

**CHARACTERIZATION OF OUTFALLS
ON THE WINOOSKI RIVER
IN MONTPELIER**

FINAL REPORT – AUGUST 31ST, 2001

Friends of the Winooski River

153 State Street, Montpelier, VT 05602

1.0 INTRODUCTION

1.1 Background

The City of Montpelier, Vermont is located at the confluence of the Winooski River and the North Branch River. The segments of the Winooski River (VT08-05) and its North Branch (VT08-13) flowing through the downtown are both included on Vermont's 1998 List of Impaired Surface Waters due to pathogen problems resulting from combined sewer overflows. Contact recreation is not recommended in these segments due to the pathogen problems.

The City of Montpelier is in its ninth year of an expensive effort to separate the storm water lines from its sanitary sewer lines and eliminate the combined sewer overflows. One complicating factor is that, prior to this project, the Montpelier Department of Public Works (MDPW) did not have a complete record of the type and location of outfall pipes in the impaired river segments. This project was intended to satisfy the need among public officials and Montpelier citizens for a better understanding of the location and condition of pollution discharges in the impaired river segments within the City limits. It was equally intended as a vehicle to foster awareness among Montpelier citizens of the urban runoff issue.

1.2 Project Aim and Objectives

The aim of the project was to comprehensively document the outfall pipes in Montpelier to help MDPW and city residents locate undocumented pollution problems, ensure adequate maintenance of the existing outfalls, and make more informed planning decisions. Our objectives were to:

- Increase public awareness about urban NPS through publicity, media coverage, and volunteer involvement.
- Identify visible pollutant discharges other than documented, remaining CSO problems. This could lead to significant pollution reduction actions.
- Identify potential pollutant discharges that warrant future monitoring.
- Create a detailed map locating outfall pipes that could serve as a planning tool for MDPW.
- Conduct an assessment of outfall pipe condition that could be used for preventive maintenance.
- Identify local erosion problems at outfall pipe discharges. Erosion control at these sites by MDPW would result in decreased sediment and nutrient loading to the Winooski and North Branch Rivers.

2.0 METHODS

In April and May 2000, FWR worked with the MDPW to finalize an outfall survey method (Attachment 1). In order to distinguish between known stormwater discharges and suspect flows, the outfall survey was conducted in dry weather. The survey of outfall pipes on the Winooski River and the North Branch was conducted during low water periods in the summer of 2000.

The project coordinator issued a press release to generate public awareness of the project (Attachment 2). Volunteers were recruited for workdays in July and August 2000. Volunteers were provided with an overview of the project and instructed in the survey procedure and the operation of Global Positioning System (GPS) units. Volunteers recorded data describing each outfall, including notes concerning any obvious pollutant discharges (oily substances, sewage smells, discolored liquids, foams, etc.), type and condition of the pipe, and erosion at the outfall site. They marked pipe locations on field maps: enlarged sections of 1:5000 digital orthophotos overlaid with parcel boundaries and street data locations. The coordinators for each outfall pipe were recorded using the GPS units. Volunteers also photographed the outfalls. These photographs were developed, labeled with corresponding outfall identification codes, and scanned to create a picture file on CD Rom.

The outfall data were categorized to produce a comprehensive table of information pertaining to each outfall (Attachment 3). Initial results 'raised flags' on discharges from several outfalls, which were reexamined in September 2000 and again in August 2001 by project manager Dave Braun. The investigations and actions taken relative to these potentially problematic discharges are described in the results section below.

A draft Geographic Information System (GIS) map of the outfall locations was created by the MDPW from the GPS coordinates recorded in the field. This map needed extensive correcting because many of the GPS coordinates were off, and because of human error in the use of the GPS units. The project coordinator manually corrected the position of the outfalls by referring to the indexed outfall locations marked on the field maps by surveyors.

Outfall locations on the GIS map were classified to highlight those outfalls found to warrant further attention (Attachment 4). These fell into three categories of concern: (1) suspected contaminated discharges, (2) pronounced streambank and/or streambed erosion around the outfall, and (3) outfalls in danger of structural failure due to severe corrosion, damage, or obstruction.

Finally, the survey findings were presented to Steven Gray, Director of MDPW, and Derwood Lamb, Superintendent, in August 2001. Areas of concern resulting from the study results were the focus of the discussion, and resulted in MDPW agreeing to certain investigative and corrective actions, which are detailed below each item.

2.1 Limitations of Study

Because of the extensive study area, and the large number of outfalls concentrated in the City's downtown area, it was only feasible to conduct a single evaluation of the majority of the outfalls. This presented a major limitation to the study in that the survey was based on a single observation. The survey would not have been likely to detect infrequent discharges that left no physical evidence.

In order to distinguish between known stormwater discharges and suspect flows, the survey was conducted in dry weather. However, some illegal or inappropriate overflow problems could only have been witnessed during or immediately after a rainstorm.

In order to implement this low-cost, low-tech survey method, the project was conducted by many volunteers with differing abilities and approaches. This subjectivity inherent in this survey method is a further limitation of the study.

