

Nashville Dam Confusion - July 2024



Source: KSDK News, St Louis

Heavy rainfall fell in Illinois on the Nashville creek catchment resulting in a high peak, low volume flood wave. The fuse plug emergency spillway did what it was designed to do and eroded protecting the primary embankments. Over floor and infrastructure flooding resulted downstream in Nashville. Antecedent conditions were wet with around 40mm (1.57 inches) on the 4th, 50mm (1.96 inches) on the 9th and 10mm (0.4 inches) on the 11th, some of the notable totals. Event totals were widely described as around 6 inches (152mm) of rain. Available data shows around 80% of this fell in 1.5 hours between 5:30 am and 7am.

The dam was built in 1931 across the Nashville Creek. It has a volume of 493ML, or 400 acre-feet. Catchment size is small at 4.1km² or 1007 acres but is classed as ‘high hazard’ by Illinois regulators. Maximum discharge is 260.8m³/s or 9710cfs. The event is of note given it repeated a July 2022 similar scenario. 4 of the 10 learnings are summarized below.

Event	Impact	Learning areas
Significant, rapid flash flooding in the district occurred at the same time.	There was a much greater emergency downstream from the intensity of the rain with flooding impacts than the 2022 event	Dam safety frameworks Emergency plans and testing Community education
Intense rainfall, small catchment	Rapid rise in reservoir level but reservoir behaved as designed.	Emergency plans and testing Engineering Critical infrastructure risk Dam safety frameworks Hydrological risk sensitivity
2022 EMA Facebook post corrected reporting that it was a dam failure. This occurred again in 2024 with same reference to Secondary dam.	Confusion. Wasn't clear what as secondary dam was/is.	Training Critical infrastructure risk. Dam safety frameworks Community education
Road closures due to flooding around the County.	WC EMA advised in 16 th July press release that assistance was unable to reach the area / would be delayed and was complicating the situation at the dam.	Culture and behavior Risk appetite SFARP and ALARP Emergency plans and testing Compound risk

Resources	Associated Services
<ul style="list-style-type: none"> Rainfall data – official Rainfall data – unofficial EMA information distributed Media coverage 	<ul style="list-style-type: none"> Climate Disclosure Flood warning systems SFARP and ALARP Dam safety programs Emergency Action Plans Community education Operation and maintenance risk
Value to managing risk in...	Useful to
<ul style="list-style-type: none"> Public Safety Critical Infrastructure Governance, risk, and compliance Climate disclosure Critical Infrastructure Systems and processes SFARP/ALARP Engineering 	<ul style="list-style-type: none"> Regulators Insurance Dam owners Utilities Engineering Disaster & emergency managers Boards