

# \$400 Million For Pure Water

*Editor's Note:* We continually hear about the award of large construction contracts which directly or indirectly involve members of the Green Industry. With this in mind, we have presented here some of the work which is being accomplished in upstate New York on a large pure waters

program. We hope that many of the specifications which have been implemented into this program can be used in other contracts where Green Industry firms are involved.

The County of Monroe, N.Y. — which celebrated its 150th birthday

in 1971, is involved in what is probably the most advanced and largest pure waters program in the nation. It requires the laying of hundreds of miles of sewer lines, four huge treatment plants, tearing up streets, roads, curbs, lawns, and trees, all of which must be restored to their original state upon completion of each contractor's contract.

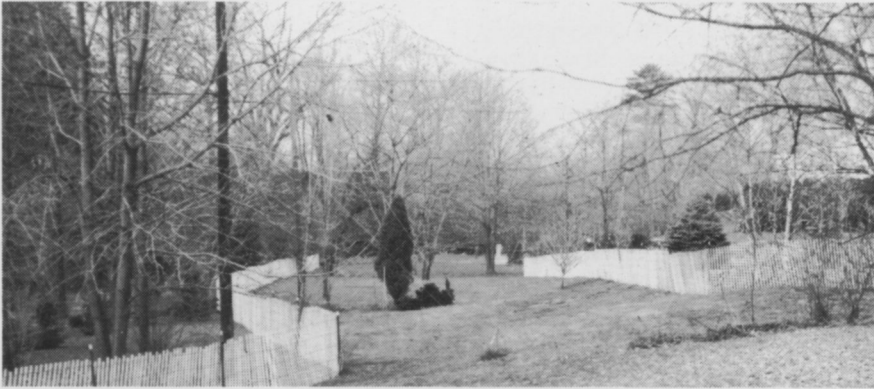
Following a recommendation of the then county manager Gordon A. Howe, officials in this western New York county had authorized a comprehensive study of the county's water in 1964 to determine what should be done to combat water pollution. Started in 1970, the cost of this program when completed in 1975, will be nearly \$400-million.

Following the study, the Monroe County Pure Waters Agency was created and a plan prepared. The division of pure waters was created under the County Department of Public Works whose responsibility was to carry out the recommendations of the Pure Waters Agency and the County Legislature. The Division represents a partnership of Federal, state, and local governments and well-known contractors, to eliminate water pollution.

In the last twenty years alone, Monroe County population has grown by more than 225,000 to an estimated 720,000 people and the index of Rochester industrial production has increased nearly five-fold, all adding to the pollution crisis.

The County has been divided into four regional systems following drainage basins. Each is having a network of sewers built by contractors, which will eventually gather loads from smaller feeder sewers and carry the sewage to large regional treatment plants. The new or remodeled treatment plants will provide a minimum of secondary treatment of the wastewater. Under the Pure Waters Plan, four regional plants are now being built by contractors to handle the work now being done by 34 over-loaded sewage treatment plants. The four, when completed, will be able to do the job more effectively. The 34 plants will eventually be phased out.

Interceptor sewer and force mains are being built throughout various towns, villages and cities of Monroe County.



This is one of the areas prior to construction.



The same area during construction.



After construction and restoration, the area looked like this.

Monroe county's Pure Waters program is a 12-month-a-year construction feat, with many contractors continuing to work on their sites during the winter months.

### RESTORATION IMPORTANT

During any kind of construction, especially of this size, there is disruption and inconvenience to people.

Every attempt has been made to minimize the impact of the ecology and maximum efforts are being made to restore the surface to its original state as contractors complete their contracts.

Harold Bilow is Supervisor of Construction and Inspection for the Division of Pure Waters, and he and contractors have been working together to see that roads, streets, curbs, lawns, trees, and other surfaces disturbed by construction are returned to a normal state following each contract completion.

