Are existing buildings, infrastructure, and critical facilities vulnerable to tornadoes?

Yes. All existing buildings, infrastructure, and critical facilities located within the County and participating municipalities are vulnerable to tornado damage. Buildings, infrastructure, and critical facilities located in the path of a tornado usually suffer extensive damage, if not complete destruction.

While some buildings adjacent to a tornado's path may remain standing with little or no damage, all are vulnerable to damage from flying debris. It is common for flying debris to cause damage to roofs, siding, and windows. In addition, mobile homes, homes on crawlspaces, and buildings with large spans (i.e., schools, barns, airport hangers, factories, etc.) are more likely to suffer damage. Most workplaces and many residential units do not provide sufficient protection from tornadoes.

The damages sustained by infrastructure and critical facilities during a tornado are similar to those experienced during a severe storm. There is a high probability that power, communication, and transportation will be disrupted in and around the affected area.

Assessing the Vulnerability of Existing Residential Structures
One way to assess the vulnerability of existing residential structures is to estimate the number of housing units that may be potentially damaged if a tornado were to touch down or pass through any of the participating municipalities or the County. In order to accomplish this, a set of decisions/assumptions must be made regarding:

➢ the size (area impacted) of the tornado;
➢ the method used to estimate the area impacted by the tornado within each jurisdiction; and
➢ the method used to estimate the number of potentially-damaged housing units.

The following provides a brief discussion of each decision/assumption.

Assumption #1: Size of Tornado. To calculate the number of existing residential structures vulnerable to a tornado, the size (area

> **Assumption #1**
> Size of Tornado = 0.17 sq. miles

impacted) of the tornado must first be determined. There are several scenarios that can be used to calculate the size, including the worst case and the average. For this analysis, the area impacted by an average-sized tornado in Tazewell County will be used since it has a higher probability of recurring. In Tazewell County, the area impacted by an average-sized tornado has changed from 0.19 square miles in the 2019 Plan Update to 0.17 square miles, for this update. This average is based on more than 70 years of data.

Assumption #2: Method for Estimating the Area Impacted. Next, a method for determining the area within each jurisdiction impacted by the average-sized tornado needs to be chosen. There are several methods that can be used including creating an outline of the area

> **Assumption #2**
> The entire area impacted by the average-sized tornado falls within the limits of each participating jurisdiction.

impacted by the average-sized tornado and overlaying it on a map of each jurisdiction (most

notably the municipalities) to see if any portion of the area falls outside of the corporate limits (which would require additional calculations) or just assume that the entire area of the average-sized tornado falls within the limits of each jurisdiction. For this discussion, it is assumed that the entire area of the average-sized tornado will fall within the limits of the participating jurisdictions.

This method is quicker, easier, and more likely to produce consistent results when the Plan is updated again. There is, however, a greater likelihood that the number of potentially-damaged housing units will be overestimated for those municipalities that have irregular shaped boundaries or occupy less than one square mile.

Assumption #3: Method for Estimating Potentially-Damaged Housing Units. With the size of the tornado selected and a method for estimating the area impacted chosen, a decision must be made on an approach for estimating the number of potentially-damaged

> **Assumption #3**
>
> The average housing unit density for each jurisdiction will be used to determine the number of potentially-damaged housing units.

housing units. There are several methods that can be used including overlaying the average-sized tornado on a map of each jurisdiction and counting the impacted housing units or calculating the average housing unit density to estimate the number of potentially-damaged housing units.

For this analysis, the average housing unit density will be used since it provides a realistic perspective on potential residential damages without conducting extensive counts. Using the average housing unit density also allows future updates to the Plan to be easily recalculated and provides an exact comparison to previous estimates.

