



Hazard Description

Flooding is a naturally occurring cycle. It occurs when the volume of precipitation (rain or snow) exceeds the capacity of riverbanks to keep waters contained. Of all natural hazards affecting Whitman County, floods are one of the most common, occurring at some level on an annual basis. Whitman County has received six Federal Disaster Declarations for flood since 1953. Floods of the declaration-level have occurred at various times throughout the year between December and May.

Several factors determine the severity of floods:

- Precipitation, intensity, and duration;
- Soil saturation conditions;
- Topography and ground cover;
- Amount of snow.

| Estimated Probability of Flood Event | |
|--------------------------------------|-----------------------------|
| EVENT | ANNUAL CHANCE OF OCCURRENCE |
| 10-year flood | 10% |
| 25-year flood | 4% |
| 50-year flood | 2% |
| 100-year flood | 1% |
| 500-year flood | 0.2% |

Table 1 – Estimated Probability

National Flood Insurance

Congress established the National Flood Insurance Program (NFIP) in 1968. This federal program enables property owners in participating communities to purchase insurance to protect against flood losses in exchange for floodplain management regulations that reduce future flood damage. For most participating communities, FEMA has prepared a detailed Flood Insurance Study that presents water surface elevations for floods of various magnitudes, including the 1-percent (100-year) annual chance flood and the 0.2-percent (500-year) annual chance flood (see Map 1 to the right). Base flood elevations and the boundaries of the 100- and 500-year floodplains are shown on Flood Insurance Rate Maps (FIRMs), which are the principle tool for identifying the extent and location of the flood hazard. FIRMs are the most detailed and consistent data source available, and for many communities they represent the minimum area of oversight under their floodplain management program. The estimated probability of a flood occurring during any given year is identified in Table 1 (above). The current number of NFIP insurance policies in force in Whitman County are identified in Table 2. The County has no new Repetitive and Severe Repetitive Loss Properties in the last five years.

| Flood Insurance Statistics for Whitman County | | | | | | |
|---|---|---|--------------------|----------------------|----------------------------|--|
| Jurisdiction | Date of Entry Initial FIRM Effective Date | # of Flood Insurance Policies as of 9/30/18 | Insurance In Force | Total Annual Premium | Claims, 11/1978 to 9/30/18 | Value of Claims paid, 11/1978 to 9/30/18 |
| Albion | 8/1/1978 | 6 | \$770,500 | \$6,281 | 4 | \$38,034 |
| Colfax | 8/1/1978 | 5 | \$1,155,000 | \$1,698 | 0 | \$0 |
| Colton | 7/2/1979 | 0 | 0 | 0 | 0 | \$0 |
| Endicott | 7/17/1978 | 4 | \$289,800 | \$5,144 | 1 | \$1,433 |
| Farmington | 7/3/1985 | 1 | \$27,200 | 417 | 0 | 0 |
| Garfield | 8/1/1978 | 5 | \$574,800 | \$4,199 | 2 | 24,665 |
| LaCrosse | NP | — | — | — | — | — |
| Lamont | NP | — | — | — | — | — |
| Malden | 5/01/2010 | 0 | 0 | 0 | 0 | \$0 |
| Oakesdale | 9/29/1978 | 5 | \$1,092,500 | \$2,726 | 0 | \$0 |
| Palouse | 7/17/1978 | 13 | \$2,312,300 | \$18,315 | 8 | \$262,594 |
| Pullman | 7/2/1979 | 43 | \$9,552,900 | \$73,625 | 30 | \$137,628 |
| Rosalia | 7/17/1978 | 5 | \$622,800 | \$7,446 | 3 | \$9,183 |
| St. John | 5/26/1981 | 0 | 0 | 0 | 0 | \$0 |
| Tekoa | 8/1/1979 | 0 | 0 | 0 | 0 | \$0 |
| Uniontown | 8/1/1978 | 1 | \$103,200 | \$2,088 | 0 | \$0 |
| Unincorporated | 5/1/1980 | 19 | \$3,168,900 | \$15,534 | 6 | \$1,957 |

Table 2 – NFIP Policies in Force and Flood Loss Data

Vulnerability

Based on the 1979 Flood Study, exposure to structures throughout Whitman County utilizing FEMA's identified 100- year flood event are identified in Table 3 below.

