LaRouche: Infrastructure Gives Nature A 'Helping Hand' Against Drought

by Marcia Merry Baker

As of October, more than half of all American counties—1,650 out of a total of 3,141 in the nation—have been officially designated as economic/weather "disaster areas" by the Federal government, mostly due to drought. **Figure 1** shows the pattern of drought-stricken areas: Hardest hit are the lands west of the Mississippi River, and even the Eastern Seaboard areas show lingering effects of prolonged drought, despite the rainfall of recent weeks.

However, the lesson from the current drought disaster episode is *not* that weather happens, but that water and land-management infrastructure-building must be resumed. Were all the projects for geo-engineering (dams, water diversions, etc.), planned as of 50 years ago, carried through, we would not now be seeing the devastation to the land and the economy affecting vast parts of the United States, Canada, and Mexico. Many projects ready-to-go as of the 1960s were shelved during the so-called "post-industrial" years. As population grew, water and land systems were not improved and maintained accordingly, so that vulnerability to so-called "weather" disaster was increased.

Lyndon LaRouche, in his campaign for an emergency anti-Depression, infrastructure-building program, stresses the principle involved in his article, "Science and Infrastructure" (see *EIR*, Sept. 27): "Now, since the scale of man's impact on what are called 'natural resources,' has become relatively large, especially when compared to the situation during earlier centuries, it were inevitable that mankind must now think of giving a helping hand to those planetary abiotic and living processes of our Biosphere. . . . We must do things in the sense of making the deserts bloom, and must apply principles of public sanitation in a richer sense than during earlier generations.

"In this vein, we must consider what has been termed 'basic economic infrastructure,' as the relatively 'hard' form of basic economic infrastructure, as man-made improvements in the Biosphere. This includes nationwide and continental systems of transportation, regional systems of integrated generation of power, national and

