

## WATER IN LAND USE PLANNING

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If you fly over the mountains of Colorado, looking toward the ground you see -- everywhere -- patterns of streets laid out through trees: subdivisions! An all-too-common story is the developer who bought a section in southwest Colorado, divided it into one-acre tracts with a grid of streets -- not compatible with erosion, drainage, or topography -- and advertised nationally, but not in Colorado:

"You can own an acre of Colorado with pine trees and blue sky and nearby waters for \$2,500. You can take not one, but two, trailers or campers onto this lot. We don't have any water supply; no public sewer. You haul your water in and haul your waste out; but you'll have an acre of Colorado."

This is a bargain, no doubt; but is it right? It's land use at its worst. Not only ecologically and environmentally bad -- more often than not the purchaser is misled into costly disappointments and water is usually one of them.

But this "land rush" phenomenon is not unique to my state; it's happening in your state as well.

Yes, we do have much in common. Besides land use trends and problems, there's the Rio Grande river -- for example. I was amused at the reference in last year's conference proceedings to a sign in your State Engineer Office:

"The Rio Grande: Colorado has the water; Texas wants it, so where does that leave us?"

I realize that Colorado hasn't always been able to deliver as it should under the Rio Grande Compact, but I checked with Clarence Kuiper, our State Engineer, just before I came, and I am happy to report that Colorado is current in its water delivery to New Mexico. Furthermore, the outlook is excellent that we will be able to meet the Compact requirement again this year.

Land use planning is perhaps the most important environmental issue remaining to be addressed as a matter of public policy at all levels of government -- national, state, and local. Jurisdictional disputes between agencies within government, between the several levels of government, must be ironed out before progress on policy can be made. The question is, "who gets the major slice of the action?"

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Let us assume the jurisdictional problems were solved. We would still face the question of how to accomplish the tasks. Certainly all the tools available to public decision makers will have to be used: rules and regulations, persuasion, economic incentives, and others. As this conference theme suggests, water too may be a tool in land use planning.

I approach my task as Keynoter in the traditional engineering fashion -- break the problem into its parts, examine each, and finally synthesize toward a solution from what has been learned. Water, Land, and Planning are the three parts: water in land use planning.

The American Dream sprang from the hunger for land so deeply felt in the hearts and minds of European immigrants. It was that hunger which brought most of them to this country. The prospect of possessing land was, to them, almost beyond belief. It was a prospect of independence impossible to achieve in Europe.

My friend Norman Wengert, the political scientist, has described the American scene at the time as reflected in Jefferson's philosophy: "Those who labor in the earth are the chosen people of God. While we have land to labor, then, let us never wish to see our citizens occupied at workbench or twirling distaff."(1) To Jefferson the vast unoccupied public domain provided the opportunity for an agrarian independent life as well as insurance that the United States would never be plagued by landless mobs, such as were overrunning great cities of Europe. To him the family farm was a socio-political concept, not an economic one. To him land ownership made possible political independence and economic security. To achieve this goal, Jefferson provided in his draft of the proposed Virginia Constitution of 1776 a grant of 50 acres to every adult in full and absolute dominion. In his first inaugural address, he spoke of the United States as a "chosen country, with room enough for our descendents to the thousandth generation."

Equally important to the Jeffersonian land ethic, but not at all recognized at the time, was the equal opportunity for full and free land disposal. This right needs special emphasis because Jefferson and other agrarian leaders did not envision the conflict which was later to arise between the right to dispose of land and the stable community of which they dreamed. In their frame of reference, land transfer would occur only at death.

But a quite different pattern in land ownership has developed, one not at all stable. Unquestionably, the ease with which land can be transferred contributes to population mobility as we see it today. The stable community Jefferson envisioned could have been created only by making land transfers unattractive. But this was and still is politically unacceptable.

New Mexico and Colorado share very much a common heritage in their land settlement and development patterns. The Homestead Act, the Carey Act, and the Reclamation Act made settlement possible. Dr. Ira G. Clark,

Professor of History here at New Mexico State University, summarized the impact of these federal programs in his paper at your conference last year.

Both states are characterized by large acreages of public land, and it was toward this land that the traditional concepts of land use planning and management have been directed. There evolved a great volume of federal legislation on public lands which became known as the doctrine of protection and preservation of the land as a national heritage, and concomitantly the doctrine of development of natural resources for the greatest good of the greatest number of people.

Today the concept of public land management is changing. A new concept is evolving which might be described as the doctrine of environmental protection.

Professor Lyn Caldwell described the ecosystems approach to public land planning and management in a paper at the Western Resources Conference in 1968.(2) He pointed out that we should consider land not in small parcels, but rather in natural ecological units. But if land planning and management by whole ecosystem units becomes public policy, all land becomes to some degree public. It is this fact which we are coming to recognize and which is shaping statutory changes in every state. It is a far cry from the view of the Jeffersonian immigrants and indeed a far cry from the views held by some (not all) land speculators, subdivision developers, and the like. But change is coming rapidly, and more and more of the various segments of society are adjusting to the new doctrine.

When man's technology was simple and his demands on nature were modest, he did not cause massive and sudden changes in the ecosystem. Many of his impacts healed themselves -- some did not (e.g. salinization of the Tigris-Euphrates River Valley). Some changes, like forest clearing in western Europe, substituted a new stable ecosystem for the original. But the science and technological explosion coupled with the population explosion of the modern era have put the matter in a new and more serious light. Ecological stability becomes an imperative.

Regardless of historical distinctions between public and private land, the exercise of eminent domain, land use zoning, and tax delinquency sales remind us that there is public jurisdiction over land, and it is not confined to land only in public ownership.

