

Temporary construction brings permanent solutions

Cities in the United States have endured fires, floods, tornadoes, earthquakes, hurricanes and terrorism. Mandan is surviving a disaster of a different kind, but damaging in its own way.

Mandan has a plume of petroleum product beneath its downtown. Estimated by the North Dakota Health Department in 1985 upon its discovery at about 1 million to 3 million gallons, the underground spill stems from Burlington Northern rail yard fueling activities.

The State of North Dakota and the City of Mandan reached a settlement with Burlington Northern Santa Fe Railway in August 2004 for remediation of the spill. As part of the settlement, \$24 million was placed in a Mandan Remediation Trust to pay for cleanup of the fuel contamination.

Overseeing the MRT are three trustees: Jim Neubauer as an appointee of the City of Mandan, Dave Glatt as an appointee of the North Dakota Department of Health, and Francis Schwindt, a retired North Dakota Health Department official selected by the other two trustees for his more than 20 years of experience with Mandan's spill. They meet Tuesdays at 1:30 p.m. at City Hall.

The MRT selected Leggette, Brashears and Graham from seven applicants to implement a comprehensive remediation plan providing for extraction, treatment and disposal of contaminants. System installation and reconstruction of disrupted areas is taking place over the course of three years. The system is to be fully installed and operational by the end of 2007.

Depending upon favorable groundwater conditions, LBG predicts that the majority of the free-phase diesel product will be removed from the surface of the groundwater in about three years. Soil vapor extraction and soil scrubbing will continue for an estimated four to seven years. Once the system is constructed, downtown business operators, workers and shoppers will scarcely realize it is operating.

Phase I system operating south of Main

The system south of Main Street was constructed in 2005 and 2006, becoming operational last spring. It includes 75 extraction wells, 5 miles of pipe, several remote manifold systems and the primary treatment facility for the entire system.

The Phase I system is drawing diesel fuel, contaminated groundwater and soil vapors from the area that was the primary focus of previous BNSF clean-up efforts. The system initially ran in soil vapor extraction mode for nearly two months to remove a build-up of methane from the soil, a by-product of the biodegradation when naturally occurring microbes attack diesel-fuel contaminated soil.

Contaminant recovery as of January 2007 is as follows:

- **Liquid recovery** – 3,725 gallons of diesel
- **Vapor recovery** – 6,992 gallons of solvents, gasoline and diesel; 45,224 pounds of methane
- **Bioattenuation** – 18,567 gallons of diesel

Much higher levels are expected when the system north of Main Street becomes operational in early 2007.



Trenching has been necessary in downtown Mandan to install pipelines to connect a series of extraction wells to remediation gathering and treatment facilities. The Mandan Remediation Trust, the N.D. Health Department, the Mandan City Commission and LBG thank businesses, residents and visitors for your patience with the process.

Phase II includes three zones north of Main

Phase II of the system is for the contaminated area north of Main Street. Construction activity was abundant here in 2006 with installation of 45 extraction wells in basements of buildings and 134 wells in lots, along streets and in sidewalks. Contractors connected wells between Main Street and First Street with about 10 miles of pipe. Two satellite remediation buildings were erected to gather subsurface diesel fuel and vapors before the contaminants pass through the piping system to the treatment building on Main Street. As soon as equipment is installed in the satellite buildings, Zones 1 and 2 will be operational.

**MANDAN
IS BECOMING
STRONGER
EVERYDAY**

Zone 3 is between First and Second Streets—around City Hall, the County Courthouse, Law Enforcement Center and former library building. Contractors will return this spring

to install about 5 miles of pipe in this area. Wells and pipelines also need to be installed in three lots at the corner of Collins Avenue and Main Street that the City will acquire after current owners demolish dilapidated structures on the properties.

Reconstruction improves functionality and appearance of south side of Main Street

The Mandan Remediation Trust and Supplemental Environmental Project Trust boards of directors are providing for reconstruction of areas disrupted by the installation of extraction wells and pipelines. On the south side of Main Street, Mandan now has a larger outdoor public gathering area and parking enhanced with retro-style pedestrian lights, benches, trees and improved electrical and water access. MDU lines are now underground and street kiosks, a stream-like fountain and more plantings will be added this spring. Similar elements will be added this summer to tame traffic for pedestrians and improve the appearance at three intersections of First Street.



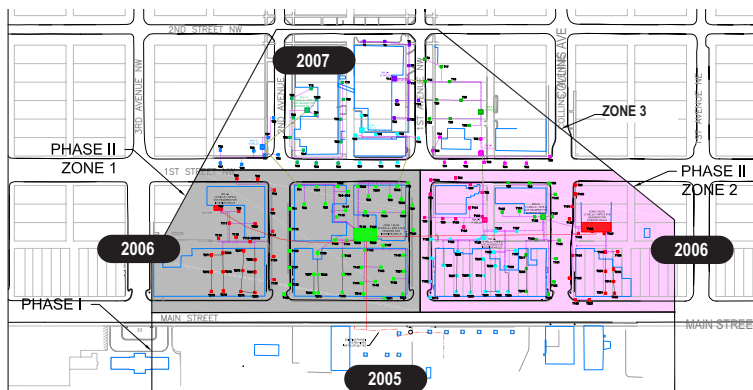
The remediation treatment building (at right) is just west of the John Iverson building at 101 West Main Street.



The Zone 2 satellite remediation building took the form of an addition to the Fire Station where it eventually will be used as a third bay.



Reconstruction of a three-block area on the south side of Main Street includes a public square for expanded downtown activities, landscaped parking areas and space reserved for future commercial development.



MANDAN REMEDIATION TRUST Financial Summary as of Dec. 31, 2006

Beginning balance on Aug. 27, 2004	\$24,000,000
Plus interest income	\$1,464,058
Less expenditures	11,124,335
Remediation	9,889,335
Building acquisition/demolition	1,114,294
Other	120,706
Fund balance	\$14,339,723

The Mandan Supplemental Environmental Projects Trust opened with a balance of \$2,500,000. The current balance is \$2,761,809.

The BNSF Settlement Fund opened with a balance of \$1,000,000. The current balance is \$791,873.