

‘MAKE THAT WHICH IS REASONABLE, POSSIBLE’

## U.S. and Mexico: Cooperate On Great Water Projects

by Dennis Small

The mass “removal” of Mexicans from the United States went into high gear in 2007. The total number deported and otherwise expelled will probably total over a *half million* for the calendar year, with some Mexican government advisors reporting that as many as *1 million* adults will be shipped back across the border in 2007, leaving *100,000* abandoned children behind—many of whom are U.S. citizens who were born in this country. There are currently some 13 million Mexicans residing in the United States, about half of them illegally.

The mass expulsions and attendant round-ups, raids, and media-induced xenophobia, are a massive human, economic, and social catastrophe in the making—courtesy of the “pro-family” Bush Administration, and the predatory financial interests behind it.

These hundreds of thousands of Mexicans are being deported back to a country they fled as economic refugees, because they were unable to scratch out a living for themselves and their families under the policies of globalization and free trade which were imposed on Mexico and which shattered that economy. They are being hunted, herded, and shipped back, like so much human cattle, to a country devastated by the lack of water projects and other basic infrastructure—as seen in the recent massive floods in the southern state of Tabasco—a country where the free-trade policies of the last 25 years have created a 50% real unemployment rate, a 30% plunge in real per-capita consumption, and plummeting food production, which threatens the very survival and sovereignty of the nation.

As Lyndon LaRouche put it in a recent discussion with members of his youth movement in California:

“The population [of Mexico] has grown somewhat, but it’s extremely poor. They’re pushed across the border, to come up here and work at virtually slave labor! As expendable human beings! And the minute they don’t need their labor, you

find out what expendable is. . . . Now, you have this great problem, here in the United States. The racists are starting to move on this thing—big. And it will tend to get bigger. . . . Why do these people come here? They had no other place to go! They were driven here—like cattle! To work as virtual slave labor in the United States. Sixteen people sleeping in a room, or something, that kind of stuff; or working on a slave job to try to squeeze some pennies to send back across the border.”

This is hardly LaRouche’s first warning about the looming catastrophe.

In September 2007, this magazine reported that the exploding U.S. mortgage crisis was leading to a sharp drop in remittances sent home by Mexican workers in the United States—about 20% of whom are employed in construction. *EIR* documented the wave of layoffs already hitting this layer, and warned that “the worst is yet to come.”

Seven years earlier, in December 2000, LaRouche had written that the coming “demise of the importer of last resort,” the speculatively inflated U.S. economy, would lead to a dramatic reversal of the export of goods *and labor force* to the United States, by desperate Third World nations.

Three decades ago, LaRouche had already exposed these fascist policies, in a 1976 half-hour national television address, in which he warned of the existence of the genocidal “Paddock Plan,” in which the Kissinger-allied agronomist and government advisor William Paddock was calling for Mexico’s population to be *cut in half* by the end of the century, and to “close the borders and let them scream.”

That is exactly what is now happening: The Paddock Plan has become reality. The United States is implementing a policy of genocide toward the nation of Mexico, and against Mexicans residing in the United States.

But worse than what we are doing to millions of Mexicans, is what we Americans are doing to ourselves: We are al-



USDA/Jeff Vanuga

*Irrigation in Yuma, Az., shows the kind of modern agriculture that could be used in Mexico, once water problems are solved by great projects long under discussion, but never implemented.*

lowing ourselves to become as beasts, in our treatment of others in this fashion. This is *not* the “beacon of hope and temple of liberty for all mankind” of which the Marquis de Lafayette so eloquently spoke.

### An Exemplary Relationship

There is, of course, a better way—but it certainly has not been found or promoted by any of the Democratic or Republican Presidential candidates, to date.

For that, they will have to turn back to the words of U.S. President Franklin Delano Roosevelt, who on April 21, 1943 stated in a visit to Monterrey, Mexico:

“Mexican farm workers, brought to the United States in accordance with an agreement between our two governments, the terms of which are fully consonant with the social objectives we cherish together, are contributing their skill and their toil to the production of vitally needed food. . . . It is time that every citizen in every one of the American republics recognizes that the Good Neighbor policy means that harm to one republic, means harm to every republic.”

And today’s political leaders will have to turn to LaRouche, who for three decades has been promoting U.S.-Mexican relations based on cooperation around great infrastructure development projects, including large-scale water, rail, and energy projects (see, for example, “Vernadsky and the Biogeochemical Development of the Great American Desert,” *EIR*, May 9, 2003). Exemplary are Mexico’s PLHINO (Plan Hidráulico del Noroeste, or Northwest Hydraulic Plan) and PLHIGON (Plan Hidráulico del Golfo Norte, or Northern Gulf Hydraulic Plan), and the giant NAWAPA (North American Water and Power Alliance), a plan which

provides for the transference of vast quantities of fresh water from Alaska and Canada’s Arctic rivers, down through the western part of the United States and into northern Mexico.