Calculating Average Housing Unit Density
The average housing unit density can be calculated by taking the number of housing units in a jurisdiction and dividing that by the land area within the jurisdiction. **Figure T-__** provides a sample calculation.
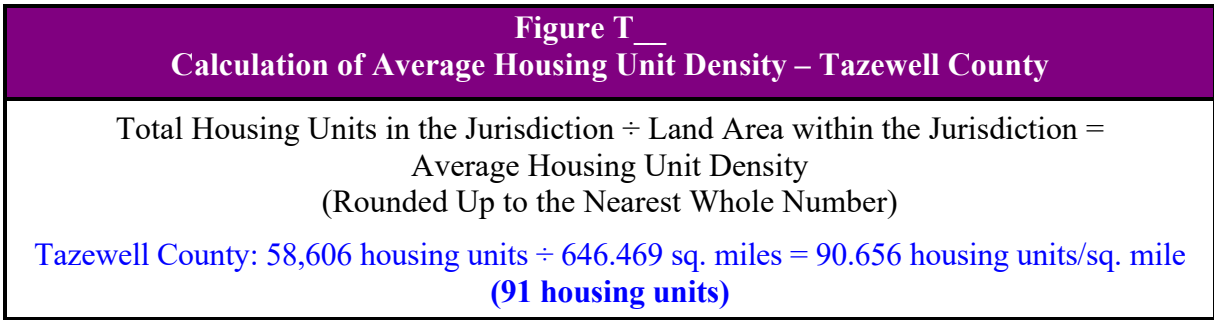
Figure T__   **Calculation of Average Housing Unit Density – Tazewell County**
Total Housing Units in the Jurisdiction ÷ Land Area within the Jurisdiction =   Average Housing Unit Density   (Rounded Up to the Nearest Whole Number)
Tazewell County: 58,606 housing units ÷ 646.469 sq. miles = 90.656 housing units/sq. mile   **(91 housing units)**

Figure T-__ provides a breakdown of housing unit densities by participating municipality as well as for the unincorporated areas of the County and the County as a whole.

Figure T-__ Average Housing Unit Density by Participating Jurisdiction					
Participating Jurisdiction	**Township Location**	**Total Housing Units (2017-2021)**	**Mobile Homes (2017-2021)**	**Land Area (Sq. Miles) (2020)**	**Average Housing Unit Density (Units/Sq. Mi.) (Raw)**
Creve Coeur	Groveland, Pekin	2,284	162	4.231	539.825
East Peoria	Fondulac, Groveland, Washington	10,697	11	20.411	524.080
Morton	Groveland, Morton, Tremont, Washington	7,554	458	12.808	589.788
Pekin	Cincinnati, Elm Grove, Groveland, Pekin	15,098	29	15.596	968.069
Tremont	Elm Grove, Tremont	1,059	0	1.120	945.536
Washington	Washington	6,384	13	8.541	747.453
Unincorp. County		9,896	182	575.440	17.197
County		58,606	905	646.469	90.656

Source: U.S. Census Bureau, American Community Survey, 5-Year Data Profile.

While the average housing unit density provides an adequate assessment of the number of housing units in areas where the housing density is fairly constant, such as municipalities, it does not provide a realistic assessment for those counties with large, sparsely populated rural areas such as Tazewell County.

In Tazewell County, as well as many other central Illinois counties, there are pronounced differences in housing unit densities. A majority of all housing units (84%) still are located in six of the County's 19 townships (Cincinnati, Fondulac, Groveland, Morton, Pekin, and Washington), while approximately 86% of all mobile homes still are located in three townships (Fondulac, Groveland, and Morton). **Figure I-x**, located in Section 1.2, identifies the township boundaries. Tornado damage to buildings (especially mobile homes), infrastructure and critical facilities in these more densely populated townships is likely to be greater than in the rest of the County. While the County, East Peoria, Morton, Washington, and xxx have ordinances that require anchoring systems for mobile homes that would help limit the damage from lower rated tornadoes, the remaining xx participating municipalities do not.

This substantial difference in density skews the average *county* housing unit density in Tazewell County and is readily apparent when compared to the average housing unit densities for each of the townships within the County. **Figure T-__** provides a breakdown of housing unit densities by township and illustrates the differences between the various townships and the County as a whole.

For 13 of the 19 townships, the *average county* housing unit density is greater (in most cases considerably greater) than the *average township* housing unit densities. However, the *average county* housing unit density is considerably less than the housing unit densities for the six most populated townships.

