

Michigan Dam & Flood Disaster

Property Impact Brief

Veros Real Estate Solutions Determines the Potential Residential
Property Risk Resulting from Dam Failures and Floods in Multiple
Michigan Counties: May 20, 2020





Contents

Overview 2

Tittabawassee River Center of Flooding and Dam Breaks..... 3

Veros Predicts Michigan Dam Breaks and Flooding Event Damage Impact by County 4

COVID-19, Dam Breaks and Flooding..... 6

Summary 6

Overview

Dam breaks and a flood in the middle of a global pandemic, it's an unimaginable scenario, that quickly became a reality on May 20, 2020, in four Michigan counties. Veros Real Estate Solutions analyzed the impact of this disastrous event and determined the potential number of residential properties that may have sustained some level of damage.

Veros Real Estate Solutions identifies **20,507** residential properties potentially impacted in the core of the Michigan Flood Event, with a total market value of **\$3,062,392,700** billion based on the predictive analytics available through the VeroVALUE AVM.

Using public records, proprietary data and mapping technology, this report details the potential impact to homes, outstanding mortgages and potential impact to insurance coverage.

Report Highlights



Potentially **34,635** properties in the region were at stake, with **20,507** in the direct core of the Michigan Floods with the potential for more significant damage.



Total market value of potentially impacted properties in the core and buffer zones exceeds **\$5.069 Billion**.



Saginaw County was the hardest hit county in Michigan.

Disaster Facts & Figures

500-Year Heavy Rain & Flooding Event:

May 20, 2020, heavy rain caused significant flooding; it was referred to as a once in 500-year event.

Flooding Caused Dams to Break: Both the Edenville and Sanford Dams were breached, contributing to the flooding and resulting property damage

Civil Impact: Roads became impassable, a boil water advisory issued, and regulatory concerns raised over the Edenville Dam's hydro-power generating license

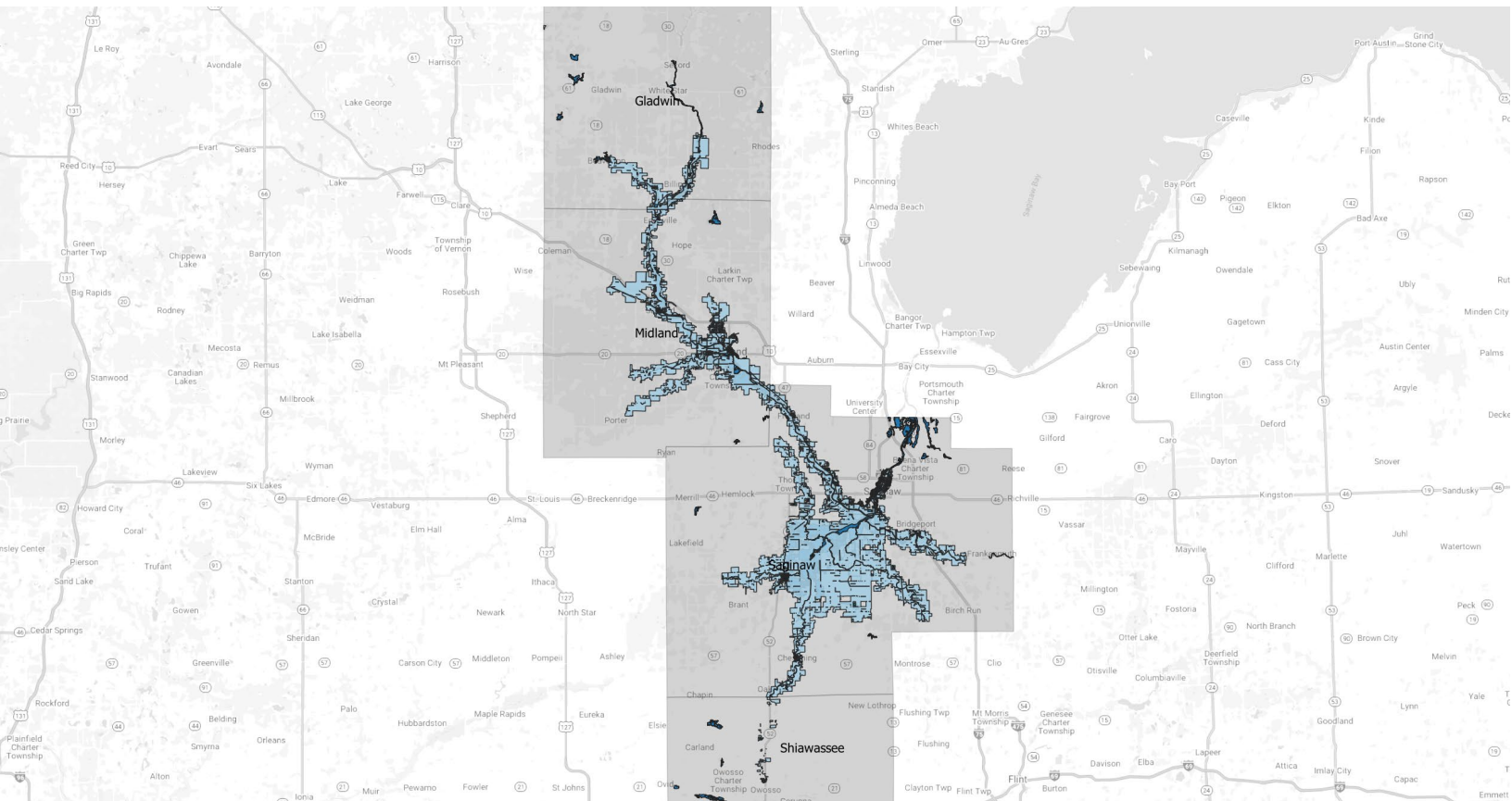
Mass Evacuations: Evacuation order went into effect for over 3,500 homes and 10,000 people