All three projects were initially proposed and designed from an engineering standpoint back in the 1960s, but they were placed on the back burner (at best) during the last 40 years of economic policy insanity which has swept most of the planet.

All three projects, however, were put back on the *front* burner at a conference held on Nov. 9, 2007 in the state of Sonora, Mexico, where LaRouche’s analysis of the global financial crisis and its solution through a new world system based on projects such as these, was at the center of the deliberations. The gathering brought together some 600 attendees, including a number of federal senators, the state’s governor, and local officials, farmers, and engineers, reflecting the determination to fight which is now sweeping Mexico (see article below).

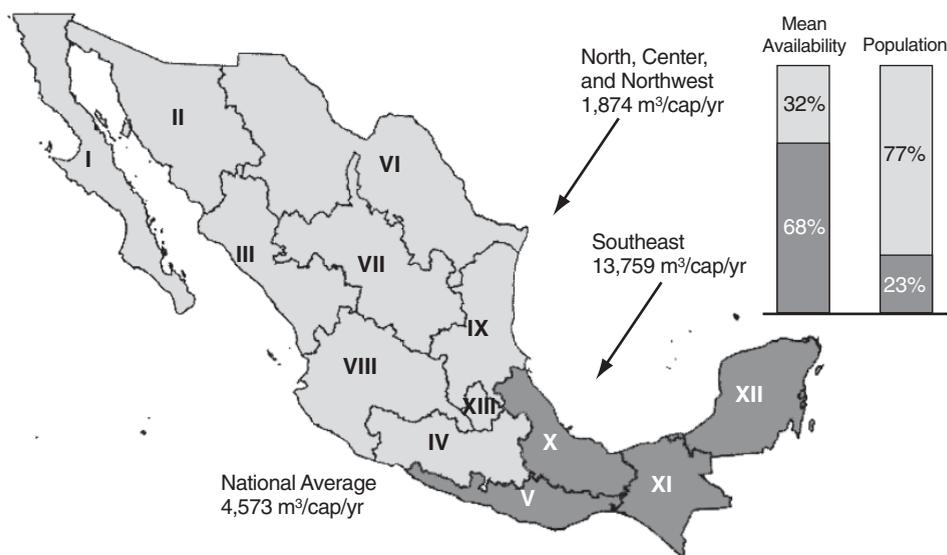
The composite picture which emerges, which we detail below, is of an integrated NAWAPA-PLHINO-PLHIGON project, which we here dub “NAWAPA-Plus,” which will be built in stages over a 30-year period, and which will produce stunning results such as:

- **Water:** It will increase Mexico’s freshwater withdrawals by nearly 70%, from today’s 77 cubic kilometers (km<sup>3</sup>) per year, to 140 km<sup>3</sup>, for use in industry, households, and agriculture.
- **Irrigated Land:** It will add about 5 million hectares of new irrigated land to the 6.5 million that currently exist in Mexico—a 75% increase.
- **Food:** It will increase food production dramatically: Grains, for example, will eventually rise by as much as 20 million tons per year, nearly doubling today’s production of 25 million tons. This will vastly improve the nutrition of the existing population of 108 million, help feed Mexicans born in the coming years, and also those will be returning from the United States.
- **Employment:** Perhaps a million Mexicans will be employed directly in the construction of the PLHINO and the PLHIGON projects at their height—including dams, tunnels, canals, and pumping stations. Millions of additional jobs will be created to produce the cement, steel, and machinery for these projects, and to farm the 5 million hectares of newly irrigated land.
- **High technology:** Beyond the significant increase in hydroelectric power from the PLHINO and PLHIGON projects, nuclear energy and nuclear-powered desalination plants are an essential feature of NAWAPA-Plus. The development of this technology, along with magnetic levitation for the high-speed rail lines that will parallel the water routes from the

Bering Strait down to the Darien Gap, will provide the science driver for the entire region.

As LaRouche put it, in his recent talk with the LaRouche Youth Movement (LYM): “Why not give people in Mexico the chance to live, by supporting a project for developing the PLHINO, which is an exemplary project? If we had not destroyed the ability of Mexico to develop, in 1982, this problem wouldn’t exist. So now we have to go to ground zero and say, ‘All right, they have a right to live there. They have a right to a project where they can grow their own food.’ And we will find our soul back, in the United States, if we do it.”

FIGURE 1  
Mexico’s Water Availability, by Hydrological Region



Source: CNA (Mexico).

## The PLHINO

Mexico has too much water ... and also too little. The Southeast is virtually floating on water, and the North and Center of the country are bone dry. That is an oversimplification, of course, but it makes the essential point. So Mexico may have an *average* rainfall of 773 millimeters per year (which compares favorably with the 742 mm for the U.S.), and an *average* 4,573 cubic meters (m³) per capita per year of available water. But human beings don’t live in mathematical averages: They live in real, geographical-economic space. In Mexico, the essential features of that space are defined by two large mountain ranges, the Western Sierra Madres and the Eastern Sierra Madres, which meet in the South-Center of the country in a dense, neo-volcanic knot.

