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HEALTH, EDUCATION AND WELFARE  
Public Health Service

Division of Water Supply and Pollution Control  
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THE SECOND BATTLE OF LAKE ERIE

by  
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the United Automobile Workers, November 6, 1965, Detroit  
Michigan

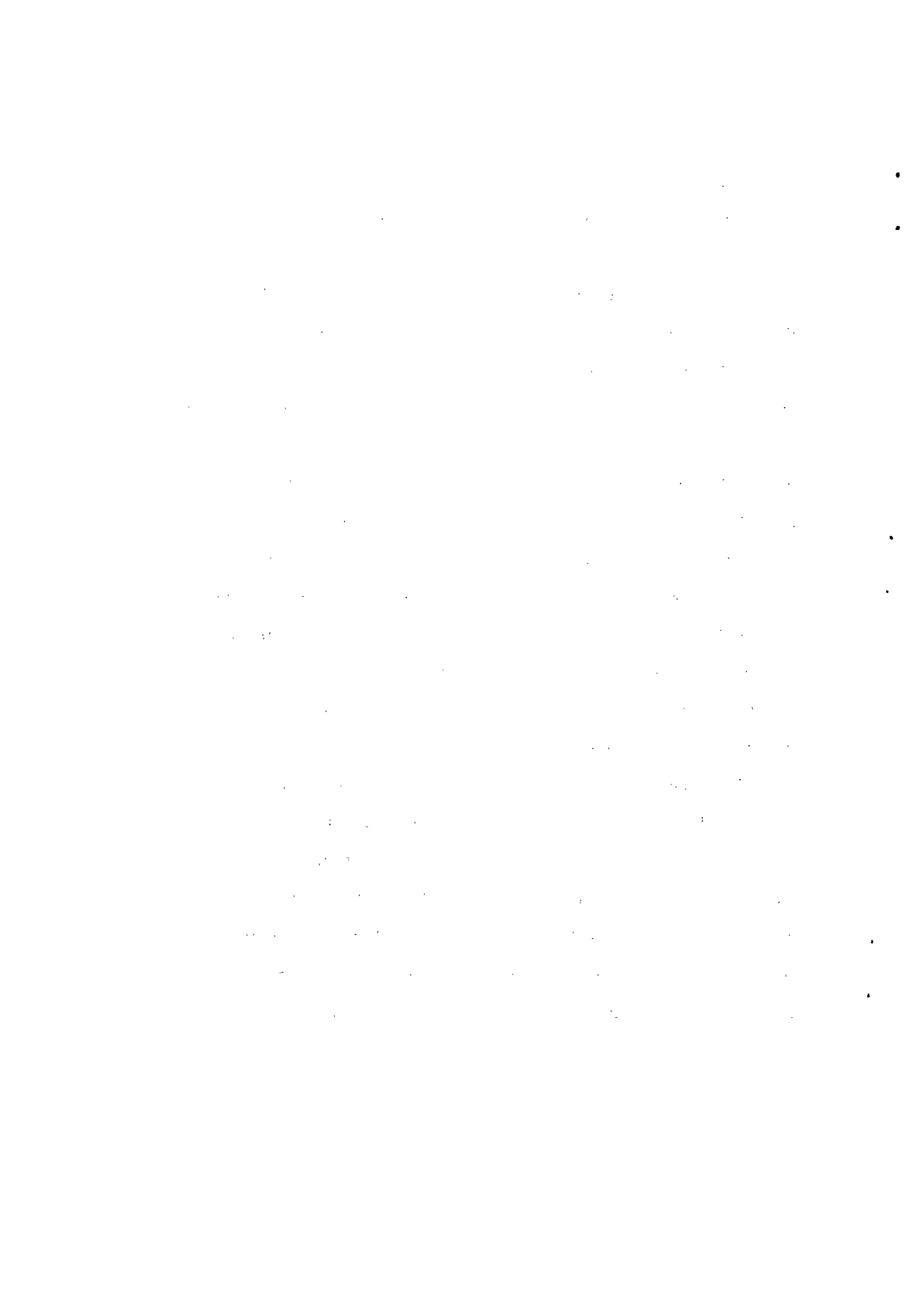


For both the United States and Canada, one of the most lucky consequences of the ice age was the formation of the Great Lakes. As the giant glaciers began to recede and the temperatures rose, about 18,000 years ago, the first small finger lakes appeared where the southern edges of the Great Lakes are now. As the glaciers shrank further northward, the Lakes grew to their present size. They are the largest area of fresh water in the world, and they have undoubtedly been the single most important factor in the development of the region around them. Were it not for the Great Lakes, this region would probably have developed as a primarily agricultural economy. Instead the Great Lakes region, for both the United States and Canada, supports an industrialized, multi-faceted economy. In both countries the Great Lakes regions have made an invaluable contribution to the national economies, and both retain a tremendous growth potential.

Civilizations are conditioned by natural resources, but not completely predetermined by them. Not all countries are as rich as their natural resources could make them. In some cases men have exploited what the earth has given them; in others they have let the earth lie fallow. In the early history of the Great Lakes region the Indians did not change their mode of existence by harnessing the talents of the Lakes. The Indians fished the Lakes, used them for drinking water and transportation, and left the Lakes much as they had found them. The

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potential of the Great Lakes lay waiting, and their beauty remained undisturbed.

The Europeans in their expansions westward seized the Great Lakes region as quickly as they could. In 1615 Samuel de Champlain first ventured onto Lake Huron; 55 years later France owned the entire St. Lawrence River-Great Lakes region. No sooner had she staked out her claim than she had to defend it against others equally conscious of its economic value. French gunboats were cruising the Lakes from 1678 on. After a hundred years of skirmishes between French, British, and Indians for control of the Lakes and their lands, the British gained ownership in 1863. Such was the value of the region that after the United States gained control of the area by the treaty of 1783, Great Britain attempted again, in the War of 1812, to retake it.

