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LAND USE ISSUES IN THE SITING OF KEY FACILITIES

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LAND USE ISSUES IN THE SITING OF KEY FACILITIES

A Report Prepared for
the
Division of State Planning and Community Affairs
Commonwealth of Virginia

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by
Raymond, Parish, Pine & Plavnick
Washington, D.C.

April, 1975

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Mr. B. C. Leynes, Jr., Associate Director
Division of State Planning and Community Affairs
Commerce and Resources Section
1010 Madison Building
Richmond, Virginia 23219

Dear Mr. Leynes:

It gives us great pleasure to submit herewith our report on land use issues involved in the siting of key facilities. We are particularly gratified by the fact that the discussion among the State agencies represented on the State Land Use Council generated by the preliminary draft of this report has already progressed far beyond its scope and is now detailing the substantive aspects of State policy.

Many comments of the various State agencies which received copies of the preliminary draft have been incorporated into this report. Selected comments which we thought would be of particular interest are quoted in the Appendix. Two particularly important comments which are only indirectly germane to the subject of the report are summarized below:

1. Mr. M.M. Sutherland, Director of the Department of Conservation and Economic Development, pointed out that the increasingly critical water shortage in the State's two largest metropolitan regions (northern Virginia and Hampton Roads) calls for an early development of State policy regarding inter-basin water transfers. While seemingly similar in nature to the need to resolve the problems presented by extraterritorial facilities, in the case of inter-basin water transfers locational considerations are very secondary, if indeed in evidence at all.

2. Mr. Berkwood M. Farmer, Chief Economist and Director of Planning and Development, Department of Agriculture and Commerce, pointed out that facilities frequently use agricultural land and that it is important, therefore, for the State to develop policies regarding the preservation of land now used for farm and forest production purposes.

We wish to especially thank you and Mr. Keith J. Buttelman for the assistance provided to us throughout this brief project and sincerely hope that we will have the opportunity of being of further assistance in your agency's effort to develop a comprehensive State land use policy for the Commonwealth of Virginia.

Very sincerely yours,

George M. Raymond, AIP, AIA
President

GMR:kfv

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SECTION I.
Introduction

The proper use of land and the assurance that public and private interests will be properly balanced in cases of land use conflicts is a primary interest of the Commonwealth of Virginia, as it is that of all other States. Article XI of the new State Constitution, adopted in 1971, specifically provides as follows:

> To the end that the people have clean air, pure water and the use and enjoyment for recreation of adequate public lands, waters and other resources, it shall be the policy of the Commonwealth to conserve, develop and utilize its natural resources, its public lands, and its historical sites and buildings. Further, it shall be the Commonwealth's policy to protect its atmosphere, lands and waters from pollution, impairment, or destruction, for the benefit, enjoyment, and general welfare of the people of the Commonwealth.

The mere statement that optimum use of all of the State's land is of Statewide concern, however, does not lead automatically to the optimum method of assuring that it will be achieved. Land use, and all the rights tied in therewith, touch on some of the most basic principles underlying our system of government. Progress toward recognition of the need to develop a new legal and institutional framework for the purpose of strengthening public control of land has been uneven across the country, and the nature of the new instruments varies widely from state to state. The basic issues in land use regulation reform raised to date are:

(a) The degree to which the existing land use regulatory system – with almost full responsibility and authority vested in local governments under state enabling legislation emphasizing procedural safeguards but offering only minimal guidelines as to substantive goals – is adequate to safeguard the broad public interest in the proper use of land throughout the State;

(b) If the existing system is inadequate, the specific types of situations in which this is true; and

(c) If resort to State authority is necessary to remedy such imperfections as may be found to affect statewide interests adversely, the precise degree to which its exercise is necessary and the form which State intervention should take.

Recommendations to the Governor and the General Assembly of the Commonwealth of Virginia for the adoption of new legislation establishing State jurisdiction over "critical environmental areas"* and for strengthening the ability of the State and its multiplicity of local jurisdictions to deal with important land use issues were last made in 1974 by the Virginia Advisory Legislative Council, but were not enacted into law. Among the various other legislative committees and executive agencies and task forces engaged in dealing with these types of issues is the Virginia State Land Use Council.** In approaching the task of developing a framework within which the various land use issues could be best considered, the Council divided the overall land use problem into four discrete segments and proposes to study and address each one, in turn. The four segments are:

Siting of key facilities.
Developments of greater than local impact.
Preservation of prime agricultural land.
Developments in areas of special geographical significance.

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*Defined as:

Areas where uncontrolled or incompatible development could result in irreversible damage to important historic, cultural, scientific, or esthetic values or natural systems, which are of more than local significance, such lands to include shorelands of rivers, lakes, and streams; rare or valuable ecosystems and geological formations; significant wildlife habitats; and unique scenic or historic areas.

Areas where uncontrolled or incompatible development could unreasonably endanger life and property, such lands to include flood plains and areas of unstable geological formations.

Areas where uncontrolled or incompatible development which results in the loss or reduction of continued long-range productivity could endanger future water requirements of more than local concern, such lands to include watershed lands, aquifers and aquifer-recharge areas, mineral deposits, significant agricultural and grazing lands, and forest lands.

**The State Land Use Council is an ad-hoc group composed of State agency heads and representatives of local governments, planning districts, and legislative study commissions and committees.

This report deals with the first of the above segments. It begins by defining the term "key facility" so as to differentiate the types of development which it would encompass from those to be considered under the other three designations. For each facility which meets the resulting definition, the report then addresses:

(a) The identification of those types of direct land use impact for which they are customarily responsible and which are of statewide concern;

(b) The extent to which existing State and federal regulations enable such impacts to be taken into account in the public decision-making process surrounding (1) its siting, and (2) the establishment of standards designed to prevent such facility from exerting undesirable or even harmful effects on its surroundings; and

(c) The manner in which any desirable State jurisdiction additional to that already existing might be exercised.

The report concludes with a set of tentative recommendations as to what might constitute an appropriate institutional context within which the Commonwealth of Virginia could address the urbanization which is so frequently induced by the location of "key facilities" in localities that are ill-equipped to manage the resulting pressures.

SECTION II.
Definition and Identification of "Key Facilities"

In the context of the study framework laid down by the Virginia State Land Use Council, to be a "key facility" a development must have characteristics which are of statewide concern for reasons other than (1) that its impact is merely greater than of strictly local significance, or (2) that its impact could be deleterious merely by reason of the special geographic (i.e. environmental) character of the particular area in which it is proposed to be located.

Based on this set of distinctions, suggested below is a definition of the term "key facility":

A *key facility* is a development which meets one or more of the following criteria:

(a) It is a development which is vital to the furtherance of the national interest or of the interest of the State;

(b) It is a development required to service or support a facility vital to the national or State interest; and/or

(c) It is a public facility which represents a major investment of public funds, whose effectiveness may be seriously affected by locational considerations.*

The following is a list of those "key facilities" which meet the foregoing criteria:

1. Electric Power Generating and Transmission Facilities
2. Bulk Transmission Lines
3. Major Airports
4. Major Port and Docking Facilities

*This definition was developed after testing of a wide range of public and private land uses which included, in addition to those finally classified as "key facilities", such uses as major stadia, "theme parks", major ski resorts, surface mining, industrial and office parks, regional shopping centers, "new towns" etc.

5. Multi-Modal Transportation Centers

6. Solid Waste Disposal Facilities

7. On-Shore Facilities Supporting Off-Shore Energy-Related Resource Recovery Operations

8. Waterway Impoundment or Diversion Projects

9. Major State Governmental Facilities*

The specific statewide concerns with regard to the siting of the three basic types of "key facilities" corresponding to the three criteria comprising the definition thereof are as follows:

(1) The State should have sufficient authority (a) to assure that all facilities needed in the national or statewide interest will be provided despite any conflicting requirements of any state land use and environmental control laws; (b) to mediate and assist in the resolution of conflicts among the statutory requirements of various federal laws**; and (c) to prevent local governments (which have traditionally had the power of final determination as to all private land uses within their boundaries) from precluding the provision of key facilities in locations where they can best fulfill their purposes.

(2) In the process of exercising any independent jurisdiction in siting decisions, however, the State should act in a manner which would guarantee that the local interest in maintaining the highest levels of environmental amenity achievable under the circumstances will be fully taken into account in the decision-making process.

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*Major land service highways, and especially interchanges between limited access and land service highways, are clearly "key facilities" within the meaning of the definition suggested above but were excluded from the scope of study by the Virginia State Land Use Council.

**The present situation has been well summarized by the Virginia Advisory Legislative Council in its 1974 report on Land Use Policies, as follows:

"The lack of coordination of the roles played by various agencies in the development decision-making process, and the lack of clarity and certainty in

(3) The State should be in a position to locate public "key facilities" for which it is itself primarily responsible where their presence would permit it to achieve as many interrelated and mutually compatible public purposes as possible.

The special problems attendant upon the fact that the location of federal developments, which in every respect qualify for inclusion among the "key facilities" listed above, is not subject to either State or local control cannot be handled in the context of the remedies available to the State without federal cooperation. The intergovernmental mechanism which seems to be evolving is one under which the federal government will abide by the provisions of a relevant State Plan provided that such a plan is prepared in accordance with federal guidelines and is approved by the federal government. This approach was pioneered in the Coastal Zone Management Act of 1972 and is one of the principal inducements offered to states to prepare land use planning processes acceptable to the federal government in the currently proposed House and Senate versions of national land use planning legislation.

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decision-making processes and the standards to be applied in reaching decisions (particularly with respect to the role of local governments) has led the Committee to believe it is not unlikely that the day may soon come when some types of development simply will not be permitted where they are needed because of the conflicting requirements of different agencies or different laws. Thus, an airport may not be permitted in an urban area where air quality is such that the airport could be accommodated without significantly affecting air quality because noise standards under the Noise Control Act may preclude placing an airport near population concentrations. Noise Act requirements may encourage placement of airports in rural areas but airports can be a significant source of air pollution since they are likely to attract large numbers of cars thus degrading air quality. Airports can also be significant sources of water pollution remnants from aircraft engine exhausts. Thus, under the air and water pollution laws, airports may be precluded in rural areas. Airports and other developments will be subject to sometimes conflicting requirements of various land use and environmental control laws but will be necessary despite such conflicts. To meet these needs, some mechanism must be found to resolve such conflicts and to handle land use questions in a more comprehensive and coordinated manner."

Source: *Land Use Policies.* Report of the Virginia Advisory Legislative Council to the Governor and the General Assembly of Virginia, p. 16.

It is also particularly important to note the context in which the key facility siting problem is being considered. In the absence of federal or state jurisdiction in this area, local zoning prevails. Many of the State's rural counties have yet to adopt comprehensive plans and zoning ordinances.* This basic deficiency has been partly addressed in House Bill 1304, which was enacted in 1974, under which every municipality and county must establish a planning commission by mid-1976 and must adopt a comprehensive plan by mid-1980 and a subdivision ordinance by mid-1977. Zoning remains optional.

Considerable thought was given to the possibility that the State might be justifiably concerned with the location of any facilities whose presence serves to stimulate the urbanization of its surroundings. This category of facilities could include a wide variety of developments such as sewers and water systems and sports stadia as well as major employment centers, regional shopping centers, etc.** It became clear, however, that the inclusion among "key facilities" of those whose eligibility is based *solely* on their urbanizing potential would be tantamount to suggesting that the State's concern covers the location, shape, and timing of nearly all urban development. While such a conclusion may or may not emerge following completion of the State Land Use Council's overall investigation, it was felt that it should not be permitted to emerge as a result of defining "key facilities" in a way which would predetermine the answer.