As **Figure 1** shows, the North, Center, and Northwest hydrological regions have 77% of the country’s population, but only 32% of the available water; whereas the four hydrological regions in the Southeast account for 68% of the country’s water availability, but only 23% of its population.

In fact, as **Table 1** shows, regions X and XI alone (covering the states of Chiapas, Tabasco, Veracruz, and parts of Oaxaca, Puebla, and Hidalgo—a mere 10% of the national territory)—have a staggering 60% of the total national surface runoff. That is because the country’s three largest rivers all flow down into the Gulf of Mexico in this area of the Isthmus of Tehuantepec: the Coatzacoalcos (32.8 km³ of runoff), the Papaloapan (44.7 km³), and the enormous Grijalva-Usumacinta, whose 115.5 km³ of runoff make it one of the major rivers in the world (see **Figure 2** and **Table 2**).

So the great challenge in Mexico has always been to take the water from where it is abundant, and transfer it to where it is not.

TABLE 1  
Mexico’s Hydrological Regions

Name	Mean Surface Runoff (km³)	Runoff as % of Total	Area as % of Total
I Baja California	3.0	1%	7%
II Northwest	5.5	1	10
III North Pacific	22.4	6	8
IV Balsas	24.9	6	6
V South Pacific	30.8	8	4
VI Río Bravo	7.2	2	19
VII Northern Central Basins	4.7	1	10
VIII Lerma-Santiago-Pacific	29.6	7	10
IX North Gulf	22.1	6	6
X Center Gulf	98.9	25	5
XI Southern Border	139.7	35	5
XII Yucatán	4.3	1	7
XIII Valley of Mexico	2.0	1	1
<b>Total Mexico</b>	<b>395.1</b>	<b>100%</b>	<b>100%</b>

Source: CNA 2006 (Mexico).

The PLHINO does just that.

The project was conceptualized in the mid-1960s, and systematized as a hydraulic plan in the early 1970s. Since that time, LaRouche and his associates in Mexico have consistently campaigned for its implementation.

At the recent Nov. 9 conference in Sonora, a new, detailed design for the PLHINO was presented by the distinguished Mexican engineer Manuel Frías Alcaraz. In the Frías design,

FIGURE 2  
**Mexico's Major Rivers**



Source: INEGI (Mexico).

TABLE 2  
**Mexico's Major Rivers**

Region	Name	Mean Surface Runoff (km <sup>3</sup> )	Runoff as % of Total
XI	1) Grijalva-Usumacinta	115.5	29%
X	2) Papaloapan	44.7	11
X	3) Coatzacoalcos	32.8	8
IV	4) Balsas	24.3	6
IX	5) Pánuco	19.1	5
X	6) Tonalá	11.4	3
VIII	7) Santiago	7.8	2
	Others	139.5	35
	<b>Total Mexico</b>	<b>395.1</b>	<b>100</b>
	—Empty into Gulf of Mexico	272	69
	—Empty into Pacific Ocean	116	29
	—Inland rivers	7	2

Source: CNA 2006 (Mexico).

approximately 75% of the runoff from five under-utilized rivers on the central Pacific Coast of Mexico would be used to feed a canal running northwestward along the Pacific Coast, with a combined flow of 220 m<sup>3</sup>/second of water (about 7 km<sup>3</sup>/yr.). These five rivers (San Pedro, Acaponeta, Baluarte, Presidio, and Piaxtla—see Figure 2) would each have new dams constructed upstream, and they would be connected by a series of four tunnels (ranging in length from 21 to 33 kilometers, with 7-meter-diameter tubing), which would gradually bring the water down by gravity from 570 meters above sea level at the first dam, to 370 meters above sea level at the last one.

The relative disadvantage of building tunnels is that they require significant capital investment, more than what is required for the alternative construction of sea-level canals and pumping stations. But pumping, on the other hand, has continuous operating costs (energy, in particular), which is not the case when tunnels are built that save energy by employing gravity to move water, based on the difference in heights. These factors have to be evaluated on a case-by-case basis, but the Frías proposal is clearly workable.

From the Piaxtla reservoir at 370 meters above sea level, Frías then proposes to construct a series of canals, pumping stations, and smaller dams and tunnels that would transfer the accumulated 220 m<sup>3</sup>/sec of water all the way to the Yaqui River in Sonora.

In this way, Frías explained to the enthusiastic Sonora gathering, we would be creating an artificial river some 460 km in length, which is comparable to the 580-km-long Santiago River, the country's seventh largest. And what nature took a million years to do, we can accomplish in a decade, Frías

emphasized. The total PLHINO project is estimated to take ten years to complete, with an annual investment of about \$1 billion—“monetary resources equivalent to [Mexico’s] purchase of food for only one year,” according to Frías.

The 7 km<sup>3</sup> of transferred water, along with additional amounts gathered directly underground by the tunnel tubes, will allow for the irrigation of 330,000 hectares of new farmland in the state of Sinaloa, and another 470,000 hectares in Sonora—for a total of 800,000 hectares opened to farming by the PLHINO.