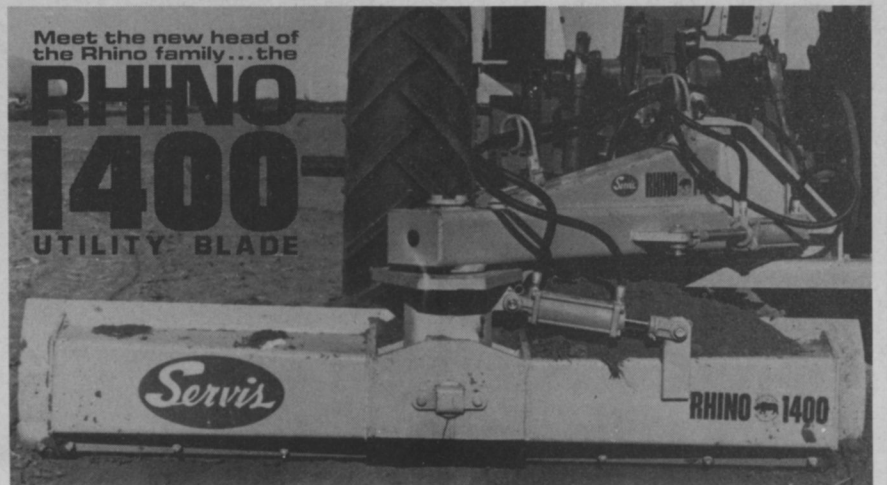
Grades, and surfaces, under the contractor's responsibility for restoration of surfaces, have to be restored so as to be equal to or better than the original condition which existed at the time they were damaged or disturbed as a result of work covered by the contract. None of the contractor's obligations are considered fulfilled until all restoration work has been approved by the Engineer and by public authorities having jurisdiction.

Where restoration of lawns, trees, shrubs, curbs, walks, roads, streets, etc. comes under the jurisdiction of town, county, state or other public authorities or public utilities, all work must be in accordance with the requirements of such authority.

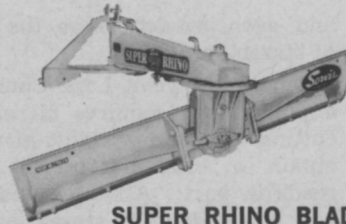
Restoration of surfaces remain a "big" part of contractors responsibility  
(continued on page 22)



Hundreds of miles of interceptor sewer lines were buried. Lawns, trees, curbs had to be restored to their original state.

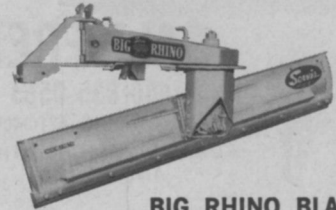


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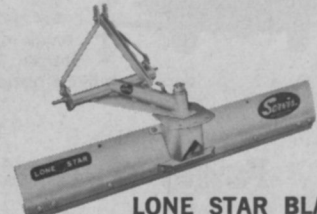
**BIG RHINO BLADE**

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## \$400 MILLION FOR WATER

(from page 15)

bilities on the Monroe County Pure Waters project and grass and planted areas are no exception. All work in connection with the restoration of grass and planted areas had to be performed by an experienced landscape subcontractor, engaged and paid for by the contractor.

Topsoil is required to be used for the top six inches of backfill of trenches and excavations in grass and planted areas unless otherwise required by particular easement agreements. Topsoil must be approved topsoil obtained from excavation operations, or imported by the contractor at his expense.

The contract said that imported topsoil could contain no mixture of refuse or any material toxic to plant growth, and be reasonably free from subsoil, stumps, roots, brush, stones, clay lumps or similar objects larger than two inches in greatest diameter. Other specifications included: acidity between 5.0 and 7.0 pH; and organic matter content not less than three percent nor more than 20 percent.

Liming, fertilization and seeding were other contractor responsibilities under the "restoration" program involved with each contract. Seed had to be sown with approved equipment at a rate of 5-pounds per 1,000 square feet, with all seeding work, under the contract, done between April 15 and June 15 or between August 20 and October 15.

Sod had to be planted on residential properties three months after backfilling operations were completed. In areas where the satisfactory establishment of grass might be difficult due to steep slopes,

drainage flows, etc., the Engineer could order sod be planted.

