6.0 APPENDIX B: HAZARD AND VULNERABILITY DATA

The information included in this appendix supplements the discussion of Huron County's hazards and vulnerabilities from Section 2: Hazard Identification and Risk Assessment. A complete list of historical incidents of each hazard is provided here. Additionally, detailed data on the anticipated damage to Huron County from a 100-year flood and earthquake, per HAZUS estimates, is provided.

5.1 HAZARD HISTORY DATA

The National Climactic Data Center has maintained records on weather incidents across the United States since 1950. The tables below provide a complete history of the incidents in Huron County from 1950 through present day.

5.1.1 Drought and Extreme Heat

These incidents include all occurrences categorized as drought or extreme heat.

Hazard	Location	Date	Injuries	Deaths	Property Damage	Crop Damage
Drought	Huron (Zone)	08/01/1996	0	0	0	0
Drought	Huron (Zone)	06/01/1999	0	0	0	0
Drought	Huron (Zone)	07/01/1999	0	0	0	0
Drought	Huron (Zone)	08/01/1999	0	0	0	0
Drought	Huron (Zone)	09/01/1999	0	0	0	15M

5.1.2 Flood

The flood incidents identified in this table include events classified as flood and flash flood that occurred in Huron County since 1950.

Hazard	Location	Date	Deaths	Injuries	Property Damage	Crop Damage
Flash Flood	Huron County	04/23/1996	0	0	0	0
Flash Flood	Huron County	06/19/1996	0	0	0	0
Flash Flood	Huron County	05/25/1997	0	0	0	0
Flash Flood	Huron County	05/25/1997	0	0	0	0
Flash Flood	Huron County	06/01/1997	0	0	70K	10K
Flash Flood	Huron County	06/01/1997	0	0	25K	15K
Flash Flood	Huron County	01/07/1998	0	0	0	0
Flash Flood	Huron County	01/09/1998	0	0	0	0
Flash Flood	Huron County	04/09/1998	0	0	0	0

Hazard	Location	Date	Deaths	Injuries	Property Damage	Crop Damage
Flash Flood	Huron County	04/16/1998	0	0	0	0
Flash Flood	Huron County	05/03/1998	0	0	0	0
Flash Flood	Huron County	06/30/1998	0	0	15K	0
Flash Flood	Huron County	06/30/1998	0	0	50K	0
Flash Flood	Huron County	08/25/1998	0	0	1M	0
Flood	Huron (Zone)	08/26/1998	0	0	75K	0
Flood	Huron (Zone)	08/26/1998	0	0	50K	0
Flash Flood	Huron County	07/06/1999	0	0	0	0
Flood	Huron (Zone)	02/23/2000	0	0	20K	0
Flash Flood	Huron County	07/29/2000	0	0	500K	0
Flash Flood	Huron County	08/23/2000	0	0	0	0
Flash Flood	Huron County	07/08/2003	0	0	250K	0
Flood	Huron (Zone)	06/14/2004	0	0	0	0
Flood	Huron (Zone)	01/01/2005	0	0	425K	0
Flash Flood	Huron County	06/21/2006	0	0	8M	1M
Flood	Countywide	06/22/2006	0	0	12M	7M
Flood	Milan	01/06/2007	0	0	200K	0
Flash Flood	Huron County	06/26/2008	0	0	10K	10K
Flash Flood	Huron County	05/26/2009	0	0	400K	30K
Flash Flood	Huron County	02/28/2011	1	0	0	0
Flood	Steuben	02/28/2011	0	0	750K	0
Flood	Norwalk	10/30/2012	0	0	40K	0
Flash Flood	Huron County	07/10/2013	0	0	75K	0

5.1.3 Severe Thunderstorm

Thunderstorm incidents include events that produced any combination of hail, lightning and thunderstorm wind; all hazards were not necessarily present in all incidents.

Hazard	Location	Date	Deaths	Injuries	Property Damage	Crop Damage
Hail	Huron County	07/02/1963	0	0	0	0
Thunderstorm Wind	Huron County	07/02/1963	0	0	0	0
Hail	Huron County	06/27/1969	0	0	0	0
Thunderstorm Wind	Huron County	10/04/1973	0	0	0	0
Hail	Huron County	04/14/1974	0	0	0	0
Thunderstorm Wind	Huron County	04/14/1974	0	0	0	0
Thunderstorm Wind	Huron County	05/21/1975	0	0	0	0
Thunderstorm Wind	Huron County	05/21/1975	0	0	0	0

Hazard	Location	Date	Deaths	Injuries	Property Damage	Crop Damage
Thunderstorm Wind	Huron County	06/05/1975	0	0	0	0
Hail	Huron County	07/10/1975	0	0	0	0
Thunderstorm Wind	Huron County	03/20/1976	0	0	0	0
Hail	Huron County	05/31/1977	0	0	0	0
Hail	Huron County	06/05/1977	0	0	0	0
Thunderstorm Wind	Huron County	06/28/1977	0	0	0	0
Thunderstorm Wind	Huron County	07/04/1977	0	0	0	0
Thunderstorm Wind	Huron County	09/13/1980	0	0	0	0
Thunderstorm Wind	Huron County	04/28/1981	0	0	0	0
Thunderstorm Wind	Huron County	01/04/1982	0	0	0	0
Hail	Huron County	03/31/1982	0	0	0	0
Hail	Huron County	03/31/1982	0	0	0	0
Thunderstorm Wind	Huron County	03/31/1982	0	0	0	0
Thunderstorm Wind	Huron County	04/03/1982	0	0	0	0
Hail	Huron County	05/27/1982	0	0	0	0
Thunderstorm Wind	Huron County	06/15/1982	0	0	0	0
Hail	Huron County	06/22/1982	0	0	0	0
Hail	Huron County	06/22/1982	0	0	0	0
Hail	Huron County	06/22/1982	0	0	0	0
Hail	Huron County	06/22/1982	0	0	0	0
Hail	Huron County	05/02/1983	0	0	0	0
Hail	Huron County	05/02/1983	0	0	0	0
Hail	Huron County	05/02/1983	0	0	0	0
Hail	Huron County	05/02/1983	0	0	0	0
Thunderstorm Wind	Huron County	05/02/1983	0	0	0	0
Thunderstorm Wind	Huron County	05/02/1983	0	0	0	0
Thunderstorm Wind	Huron County	05/02/1983	0	0	0	0
Thunderstorm Wind	Huron County	05/02/1983	0	0	0	0
Thunderstorm Wind	Huron County	07/04/1983	0	0	0	0
Thunderstorm Wind	Huron County	07/21/1983	0	0	0	0
Thunderstorm Wind	Huron County	09/06/1983	0	0	0	0
Thunderstorm Wind	Huron County	09/06/1983	0	0	0	0
Thunderstorm Wind	Huron County	09/06/1983	0	0	0	0
Thunderstorm Wind	Huron County	08/10/1984	0	0	0	0
Hail	Huron County	03/28/1985	0	0	0	0
Thunderstorm Wind	Huron County	04/05/1985	0	0	0	0
Hail	Huron County	05/27/1985	0	0	0	0
Hail	Huron County	05/27/1985	0	0	0	0
Hail	Huron County	07/10/1985	0	0	0	0
Thunderstorm Wind	Huron County	07/10/1985	0	0	0	0
Thunderstorm Wind	Huron County	07/10/1985	0	0	0	0
Thunderstorm Wind	Huron County	05/06/1986	0	0	0	0