Figure T-__ Average Housing Unit Density by Township					
Township	**Incorporated Municipalities Located in Township**	**Total Housing Units (2017-2021)**	**Mobile Homes (2017-2021)**	**Land Area (Sq. Miles) (2020)**	**Average Housing Unit Density (Units/Sq. Mi.) (Raw)**
Boynton		110	0	29.587	3.718
Cincinnati	Pekin, South Pekin	3,173	5	27.959	113.488
Deer Creek	Deer Creek, Goodfield	564	0	27.485	20.520
Delavan	Delavan	958	0	30.158	31.766
Dillon		297	4	35.946	8.262
Elm Grove	Pekin, Tremont	1,325	0	36.028	36.777
Fondulac	East Peoria	6,131	136	17.777	344.884
Groveland	Creve Coeur, East Peoria, Marquette Heights, Morton, Pekin	8,386	215	38.030	220.510
Hittle	Armington	237	3	30.254	7.834
Hopedale	Hopedale	784	0	35.168	22.293
Little Mackinaw	Minier	633	11	36.347	17.415
Mackinaw	Mackinaw	1,862	36	36.160	51.493
Malone		71	9	29.682	2.392
Morton	Morton	7,761	424	35.760	217.030
Pekin	Creve Coeur, Marquette Heights, North Pekin, Pekin	13,795	21	12.304	1121.180
Sand Prairie	Green Valley	622	0	35.431	17.555
Spring Lake		825	8	62.464	13.208
Tremont	Morton, Tremont	1,052	20	35.051	30.013
Washington	East Peoria, Morton, Washington	10,020	13	54.876	182.593
Townships - 6 most populated		49,266	775	186.706	263.869
Townships - 13 least populated		9,340	130	459.761	20.315

Source: U.S. Census Bureau, American Community Survey, 5-Year Data Profile.

Estimating the Number of Potentially-Damaged Housing Units

Before an estimate of the number of potentially-damaged housing units can be calculated for the participating municipalities, an additional factor needs to be taken into consideration: the presence of commercial/industrial developments and/or large tracts of undeveloped land. Occasionally villages and cities will annex large tracts of undeveloped land or have commercial/industrial parks/developments located within their corporate limits. In many cases these large tracts of land include very few residential structures. Consequently, including these tracts of land in the calculations to determine the number of potentially-damaged housing units skews the results, especially for very small municipalities. Therefore, to provide a more realistic assessment of the number of potentially-damaged housing units, these areas were subtracted from the land area figures obtained from the U.S. Census Bureau for the analysis for this update.

In Tazewell County, all of the participating municipalities have large commercial/industrial and/or undeveloped land areas within their municipal boundaries. These areas account for

approximately one-fourth to three-fifths of the land area in these municipalities. If these areas are subtracted from the U.S. Census Bureau land area figures, then the remaining land areas have fairly consistent housing unit densities and contain a majority of the housing units. **Figure T-__** provides a breakdown of the refined land area figures for the municipalities. These refined land area figures will be used to update the average housing unit density calculations for these municipalities.

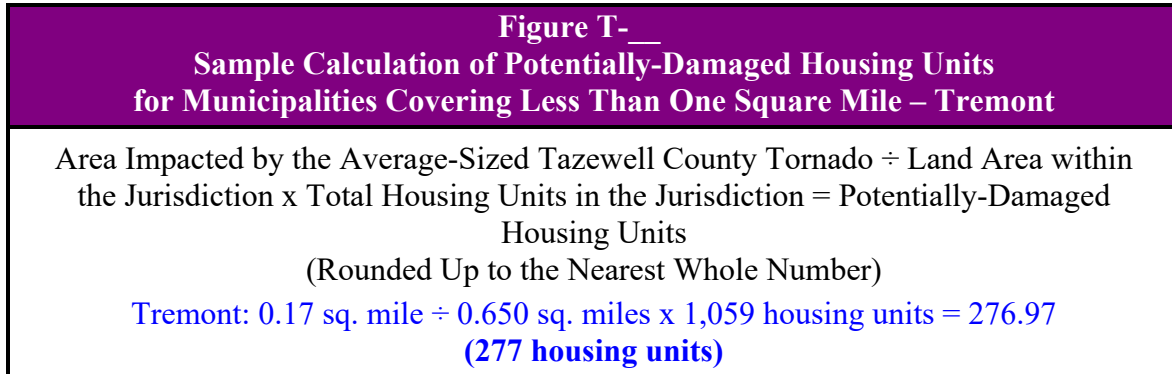| Figure T-__ Refined Land Area Figures for Participating Municipalities with Large Tracts of Commercial/Industrial and Undeveloped Land Areas			
Participating Jurisdiction	**Land Area (Sq. Miles) (2020)**	**Estimated Open Land Area & Commercial/ Industrial Tracts (Sq. Miles)**	**Refined Land Area (Sq. Miles)**
Creve Coeur	4.231	2.550	1.681
East Peoria	20.411	6.370	14.041
Morton	12.808	6.130	6.678
Pekin	15.596	3.930	11.666
Tremont	1.120	0.470	0.650
Washington	8.541	4.340	4.201

With updated average housing unit densities calculated it is relatively simple to provide an estimate of the number of existing potentially-damaged housing units. This can be done by multiplying the average housing unit density by the area impacted by the average-sized Tazewell County tornado. **Figure T- __** provides a sample calculation.