To adjust our land use policies to ecological stability will force a complete transformation in the U.S. political economy. Land owners will lose some rights, but gain some protections. Controversies over land use will be settled on ecological facts as much as on statutory facts.

The application of ecological concepts to land use forces major adjustments in the philosophy of land as a commodity. Private possession of land under ecological ground rules is possible, but the freedom to buy,

sell, or transfer land must be somewhat compromised. Traditional land economics, so deeply rooted in American life, are becoming increasingly inconsistent with the interests of a large majority of citizens who live in cities, own no land, and do not, therefore, now hold sacred the tradition of full and unconditioned land ownership.

So much for land; now let me turn your attention toward water for a moment.

It's truly amazing how rapidly concepts change. Only twelve years ago at the Western Resources Conference in 1960, Ted Schad spoke about water resource policy.(3) At the time he was Staff Director of the Senate Select Committee on Water. At the present time he is Executive Director of the National Water Commission, busily engaged in preparing a final report on the nation's water problems and goals as identified by the Commission. He said, in 1960, "One aim of water management which has been accepted as a Federal responsibility is reduction of loss of life and property caused by recurring floods... So long as human encroachment on the natural flood plains continues to increase the flood hazard, engineering works alone cannot be effective, and, therefore, present programs need to be supplemented by other public action." Clearly flood plain regulation was a first step toward comprehensive public control over land use. I doubt if widespread, serious thought was given to using water as a tool to control land use in 1960.

But in 1969 Dr. Ernest Engelbert told the Third Western Interstate Water Conference that water is an important vehicle for planning and guiding the course of physical and economic change.(4) "At present water is too narrowly viewed as a facilitative resource for making growth possible--whether it be for the purpose of adding acres of unneeded crops, of increasing population in metropolitan areas already suffering congestion, or of building additional structures on a stream which is overbuilt. This is a philosophy which lets unplanned growth determine the course of development, when what is really needed is a system of water development that results in planned growth."

It is painfully clear to us in New Mexico and Colorado that water has a crucial impact on growth, on distribution of population and industry. People go where the water is, or if they over-expand beyond available water, they import it. That is our experience in Colorado where the eastern front range strip centering on Denver has virtually outgrown its water supply. Long ago the people reached across the Continental Divide to the Colorado River for new water. The population trend forecasted by the Colorado Environmental Commission in its final report to the Legislature, dated March 1972, suggests that urbanization in the front range will capture 90% of the State population, 60% being located within the Denver metropolitan area, and the balance north to Fort Collins and south to Pueblo.(5) The reasons why this compaction of population into a small area occurs are complex and not fully clear to me. It has something to do with the desire of people to live in that particular region and also something to do with economic opportunities and amenities of life. Whatever the reasons, growth is clearly made

possible by availability of water. It is logical to ask, then, could not concentrated growth be discouraged, if not prevented, by unavailability of water?

Now a very brief word about planning.

The lessons of recent years have shown us that water development and management need to be planned in the context of a total system. Entire basins have to be planned and managed as integrated units taking account of both ground water and surface water. Efficiency in water use and recycling are becoming standard guidelines to an optimized plan. The most difficult planning task of all, however, is to educate and persuade the public to make policy decisions in a systems framework parallel to the management system. Legal, institutional, and traditional barriers exist which have to be breached. We have to be more creative in the methods which are employed to present complex water issues to the public for citizen decision making.

Citizen participation in decision making has come to be a subject of intensive thought and discussion. Perhaps no group has been more cognizant of this issue than the League of Women Voters. Speaking at the 1969 Western Resources Conferences, Mrs. Donald Clusen, who is with us today and will speak later, listed several characteristics of good water planning which would insure citizen participation and especially consideration of social benefits during the decision making process. (6) She emphasized attention to alternatives for consideration by the public and the importance of generating public interest in the alternatives. People should have the opportunity to discuss the choices and voice their preferences before final decisions are made. She correctly pointed out that public participation can be possible only if planners place before citizens the choices to be made, the objectives to be reached, and the results of the alternative actions long before any decisions are made.

Now, having examined our conference theme by its parts -- Land, Water and Planning, can we synthesize toward a conclusion about water in land use planning? I have tried, and I must confess that I cannot. I just do not know enough about the interactions which would occur when the three parts are brought together. But I don't feel too badly because I have not found that others have succeeded in such a synthesis either.

So, I turn to experience. What lessons are to be found in my own limited experience?

In my own city of Fort Collins, in the 1950's, city policy was to refuse water service outside its limits. By 1960 rural service districts were being formed and requested the City to provide treatment and delivery. They were rejected. The City attitude was that a rural district couldn't successfully be organized. But they were, because water was available. Five districts now surround the city; when the city limit expands into these districts, it means no end of trouble.

Denver tried a blue line concept long ago -- the result was an awesome array of governmental entities surrounding the city and endless intergovernmental conflict. Again, water was available.

Boulder, in recent years, has combined a blue line concept with a determined county zoning policy and a strong system of building permits to control land use. This combination seems to be working reasonably well.

Experience -- yes, sad experience -- is leading toward statutory provisions which add water into land use controls.

The Colorado General Assembly is right now considering two subdivision acts which attempt to identify and clarify subdivision control responsibility at various levels of government and use water and sewage as tools. Further, there is an attempt to limit ground water extraction in subdivisions because the accumulating effect of many domestic wells is damaging existing water rights. If these measures are passed, new domestic wells will require a permit and State Engineer review. These bills are very much like your SB 39, which I understand failed to pass the New Mexico Senate recently.

These experiences and observations all point toward water as one of the tools available in the construction of orderly land use practices and policies. Just how that tool best can be used remains to be seen. Perhaps this Conference will shed further light on that question. It deserves the most serious attention of all of us: water user, environmentalist, water planner and manager, natural resource professional, and layman citizen alike.

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