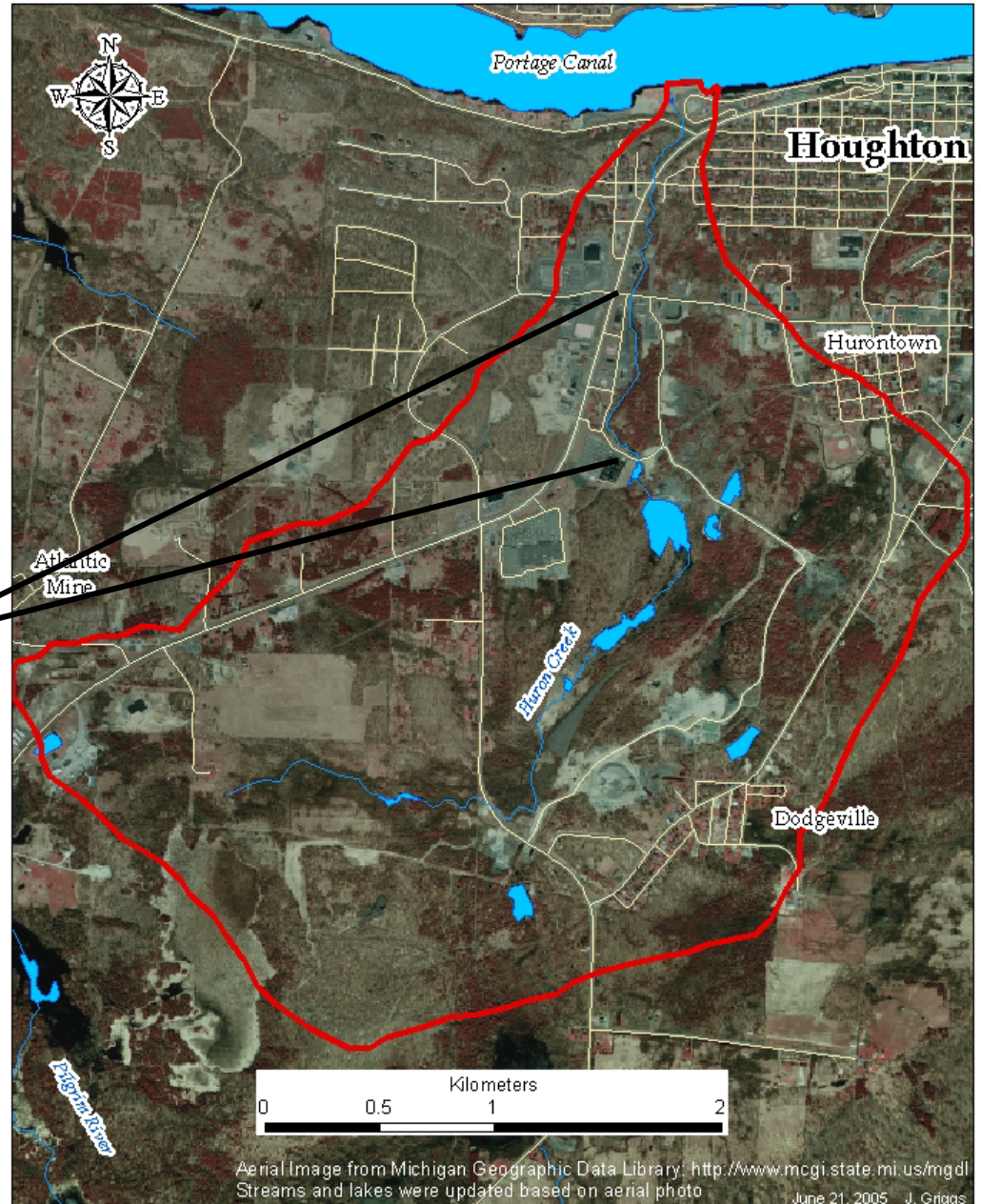
