

Davis Creek News

A newsletter for residents of the Davis Creek Watershed; Sponsored by Kalamazoo Conservation District, River Partners Program of the Forum of Greater Kalamazoo and MI Department of Envir. Quality

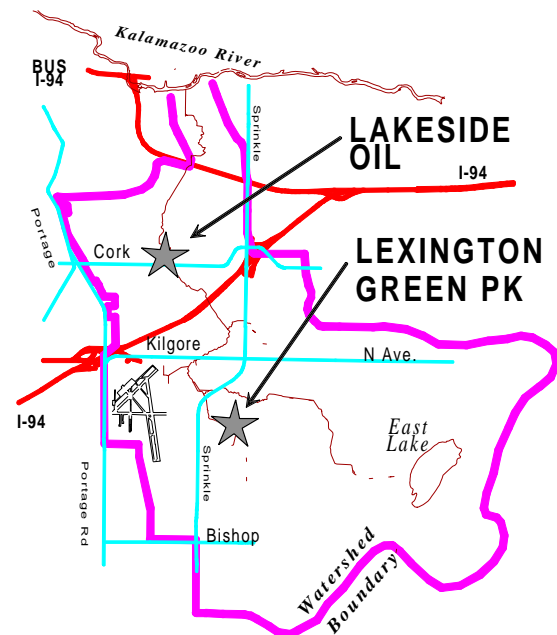
Conservation plantings at Lexington Green Park to improve water quality of Davis Creek

Davis Creek is polluted by overland runoff from the surrounding neighborhoods and urban land uses. The rainfall runoff becomes polluted due to soil erosion, yard chemicals, fertilizer and trash. Lexington Green Park is situated next to a tributary of Davis Creek and is one of the places where nonpoint source pollution enters the water. As a "neighbor" of Davis Creek, the park gives materials to Davis Creek which is important to the creek and the aquatic life within it. The Davis Creek Watershed Steering Committee, together with city engineer Chris Barnes, has proposed vegetative treatment as a conservation practice for Lexington Green Park to enhance the quality of Davis Creek.

As these new plantings succeed, the creek should become narrower in width. This will increase the rate of flow, and reduce the deposition of silt which has caused poor habitat. According to Marc Elliott of the Kalamazoo Conservation District, the project will involve installing vegetative controls and natural buffers along the stream bank to stabilize the soil and reduce nonpoint source pollution from washing into the creek. The new plantings will replace the shallow-rooted plant species with shrubs and other woody species that have a complex root structure which helps prevent soil erosion.

These new plants will also provide shade and keep the water cooler. Heat is a serious source of water pollution in urban areas where rainfall picks-up heat from roads and parking lots which can kill fish and other aquatic life. Many fish feed upon insects which drop from overhanging shade trees into the water. Woody plants also discourage flocks of geese from congregating along the shore. Geese are a well-known nuisance. They also leave droppings that can cause serious nutrient and fecal pollution.

The City Council has approved an agreement with the Davis Creek partnership to construct these conservation improvements at the Park. These vegetative "best management practices" are expected to be installed by December.



INSIDE

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- ③ Clean Water Action Plans
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OIL REFINERY SITE CLEANED

Lakeside Oil Refinery Cleanup

Lakeside Oil Refinery began operating in 1939 at the Cork Street location in Kalamazoo, producing several grades of petroleum from crude oil. Since 1978, 11 oil spills had been documented by the state. One of the largest occurred in the early 1980's and involved about 9,000 gallons of jet fuel. Even after oil refining activities ceased in 1986, fuel oil was still stored and marketed on site. During this period state environmental protection officials continued to work with the site owner to address known environmental concerns. These efforts further identified and documented petroleum contamination in soil, ground-water, surface water and stream sediments.

In early 1995 the Davis Creek Watershed Project was initiated under the River Partners Program. This locally led effort was coupled with increased regulatory focus upon the known environmental contamination at Lakeside Oil. In mid 1995 the U.S. Environmental Protection Agency (EPA) and the Michigan Department of Environmental Quality (MDEQ) initiated legal proceedings to compel the oil refinery owner to comply with state and federal environmental protection rules for site cleanups.

On March 11, 1996 EPA arrived at the Lakeside Refinery. Acting under emergency response authority, EPA engineers came to address conditions at the site which were determined to pose a substantial environmental threat to Davis Creek and the Kalamazoo River. The threat was due to 350,000 to 400,000 gallons of oil and oily water contained in over 100 abandoned above ground storage tanks and miles of underground piping.