Hazard	Location	Date	Deaths	Injuries	Property Damage	Crop Damage
Hail	Huron County	06/16/1986	0	0	0	0
Thunderstorm Wind	Huron County	09/26/1986	0	0	0	0
Thunderstorm Wind	Huron County	09/30/1986	0	0	0	0
Hail	Huron County	06/08/1987	0	0	0	0
Thunderstorm Wind	Huron County	06/29/1987	0	0	0	0
Thunderstorm Wind	Huron County	08/02/1987	0	0	0	0
Thunderstorm Wind	Huron County	08/02/1987	0	0	0	0
Thunderstorm Wind	Huron County	06/25/1988	0	0	0	0
Thunderstorm Wind	Huron County	06/25/1988	0	0	0	0
Thunderstorm Wind	Huron County	06/25/1988	0	0	0	0
Thunderstorm Wind	Huron County	08/05/1988	0	0	0	0
Thunderstorm Wind	Huron County	05/25/1989	0	0	0	0
Thunderstorm Wind	Huron County	06/27/1989	0	0	0	0
Thunderstorm Wind	Huron County	06/03/1990	0	0	0	0
Thunderstorm Wind	Huron County	06/22/1990	0	0	0	0
Thunderstorm Wind	Huron County	09/14/1990	0	0	0	0
Thunderstorm Wind	Huron County	03/27/1991	0	0	0	0
Thunderstorm Wind	Huron County	06/15/1991	0	0	0	0
Hail	Huron County	08/17/1991	0	0	0	0
Thunderstorm Wind	Huron County	06/17/1992	0	0	0	0
Thunderstorm Wind	Huron County	06/18/1992	0	0	0	0
Thunderstorm Wind	Huron County	06/18/1992	0	0	0	0
Thunderstorm Wind	Huron County	07/10/1992	0	0	0	0
Thunderstorm Wind	Huron County	07/14/1992	0	0	0	0
Thunderstorm Wind	Huron County	07/29/1992	0	0	0	0
Thunderstorm Wind	Huron County	09/09/1992	0	0	0	0
Hail	Southeast Part	04/12/1994	0	0	0	0
Hail	Norwalk	05/25/1994	0	0	0	50K
Thunderstorm Wind	Wakeman	06/20/1994	0	1	5K	0
Thunderstorm Wind	New London	08/02/1994	0	0	50K	0
Thunderstorm Wind	Norwalk	08/13/1994	0	0	50K	0
Thunderstorm Wind	Huron County	08/28/1994	0	0	5K	0
Thunderstorm Wind	New London	09/25/1994	0	0	5K	0
Thunderstorm Wind	Monroeville	04/11/1995	0	0	5K	0
Thunderstorm Wind	Huron County	05/28/1995	0	0	10K	0
Thunderstorm Wind	Huron County	05/28/1995	0	0	5K	0
Thunderstorm Wind	New London	06/21/1995	0	0	3K	0
Thunderstorm Wind	Norwalk	06/29/1995	0	0	12K	0
Thunderstorm Wind	Countywide	07/13/1995	0	0	100K	20K
Thunderstorm Wind	Countywide	07/15/1995	0	0	0	0
Thunderstorm Wind	North Half	08/01/1995	0	0	3K	0
Thunderstorm Wind	Bellevue	08/15/1995	0	0	2K	0

Hazard	Location	Date	Deaths	Injuries	Property Damage	Crop Damage
Thunderstorm Wind	Countywide	08/17/1995	0	0	2K	0
Thunderstorm Wind	Countywide	04/12/1996	0	1	60K	0
Thunderstorm Wind	Hartland	07/24/1996	0	0	10K	0
Thunderstorm Wind	Norwalk	10/30/1996	0	0	0	0
Thunderstorm Wind	Monroeville	11/07/1996	0	0	0	0
Thunderstorm Wind	Southern Portion	12/01/1996	0	0	0	0
Thunderstorm Wind	Norwalk	05/18/1997	0	0	2K	0
Lightning	Norwalk	06/29/1997	0	0	100K	0
Thunderstorm Wind	Willard	07/26/1997	0	0	2K	0
Thunderstorm Wind	Norwalk	07/26/1997	0	0	2K	0
Hail	Norwalk	08/16/1997	0	0	0	0
Thunderstorm Wind	Norwalk	08/16/1997	0	0	30K	0
Thunderstorm Wind	Countywide	08/16/1997	0	0	5K	0
Hail	North Fairfield	02/28/1998	0	0	0	0
Thunderstorm Wind	Countywide	03/28/1998	0	0	20K	0
Thunderstorm Wind	Norwalk	04/16/1998	0	0	1K	0
Hail	Wakeman	05/31/1998	0	0	0	0
Thunderstorm Wind	Willard	05/31/1998	0	0	0	0
Thunderstorm Wind	Plymouth	06/12/1998	0	0	0	0
Thunderstorm Wind	Countywide	06/24/1998	0	0	5K	0
Hail	North Fairfield	06/27/1998	0	0	0	0
Thunderstorm Wind	Strongs Ridge	06/28/1998	0	0	2K	0
Thunderstorm Wind	Monroeville	06/29/1998	0	0	3K	0
Thunderstorm Wind	Countywide	07/21/1998	0	0	30K	0
Thunderstorm Wind	Countywide	07/21/1998	0	1	150K	0
Thunderstorm Wind	Countywide	07/21/1998	0	0	10K	0
Thunderstorm Wind	Countywide	07/21/1998	0	0	15K	0
Thunderstorm Wind	Willard	07/21/1998	0	0	75K	0
Hail	Countywide	08/24/1998	0	0	0	20K
Thunderstorm Wind	Countywide	08/24/1998	0	0	20K	0
Thunderstorm Wind	Countywide	08/25/1998	0	0	25K	0
Thunderstorm Wind	Countywide	11/10/1998	0	0	10K	0
Thunderstorm Wind	Countywide	12/07/1998	0	0	5K	0
Lightning	Wakeman	06/11/1999	1	0	0	0
Hail	Norwalk	06/11/1999	0	0	0	0
Thunderstorm Wind	Norwalk	06/11/1999	0	0	5K	0
Thunderstorm Wind	Central Portion	06/11/1999	0	0	10K	0
Hail	Norwalk	06/12/1999	0	0	0	0
Hail	Norwalk	06/12/1999	0	0	0	0
Thunderstorm Wind	Norwalk	06/12/1999	0	0	0	0
Thunderstorm Wind	Norwalk	07/06/1999	0	0	25K	0
Thunderstorm Wind	Countywide	07/09/1999	0	0	300K	0