### The Tabasco Flood

As the Sonora conference was meeting, the participants’ attention remained rivetted on the nightmare flooding that had ravaged Mexico’s Southeast scarcely two weeks earlier.

In just three days at the end of October, about one meter of rain fell on the impoverished states of Tabasco and neighboring Chiapas. Where the Grijalva and the Usumacinta rivers unite in the coastal flood plain, just downstream from the city of Villahermosa, an “hydraulic plug” developed, which caused a backup of enormous amounts of water.

Approximately 1 million of Tabasco’s 2 million inhabitants were affected by the flooding, with close to 90% of the state, including its capital city of Villahermosa, being under water. The situation in Villahermosa was so dire that the state government secretary Humberto Mayans warned of a “very high risk” of social crisis and riots like those that occurred after the last great regional flood in 1999. He noted that there were 100,000 people wandering around, who had lost everything, and that there was a great danger of outbreak of disease, due to the lack of potable water and basic sanitation services.

In a status report to the media on Nov. 19, Tabasco Gov. Andrés Granier described the dire conditions faced by many residents, whose garbage-filled homes were now uninhabitable, and who had no means of earning money, thanks to the destruction of Mexico’s formal economy by 25 years of globalization and free trade: “Even if there is no water in their houses, there is hunger. . . . How can they get the money to buy food, when the majority of them worked in the ‘informal’ economy, and have lost their jobs?”

Mexico’s pathetic free-marketeer President Felipe Calderón had the audacity to blame the flood disaster on “climate change,” but Governor Granier quickly disabused him of that lie, charging that the tragedy is the result of years of disinvestment in infrastructure. Granier pointed out that, had long-planned water-control projects been built, “there would have been damage, yes, but not the catastrophe we are now suffering.” This would require, minimally, an investment of 6 billion pesos (about \$550 million), the governor said, yet the federal budget has allocated only a pathetic 387 million pesos (\$35 million).

The essence of the problem was described in a report filed by the Society of Civil Engineers of Mexico (CICM) on Nov. 6:

The basin of the Grijalva, the more western of the two riv-

ers (see Figure 2), represents 27% of the surface area subjected to the heavy rainfall. Of the four major dams on the Grijalva and its tributaries, which were built between 1959 and 1987, the three furthest upstream (La Angostura, Chicoasén, and Malpaso), were able to control 100% of the water volume reaching them, without having to release any of it further downstream. The fourth dam, Peñitas, was able to contain about one third of the 3,000 m<sup>3</sup> per second of water reaching it, but was forced to release the remainder downstream. But the CICM calculated that this volume of water contributed only 3% of the total floodwaters that hit Tabasco.

Engineer Frías argues that Peñitas’s original design and construction were inadequate, creating a reservoir far too small to contain the substantial run-off from the river during periods of heavy rainfall.

The Usumacinta and its tributaries and other rivers in the region, constitute 73% of the surface area hit by the rains. *And they have no dams on them whatsoever.* Thus, the devastating flood. The CICM concluded with the understated recommendation that Mexico must “promote a greater investment in infrastructure projects in the entire national territory, and especially in the South-Southeast region, to prevent disasters and contribute to sustained and balanced long-term economic development.”

### The PLHIGON

Such a regional infrastructure project has long been designed and proposed, and is known as the PLHIGON, the Northern Gulf Hydraulic Plan. As with the PLHINO, the LaRouche movement has promoted its implementation for decades. For example, in late 1999, in the wake of the last great Tabasco flood, *EIR* published a study written by the late Carlos Cota Meza, one of the leaders of the LaRouche movement in Mexico, under the provocative headline: “How To Create More Than a Million Jobs a Year in Mexico.” That report was accompanied by a series of maps, including one detailing the PLHINO and the PLHIGON which we reproduce here as **Figure 3**.