In saying this, it should be emphasized that the urbanizing *consequences* of the siting of facilities which *are* deemed to fall within the "key facility" classification should definitely be of statewide concern. The reasons for this judgement and a tentative framework within which those State responsibilities which would appear to flow therefrom could perhaps be best discharged are discussed in Section V of this report.

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*As of last year, of the 95 counties, 39 cities, and 191 towns in the State, only 37 counties, 31 cities and 49 towns had adopted comprehensive plans; and 44 counties, all the cities, and 91 towns had adopted zoning ordinances.

Source: *Land Use Policies* – Report of the Virginia Legislative Council to the Governor and the General Assembly of Virginia.

**The vast majority of developments which tend to stimulate rapid large-scale urban development clearly fall into the category of developments with impacts of greater than local significance.

A review of the land use laws of other states has not proven very fruitful in yielding useful definitions of "key facilities" as distinct from developments of more than local impact.

The *Oregon* Land Use Law extends state jurisdiction over the following "activities of statewide significance if the (Land Conservation and Development) Commission determines that by their nature and magnitude they should be so considered:

(a) The planning and siting of public transportation facilities;

(b) The planning and siting of public sewerage systems, water supply systems, and solid waste disposal sites and facilities."

The State's Joint Legislative Committee on Land Use may add activities to the above list upon a recommendation by the Commission specifying "the reasons for the proposed designation, the dangers that would result from such activity being uncontrolled, and suggested State planning goals and guidelines to be applied thereto."

The *Maine* Site Location of Development Law defines a development which may substantially affect the environment as "any state, municipal, quasi-municipal, educational, charitable, commercial, or industrial development, including subdivisions, but excluding State highways and State aid highways, which requires a license from the Board of Environmental Protection (for water or air pollution), or which occupies a land or water area in excess of 20 acres, or which contemplates drilling for or excavating natural resources on land or under water, excluding borrow pits for sand, fill, or gravel regulated by the State Highway Commission and pits of less than 5 acres, or which occupies on a single parcel a structure or structures in excess of a ground area of 60,000 square feet."

The American Law Institute Model Land Development Code defines a "major public facility" as "any publicly-owned facility of regional significance (excluding):

(a) any public facility operated by a local government, or an agency created by it, primarily for the benefit of the residents of that local government;

(b) any street or highway except an interchange between a limited access highway and a frontage access street or highway;

(c) any airport that is not to be used for instrument landings; or

(d) any educational institution serving primarily the residents of a local community.

The *Florida* Environmental Land and Water Management Act of 1972 defines as major "any publicly-owned facility of more than local significance". The relevant administrative guidelines classify major facilities which are so defined merely as instances of developments of regional impact. This tends to fatally blur the distinction, which is so essential for the purposes of this study, between those developments which are of greater than local significance and those which, by their nature, are needed in furtherance of the national or statewide interest. Thus, included among "major public facilities" in Florida are all airports or air landing strips, regardless of size; hospitals with a capacity of over 600 beds or those serving more than one county, regardless of size; waterports excepting those serving exclusively pleasure boats with less than 100 mooring slips; and schools designed for more than 3,000 full-time student equivalents as well as expansions of higher education institutions by more than 20% of their design capacity.

SECTION III.
Federal Influence over the Siting of "Key Facilities"

Except for specific affirmative siting legislation, such as the Deepwater Ports Act of 1974, federal influence over "key facility" siting is indirect. It stems primarily from legislation enacted over the years, and with greatest intensity during the last decade, intended to protect the nation's environmental values and amenities.

Every federal action capable of significantly affecting the environment is subject to the provisions of the National Environmental Policy Act of 1969 (NEPA). This includes all actions affecting "key facilities", including funding jurisdiction, of such agencies as the Federal Power Commission, the Energy Research and Development Administration, the Federal Aviation Administration, the U.S. Corps of Engineers, the Department of Health, Education and Welfare, etc.

Under NEPA, each such agency must develop and file an environmental impact statement which weighs the long-term social benefits against the long-term environmental costs of proposed actions. While this statute imposes only procedural duties upon Federal decision makers, it has had a major impact upon the substantive outcomes in particular decisions by assuring that they will take into account matters transcending immediate economic and political considerations.

A multiplicity of other federal statutes circumscribes the freedom of action of both private and public participants engaged in "key facility" siting processes. Clean Air legislation prohibits violation of acceptable air quality standards. Water pollution legislation prescribes constraints which of necessity affect the economics, and thus the location, of those "key facilities" whose presence can affect water quality. The proliferation of such environmentally protective statutes has increasingly sharpened the conflict between public demands for facilities needed for the satisfaction of basic public needs (and thus the agencies charged with their provision) and public resistance to any environmental degradation which may result. Where "key facilities" are those needed in the national or statewide interest, in the absence of any preemptive federal authority, this conflict can only be resolved at the State level.

SECTION IV
Key Facilities: Characteristics, Land Use-Related Regulatory Systems, and Regulatory Gaps

1. Electric Power Generating and Transmission Facilities

Electric Power Plants

Electric power is one of the most critical elements in the economic and social welfare of any state. It is essential that the needed generating capacity be provided at all stages of evolution of a state's economy. Since electric generating facilities provide power for entire regions, the task entrusted by the State to the utility companies must be facilitated to the extent of not allowing the siting of increments to the existing generating capacity either to be conditional upon the assent of individual municipalities or to become embroiled in an overly complicated system of clearances and approvals.

At the same time, it must be recognized that of all the major man-made facilities, both fossil, and especially nuclear, electric generating plants have one of the most severe environmental impacts. This suggests that it is essential that the technical capacity brought to bear in evaluating the possible environmental impact of alternative sites be of a calibre which is probably beyond the attainment of individual jurisdictions within the State.

Currently applicable State and federal statutes and regulations already engulf the siting process in a hugely complicated legal and administrative maze. In an attempt to achieve the development of new siting procedures which would permit the demands for more energy to be met in a manner consistent with environmental concerns, a number of power plant siting bills have been under consideration in Congress for several years.* All of these would require long-range (10-year) plans for future sites, submission of alternative sites before any facility or site could be certified, and full public disclosure during each step of the certification process. Among the other significant provisions of these complex bills, that proposed by the Administration (S935) would establish a Federal

*The Land Resource Planning Assistance Act (S. 984) was introduced in the Senate subsequent to the completion of this report on March 6, 1975. Title III of that bill, known as the Energy Facilities Planning Act, follows a pattern which is essentially similar to that of its predecessors.

Electric Facilities Siting Panel, composed of all relevant federal agencies, for the purposes of (1) developing a unified federal application form which would be the sole application for all necessary federal approvals, and (2) developing a consolidated application for use by the "state certifying agencies" which would include both the federal and the certifying agencies' application forms. A state's "certifying agency" could be its regulatory utility commission (such as the Virginia State Corporation Commission).

Construction of facilities would be permitted only on certified sites, and such certification would be limited to either those contained in the long-range plan for a period of at least two years, or alternate sites proposed at least one year in advance of the date of application. An alternate site could be preferred by the certifying agency, but only after its rejection of the site initially proposed by the utility on specified grounds (such as environmental and economic costs and benefits, the impact of the use of either site on applicable land use programs, the availability of fuels, the adequacy and reliability of electric supplies given an established need therefor, etc.). Processing time would be limited and all reviews by all relevant federal, state, and local jurisdicitions would be performed concurrently.

To some degree, this federal legislation reflects the provisions of Maryland's 1971 Power Plant Siting Act. The latter also requires long-range plans based on forecasts of need by all utilities, which is then translated by the State Department of Natural Resources (DNR) into a 10-year statewide plan of plant sites and transmission line routings. Jointly with the State Health Department, the DNR then prepares preliminary environmental impact statements (EIS) on each such site or routing. After dropping all unusable sites, the DNR investigates each remaining site in detail and prepares a final EIS. The law mandates that the State always have in its possession not less than four and not more than eight acceptable sites, ready for use by utilities for facility expansion. This reserve must include at least one site suitable for use by each company which generates more than 1,000 megawatts of power in the State. Sites are acquired with money from an Environmental Trust Fund built up through a 0.1 mill surcharge per killowatt hour generated. The law permits utilities to pass this surcharge on to their customers.

The Maryland law covers all generating plants. The laws of other states are more limited in their applicability. Thus, the siting laws of Minnesota, Montana, New York, and Ohio cover only plants with a capacity of 50mw or greater; that of Massachusetts covers plants starting with a capacity of 100mw; while that of the State of Washington starts with 250mw plants on solid ground and 50mw in the case of floating plants. The National Association of Regulatory Utility Commissions (NARUC) recommends 50mw as the lower limit of facilities which should be made subject to State siting regulations.

In Virginia, the State Corporation Commission (SCC) licenses power plants of any size proposed to be constructed by a utility applicant *outside* its service area and generating units of 10,000kw or more to be constructed *within* such service areas. All nuclear power facilities are subject to regulation by the federal Nuclear Regulatory Commission. Under the provisions of House Bill 967, passed in 1972, the SCC must "give consideration to the effect of (each) facility on the environment and establish such conditions as may be desirable or necessary to minimize adverse environmental impact". The exclusion of all plants built by utilities *within* their service areas prior to the adoption of the 1972 statute formerly placed almost all regulatory responsibility over the specific siting of most power plants exclusively on local governments. The SCC's expanded jurisdiction and responsibility now provide almost total coverage, supplemented by a wide variety of State and federal regulations protective of air and water quality and other natural resources.

The SCC also licenses the construction of all dams intended for the purpose of generating hydro-electric energy, which dams are also subject to the jurisdiction of the Federal Power Commission. Under an extension of its authority by a 1971 decision of the State's Supreme Court, the SCC also licenses all dams in streams where such dams could affect interstate or foreign commerce, regardless of purpose. A 1973 Electric Facility Siting bill, which failed to pass in the State Legislature, would have required the construction of generating facilities of 100mw or greater capacity to undergo a certification procedure modeled on the Maryland statute and the pending federal bills.

Overhead Electric Transmission Facilities

Overhead electric transmission facilities can have a devastating impact on the aesthetics of the landscape which they traverse. At transmission voltages, even using the best of current technology, the cost of undergrounding can be up to eight to fifteen times that of overhead transmission. Voltage on transmission lines (as distinguished from local distribution lines) is seldom less than 69kv and the trend is to ever higher voltages. Lines with a 350kv capacity were first built in the 1950's. Today, the Appalachian Power Company (APCO) and the Virginia Electric and Power Company (VEPCO) between them operate 722 miles of 500kv lines, and APCO, alone, operates over 160 miles of 765kv lines within the State of Virginia.

There is no single regulatory pattern for overhead transmission lines across the country. For example, the States of Connecticut and Maryland require permits for all transmission lines with capacities of 69kv or greater. In New York State, permits are required for lines of 125kv extending a distance of one mile or more and for lines of between 100kv and 125kv extending a distance of more than ten (10) miles.

In Virginia, SCC approval is required for all lines with a capacity of 200kv or more. Additional rights-of-way are approved only upon proof that existing ones do not adequately serve the needs of the utility. As a condition to such approval, the Commission must also determine that the corridor selected will minimize damage to the area's scenic and environmental assets* and must give consideration to adopted county or municipal comprehensive plans in choosing such corridor. The SCC's approval, however, overrides any local zoning provisions to the contrary. Under the proposed 1973 State Electric Facility Siting Act (which was not enacted into law) projected 200kv lines would have had to be shown on the required long-range plan underlying the certification process. This is similar to the provisions of the proposed federal siting statute (S935)

*The statute definition of "scenic and environmental assets" also includes "historic assets". This seemingly limited statutory concern has not prevented the SCC from construing the term to include "every other factor contributing any benefit to human life and every factor which may reasonably be expected to be of foreseeable benefit" (Application of Appalachian Power Co., SCC Case No. 10848).

which would make the general location and routes of all transmission lines subject to certification based on a long-range plan.