Hazard	Location	Date	Deaths	Injuries	Property Damage	Crop Damage
Hail	Norwalk	07/30/1999	0	0	0	0
Hail	Wakeman	07/30/1999	0	0	0	10K
Thunderstorm Wind	Wakeman	07/30/1999	0	0	5K	0
Thunderstorm Wind	Countywide	10/13/1999	0	0	10K	0
Thunderstorm Wind	Strongs Ridge	04/20/2000	0	0	10K	0
Thunderstorm Wind	Norwalk	06/05/2000	0	0	5K	0
Lightning	Willard	06/16/2000	0	3	0	0
Hail	Monroeville	07/14/2000	0	0	0	0
Hail	Monroeville	07/14/2000	0	0	0	0
Hail	Milan	07/14/2000	0	0	0	0
Hail	Monroeville	07/14/2000	0	0	0	0
Hail	Willard	07/14/2000	0	0	0	0
Thunderstorm Wind	Norwalk	07/29/2000	0	0	75K	0
Thunderstorm Wind	Wakeman	08/02/2000	0	0	5K	0
Thunderstorm Wind	Willard	08/06/2000	0	6	350K	0
Thunderstorm Wind	New London	08/09/2000	0	0	2K	0
Thunderstorm Wind	Countywide	09/20/2000	0	0	50K	0
Thunderstorm Wind	Countywide	10/04/2000	0	0	5K	0
Thunderstorm Wind	Strongs Ridge	05/26/2001	0	0	5K	0
Hail	Hartland	06/19/2001	0	0	0	0
Thunderstorm Wind	Wakeman	07/01/2001	0	0	5K	0
Thunderstorm Wind	Willard	07/09/2001	0	0	15K	0
Thunderstorm Wind	Monroeville	07/22/2001	0	0	5K	0
Thunderstorm Wind	Monroeville	07/25/2001	0	0	10K	0
Thunderstorm Wind	Greenwich	10/24/2001	0	0	5K	0
Hail	Wakeman	04/28/2002	0	0	5K	0
Hail	Willard	05/14/2002	0	0	10K	0
Hail	Wakeman	06/04/2002	0	0	2K	0
Hail	Collins	06/14/2002	0	0	5K	0
Thunderstorm Wind	Norwalk	07/28/2002	0	0	2K	0
Thunderstorm Wind	Countywide	07/29/2002	0	0	15K	0
Thunderstorm Wind	Strongs Ridge	08/04/2002	0	0	10K	0
Hail	Norwalk	09/14/2002	0	0	0	0
Thunderstorm Wind	Olena	09/20/2002	0	0	5K	0
Thunderstorm Wind	Countywide	11/10/2002	0	0	100K	0
Hail	Greenwich	04/04/2003	0	0	2K	0
Thunderstorm Wind	Norwalk	04/04/2003	0	0	5K	0
Thunderstorm Wind	Monroeville	04/20/2003	0	0	5K	0
Hail	Willard	05/01/2003	0	0	0	0
Thunderstorm Wind	Clarksfield	05/10/2003	0	0	5K	0
Thunderstorm Wind	Norwalk	07/04/2003	0	0	10K	0
Thunderstorm Wind	Norwalk	07/04/2003	0	0	125K	0

Hazard	Location	Date	Deaths	Injuries	Property Damage	Crop Damage
Thunderstorm Wind	Countywide	07/07/2003	0	0	50K	0
Thunderstorm Wind	Countywide	07/08/2003	0	0	300K	0
Thunderstorm Wind	Willard	07/08/2003	0	0	50K	0
Thunderstorm Wind	Norwalk	07/27/2003	0	0	10K	0
Thunderstorm Wind	Strongs Ridge	08/21/2003	0	0	800K	0
Thunderstorm Wind	Norwalk	11/12/2003	0	0	5K	0
Hail	Monroeville	04/17/2004	0	0	75K	0
Hail	Greenwich	04/17/2004	0	0	0	0
Hail	Wakeman	05/07/2004	0	0	0	0
Thunderstorm Wind	Fitchville	05/17/2004	0	0	3K	0
Thunderstorm Wind	Greenwich	05/18/2004	0	0	10K	0
Thunderstorm Wind	Wakeman	05/21/2004	0	0	25K	0
Thunderstorm Wind	Countywide	05/21/2004	0	0	125K	0
Thunderstorm Wind	Willard	05/30/2004	0	0	3K	0
Thunderstorm Wind	New Haven	06/09/2004	0	0	45K	0
Thunderstorm Wind	Countywide	06/13/2004	0	0	50K	0
Thunderstorm Wind	Countywide	06/14/2004	0	0	20K	0
Hail	Willard	06/24/2004	0	0	0	0
Thunderstorm Wind	Willard	06/24/2004	0	0	4K	0
Hail	Norwalk	08/15/2004	0	0	0	0
Hail	Willard	08/18/2004	0	0	0	0
Hail	Fitchville	08/18/2004	0	0	0	0
Hail	New London	08/18/2004	0	0	0	0
Thunderstorm Wind	New London	08/24/2004	0	0	3K	0
Hail	Greenwich	04/20/2005	0	0	0	0
Thunderstorm Wind	Monroeville	06/05/2005	0	0	15K	0
Thunderstorm Wind	Hartland	06/05/2005	0	0	10K	0
Thunderstorm Wind	Clarksfield	06/10/2005	0	0	2K	0
Hail	New London	06/14/2005	0	0	0	0
Thunderstorm Wind	Norwalk	06/30/2005	0	0	10K	0
Thunderstorm Wind	Peru	07/13/2005	0	0	2K	0
Thunderstorm Wind	Willard	07/25/2005	0	0	20K	0
Thunderstorm Wind	Wakeman	07/26/2005	0	0	6K	0
Thunderstorm Wind	Wakeman	07/26/2005	0	0	2K	0
Thunderstorm Wind	New London	07/26/2005	0	0	4K	0
Hail	Greenwich	08/20/2005	0	0	0	0
Thunderstorm Wind	Norwalk	11/06/2005	0	0	2K	0
Thunderstorm Wind	Willard	11/06/2005	0	0	10K	0
Thunderstorm Wind	Peru	11/06/2005	0	0	1K	0
Hail	Norwalk	04/07/2006	0	0	0	0
Hail	North Fairfield	04/07/2006	0	0	0	0
Hail	Monroeville	04/21/2006	0	0	0	0