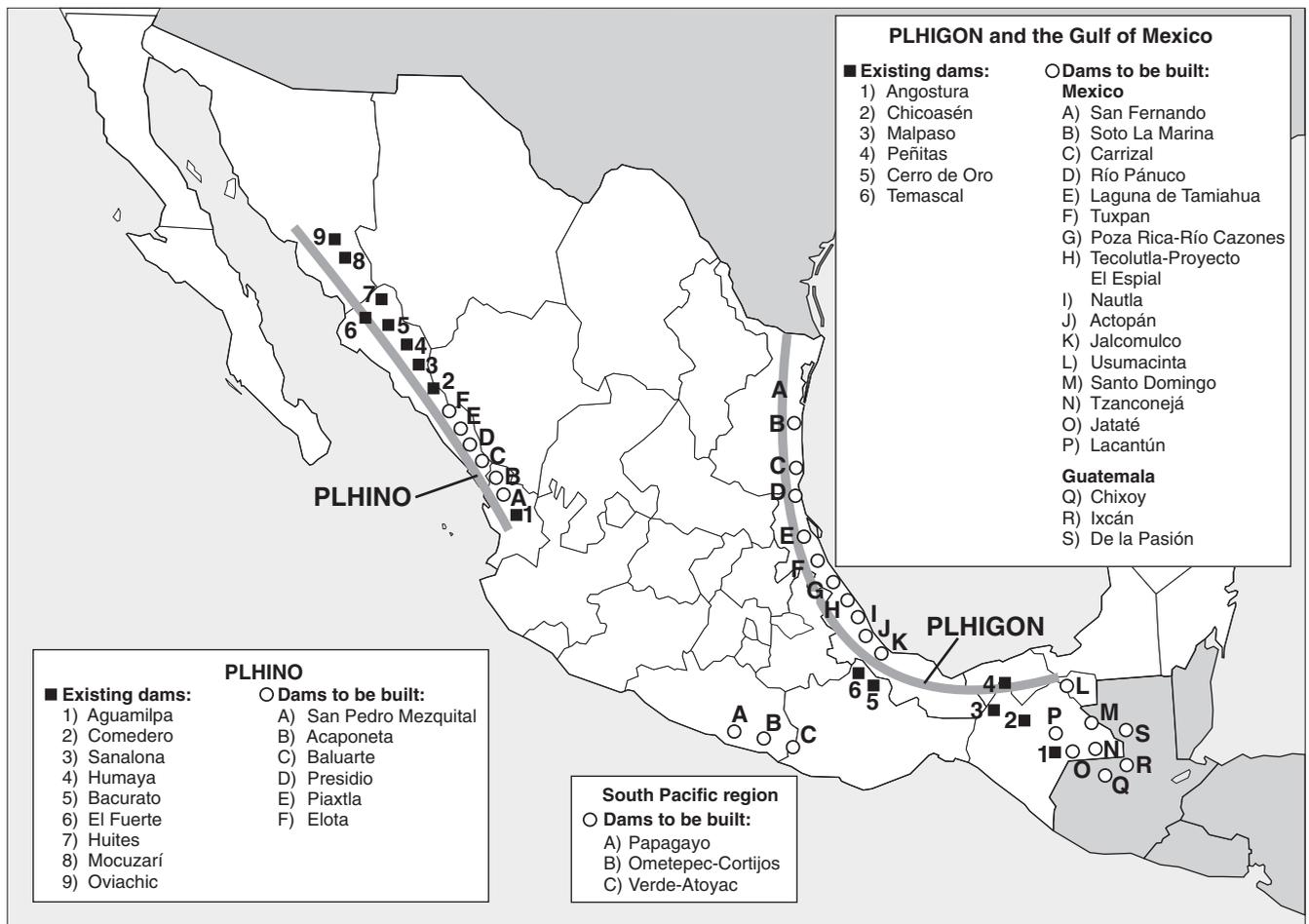
The PLHIGON will control the historic flooding problem in the region, produce significant amounts of hydroelectric power, and move vast quantities of fresh water northwest along Mexico’s Gulf Coast, part of which will then require complementary projects that will pump it up to Mexico’s north-central plateau, which is part of the Great American Desert.

The total amount of water runoff to be controlled and withdrawn for use is enormous, and dwarfs the PLHINO’s scope of 7 km<sup>3</sup> of water withdrawn, out of a total runoff of 9.5 km<sup>3</sup>. The Southeast’s four big rivers (Grijalva-Usumacinta, Papaloapan, Coatzacoalcos, and Tonalá—the first, second, third and sixth biggest in the country, respectively) jointly produce some 204 km<sup>3</sup> of runoff, of which only 15%, or 30 km<sup>3</sup>, will be withdrawn for use in the PLHIGON.

In the detailed design drawn up by Frías, six major dams

FIGURE 3

**Mexico: the PLHINO and the PLHIGON**



Source: *EIR*, January 7, 2000.

will be constructed on the Usumacinta River and its tributaries, some of which will involve binational projects with Guatemala. These will create hydroelectric installed capacity in the range of 9.5 gigawatts, nearly doubling Mexico's current hydroelectric installed capacity of 11 GW, out of a national total of 50 GW from all sources. It will also be necessary to increase the capabilities of the existing Malpaso and Peñitas dams on the Grijalva.

Besides producing electricity, these dams will be designed to control the rivers' runoff, and prevent future flooding. That will allow the rich lands, in what is now a vast coastal flood plain stretching across Tabasco and the neighboring state of Campeche, to be placed in agricultural production, both for crops and pastureland. Frías estimates that more than 1.5 million hectares of land can be recovered, transforming the region into the country's number-one agricultural zone. As a rule of thumb, 1 km<sup>3</sup>/yr of water will irrigate some 100,000 hectares of land. That means that about 15 km<sup>3</sup> of the 204 km<sup>3</sup>

of runoff from the four mentioned rivers, will be needed for the 1.5 million new hectares of agricultural land.

It will also be desirable to build a canal eastward into the Yucatán peninsula, where the relatively arid conditions have forced an over-reliance on aquifers, which are rapidly becoming depleted.