Because FWR relied on volunteers to conduct the survey, it was necessary to schedule the survey days on weekends when working people would be available. Because of this constraint, non-permitted discharges originating from an industrial or commercial activity would have been less likely to be detected.

3.0 RESULTS

A total of 35 volunteers took part in the outfall survey. 176 outfalls were identified along the approximately 5 miles of streambank that were surveyed. The corrected outfall locations are shown on the map of the study area (Attachment 4).

The project generated a positive response from the local community and attracted additional anecdotal reports of discharges that were considered suspicious. The *Times Argus* reported on the project at the time of the first survey session (Attachment 5). Although the report contained numerous inaccuracies, and was premature and misleading in its 'all-clear' conclusion, it did succeed in attracting volunteers for the second workday the following month.

3.1 Suspected Contaminated Discharges

Outfall NB-JT-01

Located in the foundation wall of the old Chittenden Bank building (below Mail Boxes Etc.) just upstream of the Rialto Bridge on the west bank (right bank when facing downstream). A 6-inch diameter ceramic pipe was discharging a small quantity of foul-smelling liquid. The eroded base of the building foundation below the pipe was also seeping the liquid, creating a plum of gray water in the North Branch.

In September 2000, a sample of the discharge was taken to Spectrum Laboratories and found to contain >160,000 E. coli colonies/100 mL.

MDPW Action: In September 2000, this finding was brought to the attention of MDPW. MDPW contacted the building landlord, who supposedly took corrective action. However, the problem was apparent when the site was revisited in August 2001 (right); a second sample taken at that time had E. coli concentrations exceeding 160,000 colonies/100 mL. MDPW agreed to investigate the problem further and take corrective action. FWR will monitor progress in correcting this problem.



Outfall NB-MW-16

Located on east bank of the North Branch (left bank when facing downstream) approximately 30 feet downstream of the Rialto Bridge. This 18-inch ceramic pipe was partially submerged at the time of the survey and a foul odor was reported at the site. This was only faintly noticeable when the pipe was revisited in September 2000 and higher water levels submerged the pipe.

When outfall NB-MW-16 was revisited in August 2001, the pipe was discharging a steady flow of dirty water that formed a sediment plume in the North Branch. The repair on a burst water main on Main Street was the obvious source of the pollution (right).



A large hole had been excavated where the break had occurred and City water was flowing out of a disconnected section of pipe and mixing with soil in the bottom of the hole. A pump and hose was being used to transfer this muddy water to the nearest stormdrain that in turn discharged in the North Branch at the outfall in question.

When Dave Braun suggested to the works foreman that the clean water be collected in a bucket beneath the flowing main so that clean water could be pumped to the river instead of the muddy water, the foreman indicated that this was not feasible. FWR reported the incident to the local media since it was considered an important example of preventable pollution, which happened to occur on the same day and in the same river reach as another major pollution event, runoff from a house fire (Attachment 6).

MDPW Action: When discussing this outfall with MDPW it was learned that a sewer siphon approximately 20-feet downstream has the potential to overflow into the North Branch. The proximity of this discharge may account for the foul odor. The siphon overflows when its carrying capacity is exceeded, or if sediment is allowed to accumulate in the siphon. Accordingly, this and other siphons in Montpelier are scheduled for weekly inspections and monthly cleaning. The situation should improve as CSO separation work continues, allowing previous separations to come 'on-line'. This will be a matter for FWR to monitor in the future.

Steven Gray's position concerning the sediment pollution resulting from the water main repair was that this event was no different than regular storm runoff, and therefore did not warrant preventative measures.

Outfall NB-JT-03

This 6-inch diameter outfall in the foundation of the building located at 27 State Street has been repeatedly observed discharging a large volume of clear water at regular intervals. This outfall was reported to FWR by numerous residents who were concerned because of its intermittent nature, and the fact that the building contains a photo developing business that is presumed to create hazardous waste.

MDPW Action: MDPW informed FWR that this is almost certainly discharge from a basement sump pump, but they will double check and report back to FWR.

Outfall WI-JB-04

Located on the Winooski River by Memorial Drive between the Exxon gas station and the Main Street Bridge. A "sewage smell" was originally reported in the vicinity. During a second examination in September 2000, the smell was noted but the source was inconclusive. River vapor from the nearby falls was considered a possible reason for the general odor. However, when a third visit was made in August 2001, a small amount of foul smelling discharge was observed, and a sample was taken to Spectrum Laboratories. The sample was found to contain 2,340 E. coli colonies/100 mL (Attachment 7). This is within the range for stormwater, although the smell is strongly suggestive of septic contamination.

MDPW Action: MDPW will inspect the site.

Outfall WI-FC-04

Located on the Winooski River below the VFW post 792 on Pioneer Street. This 12-inch diameter ceramic pipe had a constant, low volume discharge. A strong oily smell was noted at the outfall, and there were accumulations of black greasy sand beneath the outfall, which produced an oily sheen when disturbed. Iron deposits were also noted coming from the outfall, staining the bank and bed material in the outfall area rust-red.

