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Smart Growth: The Duty to Supply Water to Developing Regions

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Abstract: As land development increases across the United States, concerns grow about sustaining an adequate fresh water supply. In fact, states such as Connecticut, an east coast state, where water is thought to be prevalent in comparison to many western states, are already facing water shortages as evidenced by interruptions in stream flow and other factors. Through the use comprehensive governmental action, including smart growth techniques, federal, state, and local governments have an opportunity to mitigate water shortages in states like Connecticut by integrating governmental processes and increases in scientific research.

The Duty to Supply Water to Developing Regions

We may have learned from California that electricity does not always stream at full power when the switch is flipped, but is it possible for us to believe that when the spigot is turned water might not flow? This is a dramatic way of asking whether the demand for water that comes with new development must always be met by water suppliers. Supplying water to meet the nation's growing demand for domestic, commercial, and industrial water users is surely one of the chief concerns of smart growth advocates. How smart growth planning should be shaped by the realities of water quantity is not a topic that is much discussed in New York, but recent events in Connecticut may be instructive. An examination of this topic reveals the multiple disconnections in governmental planning that plague any effort at growth management or smart growth.

Relative Rights Under the Riparian Doctrine

New York, Connecticut, and other states east of the Mississippi follow the riparian doctrine of water use. In these states, there is a type of joint interest in the water flowing in a river or other watercourse. The right to divert water from the body under the common law was defined by the natural flow doctrine, under which each owner was entitled to have the stream flow through his land in its natural condition, not materially diminished or polluted by the use of others. This gave great power to downstream users to limit the non-domestic use of water on the part of upstream riparian owners. Regarded as antidevelopment in its effect, this approach evolved into the reasonable use doctrine.

Under the reasonable use approach, each riparian owner has a right to divert water for any use that is reasonable with respect to other riparian owners. A highly textured test has been created in most states for determining what uses are reasonable in what circumstances. Some of the factors used to determine reasonableness include the social importance of the use, its economic value, and the extent of harm that the use effects. The concept of reasonableness has always been relative. When one riparian owner sues another, the reasonableness of the uses of both is at issue. Domestic uses such as bathing, drinking, gardening and household stock watering have been highly favored under riparian water law. In each state, various policies regarding the proper allocation of water sources have evolved among competing priorities with milling and agricultural uses being favored. When supplies are low, uses that would otherwise be considered reasonable may be deemed unreasonable and curtailed. Courts forced to reallocate water use during shortages tend to make their decisions based on the comparative reasonableness of uses.

Land Use Law in Connecticut

The authority to determine types, densities, and intensities of land use – the placement on the land of people, their homes, job sites, and supportive commercial and industrial businesses – has been delegated by most states to local governments. Under Connecticut law, the state’s 169 localities have been instructed to prepare plans of conservation and development, to establish zoning commissions to adopt zoning ordinances that take these plans into consideration, to create planning boards that adopt subdivision regulations and review and approve subdivision proposals, and to adopt wetlands and watercourse protection laws and subject land development activities to review by permit issuing, local inland watercourse and wetlands agencies. Conn. Gen. Stat., Title 8, Chapter 124.

All parts of the state are served by regional planning councils or councils of government that are asked to prepare regional plans of conservation and development. Conn. Gen. Stat. § 16a-26. At the state level, a state-wide plan of conservation and development is to be prepared by the State Office of Policy Management and used to guide state agencies in their affairs. Connecticut law allows for, but does not require, local, regional, and state plans to be consistent with, and based upon, one another. In practice, local land use plans tend to be out-of-date, of limited utility in shaping zoning ordinances, and poorly coordinated with regional and state-wide plans. Regional and state-wide plans tend to be too general to guide local planning and zoning with respect to deciding human settlements and business location.

Zoning and the Demand for Water

Local planning and zoning determines future water demand by creating blueprints for future development. Deciding how many people, businesses and industries will exist in the future is a function of market demand and how that demand is absorbed in zoning districts. Zoning districts allow residential developments of various

types, such as single-family or multi-family uses, and at densities that range from one single-family home for every five acres to eight, twelve, or more townhouses or apartments per acre. Since water use per family is fairly predictable, averaging between 50-75 gallons per day per person, household water consumption is directly dependent on zoning determinations of this type. Similarly, zoning allows water consuming commercial and industrial uses on the land, according to zoning district designations, at various floor area to acre ratios, again determining water demand in the process. Estimates for commercial and industrial water usage range from 1,000 gallons per day per acre to tens of thousands depending on the businesses involved.

Impact of Land Uses on the Environment

Land development brings with it a number of environmental consequences affecting hydrology. These include more impervious ground cover, less groundwater recharge, larger runoff volumes, higher peak flow rates, increased flooding, channel enlargement, and shallower flow depths in channels, streams, and rivers. Development close to watercourses can increase water temperature, turbidity, sediment concentration, and dissolved oxygen. With development comes habitat fragmentation, non-point source pollution, the removal of protective shade canopies, the deposition of organic material, and the destruction of stream banks and vegetative covers.