It is important to note that, for instance, one 500kv line carries four times as much power as a 230kv line, yet its 150 foot right-of-way exceeds that of the smaller line by only 25 feet. Proper regulation of distribution systems can thus insure that, through economical utilization of rights-of-way, vast quantities of land which would otherwise be sterilized could be saved for other purposes. This is especially true if electric and bulk transmission facilities could use common rights-of-way. The significance of this aspect of land use regulation is highlighted by the fact that, nationally, the 100,000 miles of new transmission lines which are built each decade use 1.5 million acres of land. Illustrative of the incidence of transmission lines in the State are the following totals for APCO and VEPCO (derived from their respective 1973 annual reports):*

The anticipated rate of growth of demand for electric power in the State of Virginia**is thus bound to impose a major burden on the State's land resources.

Regulatory Gap

The siting of electric generating facilities requires a system-wide perspective and a highly specialized approach. Electric power facilities form large integrated grids, frequently transcending state lines. Each new site must be selected so as to permit the additional power facility to fit most efficiently into the existing grid system.

*These totals exclude the lines operated by the Old Dominion Power Company, the Monterey Utility Company, the Delmarva Power and Light Company of Virginia, and the Potomac Company of Virginia.

**Per capita national consumption of electric power, which was 7,950 kilowatt hours in 1970 is expected to grow to 22,200 kilowatt hours by 1990. The overall growth of electric power demand in Virginia in the 1960's has surpassed the national trend. The State's annual growth rate during that period was 9.9 percent compared to only 7.5 percent throughout the nation. (Source: *The Energy-Environment Conflict: Siting Electric Power Facilities*, Mason Willrich, 58 Virginia Law Review 261, 1972).

	APCO	VEPCO
765kv	160.55 miles	--
500kv	95.22 miles	626.98 miles
230kv	--	1245.67 miles
345kv	69.69 miles	--
138kv	1406.00 miles	105.05 miles
115kv	--	2918.85 miles
88kv	117.76 miles	--
69kv	449.46 miles	106.09 miles
46kv	41.44 miles	--
34.5kv	303.33 miles	--
Total:	2643.35 miles	5002.64 miles

The time frame within which a siting decision can be secured is of utmost importance to electric utilities since delays can be not only extremely costly, but may force the continued utilization of obsolete and unreliable facilities and, ultimately, lead to their inability to satisfy public demand for electricity.

Viewed from the other end of the telescope, as it were, there seem to be no affirmative criteria based on environmental considerations that could be used to determine where, specifically, a power plant should be located.* The main concern is that the location selected minimize adverse environmental impacts, and that, therefore, all reasonable alternatives be examined.

*A promising, highly sophisticated, computer-based, analytical technique for the selection of generating facility sites and transmission line routings has been developed recently by Professor Robert G. Giles of the Virginia Polytechnic Institute and State University.

The legislative trend in Virginia seems to be based on the premise that the provider of electric power is so circumscribed in its siting options as to preclude granting to an environmentally oriented agency the lead in site selection. The lead agency has consistently been the State Corporation Commission. In 1972, the SCC has been specifically required to address the environmental issue. In performing its responsibility under this charge, the SCC must of necessity seek input from all of the other State agencies concerned with various aspects of the environment: the State Water Control Board, State Air Pollution Control Board, State Highway Commission, Commission of Game and Inland Fisheries, Marine Resources Commission, Department of Conservation and Economic Development, Commission of Outdoor Recreation, Virginia Institute of Marine Science, and the State Division of Planning and Community Affairs. In recent months the review of several cases being considered by the SCC has been coordinated by the Council on the Environment. Close consultation is especially important in view of the fact that several of these agencies are responsible for the administration of their own permitting systems under State and federal environmental statutes.

The SCC procedure does not preclude the full consideration of various alternate sites, but provides no assurance that this will be done in every case. Its recent practice, however, has included use of the above-mentioned analytical technique developed by Professor Robert G. Giles.

At present, the siting-connected land use issues which seem to remain unresolved are:

(a) The lack of a frame of reference for siting decisions due to the absence of a long-range plan of specific anticipated sites which would assure that all reasonable alternatives have been examined.

(b) The strong probability that, with continued population spread, siting decisions will be increasingly subject to challenge and protracted litigation.

The proposed 1973 Electric Facilities Siting Act addressed both of these issues. The advantage of adding thereto the advance site acquisition technique permitted under the Maryland 1971 Power Plant Siting Act might be considered. The price to the consumers of assuring an ever-ready supply of sites cleared in advance may be considerably less in the long run than the cost of delays in providing supplements to the existing power supply over the years.

The possibility that all State agencies involved, jointly with the SCC, might develop a unified application to expedite all State agency reviews (on the model of that provided for in S.935, the pending federal legislation discussed above) might also be considered.

* * *

In the case of overhead transmission lines, the principal issues that would remain unresolved even if the proposed 1973 Electric Facilities Siting Act were to be enacted are:

(1) The fact that all lines under 200kv would be outside its purview*;

(2) The need to plan and coordinate distribution rights-of-way for both, electric and bulk transmission (see below), so that as many systems as possible could occupy the same land area; and

(3) The need for greatest possible sensitivity to the aesthetic impact of transmission lines on the landscape.

The environmental assessment process required since enactment of the 1972 amendment could resolve the latter. In this it would be helpful if the SCC were to affirmatively supplement its present exhortation to utilities to construct their lines in accordance with the general guidelines recommended by the Federal Power

*Measured in terms of existing lines, this exemption means that, if the entire APCO overhead transmission line were yet to be built, only 325.46 out of 2643.35 miles (or 12.3%) would come under the SCC's jurisdiction. The corresponding figures for VEPCO would be only 1872.65 out of a total of 5002.64 miles (or 37.4%).

Commission "to the extent practicable" with independent input from qualified landscape architects (and industrial designers, where applicable) in the review of all plans for proposed facilities.

2. **Bulk Transmission Lines**

Gas, oil, and other mineral resources are currently transported via pipelines, since this form of distribution often is more economical than other methods. The rights-of-way required for construction of such lines create problems similar to those created by electric power transmission lines, but since the facilities are almost always buried, their aesthetic impact is much less severe.

The most commonly encountered form of pipeline is that serving natural gas distribution systems. In Virginia, there are two such major systems, both interstate in nature: the Transcontinental Gas Pipe Line Corporation (T.G.P.L.) and the Columbia Gas Transmission Corporation (C.G.T.). The pressure carried by the T.G.P.L. is well above 125 pounds per square inch (psi). They provide natural gas to the following certified companies: Southwestern Virginia Gas Company, Virginia Pipe Line Company, Commonwealth Gas Distribution Corporation, Columbia Gas of Virginia, and Washington Gas Light Company.

The Columbia Gas Transmission Corporation (C.G.T.) has two natural gas pipelines, both of which also carry pressures greatly in excess of 125 psi. The C.G.T. pipelines serve the following certified companies: Columbia Gas of Virginia, Roanoke Gas Company, Shenandoah Gas Company, and Washington Gas Light Company.

Regulatory jurisdiction in other states varies. The State of Nevada requires permits for *all* gas transmission lines, storage plants, compressor stations, and associated facilities when constructed outside incorporated cities. In New York State, fuel gas transmission lines that are subject to State control are those that extend 1,000 feet or more and operate at a pressure of 125 psi or more. This is in accordance with the Model State Environmental Protection Act proposed by the National Association of Regulatory Utilities Commissions (NARUC) which recommends regulation by states of all transmission lines operating at a pressure of 125 psi or greater.

Regulatory Gap

All privately owned commercial *intra-state* gas transmission lines, regardless of pressure, are now regulated by the State Corporation Commission. Three municipal gas distribution systems (i.e. Richmond, Charlottesville, and Danville) are not subject to any regulation other than that exercised by the localities on whose territory they operate. These systems also serve, or can serve, any of the surrounding counties. All *interstate* lines are regulated by the Federal Power Commission, exclusively.

Underwater pipelines are subject to regulation by the Marine Resources Commission. Interstate bulk petroleum lines are regulated by the Interstate Commerce Commission, with the SCC's role limited to that of reporting complaints to the ICC.

Given the relatively modest, even though still appreciable, environmental impact of an underground pipeline, the land use consequences of its siting are among the least severe of those associated with any of the "key facilities" considered in this study. The particular routing chosen, however, may seriously affect the usability of the adjoining and residual parcels for their most appropriate purposes. Where State jurisdiction is not totally preempted by the federal government, this consideration calls for the possible involvement of the State Division of Planning and Community Affairs in the environmental review which should be a part of the licensing process. This may be especially important in the frequent instances where the proposed pipelines would cross over the territory of rural counties with limited land use control capability.

3. **Major Airports**

Air travel is as essential an attribute of life in the second half of the 20th Century as railroad travel was in the first. The need for a well conceived system of airports, within the context of a balanced transportation system, no longer needs to be documented. On the other hand, the consequences of construction of a major new airport could be adverse as well as beneficial in terms transcending

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its probable impact on the natural environment. The rapid service and ease of transport provided by air travel for passengers and cargo could expose an undeveloped area to a development boom of large proportions. Depending upon the size of the airport, a rural region could become urbanized in but a few years. At the same time, the presence of an airport could counteract the isolation of communities or regions and thus enable them to develop to their full growth potential. Recreational development of an attractive mountain region, for example, could be vastly enhanced by the appropriate siting of an airport.

The proper siting of airports is important from a statewide point of view if an acceptable balance is to be maintained between State and regional transportation needs and State and regional land use policies and plans. It is also important that all applicable environmental concerns be given due consideration in the airport siting process. Among the factors involved are the following:

(1) **Social and Economic**

a. A major airport provides employment opportunities, both during construction and over time. Additional employment opportunities of major consequence are usually provided by ancillary service industries.

b. The airport's ability to counteract an area's isolation contributes to its growth and general economic development.

(2) **Environmental**

a. Airports frequently cause major air and noise pollution and may be responsible for substantial water pollution as well.

b. The increase in traffic generated by a major airport frequently causes the need for major new roads.

* * *

In the State of Connecticut, a "major airport" is defined as any commercial facility, public or private, having general cargo and/or passenger service. The American Law Institute Model Land Development Code describes an airport as "major" when it is equipped with an instrument landing system (ILS). This definition would probably include equivalent airports equipped with one of the following in lieu of an ILS:

(1) Very high frequency omni-directional radar range (TVOR) combined with distance measuring equipment (DME); or

(2) The military equivalent of (1), known as TACAN.

Based on the above, it is suggested that airports classified as "key facilities" might be those with a published non-precision or precision instrument approach. A possibly desirable broader definition might include any airport in the Virginia Air Transportation System (VATSS).

A comprehensive list of Virginia airports equipped with navigational aids of any kind is presented in Table I.

Regulatory Gap

At the present time, local governments are in the process of reviewing a Statewide Air Transportation System Plan prepared by the Division of Aeronautics of the State Corporation Commission in cooperation with the Division of State Planning and Community Affairs. Upon receipt of all comments, a policy committee appointed by the Secretary of Transportation will review the plan prior to its being sent to the Governor. Should the plan be officially adopted, all future State and federal grants-in-aid will be governed by the status assigned to each airport in the plan. Local authorities are not bound by the plan if they choose to expand or develop airports without recourse to outside financial assistance.

The plan designates areas to be served by airports of various types but stops short of designating specific locations. Siting is determined by the local governments involved. Where an airport required to serve a city can only be placed on the territory of

Table I

Virginia Airports
Navigation Aides and Operational Roles

(This list excludes 39 airports that lack the navigation aids identified below.)