When the outfall was next reexamined, water levels had risen considerably and the outfall was submerged. However, a third visit in August 2001 showed the same conditions, *i.e.* oily deposits, and a rainbow sheen on the water surface (right). Despite the drought conditions, the flow from the outfall remained constant, and the accumulations of contaminants were more pronounced in the slow-moving receiving waters.



A monitoring well was noted on the VFW property. Dave Braun contacted the Hazardous Waste Management Division of the ANR-DEC. A field officer visited the site and is reviewing case files. An oil spill that occurred two years ago at Stove Works, a neighboring commercial establishment, may be the cause of the contamination. The field officer will investigate the problem to determine what remedial actions may be taken.

MDPW Action: MDPW will assist the investigation as appropriate.

3.2 Erosion at Outfalls

Significantly, 22% of surveyed outfalls were found to be the cause of moderate to severe riverbank erosion. Riverbed erosion caused by discharge from an outfall was recorded in 5% of cases, and 4% of outfalls were undermined to some extent

MDPW Action: MDPW will review the information submitted concerning erosion problems, make site visits, and schedule appropriate repair work, such as installation of rock riprap around outfalls, as it sees fit.

3.3 Outfalls in Disrepair

A small number (3%) of running outfalls were found to be moderately obstructed by sediment and/or debris. A similar number were found to be steel pipes that were characterized as “rusted out”.

3.4 Miscellaneous Problems Noted

One interesting finding, although outside the scope of the study, was an illegal bottle dump; volunteer surveyors witnessed employees of a bottle redemption business systematically throwing unredeemable containers into the Winooski River. Project manager Dave Braun discussed the matter with the proprietor and the employees involved and they agreed to cease and desist such illegal dumping. No further action was taken.

Another potential problem noted in the course of this study is a large quantity of granite dust located approximately 10 feet from a storm drain at the intersection of Granite Street and Barre Street (below).

In the spring it was observed that the dust was washing over the ice and snow into the storm drain.

MDPW Action: Steve Gray will send a letter to the proprietor asking that the dust be contained in

a more substantial receiving box and that the dust accumulation be removed periodically to prevent overspill.



4.0 DISCUSSION

The high *E. coli* concentration in the sample taken from outfall NB-JT-01 is indicative of untreated wastewater. The *E. coli* level found in outfall WI-JB-04 may be the result of a septic leak although it is within the range for urban stormwater runoff. Although the flows in both cases were small at the time of observation, the discharges adversely impact water quality, and run counter to the City's efforts to prevent untreated wastewater from entering the river. Due to the age and density of the sewer infrastructure and its proximity to the river, such leaks may be expected to appear periodically. The most effective protection from these small yet highly concentrated sources of pollution is for local citizens, FWR, and MDPW to remain vigilant for signs of these 'points of blight' so that corrective measures can be taken quickly.

The oily contamination at outfall WI-FC-04 is another small but worrisome finding of the study. The Hazardous Waste Management field officer who visited the site surmised that the distance between the site of the known oil spill and the outfall represented a normal rate of travel for contaminants through soil given the time that has elapsed since the spill occurred. However, it is possible that the oil is coming from another source entirely, perhaps via a storm drain or a leaking fuel tank.

The survey results provide evidence that the design, location, and disrepair of many outfalls is the cause of considerable bank and streambed erosion, resulting in sediment loading to the river. Because sediment is the most pervasive water quality problem in the Winooski River watershed and a major cause of impairment in the river segment under study, this is a significant finding. In addition, bank erosion, often in combination with bed erosion, can lead to the undermining of the outfalls, leading to their collapse, resulting in turn in more sediment loading and costly repairs. There were, however, examples of well designed outfalls, including one with a rock-lined sediment basin (right) below the Granite Street Bridge.



The poor physical condition and level of obstruction of some of the running outfalls suggest that future storm episodes might result in their structural failure, resulting in sediment loading to the Winooski River and costly repairs for the City of Montpelier.

The sediment discharge described at outfall NB-MW-16 is worrisome in that, in FWR's opinion, it is not an isolated incident. FWR and other community members have expressed concern regarding many occasions in the past when the City did not incorporate adequate pollution prevention measures during excavations. Problems have been noted during the CSO separation work, conducted by a contractor on behalf of the City, and as a result of various municipal repairs. It is possible that the impact of sediment on the aquatic environment regionally is not fully appreciated by the City and its contractors. In addition, the prevalence of sediment and other pollutants in rivers following rainstorms may be desensitizing the City to the problem, and reducing motivation to incorporate appropriate measures to avoid exacerbating the situation. Failure to take all reasonable measures to protect water quality at the municipal level runs counter to Federal and State environmental programs that are investing heavily in conservation measures aimed at reducing phosphorous levels in the Lake Champlain Basin. Many of these measures involve reducing sediment loading from soil erosion and other sources.