Until the War of 1812 the Great Lakes had been a promise; afterwards they paid off. The introduction of steamboats and the American version of the "industrial revolution" transformed the Lakes into highways of commerce and industry. Reduced shipping costs and the availability of clear, cheap water stimulated production of every kind. When the Erie Canal was finished there was a water route from the Atlantic to the center of America, and its consequences were felt throughout the entire nation. The



Great Lakes created the copper mines of the Keweenaw Peninsula of Lake Superior. The Lakes built the great open-pit iron mines in the Mesabi, Marquette, Gogebic, Vermilion, Menominee, and Cuyuna ranges. They created the markets for the grain of the mid-west and the timber of the old northwest; they transported millions of tons of coal and stone; they supplied seemingly endless quantities of process and cooling water for a diversified manufacturing economy.

By the 1920s, annual shipping on the Great Lakes, even though open for only 7-1/2 to 8 months of the year, exceeded the combined total tonnages of the Panama and Suez Canals for the entire year. Also by the 1920s, Great Lakes commerce exceeded the annual foreign trade of the entire United States from any of its ocean ports. The Detroit River is possibly the most heavily used of the Great Lakes connecting channels since it joins the western Lakes, sources of raw materials, with Lake Erie, the site of heavy industry and manufacturing. In 1962, 150 different types of cargo, totalling 100,039,108 tons, travelled up and down the Detroit River.

The use of Great Lakes water for industrial processes has reached equally huge proportions. From Lake Erie alone, industries today take 4.7 billion gallons of water daily, including 3.85 billion used for power production. The municipalities along Lake Erie take 619 million gallons a day. Multiply these figures by water usage on the



other four lakes and the magnitude of our dependence on this fresh water takes on its true proportions.

Massive exploitation of water resources has created an economy of extraordinary productivity. The two largest cities of Canada, Toronto and Montreal, are in the Lakes' basin. Two of the five largest cities in the U. S. are on the Great Lakes. The five states of the Western Great Lakes area (Illinois, Indiana, Michigan, Ohio, and Wisconsin) account for 29% of the national index of value-added-by-manufacture in 1962. There is prospect for continued expansion of industry and prosperity in the Great Lakes region. Production in the Detroit area, measured in terms of value-added-by-manufacture, could well increase from about \$5.8 billion in 1960 to approximately \$13 billion in 1980. Population likewise may climb to 5.5 million in the Detroit area by 1980.