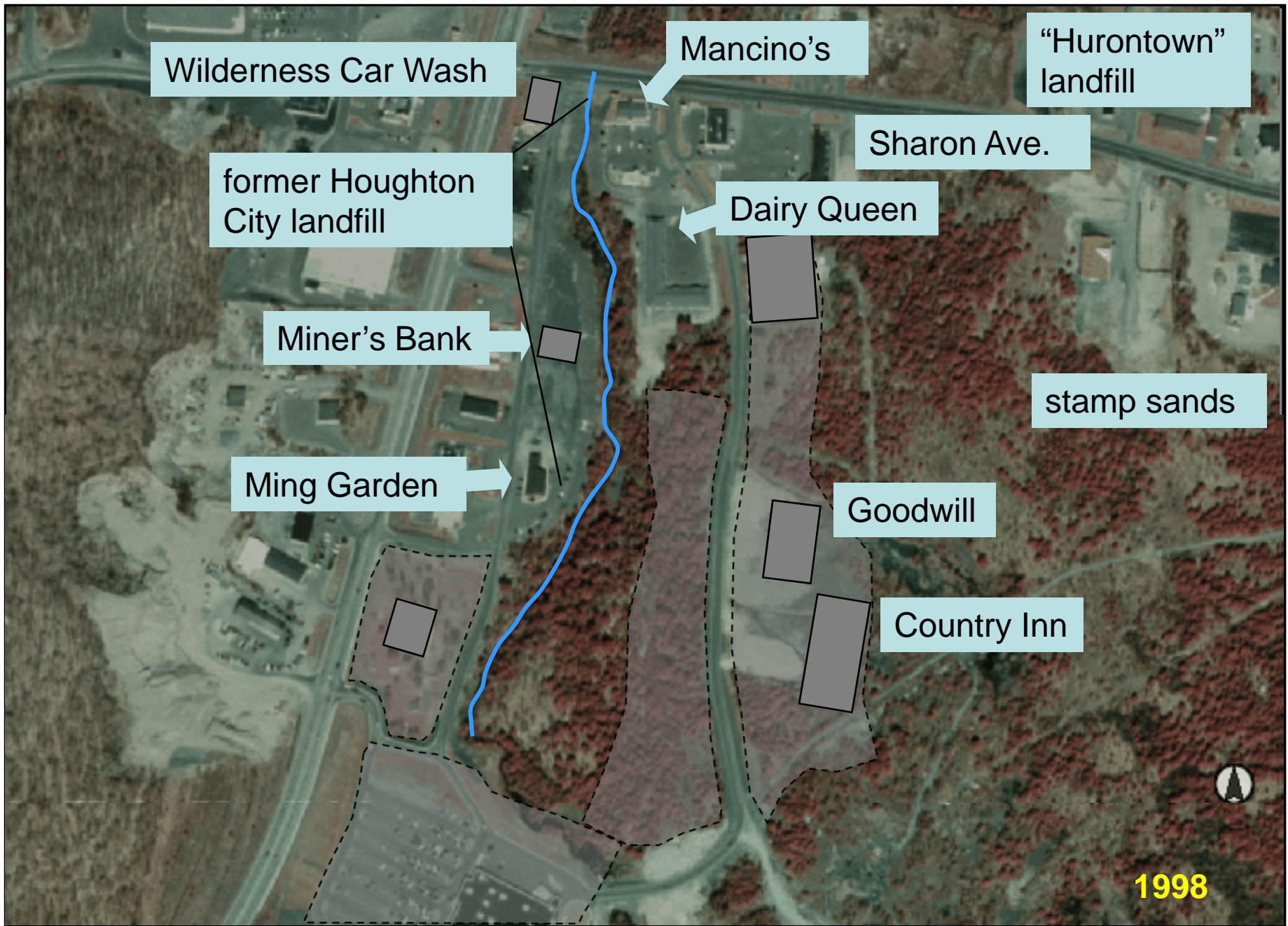