5.0 CONCLUSIONS

To put this project into historical perspective, it is clear that the conditions documented by the study are a big improvement over what might have been found a few decades ago. Unquestionably, the City of Montpelier has made great progress in improving water quality, notably in reducing the discharge of untreated waste to rivers. Although this project has highlighted a number of suspected and confirmed problem discharges, it may have been unthinkable to enter the foul waters of 30 years ago to conduct such a study! The City's extensive CSO separation efforts will be complimented by appropriate actions taken by the Department of Public Works to investigate and eliminate residual problems.

The study also indicates that outfalls have significant potential to impact water quality via riverbank and bed erosion, and associated sediment loading. Because sediment is a major problem in the Winooski River watershed, erosion should be prevented as much as possible.

Given the stated limitations of the study, it is not possible to ascertain whether the relatively low number of problematic discharges identified by the study indicates that they are genuinely few in number, or simply that they were not generally in evidence at the time of the survey. Clearly this is a significant 'if', one that could only be understood through more extensive study. It is essential that FWR, the Montpelier Department of Public Works, and the citizens of Montpelier continue to be vigilant for signs of water quality problems, and to work cooperatively to address them. This project may be expected to have stimulated such vigilance and contributed to increased public and municipal awareness of the need to take appropriate actions when a suspected source of pollution is noticed.

6.0 RECOMMENDATIONS

6.1 *Suspected Contaminated Discharges*

- FWR understands that MDPW will take appropriate action to investigate and address pollution problems identified at outfalls NB-JT-01 and WI-JB-04. Further, FWR understands that MDPW will assist ANR-DEC with investigations concerning outfall WI-FC-04.
- FWR understands that MDPW will confirm the status of the discharge coming from outfall NB-JT-03.

6.2 *Erosion at Outfalls*

- Those outfalls in danger of failure from severe bank erosion should be stabilized by the City of Montpelier. A combination of rock riprap and vegetation planting would be effective in most situations.
- Bed erosion should be prevented by redesigning the oufall or the installation of a rock-lined basin, which may also help to intercept sediment from runoff.

6.3 Outfalls in Disrepair

- We hope that the information provided concerning the physical condition of outfalls will assist the City in its ongoing maintenance.

6.4 Other Problems Noted

- FWR understands the City will discuss the granite dust runoff problem at the corner of Barre Street and Granite Street with the building's owner or manager.

LIST OF ATTACHMENTS

- Attachment 1: Outfall Survey Form
- Attachment 2: FWR Press Release
- Attachment 3: Outfall Survey Data Table
- Attachment 4: Outfall Survey Map
- Attachment 5: Times Argus Article
- Attachment 6: 2nd Times Argus Article
- Attachment 7: E. coli Test Results

FRIENDS OF THE WINOOSKI RIVER OUTFALL SURVEY, MONTPELIER, VT

RIVER REACH ID # _____ GPS COORDINATES N: _____ PIPE I.D. # _____
 W: _____

PICTURE TAKEN: NO YES CAMERA ID # _____ FRAME # _____

SURVEYED BY: _____ DATE: _____

WEATHER IN PAST 24 HOURS: **WEATHER NOW:**

STORM (HEAVY RAIN) STORM (HEAVY RAIN)
 RAIN (STEADY RAIN) RAIN (STEADY RAIN)
 SHOWERS SHOWERS
 DRY DRY

PIPE SUBMERGED: YES NO INTERIOR DIAMETER OF PIPE: _____ INCHES

PIPE MATERIAL: **SIGNS OF PIPE DETERIORATION:** **SILTATION IN PIPE:**

PLASTIC NONE NONE
 CONCRETE RUSTED OUT LIGHT
 CERAMIC CRACKED MODERATE
 IRON OTHER _____ PIPE OBSTRUCTED
 STEEL

SIGNS OF RIVER BANK/BED EROSION AT OUTFALL: (CHECK ALL THAT APPLY)

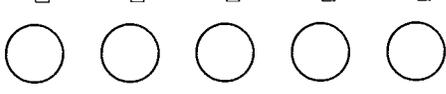
NONE OUTFALL UNDERMINED
 RIVER BED ROAD UNDERMINED
 RIVER BANK OTHER _____

DISCHARGE DURING OBSERVATION:

NO → **EVIDENCE OF RECENT DISCHARGE (PIPE WET)**
 NO
 YES

YES → **DESCRIPTION OF FLOW:**
 INTERMITTANT CONSTANT

APPROXIMATE VOLUME



DESCRIPTION OF DISCHARGE: (COLOR, ODOR, FOAM, OILY SHEEN, SOLIDS, STEAM ETC)

DISCHARGE TURBIDITY:
 CLEAR SOMEWHAT TURBID TURBID VERY TURBID

REMARKS:

JULY 1ST, 2000

FOR IMMEDIATE RELEASE

CONTACT: FREDDIE COUSINS, 223-7329

***FRIENDS OF THE WINOOSKI RIVER INVESTIGATES OUTFALLS
INTO MONTPELIER'S RIVERS***

MONTPELIER, VT – Friends of the Winooski River (FWR) has won State funding, and City support, to conduct a comprehensive assessment of pipes that discharge into the rivers flowing through downtown Montpelier. The information gathered will enable the City to locate and address undocumented sources of pollution into the Winooski River and, ultimately, Lake Champlain.