The Great Lakes have been generous and can continue to be generous. Until now, their generosity has been met with extreme ingratitude. We have not treated the Lakes with even the minimum respect that we might have been expected to show objects of such beauty. In using them as receptacles for the wastes that our civilization produces, we have damaged them severely. The game fish that thrived in Lake Erie are declining. The translucent





blue water is being steadily transformed into something thicker and muddier, occasionally, in Lake Erie, resembling pea soup. The shores are sometimes lined with debris, often decaying organic matter.

We have damaged ourselves in this process. The invaluable recreational potential of Lake Erie has been stymied, and both commercial and sports fishing depressed. The water supplies of several large cities have been vexed with intermittent unpleasant tastes and odors. There is every reason to believe that the same problems will appear in the other Lakes in short order if waste discharges continue at their present rate.

We are approaching a turning point, however. The five Lakes which have been the foundation of an entire regional economy are reaching the end of their resistance to wanton abuse. The continued growth that we can expect will place tremendous demands on the water supply. 5.5 million people will obviously need much more water than the 3.9 million people that were here in 1960. Less obvious, perhaps, is the volume of increased industrial water needs. In 1960 industry used 46% of the water of the United States, compared to 8% used by the public at large. Furthermore, much of the industry along the Great Lakes was located there because it required especially great quantities of water in the first place. Increase in industrial water needs in the Great Lakes area will probably be greater than the national



average. The chemical industry, for example, used approximately 677 billion gallons of water in the Great Lakes region in 1959; economists estimate that it may require 1950 billion gallons a year by 1980, practically tripling its requirements. The pulp and paper industry in the Great Lakes region used 293 billion gallons in 1959, and may need 507 billion gallons a year by 1980.

The continued growth of this region is going to depend principally on our ability to supply these staggering volumes of water for industrial and municipal use. Are we going to have the water available and will it be of usable quality?

A quick glance at the condition of Lake Erie today, and at the disturbing trends in some other areas of the Great Lakes, suggests that failure is imminent. Pollution is encroaching on Lakes Michigan and Ontario. Lake Erie is polluted practically in its entirety. It was the first of the Lakes to go, largely because it is the shallowest; there is less water in it to pollute, and the eutrophication, or aging, process naturally occurs most rapidly in a shallow lake. The quantities of wastes poured into the Lake are so immense that we have accelerated this natural aging process.

Organic wastes, both from industry and from plain sewage, greatly increase the quantities of phosphorus and nitrogen and their compounds in the Lake. These substances are nutrients for many microscopic forms of plant and animal life, notably alga and phytoplankton. These



organisms in turn destroy the usefulness of the water for many other purposes--swimming, boating, water supply, fish propagation. Inorganic wastes, largely sediment (although we do not as yet have enough knowledge of the long-term effects of toxic materials discharged to the Lakes), are also destructive. Sediment increases the turbidity, or suspended matter in the water; this makes the water opaque, cutting down the quantity of light that penetrates below the surface. The sediment also settles to the bottom, forming sludge banks of significant depth, which smother plant and animal life.

The traditional form of pollution is a steady deterioration in the quality of the water--in its oxygen content, its bacterial levels, its color, its acid-alkali balance, its toxic content. In a river, once we determine to prevent such pollution and provide adequate treatment for our wastes, the natural flow of the stream will normally carry out the old pollutorial material and renew the water. In estuary and ocean waters, tidal flow is usually strong enough to scour out sludge deposits and polluted backwaters. In a Lake, basically a stagnant body of water, waste materials remain once they are put in. When combined with the natural tendency of stagnant waters towards eutrophication, or aging, pollution is deadly: it threatens to destroy the body of water forever. The end of the aging process, towards which Lake Erie is moving, is the



transformation of the entire Lake into a marsh, and eventually into dry land, as the basin fills up with organic material. This process is irreversible. It is final. In this geologic era we will have no second Lake Erie.