FIGURE 1

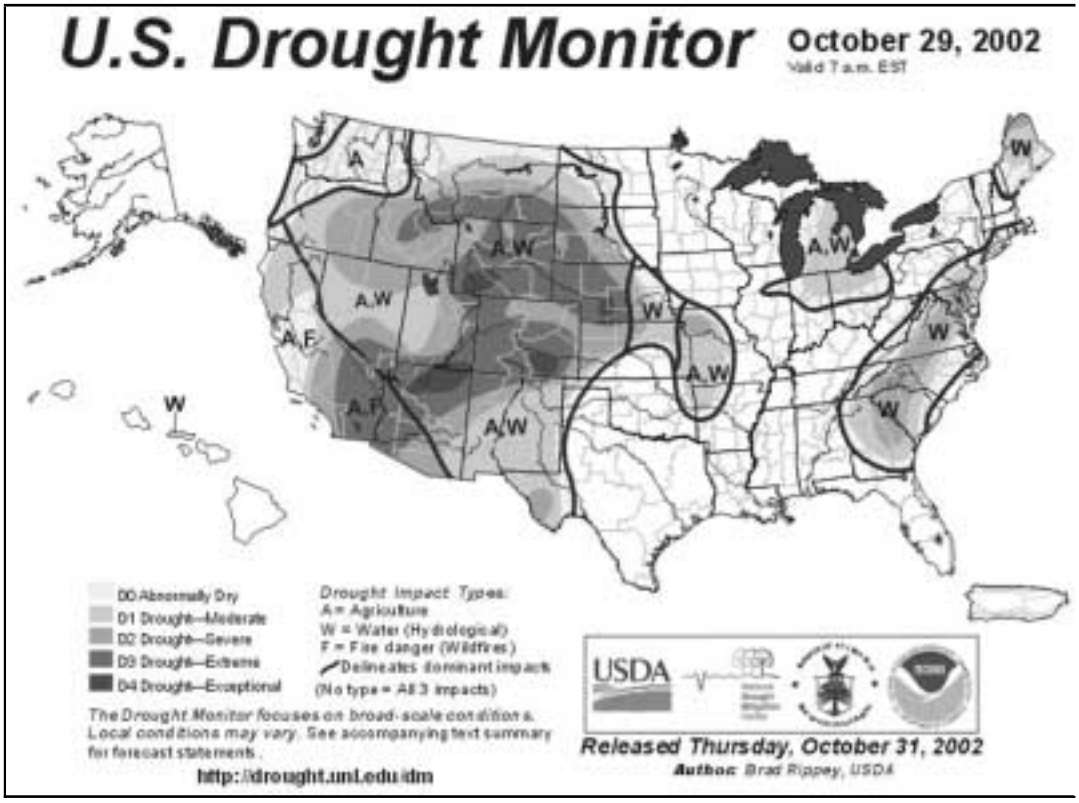
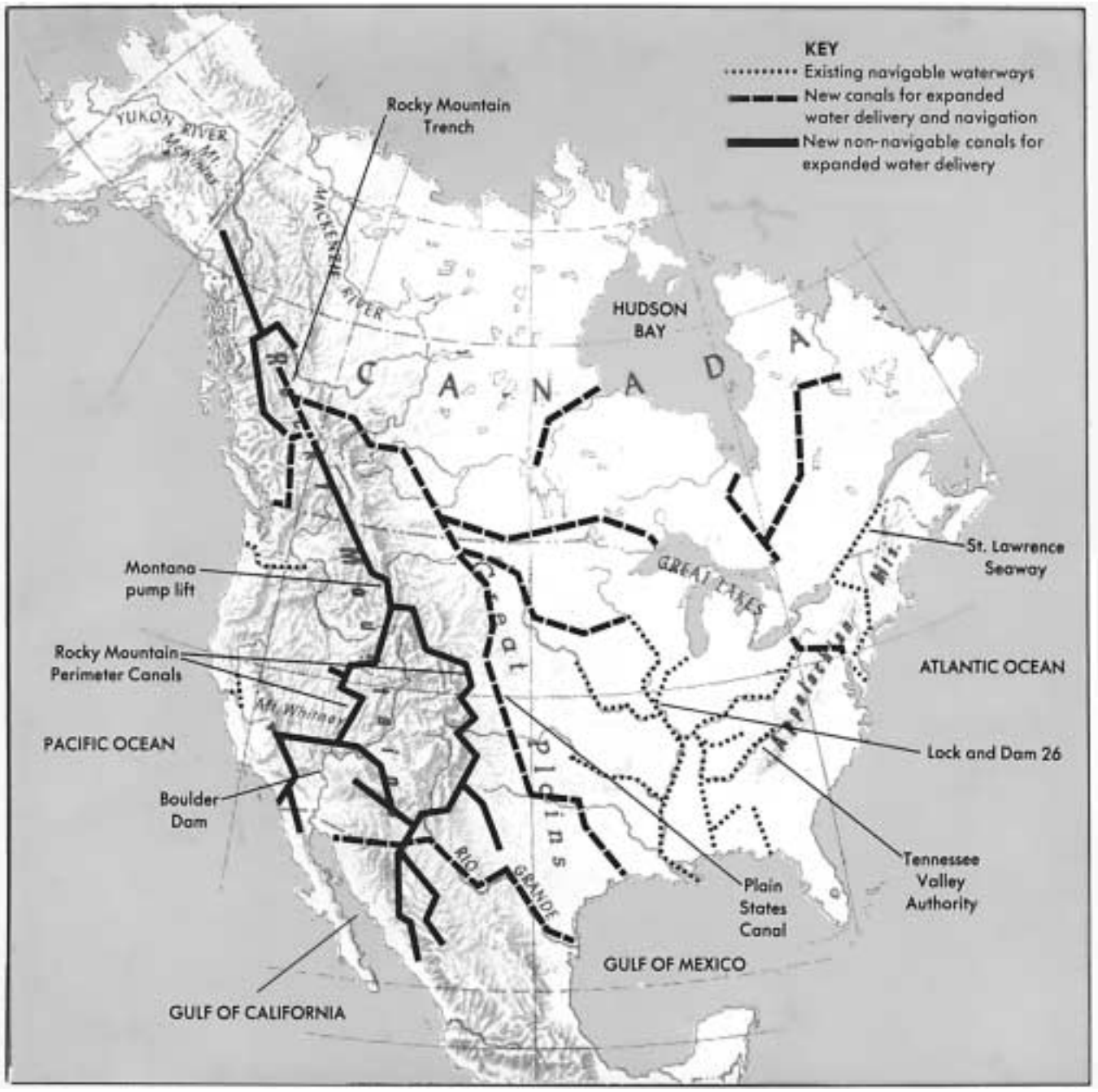


FIGURE 2

The NAWAPA Plan for Bringing Additional Fresh Water to the United States, Canada, and Mexico



international systems of water management, extensive systems of land reclamation and maintenance, and the rational design and management of cities and the relationship of urban life to, and integration with countryside of field, mountains, and forests."

Continental Water Geo-Engineering

A priority continental-scale project, first conceived 50 years ago and still more demanded by today's scale of drought throughout the nation's western half, is the North American Water and Power Alliance (NAWAPA), shown in **Figure 2.**

Contour terraces in Kansas; the intelligent use of water and anti-erosion practices in agriculture is no product of post-1960s "environmentalism," but of the Soil Conservation Districts and organized practices of the now-underfunded, 1935 Soil Conservation Act.

While large in scope, the engineering idea is simple: re-direct southward some 15% of the flow of the MacKenzie River system, currently going north to the Arctic. Make use of the natural-wonder Rocky Mountain Trench in British Columbia, and south of that, build water channels. The whole requires only one lift-pump system, in Montana.

