

RATIONALIZING ENVIRONMENTAL CLEANUP

In the difficult economic environment of the 1990s, rational, common sense approaches are needed for determining when and how environmentally contaminated sites should be cleaned up.

by Maurice Freedman, CRE

There is no question that the lives of those who establish the potential developmental value of tracts of land have become extremely complex over the past several years. In determining the "highest and best use" of land, we must consider not only traditional market and zoning variables but also the rapidly eroding "matter-of-right" for the legal use of the land itself. In a sense, the regulatory climate governing the use of land is in transition. The ultimate determination of land use is coming increasingly under the aegis of regulators and the community, rather than remaining solely at the discretion of the landowner. Although this shift in control is often difficult to reconcile with our society's assumptions about the vested rights of the landowner, it is a reality nonetheless. It is this author's opinion that, with the heightened public awareness of often legitimate environmental concerns, individuals' property rights will continue to erode in the foreseeable future, and this erosion will complicate the tough economic realities of the 1990s that confront both developers and the communities in which they strive to build their projects.

Environmental Trends

In forecasting the developmental potentials of a large tract of land over time, the rules by which the development game is played are not static but, in fact, are ever changing. Thus, the pursuit of the highest and best use of land is much like duck hunting: in order to hit the target, one must establish an adequate lead and shoot at a point where it is hoped both the bullet and duck will converge. To establish such a lead in development planning, one's finger must be on the pulse of the regulators and the community-at-large not only to learn what their attitudes are now but to anticipate accurately what those attitudes are likely to be six months or a year or more in the future.

Another reality one must acknowledge is the universality of the environmental movement. Stringent wetlands regulations, initiated in Massachusetts in the late 1970s with the Hatch and Jones Acts, have been adopted in almost every other state, and many of these same principles have been mirrored in federal wetlands regulations. A review of two decades of regulation governing the alteration of wetlands clearly shows a pattern of escalating stringency: first allowing reasonable use, then use for only limited purposes, then no use and finally no use of wetlands *and* a substantial fringe buffer zone of uplands surrounding the wetlands. Today, serious discussions are underway to decide whether to restrict the use of uplands which some day *might* become wetlands as ocean tides rise due to global warming.

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Other espoused concerns of the populace, such as "preserving the character of the community" or NIMBYism (not in my back yard), also are eroding the rights of property owners. Jack Kemp, Secretary of the U.S. Department of Housing and Urban Development, recently has documented the inordinate cost and time burdens associated with often redundant and sometimes extremist environmental regulations and the degree to which these regulations interfere with the attainment of another vital social goal—"affordable housing."¹ In spite of this governmental outcry, it is unlikely that current trends will change significantly.

Hazardous And Toxic Wastes

An even greater threat dwarfs all other concerns about the economic use of land: the financial liability that even an innocent landowner assumes with the purchase of property contaminated by one of the numerous substances on the U.S. Environmental Protection Agency's (USEPA) long list of hazardous materials.² With the invention and widespread use in the 1970s and 1980s of the atomic mass gas chromatograph spectroscope and other state-of-the-art technology, it has become possible to detect minute traces (parts per billion) of substances that may (or may not) be harmful to mankind. Proving with any degree of scientific certainty that a causal relationship exists between the presence of certain substances and the degradation of community health is often difficult, if not impossible.

Federal and state legislation labels trace amounts of certain substances as harmful and makes the landowner financially responsible for cleaning up those substances (even if the landowner in no way contributed to the presence of the hazardous or toxic substances or even knew about it at the time of purchase of the land).³ It is now possible for the USEPA and state environmental regulators to legally attach *any* of the assets of the landowner as security for the cleanup costs, even if these costs are many times the value of the real property itself.