City (Airport Name)	Navigation Aids ILS	TVOR	VOR and DME	VOR	TACAN	Operational Roles* Existing	Planned
Abingdon (Virginia Highlands)			X			BU	GU
Amelia (Hilltop)			X			LS	LO
Ashland (Hanover County)			X			BU	BT
Blacksburg (VPI and SU)			X			BU	GU
Charles City (Berkeley Plantation)			X			LS	deleted
Charlottesville (Char.-Albermarle)	X					AC	AC
Culpeper (Culpeper)			X			BU	GU
Danville (Danville)				X		AC	AC
Dublin (New River Valley)	X		X			BT	BT
Forest (New London)			X			BU	LO
Franklin (Franklin)			X			BT	BT
Ft. Eustice (Felkar)				X	X	not subject to state plan	
Fredericksburg (Shannon)			X			BU	LO
Front Royal (Front Royal-Warren Co.)			X			BU	BU
Gloucester (Gloucester)			X			BU	GU
Gordonsville (Gordonsville)			X			BU	LO
Hampton (Langley AFB)	X			X	X	not subject to state plan	
Hopewell (Hopewell)			X			BU	BU
Hot Springs (Ingalls)	X					AC	AC
Laurenceville (Laurenceville)			X			BU	LO
Leesburg (Leesburg)			X			BU	GU
Lynchburg (Falwell)			X			BU	LO
Lynchburg (Lynchburg)	X		X			AC	AC
Manassas (Manassas)			X			GU	BT
Martinsville (Blue Ridge)		X				BU	GU
Melfa (Accomack)			X			BT	BT
Midland (Warrenton-Fauquier)			X			GU	BT
Newport News (Patrick Henry)	X					AC	AC
Norfolk (Norfolk)	X		X			AC	AC
Quinton (New Kent)			X			BU	GU
Richmond (Byrd)	X		X			AC	AC
Roanoke (Roanoke)			X			AC	AC
South Boston (Tuck)			X			BU	GU
Staunton-Harrisonburg (Shen. Valley)	X					AC	AC
Tangier (Tangier Island)			X			BU	GU
Washington (Dulles)	X		X			AC	AC
Washington (National)	X		X			AC	AC
Weirwood (Kellam)			X			BU	deleted
West Point (West Point)			X			GU	GU
Winchester (Winchester)			X			GU	BT
Wise (Lonesome Pine)		X				GU	BT
Woodbridge (Woodbridge)			X			BU	LO

*Operational roles are according to a draft plan presently being reviewed throughout the state:

LS – Landing Strip
LO – Local Service
BU – Basic Utility
GU – General Utility
BT – Basic Transport
GT – General Transport
AC – Airport with certified air carrier service

Source: Division of Aeronautics, State Corporation Commission.

another political jurisdiction, there is at present no arbitration, as against merely advisory or coordinative, machinery to actually resolve any disagreement between the parties. The SCC's current licensing process does take into consideration safety factors but does not review environmental, social, and economic impacts. It also fails to include consideration of alternative sites.

The airport highway access system is usually planned in coordination with the planning of the airport. Problems of coordination arise, however, in the implementation process inasmuch as the responsibility for the construction of the two facilities is lodged in separate agencies, with their own priorities and budgetary considerations. As a result, airports may be built long in advance of the completion of the related highway system and the development in its vicinity generated by its presence frequently constrains or actually thwarts the later implementation of an adequate access system.

A rare example of the opposite approach – perhaps the only such example anywhere in the nation – is the coordination which was achieved in the development of Dulles International Airport serving the Washington, D.C. Metropolitan Region. There the Federal Aviation Administration planned and built an approximately 15 mile access road, designed to Interstate highway standards and adequate to meet the foreseeable demand to about the end of the century. The right-of-way is sufficient to accommodate such additional lanes as the State may desire to install to serve inter-community traffic along the way, as well as a branch of the regional mass transit system.

The urbanizing impact of a major airport is now controlled exclusively by localities under local zoning laws. Encroachment of development which is incompatible with not only the present, but also any contemplated future role of a particular airport is seldom preventable under the present system.

The above suggests the possible need for airport siting legislation modeled on the proposed Electric Facilities Siting Act, but appropriately scaled down in scope. At the very least, perhaps, the Department of Highways and Transportation should be vested with

powers of land acquisition for airports, similar to those which House Bill 1513 is proposing to give to the Department of Conservation and Economic Development for the acquisition of solid waste disposal sites in instances where the localities involved fail to reach agreement in the face of an obvious need for a regional solution.

Methods whereby a coordinated approach to the discharge of the State's role in the urbanization process could perhaps best be achieved are discussed in Section V of this report. The participation of the Division of State Planning and Community Affairs would be particularly logical since it is already deeply involved in the development of the Statewide Air Transportation Plan. The DSPCA is also the State agency most qualified to help develop minimum standards for land utilization of airport environs.

4. **Major Port and Docking Facilities**

Any major port or docking facility, natural or deepwater, can be of greatest economic significance to its region and the State as a whole. Yet, incontestably, the development of such ports and their potential impact upon the surrounding shore areas and waters have major environmental consequences. Briefly stated, these include those resulting from the considerable dredging required to maintain harbors at authorized depths which could modify the hydrology of the harbor, result in a change in salinity, endanger the fishing industry, and create a dredge spoils problem. In the case of oil ports there is the added danger of oil spills. On land, a port generates a large volume of heavy truck traffic and usually serves as a spur for intensive industrial and/or urban development. These considerations justify the designation of such developments as "key facilities".

It is suggested that, at the very least, the State needs to concern itself directly with the siting only of major municipal and private ports and docking facilities, i.e. those with authorized channel depths of 25 feet or more, and therefore capable of handling major ships. This channel depth can accommodate moderate-sized freighters of up to 10,000 deadweight tons (dwt). By way of comparison, major shipping ports situated on the nation's two

coasts have authorized channel depths of 35 feet or greater. General cargo ships to New York, New Orleans, and San Francisco reach a capacity of 25,000 dwt and have a loaded draft of up to 40 feet. Four of the Great Lakes ports have channel depths of 27 to 28 feet.

A broader definition might include all facilities engaged in the commercial interface of waterborne passengers and cargo with land or any other mode of transportation, regardless of depth under the hull.

To establish a new channel with a depth sufficient to accommodate oceangoing vessels requires dredging which is under the jurisdiction of the U.S. Corps of Engineers. Under the National Environmental Policy Act, an operation of this type requires the preparation of an environmental impact statement which examines not only the direct impact of such a facility on the physical environment but also its anticipated effect, immediate and cumulative, on the social and economic structure of the affected areas on-shore and the area's ability to cope therewith given the existing managerial capability of the government(s) involved.

Fills by riparian owners opposite their property to the established bulkhead line, if any, require a permit by the Virginia Marine Resources Commission. Statutory exemption from such permit requirement is granted to owners who secured a certificate of assurance from the State Water Control Board pursuant to the Water Quality Improvement Act of 1970 prior to July 1, 1972. Future construction of new piers, docks, marine terminals, and port facilities can be done by permit also.

Regulatory Gaps

The above process seems to safeguard the State's environmental interest, but – with the obvious exception of facilities built by or for the State itself – it fails to address the desirability of assuring that the siting of all such major general utility transportation facilities will further an overall State Transportation facilities plan. While, as of now, no Statewide Water Transportation Plan, similar

to the State Airport Plan, seems to exist, under its enabling legislation the Virginia Port Authority is charged, among other things, with the duty of "keep(ing) informed as to the present and future requirements and needs of the (State's) ports" and of "initiat(ing) and further(ing) plans for (their) development". At the same time, since 1974, the State Highway and Transportation Commission has been charged with the development and coordination of a balanced and unified transportation system plan which is to include water transportation. (See discussion of Multi-Modal Transportation Centers.) The necessary authority for the formulation and periodic updating of such a plan thus seems to exist.

The likelihood that a major port facility will stimulate urban development in its immediate vicinity cannot be a matter of total indifference to the State. Experience richly teaches that the legacy of hastily improvised urban arrangements during the construction and early operation stages of a facility built some distance away from any existing urban infrastructure lives long into the future and more often than not inhibits the effective functioning of the "key facility" itself.

5. **Multi-Modal Transportation Centers**

At present, the issue of transportation centers other than airports and seaports is not considered to be of major statewide concern. Indications are, however, that the situation is changing. National policy is placing increased emphasis on public transportation. There is also mounting evidence that railroads are beginning to recapture some of the ridership they have lost over the years to airlines and private automobiles.

Multi-modal transportation centers are a key element in the economic feasibility of public transportation systems. They provide that added margin of convenience and flexibility which can make the decisive difference in their ability to attract riders now using competing transportation modes. Such centers can also play major roles in the structuring of urbanization patterns. The establishment of public transportation systems is, in turn, one of the key components of any plan for the maintenance of acceptable regional

air quality standards for which the States are responsible under the federal Clean Air Act.

Inasmuch as the classification of multi-modal transportation centers as "key facilities" looks to the future, there is little experience to guide the selection of that breakpoint in their size spectrum which would make their siting a matter of statewide concern. Since, however, traffic generating facilities are already subject to the jurisdiction of the State Air Pollution Control Board, it is suggested that the standards already in use be also used for purpose of their designation as "key facilities".

As of January 1, 1975, these standards are as follows:

(a) Within Standard Metropolitan Statistical Areas (SMSA): the facility's potential to generate 700 cars during the peak hour and 1,750 cars during the 8-hour period including same; and

(b) Outside SMSA's: 1,400 and 3,500 cars, respectively.

Regulatory Gap

At present, the only applicable regulation other than that imposed by local zoning ordinances is the State Corporation Commission's authority to review and possibly disapprove any proposed *abandonment* of an existing railroad or bus station. The increased policy emphasis at both the State and federal levels on public transportation has caused the adoption, in 1974, of legislation requiring the State Highway and Transportation Commisssion "to develop and coordinate balanced and unified transportation system plans." The plans so developed must coordinate "the development of highways with public urban transit (including interurban rail) and air and water transportation facilities." The statute provides that all authority and responsibility now vested in other agencies or governments that may be affected by the plan is to remain intact. Under the circumstances, the development of any such plan in furtherance of State urban growth policy objectives would of necessity have to be appropriately calibrated to permit full participation in its formulation of cities, counties, Planning and Transportation District Commissions, and various concerned State

agencies such as Airport and Port Authorities, the Air Pollution Control Board, and the like. The involvement of the State Division of Planning and Community Affairs in the preparation of the overall transportation plan would be a logical extension of its already active role in the preparation of the Statewide Air Transportation Plan.

6. **Solid Waste Disposal Facilities**

The recent solid waste explosion has put most states in the position of having to assure that rational solutions to the problem which it presents can be developed. Conservative projections are that the annual generation of domestic solid waste in the State will increase from an estimated 3,322,000 tons in 1974 to 4,300,000 tons by 1980.* The formulation of a realizable facility plan by all political jurisdictions is essential to the well-being of the State as a whole. This characteristic invests solid waste disposal facilities, including sanitary landfills, incinerators, and/or facilities designed to accommodate new and innovative methods of solid waste disposal or recycling, with the attributes of "key facilities" within the context of the definition advanced in this report.

Situations have frequently been known to arise wherein the solid waste disposal needs of a heavily built up urban community dictate the development of the necessary facilities beyond its boundaries. This is especially true in the State's large metropolitan areas where conveniently located land suitable for landfills is rapidly diminishing. Since cities do not have extraterritorial rights for the development of solid waste disposal facilities, it may be reasonable to consider the need for the State to assume sufficient jurisdiction to enable it to resolve any problems that may develop as a result.

