VERMONT ENVIRONMENTAL REPORT

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VERMONT'S $50 MILLION SEWAGE PLANT CONSTRUCTION PROGRAM: IS IT A BOONDOGGLE?

Questions are beginning to be raised about the size, cost and environmental consequences of a $50 million wastewater treatment plant construction program, a program that Environmental Secretary Martin Johnson describes as "the number one priority activity" for the Agency over the next two years.

The sewage treatment plant construction program was authorized in 1972 by the Federal Water Pollution Control Act Amendments. It is a massive commitment to the goal of clean water: $24 billion over-all and $18 billion for design and construction of waste treatment facilities. In 1972 the Nixon Administration ordered the impoundment of half of this money. Two billion dollars were available in fiscal year (FY) 1973; three billion in FY 1974; four billion in FY 1975; and now as a result of a Supreme Court ruling nine billion dollars will be released for spending in FY 1976.

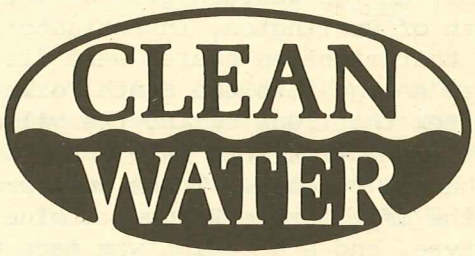
In Vermont the planning and construction activity has been well-advanced already but the availability of $36 million of federal money and about $14 million of state and local matching funds will spur construction. Today in Vermont there are ten plants under construction, eleven more are in final design stages, and bond votes are scheduled in twenty towns during next year to authorize treatment plant construction.

While few people dispute the fundamental goal of clean water, while they agree that the dumping of raw sewage into the state's waters should be stopped, there is growing uneasiness about how this goal should be achieved and what it should cost.

Two of those who are raising questions about the wastewater treatment plant construction program are Martin Zeller, Director of Land Use Planning, and John Marshall, an intern in the State Planning Office, who is a student at Yale Law School.

These are some of the questions they are raising. "Can the State of Vermont afford to borrow the money needed to match the federal grants for sewage plant construction without losing its preferred credit rating?" "What is going to happen when the towns discover the exorbitant costs they are going to have to pay for building and maintaining sewage treatment plants?" "Who will be asked to foot the bill?" "To what extent have we measured the need for a sewage treatment plant in a given community against the importance of other capital construction projects like housing, schools and hospitals?" "Is the wastewater treatment program another example of an overblown federal construction project like the interstate highway system?" "Are there alternatives to the present water-based sewage treatment technology; would these alternatives be less expensive and have they been carefully considered?"

Then there are questions of growth. Zeller sees the decision to construct a sewage treatment plant as "a significant opportunity to direct or stimulate growth."



He looks at the size of the new construction program, $50 million and the proliferation of sewage plants throughout the state, and he sees no clear priority system for saying which sewage systems should go in and which should not, based on a plan of how the state should grow. Because the "design capacity" of a sewage treatment plant invariably exceeds the present volume of waste, because these plants are expensive to build and maintain, Zeller sees their construction as creating a momentum for growth. Communities get these plants, tie themselves into

SEWAGE PLANT CONSTRUCTION PROGRAM (Continued)

indebtedness, find out these plants are more expensive than they anticipated, and are then forced to attract new industries and more people to pay the costs; it leads to development and growth and it's indiscriminate.

State Planning personnel are not the only people who are raising questions about the size and cost of the wastewater treatment construction program.

In the Central Vermont town of Chelsea, the sewage treatment plant cost over $700,000 to build. It presently accomodates 100 housing units. If you count the federal dollars, it amounts to a cost per unit of $7000. Chelsea residents will pay a user fee of $67 annually. Chelsea Selectman, Neil Kennedy, expressed general satisfaction with the new plant. He explained that the high water table and the density of settlement patterns in Chelsea Village insisted upon the need for a sewage treatment plant as opposed to the less expensive alternative of individual septic systems. At the same time he had certain reservations about the new facility. He questioned the need for railings around the aeration tank and for a chain-link fence around the plant. He wondered about the size of the sludge-drying building. He thought these might be federal standards.

In Orwell, on the western side of the state, south of Burlington, investigators discovered that eighteen houses were discharging raw sewage into the South Fork of the East Creek that runs behind the village and eventually empties into Lake Champlain. Something had to be done. There were problems with the impermeable Vergennes blue clay soil type, and a decision was made to build a sewage treatment facility. The system, as constructed, will serve up to 57 houses. Its total cost: $675,000. The vote to approve the project was 91-90, and David Barker, an Orwell resident, who voted against the bond issue says that he feels "The Town was sold a bill of goods by a sophisticated engineering firm." He is familiar with the special problems in Orwell but he wonders if there wasn't some less expensive way of coping. He wonders whether a small grants program for individual householders might have solved the problem at a lower cost.