Table 3 – Structure and Contents at Risk in 100-Year Floodplain

| | Value of Exposed Buildings Within 100-Year Floodplain | | | % of Total Assessed Value |
|------------------------|---|----------------------|------------------------|---------------------------|
| | Structure | Contents | Total | |
| Albion | \$13,696,500 | \$7,404,000 | \$21,100,500 | 33.99% |
| Colfax | \$126,426,750 | \$83,262,000 | \$209,688,750 | 48.58% |
| Colton | \$4,917,000 | \$2,840,250 | \$7,757,250 | 19.77% |
| Endicott | \$3,958,500 | \$2,068,500 | \$6,027,000 | 10.53% |
| Farmington | \$2,205,000 | \$1,233,750 | \$3,438,750 | 26.43% |
| Garfield | \$10,037,250 | \$6,483,000 | \$16,520,250 | 28.97% |
| LaCrosse | \$0 | \$0 | \$0 | 0.00% |
| Lamont | \$1,005,000 | \$846,750 | \$1,851,750 | 18.99% |
| Malden | \$695,250 | \$619,500 | \$1,314,750 | 6.38% |
| Oakesdale | \$14,861,250 | \$9,468,000 | \$24,329,250 | 52.91% |
| Palouse | \$8,789,250 | \$5,142,000 | \$13,931,250 | 15.77% |
| Pullman | \$430,319,250 | \$287,182,500 | \$717,501,750 | 27.39% |
| Rosalia | \$2,238,750 | \$1,257,000 | \$3,495,750 | 6.04% |
| St. John | \$13,498,500 | \$9,492,000 | \$22,990,500 | 34.75% |
| Tekoa | \$10,956,750 | \$6,772,500 | \$17,729,250 | 21.94% |
| Uniontown ^a | 0 | 0 | 0 | 0 |
| Unincorporated | \$203,823,000 | \$140,471,250 | \$1,067,676,750 | 31.85 |
| Total | \$847,428,000 | \$564,543,000 | \$2,135,353,500 | 29.61 |

a. Uniontown data not available from County Assessor

Types of Flooding in Whitman County

1. **River or stream flooding** occurs with prolonged heavy rainfall, a rapidly melting snowpack, or a combination of these.
2. **Urban flooding** results from intense storms dropping large volumes of rain within a short period of time, exceeding the capacity of stormwater management systems.
3. **Groundwater flooding** occurs when there is a highwater table and persistent heavy rains. The situation is caused in areas where an upper, thin layer of permeable soils overlays an impermeable layer of hardpan. As the ground absorbs more rain, the groundwater table rises, resulting in flooding in areas where the land surface is below the water table.

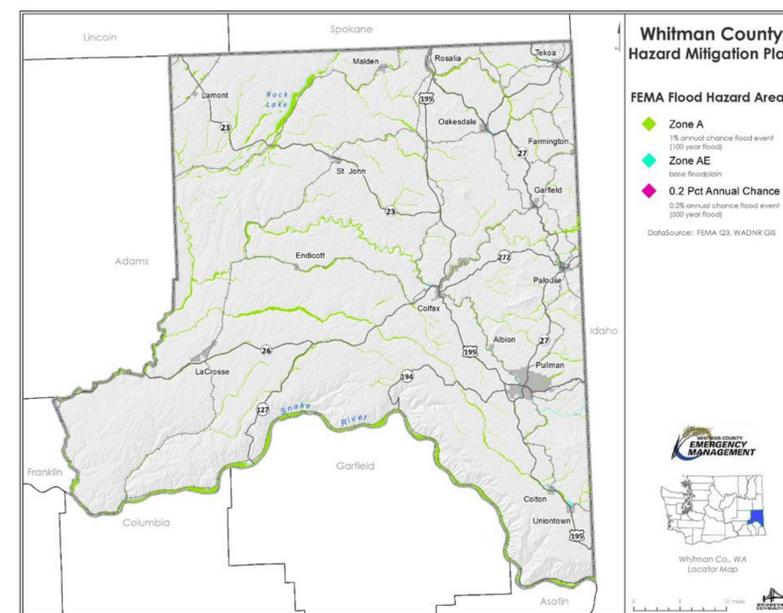
Effects of Flooding

The effects of floods are devastating. Aside from inundation of lands and property with sediment-filled waters, floods also result in:

- Death or injury to people, pets, and livestock;
- People stranded or isolated for extended periods of time;
- Physical destruction of infrastructure which support communities, such as roads, bridges, railroads, pipelines, and utility systems;
- Contaminated water sources and water treatment systems;
- Compromised septic systems, destroyed electrical and heating systems;
- Restricted or limited access for emergency responders.

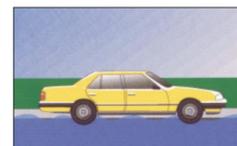
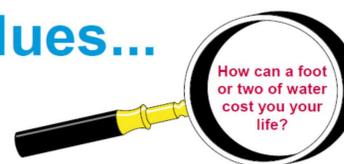
Delineation of a Flood Hazard Area

For mitigation planning purposes, the flood hazard is delineated using the 2010 NFIP map for the 100- and 500-year floodplain illustrated in Map 1. While this maps shows where floods can and have occurred before, it should be remembered that flooding does, and will continue to occur outside of these boundaries.



Map 1: FEMA-identified 100- and 500-Year Flood Hazard Areas

Clues...



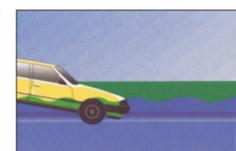
Water weighs 62.4 lbs. per cubic foot and typically flows downstream at 6 to 12 miles an hour.



When a vehicle stalls in the water, the water's momentum is transferred to the car. For each foot the water rises, 500 lbs. of lateral force are applied to the car.



But the biggest factor is buoyancy. For each foot the water rises up the side of the car, the car displaces 1,500 lbs. of water. In effect, the car weighs 1,500 lbs. less for each foot the water rises.



Two feet of water will carry away most automobiles.