Figure T-__ **Sample Calculation of Potentially-Damaged Housing Units – Tazewell County**
Average Housing Unit Density x Area Impacted by the Average-Sized Tazewell County Tornado = Potentially-Damaged Housing Units (Rounded Up to the Nearest Whole Number)
Tazewell County: 90.656 housing units/sq. mile x 0.17 sq. miles = 15.41 housing units **(16 housing units)**

For those municipalities that cover less than one square mile, the average housing unit density cannot be used to calculate the number of potentially-damaged housing units. The average housing unit density assumes that the land area within the municipality is at least one square mile and as a result distorts the number of potentially-damaged housing units for very small municipalities.

To calculate the number of potentially-damaged housing units for these municipalities, the area impacted by the averaged-sized Tazewell County tornado is divided by the land area within the municipality to get the impacted land area. The impacted land area is then

multiplied by the total number of housing units within the municipality to get the number of potentially-damaged housing units. **Figure T-___** provides a sample calculation.

Figure T-___ **Sample Calculation of Potentially-Damaged Housing Units** **for Municipalities Covering Less Than One Square Mile – Tremont**
Area Impacted by the Average-Sized Tazewell County Tornado ÷ Land Area within the Jurisdiction x Total Housing Units in the Jurisdiction = Potentially-Damaged Housing Units (Rounded Up to the Nearest Whole Number) Tremont: 0.17 sq. mile ÷ 0.650 sq. miles x 1,059 housing units = 276.97 **(277 housing units)**

Figures T-___ and **T-___** provide a breakdown of the number of potentially-damaged housing units by participating municipality, as well as by township and for the unincorporated areas of the County and the County as a whole. It is important to note that for the most densely populated townships, the estimated number of potentially-damaged housing units would only be reached if a tornado's pathway included the major municipality within the township. If the tornado remained in the rural portion of the township, then the number of potentially-damaged housing units would be considerably lower.

Figure T-___ **Estimated Number of Housing Units by Participating Jurisdiction** **Potentially Damaged by a Tornado**					
Participating Jurisdiction	**Total Housing Units (2017-2021)**	**Land Area/Refined Land Area (Sq. Miles) (2020)**	**Average Housing Unit Density (Units/Sq. Mi.) (Raw)**	**Potentially-Damaged Housing Units (Units/0.17 Sq. Mi.) (Raw)**	**Potentially-Damaged Housing Units (Units/0.17 Sq. Mi.) (Rounded Up)**
Creve Coeur	2,284	1.681	1358.715	230.98	231
East Peoria	10,697	14.041	761.840	129.51	130
Morton	7,554	6.678	1131.177	192.30	193
Pekin	15,098	11.666	1294.188	220.01	221
Tremont	1,059	0.650	---	276.97	277
Washington	6,384	4.201	1519.638	258.34	259
Unincorp. County	9,896	575.440	17.197	2.92	3
County	58,606	646.469	90.656	15.41	16

What is the level of risk/vulnerability to existing buildings, infrastructure, and critical facilities vulnerable from tornadoes?

There are several factors that must be examined when assessing the vulnerability of existing buildings, infrastructure, and critical facilities to tornadoes. These factors include tornado frequency, population distribution and density, the ratings and pathways of previously

recorded tornadoes, and the presence of high-risk living accommodations (such as high-rise buildings, mobile homes, etc.).

Township	Total Housing Units (2017-2021)	Land Area (Sq. Miles) (2020)	Average Housing Unit Density (Units/Sq. Mi.) (Raw)	Potentially-Damaged Housing Units (Units/0.17 Sq. Mi.) (Raw)	Potentially-Damaged Housing Units (Units/0.17 Sq. Mi.) (Rounded Up)
Figure T-__ **Estimated Number of Housing Units by Township Potentially Damaged by a Tornado**					
Boynton	110	29.587	3.718	0.63	1
Cincinnati	3,173	27.959	113.488	19.29	20
Deer Creek	564	27.485	20.520	3.49	4
Delavan	958	30.158	31.766	5.40	6
Dillon	297	35.946	8.262	1.40	2
Elm Grove	1,325	36.028	36.777	6.25	7
Fondulac	6,131	17.777	344.884	58.63	59
Groveland	8,386	38.030	220.510	37.49	38
Hittle	237	30.254	7.834	1.33	2
Hopedale	784	35.168	22.293	3.79	4
Little Mackinaw	633	36.347	17.415	2.96	3
Mackinaw	1,862	36.160	51.493	8.75	9
Malone	71	29.682	2.392	0.41	1
Morton	7,761	35.760	217.030	36.90	37
Pekin	13,795	12.304	1,121.180	190.60	191
Sand Prairie	622	35.431	17.555	2.98	3
Spring Lake	825	62.464	13.208	2.25	3
Tremont	1,052	35.051	30.013	5.10	6
Washington	10,020	54.876	182.593	31.04	32
Townships - 6 most populated	49,266	186.706	263.869	44.86	45
Townships - 13 least populated	9,340	459.761	20.315	3.45	4