The engineers and planners at the Agency of Environmental Conservation are quick to defend the sewage treatment plant construction program.

William Brierley heads up the Public Facilities Section and supervises the statewide planning and construction effort. "The question is how to abate pollution," he insists. "If they need a plant, we build it; if they don't, we don't." He denies categorically any suggestion that the sewage construction program is steaming ahead indiscriminately. The planning documents support his point of view. For a project to qualify for federal assistance it must be entered on a state priority list. Points are assigned to individual projects on the basis of the number of people affected, the severity of the pollution problem, and the need to preserve existing high quality water. It is not a helter-skelter procedure.

As to questions of cost, the Agency is facing the same problems that complicate every other effort to deliver services in Vermont, the fact that 50% of the population in this state resides in a rural area. Water Quality Chief, David Clough, explained it this way. "In small towns the unit cost is more expensive. In cities like Barre, Montpelier and Burlington, where population densities are higher, you don't have to run 100 feet of pipe just to connect an additional house."

The question of the impact of sewage plant construction on growth is clearly controversial.

William Brierley sees no mandate from the Legislature to consider the impact of sewage plant construction on growth. The project life of a treatment plant is 20-25 years. "It would be stupid," observes Brierley, "to build a plant that lasted for less than twenty years because then you would be paying out on a dead horse." What the engineers do is this. Before designing a plant they contact the planning offices, the selectmen, and "project a population" for the next twenty years. Then the plant is designed. "You have to 'crystal ball' capacity," says Brierley, adding, "we are only trying to abate pollution, not to 'plan.'" Brierley willingly admits that sewage plant construction like the provision of any kind of service, tends to stimulate growth, but he has

SEWAGE PLANT CONSTRUCTION PROGRAM (Continued)

never met a selectman yet who wanted no-growth, and he doesn't consider this kind of question part of his responsibility.

Water Quality Director Clough sees the question of growth in much the same way. When engineers plan a sewage treatment plant they add on 20-50% of the present population to accomodate future needs. Sure this attracts industrial and residential development but Clough sees no mandate to say who should grow and who should not. "You are never going to control growth with a sewage system," Clough remarks. "There are natural constraints that can be overcome by money." You could distil sewage wastes, if you had the money, and produce pure water. And how are you going to arbitrate between several towns that share a river basin, how are you going to decide which town should grow and which should not? It would be an enormously complicated decision and almost inevitably controversial.

Agency officials talked about alternatives: about "land treatment," about the "dry toilet," and about reducing waste at its source.

As to alternatives it seems clear that the State of Vermont is committed to water-borne sanitation systems in the foreseeable future. The "land treatment" alternative was commended in a July, 1973 study by the Washington, D. C.-based "Project on Clean Water." "Land treatment is an alternative which involves the confinement and purification of wastewater on the land. By returning all human and most industrial wastes to the land and allowing them to filter through or flow over the soil, this system uses the natural processes of time, sun, wind, vegetative growth and the physical and chemical makeup of soils to purify wastewater." Going on, the report says: "One reason the land treatment alternatives has received so little attention is that water pollution control has been vested in the technologically-oriented sanitary engineering profession, rather than in the more broad-based ecological disciplines."

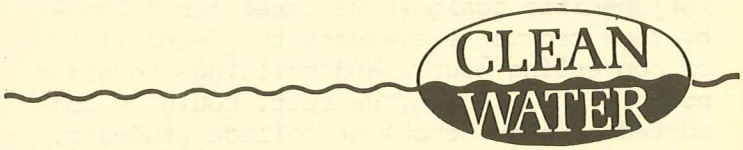
Would the "land treatment" system work in Vermont? Officials at the Agency are skeptical. They see several problems: the high water table; the availability of land; "tight" or impermeable soils; old man winter, and a conservative Health Department attitude on the advisability and safety of spraying human wastes on the land.

Officials at the Agency thought the "Clivus Multrum" dry toilet was a good unit. Its use on a wide scale could cut the flow of sewage waste in half. But could it be used everywhere and how would you persuade the public to install it? And even if you cut the flow of human waste you would still have to deal with sewage water from washing and running water. As Bill Brierley remarked, "If we knew how to do something else, we'd do it."

The only other way of cutting costs is to get the public to use less water, less of the kinds of things the public has come to want; washing machines, dishwashers, second bathrooms. Sewage treatment applies to everything that produces water in the home and in industry. Getting that kind of message across could be hard.

The sewage treatment construction project will cost a lot of money. Is it a boondoggle? It depends on your point of view. Some people are wondering how they can afford everything that seems necessary today: expensive schools, expensive power, expensive hospitals, expensive telephones, expensive gasoline, and expensive sewage treatment systems.