FWR needs volunteers to join its members on July 8th to accurately map and describe outfalls to the river. These findings will then be cross-referenced with Montpelier's Department of Public Works records to determine which outfalls are legitimate - from storm-drains and stream culverts for example – and which are not. These may include old connections to floor drains that were never hooked up to the sewer system, and continue to dump untreated waste into the river. The survey will also help ensure adequate maintenance of legitimate outfalls, and assist the City in its storm water management.

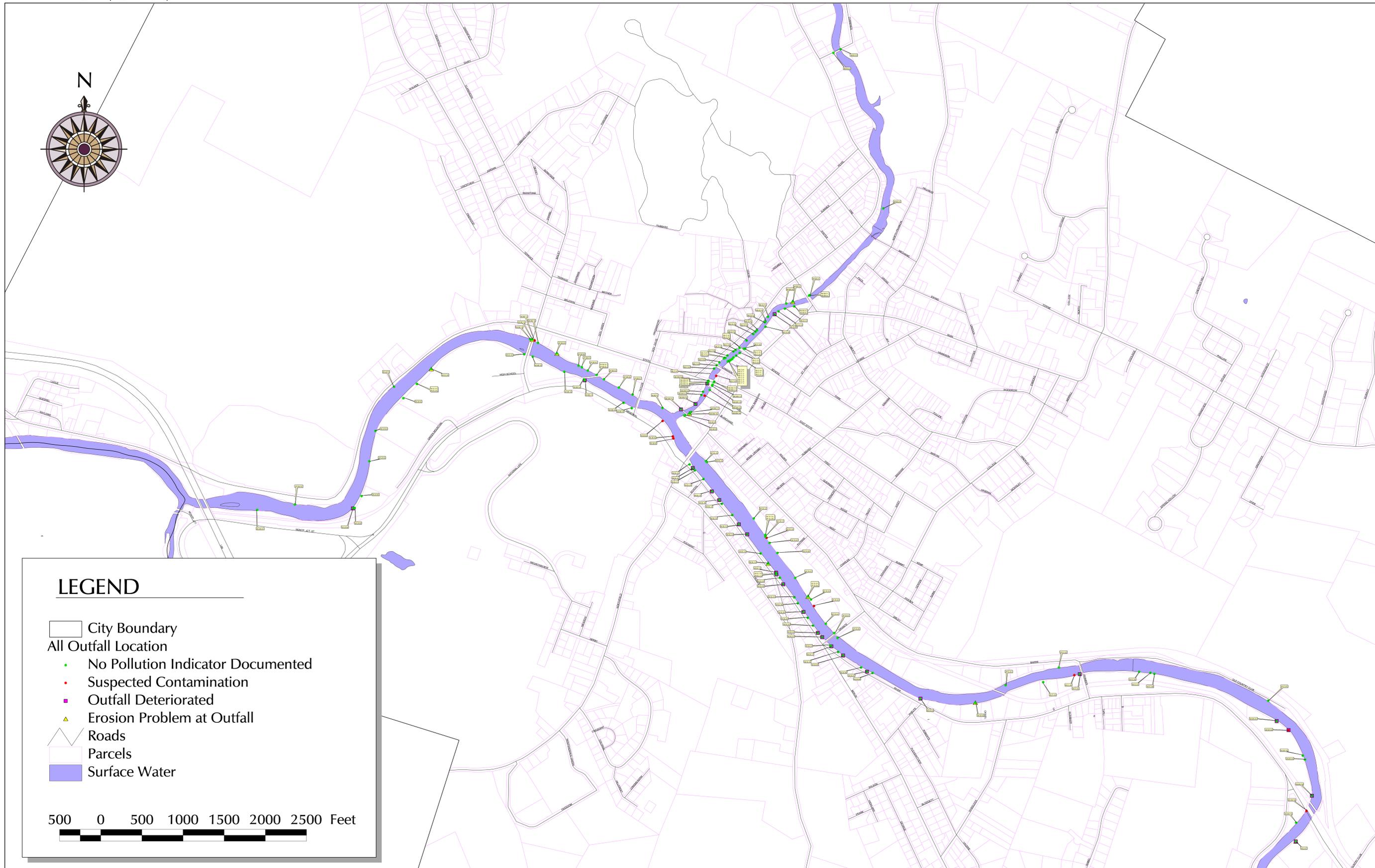
Urban runoff and untreated wastewater adversely affect the Winooski River. The downtown sections of the Winooski River do not meet water quality standards because of pathogens, and recreational contact with the water is not recommended. This situation is expected to improve as the City's Department of Public Works continues efforts to prevent raw sewage entering the river from combined sewer overflows during heavy rain. Most City stormdrains now discharge directly into the river but pipes that are discharging when the weather is dry are suspect.