Hazard	Location	Date	Deaths	Injuries	Property Damage	Crop Damage
Hail	Wakeman	04/23/2006	0	0	0	0
Hail	North Fairfield	05/18/2006	0	0	0	0
Hail	Monroeville	05/18/2006	0	0	0	0
Hail	Plymouth	05/25/2006	0	0	0	0
Thunderstorm Wind	Monroeville	05/25/2006	0	0	6K	0
Thunderstorm Wind	Norwalk	05/25/2006	0	0	4K	0
Thunderstorm Wind	Norwalk	06/19/2006	0	0	1K	0
Hail	Greenwich	06/21/2006	0	0	0	0
Thunderstorm Wind	Plymouth	06/21/2006	0	0	4K	0
Thunderstorm Wind	Plymouth	07/02/2006	0	0	10K	0
Thunderstorm Wind	Plymouth	07/02/2006	0	0	10K	0
Thunderstorm Wind	Wakeman	07/04/2006	0	0	12K	0
Hail	Monroeville	05/01/2007	0	0	0	0
Hail	Norwalk	05/01/2007	0	0	0	0
Hail	Greenwich	05/01/2007	0	0	0	0
Hail	Hunts Corner	05/01/2007	0	0	0	0
Hail	Norwalk	05/01/2007	0	0	10K	0
Hail	Collins	05/01/2007	0	0	0	0
Thunderstorm Wind	Willard	05/01/2007	0	0	15K	0
Thunderstorm Wind	North Fairfield	06/02/2007	0	0	2K	0
Hail	Willard	06/08/2007	0	0	0	0
Thunderstorm Wind	Greenwich	06/08/2007	0	0	5K	0
Thunderstorm Wind	Wakeman	07/27/2007	0	0	10K	0
Thunderstorm Wind	Norwalk	08/09/2007	0	0	3K	0
Thunderstorm Wind	Norwalk	01/09/2008	0	0	100K	0
Thunderstorm Wind	Willard	01/09/2008	0	0	50K	0
Hail	Norwalk	04/11/2008	0	0	0	0
Thunderstorm Wind	Norwalk	05/02/2008	0	0	5K	0
Hail	Weavers Corners	05/03/2008	0	0	0	0
Thunderstorm Wind	Strongs Ridge	05/30/2008	0	0	3K	0
Thunderstorm Wind	Wakeman	05/31/2008	0	0	2K	0
Thunderstorm Wind	Norwalk	06/09/2008	0	0	25K	0
Hail	Wakeman	06/10/2008	0	0	0	0
Thunderstorm Wind	Norwalk	06/15/2008	0	0	5K	0
Hail	Norwalk	06/21/2008	0	0	0	0
Hail	Norwalk	06/21/2008	0	0	0	0
Hail	Norwalk	06/23/2008	0	0	0	0
Hail	Norwalk	06/23/2008	0	0	0	0
Hail	Norwalk	06/23/2008	0	0	0	0
Lightning	Wakeman	06/26/2008	1	1	0	0
Thunderstorm Wind	North Fairfield	07/08/2008	0	0	2K	0
Thunderstorm Wind	Norwalk	07/08/2008	0	0	2K	0

Hazard	Location	Date	Deaths	Injuries	Property Damage	Crop Damage
Hail	Greenwich	05/26/2009	0	0	0	0
Thunderstorm Wind	Norwalk	06/01/2009	0	0	8K	0
Hail	Norwalk	07/21/2009	0	0	0	0
Thunderstorm Wind	Willard	08/20/2009	0	0	2K	0
Hail	Wakeman	05/05/2010	0	0	0	0
Thunderstorm Wind	Wakeman	05/14/2010	0	0	2K	0
Thunderstorm Wind	Norwalk	05/31/2010	0	0	1K	0
Hail	Willard	06/04/2010	0	0	0	0
Thunderstorm Wind	East Townsend	06/23/2010	0	0	1K	0
Thunderstorm Wind	Collins	06/23/2010	0	0	1K	0
Thunderstorm Wind	New London	06/27/2010	0	0	10K	0
Thunderstorm Wind	New London	06/27/2010	0	0	1K	0
Thunderstorm Wind	Willard	07/08/2010	0	0	0	0
Thunderstorm Wind	Norwalk	08/04/2010	0	0	5K	0
Thunderstorm Wind	New London	09/16/2010	0	0	30K	0
Thunderstorm Wind	Monroeville	04/27/2011	0	0	40K	0
Hail	Norwalk	05/12/2011	0	0	5K	0
Hail	Norwalk	05/12/2011	0	0	1K	0
Hail	Strongs Ridge	05/25/2011	0	0	20K	0
Thunderstorm Wind	Willard	05/26/2011	0	0	1K	0
Thunderstorm Wind	New London	05/26/2011	0	0	1K	0
Hail	New London	06/07/2011	0	0	0	0
Hail	Plymouth	06/10/2011	0	0	0	0
Thunderstorm Wind	Norwalk	06/18/2011	0	0	250K	0
Hail	East Norwalk	06/27/2011	0	0	0	0
Thunderstorm Wind	Willard	07/11/2011	0	0	10K	0
Thunderstorm Wind	Norwalk	07/28/2011	0	0	15K	0
Hail	North Fairfield	08/09/2011	0	0	0	0
Thunderstorm Wind	Strongs Ridge	08/24/2011	0	0	100K	0
Thunderstorm Wind	Wakeman	08/24/2011	0	0	40K	0
Thunderstorm Wind	Norwalk	08/24/2011	0	0	45K	0
Thunderstorm Wind	Norwalk	08/24/2011	0	0	0	0
Thunderstorm Wind	Norwalk	08/24/2011	0	0	1K	0
Hail	Monroeville	03/15/2012	0	0	0	0
Hail	Norwalk	03/15/2012	0	0	0	0
Hail	Norwalk	03/19/2012	0	0	0	0
Thunderstorm Wind	Norwalk	06/18/2012	0	0	0	0
Thunderstorm Wind	Wakeman	06/18/2012	0	0	0	0
Thunderstorm Wind	Wakeman	06/18/2012	0	0	0	0
Thunderstorm Wind	Norwalk	07/01/2012	0	0	125K	0
Thunderstorm Wind	Willard	07/01/2012	0	0	5K	0
Thunderstorm Wind	Wakeman	07/01/2012	0	0	0	0