Shelters & COVID-19: Evacuees temperatures checked and masks provided at shelters

State and Federal Declarations: Governor Gretchen Whitmer declared a state of emergency on May 19, 2020. FEMA EM-3525 declared on May 21, 2020

Tittabawassee River Center of Flooding and Dam Breaks

This map shows the flooding along the Tittabawassee River, and its potential direct impact on residential properties in Michigan counties. The winds, rain and intense storms further impacted the area.



- Created when the Edenville Dam was built in 1924, Wixom Lake reservoir vanished in a matter of hours as it emptied into the surrounding communities after the failure of dam. The lake have virtually disappeared.
- Amid heavy rains and the two dam failures, the residents of Midland County were forced to evacuate as billions of gallons of water and mud inundated homes.

Veros Predicts Michigan Dam Breaks and Flooding Event Damage Impact by County

Veros determined the potential property-level impact within the counties identified to have been affected by the Flooding in Michigan that began on May 20, 2020.

Core and Buffer Zone Explained

The disaster data set from Veros combines data and satellite imagery from multiple sources in near real-time, indicating whether or not a specific parcel has been affected. This disaster data provides accuracy more precise than FEMA, which uses county boundaries for its designations. Using parcel boundaries, latitude and longitude, address information and more, Veros creates two geographic areas that pertain to a disaster event: residential properties in the Core (inside the event) and residential properties in the Buffer (typically within a ½ mile outside of the core). If a property is located within the core or the buffer, it is not implicit that there is damage, but rather, an indication of the likelihood that a property may have experienced damage. The Total Estimated Market Value is based on the total of the impacted properties calculated using Veros' predictive valuation technologies.

Property Impact Within The Event Core of the Tracked Michigan Floods

The following chart indicates the potential property impact in the path of the dam break and flooding events, referred to as the event core.

MICHIGAN FLOOD		ESTIMATED INSIDE EVENT CORE		
STATE	COUNTY	Total Estimated Market Value	Number of Properties	Percentage of Properties Inside Event
MI	GLADWIN	\$457,860,200	3,079	19.13 %
MI	MIDLAND	\$1,261,547,000	6,692	21.73 %
MI	SAGINAW	\$1,304,984,500	10,510	15.17 %
MI	SHIAWASSEE	\$38,001,000	226	0.95 %
TOTAL		\$3,062,392,700	20,507	

Likely Property Impact In The Buffer Zones of the Flooding

This chart indicates the properties in the Buffer of the flooding.

MICHIGAN FLOOD		ESTIMATED INSIDE BUFFER		
STATE	COUNTY	Total Estimated Market Value	Number of Properties	Percentage of Properties Inside Buffer
MI	GLADWIN	\$85,121,400	633	3.93 %
MI	MIDLAND	\$675,092,000	3,708	12.04 %
MI	SAGINAW	\$1,120,373,000	9,090	13.12 %
MI	SHIAWASSEE	\$126,678,000	787	3.30 %
TOTAL		\$2,007,264,400	14,218	