There is the other side of the coin, what the program will achieve. As David Clough says: "There is a hell of a lot of raw waste going into rivers. The job isn't done yet. This program will clean up a tremendous part of the state."



VPIRG CRITICIZES STATE AIR POLLUTION PROGRAM

The Vermont Public Interest Research Group has just published a detailed report entitled, Up in Smoke: The Myth of Clean Air in Vermont. Copies are available for $1.00 from VPIRG, 26 State St., Montpelier, Vt., 05602.

HERONEMUS ASKS FOR ENERGY ALTERNATIVES AND CONSERVATION

Professor William Heronemus, an expert on alternative sources of energy from the University of Massachusetts (Amherst) testified before the Vermont Senate Energy Committee on Thursday, July 31. Professor Heronemus has spearheaded research on windpower technology and ocean thermal differences.

In his 75-minute presentation before the Committee, Heronemus drew a grim picture of rising conventional energy costs. Coal, oil, natural gas, nuclear power, all these costs will continue to rise. If we follow current plans we shall quadruple our production of coal over the next 35 years and multiply our use of nuclear power by a factor of 800.

Heronemus was adamant about the need for a vigorous and equitable program of energy conservation. Here was a place where government could offer leadership. He commended an effort by the State of Massachusetts to save 20 million dollars next winter by lowering the heating levels in public buildings. "The burning of petroleum is a crime," he told the Committee, "because petroleum is the feed stock to important chemical industries. It is too valuable to be burned."

If the Senate Committee was looking for proposals for taking action, they were not disappointed. Heronemus discussed the available alternatives and their suitability to Vermont: hydro-electric power; wood; methane or bio-gas; the solar cell; the flat-plane solar collector; windpower machines; solid waste; sewage sludge.

In closing his remarks, Heronemus called for specific action. He asked for a town-by-town census to evaluate the feasibility of converting houses and buildings to solar power. This census, he felt, could be conducted by high school or college students, once they had been properly instructed. He called for a state-supported solar heating demonstration project. He pointed out the need for an accurate wind-speed inventory in Vermont. He talked of Vermont's woodlands as an energy resource. Young people and unemployed adults could find work in the outdoors by recovering waste wood from our forests and by creating what he called a "trial energy plantation" on public land. Heronemus advised the Committee to establish a system of loans or tax incentives to encourage individual property owners to shift from total reliance on conventional fuels to partial reliance on solar energy. At a regional level Heronemus suggested that Vermont "tie up with the other New England states" in looking at offshore winds in the Gulf of Maine as a "common energy resource." These winds develop an average of 700 watts per meter; they can be captured and they are a clean source of energy.

During the question and answer period Senator Janeway asked about the proper role of government versus private enterprise in developing alternative sources of energy. Heronemus considered the record of the utilities. All in all, it had not been impressive. "Would the utilities develop offshore wind?" he asked. "I don't think so. Offshore wind is not as profitable as selling oil."

1975 GOVERNOR'S CONFERENCE: THE ECONOMY AND THE ENVIRONMENT

The Governor's Conference on Natural Resources, held for the first time six or seven years ago, but not convened in 1974, will resume at the Tavern Motor Inn in Montpelier on September 10. The focus of this year's conference is "The Economy and the Environment -- Toward 1985 and Beyond." According to VNRC Executive Director, Seward Weber, who is on the planning committee for the Conference, the object of the 1975 gathering is not to go over old ground and draw up sides in debating conflicts between environmental concerns and the need for a vigorous economy. What is to be discussed is this: how the environment of Vermont can be managed more effectively so that economic conditions and employment opportunities can be improved.

BURLEY ASSOCIATES IS CONDUCTING "CITYSCAPE PROJECT" IN MONTPELIER

A team of architects and surveyors from the firm of Robert Burley Associates is conducting a "Cityscape Project" in Montpelier. The $14,000 project began on May 15th and will continue throughout the summer. The aim of the project is to provide a visual,

"CITYSCAPE PROJECT" (Continued)

physical and economic inventory of the "Design Control District" of the City of Montpelier. The Design Control District consists of the central business district, the civic district, and the old residential neighborhoods of the city.

These are the results that can be expected from the project under an agreement worked out between Burley Associates and the City of Montpelier: (1) a history of the city; (2) an updated map; (3) an extensive survey of buildings in the Design Control District, including an analysis of their physical condition, space, present use and architectural merit; (4) a survey of citizen needs and attitudes; (5) a visual record of the District, black-and-white photographs of buildings in the District; (6) a discussion of alternatives for restoration in the District; (7) a statement of design standards indicating traditional building characteristics and methods of adaptive use; (8) a description of capital investment opportunities in the District; and (9) a series of recommendations and guidelines for future development.