Hazard	Location	Date	Deaths	Injuries	Property Damage	Crop Damage
Thunderstorm Wind	Norwalk	07/05/2012	0	0	3K	0
Hail	Willard	09/06/2012	0	0	0	0
Thunderstorm Wind	Willard	05/31/2013	0	0	0	0
Thunderstorm Wind	Norwalk	05/31/2013	0	0	15K	0
Hail	Greenwich	06/12/2013	0	0	0	0
Hail	Greenwich	06/12/2013	0	0	0	0
Hail	Greenwich	06/12/2013	0	0	0	0
Thunderstorm Wind	Norwalk	06/13/2013	0	0	2K	0
Thunderstorm Wind	Willard	06/13/2013	0	0	5K	0
Thunderstorm Wind	Monroeville	06/25/2013	0	0	6K	0
Hail	Strongs Ridge	07/10/2013	0	0	0	0
Hail	Strongs Ridge	07/10/2013	0	0	0	0
Thunderstorm Wind	Norwalk	07/10/2013	0	0	15K	0
Thunderstorm Wind	Greenwich	07/10/2013	0	0	5K	0
Hail	Strongs Ridge	07/30/2013	0	0	10K	0
Thunderstorm Wind	Norwalk	11/01/2013	0	0	250K	0
Thunderstorm Wind	Norwalk	11/17/2013	0	0	10K	0
Thunderstorm Wind	Wakeman	11/17/2013	0	0	5K	0
Hail	East Townsend	04/29/2014	0	0	0	0
Thunderstorm Wind	Norwalk	05/21/2014	0	0	15K	0
Hail	Norwalk	06/18/2014	0	0	0	0
Thunderstorm Wind	Willard	06/18/2014	0	0	250K	0
Thunderstorm Wind	Norwalk	07/08/2014	0	0	3K	0
Thunderstorm Wind	New London	12/24/2014	0	0	1K	0
Thunderstorm Wind	Norwalk	12/24/2014	0	0	3K	0
Thunderstorm Wind	Willard	05/30/2015	0	0	8K	0
Thunderstorm Wind	Strongs Ridge	09/04/2015	0	0	1K	0
Thunderstorm Wind	Monroeville	09/04/2015	0	0	30K	0
Thunderstorm Wind	North Fairfield	09/04/2015	0	0	30K	0
Hail	New London	06/16/2016	0	0	0	0
Thunderstorm Wind	New London	07/13/2016	0	0	0	0
Thunderstorm Wind	Wakeman	07/13/2016	0	0	10K	0
Thunderstorm Wind	Willard	09/10/2016	0	0	15K	0
Hail	Strongs Ridge	02/24/2017	0	0	0	0
Thunderstorm Wind	Willard	03/01/2017	0	0	3K	0
Thunderstorm Wind	Monroeville	03/01/2017	0	0	5K	0
Thunderstorm Wind	White Fox	05/28/2017	0	0	75K	0
Thunderstorm Wind	Willard	05/29/2017	0	0	2K	0
Hail	Willard	06/13/2017	0	0	0	0
Hail	Strongs Ridge	07/16/2017	0	0	0	0
Hail	New London	07/16/2017	0	0	0	0
Thunderstorm Wind	Hunts Corner	07/28/2017	0	0	25K	0

Hazard	Location	Date	Deaths	Injuries	Property Damage	Crop Damage
Thunderstorm Wind	Centerton	11/05/2017	0	0	0	0
Thunderstorm Wind	Peru	11/05/2017	0	0	50K	0
Thunderstorm Wind	Peru	11/05/2017	0	0	35K	0
Thunderstorm Wind	Wakeman	11/05/2017	0	0	10K	0
Thunderstorm Wind	Wakeman	11/05/2017	0	0	20K	0

5.1.4 Tornado

Confirmed tornadoes occurring in Huron County since 1950 are listed below.

Hazard	Location	Date	Fujita Scale	Deaths	Injuries	Property Damage	Crop Damage
Tornado	Huron County	08/17/1972	F2	0	0	0	0
Tornado	Huron County	05/10/1973	F3	5	100	2.5M	0
Tornado	Huron County	06/26/1973	F1	0	0	1K	0
Tornado	Huron County	06/26/1973	F0	0	0	1K	0
Tornado	Huron County	09/05/1975	F1	0	0	25K	0
Tornado	Huron County	04/25/1976	F0	0	0	2.5K	0
Tornado	Huron County	06/30/1977	F1	0	0	250K	0
Tornado	Huron County	06/30/1977	F2	0	0	250K	0
Tornado	Huron County	06/26/1978	F1	0	0	25K	0
Tornado	Huron County	05/02/1983	F2	0	2	250K	0
Tornado	Huron County	03/10/1986	F2	1	10	2.5M	0
Tornado	Huron County	05/15/1986	F0	0	0	25K	0
Tornado	Huron County	11/27/1989	F2	0	1	2.5M	0
Tornado	Huron County	05/30/1991	F1	0	0	250K	0
Tornado	Norwalk	09/30/1994	F1	0	0	50K	0
Tornado	Huron County	07/12/1998	F0	0	0	100K	0
Tornado	Willard	07/21/1998	F0	0	0	100K	0
Tornado	New London	07/09/1999	F1	0	0	100K	0
Tornado	Monroeville	09/20/2000	F2	0	1	250K	15K
Tornado	Hunts Corner	11/10/2002	F1	0	0	800K	0
Tornado	Collins	07/10/2003	F0	0	0	10K	30K
Tornado	Monroeville	05/25/2011	EF1	0	0	250K	0
Tornado	Weavers Corners	07/10/2013	EF0	0	0	50K	0
Tornado	Steuben	11/05/2017	EF0	0	0	200K	0
Tornado	Peru	11/05/2017	EF1	0	0	200K	0
Tornado	Fitchville	11/05/2017	EF0	0	0	125K	0
Tornado	West Clarksfield	11/05/2017	EF1	0	0	250K	0

5.1.5 Windstorm

Incidents identified as windstorms are limited to wind-only events. Events in which severe wind occurred along with another hazards, such as winter weather or severe thunderstorms, are identified under the primary hazard.

Hazard	Location	Date	Deaths	Injuries	Property Damage	Crop Damage
High Wind	Huron (Zone)	01/27/1996	0	0	0	0
High Wind	Huron (Zone)	02/10/1996	0	0	3K	0
High Wind	Huron (Zone)	03/25/1996	0	0	6K	0
High Wind	Huron (Zone)	04/25/1994	0	0	0	0
High Wind	Huron (Zone)	09/07/1996	0	0	5K	20K
High Wind	Huron (Zone)	10/30/1996	0	0	50K	100K
High Wind	Huron (Zone)	02/21/1997	0	0	0	0
High Wind	Huron (Zone)	02/27/1997	0	0	0	0
High Wind	Huron (Zone)	04/30/1997	0	0	2K	0
High Wind	Huron (Zone)	03/28/1998	0	0	10K	0
High Wind	Huron (Zone)	11/10/1998	0	0	25K	0
High Wind	Huron (Zone)	04/06/1999	0	0	30K	0
High Wind	Huron (Zone)	05/06/1999	0	0	20K	50K
High Wind	Huron (Zone)	12/11/2000	0	0	250K	0
High Wind	Huron (Zone)	02/09/2001	0	0	30K	0
High Wind	Huron (Zone)	02/25/2001	0	0	20K	0
High Wind	Huron (Zone)	04/12/2001	0	0	25K	0
High Wind	Huron (Zone)	10/25/2001	0	0	25K	0
High Wind	Huron (Zone)	02/01/2002	0	0	20K	0
High Wind	Huron (Zone)	03/09/2002	0	0	250K	0
High Wind	Huron (Zone)	11/12/2003	0	0	50K	0
High Wind	Huron (Zone)	03/05/2004	0	0	75K	0
High Wind	Huron (Zone)	12/07/2004	0	0	35K	0
High Wind	Huron (Zone)	11/06/2005	0	0	25K	0
High Wind	Huron (Zone)	02/17/2006	0	0	50K	0
High Wind	Huron (Zone)	12/01/2006	0	0	25K	0
High Wind	Huron (Zone)	12/23/2007	0	0	12K	0
High Wind	Huron (Zone)	01/30/2008	0	0	30K	0
High Wind	Huron (Zone)	09/14/2008	0	0	4M	1M
High Wind	Huron (Zone)	02/11/2009	0	0	300K	0
High Wind	Huron (Zone)	12/09/2009	0	0	200K	0
High Wind	Huron (Zone)	04/28/2011	0	0	0	0
High Wind	Huron (Zone)	04/28/2011	0	0	50K	0
High Wind	Huron (Zone)	04/28/2011	0	0	0	0
High Wind	Huron (Zone)	02/24/2012	0	0	25K	0
High Wind	Huron (Zone)	03/02/2012	0	0	2K	0
High Wind	Huron (Zone)	10/29/2012	0	0	150K	0