“State of the Stream Segment”

Sharon Avenue to Frog Pool



Prepared by Alex Mayer, 6/25/06



Wilderness Car Wash

Mancino's

"Hurontown"
landfill

Sharon Ave.

former Houghton
City landfill

Dairy Queen

Miner's Bank

stamp sands

Ming Garden

Goodwill

Country Inn

1998

Desired attributes

- visually attractive
- habitat for a healthy ecosystem
- opportunities for human interactions
- water quality
- community education





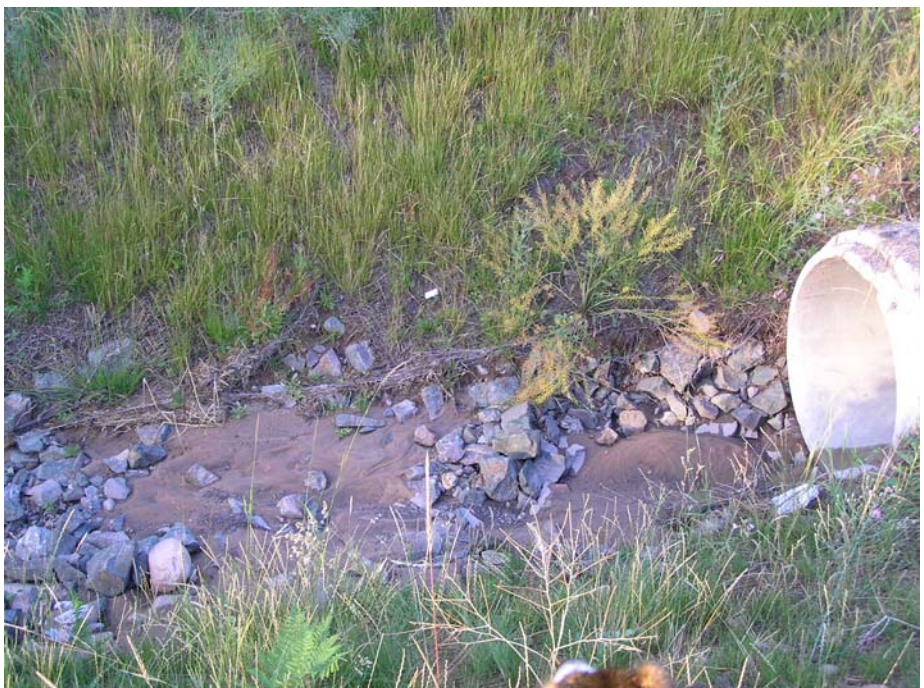












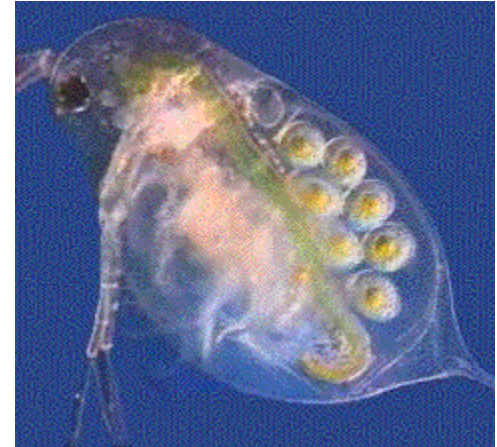
Landfill: Chemical water quality

	Seep # 1	Seep # 2	Regulated Value
Total Dissolved Solids (mg/L) *	750	980	500
Copper (total) (ug/L) *	300	1,200	13/39
Manganese (total) (mg/L) *	3.5	9.500	2.8/12.0
Silver (total) (ug/L) *	0.22	0.35	0.2/1.1
Ammonia (mg N/L) *	0.44	4.7	0.029/0.32
Iron (total) (mg/L) *	120	4	
Magnesium (total) (mg/L) *	20	29	
Sodium (total) (mg/L) *	53	64	
Mercury (ng/L)**		19.6	1.3

*MDEQ 7/12/05 **UPEA 6/29/05

Landfill: Water toxicity*

- The toxicity of landfill leachate was assessed by placing a volume of the leachate water in an “aquarium” containing *Daphnia magna*, or “water flea.”
- The number of live and dead *Daphnia* are counted after a specified time and the results are translated to “toxicity units.”
- The results of the tests indicate that the Houghton City Landfill site 2 seep sample would not meet the aquatic toxicity requirements the Michigan Water Quality Standards.