A second canal, 59 km in length, will be constructed to link the city of Villahermosa to the Gulf coast, transforming that anguished city into a thriving internal port.

In a second stage, an additional 15 km<sup>3</sup> of water will be transported northwestward along the Gulf coast, building dams, canals, and pumping stations for that purpose. There are technical difficulties involved in transferring such vast amounts of water either over (or under, with tunnels) the neovolcanic knot in the center of Mexico, but these can be solved with the significant increase in power production that will come as Mexico fully develops its nuclear industry.

Substantial power will also be needed to pump water over

the Eastern Sierra Madre into the Great American Desert region in north-central Mexico, a problem discussed in *EIR*, May 9, 2003, as follows:

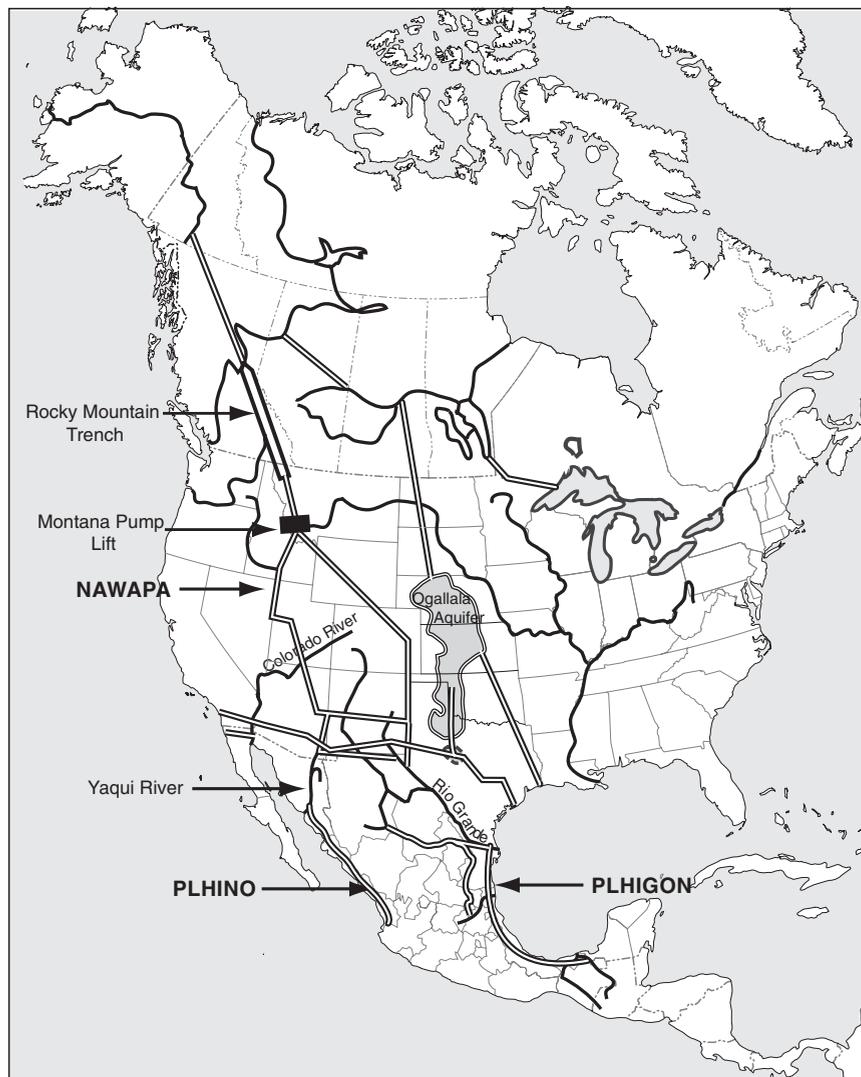
“It should be noted that neither the PLHINO nor the PLHIGON would carry water up to the Great American Desert, to the arid center-north of Mexico. They would have to be complemented by other projects that would bring water up from the coasts to the central highlands. From the western side, this is not very feasible in physical-economic terms, since the Western Sierra Madre is quite high—it reaches heights of 3,000 meters above sea level. But on the Gulf side, it is much more feasible, given that the Eastern Sierra Madre ranges between 2,000 and 2,500 meters above sea level.

“One project that would be especially important for carrying water in that direction, at least as far as the city of Monterrey (which is just before you have to cross over the Eastern Sierra Madre into the highlands), is a proposal developed by Mexican engineer Manuel Frías Alcaraz, and which he has dubbed the *TzenValle System*. The idea is to divert about one-third of the water from the Pánuco River (the fifth in the country, in terms of runoff) and its tributaries, where these originate in the Eastern Sierra Madre in the state of San Luis Potosia. By means of a series of dams, tunnels, and canals located at some 250-300 meters above sea level, water would be carried north, and then pumped up as far as Monterrey, which is at 540 meters above sea level. In other words, the cost of the pumping would be kept to a minimum, because the water would only need to be lifted an additional 250 meters or so.

“The *TzenValle System* would carry an additional 6.8 km<sup>3</sup> of water per year to this arid zone. . . .