Hazard	Location	Date	Deaths	Injuries	Property Damage	Crop Damage
High Wind	Huron (Zone)	11/24/2014	0	0	100K	0

5.1.6 Winter Storm

Winter storm events include incidents classified as blizzard, extreme cold/wind chill, ice storm, or winter storm that occurred in Huron County since 1950.

Hazard	Location	Date	Deaths	Injuries	Property Damage	Crop Damage
Winter Storm	Huron (Zone)	01/02/1999	0	2	15K	0
Winter Storm	Huron (Zone)	01/08/1999	0	0	2K	0
Winter Storm	Huron (Zone)	01/13/1999	0	0	2K	0
Winter Storm	Huron (Zone)	12/13/2000	0	0	100K	0
Winter Storm	Huron (Zone)	03/24/2002	0	0	50K	0
Winter Storm	Huron (Zone)	12/22/2004	0	0	5.1M	0
Ice Storm	Huron (Zone)	01/05/2005	0	0	4.4M	0
Winter Storm	Huron (Zone)	01/22/2005	0	0	200K	0
Winter Storm	Huron (Zone)	04/23/2005	0	0	250K	0
Winter Storm	Huron (Zone)	02/04/2006	0	0	50K	0
Winter Storm	Huron (Zone)	02/13/2007	0	0	40K	0
Winter Storm	Huron (Zone)	12/15/2007	0	0	150K	0
Winter Storm	Huron (Zone)	02/25/2008	0	0	100K	0
Winter Storm	Huron (Zone)	03/04/2008	0	0	250K	0
Winter Storm	Huron (Zone)	03/07/2008	0	0	750K	0
Winter Storm	Huron (Zone)	12/19/2008	0	0	35K	0
Winter Storm	Huron (Zone)	01/09/2009	0	0	80K	0
Extreme Cold/Wind Chill	Huron (Zone)	01/15/2009	0	0	0	0
Winter Storm	Huron (Zone)	01/27/2009	0	0	150K	0
Winter Storm	Huron (Zone)	02/01/2011	0	0	250K	0
Extreme Cold/Wind Chill	Huron (Zone)	03/27/2012	0	0	0	0
Extreme Cold/Wind Chill	Huron (Zone)	04/29/2012	0	0	150K	0
Extreme Cold/Wind Chill	Huron (Zone)	01/06/2014	0	0	0	0
Extreme Cold/Wind Chill	Huron (Zone)	01/28/2014	0	0	0	0
Winter Storm	Huron (Zone)	02/04/2014	0	0	150K	0
Winter Storm	Huron (Zone)	03/12/2014	0	0	150K	0
Winter Storm	Huron (Zone)	02/01/2015	0	0	200K	0
Extreme Cold/Wind Chill	Huron (Zone)	02/15/2015	0	0	0	0
Extreme Cold/Wind Chill	Huron (Zone)	02/20/2015	0	0	0	0
Winter Storm	Huron (Zone)	04/08/2016	0	0	150K	0
Winter Storm	Huron (Zone)	12/17/2016	0	0	0	0

5.2 HAZUS LOSS ESTIMATES

HAZUS is a nationally accepted methodology that utilizes U.S. Census and local geographic information systems (GIS) data to estimate losses for earthquakes, hurricanes, and floods. Because floods and earthquakes are identified as risks for Huron County, HAZUS was used to generate and evaluate the county's vulnerability to these incidents. Estimates from HAZUS were generated using 2010 U.S. Census Bureau data, which calculated Huron County's population as 59,626.

5.2.1 Flood

To evaluate Huron County's vulnerability to flood, a 100-year flood scenario was utilized to generate loss estimates. For a flood of this magnitude, the damage to the county would be significant. The incident would expose a significant portion of the county's buildings to damage. Table 5-1 identifies buildings by occupancy type for all of Huron County and those exposed to risk in this scenario.

Table 5-1: Building Exposure by Occupancy

Occupancy	Huron County		100-Year Flood Scenario	
	Exposure ($1000)	Percent of Total	Exposure ($1000)	Percent of Total
Residential	$4,470,337	72.4%	$623,837	80.9%
Commercial	$943,149	14.4%	$62,627	8.1%
Industrial	$258,947	8.1%	$44,816	5.8%
Agricultural	$72,019	1.1%	$17,902	2.3%
Religion	$134,509	2.1%	$10,438	1.4%
Government	$41,749	0.6%	$1,983	0.3%
Education	$85,466	1.3%	$9,739	1.3%
Total	***$6,546,176***	***100%***	***$771,342***	***100%***

Essential Facility Inventory

Essential facilities are healthcare facilities like hospitals and clinics, fire and EMS stations, police stations, and operations and dispatch centers. Schools are included in essential facilities. Huron County's essential facilities are identified in Table 5-2.

Table 5-2: Essential Facility Inventory

Facility Type	Number
Hospital	3 (225 beds)
Schools	34
Fire Stations	10
Police Stations	8

Estimated Building Damage

Per HAZUS estimates, 30 buildings will sustain at least moderate damage. This accounts for 85% of the total buildings identified for the scenario. Zero buildings are estimated to be completely

destroyed. Tables 5-3 and 5-4 identify the anticipated building damage based on occupancy type and building type.