Additional factors which justify State concern with the siting of solid waste disposal facilities on grounds transcending health considerations are that (1) sanitary landfills should not be located too close to the boundaries of major airports (where they would constitute a safety hazard due to their propensity to attract birds);

*_Solid Waste in Virginia_ by Haycs, Seay, Mattern & Mattern for the State Commission to Study and Advise Upon the Disposal of Solid Waste, 1974.

(2) for aesthetic reasons, landfills should be located away from State highways or be thoroughly and permanently screened if located within sight thereof;* (3) trucking of solid waste to the disposal facility, particularly in the case of a facility sized to serve a very large region, may present problems of a magnitude beyond local capability to resolve; and (4) the size which comprehensive regional solid waste facilities can be expected to reach is such that their overall negative environmental impact may be completely beyond the capability of local governments to control.

The existing Virginia Solid Waste Disposal Law mandates that all counties (including all towns) and cities throughout the State assume the responsibility for the proper disposal of all solid waste, and it *permits* the Commissioner of Health to require each county and each city within the State to submit for its approval a 20-year solid waste disposal plan showing all existing and anticipated sites. The development of solid waste disposal facilities by towns without reference to the county plan is only permitted subject to prior approval of the State Health Department.

The State's current environmental controls seem to be sufficient to assure that sanitary landfills and incinerators will not have adverse environmental impacts, regardless of location. Among the regulations which apply, in addition to required approval by the State Health Department of every proposal for a solid waste disposal facility site, are the following:

1. Solid waste dumping in State waters is forbidden (sewage sludge and other solid wastes from publicly owned waste treatment plants are not covered by the State law, but are stringently regulated by the federal Environmental Protection Agency).

2. The site must be so located and the operation so designed as to prevent pollution of ground and surface waters.

3. The burning of solid wastes in the open is prohibited.

4. Incinerators must meet all applicable federal and State air and water quality regulations.

*In this respect, equal state concern is justified with respect to the location of automobile junkyards.

Regulatory Gap

The powers that are presently lacking are (1) those required to enable the State to acquire land where an acceptable regional plan cannot be implemented due to the need for the location of facilities outside the boundaries of the jurisdictions which they would serve; (2) those required to assure that the locations selected take fully into account foreseeable future land use trends and opportunities; and (3) those required to assure that facility design and development standards are aimed at the achievement of aesthetically optimal results rather than be responsive primarily to health standards.

House Bill 1513, introduced in the 1975 legislative session, would give the Department of Conservation and Economic Development the power of acquiring land for use as solid waste disposal sites by localities outside their own territory. The proposed law would vest this power in the State, but only if the localities involved fail to reach agreement in the face of an obvious need for a regional solution. In considering sites for acquisition, the Health Department, as the lead agency, would have to consult with the State Water Control Board "and other State agencies having jurisdiction over matters relating to health and environment". It may be desirable, in the interest of assuring the achievement of the second and third of the three policy objectives listed above, if any law that may be passed on this subject specifically included the State Division of Planning and Community Affairs among those whose input would be sought in site location decisions.

As previously mentioned, authority already exists whereby the State Commissioner of Health can require all cities and counties within the State to submit 20-year plans showing all existing and anticipated solid waste facilities sites. To increase the State's ability to assess the current situation with regard to solid waste disposal needs throughout its territory, it may be desirable to implement this authority across the board and *require* that such plans be submitted by all applicable jurisdictions within a reasonable period. The availability of such plans would also permit their early review by the Division of State Planning and Community Affairs in relation to other land use trends and the existing local regulatory capacity.

7. On-Shore Facilities Supporting Off-Shore Energy Related Resource Recovery Operations

Of necessity, the siting of oil or gas recovery operations on the Outer Continental Shelf (OCS) within areas leased for the purpose by the federal government will be determined in the first instance by the location of economically recoverable natural resources.* These types of energy-related operations will, however, generate refineries, petrochemical plants, and other industries and docking facilities on-shore.** The location of such supporting facilities as well as the landfall of pipelines transporting these resources from recovery sites and deepwater ports to shore are relatively flexible. Yet, the specific locations selected can have widely varying impacts on the natural marine and coastal environments and on the social, economic, institutional, and governmental fabric of the affected areas.

On-shore facilities specifically related to off-shore operations which are proposed to be classified as "key facilities" include, in addition to storage tanks, plants devoted to the following industrial processes:

(1) Organic chemical processes using oil or natural gas as their raw material, such as refining, gasification, liquefaction, or polymerization; and

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*Under the provisions of Senate Bill 788 which is currently being considered in the State Legislature, subject to the forthcoming U.S. Supreme Court ruling regarding state jurisdiction over the OCS, off-shore drilling would be limited to the area lying beyond 35 miles from the coast.

**The national interest, in assuring that adequate provision will be made for the location of essential facilities of more than local interest, as this interest is spelled out in the Coastal Zone Management Act of 1972, calls for the broadening of the definition of "key facilities" dedicated to the industrial processes listed above to include those utilizing oil transported by sea to deepwater ports established under the Deepwater Port Act of 1974, regardless of its point of origin.

The option of classifying as "key facilities" on-shore facilities for processing non-energy related mineral resources (i.e. ores), whether mined in the OCS or transported by sea, was rejected due to the fact that the shore location of such facilities is completely flexible.

(2) Agrichemical production.

The above limitations are designed to keep the list of facilities classified as "key" within the parameters set forth in the introductory part of this report. This posture contrasts with that adopted by the State of New Jersey in its Major Coastal Area Facilities Review Act, under which State permits are required for the construction or alteration within the coastal zone of facilities designed to accommodate some 160 industries. It also differs from the similar basic approach adopted by the State of Maine in its Site Location of Development Law. It must be emphasized in this regard that Maine was concerned with general land use-related implications of all substantial developments throughout the State, while New Jersey approached the problem from the standpoint of the need to protect the fragile environment along the land-water interface of the State's coastal zone. Neither state looked at the problem from the vantage point of only the facilities involved.

Regulatory Gap

Jurisdiction over the regulation of siting of deepwater ports (limited to the loading and unloading of oil) beyond the territorial sea has been preempted by the federal government under the recently enacted Deepwater Port Act of 1974. Under this statute, subject to approval of the Governor of each "adjacent coastal state",* the Secretary of Transportation may issue a license for the establishment of such a port on the basis of a lengthy set of criteria of which the following are those most relevant to this study:

(a) The construction and operation of the proposed deepwater port will be in the national interest and consistent with national security and other national policy goals and objectives, including energy sufficiency and environmental quality.

*Defined as any coastal state which would be directly connected by pipeline to the port, would be located within 15 miles thereof, or is designated as such by the Secretary of Transportation if he determines that there is risk of damage to its coastal environment equal to or exceeding the risk posed to the state directly connected to the port by a pipeline.

(b) The deepwater port will be constructed and operated using best available technology, so as to prevent or minimize adverse impact on the marine environment.

(c) The adjacent coastal State has developed or is engaged in the development of a coastal zone management program pursuant to the federal Coastal Zone Management Act of 1972.

In instances where a deepwater port is proposed in competition with the planned provision of a deep draft channel and harbor in an existing port in the same State as that which would be connected by pipeline to the proposed deepwater port, the statute requires the Secretary to compare "the economic, social, and environmental effects of the construction and operation of the deepwater port with the economic, social, and environmental effects of the construction, expansion, deepening, and operation of such State port". He must also determine which project "best serves the national interest or that both projects are warranted". The statute provides that "the Secretary's determination shall be discretionary and non-reviewable".

In instances where more than one application is filed in the same region, the Secretary's determination that one deepwater port serves the national interest better than the others must include, among other factors, "a review of the degree to which (each) affect(s) the environment" and "any differences in costs of construction and operation". Environmental review criteria for all deepwater ports must include the effects of all related land-based developments.

* *

The alignment of underwater pipelines and the construction of any port facilities is subject to the jurisdiction of the Virginia Marine Resources Commission. Jurisdiction over the siting of on-shore facilities, however, is now entirely local, being exercised under local zoning regulations. Many riparian counties are sparsely populated and possess only rudimentary land use control and enforcement mechanisms, if any. This represents a major problem since the possible wide-ranging impacts of on-shore development include most of the following in each individual instance:

a. Disturbance of major spawning areas.

b. Impact upon the fishing industry.

c. Erosion of shorelands and/or embankments.

d. Disturbance of bottom sediments.

e. Air and water pollution and possible harmful substance spills.

f. Threats to the aesthetics of the natural environment.

g. Sudden increases in employment in undeveloped or sparsely developed areas.

h. Development dynamics due to alterations in real estate values beyond the capacity of localities lacking technical and managerial capability to control adequately.

i. The need for new highways.

j. Greatly increased demand for water and other public utilities.

k. Sudden demand for increased public services.

l. Vastly increased local government costs.

The most recent example of the process likely to occur at the local level under the pressure of a prospective advent of a major oil refinery potentially paying relatively huge local taxes is that ot the Hampton Roads Energy Company's proposal in Portsmouth. By a 6 to 1 vote of the local planning commission and by a unanimous vote of the City Council, the proposal for a 175,000 barrel-a-day, $350 million refinery was approved. The admitted principal motivations for such approval were the prospective 40% to 50% increment in local tax revenues and the 3,000 temporary and 500 permanent jobs which the refinery would generate. Even though this action will not become final until after approval by the U.S. Corps of Engineers and the State Marine Resources Commission, Water Control Board, Air Pollution Control Board, and Department of Health, the pressure in favor of such approval generated by the initial local consent is bound to be felt.

A second example is the recently surfaced plan of the AMOCO refinery at Yorktown to triple its capacity from 50,000 to 150,000 barrels per day. In anticipation of a favorable outcome, the Company has added 500 acres to its 1,200-acre tract. Despite its immediate proximity to the Yorktown Colonial National Historic Site, no public discussion or governmental consideration preceded this land assembly.

The above suggests that the State must be in a position of being able to assure (1) that essential energy-related off-shore operations will be provided with adequate support; (2) that, however, the locations for such supporting facilities will be selected following a thorough and sophisticated environmental assessment of all available alternatives; (3) that the need for direct State participation in alleviating such shock of rapid growth along the coastline as may follow possible discoveries of oil on the OCS will be thoroughly explored; and (4) that the State measures found to be needed as a result of such exploration will be implemented.

The consolidation, coordination and expediting of the permit review process in this area would of necessity involve the Council on the Environment, with the Division of Industrial Development, Marine Resources Commission, State Water Control Board, and State Air Pollution Control Board principally sharing the responsibility for reviewing the probable resulting impacts on the natural environment and the economy of the affected local jurisdictions. Especially noteworthy is the special role which was assigned to the Division of Industrial Development by Senate Joint Resolution 76, in 1974, in "providing localities with requested information to assure that the location of industry in a locality is compatible with community goals and needs and that such location will be mutually beneficial to both the community and the industry."

The appropriate lead agency in regard to the necessary coordination of regulatory and implementation activities dealing with the consequences of a specific on-shore facility siting approval, however, would seem to be the Division of State Planning and Community Affairs. The role which the Division of State Planning and Community Affairs might play is described more fully in

Section V of this report. Its methodical involvement in this task may be essential in view of the possibility that federal legislation now under consideration in Congress may make available to coastal states funds to compensate them for costs which they may incur as a result of the OCS oil operations. DSPCA's participation may help Virginia to identify the full range of social, economic, and environmental costs and benefits associated with the full range of local and State investments required to accommodate the demands of off-shore development, as well as help the State coordinate their provision in a timely and effective manner.