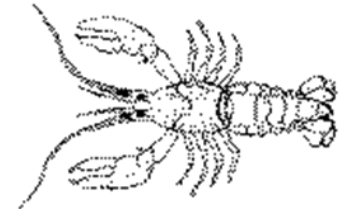
Landfill gas

- Samples of gas have been taken inside the landfill and analyzed.
- Methane gas has been detected at unacceptable levels.
- A soil vapor extraction unit has been installed and is operating.



Macro-invertebrate Community Assessment

- Stream-bottom macro-invertebrates are an important part of the community of life found in and around a stream.
- Stream-bottom macro-invertebrates differ in their sensitivity to water pollution.
- Stream-bottom macro-invertebrates provide information about the quality of a stream over long periods of time.
- Stream-bottom macro-invertebrates are relatively easy to collect.

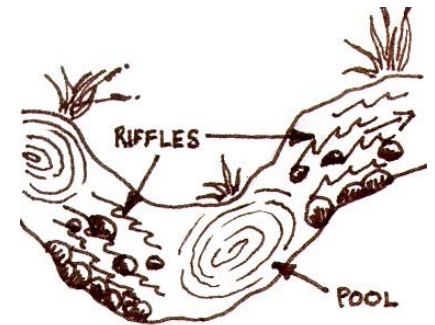
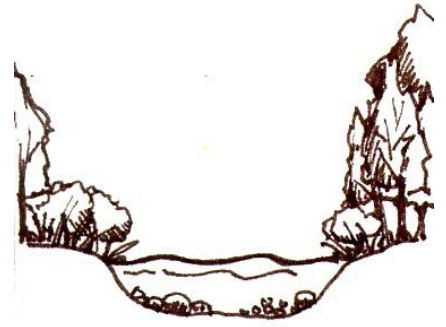


Macro-invertebrate community testing*

- Adjacent to Ming Garden
 - 44 macro-invertebrates found
 - Overall rating: “Acceptable but limited”
- Upstream of Sharon Ave.:
 - 16 macro-invertebrates found
 - Overall rating: “Poor”
- For comparison: Pilgrim River
 - 120 macro-invertebrates found
 - Overall rating: “Excellent”

Habitat evaluation

- A general to specific evaluation of the physical conditions of a stream as they relate to aquatic habitat:
 - Stream bottom materials
 - Vegetation along stream banks: abundance, shading
 - Stream bank stability
 - Stream flow
 - Pools and riffles
 - Runs and bends