“American engineer Hal Cooper has also proposed a couple of projects to carry water from the Gulf of Mexico to the Great American Desert. In the first one, he calls for building a canal that would run from the extreme north of the PLHIGON, to Monterrey, and from there to Saltillo, Torreón and into the southern part of the state of Chihuahua, where it would connect to the Conchos River, a tributary of the Rio Grande. The most challenging stretch of the project would be to raise the water from Monterrey to Saltillo, a difference of about 1,050 meters. There is no way around pumping the water up, al-

FIGURE 4  
North America: ‘NAWAPA-Plus’



Sources: Parsons Company, *North American Water and Power Alliance Conceptual Study*, Dec. 7, 1964; Hal Cooper; Manuel Frías Alcaraz; *EIR*.

though you could possibly build some tunnels under the highest parts of the Eastern Sierra Madre.”

### NAWAPA

But all of this is peanuts, compared to the *really* big water project known as the North American Water and Power Alliance. Designed by the Parsons engineering firm in the 1960s, NAWAPA is an integrated water, power, and agricultural project which proposes to take about 17% of the annual runoff of the rivers of Alaska and northern Canada (some 1,000 km<sup>3</sup> of water), most of which now flows unused into the Arctic Ocean, and channel it southward to Canada, the United States, and Mexico.

FIGURE 5

**North America: High-Speed Rail Lines**



Sources: Hal Cooper; EIR.

In EIR’s design of NAWAPA-Plus, NAWAPA would then link up in Mexico with both the PLHINO and the PLHIGON, creating a single, integrated North American water project (Figure 4), which closely parallels both the concept and the actual physical route of proposed high-speed rail projects, stretching from the Bering Strait to the Darien Gap (Figure 5).

According to the original design by Parsons, the water would first be channelled into the Rocky Mountain Trench, a natural reservoir some 800 km in length which runs from the center of Canada down into the northern United States, and which is about 15 km wide and some 100 meters deep, on average. It would store some 400-500 km<sup>3</sup> of water, at a height of about 900 meters above sea level.

Cutting across the extreme northern tip of the Trench, a

navigable waterway would be built in Canada, from Vancouver in the West to Lake Superior and the St. Lawrence Seaway in the East—a great waterway that would connect the Pacific with the Atlantic.

The eastern branch of NAWAPA would run south from this Canadian canal, through the center of the United States, where it would help to recharge the gigantic Ogallala Aquifer, which today is overexploited. From there, another canal would connect it to the Gulf of Mexico. At the extreme southern tip of the Rocky Mountain Trench, the Montana Pump Lift would be built, a pumping station that would lift the water from 900 meters above sea level to some 1,500 meters above sea level, on both sides of the Continental Divide in the Rockies. It is estimated that this would require some 80 billion watts (80 GW) of energy, a substantial amount, but the total plan proposes to build numerous hydroelectric dams along NAWAPA’s entire route, which would produce some 180 GW of energy. In other words, even after using 80 GW for the Montana Pump Lift, there would be a net surplus of some 100 GW.

From there, the central branch of NAWAPA would run along the eastern side of the Rockies, cutting across the Great American Desert through Wyoming, Colorado, New Mexico, and Texas. On this route it would connect with the tributaries of the Rio Grande (Río Bravo), which forms the border between the United States and Mexico at that point. This would enable the transfer of large quantities of fresh water—some 6.8

km<sup>3</sup>, according to the Parsons design—to the arid Center-North of Mexico. Here, at the Rio Grande, is where NAWAPA

TABLE 3  
**NAWAPA and Water Withdrawals**

	Mexico	U.S.	Canada	Total
Current Withdrawals	77	469	55	601
NAWAPA	24	99	42	165
Total New Withdrawals	101	568	97	766
Percentage Increase	31%	21%	76%	22%

Sources: Parsons Co.; U.S. Geological Survey; FAO; EIR

FIGURE 6

**Mexico: Water Transfers**  
(km<sup>3</sup>)



Sources: Parsons Company, *North American Water and Power Alliance Conceptual Study*, Dec. 7, 1964; Hal Cooper; Manuel Frías Alcaraz; *EIR*.

and the PLHIGON meet.

The western branch of NAWAPA would also cut through the Great American Desert, crossing Nevada, Utah, Arizona, and New Mexico, where it would also feed into the Rio Grande, and would re-connect with the central branch of NAWAPA. From Arizona, a canal would be built to carry wa-

TABLE 4

**Mexico: Water Transfers Under 'NAWAPA-Plus'**  
(km<sup>3</sup>)

	To:NAWAPA- Baja (I)	NAWAPA- PLHINO (II, III)	NAWAPA- PLHIGON (VI, VII, IX, X, XI)	Total Mexico
From:				
NAWAPA	5	12	7	19
PLHINO	0	7	0	7
PLHIGON	0	0	37	37
—TzenValle			6.8	
—Isthmus Big Four Rivers			30	
<b>Gross New Water to Region</b>	<b>5</b>	<b>19</b>	<b>44</b>	<b>63</b>
Replace Aquifer Overuse	1	1.5	3.4	10
Net New Water to Region	4	17.5	40.6	53
Current Total Withdrawals	3.8	17	24.2	76.5
Percentage Increase	105%	103%	168%	69%

Sources: CNA 2006 (Mexico); Parsons Co.; Hal Cooper; Manuel Frías Alcaraz; *EIR*

ter across the border to Mexico, to the Yaqui River in Sonora, which would receive nearly 12 km<sup>3</sup> of water a year. This is where NAWAPA and the PLHINO meet.