In the last couple of years, concerned citizens have reported a number of pipes discharging pollution into the Winooski River in Montpelier, and the Stevens Branch in Berlin, enabling City and State government to take remedial action. FWR hopes to receive more tip-offs from concerned citizens as a result of the outfall survey. Says FWR Secretary David Braun, "This survey is a low-cost way of helping the City address remaining sources of untreated waste that continue to foul the river."

The state Agency of Natural Resource's Water Quality Division funded the project with a \$3,525 grant. A local environmental consulting firm is loaning FWR six Global Positioning System units to enable surveyors to locate outfalls with pin-point accuracy, and Montpelier Public Works will feed the data gathered by FWR volunteers into its Geographic Information System.

Friends of the Winooski River is a volunteer organization based in Montpelier, dedicated to maintaining and improving the integrity of the Winooski River watershed by increasing public awareness, encouraging citizen stewardship, and assessing and improving water and environmental quality.

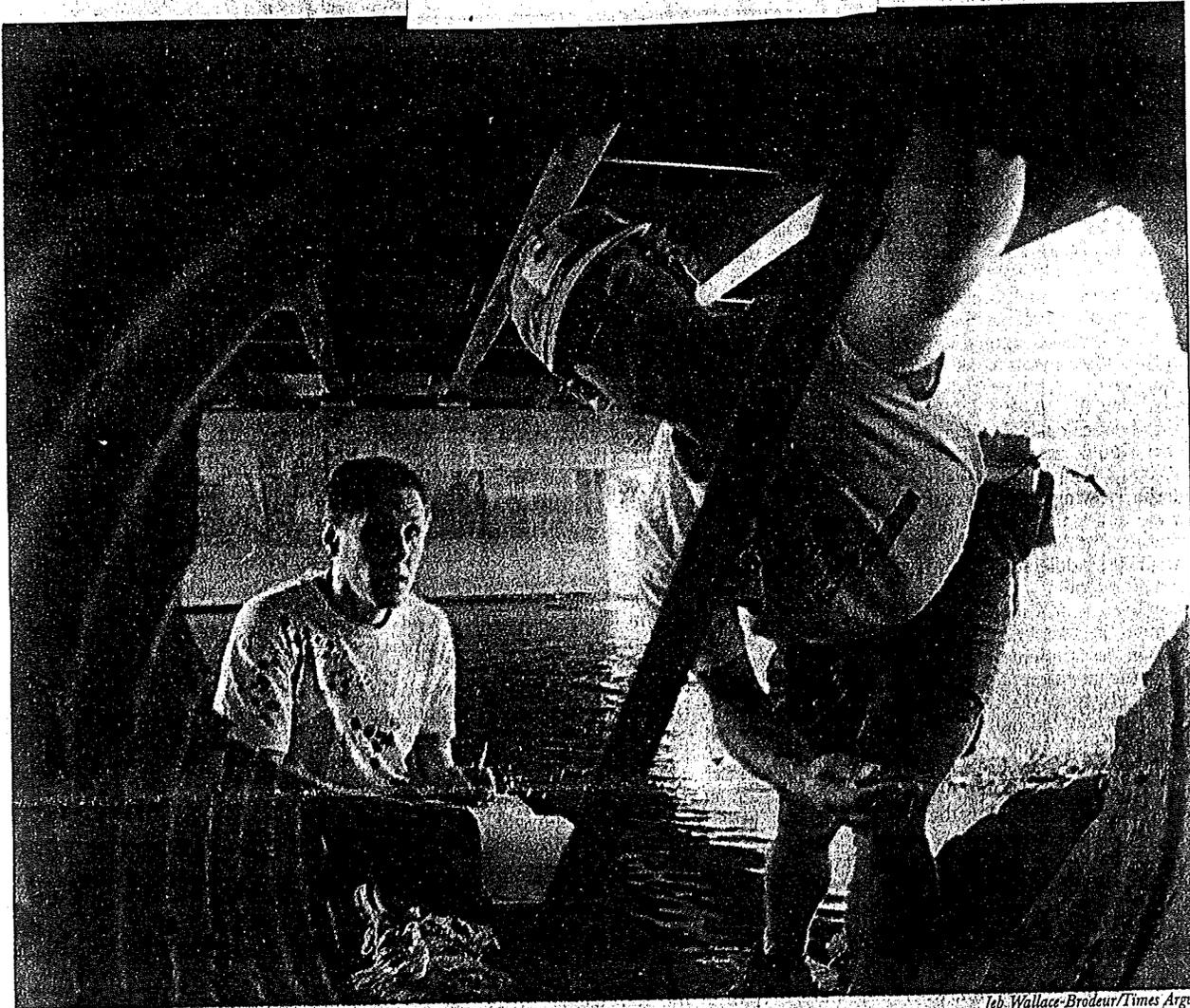
**For more information, and to participate in the outfall survey, contact Freddie Cousins 223-7329
<fcousins@together.net>**



Location and Condition of Outfalls to the Winooski River and the North Branch River in Montpelier, Vermont

Sources: Outfall survey work completed by the staff and volunteers of the Friends of the Winooski River, 7/00-8/01
 Data processing provided by the City of Montpelier and the Friends of the Winooski River
 Map plotting and roads, parcels, town boundary, and surface water data courtesy of Stone Environmental, Inc.