Table 5-3: Expected Building Damage by Occupancy

	Percent Damaged					
Occupancy	**1-10%**	**11-20%**	**21-30%**	**31-40%**	**41- 50 %**	**> 50%**
Agriculture	0	0	0	0	0	0
Commercial	0	0	0	0	0	0
Education	0	0	0	0	0	0
Government	0	0	0	0	0	0
Industrial	0	0	0	0	0	0
Religious	0	0	0	0	0	0
Residential	16	24	6	0	0	0
Total	***16***	***24***	***6***	***0***	***0***	***0***

Table 5-4: Expected Building Damage by Building Type

	Percent Damaged					
Building Type	**1-10%**	**11-20%**	**21-30%**	**31-40%**	**41- 50 %**	**> 50%**
Concrete	0	0	0	0	0	0
Manufactured Housing	0	0	0	0	0	0
Masonry	3	3	0	0	0	0
Steel	0	0	0	0	0	0
Wood	13	21	6	0	0	0
Total	***16***	***24***	***6***	***0***	***0***	***0***

Based on this scenario, HAZUS does not predict that any critical facilities will sustain moderate or significant damage. Therefore, it is anticipated that the hospital beds, emergency services, and institutional services normally present in the county would continue to be functional in a 100-year flood scenario. Several schools are anticipated to experience moderate damage and complete loss of use.

Table 5-5: Expected Damage to Essential Facilities

Classification	**Total**	**Moderate Damage**	**Substantial Damage**	**Loss of Use**
Fire Stations	10	0	0	0
Hospitals	3	0	0	0
Police Stations	8	0	0	0
Schools	34	3	0	0

Shelter Requirements

When flooding forces people from their homes, some will seek refuge at a public shelter. In this incident, it is anticipated that 244 households would be displaced and approximately 150 people would seek temporary shelter.

Building Related Losses
The total economic loss for the identified 100-year flood event is estimated to be $19.45M.

Building-related losses are separated into two loss categories: direct building loss and business interruption loss. Building losses include structural damage and damage to contents. Business interruption losses include the costs associated with not being able to conduct normal business, displaced workers, and lost opportunities. Table 5-6 provides a summary of the anticipated losses.

Table 5-6: Building-Related Economic Loss Estimates

Area	Residential	Commercial	Industrial	Others	Total
Building Loss					
Building	9.03	0.75	0.53	0.20	**10.54**
Content	3.77	2.57	1.09	1.23	**8.67**
Inventory	0	0.04	0.11	0.04	**0.19**
Business Interruption					
Income	0	0.01	0	0	**0.01**
Relocation	0.01	0	0	0	**0.01**
Rental Income	0	0	0	0	**0**
Wage	0	0.01	0	0.03	**0.04**
Total	***12.83***	***3.39***	***1.73***	***1.50***	***19.45***

5.2.2 Earthquake
The simulated earthquake epicenter was assumed to be inside Norwalk, the most populated jurisdiction in Huron County, to simulate a worst-case scenario. The simulated earthquake had a magnitude of 5.0 on the Richter Scale and a dept of 5.0 km. The HAZUS loss estimation program utilized 2010 U.S. Census data for this scenario. There are an estimated 24,000 buildings in the county with a replacement value of $6,546M.

Critical Facility Inventory
HAZUS separates critical facilities into essential facilities and high potential loss (HPL) facilities. Essential facilities are healthcare facilities like hospitals and clinics, fire and EMS stations, police stations, and operations and dispatch centers. Schools are included in essential facilities. HPL facilities include dams, levees, nuclear power plants, military installations and hazardous material sites.

Table 5-7: Critical Facility Inventory

Essential Facilities		High Potential Loss Facilities	
Facility Type	*Number*	*Facility Type*	*Number*
Hospital	3 (225beds)	**Hazardous Materials Sites**	25
Schools	34		
Fire Stations	10		
Police Stations	8		

Transportation and Utility Lifeline Inventory

Lifeline systems are defined as transportation and utilities. Transportation systems include highways, railways, and airports. Utility systems include water treatment and potable water plants, wastewater treatment plants, natural gas suppliers, fuel oil suppliers, electrical power plants, and communications hubs. The total value of these lifeline systems exceeds $2,126M and includes more than 129.25 miles of highway, 297 bridges, and 7,196 miles of pipes.

Table 5-8: Transportation System Inventory

System	Components	Quantity	Replacement Value
Highways	Bridges	294	$102.59M
	Segments	52	$935.68M
Railways	Bridges	7	$0.35M
	Facilities	1	$2.66M
	Segments	217	$197.05M
Airport	Facilities	2	$21.30M
	Runways	2	$75.93M
Total			***$1,335.60M***

Table 5-9: Utility System Inventory

System	Components	Quantity	Replacement Value
Potable Water	Distribution Lines	N/A	$115.82M
	Facilities	2	$69.93M
Waste Water	Distribution Lines	N/A	$69.49M
	Facilities	7	$489.51M
Natural Gas	Distribution Lines	N/A	$46.33M
Communication	Facilities	3	$0.32M
Total			***$791.40M***

Building Damage

The estimated building damage according to HAZUS is extensive. The number of buildings projected to sustain moderate damage is 4,139, approximately 17% of all buildings in the county. It is estimated that 259 buildings would be destroyed. Table 5-10 summarizes the anticipated building damages.

Table 5-10: Expected Building Damage by Occupancy

Occupancy	None	Slight	Moderate	Extensive	Complete
Agriculture	148.66	47.65	50.03	23.40	5.26
Commercial	720.72	273.07	283.31	132.18	37.71
Education	36.79	12.08	11.95	4.77	1.40
Government	31.49	11.63	13.48	5.62	1.77
Industrial	262.97	91.65	102.94	51.44	14.01
Other Residential	1558.00	621.98	648.67	284.80	64.56
Religion	97.93	27.58	22.41	10.16	2.93
Single Family Residential	12972.20	3748.11	1764.01	470.42	132.25
Total	***15,829***	***4,834***	***2,897***	***983***	***260***

Depending on the type of building construction, damage from an earthquake can be more or less serious. Based on common types of construction, the scenario is extrapolated into damage according to type of construction type.

Table 5-11: Expected Building Damage by Building Type

Building Type	None	Slight	Moderate	Extensive	Complete
Wood	11558.88	3124.79	1082.83	132.06	9.99
Steel	370.04	113.80	173.50	105.51	29.66
Concrete	113.91	34.17	37.82	17.58	3.53
Precast	107.45	27.90	42.18	27.78	5.17
Reinforced Masonry	45.48	9.53	14.88	9.62	1.29
Unreinforced Masonry	2811.73	1130.90	1016.65	442.13	156.25
Manufactured Housing	821.27	392.66	528.93	248.13	54.00
Total	***15,829***	***4,834***	***2,897***	***983***	***260***

Essential Facility Damage

According to HAZUS estimates, only 119 of the county's hospital beds (53%) would be available and functional on the day of the earthquake. These would be needed by patients already hospitalized at the time of the earthquake and by those requiring hospitalization for injuries sustained in the incident. After one week, it is estimated that 65% of the beds would be available. By the 30-day mark, an estimated 84% would be fully functional. Anticipated damage to other essential facilities is detailed in Table 5-12.