Since we cannot have another Lake Erie we have no choice but to save this one. Two important steps have been taken in this direction. At the request of Governor Swainson of Michigan, the U. S. Department of Health, Education, and Welfare in 1962 initiated an intensive study of the Michigan waters of Lake Erie and the Detroit River. After the study was completed, an enforcement conference was held under the Federal Water Pollution Control Act, and the Michigan and Federal conferees unanimously adopted a program of action to save the Lake. If the Lake were to be cleaned up, the other States would have to do their part as well, of course, and Governor Rhodes of Ohio called for another conference to create a program that would be binding on all five Lake Erie states. This second pollution control conference was held in August of this year, and the conferees, six of them this time, again adopted an action program.

The remedial action required to save Lake Erie varies, of course, according to the specific pollution source and the volume and type of waste it discharges. In general, the Federal scientists and investigators believe we will need:

1. Secondary treatment plus adequate disinfection for all municipal



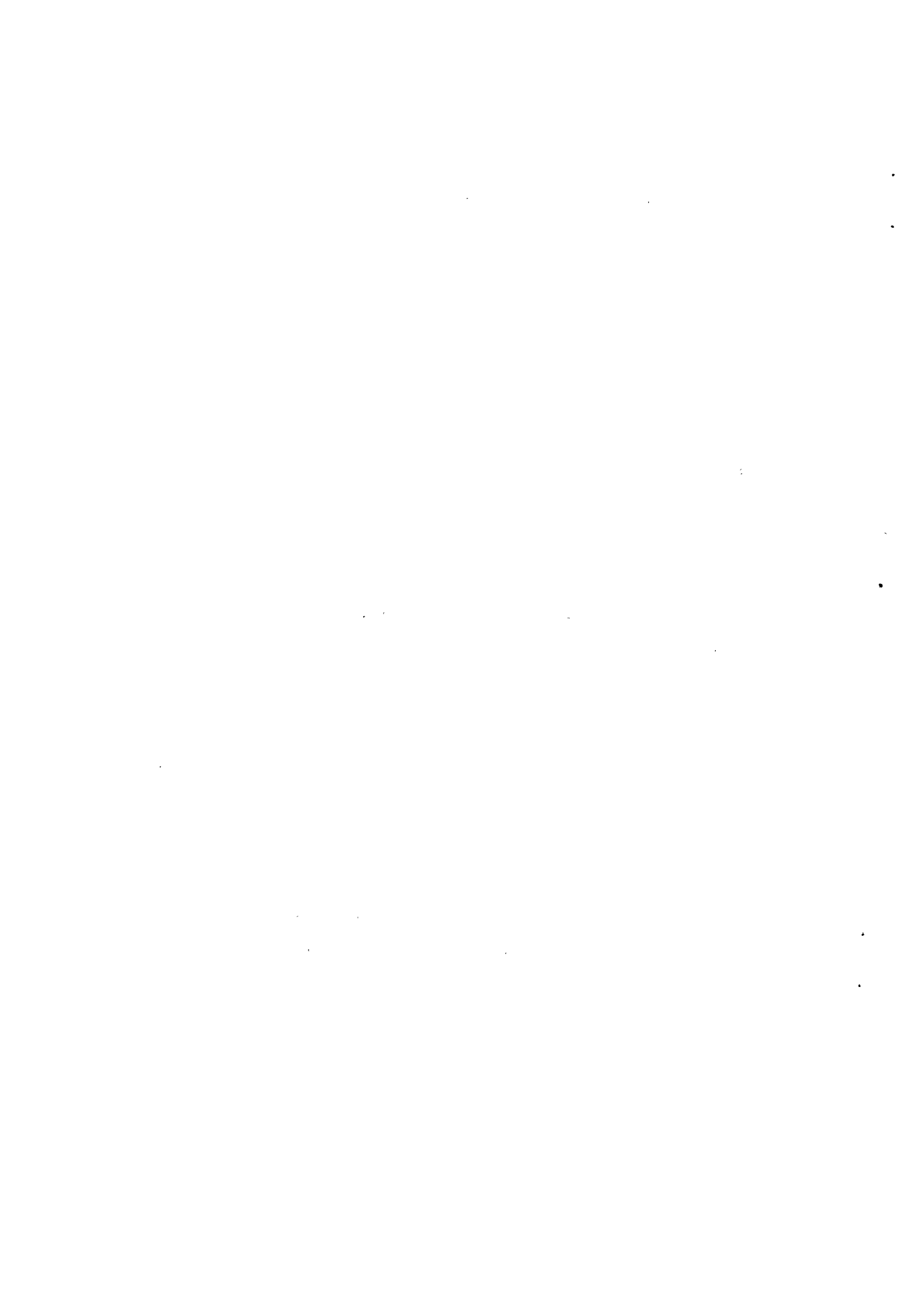


sewage.

2. The operation of secondary treatment plants in such a manner as to maximize the reduction of phosphorus in the effluent.