Overall, NAWAPA would add, besides significant hydropower and navigation routes, at least 20% to America's water supply—an addition of some 135 billion gallons per day (bgd)—and add greatly to Canadian and Mexican supplies as well. The arid western regions of all three nations would be directly aided by "creating" new water supplies from NAWAPA.

Here are the specifics. In all of North America, annual precipitation amounts to an estimated average of 4,200 bgd. Of that, about 1,200 bgd reaches the 48 states, where man's intervention over the past 200 years has directly increased what water engineers call the "average dependable supply of runoff." In recent decades, this dependable supply has totalled about 515 bgd for the United States. It is not a fixed figure, but the result of all kinds of water management improvements, especially the dam-building of the inter-war period—the Grand Coulee and the Hoover Dams, the Colorado River development, the Tennessee Valley Authority, and the post-war California Water Plan (adopted in 1957).

As of the mid-1960s, the United States had a "budget surplus" of water. Its population of 190 million people then used about 308 bgd, which was 60% of the average dependable supply of 515 bgd. But today, 280 million Americans require easily 590 billion or more. The new "NAWAPA" water is essential.

Another source of "new" water is illustrated by the artist's rendering of a seawater desalination plant. Cheap, plentiful electricity is the precondition for large-volume water desalination, and the modern, "fourth-generation" high-temperature, gas-cooled nuclear reactor designs are ready to go. The illustration here shows what could be done for the arid southern California region, by nuclear-powered desalination on the Pacific coast.

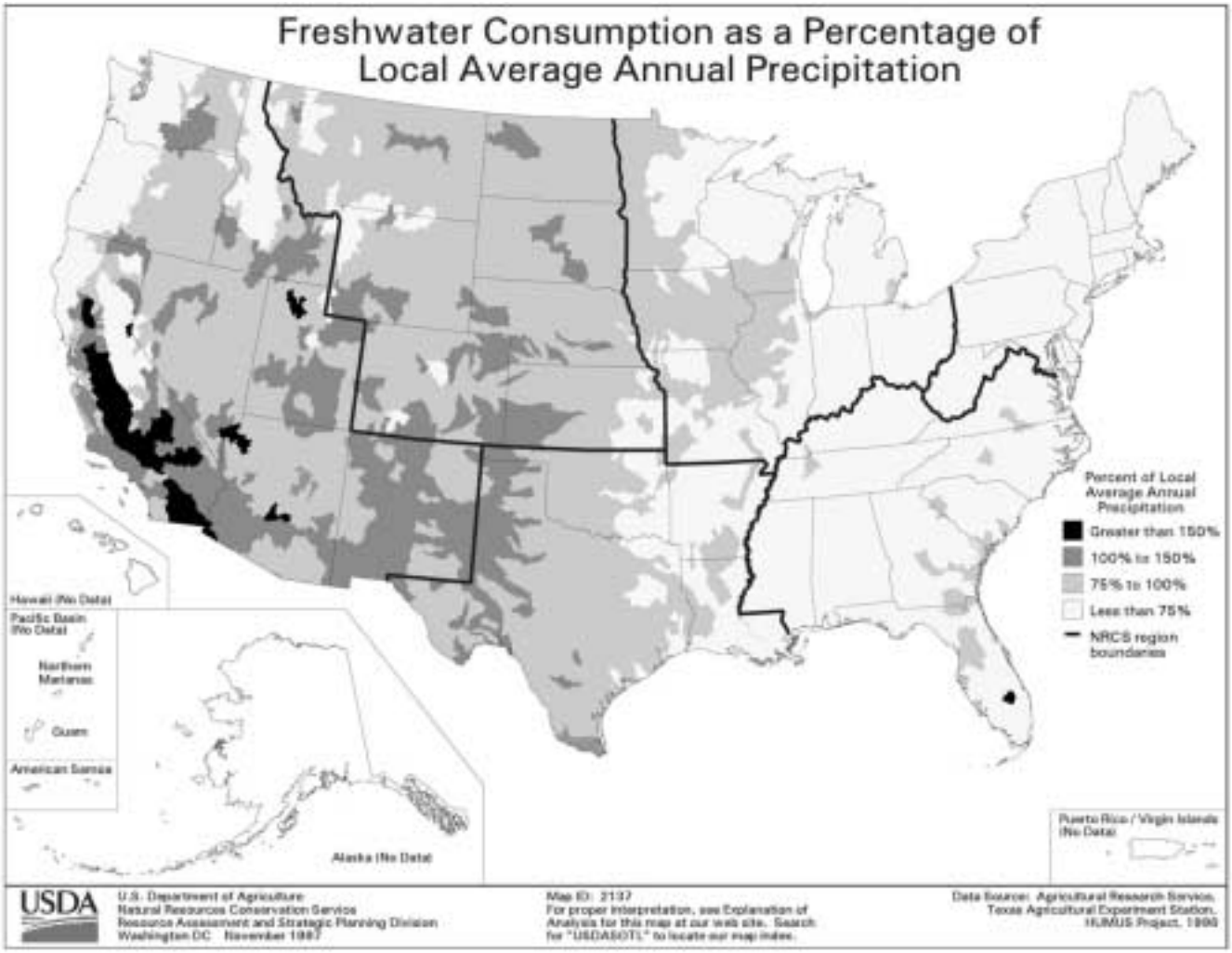
Reclamation: The 'Soil Conservation District'