FRIENDS OF THE WINOOSKI RIVER



Job Wallace-Brodeur/Times Argus

Nick Rosenberg of Moretown measures a drainage pipe while Daemmon Hughes of Montpelier records the number during a survey of pipes that discharge into Montpelier's rivers. The survey, which was conducted by Friends of the Winooski, aims to identify urban runoff and untreated wastewater that are draining into the city's rivers.

River survey finds little pollution

By Stephen Mills

TIMES ARGUS STAFF

MONTPELIER - The first-ever comprehensive survey of outflow pipes into capital city rivers has revealed few signs of illegal pollution.

A dozen members of Friends of the Winooski River were wading along the banks of the Winooski and North Branch rivers Saturday, looking at each pipe they came across, checking its exact position with global positioning satellite devices and plotting its location on city survey maps.

As expected, a group of three volunteers - Ward Joyce, Bev Lavin and James Tabbert - found many of the outlet pipes in the historic quarter of the city along the North Branch, notably between the State Street and School Street bridges. Some of the largest pipes were found along the Winooski between Main Street and Bailey Street.

Pipes of varying ages, diameters, materials and uses were

"We found a typical array of sediments clogging pipes ... and some oily road grit, but nothing really serious."

Dave Braun, Friends of the Winooski

each individually inspected for signs of discharge, pipe corrosion and condition. The records were carefully recorded.

Information gathered would be cross-referenced with city records of known outflows to see which are legal, which are not, and whether they include city storm drains that need maintenance.

For its part, the city public works department has been engaged in a long-term upgrade to separate its sewer and storm drain overflow system to avoid polluting the river. The planning and development department has provided maps and portable GPS equipment for the river sur-

vey.

"We completed roughly half the survey that we wanted to do, and documented 116 outfalls," said Dave Braun. "We didn't find anything alarming at the time of the survey."

Timeliness was everything, he said, of the weather conditions. A bright, sunny day meant the only outflows into the river were likely to be small streams. Anything else would be considered suspect, such as untreated sewage discharged directly into the river, or oil or chemical pollutants being dumped down drains or leaching out of storage tanks, said Braun.

"In terms of pollutants, we found a typical array of sedi-

ments clogging pipes, some gully erosion in and around outfalls, and some oily road grit, but nothing really serious," said Braun, although he does plan to request monitoring of a pipe between two gas stations.

"What we're finding is a thousand points of blight," Braun added. "Water pollution problems in this state are the cumulative effect of a number of different sources."

The FOW is still looking for volunteers for the second half of the study, along the Winooski between the North Branch and Stevens Branch tributaries. Volunteers are asked to gather behind Christ Church on State Street Aug. 12, at 8:30 p.m., when breakfast will be served and participants briefed before setting out. Old clothing and sturdy shoes for walking along the riverbed are recommended.

"We hope to provide a report of what's out there and

(See River, Page 2)

River

(Continued from Page 1)

look at pipes that are in disrepair, need attention or are blocked," said FOW organizer Freddie Cousins. "It's illegal to put anything into the river without a permit, even tap water because it is chlorinated."

Ash, water disposal draws complaints from river group

By Stephen Mills

TIMES ARGUS STAFF

MONTPELIER - There was another loser - the Winooski River - when a water main break and a house fire caused a day of chaos and damage in Montpelier Monday.

While city officials and insurers were counting the costs of the two incidents, environmentalists said there was considerable pollution of the river by the liquid runoff created by both incidents.

The Friends of the Winooski River said bilge water pumped away from the water main break on Main Street was visibly stained brown with soil. And water from fire hoses used to douse the Elm Street house fire was stained with black ash and a cocktail of preservatives, including petrochemicals and arsenic.

Both spills found their way through the storm drain system to the river. Of particular

concern for FWR was the low level of the river, which meant the levels of sedimentation and toxicity for aquatic life were greater.

"There wasn't the faster flow to disperse the sedimentation or to dilute the toxins," said FWR coordinator Freddie Cousins. "The point is that we should make all reasonable efforts to avoid river pollution.

"Two things happened that day," she continued. "We had the fire that was unavoidable.

"The other was the damage caused by the water main break that probably happens more frequently and was very avoidable," she added. "There needed to be a little more river consciousness and ingenuity."

