

# Areas of Landslides

## Valley City West Quadrangle, North Dakota

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### Preliminary Inventory Map

Areas affected by landslides (Qls), soil creep (Qisc), and other types of mass movement in the vicinity of the western edge of the City of Valley City, North Dakota are depicted on this map at a scale of 1:24,000. Areas of mass movement were mapped from 1997 1:40,000 scale aerial photography using an Abrams (Model CB-1) Stereoscope. Mass movement features were identified at a nominal interpretive scale of 1:20,000. The delineation of affected areas was photo-interpreted at a nominal scale of 1:10,000. Aerial stereo-photographic interpretation was conducted during the Spring, Summer, and Fall of 2004. Field checking was completed during the Fall of 2004. Areas affected by mass movement within the Valley City West Quadrangle are generally constrained to the Sheyenne River Valley slopes and within slopes of tributary drainages. Slope instability is typically initiated within the Pierre Formation shales and marls that form the broad slopes of the Sheyenne River Valley. A total of 36 slide areas (Qls) have been mapped that display identifiable topographic characteristics consistent with mass wasting features. One area affected by soil creep processes (Qisc) is also depicted. Two paleomovement areas (Qlsp) are also depicted on this map. These two areas are interpreted to be areas of mass movement in which the surficial topographic expression of the slide material has been considerably subdued with the continued passage of time. Overall, approximately three percent (958 acres) of the land area within the quadrangle has been affected by landslides. The average numerical size of an affected area is 27 acres. There is a strong likelihood that other areas of instability and movement exist within this quadrangle that are not mappable at a scale of 1:24,000. The user is cautioned that this map is best used as a planning aid and to further enhance the overall understanding of areas in and around Valley City that are prone to slope instability and mass movement.

#### EXPLANATION

Geology Undifferentiated

#### QUATERNARY

**Qls** Landslides  
Areas of mass movement that display a net downslope movement of earth material in mass either in a slumping or rotational manner.

**Qisc** Soil Creep  
Areas of mass movement that display an irregular washboard like pattern perpendicular to slope.

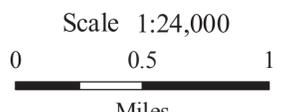
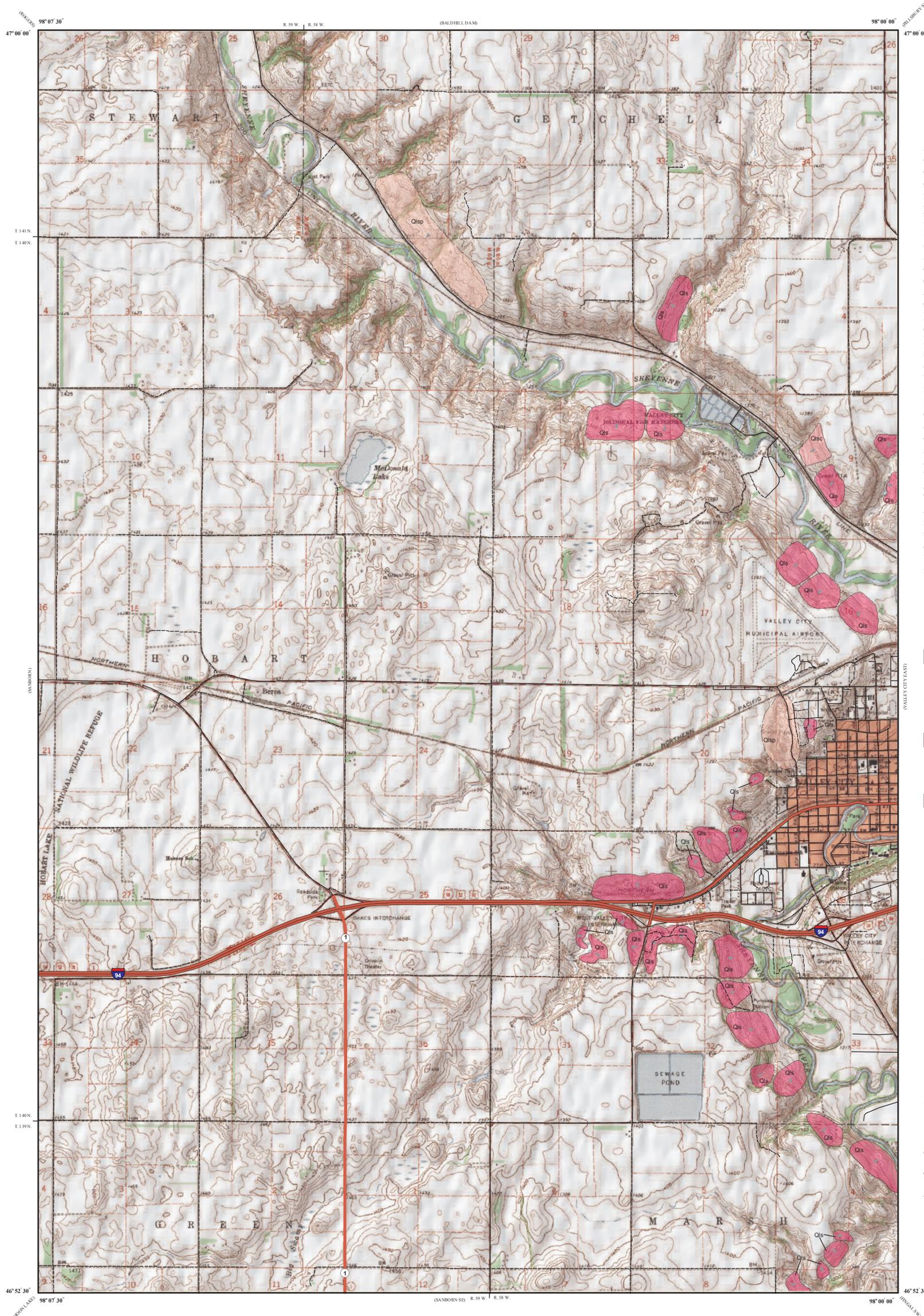
**Qlsp** Paleomovement Areas  
Areas of paleo mass-movement with subdued surficial topographic expression.

#### Geologic Symbols

Known contact between two geologic units  
 Approximate contact between two geologic units  
 Net downslope movement direction of mass movement feature

#### Other Features

Federal Highway  
 State Highway  
 Paved Road  
 Unpaved Road



Scale 1:24,000  
Lambert Conformal Conic Projection Standard Parallels 46° 52' 30" and 47° 00' 00"  
1927 North American Datum NGVD 1929  
USGS 7.5 Minute Topographic Map Contour Interval 10 Feet  
Road Layer Rectified to 2003 NAIP Digital Orthophoto