8. **Waterway Impoundment or Diversion Projects**

Impoundments, whether for water supply, hydroelectric power, or other purposes, can create significant regional impacts. Water supply reservoirs, especially, must frequently be located outside the boundaries of the community which they serve. Many of the impacts of such projects can be beneficial, others adverse, but all are interrelated. Introduction of a dam can cause deterioration of water quality downstream via modification of hydrocycle, modification of sediment load, or temperature stratification. Access to upstream reaches of the waterway will be reduced causing a reduction in fish migration. Dams in estuaries can cause salt water intrusion alterations as well as modify the tidal prism. Other important possible impacts are:

1. The emergence of recreational communities along the shores of the newly created water bodies.
2. Displacement (through flooding) of existing development.
3. Reductions in forest acreage.
4. Alteration of fish and wildlife habitats.
5. Alteration of the ground water table and possible contamination thereof.

Regulatory Gap

At the present time, no State authority exists in Virginia for regulation of dams (other than those licensed by the State Corporation Commission)*, reservoirs, or diversions of waterways. The proposed Virginia House Bill 756 (Dam and Reservoir Act of 1974), which would give the State the right to approve or reject dam projects,** has been carried over for consideration in the current session. This bill defines a dam as any artificial barrier which impounds or diverts water with either (a) a height of 25 feet or more, or (b) an impounding capacity of one hundred acre-feet or more. Administration and enforcement authority would be lodged in the State Water Control Board.

State authority under the proposed legislation would most likely be triggered by the impounding capacity of the dam rather than by the 25-foot height limit. It is worthy of note that the federal Department of Housing and Urban Development requires an environmental review prior to approval of financing for any project involving impoundment of two surface acres of 25 acre-feet of water. It would appear desirable to study the possibility that environmental impact review of structures with size characteristics below those recommended in the proposed Dam and Reservoir Safety Act be required, with such reviews perhaps being performed at the county, rather than the State level.

House Bill 756 does not require the State Water Control Board to review the environmental impact of a proposed dam. This is an

*The State Corporation Commission is empowered to license all dams for hydroelectric purposes and dams erected for any other purposes in "waters of the State", defined so as to include all navigable streams and "any stream or part thereof ... in which the construction of any dam or works ... would affect the interests of interstate or foreign commerce". Dams in streams which are not "waters of the State" (and which are termed "waters within the State") are beyond the SCC's jurisdiction except where dams are erected for hydroelectric purposes.

**The bill would exempt all dams licensed by the State Corporation Commission, those controlled by the federal government, those designed, built, or maintained by the U.S. Soil Conservation Service, and all canal locks.

omission which should be remedied. It may be especially necessary for the State to be able to exercise some supervision in instances where lakes are created as part of speculative "second home" or resort community undertakings. Also important is the possible effect of water impoundment and diversion projects on waters which may warrant designation as free-flowing and scenic rivers.

The recent controversy over the Catoctin and Goose Creek dams highlighted the problem which results from the construction of water supply dams by localities on the territory of others. The Catoctin Dam would flood 3,000 acres of land, completely covering the historic village of Taylorstown and parts of Waterford. The Goose Creek Dam would flood 20,000 acres, from Route 15 to Rectortown.

House Bill 921, which is currently under discussion in the State legislature, provides that any county or municipality can obtain land to construct a dam for a water supply system beyond its boundaries only with the prior consent of the governing body of the locality in which the dam and reservoir would be located. Where such agreement cannot be secured, a further amendment to House Bill 921, which is also being considered, would empower the State Corporation Commission to act as an arbiter.

The peripheral land use impacts vary as between water supply and hydroelectric reservoirs. In the case of the former, the use of the shore and of land throughout the tributary watershed must be strictly controlled in order to protect the purity of the potable water supply. This also applies to the use of the water surface. As a result, except for possible low-intensity recreation use of the surroundings and the granting of limited fishing privileges involving the use of other than motor-driven craft, the use of water supply reservoirs and their shores are of relatively limited statewide consequence.

Hydroelectric dams, however, tend to create vast man-made lakes whose shores can be most attractive for resort developments of all types. Their urbanizing impact, therefore, should be of considerable concern to the State, particularly since road access demanded by such development in the wilderness areas where dams of this type

are most likely to be located can impact the environment over a very wide area. All hydroelectric dams are subject to the jurisdiction of the Federal Power Commission and all such dams as well as dams erected for any other purpose across "waters of the State" are subject to licensing by the State Corporation Commission. All of this assures consideration of their environmental impact. The affected area's ability to cope with any resulting urbanization is not specifically addressed by the SCC, and could perhaps be best handled in the manner discussed in Section V of this report. Proper assessment of any impoundment or diversion of waters which may affect future designations of free-flowing and scenic rivers should involve the Commission of Outdoor Recreation.

9. **Major State Governmental Facilities**

The State's executive agencies are responsible for the erection of a multiplicity of facilities in all regions of the Commonwealth. Traditionally, each agency selects those locations for its facilities which it believes will best further the achievement of its own functional goals. Recent years have brought about increased recognition of the large number and variety of considerations which should be taken into account by governments in formulating site selection policies for their agencies. In addition to their impact on the land, waters, and air within their sphere of influence, major governmental facilities usually create two distinct types of impacts in terms of their interaction with their social, economic, and man-made physical environment. These impacts are mainly the following:

(1) **Physical impacts**

a. Traffic generation with the attendant need for access roads; and

b. Demand for public utilities.

(2) **Social and economic impacts**

a. Increased employment opportunities;

b. Economic boost to nearby communities;

c. Possible population in-migration with attendant urbanization and increased service demand; and

d. Removal of land from tax rolls.

These attributes of major governmental facilities are among the principal determinants of any local or regional urban or economic growth policy. Since the State is already responsible for the initiation of these facilities, it could also use their siting affirmatively as an element in its overall development policy. The State should also be in the position of being able to review an agency's siting proposal from the standpoint of its impact on local sensitivities (i.e., a major correctional institution in close proximity to a residential community) and to influence the outcome on the basis of considerations transcending those which are usually taken into account by single-purpose agencies in pursuit of their mission. If all attainable State policy objectives related to the construction of a particular facility are to be achieved in the most effective manner, the variety of factors which should be considered suggests the need for a multi-functional evaluation of each major governmental facility siting proposal.

The Virginia Environmental Quality Act (VEQA) defines as "major" any State facility (exclusive of any highway or road construction, or any part thereof) undertaken by any State agency, the construction of which costs one hundred thousand ($100,000) dollars or more to complete. While, given current construction costs, this level of expenditure denotes a facility of a size considerably below that which could be said to represent the kind of "major investment" contemplated in the proposed definition of "key facility", it is recommended that the VEQA definition be accepted since all facilities which it covers are already subject to an environmental review.

The list of State installations qualifying as "key facilities" would include State hospitals, correctional facilities, institutions of higher learning, office buildings, outdoor recreation facilities (including parks and beaches), and all other State facilities, except highways. The principal relevant characteristics of the major ones are set forth briefly below.

State Hospitals. A hospital is a major generator of patient and visitor traffic. Proximity of a hospital usually serves as a stimulant for the development of housing, service industries, and hotels or motels. Characteristics which are particular to hospitals are potential water pollution and special solid waste problems on the one hand, and on the other, their quality of being essential to the overall health and well-being of the residents of the surrounding area and of the State as a whole. While a general hospital is generally perceived as a beneficial presence, a mental health hospital facility is usually resisted by residents of the area in which it is proposed to be sited.

State Correctional Facilities. The environmental impact of a major correctional facility can be expected to be similar to that of a hospital except for a lower level of traffic generation. A correctional facility is usually looked upon as being disruptive of the community. The mere presence of such an institution could cause a decline in adjoining property values and changes in the character of the population in its immediate area.

State Institutions of Higher Learning. These institutions, which include both four-year and two-year universities and colleges, are regional in the nature of their impact. These types of institutions provide statewide educational opportunities as well as employment opportunities for residents within the region. A large institution of higher learning usually fosters the growth of service organizations dependent upon its intellectual and technical community. It could become the hub of areawide cultural and research activities. These characteristics may also spur general urbanization of its surroundings.

State Office Buildings. State office buildings are generators of traffic and, depending upon their size and function, frequently trigger ancillary development. They can be major assets to communities in need of an economic stimulus.

Outdoor Parks and Recreational Facilities. In addition to the types of impacts which are caused by facilities used by many people (i.e., traffic and need for access roads, etc.) the location of State parks should be evaluated from the standpoint of their potential

contribution to the regional balance between urban areas and open space. Parks can be used to safeguard unique and/or fragile environmental features and natural resources. They can also serve as buffers between otherwise incompatible uses (i.e., in the vicinity of airports).

Regulatory Gap

Since 1973, the Virginia Environmental Quality Act (VEQA) has required all State agencies to submit an Environmental Impact Report to the Council on the Environment on each major facility which they propose to construct. The report, modeled on the requirements of the National Environmental Policy Act, must include at least the following:

(1) The environmental impact of the proposed construction;

(2) Any adverse environmental effects which cannot be avoided if the proposed construction is undertaken;

(3) Measures proposed to minimize the impact of the proposed construction;

(4) Any alternatives to the proposed construction; and

(5) Any irreversible environmental changes which would be involved in the proposed construction.

Following its review of the Environmental Impact Report, the Council on the Environment may recommend to the Governor that a particular site be rejected. The final decision in this regard rests with him. VEQA limits the definition of the term "environment" to "natural and scenic and historic attributes of the Commonwealth". In view of this, the State Environmental Impact Report requirement leaves out of consideration factors such as the possible beneficial or adverse effect of such siting on social communities and their economic well-being. Where State facilities are erected with federal assistance (i.e., in the case of hospitals erected under the Hill-Burton program) the NEPA Environmental Impact Statement

requirement would broaden the review, but would not necessarily enable the State to inject State policy considerations to the desired degree. Despite the narrowness of the definition in the State law, however, it appears that, in practice, all environmental impact statements consider all identifiable impacts of human concern.

The inclusion of considerations related to the role of State facilities in the implementation of the State's urban growth and development policy suggests that the Division of State Planning and Community Affairs should be one of the agencies prominently involved in the development of the required Environmental Impact Report.

In addition, it is suggested that the definition of "major" facility in VEQA be broadened to include the *acquisition of land* costing one hundred thousand dollars or more for any State purposes, excepting highway rights-of-way, even if no structures are proposed to be placed thereon. This suggestion is based on the clear possibility that the acquisition of vacant land worth that sum, especially in sparsely developed parts of the State, may be a much more environmentally significant step than the construction of an equivalently priced structure.

SECTION V.
The "Key Facility" as a Stimulus for Urbanization The State's Role

This report is based on the proposition that a development which is of Statewide concern only by reason of the fact that its presence usually stimulates urban development in its surroundings is not a "key facility" within the meaning suggested as the basis for this study. The reason for focusing this study upon "key facilities", as defined, was not meant to minimize the importance to the State of assuring, within a reasonably conceived State-local intergovernmental powers allocation system, that the specific patterns and standards of land development throughout its territory are as sound and as supportive of Statewide social, economic, and conservation objectives as possible.

It is, after all, but a truism to say that most of the State's population and its most intractable problems are urban in nature or associated with the type and quality of its man-made fabric. Yet, as already pointed out, to include among the "key facilities" to be considered in this study those whose siting is of concern to the State *only* because of their tendency to generate urban development in their environs would tend to place in that classification an almost endless list of uses and developments. Included would have to be shopping centers, office and industrial parks, all major institutions (such as private universities and colleges), trunk sewers and water lines, major residential subdivisions or apartment developments, etc. Since the urbanizing impact of such facilities is independent of their location, to assert a priori that the State has a *direct* responsibility in assuring proper urban development everywhere would cover most of its urbanization process. Ultimately, this objective could only be achieved through the assumption by the State of some form of participation in local zoning decisions, since the particular location of major developments likely to have secondary urbanizing effects is now almost exclusively decided at the local level.