Plantings and shrubs that couldn't be protected in their original locations had to be removed by careful excavation and balling the roots in burlap. Plants and shrubs were required to be stored in protected areas and given ample water to keep them in a thriving condition. As soon as possible after construction operations moved ahead, the plantings and shrubs were to be set back in their original location.

### SAME AS BEFORE

The contractors were also obligated to replace with the same species and size any plantings and shrubs that fail to survive the moving operation during the guaranteed period.

Contractors working on the Monroe County program were also responsible for the proper maintenance and care of all restoration work in grass and planted areas until final acceptance of the work. They had to guarantee their work for a minimum one year period from the date of initial acceptance.

Permission to trim or remove trees was needed in unpaved areas where trenching or excavation passed through residential sections. When obtained, all trees twelve inches in diameter — sometimes even six inches in diameter — and larger were protected and preserved within the work limits but outside the area being excavated.

Small trees, and plantings were carefully taken up and preserved by the contractor for reuse by an approved landscape subcontractor — as part of the contract specifications.

Topsoil, too, was removed and

stockpiled separately from other excavated materials, for reuse as part of the restoration.

Landscape contractors hired by contractors on the Monroe County Pure Waters Project followed the restoration "specifications" as outlined by the Division of Pure Waters, for seeding, mulching, sodding and other activities.

For example, except in open farm areas under cultivation, all disturbed open and wooded areas, on slopes of less than one vertical to four horizontal, were treated with a mixture of fertilizer and seed using the Hydro-Seeder of the Finn Equipment Company, or other approved equipment. Seed had to be sown at the rate of 70 pounds per acre, with fertilizer being applied at the rate of 800 pounds per acre.

#### Seed Mix

	Weight of Pure Live Seed
Red Fescue ( <i>Festuca rubra</i> )	40
Kentucky Bluegrass ( <i>Poa pratensis</i> )	10
Common Ryegrass (Domestic) ( <i>Lolium perenne</i> ) ( <i>Lolium multiflorum</i> )	15
White Clover ( <i>Trifolium repens</i> )	5
Total lbs.:	70

#### Fertilizer Mixture

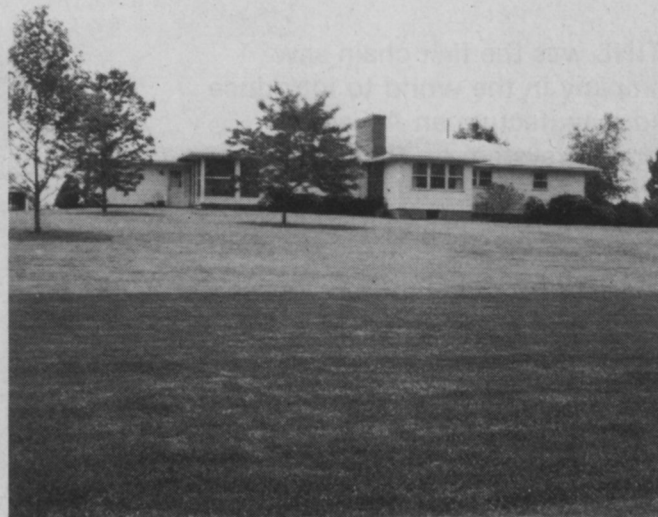
Rate of use: ½ by weight of Type 1 and Type 2.	
Type 1	10-6-4
Type 2	Uramite, Nitroform or Borden's 38

Within 48 hours after seeding, a mulch of clean new crop wheat straw was placed uniformly in a continuous blanket at a rate of not less than two tons per acre. A mechanical

(continued on page 24)



This tree was planted on private property as part of the restoration program.



The dark area in front shows where sod was placed. Contractor was responsible for restoration.



This area was seded and covered with straw following placement of the sewer project. Contractors followed stander seeding specifications to restore site to the original state.

## \$400 MILLION FOR WATER

(from page 22)

blower was sometimes used to apply mulch. However, the Division of Pure Waters would not allow machines which cut mulch into short pieces to be used.