As the truly staggering costs of cleanup operations are becoming apparent, some members of the scientific community, cognizant of the need for reasonably and rationally prioritizing scarce financial resources, are suggesting that a healthy dose of common sense could save tens of millions of dollars, and permit dollars spent on costly cleanup operations to be reallocated to more urgent needs of much greater community benefit.⁴ In the highly publicized Woburn case, which USEPA's regional administrator Julie Belaga called "the single largest settlement in the history of the Superfund cleanup program," a \$69 million commitment was made by W.R. Grace and three other companies to an effort for purifying groundwater on a contaminated site which could take 20 to 50 years.⁵ However, what public health imperative justifies an attempt to purify the groundwater in Woburn, which has been ably and amply served by other water sources since the groundwater contamination was identified in 1979? Further, since Metropolitan Boston, a region which includes Woburn, enjoys over 40 inches of rainfall annually and

can readily serve its static population from the Metropolitan District Commission's (MDC) chain of surface reservoirs, what is the anticipated future use of Woburn's purified aquifer 20 to 50 years hence? Since the MDC is presently contemplating costly water treatment facilities which could be far more rapidly amortized by a larger usage base, it would be much more cost effective to connect to the MDC system those homes in Woburn which, previously had obtained their potable water from municipal or private wells rather than spend \$69 million to clean up an aquifer which is not vital for meeting the needs of the community. The MDC system could provide Woburn with totally safe water supplies well into the 21st Century. Because of MDC's clearly demonstrated water conservation methods and the reduction in demand for its water supply from the state's declining industrial base, MDC's reservoir supply should be adequate for the foreseeable future.

Rationalizing Groundwater Policy

Hydrogeologists acknowledge that, while the contamination of groundwater is an extremely slow process (migration of the pollutant plume in the ground is often calculated in terms of only a few dozen feet per decade), groundwater pollution, once it occurs, is virtually irreversible. It is unfortunate that the American society, through decades and centuries of carelessness, has despoiled most groundwater resources in its urban areas. However, it is futile public policy to risk using inherently unsafe urban groundwater or to undertake costly, and no doubt fruitless, efforts at its cleanup.

Nineteenth century visionaries in cities such as New York and Boston anticipated problems with groundwater. By securing, in perpetuity, tens of thousands of acres of rural land and committing them exclusively to watershed protection, these visionaries created systems that would assure adequate and safe water supplies for their cities' rapidly growing populations. It has long been the position of this author that, in rural areas, where groundwater supplies may be significant and uncontaminated, it is not only vitally important but also practical to establish regional aquifer protection districts that will ensure the quality of critical water resources.⁶

Recently, the New Jersey Department of Environmental Protection (NJDEP) classified its groundwater resources into four categories. The lowest category, Class IV, covers extensive, already contaminated urban and industrial areas with groundwater that is not fit for human consumption and that generally is of poor quality. NJDEP prohibits use of Class IV groundwater for at least 50 years, thereby curtailing futile and costly attempts at its cleanup.⁷ It is hoped that such practical and cost-effective solutions will become much more widespread over time.

Rationalizing Priorities For Site Remediation

Privatization of site remediation, which allows licensed and highly qualified geotechnical firms to undertake the cleanup of contaminated sites, will

reduce dependency on overworked and bureaucratic government officials and offer the opportunity for rapid, creative and cost-effective solutions to remediation of contaminated sites. The decision to permit private sector intervention occurs during a process known as "risk assessment". This process is performed after rigorous three-dimensional investigation of the site soils and groundwater by excavations, borings and chemical and biochemical analyses to determine the extent and causes of pollution and the specific nature and concentration of the contaminants. Once these basic facts have been ascertained, it is vital for the environmental scientist and the real estate counselor to explore the interplay between projected site cleanup costs (such costs are never known until the work is complete) and the value of alternative potential land uses. It is necessary for both parties to engage in a free-flowing, give-and-take discussion and determine creatively the true highest and best use of the land in such complex cases. The participants in this exercise must be highly qualified and seasoned experts in their respective fields, and they must be able to provide sound judgments and reliable, if rough, quantifications of cost and value relationships so that a reasonable and appropriate strategy for land use can be established.