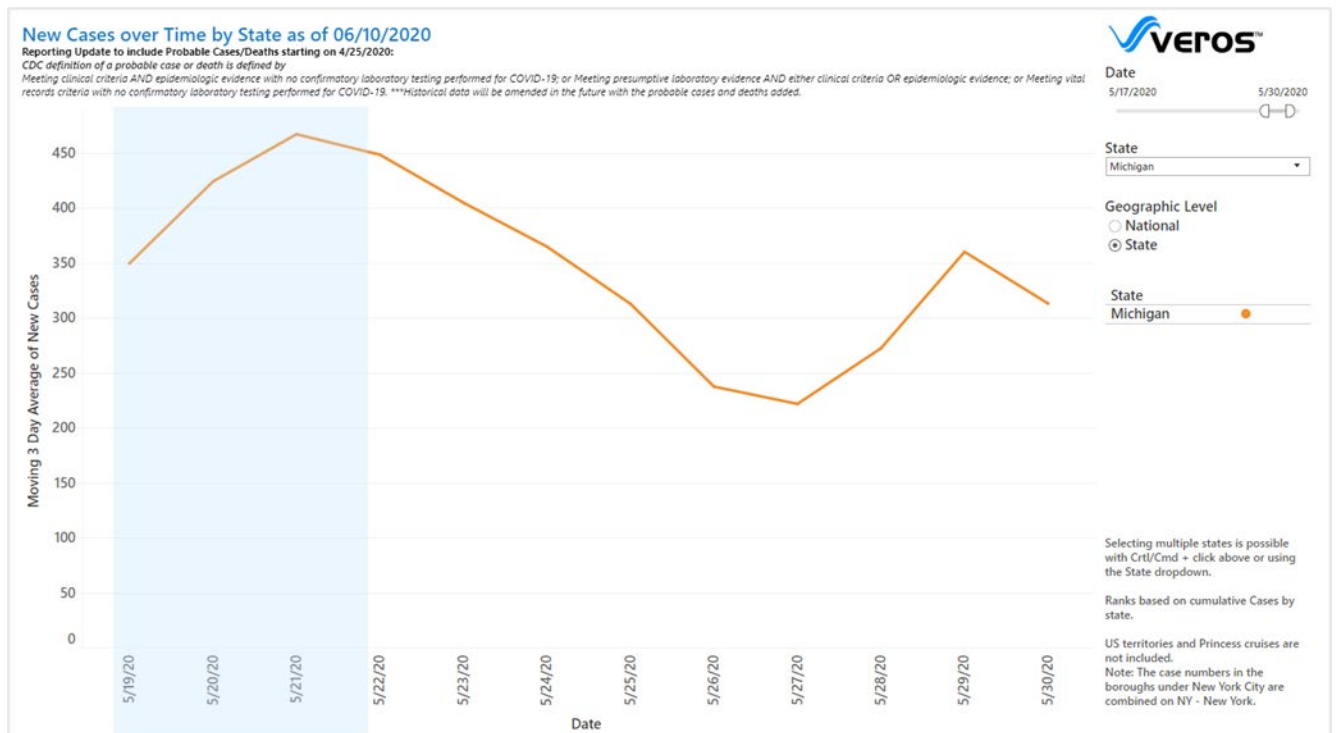
Properties Outside of the Event

Here is a view of the properties which were likely not directly damaged as a result of the flooding.

MICHIGAN FLOOD		OUTSIDE OF EVENT & BUFFER	
STATE	COUNTY	Number of Properties	Percentage of County Not Affected
MI	GLADWIN	12,383	76.94%
MI	MIDLAND	20,393	66.23%
MI	SAGINAW	49,687	71.71%
MI	SHIAWASSEE	22,864	95.76%
TOTAL		105,327	

COVID-19, Dam Breaks and Flooding

As the dams broke, the river rose, water breached the banks, the rise of COVID-19 cases continued its upward trajectory as reported on May 20, 2020. When the flooding hit, residents were forced from their homes and faced the uncertainty of going to a shelter where social distancing would be difficult. The light blue box is the COVID-19 new case trend that occurred during the flooding event activity tracked in this report. For complete COVID-19 tracking, go to the [Veros COVID-19 Tracker](#).



Summary

The total impact of the dam breaks and flooding was extreme. People were forced from their homes with many homes water damaged and lost, businesses interrupted and lives forever changed. In addition, this flooding occurred during the COVID-19 virus pandemic, causing further strain on shelters, first responders and citizens following stay at home orders as well as social distancing guidelines.

Veros is committed to supporting the challenges faced by the organizations helping those in need. Veros continues to monitor the impact of floods and future natural disasters as they occur. Our thoughts are with the people and responders challenged with the effects of this event.

When Disaster Strikes, Veros Is There for You.

To request a complete list of potential properties and localized damage as a result of the Michigan Floods, visit: **Veros.cc/Data** or call: **866.458.3767**.

To subscribe to future natural disaster reports from Veros Real Estate Solutions, please visit: **Veros.com/911**

What Disaster Data Can Do for Your Business.



Proactively help the people most in need by identifying at-risk loans and rapidly initiating contact to offer assistance



Determine risk rating and focus risk management efforts on high-risk properties



Identify damaged and high-risk properties



Streamline the property assessment process



Accelerate clear-to-close time for unimpacted properties



Eliminate unnecessary property inspections

Find out more: **Veros.cc/data**



Veros Real Estate Solutions
www.veros.com
communications@veros.com
866-458-3767 Option 2