

Researchers look for ways to bring nature back to Stamford's Mill River

Experts assess water quality and possibility of restoring flora, fauna

By Magdalene Perez, Staff Writer – THE ADVOCATE

STAMFORD -- The three researchers stood on a muddy bank of the Mill River in galoshes and thigh-high rubber waders, clipboards and notebooks in hand.

Jason Lederer, a geologist, was excited by what they had found at this particular stretch -- a sharp bend in the river near Cold Spring and Stillwater roads. Lederer works for The Bioengineering Group, a company that specializes in enhancing aquatic and terrestrial habitats.



Marta Jarzyna and Jason Lederer, a geologist with The Bioengineering Group, compare their findings. (Kathleen O'Rourke/Staff photo)

"See how the river flows very straight until this point?" Lederer said, pointing to the blue line on a map. "Rivers in nature don't really make 90 degree turns. They meander."

Last week, Lederer joined a water resources engineer and an ecologist in gathering crucial information for the city's \$2.9 million project to improve the water quality and encourage more public access and recreational use of Mill River, one of several on a state list of "impaired" water bodies.

Eventually, the city aims to use the money -- about 55 percent provided by grants from the

Environmental Protection Agency and the rest funded by the city-- to restore native plants and wildlife to the river.

The project is led by CDM, an engineering consulting firm based in Cambridge, Mass., that has a \$1.3 million contract with the city. Ultimately, the work will complement that done by the Army Corps of Engineers, which in a separate project will soon remove the Main Street dam and retaining walls around the waterway in Mill River Park, said Jeanette Brown, executive director of the Water Pollution Control Authority.

"They're joined together insofar as what the benefits to the river will be," Brown said. "This is looking at how to restore water quality in the river and how to restore habitat."



Catherine Chomat, water resources engineer for CDM, Left, and Marta Jarzyna, ecologist for The Bioengineering Group, spend a third day along the Mill River reporting on water quality and conditions. The research is part of the Mill River restoration project funded by the federal government. (Kathleen O'Rourke/Staff photo)

CDM Water Resources Engineer Catherine Chomat and her team from Bioengineering Group had a lot to look for in their three-day outing. Walking along the banks in a 7-mile stretch from the reservoir at Interlaken Road to Long Island Sound, they noted erosion, land uses, geological features, composition of the river bed, water depth, hydraulics, pockets of debris, water quality and sedimentation.

They also measured water flow from two tributaries that feed into the river, one that enters at Washington Boulevard and another just above Main Street.

Under Cold Spring Road, tree branches swept by the river gathered in a pile at the base of the bridge. In the back yards of the houses along the banks, there were clear signs of erosion, Chomat and her team said.

"One thing that's clear is that it's a very developed watershed," Lederer said. "There's certain inherent problems that come along with that."

Some of those problems include fertilizer runoff from yards, and leaves or other debris that can gather in the river. Both can magnify damage to natural ecosystems by encouraging the growth of algae and lowering oxygen levels in the water, Marta Jarzyna, an ecologist for the Bioengineering Group, said. Low oxygen levels can make the habitat inhospitable for fish and other wildlife.

Of particular interest to Lederer were "anthropogenic features," or changes people made to the stream. Along the river the group found many retaining walls and other structures built to prevent erosion. In some cases, farmers built the additions as much as 100 years ago to help irrigate their fields.

But rivers are constantly adjusting, and sometimes the aging manmade structures can lead over the years to effects that were not intended, such as flood plains, Lederer said.

The bend at Cold Spring Road was an example. The river, straightened and hemmed in by retaining walls for decades, gathers velocity as it runs in a straight line from north to south. When the water hits the bend, it does so with so much force that it sometimes overflows the banks. A mucky pond at the location was proof that water had overtaken the ground in the past.

"Nature always tries to fight back," Lederer said.

Once CDM, together with the Water Pollution Control Authority, finishes gathering information about the water quality and flow of the river, the information will be used to assess how the city can improve water quality and what types of native wildlife such as grasses, plants and fish it may be feasible to bring back to the river, Brown said. That work will be completed in a second phase of the project, also funded by the \$2.9 million in city and EPA grant money.

"If there are areas of habitat that have been destroyed due to development, then we will look at how to restore that," Brown said. "There's more money available in the grant for design and restoration work."