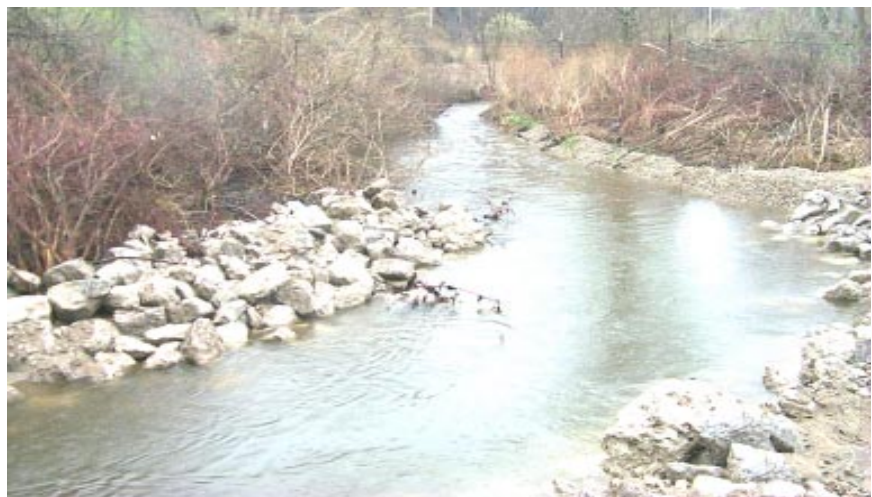
ABOVE: Contaminated sediments & scum temporarily captured behind the failed, in-stream dam at Lakeside.

A second phase of the cleanup was initiated during the winter of 1998-1999 when MDEQ removed contaminated sediments from within Davis Creek. A failed dam was also removed from within the creek at the completion of the sediment removal project. The dam was originally installed as the refinery's "water pollution control structure," believing that spilled oil would pool behind the dam instead of floating downstream.

This summer a stream channel and stream buffer restoration project was undertaken by Malcolm-Pirnie, consultants for MDEQ. This is one of the first full-scale stream restoration projects in the state. The City of Kalamazoo has been supportive of restoration and protection efforts for this stretch of Davis Creek. Although

During the past three-year investigation and remediation of this site, EPA and its contractors cleaned, dismantled and removed the oil storage tanks, piping and refinery process equipment. The total project costs under this emergency action have exceeded \$6.6 million.

BELOW: Replacing contaminated sediments with clean stone and shaping the new creek bottom.



ABOVE: Dam removed & natural creek flow reestablished in new, clean channel.

the future use of the site has not yet been determined, the City has agreed to establish a protected buffer zone to protect the stream corridor. This would be consistent with the City's goals for brownfields redevelopment and watershed protection.

While considerable progress has been made (see accompanying side-bar), considerable restoration work remains. These include ongoing efforts to determine the extent of subsoil and ground water contamination at this geologically complex site. The remedial efforts for groundwater will likely continue for quite some time.

More information and photos of the remedial efforts are at the Malcolm-Pirnie web site at <http://www.pirnie.com/pws/projects/LAKESIDEREf>.

Special thanks to Ms. Jenny Molloy of MDEQ and Mr. John Valkenburg of Malcolm-Pirnie for their assistance in providing text and photos for this article.



ABOVE: The EPA's mobile wastewater treatment plant is seen parked near Cork Street. Called "Springfield Belle," this trailer removes pollution from storm water runoff that is captured in sumps and lagoons during the cleanup.

BELOW: Engineers have temporarily relocated the creek flow to allow access to the bottom sediments which were captured behind the dam. Specially trained haz-mat workers are shown removing the contaminated sediments from the creek bed. Clean replacement soils can be seen in the background.



Contamination Removed by

EPA:

- 25,236 tons of contaminated soil removed and disposed off site
- 275 kilograms of PCB contaminated oil removed
- 1,385 cubic yards of material containing asbestos
- 3,271 tons of steel recycled
- 1,600 lbs hazardous lead/chromium
- 2,400 lbs benzene
- 85 gal. nitric/hydrofluoric acid
- 15 tons benzene/lead
- 5 gal. mercury
- 185,000 gallons of oily water shipped off site as special wastes
- 4.7 million gallons of water treated by the "Springfield Belle"

Clean Water Action!