Habitat evaluation*

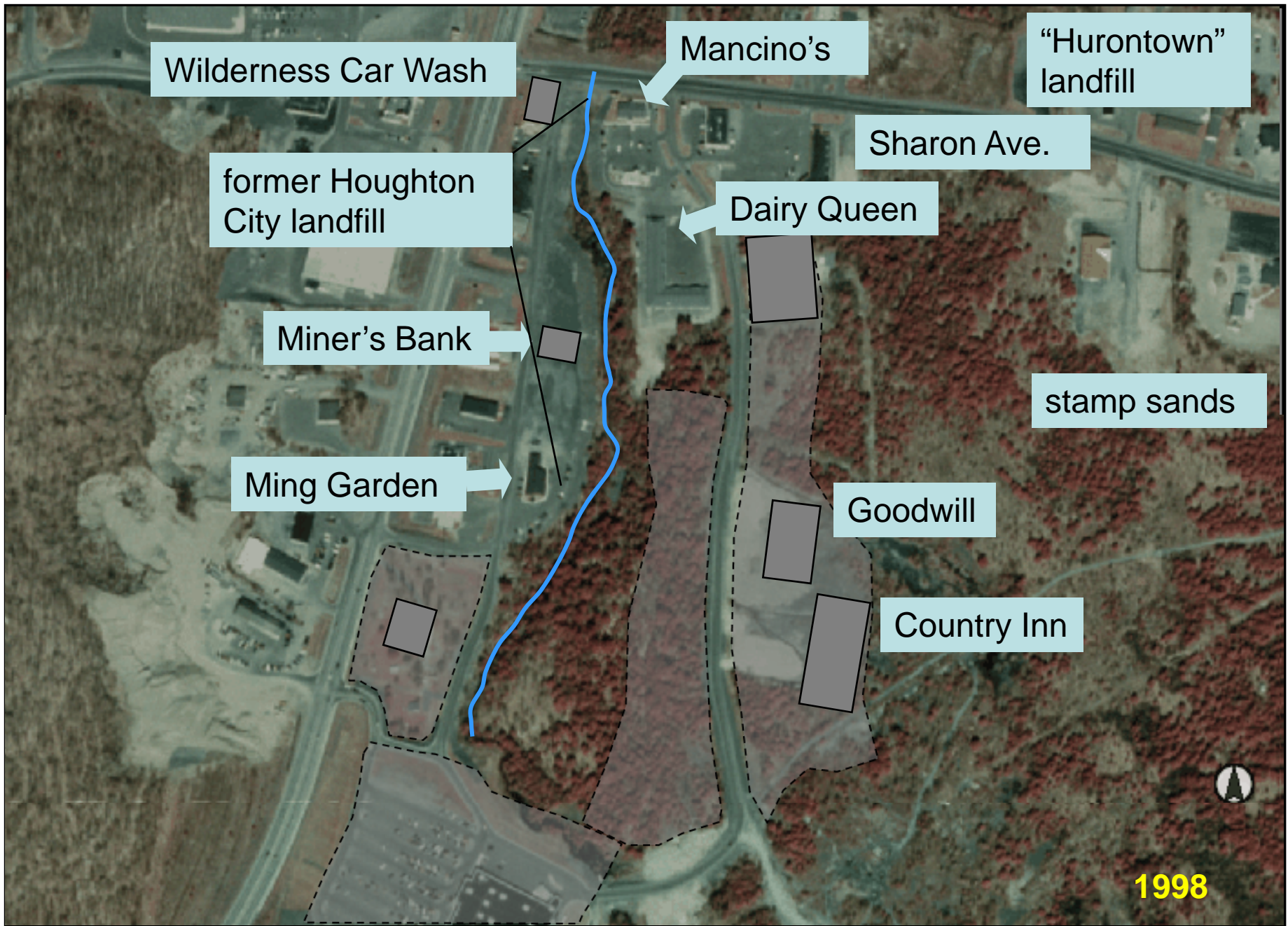
- Adjacent to Ming Garden
 - Excellent
- Upstream of Sharon Ave.:
 - Good
- For comparison: Pilgrim River
 - Excellent

Most recent assessment by DEQ*

- “Currently, excessive stormwater runoff and habitat destruction from sedimentation are the biggest threats to the recovery of Huron Creek.”
- “Serious erosion problems upstream of the Ming Garden location on Huron Creek. Excessive erosion is occurring from a number of raw undeveloped sites due to filter fabric problems and broken storm water pipes. A large amount of sediment sits a top some of the best rocky substrate in the valley downstream of the culvert.”

Most recent assessment by DEQ*

- “For the first time, we found aquatic insects just upstream of Sharon Ave...the new collection system would be installed starting in July. Hopefully, this will help the biota numbers and eliminate the yellow boy in the stream.
- The habitat looks to be improving in this area and streamside vegetation now includes orchids along the stream.”



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