Unincorporated Tazewell County (including Fire Protection Districts and Townships)
For Tazewell County, including the fire protection district and townships, the level of risk or vulnerability posed by tornadoes to existing buildings, infrastructure, and critical facilities is considered to be ***low to medium*** depending on the population density of the township/fire protection district. This assessment is based on the frequency with which tornadoes have occurred in the County, as well as the amount of damage that has been sustained tempered by the low population density throughout most of unincorporated Tazewell County and the presence of few high risk living accommodations. While previously recorded tornadoes have followed largely rural pathways, they have caused significant damage on several occasions.

Participating Municipalities (including School Districts and Levee Districts)
In general, if a tornado were to touch down or pass through any of the participating municipalities the risk to existing buildings, infrastructure, and critical facilities would be considered ***high***. This assessment is based on the population and housing unit distribution within the municipalities where wide expanses of open spaces do not generally exist. As a

result, if a tornado were to touch down within any of the municipalities it would have a greater likelihood of causing substantial property damage.

Are future buildings, infrastructure, and critical facilities vulnerable to tornadoes?

Yes and No. While the County, Creve Coeur, East Peoria, Morton, Washington, and xxx have building codes in place that will likely lessen the vulnerability of new buildings and critical facilities to damage from tornadoes, the xx remaining municipalities do not. However, even new buildings and critical facilities built to code are vulnerable to the risks posed by a higher rated tornado.

Infrastructure such as new communication and power lines will continue to be vulnerable to tornadoes as long as they are located above ground. Flying debris can disrupt power and communication lines even if they are not directly in the path of the tornado. Steps to bury all new lines would eliminate the vulnerability, but this action would be cost prohibitive in most areas.

What are the potential dollar losses to vulnerable structures from tornadoes?

Unlike other hazards, such as flooding, there are no standard loss estimation models or methodologies for tornadoes. However, a rough estimate of potential dollar losses to the *potentially-damaged housing units* determined previously can be calculated if several additional decisions/assumptions are made regarding:

➢ the value of the potentially-damaged housing units; and

➢ the percent damage sustained by the potentially-damaged housing units (i.e., damage scenario).

These assumptions represent a ***probable scenario*** based on the reported historical occurrences of tornadoes in Tazewell County. The purpose of providing a rough estimate is to help residents and government officials make informed decisions to better protect themselves and their communities. These estimates are meant to provide a ***general idea*** of the magnitude of the potential damage that could occur. The following provides a brief discussion of each decision/assumption.

Assumption #4: Value of Potentially-Damaged Housing Units. In order to determine the potential dollar losses to the potentially-damaged housing units, the monetary value of the units must first be calculated. Typically, when damage

> **Assumption #4**
>
> The average market value for residential structures in each participating jurisdiction will be used to determine the value of potentially-damaged housing units.

estimates are prepared after a natural disaster such as a tornado, they are based on the market value of the structure. Since it would be impractical to determine the individual market value of each potentially-damaged housing unit, the average market value of residential structures in each municipality will be used.

To determine the average market value, the average assessed value must first be calculated. The average assessed value is calculated by taking the total assessed value of residential

buildings within a jurisdiction and dividing that number by the total number of housing units within the jurisdiction. The average market value is then determined by taking the average assessed value and multiplying that number by three (the assessed value of a structure in Tazewell County is approximately one-third of the market value). **Figure T-__** provides a sample calculation. The total assessed value is based on 2022 tax assessment information obtained from the Tazewell County Clerk.

