LESSONS LEARNED

ECOLOGICAL MONITORING

horseshoe bend of Brent Run Creek to the north. The expansion of the landfill occurred over the existing site, which will result in further economic downturn to the area. This project supported the expansion of the Brent Run Landfill in Montrose, Michigan. Without expansion, the landfill would reach its capacity in 2026. The landfill expansion occurred in 2016.

PROJECT TIMELINE

- 2011: Landfill expansion permitting begins.
- 2011-2012: Environmental impact assessments required.
- 2013: Environmental impact assessments completed.
- 2014: Permitting process begins for new valley excavation.
- 2015: Permitting process continues.
- 2016: Construction begins.
- 2017: Completion of construction and landfill expansion.

PROJECT DETAILS

- Construction
  - 1.6 million cubic yards of new valley excavation
  - Wetland and creek monitoring complete
  - Former creek channel filled and flow enters new channel
  - Relocation issued
  - Wetland delineation and assessment
  - Recognize need for landfill expansion
  - Landfill acquired by Waste Connections
- Design
  - Preliminary design discussions with regulatory agencies
  - Additional ecological assessments
  - Wetland, creek channel, and ecological community monitoring
- Construction
  - Sand sub-base placement for riffle construction
  - Channel excavation
  - Aquatic macro-invertebrate found during creek relocation
  - Erosion control blanket installation
  - Flow transfer into the new channel
  - Flow in new channel 1 year after construction

PROJECT DOCUMENTS

Three Mile Creek Restoration

- Habitat structures placed along the client that restoration work should be limited to 50 percent of the creek channel. GEI convinced the Michigan DEQ on behalf of the client that restoration work should be limited to 50 percent of the creek channel.

Three Mile Creek Dam Failure

- The approved habitat plan included sediment removal, plantings, grading, seeding, live stake installation, grade control, bank stabilization, and aquatic habitat creation. Habitat restoration plan conducted.

Wetland Impact Assessment

- The Lower Millecoquins River was seeded with numerous native and exotic plantings, creating a well-vegetated floodplain.

Fish Habitat and Bank Stabilization

- The habitat structures were designed to begin to form naturally. Some riffles that have a large particle size with lower energy areas. Some riffles that have a large particle size with lower energy areas. Some riffles that have a large particle size with lower energy areas.

Habitat Structures

- GEI staff moved nearly 1,290 cubic yards of one month, equivalent to nearly 1,290 cubic yards of one month, equivalent to nearly 1,290 cubic yards of one month.

Monitoring Conducted

- Monitoring conducted to ensure that the restoration work was effective and safe. It was determined that the restoration work was effective and safe.

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