

The Failures of Edenville and Sanford Dams on May 19th, 2020 near Midland, MI

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Edenville and Sanford Dams failed on Tuesday May 19th, 2020 after two days of heavy rainfall. The failures prompted the evacuation of over 10,000 local residents in mid-Michigan during the COVID-19 pandemic and resulted in about \$100M in damages. The slope instability that led to the breach of Edenville Dam was captured on video by a witness which has been widely circulated in the news media. Sanford dam which is located about 10 miles downstream and south of Edenville was subsequently overtopped and failed.

Understanding the causes of Edenville Dam failure is important because Michigan and neighboring states have hundreds of old earth dams that were constructed before conventional geotechnical engineering design practices and earth compaction quality control measures were used in dam construction; e.g., according to the Michigan Department of Environment, Great Lakes and Energy (EGLE), 271 dams are 100+ years old in Michigan alone.

Prof. Pradel who led the ASCE reconnaissance team will present the findings from the team's investigation which used satellite based geodetic measurements, UAVs (for imaging, LIDAR, and thermal surveys), geophysical surveys (seismic and resistivity), historical, geological and geotechnical field and laboratory investigations.

