be called commissioners, directors, or trustees, and terms of office range from 2 to 6 years. The authority has the power to issue bonds, contract for construction, and collect service charges and sometimes to levy taxes. Dependent upon its size, the authority members may carry out their responsibilities directly, or they may set up a departmentalized administrative structure. An example of the latter is the Washington Suburban Sanitary Commission which has an organizational framework as follows:



Judicial

An extended consideration of the judicial aspects of the governmental problems in the urban fringe is beyond the limits of this discussion. Court decisions on cases pertaining to the subject are vast in number. In any given locality the worker in the field of urban area sanitation should learn the nature of judicial actions bearing upon his work.

One judicial procedure which varies from the usual is that in Virginia (2). There, since 1904, all annexation petitions are decided upon by a specially appointed circuit court whose judges are selected by the chief justice of the State supreme court of appeals.

A petition action can be accomplished in various ways. A community which desires to an-

nex land can pass an ordinance citing the need, proposed area for annexation, and the terms. If the people outside a municipality desire to be annexed, a petition may be made by 51 percent of the qualified voters of the area concerned.

Petitions are filed with the county circuit court and a special annexation circuit court is constituted. This court considers a petition on four counts: (a) the need of the community for more land in order to develop, (b) the need for governmental services in the territory to be annexed, (c) the mutuality of interests in the proposed annexed area and the annexing municipality, and (d) the financial ability of the annexing community to discharge its obligations to the residents of the area to be annexed. The court has the power to determine the boundaries of the annexed territory as well as the terms and conditions of the annexation settlement.

In making its decision the court often hears testimony from health officials, planners, and public administrators.

The most consistent use of annexation in this country has been in Virginia.

Summary

In summary, the governmental aspects of urban fringe sanitation are among the most important. They arise from the American system of the three foundations of government: legislative, executive, and judicial. The public health engineer, though not usually in a political position, should be thoroughly acquainted with these aspects and how to work through them. He also should be prepared to develop legislative measures which will facilitate his work.

REFERENCES

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Signs and Symptoms

An annotated review of medical genetics for 1958, prepared by Dr. Victor McKusick and colleagues, appears in the *Journal of Chronic Diseases*, October 1959. It is planned to repeat the review annually, with a survey of all publications within the calendar year. Dr. McKusick requests that reprints for use in future reviews be addressed to him at the Johns Hopkins Hospital, Baltimore 5, Md.

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The rate of admission to general hospitals in this country has increased by almost 80 percent in the last 20 years, from 56 to 99 admissions per 1,000 population, but the average patient in a general hospital today spends 8.6 days there—a decline of about one-third from the 12.5 average of 20 years ago, the Health Information Foundation reports on the basis of studies by the Public Health Service.

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In the present American population, chronic illness afflicts 21 million persons over the age of 55, according to estimates of the National Health Survey, Public Health Service. Of this number, nearly one-half are limited in their activity, and at least 1 in 10 is unable to work at ordinary tasks.

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A Korean physician, Chai Bin Park, received in June 1959 the first doctorate in public health in the field of biostatistics ever given by the University of California. His topic was "Longitudinal Studies of Tuberculosis Patients Registered in Hawaii." A summary of his doctoral dissertation appeared in the December 1959 issue, p. 1108, of *Public Health Reports*.

Home accident prevention is a public health activity in 40 States, reports the Home Safety Inventory of 1958, sponsored by the National Safety Council. Twenty-four States emphasize home accident prevention as part of established programs, and 16 additional States conduct short-term, specific projects in this field.

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Fifty victims of strokes each year will be treated completely within their own homes soon after the onset of attack by the Jewish Chronic Disease Hospital in Brooklyn, which has scheduled a 5-year program. Hospitalization may be required for an acute case, but the goal will be to return the patient home and supply all hospital services there. Rehabilitation therapy will begin at once. By starting treatment shortly after the stroke and the resulting impairment occurs, it is hoped that restoration will be supported and the effects of immobilization will be prevented. The validity of home treatment for other chronic illnesses will be evaluated as well. The project is supported by a grant from the National Institutes of Health, Public Health Service.

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A 3-year home care pilot project is underway in a rural area of North Carolina. Increased incidence of aged and chronically ill patients in Person County, covering some 20 square miles in the north central section of the State, stimulated the home care plan which is sponsored by the North Carolina State Board of Health and the Public Health Service. There are 11 practicing physicians in the county and one 60-

bed hospital, serving a population of 25,000.

Services now being given to patients in their homes include medical care and consultation, nursing, social service, physical and occupational therapy, health and nutrition education, orthopedic equipment, medicine, and sickroom supplies. Selected residents of all age groups who are chronically ill or disabled are eligible, regardless of financial status, if they possess the potential for self-care and self-support after appropriate restorative services.

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The nucleonics industry is debating the Atomic Energy Commission's proposed rule amending its part 20 regulation, "Standards for Protection Against Radiation." The proposed amendment would decrease radiation exposure limits and require new cumulative exposure reports to employees. Complaints state the rule would complicate employee relations, impose unnecessary economic burdens, and seriously discourage industrial use of atomic energy.

Under the proposed changes, total external radiation exposure for any worker over 18 years of age would be limited to an average of 5 rems annually, reduced from 15 rems, with exposure in any one year limited to 12 rems. Maximum permissible concentrations of radioactive substances in air and water would be changed to be consistent with these dose limits. And licensees would be required to give employees a report showing accumulated exposure annually and within 90 days of termination of employment. Employers would also be required to give workers an immediate report of overexposure.