Figure T-__ **Sample Calculation of Average Assessed Value & Average Market Value – Tremont**
Average Assessed Value Total Assessed Value of Residential Buildings in the Jurisdiction÷ Total Housing Units in the Jurisdiction = Average Assessed Value (Rounded to the Nearest Dollar) Tremont: $41,518,945 ÷ 1,059 housing units = $39,206 **Average Market Value** Average Assessed Value x 3 = Average Market Value Tremont: $39,206 x 3 = $117,618 **($117,618)**

Figures T-__ and **T-__** provide the average assessed value and average market value for each participating municipality as well as by township and for the unincorporated areas of the County and the County as a whole.

Figure T-__ **Average Market Value of Housing Units by Participating Jurisdiction**				
Participating Jurisdiction	**Total Assessed Value of Residential Buildings (2022)**	**Total Housing Units (2017-2021)**	**Average Assessed Values**	**Average Market Value (2022)**
Creve Coeur	$39,537,045	2,284	$17,310	$51,930
East Peoria	$327,064,080	10,697	$30,575	$91,725
Morton	$383,333,665	7,554	$50,746	$152,238
Pekin	$330,271,161	15,098	$21,875	$65,625
Tremont	$41,518,945	1,059	$39,206	$117,618
Washington	$310,882,740	6,384	$48,697	$146,091
Unincorp. County	$442,422,749	9,896	$44,707	$134,121
County	$2,018,303,176	58,606	$34,439	$103,317

Source: Tazewell County Clerk.

Figure T-__				
Average Market Value of Housing Units by Township				
Participating Jurisdiction	**Total Assessed Value of Residential Buildings (2022)**	**Total Housing Units (2017-2021)**	**Average Assessed Values**	**Average Market Value (2022)**
Boynton	$1,851,650	110	$16,833	$50,500
Cincinnati	$108,061,158	3,173	$34,056	$102,169
Deer Creek	$24,418,560	564	$43,295	$129,886
Delavan	$19,093,600	958	$19,931	$59,792
Dillon	$15,133,145	297	$50,953	$152,860
Elm Grove	$53,088,662	1,325	$40,067	$120,201
Fondulac	$174,675,504	6,131	$28,491	$85,472
Groveland	$286,803,102	8,386	$34,200	$102,601
Hittle	$5,649,554	237	$23,838	$71,513
Hopedale	$26,770,757	784	$34,146	$102,439
Little Mackinaw	$18,886,960	633	$29,837	$89,512
Mackinaw	$73,808,948	1,862	$39,640	$118,919
Malone	$1,914,380	71	$26,963	$80,889
Morton	$401,126,815	7,761	$51,685	$155,055
Pekin	$259,969,316	13,795	$18,845	$56,536
Sand Prairie	$16,470,093	622	$26,479	$79,438
Spring Lake	$23,177,267	825	$28,094	$84,281
Tremont	$51,174,182	1,052	$48,645	$145,934
Washington	$456,229,523	10,020	$45,532	$136,596
Townships - 6 most populated	$1,578,804,260	49,266	$32,047	$96,140
Townships - 13 least populated	$439,498,916	9,340	$47,056	$141,167

Source: Tazewell County Clerk.

Assumption #5: Damage Scenario. Finally, a decision must be made regarding the percent damage sustained by the potentially-damaged housing units and their contents. For this scenario, the expected percent damage sustained by the structure and its contents is 100%; in other words, all of the potentially-

> **Assumption #5**
>
> The tornado would completely destroy the potentially-damaged housing units.
>
> Structural Damage = 100%
> Content Damage = 100%

damaged housing units would be completely destroyed. While it is highly unlikely that each and every housing unit would sustain the maximum percent damage, identifying and calculating different degrees of damage within the average area impacted is complex and provides an additional complication when updating the Plan.
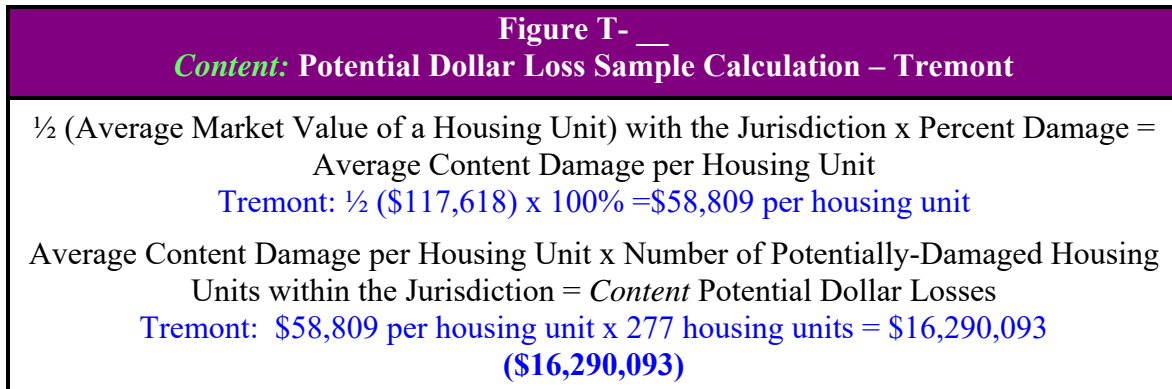
Calculating Potential Dollar Losses