The key result of the project will be the identification of a set of design standards for the District and a comprehensive statement of the alternatives open to the City of Montpelier.

UVM TO OFFER MASTER'S DEGREE PROGRAM IN HISTORIC PRESERVATION

The Departments of History and Art at the University of Vermont have announced a new two-year graduate program in Historic Preservation leading to the Master of Arts degree. The object of the new program is to provide "interdisciplinary training in the conservation, enhancement and reuse of the built environment to participants from a wide variety of backgrounds and interests."

Chester H. Liebs, who was formerly Assistant Director of the State of Vermont's Division of Historic Sites, is Program Director for the new degree offering. This program is currently accepting applications from qualified students for September 1975 admission. (Interested persons may direct inquiries to the Graduate College Admissions Office, The University of Vermont, Burlington, Vermont, 05401, or call Chester Liebs at (802) 656-3180. Applications and supporting papers are due as early in the month of August as possible.)

UDALL TO BE GUEST SPEAKER AT VERMONT CONSERVATION BANQUET

Representative Morris K. Udall (D. Arizona) who is seeking the Democratic nomination for President has accepted an invitation to be the guest speaker at the second Vermont Conservation Banquet, November 1, 1975, sponsored by the Vermont Natural Resources Council. This year's Banquet will be held at the Woodstock Inn. Further details will be given in the September and October issues of the VER.

VERMONT FOOD COMMISSION WILL MEET IN RUTLAND

The Vermont Food Commission, formally inaugurated by Governor Salmon in Montpelier on June 6th, will hold the third of its six scheduled monthly public meetings August 20th in Rutland. The public portion of the Commission's business will begin at 6:30 p.m. at the Rutland High School.

The Food Commission was formed to look into these issues: high food costs; the fact that Vermont imports over 90% of its food supplies from out-of-state, and the need for greater self-sufficiency. The Commission has already met in Burlington and St. Johnsbury. Future meetings will be held in Brattleboro on September 17th, in Enosburg Falls on October 15th, and in Bennington on November 19th. The Commission will report to the Governor in December in time for its findings and recommendations to be available to the 1976 Session of the General Assembly.

Rosalyn Oakes, Chairperson and Executive Director of the Commission, has emphasized the important part that public participation will play in the deliberations of the Commission. Citizens are invited to make presentations of up to five minutes in length at the several public meetings being convened throughout the state.

(VNRC members may call Rosalyn Oakes at 828-3326 or Brendan Whittaker at 828-3357 for further information.)

JOINT COMMITTEE CONSIDERS PHOSPHATE BAN

Two major issues have been brought to light in a lively debate between representatives of the Soap and Detergent Association and supporters of a bill that would eliminate phosphates from household detergents.

The Joint Committee on Natural Resources is conducting hearings on S. 128, a bill introduced by Senator Arthur Gibb (R. Addison). Proponents of the measure, led by the Lake Champlain Committee and officials from the State Department of Water Resources, claim that phosphate pollution is causing excessive weed growth and algae blooms, particularly in Lake Memphremagog and along many of the bays of Lake Champlain.

The first issue surrounds the question of nutrient levels in the state's waters. Roughly 50% of the phosphate "loading" in Vermont's rivers, lakes and streams comes from soil and organic materials; 25% comes from sewage other than detergents; and only 25% comes from the detergent products themselves. Representatives of the detergent industry argue that there is so much phosphorus in the water from natural and other sources that the removal of detergent phosphorus would be both expensive and would make no important difference.

This point of view was opposed by supporters of S. 128. They point to studies that show that almost all water bodies in Vermont are "phosphate limited." This means that there is relatively less phosphorus available than other nutrients essential for plant growth. In these circumstances it is the presence or absence of additional phosphorus that is the critical factor in the rate of plant development.

The second major issue that emerged from the hearings was the question of whether Vermont should attack the problem of phosphate pollution with a ban on detergents or, at the "end of the line," at sewage treatment plants before waste waters enter the rivers, lakes and streams. There is a further treatment process known as "nutrient stripping." This process could be added to primary or secondary treatment at new and existing sewage plants and it could remove up to 90% of the phosphorus and other nutrients in sewage plant effluent.

Officials from the Water Resources Department explained the difficulties of adopting this proposal. They pointed out the expense of adding nutrient stripping to existing and new sewage treatment facilities. The Water Resources Department has other priorities. Before they decide to spend money on nutrient stripping they want to see the completion of a network of secondary level sewage treatment plants throughout the state. This first objective won't be achieved until 1985 or 1990. In the meantime a ban on phosphates could be imposed and have immediate benefits.

(Additional hearings on S. 128 will be scheduled but no firm action can be taken until the Legislature reconvenes in January, 1976.)

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