3. Industrial waste treatment equivalent to that given municipal wastes.
4. Combined storm and sanitary sewers must be prohibited in all new sewer construction, and methods must be found and implemented for correcting stormwater overflow where it now exists.

Speed may now be the most important factor. Every day of delay makes more remote the possibility of restoring Lake Erie to its earlier usefulness. Every day of delay means further damage to the other Great Lakes. The Federal Government has the power to force corrective action where the pollution damage is interstate. But the Federal water pollution control program is designed, as it should be, as a cooperative State-local-Federal program. If we are required to take legal action to get towns and industries to put in the necessary treatment facilities, the procedure becomes costly and time-consuming. In that kind of case we are all the losers.

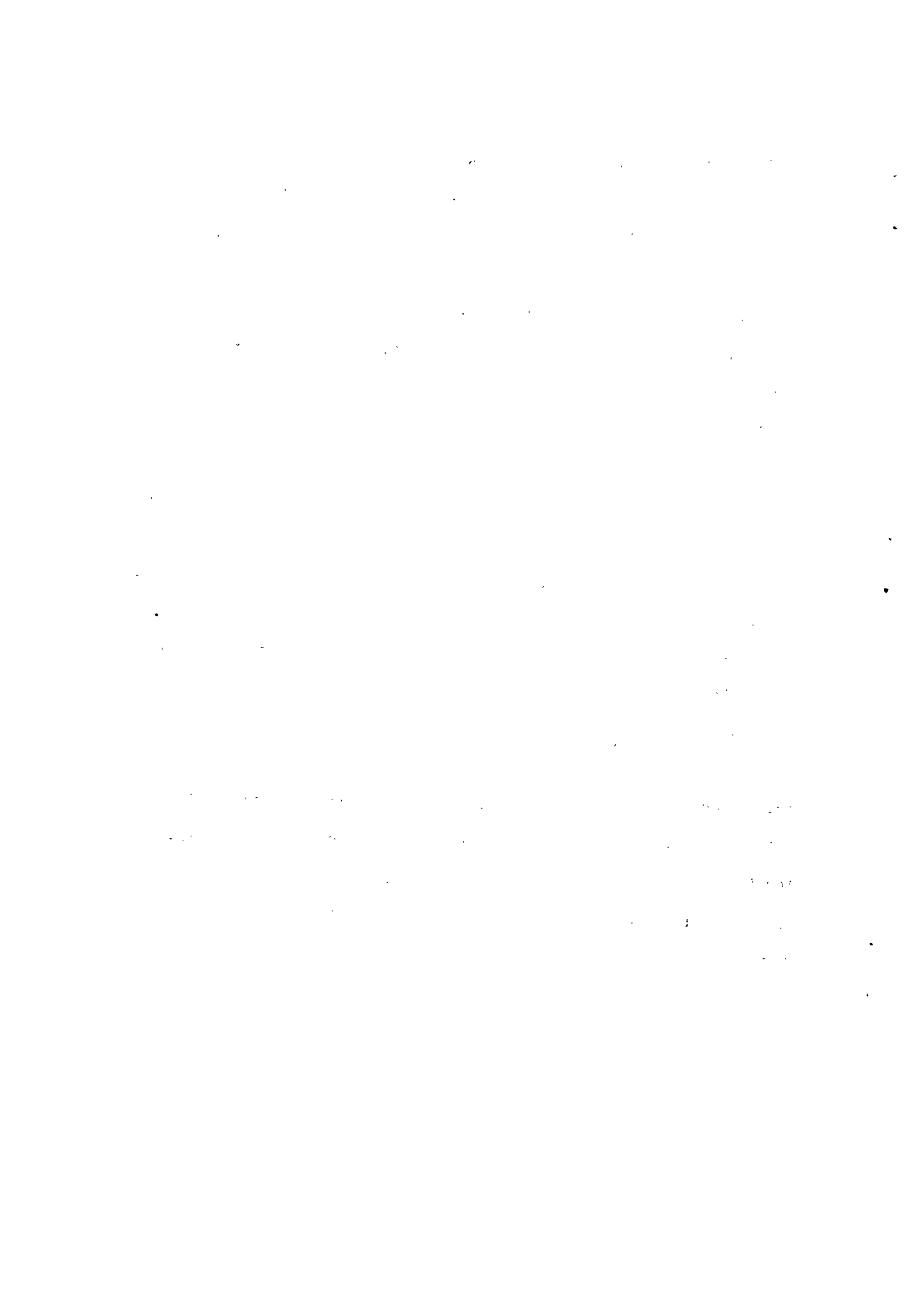
Cooperative action is the only hope for a rapid solution to the problem. In my many years with the water pollution control program I have found that our greatest ally in the struggle for clean water is the expressed opinion of the people. I do not think we can fairly expect industries to be eager to build expensive waste treatment facilities which they do not consider to be productive