Cousins suggested workers could have dug a couple of feet below the leaking water main, and had the water drain

(See Complaints, Page A8)

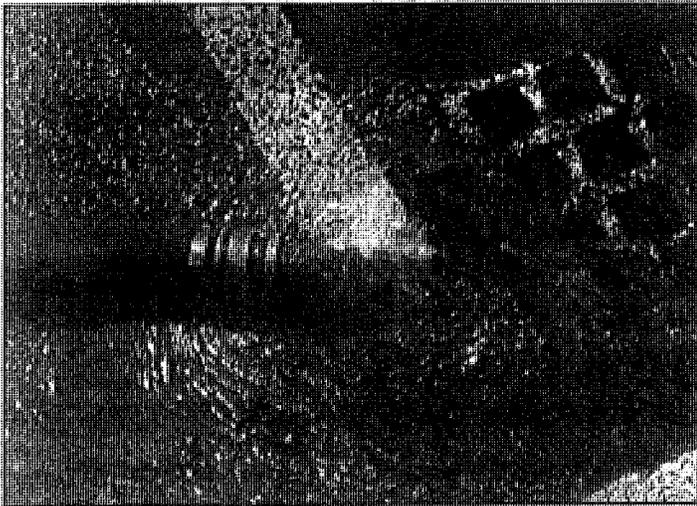


Photo by Freddie Cousins

Muddy water from the water main break this week in Montpelier is hosed down a storm drain.

(Continued from Page A1)

into a large tub. The bilge hose could then have been placed in the tub to pump away water from a clean container and prevent it mixing with soil.

Future planning could also allow for filters at the outlets of major storm drains serving the city where pollution is greatest to prevent the ash and other debris from the fire reaching the river.

"It comes down to out of sight, out of mind," said Cousins. "Everybody was looking at the hole in the ground and the fire.

"There were only two people looking at the river - us. The river is an ecological treasure, not a sewer.

"The legacy of our current attitude is that we've turned our backs to the river," she added. "We're still not recognizing the river for all its beauty, and it's life."

Cousins said she and a colleague discovered the pollution while they were doing tests of other suspicious "outfalls" into

the river from pipes and fissure in the riverbank that FWR have been plotting using global positioning satellite tracking for the past year.

She said FWR had located several outfalls that proved to be toxic or polluting, including one that had more than twice the acceptable level of E-coli considered safe for swimmers and other water users.

The group was meeting with Public Works Director Steve Gray today to present their findings in a report. The city will then try to trace back the source of the pollution.

To the city's credit, said Gray, the public works department worked through Sunday night and all day Monday to repair the water main break that cut off water supplies to more than a dozen businesses on Main and State streets. Repairs were complicated by the need to replace a Y-junction in the main that proved to be a weak spot in the line and caused the rupture.

Gray said he recognized FWR's concern for the river, but said runoff from the water

main break was less than might be expected during a rain shower or storm.

"Muddy water is no different to water running down curbs that is a lot worse," he said. "It's going to black because it's all dirt and dust, feces, and so on.

"With the fire, I'm sure there would be black ash going into the river," he added. "But what are you going to do? You have a fire and you pour water on it."

Montpelier Fire Chief Norman Lewis agreed.

"If they want to obtain an ordinance that would outlaw fires, we would be very happy," he said.

Lewis said the fire department had only used water on the house fire started by a propane torch used to heat flashing that sparked a fire in the wall and set the roof alight.

In addition to ash, Lewis said the most toxic substances headed from the fire to the river were probably petrochemical products found in the building's water-resistant tar paper and roof shingles.

Lewis said he thought there

was probably more pollution of the air than the river, with heated petro-chemical toxins being vaporized into the atmosphere as smoke. The amount of water used in the fire would also have helped dilute any toxins that found their way to the river, he added.

In the case of electrical or chemical fires, Lewis said fire departments now use dry bicarbonate of soda or water foam retardants, respectively, that rob a fire of the oxygen it needs to burn, and are much safer environmentally.

The much greater threat to rivers, he said, is the frequency of heating oil spills from aging fuel tanks.

FWR is one of a number of grassroots environmental groups working to protect river pollution from reaching Lake Champlain. Its two main events during the year are next month's annual river cleanup of the Winooski River, which will be held Sept. 15, and the Celebrate the Winooski festival Sept. 22.



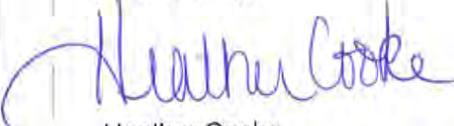
Spectrum Environmental Research Laboratory
PO Box 122 ~~~ 342 River Street
Montpelier, VT 05602
TEL: 802-223-7088
FAX: 802-223-1013

CLIENT: Friends of the Winnoski
153 State St.
Montpelier VT 05602

SAMPLE #: Z508-509
SAMPLER: Freddie Cousins
SAMPLE DATE: 08-13/2:30-2:45pm
DATE RECEIVED: 08-13-01
REPORT DATE: 08-20-01

<u>SAMPLE SITE</u>	<u>PARAMETER</u>	<u>RESULT(cfu/mL)</u>	<u>MAXIMUM CONTAMINATION LEVEL</u>
Elm St.	E.coli	>160,000/100mL	77/100mL
Memorial Dr.	E.coli	2,340/100mL	77/100mL

Approved by,


Heather Cooke
Laboratory Supervisor

enclosures