Table 5-12: Expected Damage to Essential Facilities

Classification	Total	Moderate Damage >50%	Complete Damage > 50%	With Functionality >50% on Day 1
Hospitals	3	1	0	2
Schools	34	8	0	19
Police Stations	8	1	0	6
Fire Stations	10	0	0	0

Transportation and Utility Lifeline Damage

Per HAZUS estimates, all highways, bridges, railways, and rail bridges will have more than 50% functionality on the first day after an earthquake and will continue to experience greater than 50% function throughout the recovery period. Limited damage to these transportation systems is expected.

Airports are also expected to have at least 50% functionality immediately following the incident. It is anticipated that 1 airport will sustain at least moderate damage. This damage is not expected to prevent them from functioning.

Tables 5-13 and 5-14 describe the anticipated damage to utility system facilities and pipelines.

Table 5-13: Expected Utility System Facility Damage

System	Total	Moderate Damage	Complete Damage	Day 1 >50% Functionality	Day 7 >50% Functionality
Potable Water	2	1	0	1	2
Waste Water	7	3	0	3	7
Communication	3	2	0	3	3

Table 5-14: Expected Utility System Pipeline Damage

Utility	Total Pipeline	Anticipated Leaks	Anticipated Line Breaks
Potable Water	3,598 mi	373	93
Waste Water	2,159 mi	187	47
Natural Gas	1,439	64	16

Electrical service is more challenging and time consuming to restore. Table 5-15 outlines the number of customers anticipated to be without electric service following the incident. There are 22,820 total households in the county.

Table 5-15: Expected Electric Power System Performance

Days Post-Event	Households Without Service
Day 1	8,849
Day 3	5,470
Day 7	2,087
Day 30	348
Day 90	11

Post-Incident Fire Risk

Because there is often limited water supply following an earthquake, fires can be a significant hazard. HAZUS estimates the number of fires that would occur based upon the prospect of water not being available to fight fires and an abundance of spontaneous ignition. According to these estimates, no fire ignitions are probable and no damage or loss is anticipated.

Debris Generation

The amount of debris generated by an earthquake can be substantial. HAZUS classifies debris into two types based on the handling equipment required: brick/wood and reinforced concrete/steel. In the given scenario, a total of 162,000 tons of debris is anticipated. Brick/wood would comprise 50% of that amount. When converting these totals to truckloads, debris removal would require 6,480 truckloads, assuming 25 tons per truck.

Shelter Needs

Temporary public shelters are often necessary post-quake to provide housing for people displaced by the event. HAZUS estimates that 352 households would be displaced and 208 people would seek housing in a temporary shelter.

Casualties

The number of people estimated to be injured or killed by the earthquake is divided into four categories based on the extent of the victim's injuries:

Level 1 – Require medical attention but not hospitalization
Level 2 – Require hospitalization for non-life-threatening injuries
Level 3 – Require hospitalization for critical injuries
Level 4 – Fatalities

Casualty estimates are provided for 3 times of day that represent periods of the day that various sectors of the community operate at peak capacity loads. These figures are provided in Table 5-16.

Table 5-16: Casualty Estimates

Time	Location	Level 1	Level 2	Level 3	Level 4
2 AM	Commercial	1.39	0.32	0.04	0.08
	Commuting	0	0	0.01	0
	Educational	0	0	0	0
	Hotels	0	0	0	0
	Industrial	4.11	0.95	0.12	0.23
	Other Residential	32.18	6.71	0.72	1.38
	Single Family Residential	79.11	17.39	2.31	4.53
	TOTAL	***117***	***25***	***3***	***6***
2 PM	Commercial	81.90	18.99	2.48	4.80
	Commuting	0.02	0.03	0.05	0.01
	Educational	45.47	10.98	1.57	3.05
	Hotels	0	0	0	0
	Industrial	30.28	6.99	0.90	1.72
	Other Residential	6.57	1.41	0.16	0.30
	Single Family	16.65	3.79	0.53	0.99
	TOTAL	***181***	***42***	***6***	***11***
5 PM	Commercial	60.01	13.97	1.84	3.52
	Commuting	0.43	0.62	0.99	0.20
	Educational	2.50	0.61	0.09	0.17
	Hotels	0	0	0	0
	Industrial	18.93	4.37	0.56	1.08
	Other Residential	12.27	2.62	0.30	0.56
	Single Family Residential	31.73	7.20	1.00	1.87
	TOTAL	***126***	***29***	***5***	***7***

Building-Related Losses

Total economic loss for this earthquake scenario is estimated to be $650.38M. This includes building and lifeline related losses and is based on the building inventory in Huron County. Building losses are examined in two categories: direct building loss and business interruption loss. Direct building losses include structural damage and damage to contents. Business interruption losses include the costs associated with not being able to conduct normal business, displaced workers, and lost opportunities.

Total estimated building losses are anticipated to be $549.56M. Business interruption expenses account for 18% of this total. Residential structures are expected to sustain the greatest loss by far, more than 51% of the total loss for the county.

Table 5-17 provides a summary of the anticipated building-related losses. All figures are expressed in millions of dollars.

Table 5-17: Building-Related Economic Loss Estimates

Area	Single-Family	Other Residential	Commercial	Industrial	Other	Total
Income Losses						
Wage	0	0.96	19.24	1.56	1.29	23.06
Capital Related	0	0.41	15.42	0.93	0.30	17.07
Rental	5.36	3.47	7.86	0.53	0.59	17.81
Relocation	18.68	3.69	13.44	2.44	4.83	43.08
Capital Stock Losses						
Structural	30.82	6.62	20.99	8.21	6.94	73.59
Non-Structural	120.17	33.87	56.05	26.14	15.11	251.34
Content	48.75	10.18	31.98	18.68	8.98	118.57
Inventory	0	0	1.04	3.74	0.26	5.05
TOTAL	***223.77***	***59.21***	***166.02***	***62.24***	***38.32***	***549.56***

Transportation and Utility Lifeline Losses

Earthquakes often cause extensive damage to a community's infrastructure. Tables 5-18 and 5-19 depict the potential damage Huron County could expect to its transportation and utility systems. Loss figures address only the cost to repair, not business interruption costs. Numbers are expressed in millions of dollars.

Table 5-18: Transportation System Economic Losses

System	Component	Inventory Value	Economic Loss
Highway	Segments	$935.68M	0
	Bridges	$102.59M	$1.38M
Railways	Segments	$197.05M	0
	Bridges	$0.35M	<$0.01M
	Facilities	$2.66M	$0.37M
Airport	Facilities	$21.30M	$5.12M
	Runways	$75.93M	0
Total		***$1,335.56M***	***$6.87M***

Table 5-19: Utility System Economic Losses

System	Component	Inventory Value	Economic Loss
Potable Water	Facilities	$69.93M	$14.43M
	Distribution Lines	$115.82M	$1.68M
Waste Water	Facilities	$489.51M	$76.64M
	Distribution Lines	$69.48M	$0.84M
Natural Gas	Distribution Lines	$46.33M	$0.29M
Communication	Facilities	$0.32M	$0.07M
Total		***$791.39M***	***$93.95M***