Without pre-judging any conclusions in that regard that may emerge at the completion of the current study of the State Land Use Council, it is possible to assert that the State does have a direct responsibility in the direct *consequences* of the siting of those "key facilities" over which local governments would have little, if any, control by reason of their becoming primarily a State responsibility. By preempting local siting jurisdiction, the State should by right assume the burden of preventing the emergence of conditions with which the local governments concerned may have little or no capability to cope.

In this, the State need not necessarily supplant local land use control authority where it is adequate to the task. What is necessary, however, is that the State have residual authority sufficient to assure that the potential for improper development which is inherent in any given situation will not materialize due to the absence of either authority or capability, or both.

Set forth below are tentatively suggested alternate or complementary ways in which the State of Virginia could discharge this particular responsibility:

1. Evaluate the probable force, spread, timing, and consequences of urbanization (a) during construction of the "key facility", and (b) following its completion.

2. Evaluate the technical and administrative capability of the local government concerned to meet the challenge of change.

3. Promulgate State land use guidelines and require the formulation and adoption of such local codes, ordinances, and plans as the State may deem to be necessary to assure that the resulting development will meet such guidelines.

4. Offer State financial assistance toward the building up of the necessary technical capability and for the initially required administrative staff. (This program, which is in part being carried out already, could be phased out gradually, letting the burden be assumed by the expanding local revenue base.)

5. Upon failure of the local government to develop, adopt, and enforce the necessary regulatory instruments, develop its own plan and regulatory system and require its enforcement by local governments. Alternatively, establish a "zone of influence" around the "key facility" and require all new development within such zone to first secure permits from the State.

* * *

Planning and regulation, alone, are not sufficient to enable a perhaps sparsely populated and relatively poor region to accommodate a major

urbanizing trend. The State's responsibility should, therefore, perhaps also include an allocation of resources equal to the needs generated by the location of the "key facility" in which it has a direct interest. This might include adjusting of highway construction priorities,* urgent acquisition of open space to protect unique or critical environmental areas or natural resources, assistance in the establishment of sewer and water systems and sewage disposal and solid waste facilities, special grants (or loans) for the construction of schools and other needed public buildings (such as public space to permit efficient expansion of administrative capacity), etc.

The applicability of the above to the "key facilities" included in this study is examined below.

1. **Electric Power Generating Facilities.** Due to the length of time it takes to construct such facilities, and depending upon the isolation of the area in which they are proposed, it is necessary to avoid the creation of ultimately permanent "temporary" construction "towns" or hastily thrown together "strip" highway developments. Norris, Tennessee, is one example of a well laid-out and constructed workers' encampment which became a sound permanent community. Other impacts which need attention are the road and, possibly, rail network providing access to the plant. Generally, large-scale urbanization in the vicinity of power plants is unlikely due to the relatively low employment they usually generate.

2. **Electric or Bulk Terminal Transmission Facilities.** No urbanizing effects.

3. **Major Airports.** By definition, major airports will be located only in the vicinity of major urban areas which would probably be able to easily absorb any resulting impact during the construction stage. Highway networks, however, are never as easily established after the urbanizing impacts of the airport manifest themselves as they could be at the time that the decision to build it is first made. Land use

* This should be considered not only in relation to the highways funded under the provisions of the Industrial Access Law, but all other State highways as well. Conceivably, the scope of the Industrial Access Law could be broadened to include all highway needs related to the impact of "key facilities".

patterns should be predetermined so as to avoid later incompatibilities due to aircraft noise in the air or on the ground. Where necessary, open space should be acquired beyond the boundaries of the airport to assure (a) proper buffering between the airport and uses which are sensitive to its impact, and (b) the safety of aircraft and of developments on the ground.

Control over urbanization patterns should also assure that land which will be strategically located from the standpoint of economic development related to the new ground and air transportation system will not be preempted by unrelated uses. The State's direct role in providing the new highways may give it considerable leverage in securing voluntary compliance with land use guidelines on the part of local governments, thus enabling it to stop short of imposing a mandated order.

4. **Major Port and Docking Facilities.** The road (and possibly, rail) network is key to the proper integration of the resulting urban pattern into any regional land use plan. Also important is a careful assessment of the adjacent coastline to prevent any future development from despoiling irreplaceable values, including touristic and aesthetic ones.

5. **Multi-Modal Transportation Center.** A passenger transportation center which is an essential part of any effective convenient, and frequently running public transportation system, represents the most strategic location in its region for the concentration of both, white and blue collar employment centers (such as offices and labor-intensive industrial plants). The accessibility of, particularly, office space within walking distance is of prime importance. Also, the development of higher density residential settlements within walking distance of the transportation centers tends to minimize use of private automobiles, reduces the need for wasteful parking capacity at the station, and cuts down considerably on air pollution during the critical "rush hours". Recent studies of station development patterns in connection with the Washington, D.C. rapid transit system have highlighted the need for the comprehensive planning of their surroundings at the earliest possible stage.

6. **Solid Waste Disposal Facilities.** In addition to assuring the adequacy of the road network providing access to such facilities, the State's concern should encompass that of assuring that the presence of the facilities will not blight their surroundings. In addition to assuring itself that all environmental controls (i.e. those preventing water and/or air pollution) will be strictly enforced, the State should perhaps also concern itself with the establishment of adequate buffers along the edges of, especially, sanitary landfills and the screening and landscaping of such buffer zones. In addition, plans for the reclamation of completed landfills for useful purposes (such as recreation facilities) should be part of the plans originally submitted for the State's approval. Regardless of the *ultimate* use of sanitary landfills, however, development of adjacent areas should not be capable of being undesirably affected by their presence while in process of becoming something else. Any interim buffer strips may thus become "land banks" for ultimate development at greatly appreciated values.

7. **On-Shore Facilities Supporting Off-Shore Energy-Related Resource Recovery Operations.** As in the case of major port facilities, the road (and, possibly, rail) network serving the industrial concentrations which can be expected to materialize will be one of the keys to proper land use planning in their vicinity. The advance provision of infrastructure, and especially of water and sewer systems, may permit the creation of concentrated new urban nodes as against the scattering of the incremental population among a multiplicity of jurisdictions, all possibly equally unprepared to receive it.

8. **Waterway Impoundment or Diversion Projects.** Depending upon the size of the resulting man-made lakes, a major waterway impoundment project can cause an appreciable influx of "second homes" to their shores. These types of communities represent examples of some of the most reprehensible misuse of critically important environments and the squandering of rare resources. On the other hand, if properly laid out and equipped, the presence of such communities can revitalize declining areas or contribute to the economic development of underdeveloped ones.

9. **Major State Governmental Facilities.** This broadly inclusive classification does not permit a clear advance identification of likely

urbanization impacts. In general, however, the simultaneous planning of all supporting facilities (i.e. highways) for which the State is also responsible, as well as the identification of land use imperatives to assure the proper functioning of the basic facilities themselves should be a clear State responsibility.

State Land Use Guidance Function

It is not within the scope of the present study (which has considered only one of four areas of possible State concern with the use of its land) to suggest a definitive framework for the discharge of the State's responsibilities with respect to the siting of "key facilities" and the possible urbanization of their surroundings. Nevertheless, it may be useful if some tentative conclusions which have emerged, albeit from an only partial and very limited perspective, are set down for consideration by the State Land Use Council.

In each case, the agency primarily responsible for the supervision and regulation of each type of "key facility" might, perhaps, remain the *lead agency* in the processing of the siting application. This would result in the following patterning of responsibilities:

Electric Power Generating Facilities	—State Corporation Commission
Electric and Bulk Transmission Lines	—State Corporation Commission
Hydroelectric Power Dams	—State Corporation Commission
Major Airports	—State Corporation Commission and State Highway and Transportation Commission
Waterway Impoundment and Diversion Projects	—State Water Control Board and State Corporation Commission
Major Port and Docking Facilities	—Marine Resources Commission, Virginia Port Authority, and State Highway and Transportation Commission

Solid Waste Disposal Facilities	—Department of Health
Major State Governmental Facilities	—Appropriate State Agency
Multi-Modal Transportation Centers	—State Highway and Transportation Commission

One group of "key facilities" does not, at present, fall within the area of jurisdiction of any existing State agency, i.e. *On-Shore Facilities Supporting Energy-Related Off-Shore Resource Recovery Operations.* Equally, to date, the State has not concerned itself with the supervision or direct influencing of land use patterns, which functions have been exercised exclusively by local and county governments operating under the State planning and zoning enabling laws. Since much of the State function envisaged in these areas, as it might be triggered by the siting of "key facilities", is of a coordinative nature, and since the development of the population and economic data base and projections are now performed by the Division of State Planning and Community Affairs, it is possible that this agency could be the one most appropriately designated as the *lead agency* in the performance of the necessary tasks. It might be worthy of mention in that regard that the Division has traditionally administered the State's comprehensive planning and management assistance program under Section 701 of the federal Housing Act of 1954 (as amended), and that it is, therefore, the logical agency to perform the proposed evaluative function with respect to local capacity to absorb change and to formulate appropriate guidelines and assistance program. The Division would draw into the process all other relevant State agencies (i.e. the Division of Industrial Development with regard to On-Shore Facilities) and it could discharge its overall responsibility by delegating the necessary authority to be exercised in accordance with State guidelines by the appropriate Planning District Commissions.

The Division of State Planning and Community Affairs would discharge similar responsibilities with regard to urbanizing effects of all other "key facilities" and would bring its land use planning expertise to bear as a member of the review team. The important thing to remember is that the State's responsibilities with respect to the consequences of siting of "key facilities" do not end with the approval of the application. Apart from State environmental monitoring activities, the

Division of State Planning and Community Affairs can provide the most meaningful continuing assistance to localities and counties which are struggling to meet the challenge of change.*

The functions which the Division of State Planning and Community Affairs would be expected to perform in furtherance of the objectives identified in this study is generally within its legislative mandate which includes, among others, the responsibility for:

(a) Encouraging, assisting and coordinating the planning efforts of State agencies, governmental subdivisions and geographical regions.

(b) Developing a master plan for the State, incorporating projections and developments pertaining to population, transportation, commerce, agriculture, resources and land use; the master plan to represent the coordinated efforts and results of all participating planning groups.

(c) Coordinating the establishment of State investment priorities so as to minimize delays in the provision of the necessary infrastructure in areas of sudden growth.

(d) Providing professional and technical assistance to political subdivisions of the State.

The authority to establish land use guidelines in the "zone of influence" of "key facilities" and to exercise any enforcement powers in relation thereto is now lacking and would require new legislation.

*Even though State highways and highway interchanges have not been discussed in this study, it may be worth stressing that their ubiquitous urbanizing effects could also perhaps be best addressed in the institutional framework suggested in this study.

SECTION VI.
Conclusion

In conclusion, it can be said that the siting of "key facilities", as these are defined in this study, raises three types of issues:

(a) The need for authority to assure that those responsible for their provision will be able to construct them despite local opposition.

(b) The need to assure that the site selection process will include every possible consideration dealing with the environmental impact of each proposal and that, in the location ultimately selected, the construction and operation of the "key facility" will not exert any unnecessary adverse impact on the environment.

(c) That the consequences of such location in terms of the resulting development dynamics in the surrounding area will not overwhelm the localities and counties involved.

Considerable progress is being made with respect to the achievement of the first of the above objectives. Not all the relevant legislative initiatives have been enacted into law to date, but, judging by national trends, the probability is strong that the need for an institutionalized ability to resolve seemingly irreconcilable land use conflicts in the statewide or national interest is being increasingly recognized in Virginia as elsewhere.