With all the decisions and assumptions made, the potential dollar losses can now be calculated. First, the potential dollar losses to the ***structure*** of a potentially-damaged housing unit must be determined. This is done by taking the average market value for a residential

structure and multiplying it by the percent damage (100%) to get the average structural damage per unit. Next the average structural damage per unit is multiplied by the number of potentially-damaged housing units. **Figure T-__** provides a sample calculation.

Figure T-__ *Structure:* **Potential Dollar Loss Sample Calculation – Tremont**
Average Market Value of a Housing Unit with the Jurisdiction x Percent Damage = Average Structural Damage per Housing Unit Tremont: $117,618 x 100% = $117,618 per housing unit
Average Structural Damage per Housing Unit x Number of Potentially-Damaged Housing Units within the Jurisdiction = *Structure* Potential Dollar Losses Tremont: $117,618 per housing unit x 277 housing units = $32,580,186 **($32,580,186)**
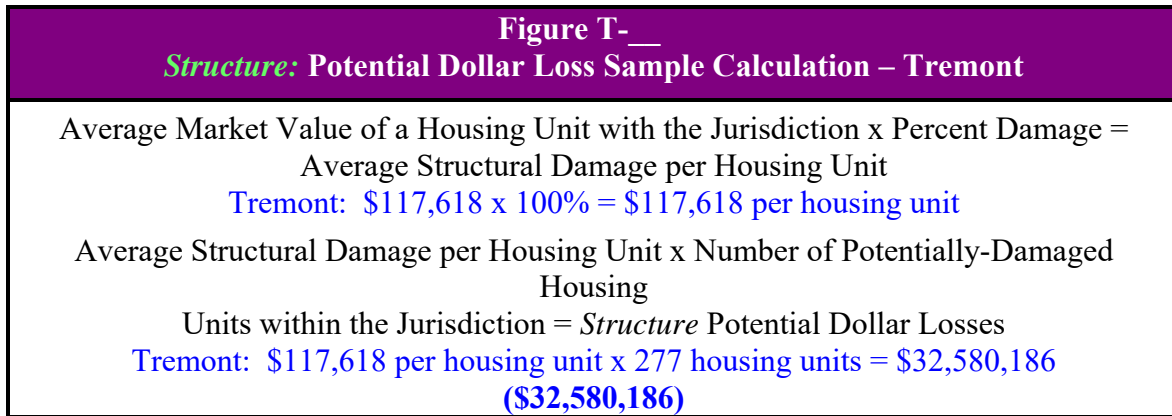
Next, the potential dollar losses to the ***content*** of a potentially-damaged housing unit must be determined. Based on FEMA guidance, the average value of a residential housing unit's content is approximately 50% of its market value. Therefore, start by taking one-half the average market value for a residential structure and multiply by the percent damage (100%) to get the average content damage per unit. Next the average content damage per unit is multiplied by the number of potentially-damaged housing units. **Figure T-__** provides a sample calculation.

Figure T- __ *Content:* **Potential Dollar Loss Sample Calculation – Tremont**
½ (Average Market Value of a Housing Unit) with the Jurisdiction x Percent Damage = Average Content Damage per Housing Unit Tremont: ½ ($117,618) x 100% =$58,809 per housing unit
Average Content Damage per Housing Unit x Number of Potentially-Damaged Housing Units within the Jurisdiction = *Content* Potential Dollar Losses Tremont: $58,809 per housing unit x 277 housing units = $16,290,093 **($16,290,093)**

Finally, the ***total potential dollar losses*** may be calculated by adding together the potential dollar losses to the structure and content. **Figures T-__** and **T-__** give a breakdown of the total potential dollar losses by municipality and township. For comparison, an estimate of potential dollar losses was calculated for the entire County, the unincorporated portions of the County, the six most populated townships and the 13 least populated townships.