capital investments. Nor do I think we can expect city officials to rush to commit city funds or raise taxes to build municipal waste treatment works unless they are sure of strong popular support. If the United Auto Workers merely saw to it that its membership was converted to the cause of clean water, much would be accomplished already. 1,200,000 people cannot be ignored. If the UAW can use its immense prestige and influence to win other converts to the cause of clean water, still more would be accomplished.

When I was a young man in the 1930s, my imagination was captured by the UAW organizing campaigns and the audacity of its sit-down strikes. Our country has changed since those days, and so have your problems and the nature of your struggles. The issues which lay behind the old-fashioned "bread-and-butter" fights are now broader and more complex. The water pollution issue has the peculiarity of being both a national, nonpartisan, long-range concern and a "bread-and-butter" issue of the greatest immediacy to union members.

Clean water in the Great Lakes would provide one of the best fringe benefits yet designed--ample free recreational opportunities close to home. Many of us cannot afford to fly to Florida or California twice a year for swimming, water-skiing, boating, or simple relaxation for our families. A vacation-land on Lake Erie could be worth quite a pay raise.



Throughout the world, water is a key raw material for basic industry. In this region there is an especially high proportion of water-using industries. As the Great Lakes go, so goes industry in this region. All the iron and coal in the ground and all the demand that this great economy can muster will not produce steel without water. The possible decline of industry is the most basic, "bread-and-butter" issue for any union.

If our industries are going to be kept moving and growing, we are going to have to evolve more intelligent water policies and practices. Such action will be a matter of survival for a sophisticated economy such as ours. This nation is not accustomed to long-range planning in the handling of its resources. But without the clean fresh water supplied by the Great Lakes our economy, your jobs, and even the positions of the United States and Canada as world powers may be adversely affected.

We may not be a nation of great experience in planning and managing our resources, but neither are we suicidal or stingy. It is just a matter of awakening our spirit. On projects that have caught the popular imagination, no amount is too much for us to spend, for we are a wealthy country. I have seen brave men, excited by space travel and anxious to spend billions of dollars on it, struck timid by the millions of dollars that clean water costs. Bravery in these matters can be restored by increased public concern with the task of

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preserving our waters.

We won the first battle of Lake Erie in 1813. We are now facing a second battle of Lake Erie. The battleground is far larger than the Lake, and the stakes are even greater than they were in 1813. We won the first battle quickly. The second one may be harder and will take longer. The wholehearted support of the UAW in this Second Battle of Lake Erie could help us win it much more quickly. I know that support will be forthcoming.

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