The western stretch of NAWAPA would also supply water to the north and center of California, and to the Colorado River, which in turn, would carry more than 5 km<sup>3</sup> of water a year to northern Baja California.

**Table 3** presents summary information on what NAWAPA alone will contribute to water withdrawals in Mexico, the United States, and Canada. It will provide about 24 km<sup>3</sup> of fresh water to Mexico, increasing its current withdrawals by 31%; U.S. withdrawals will rise by 21%; and Canada's withdrawals will increase by 76%. For the entire three-nation region, NAWAPA means a 22% increase in water withdrawals.

Is this not a far better concept around which to organize relations among the United States, Mexico, and Canada, than the benighted North American Free

Trade Agreement (NAFTA), which has brought only devastation to all three nations?

**Figure 6** and **Table 4** present the full impact of the NAWAPA-Plus projects on water availability in Mexico. For the country as a whole, there will be 63 km<sup>3</sup> of new water available. Since Mexico currently gets 36% of its total water with-

drawals from aquifers, and in the process over-exploits more than 20% of all its aquifers—i.e., withdrawing more water than the amount of annual recharge—it will be necessary to use some 10 km<sup>3</sup> of the newly available water to recharge the aquifers and reverse their depletion. That will leave net new water availability of some 53 km<sup>3</sup>, a 69% increase over today's 77 km<sup>3</sup>.

If this is looked at by region, as shown in Figure 6, the NAWAPA-Baja area (Mexico's hydrological Region I) will receive 5 km<sup>3</sup> of new water from NAWAPA, which will mean a net increase for the region of over 100%.

The NAWAPA-PLHINO area (Regions II and III) will get 12 km<sup>3</sup> from NAWAPA, and 7 km<sup>3</sup> from the PLHINO, for a total of 19 km<sup>3</sup> of new water. After aquifer recharge in this area, which is a serious problem, the net increase over today's level will also be over 100%.

And for the NAWAPA-PLHIGON area (Regions VI, VII, IX, X, and XI), the 7 km<sup>3</sup> of water coming from NAWAPA into Mexico through

the Rio Grande system, will be boosted by 30 km<sup>3</sup> coming from the lower PLHIGON region, and another 7 km<sup>3</sup> from the TzenValle project on the Pánuco River. That will create an increase of net new water availability of 168%. This dramatic upshift will create the basis for addressing, at long last, the pressing issues of the Mexican portion of the Great American Desert.

This increase in water availability will allow Mexico to irrigate some 5 million hectares of new land, a 75% increase over its current 6.5 million hectares of irrigated land. Of this newly irrigated land, 0.8 million hectares will be in Sinaloa and Sonora; 1.5 million will be in the Tabasco/Campeche flood plain; and about 2.7 million will be opened up in the upper reaches of the PLHIGON, including in the currently dry central highlands.

## And Beyond

At the Nov. 9 Sonora conference on “Building a Bridge to the Future” with projects such as the PLHINO and NAWAPA, this author delivered an address which detailed the NAWAPA project, and concluded with the following remarks:

“Therefore, if we combine national programs such as your PLHINO and PLHIGON, which involve freshwater transference from one basin to another *within the country*; and if we also add to that freshwater transference among river basins involving *various countries*, such as NAWAPA, we will be able to take a big step forward. But a third element is needed; there is a third leg to the stool, which cannot stand on two alone. And that is that we must also *manufacture* fresh water—and not just transfer it among basins. The most efficient way to do that is with nuclear desalination plants, which are quite feasible.

“Mexico can absolutely do this: master technologies of the future, such as nuclear energy. Likewise, high-speed rail lines must be constructed which employ magnetic levitation technology, which is already being done in China and elsewhere.

“The importance of these technologies is not only that they are more economically efficient, but they also introduce the unique element which is the motor of all economic development, that which produces the scientific and technological spark which distinguishes human economy from that of any other, inferior species.

“I am convinced that, if we study these proposals, if we organize our respective nations around these ideas, and if, most especially, we present these ideas to the youth of our countries—who, after all, are our future—then these proposals, which today may strike us as reasonable but impractical or utopian, will become, with our political organizing efforts, proposals which are not only reasonable, but also *possible*.”

As Lyndon LaRouche’s friend, the late Mexican President José López Portillo, urged in his memorable October 1982 address to the United Nations General Assembly: “Let us make that which is reasonable, possible!”