Figure T-__ Estimated Potential Dollar Losses to Potentially-Damaged Housing Units from a Tornado by Participating Jurisdiction					
Participating Jurisdiction	Average Market Value (2022)	Potentially-Damaged Housing Units (Rounded Up)	Potential Dollar Losses		Total Potential Dollar Losses
			Structure	Content	
Creve Coeur	$51,930	231	$11,995,830	$5,997,915	$17,993,745
East Peoria	$91,725	130	$11,924,250	$5,962,125	$17,886,375
Morton	$152,238	193	$29,381,934	$14,690,967	$44,072,901
Pekin	$65,625	221	$14,503,125	$7,251,563	$21,754,688
Tremont	$117,618	277	$32,580,186	$16,290,093	$48,870,279
Washington	$146,091	259	$37,837,569	$18,918,785	$56,756,354
Unincorp. County	$134,121	3	$402,363	$201,182	$603,545
County	$103,317	16	$1,653,072	$826,536	$2,479,608

Figure T-__ Estimated Potential Dollar Losses to Potentially-Damaged Housing Units from a Tornado by Township					
Participating Jurisdiction	Average Market Value (2022)	Potentially-Damaged Housing Units (Rounded Up)	Potential Dollar Losses		Total Potential Dollar Losses
			Structure	Content	
Boynton	$50,500	1	$50,500	$25,250	$75,750
Cincinnati	$102,169	20	$2,043,380	$1,021,690	$3,065,070
Deer Creek	$129,886	4	$519,544	$259,772	$779,316
Delavan	$59,792	6	$358,752	$179,376	$538,128
Dillon	$152,860	2	$305,720	$152,860	$458,580
Elm Grove	$120,201	7	$841,407	$420,704	$1,262,111
Fondulac	$85,472	59	$5,042,848	$2,521,424	$7,564,272
Groveland	$102,601	38	$3,898,838	$1,949,419	$5,848,257
Hittle	$71,513	2	$143,026	$71,513	$214,539
Hopedale	$102,439	4	$409,756	$204,878	$614,634
Little Mackinaw	$89,512	3	$268,536	$134,268	$402,804
Mackinaw	$118,919	9	$1,070,271	$535,136	$1,605,407
Malone	$80,889	1	$80,889	$40,445	$121,334
Morton	$155,055	37	$5,737,035	$2,868,518	$8,605,553
Pekin	$56,536	191	$10,798,376	$5,399,188	$16,197,564
Sand Prairie	$79,438	3	$238,314	$119,157	$357,471
Spring Lake	$84,281	3	$252,843	$126,422	$379,265
Tremont	$145,934	6	$875,604	$437,802	$1,313,406
Washington	$136,596	32	$4,371,072	$2,185,536	$6,556,608
Townships - 6 most populated	$96,140	45	$4,326,300	$2,163,150	$6,489,450
Townships - 13 least populated	$141,167	4	$564,668	$282,334	$847,002

This assessment illustrates why potential residential dollar losses should be considered when jurisdictions are deciding which mitigation projects to pursue. ***Potential dollar losses caused by an average tornado in Tazewell County would be expected to exceed at least $17.8 million in any of the participating municipalities. This figure is up $4.6 million from the previous analysis.***

Potential dollar losses caused by an average tornado in Tazewell County townships would be expected to range from $75,750 in Boynton Township to $16.1 million in Pekin Township. As discussed previously, the estimate for the entire County is skewed because it does not take into consideration the differences in the housing density.

Vulnerability of Commercial/Industrial Businesses and Infrastructure/Critical Facilities
The calculations presented above are meant to provide the reader with a sense of the scope or magnitude of an average-sized tornado in term of residential dollar losses. These calculations do not include damages sustained by businesses or other infrastructure and critical facilities within the participating jurisdictions.

In terms of businesses, the impacts from an average-sized tornado event can be physical and/or monetary. Monetary impacts can include loss of sales revenue either through temporary closure or loss of critical services (i.e., power, drinking water, and sewer). Depending on the magnitude of the event, the damage sustained by infrastructure and critical facilities can be extensive in nature and expensive to repair. As a result, the cumulative monetary impacts to businesses and infrastructure can exceed the cumulative monetary impacts to residences. ***While average dollar amounts cannot be supplied for these items at this time, they should be taken into account*** when discussing the impacts that an average-sized tornado could have on the participating jurisdictions.