The following Kalamazoo River Watershed projects are proposed for funding under the Federal Clean Water Action Plan:

- **Allegan Conservation District. The Rabbit River Watershed** (Allegan County) is largely agricultural, with water quality impairments due to nutrient and sediment inputs, and hydrological changes brought about by development which increases stream flow and reduces stream stability. The District will perform a watershed inventory; provide technical assistance; develop individual landowner conservation plans; and financially assist land owners in implementing best management practices.
- **City of Kalamazoo (3). Storm Water Management** will be initiated to: educate citizens and officials about watershed issues; evaluate storm water runoff

quality; identify critical sites; review existing City ordinances; and identify storm water funding strategies. To help protect **Woods Lake** from urban storm water runoff, the City will construct dry detention ponds and an extended wetlands treatment area in Kensington Park; address high erosion areas; and install sedimentation structures. To improve the **Crosstown Ponds** the City will assess conditions in & around the ponds; evaluate water quality; and develop remediation alternatives.

- **City of Portage. Consolidated Drain #1** will be renovated and best management practices installed to reduce the sediment and nutrient loads which this urban drain currently delivers into Portage Creek. The project will include a nonpoint source

pollution educational trail along the stream.

- **Four Township Water Resources Council.** This north Kalamazoo and south Barry County Council will assist rural, local governments in updating their community master plans and zoning measures to protect water quality. Conservation easements will be acquired, and an educational program for local decision makers and land owners will be implemented.
- **Western Michigan University (3).** A **Watershed Data Center** will be developed as a shared, electronic repository for organizing and disseminating water quality observations. WMU will further develop **Kalamazoo River Watershed GIS** data for the benefit of local governments and others. A watershed media strategy will also be developed to promote **Kalamazoo River Watershed Public Education.**

18 Things

You Can Do For Clean Water

In previous issues we learned that human activities on the land cause nonpoint source (NPS) pollution and contaminated storm water runoff. MDEQ reports that 95% of our state's waters are impacted by NPS pollution. Data recently collected for the Kalamazoo River TMDL indicate that two-thirds of the excess pollutant loads are coming from urban and agricultural storm water runoff. We now understand that the primary method to prevent NPS pollution from impacting watersheds are best management practices (BMP's). Below, we present additional ideas for best management practices which you can adopt in your daily habits. If we all adopt BMP's, we will individually be doing our fair share in protecting both the surface and groundwater resources of our community.

Vehicle owners, ahoy!

- Auto maintenance chemicals mix with runoff and poison aquatic life and water bodies. -- Degreasers and other car cleaning products are toxic chemicals; so minimize their use!
- Recycle antifreeze or dispose of it properly as a household hazardous waste. -- In addition to polluting water, antifreeze may cause pet deaths, as it is attractive to dogs and other animals.
- Motor oil should be recycled, too.
- Avoid washing vehicles over driveways and other paved areas that normally drain to water bodies. -- Rather, wash cars over turf where the moisture benefits the grass, settleable solids are captured, and where natural soil bacteria can digest many pollutants; Or use commercial car washes (where washwater becomes sanitary waste) .
- Use alternate transportation: walk, bicycle, skate or carpool.

Something for everyone-you, your community, and your government!

- Plant trees and shrubs! They help in groundwater infiltration and absorption. Use rain gutters or woody plants to protect soil under the roofline.
- Encourage regular street sweeping.
- Assure dumpsters and trash containers have lids, and use them. Plug waste container drain holes. -- If rain is allowed to fall into trash containers, it will wash all sorts of toxic chemicals and nutrients into our lakes, streams and drinking water.
- Never burn trash. Household trash contains inks, plastics and heavy metals which will escape into the air and soil when disposed improperly.
- Keep trash and leaves away from storm drain openings, roadway grates, curbs, and gutters. Carry an empty trash bag with you on walks and pick up any trash you see.
- Encourage your community to adopt

standards for waterbody setbacks and natural buffer preservation.

- Grade soil into gentle slopes away from your house and other structures to control erosion.
- Keep children and animals out of sensitive stream bank areas as frequent trampling can cause erosion.
- Bare earth is one of water quality's greatest enemies. When you see exposed soil... discover the cause and fix the problem!
- Get rid of your dog's poop & other pet wastes. -- Bury an old, covered, plastic pail with holes in it to use as a backyard, doggie septic tank.
- Make your local government aware of problems by writing letters or filling out petitions.
- Use community planning to protect sensitive areas; layout roadways to minimize the number of stream crossings.
- Install gravel trenches made of stone and other porous materials along driveways or patios to collect water and promote infiltration.

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