Water Supply in Connecticut

In Connecticut, water supply is the business of water companies. The regulation of water companies is the responsibility of the Department of Public Health. Water companies serving more than 1000 persons must submit a water supply plan which analyzes the company's ability to provide water to existing and projected new customers for a period of 50 years. See Conn. Gen. Stat. § 25-32d. Before a water supply plan is final, it must be approved by the State Commissioner of Environmental Protection.

In developing their 50-year demand projections, water companies are dependent on the plans and zoning ordinances of the municipalities within their jurisdiction. The reverse is seldom true, however. Local planning and zoning proceeds under the assumption that water supplies will be available for the full build-out projections of the town or city's zoning ordinance. In other words, there is a missing feedback loop. There is no connection between the realities of future water supply limitations and the amount or location of development provided for in local plans of conservation and local zoning. This is a serious dysfunction in a system of critical importance to all of the interests bound up with growth and resource consumption.

Connecticut policy makers are currently considering how to react to episodic interruptions of stream flow. When streams run dry, as they have recently, there are disastrous consequences to indigenous fish and other aquatic life, river recreational uses, and river-generated hydropower operations. The state-created River Advisory Committee is advising the Department of Environmental Protection that a new system of

water allocation and permitting is needed to deal with current water supply limitations. In some parts of the state water uses that have been grandfathered by state law already exceed stream flows. Anyone wishing to appropriate water for land uses that will change the rate of a stream or river's flow must apply for a diversion permit under the state's Water Diversion Act. These permits can take up to two years to receive.

The River Advisory Committee is considering how to increase and allocate water supplies so that in-stream flow may be maintained. As in the early days of the riparian system under common law, decision-makers are considering relative priorities among competing uses of surface waters. To maintain in-stream flow in the face of increasing consumption, new sources of water will be sought, conservation measures explored, more wells drilled, and, in the end, moratoria on service connections considered. Obviously, any decision to maintain in-stream flow at an established level in certain types of watercourses will limit the supply of water available for other uses. Today there is tension among a number of strongly competing uses for water such as household consumption, industrial and commercial uses, agricultural operations, recreation, riparian rights, electric generation, wastewater assimilation, and navigation.

How are these decisions to be made? In an earlier age, our society survived while the common law courts gradually made decisions regarding the relative rights of riparian users. Today, water quantity and quality are affected by such a large number of agency decisions and actions that it is necessary to determine how they can be made coherent. For smart growth to occur, our land use and natural resource decision-making system must be smart. This means that the disconnections between water regulation and land use regulation must be repaired. A variety of state agencies, including the Department of Public Health, Department of Environmental Protection, and Department of Public Utility Control are given the responsibility for regulating water suppliers and insuring the quality and quantity of water needed in the state. These agencies tend to be those charged with implementing federal water quality standards emanating from various sections of the Clean Water Act which require streams to be classified, point source discharges regulated, wetlands protected, and total daily maximum pollution load standards enforced. They do this with little or no authority over how the land is used.

The State Office of Policy Management, on the other hand, is responsible for the preparation of the state's plan of conservation and development which is to guide these and other state agencies in their endeavors. This state plan is not detailed enough to influence regional and local land use planning which proceeds along a separate path. There is little evidence of any vertical integration of development and conservation planning among state, regional, and local levels of government.

At the local level, quite often, local land use plans are out-of-date and frequently zoning laws are not properly synchronized with up-to-date plans of conservation and development. At the local level, the protection of watercourses and wetlands is delegated to the inland wetland and watercourse agency while the approval of residential subdivisions is delegated to the planning commission, in most localities.

Water companies are given the responsibility of preparing long-term water supply plans which are not considered by most local and regional plans of conservation and development.

As a whole, the “decision-making system” created in Connecticut is not sufficiently functional to deal with contemporary exigencies such as the interruption of in-stream flow and heightened water demand. Water supply planning and provision – a state function- is largely separated from the plans and regulations that determine water demand – a function of local governments. These latter plans and regulations, by and large, are made in ignorance of the realities of water supply limitations. Federal, state, regional, and local agencies that made decisions affecting water quality, quantity, and consumption are not coordinated. At the local level, agencies that protect watercourses are guided by separate standards that often conflict with the densities and uses prescribed by zoning and subdivision policies.

The science of ecology and the study of business management make it clear that for systems to operate in an efficient manner, there must be feed-back loops created that connect, integrate, and coordinate the thinking and actions of all of the system’s components. In Connecticut and New York, where the same dichotomies are evident, we have fallen far short of this ideal. Until this system is repaired, it is doubtful that sound water supply and demand decisions can be made and implemented. The State Health Commissioner in Connecticut has the authority to declare a moratorium on additional hookups or expanded water service when the Commissioner deems a water company unable to provide new services needed by developments that are proposed. Local governments that wish to grow, expand their tax bases, provide affordable housing, attract business development, and increase water consumption can be highly prejudiced if this decision-making system is not repaired. It must be made sufficiently functional so that decisions about water supply, demand, and allocation among all competing uses are made in a reasonable and efficient manner.