Hand in hand with water management goes land management. Vast parts of the Western states today are suffering conditions even worse than the famous 1930s Dustbowl, because of the lack of water infrastructure building and land care over the past three decades.

Figure 3 gives a snapshot of land and water concerns today. Begin with the region west of the Mississippi River. There, in much of the high

Artist's depiction of a seawater desalination tower.

FIGURE 3



Source: U.S. Department of Agriculture.

plains and Western states, 75-100% (extensive light shading) of the average annual precipitation is being consumed (for all uses—agriculture, industrial, residential, generator-cooling, etc.); in some areas, over 100% (darker shading); and in much of California, over 150% (darkest shading). Such areas are using "imported" water from other regions, and drawing down underground aquifers. But even in an area where water demand is at the 75-100% share of annual precipitation, this means trade-offs and competition for water. The common threat to soil here is wind erosion, as in the classic Dust Bowl period of the 1930s. Also, salinity is destroying soil fertility in many locations.

In most of the Eastern states, consumption of water is under 75% of average annual precipitation; however, the map shows there are a number of exceptions. Moreover, because water and land infrastructure has not been fully developed, sheet and rill erosion, common in humid conditions, is still a threat.

The map makes very clear why launching the large-scale projects is essential, which means unleashing the Army Corps of Engineers, and Federally-directed private construction drives, etc. But it is additionally required to reinvigorate the unique U.S. institution of *soil conservation districts.* These are a web of some 2,650 locally bounded districts, spanning much of the 18 major drainage basins—with 160 principal rivers, and 2,200 watersheds, of the continental United States. Under President Franklin Delano Roosevelt, and his Agriculture Secretary Henry Wallace, the Soil Conservation Act of 1935 was passed, initiating the creation of local entities, working in collaboration with the U.S. Department of Agriculture,

and state water and soil experts, to decide on, and implement appropriate kinds of local interventions to improve and maintain their specific resources base of land conformation, soils and water. Over the decades, the methods included contour farming, ponds, terracing, underground drainage, windbreaks, and others.

The purpose is expressed in the Act itself, which states (from 49 U.S. Statutes at Large 163): ". . . [I]t is hereby recognized that the wastage of soil and moisture resources on farm, grazing, and forest lands of the Nation, resulting from soil erosion, is a menace to the national welfare and that it is hereby declared to be the policy of Congress to provide permanently for the control and prevention of soil erosion, and thereby to preserve natural resources, control floods, prevent impairment of reservoirs, and maintain the navigability of rivers and harbors, protect public health, public lands and relieve unemployment; and the Secretary of Agriculture, from now on, shall coordinate and direct all activities with relation to soil erosion and in order to effectuate this policy."

Today the soil districts cover half of all the privately owned land in the country. There have been marked results. One demonstration project was started in Coon Valley, Wisconsin, which is located in a region called the Driftless Area. The 1920s Coon Valley soil erosion rate was estimated to be nearly 15 tons per acre. But by 1992, the rate was down to just over 6 tons per acre. Moreover, this improvement occurred despite the changeover of cropping away from small grains (wheat, oats, barley—which normally have a lesser erosion rate), to row crops (corn, sorghum, and others—which encourage higher erosion).

Thus, for over 60 years, the Coon Valley remains a very productive agricultural area. Among the practices introduced were contour tillage (illustrated in the photograph), stripcropping, and terracing; also use of no-till (ploughing only every few years, and otherwise using seed-boring, and herbicides) and other forms of residue management practices. In recent years, some land was also taken out of farming (in the Conservation Reserve).

However, this kind of improvement process has been counteracted over the past 30 years by underfunding, and by the imposition of the *anti-improvements* view—presented under many guises, such as back-to-nature, or "free markets." In 1937, some $463 million was appropriated to the Agriculture Conservation Program and Soil Conservation Service. Today, the equivalent public funding level would be around $5 billion a year, but barely half of that—$2.2 billion—was the annual expenditure norm in the late 1990s. This accompanies drastic cutbacks in the Army Corps of Engineers' mandate, and in funding for water infrastructure projects.

Launching long-overdue large-scale water management projects—such as the North American Water and Power Alliance—reinvigorating the Soil Conservation Districts, and unleashing the Army Corps of Engineers, can literally create new "natural resources" of land and water.