Many real estate investors are aware of horror stories concerning the zillions of dollars spent for remediation. The costs of remediation in fact range from the simply modest to the truly horrendous, and they depend largely on the nature and degree of contamination. For example, costs for air stripping of certain petroleum volatiles often are in the range of a few thousand dollars per acre; costs for cleaning up high concentrations of toxins such as cyanide, polychlorinated biphenols or mercury, which typically entails the removal and detoxification of the soil and groundwater, can run to tens of millions of dollars per acre. Costs of remediation also depend on the nature of the land use. The residential land use category demands the highest level of remediation, but an alternative land use, such as certain industrial and commercial facilities, may require only that the soil be sealed with an impervious membrane or a layer of clay.⁸

An innovative method of remediation was utilized by the Hackensack Meadowlands Development Commission to deal with a noxious and odorous landfill in the infamous New Jersey Meadowlands. In this case, the landfill was "turned into fields of wildflowers after the ground was covered with a synthetic liner made from recycled bottles".⁹ The commission presently operates a trash museum and environmental center immediately adjacent to this once detested landfill.

Conclusion

As a society, we are facing limitations on our financial resources. The mounting national debt, now above

\$3 trillion; increasing worldwide economic competition from the European Community and the Pacific Rim nations; failures of major banks and diminishing governmental support for all sectors are some of the unpleasant realities with which we must grapple. With the increase in our environmental awareness and the discovery of greater than formerly realized soil and groundwater contamination, we, as a nation, must set rational priorities for our environmental cleanup efforts. It is essential to:

- protect uncontaminated groundwater by establishing regional groundwater protection districts
- acknowledge hopelessly contaminated or unsafe urban groundwaters and write these off once and for all (or until technological advancements make their cleanup economically viable)
- intensify research into techniques for cost-effective groundwater and soil decontamination when the chemistry of the responsible pollutant or the particular situation are appropriate for remediation
- establish protocols for appropriate land uses on sites with contaminated soil and groundwater
- encourage the licensing of qualified professional firms to carry out remediation efforts economically and efficiently

A Word Of Advice

As a real estate investor or analyst, do not be frightened or intimidated by the need to address rationally and practically ever more difficult and complex land valuation situations. Make sure that you have highly qualified, practically minded and experienced scientists and professionals to help you with the tough business decisions and tradeoffs which you, of necessity, will be facing now and in the future.

NOTES

1. Kemp, Jack. "Free Housing for Environmental Slobs," *The Wall Street Journal* (July 8, 1991): A8.
2. U.S. Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and revised Resource Conservation and Recovery Act (RCRA) legislation in 1980 and 1984, respectively.
3. Dumanski, Dianne. "Four Companies to Pay \$69m for Woburn Cleanup," *The Boston Globe* (July 9, 1991):1, 6.
4. Travis, Curtis C. and Day, Carolyn B. "Can contaminated aquifers at Superfund sites be remediated?" *ES&T* vol. 24, no. 10, 1990.
5. Dumanski, "Four Companies to Pay," 1, 6. *The Boston Globe*, July 9, 1991.
6. *New England Real Estate Journal*, April 17, 1981. "Water Shortage" Freedman, Maurice.
7. "A Ground Water Strategy for New Jersey", New Jersey Department of Environmental Protection, Division of Water Resources, NJ, 1989.
8. Kurz Associates, Inc., of Bridgewater, MA, reports a site in Braintree, MA, where an artificial leather manufacturing facility on several occasions had released methyl ethyl, ketone and other hydrocarbon and chlorinated compounds. Proposed residential reuse of the site would have required extensive soil removal and groundwater treatment. However, commercial development requires only that the area be sealed and blacktopped.
9. Smith, Ruth Bayard. "Lessons Taught in Trash," *The Boston Globe* (July 15, 1991): 2.