The environmental issue is only partially resolved in existing statutes and practices. The requirement for environmental impact analyses is not universal and seems to be somewhat unevenly applied (i.e. it applies to any State facility, other than highways, costing over $100,000 but it does not apply to a cross-country power transmission line with a capacity of less than 200kv). But while the environmental factors may not as yet be given the desired emphasis in the planning of major projects, the need to comply with increasingly stronger federal and state environmental laws suggests that the means for minimizing the environmental impact of "key facilities" after their construction are generally available.

Completely lacking, however, is any framework for direct state participation in rationalizing and, where local regulatory capabilities are weak or non-existent, directly regulating the urbanization which frequently accompanies the establishment of "key facilities". Also only

partially available is the authority and commitment needed to enable the State to assist affected localities in financing the advance provision of all the facilities which are necessary to enable them to avoid the disastrous social, economic, and aesthetic consequences of the customary "boom-town" type of growth.

The study has found increased recognition by the State of its responsibilities in assuring the proper utilization of land for, and around, "key facilities" to be especially urgent given the anticipated ever-increasing level of land use conflicts as the State's growth continues at a rate exceeding the national average. The same sense of urgency was felt with regard to the need for increased recognition of the State's responsibility for the timely and orderly provision of public facilities in areas of sudden growth. Both of these conclusions, to the extent that they have emerged within the limited context of a study focused on only those land use issues that are related to the siting of "key facilities" (which are themselves limited in number), are only a partial view of the State's role in land use policy formulation. It is to be hoped, however, that they will support and complement those which may result from the study of the other three segments of the overall problem generated by the need to improve the use of the State's limited and precious land resources.

Appendix
Selected Excerpts from State Agency Comments

Appendix
Selected Excerpts from State Agency Comments

A preliminary draft of this report was distributed to all State agencies concerned with its subject matter for their review. Many of their comments were incorporated in the report. Additional quoted excerpts from their comments, selected by the authors of this report, are set forth below.

General

"The basic resources with which land use policy should be concerned are soil, water, air and perhaps open space. The Introduction to the study report indicates that the Council eventually may get around to studying the issue of preserving prime agricultural land. Such a later study would, therefore, concern itself directly with soil and open space resources. Siting and regulating key facilities, on the other hand, looks at certain developments categorized by their function and use, rather than by the resources upon which they impact. These two approaches will have to be reconciled at some point, because it is not possible to develop a viable position on key facilities and quite another on preserving agricultural land and space if the two positions or policies are not compatible.

"Therefore, until such time as we have come to a policy position on the State's role in preserving prime agricultural land and open space, I must view the State's role in the siting and regulation of key facilities as being based almost entirely upon the impact of individual facilities on the State's air and water resources. My present thinking is that the State's role in siting and regulating the activities in each of the proposed categories should be that of insuring that acceptable air and water quality standards are not jeopardized, in addition to a yet-to-be-defined State role in preserving prime agricultural land and open space to which role key facilities also will be subject."

Chester F. Phelps
Executive Director
Commission of Game and Inland Fisheries

"... I believe the environmental impact of key facilities should be assessed, and that such assessments should be a requirement of any state approval process. Furthermore, I believe it would be appropriate to tie in the coordinated and consolidated permit process for key facilities that the Administrator of the Council on the Environment is authorized to manage. In this way a more comprehensive review of these types of projects can be made.

"(In) Title 10, Chapter 17 of the Code of Virginia ... the General Assembly has ... declared the Commonwealth's environmental policy, and has established the Council on the Environment to implement that policy. I believe it would be appropriate, given the Council's authority to implement this policy, to anticipate a substantial role for the Council in dealing with the siting of key facilities."

Gerald P. McCarthy
Administrator
Council on the Environment

"I believe ... that the state should have a procedure for approving the siting of key facilities *in toto*. As of now we try to control such siting through bits and pieces, such as air pollution or water pollution. If a facility will have considerable effect over which the community where it is located has no control, I believe the state must have a controlling voice in its location in order to protect citizens in the surrounding jurisdictions."

John B. Pleasants
Virginia Institute of Marine Science

"The Environmental Impact Process should be applied to all key facility siting. The National Environmental Policy Act of 1969 has been in existence long enough to engender the development of a widely understood methodology for assessing the impact of new facilities on the environment. The siting of any key facility should be subjected to the scrutiny provided by an Environmental Impact Statement ... This useful tool is being wasted if it is not put to use in this endeavor."

* * *

"... it appears that this study, "Key Facility Siting", is possibly premature. The immediate and primary emphasis should possibly be on a State growth and development policy and/or plan. It is known that top policy must be developed dealing with State requirements before subset planning can be initiated ...

"To execute the function of Planning for the Commonwealth one must first execute the objective level planning, then proceed to the requirement level planning and then to the resources level planning. The study appears to be a Phase III – resources level planning without ever having executed Phases I and II, objective and requirement level planning. It fails to support the basic principle of planning or problem solving. The Study is a subset of planning that does or does not support a yet to be developed set of State plans. The Study is out-of-phase for professional planning at the State level ...

"The State should have a role in the regulating of key facilities, but a land use policy and objectives must be developed before determination of that role takes place."

* * *

"The State should consider Land Use legislation that clearly spells out the purpose, scope and authority of whatever present activity, coordinating body or established council is designated as the lead activity."

H. J. Hughes, Director
Planning & ADP
State Air Pollution Control Board

"Environmental impact statements should be required for all key facilities, whether financed by federal, state, or private funds."

Junius R. Fishburne, Jr.
Executive Director
Virginia Historic Landmarks Commission

"For each proposed category (of key facilities), there appears to be a need for a State role in regulating these activities due to the complex interrelationship each individual category has with all others listed. Regulatory activity is needed to insure the close coordination of activities in each category so duplications of effort and confrontation of goals, objectives, and programs can be avoided. By having the regulatory powers of these activities at the State government level, the coordinating viewpoint will be able to assess the overall effects of a decision made in regulating one category on all other categories. Decisions made at the State level also will not be so easily swayed by special or local interest groups."

F. Joseph Dandois
Virginia Port Authority

"Virginia as all other states in the nation has reached a point where controlled land use planning is no longer an optional tool or a possibility for State growth but rather a necessity. With this statement as fact, it is imperative that the State move quickly in areas of development which do have effects on our limited land resource. Of those key facilities discussed, onshore support facilities for oil, energy development and transport, transportation, and water supply are the most important, and it is here that the State needs to take a leading role...

"The State should develop a broad land use policy which would indicate what is to be done by the localities, the regions and on the State level. Goals need to be set and deadlines placed on when these goals will be met. Most State agencies already have developed plans in their respective fields of expertise; these should be used in developing the State's total land use concept. Regulations for their implementation are greatly needed ...

"... the State needs a strong and specific position on land use; it cannot do this as a mosaic and must look at the issue in total; and finally, the power of land use controls and policies will be great, and caution must be exercised in its employment ... The system of checks and balances must be preserved and a land use dictatorship avoided."

Rob R. Blackmore, Director
Commission of Outdoor Recreation

"... the State should play a role in the development and siting of key facilities by doing cost benefit or similar analysis for use by localities; however, the ultimate decision should rest as close to the people as possible or local units of government. The State should play an active role in providing units of local government with information which they could use in their decision-making process."

Berkwood M. Farmer
Chief Economist and Director of Planning and Development
Department of Agriculture and Commerce

Electric Power Generating and Transmission Facilities

We agree with need for long-range site planning. It is important ... to do this planning in conjunction with power companies. If sites could be found and approved now for future, it should save much in the way of money and time.

Power line corridors should also be considered in the same light. Since transmission lines are an integral part of the plant, they should be planned along with it. We also see a need for State approval of lines less than 200kv. Many of the lines now are in the 115kv and 135kv range and do not require SCC approval.

Rob R. Blackmore, Director
Commission of Outdoor Recreation

Major Highways and Transportation Systems

Even though the subject of major highways was excluded from consideration under the terms of reference of the key facility siting study, several agencies offered comments on this subject, as follows:

"... we are daily faced with development proposals which by virtue of their location and traffic generation potential would strangle highways of statewide and even national importance. Further, the local government bodies in some jurisdictions in approving such proposals give little, if any, consideration to the impacts of such proposals on the transportation systems. Very obvious examples of such activities are

Dale City in Prince William County, Reston in Fairfax County, Springfield Mall in Fairfax County, Cloverleaf Mall in Chesterfield County, Brandermill in Chesterfield County, etc. While I personally feel it is presumptuous to anticipate the state having a substantial role in local land use decisions, I am of the opinion that a procedure should be established to require jurisdictions to consider the transportation impacts and costs to serve proposed developments in the same manner as school, public utility, environmental and other consequences are assessed."

Douglas B. Fugate, Commissioner
Department of Highways and Transportation

"Of all the single industrial or agency facility systems in the state the highway system involves real estate and has the greatest effect on urbanization. Therefore, when land use is mentioned the highway system is at the top of the list; however, the subject of highways was not addressed in this work."

Division of Aeronautics
State Corporation Commission

"The definition of key facility should be broadened to include major transportation projects. For example, I-66 in Northern Virginia or the I-95 Richmond by-pass would have significant area-wide influence. The extension of the Washington Metro System into Virginia will also have area-wide implications. Studies made of the San Francisco BART system indicates BART Stations have significantly altered values and land uses or the general area."

H. J. Hughes, Director
Planning & ADP
State Air Pollution Control Board

"It is ... suggested that major highways be included ... Land transportation is critical and most influential on all developments and their support facilities."

Rob R. Blackmore, Director
Commission of Outdoor Recreation

Major Port and Docking Facilities

"... deepwater ports and docking facilities and all operations connected therewith; all on-shore docking and port facilities related to off-shore energy resource recovery operations; and bulk port and docking facilities (should) be included as part of the key facilities related to major port and docking facilities.

"... the Marine Resources Commission has been suggested as the lead agency for processing applications for the siting of major port and docking facilities. The Virginia Port Authority should be the lead agency, in accord with its legislative mandate, and be involved with the applicant's plans from the beginning to be in a more advantageous position to guide the applicant in preparing the plans for such facilities in accordance with the rules and regulations concerning such matters as prescribed by the Commonwealth and the Federal Government."

Virginia Port Authority

On-Shore Facilities Supporting Off-Shore Operations

"In this area the State must move very rapidly since time is running short. Due to valuable and extensive recreation resources and tourism of coastal areas, we feel that it is imperative to develop comprehensive plans and that the Commission of Outdoor Recreation be included in any such planning activities."

Rob R. Blackmore, Director
Commission of Outdoor Recreation

Solid Waste Disposal Facilities

"The Department of Conservation and Economic Development agrees with the general intent of House Bill 1513 introduced in the 1975 Session of the General Assembly. The bill would have given the power of acquiring land for use as a solid waste disposal site to the Department of Conservation and Economic Development for localities outside their own jurisdiction. However, such power would better be

vested in the Department of Health since that agency has greater technical knowledge concerning the development of such sites."

M. M. Sutherland, Director
Department of Conservation and Economic Development

"The definition of solid waste disposal should be broadened to specifically include energy developed from disposal of solid waste. There is already one study in Virginia on this subject and as fossil fuel prices increase, this source of energy will become more attractive."

H. J. Hughes, Director
Planning & ADP
State Air Pollution Control Board

Water Impoundment or Diversion Projects

"Long term water supply needs should be identified by the State in cooperation with localities and then satisfied by the development and implementation of plans to satisfy these requirements. Those storage sites which have been identified to satisfy long term needs should be preserved by the State for future use."

M. M. Sutherland, Director
Department of Conservation and Economic Development

Division of State Planning and Community Affairs

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Associate Director
Commerce and Resources Section

Keith J. Buttleman
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