In regards to liming, fertilizing and seeding for grass and planted areas torn up by the sewer project and replaced with topsoil, landscape contractors found that all areas to be seeded had to be disced or otherwise loosened to a depth of two-inches and raked to true lines, free of all unsightly variations.

Topsciled areas were rolled with lawn roller and all low spots leveled up. Based on a minimum of three representative soil samples, raw ground agricultural limestone was applied. Limestone was worked lightly into the top 2 inches of the soil. Commercial fertilizer, 10-6-4 was applied at the rate of 25 pounds per thousand square feet, again worked lightly into the top 2 inches of the soil.

Seed used for grass and planted areas was:

- |     | Species                                 |
|-----|---|
| 50% | Creeping Red Fescue<br>(Illahee Strain) |
| 30% | Kentucky Blue Grass                     |
| 10% | Redtop (Fancy re-cleaned)               |
| 10% | English Perennial Rye                   |

A mulch of clean new crop wheat straw was placed uniformly in a continuous blanket to provide a cover of 3-inches, loose depth.

Any damage to existing stream or channel beds and banks and any distruptions to flow had to be repaired and restored. Rip-rap paving

on some creek crossings were constructed of durable field or quarry stone, each shaped as nearly as possible in the form of right rectangular prism. The stones had to be laid perpendicular to the rip-rap bed.

The length of a trench opened through most areas, including residential property, couldn't be longer than 3 structure-to-structure runs or 500 feet, whichever was less.

In regards to pavements torn up during the course of construction activity, contractors were required, as part of "restoration", to replace the pavement with the same quality, thickness, bearing capacity and surface finish.

Sidewalks being replaced by contractors had to extend to the nearest contraction joints or expansion joints, with all sidewalks provided with a minimum 6 inch base course of approved granular material. □

## Wider Use Of White Amur Sought By Two Fla. Solons

Two Florida legislators say the time has come to stop testing an Oriental weed-eating fish in isolated ponds and start using it to help clear vegetation that's clogging state waterways.

Representatives Bill Fulford, Orlando, and William J. Rish, Port St. Joe, called for the release of the white amur — a fish from the icy waters of Siberia — after viewing the results this week of a University of Florida research project in Orange county.

The tests are being conducted by the UF's Institute of Food and Agri-

cultural Sciences in cooperation with the U. S. Department of Agriculture and the Florida Department of Natural Resources.

Fulford, who is chairman of the House resources committee, charged there has been too much "official foot-dragging" over when the fish should be released to control submersed hydrilla vegetation in lakes and waterways.

"Some biologists have expressed concern that the amur will get out of hand and end up being more of a nuisance than the waterweeds themselves. But research indicates the amur will control hydrilla without affecting desirable underwater plants like vallisneria (commonly called eelgrass)," he said.

Rish, accompanied by a group of commissioners from Bay county, said he wants the fish released in Deerpoint Lake near Panama City to control the rapid growth of hydrilla "which has just about ruined this lake for recreational purposes."

He said conventional mechanical control methods have been ineffective, and chemical controls will not control submersed weeds either. Even if chemical controls did the job, they can't be used because the 3,000-acre lake is a source of drinking water for Panama City, he said.

Dr. Al P. Burkhalter, coordinator of the Department of Natural Resources' aquatic plant research program, Tallahassee, agreed with the legislators. "The amur has more potential as a control for aquatic weeds than anything we've seen in the last 15 or 20 years. It's time now to get it out of our experimental ponds into more natural situations to find out what we can do with it," he said.

Dr. David L. Sutton, assistant professor with UF's Agricultural Research Center, Ft. Lauderdale, said the fish is already being used in Arkansas to control submersed waterweeds without any undesirable or unforeseen side effects on other fish and plants.

His research, suported by \$75,000 in grants from the Rockefeller Foundation and the Department of Natural Resources, has convinced him that a trial release of the fish into a few land-locked lakes in Florida "will not be something we regret later on."

"We've tested the amur on all sorts of aquatic plants, with many different types of fish, and we're almost certain the amur will have no adverse effects on sport fishing or the overall aquatic environment," Sutton said.