

# Coordinates & Coordination

## The United States National Grid in Skagit County, Washington State



Skagit County  
Geographic Information Services  
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USNG: 10U EU 49086295 (NAD83)



### About the project

#### Purpose:

To provide the Skagit County Sheriff's Department with a set of paper maps containing grid coordinates, aerial photography and contours, that could be used for communication and coordination "in the field." The solution... United States National Grid. (USNG) The USNG is easy to use and understand and can be used across many different jurisdictions, agencies, and departments.

#### Proposed Uses:

The Skagit County Sheriff's Office conducts various operations where it is critical to have effective communication and coordination on the ground and, at times, in the air.

#### Marijuana Eradication

Operations in rural, mountainous and densely forested areas of the county require maps-in-hand and the ability to coordinate movement on the ground and in the air.

#### Tactical Operations

The ability to identify and coordinate location and movement of ground units in relation to a specified threat/target.

#### Other Potential Uses:

Potentially, this map set or variations of it could be used by Emergency Management, Search and Rescue, Emergency Responders, or in Geographic Location ID. (Geoaddressing) Some examples might be:

#### Disaster Relief Operations

Skagit County has a long history of major flood events. During these events, roads, address signs, or other landmarks can be completely destroyed. Therefore the ability to communicate and coordinate location in an alternative way can be quite useful.

In addition, natural disasters often draw in multiple governmental and non-governmental agencies. With the USNG in place and in use, the ability to communicate and coordinate operations between these agencies can be greatly enhanced.

#### Search and Rescue (SAR)

Land navigation for ground personnel conducting operations. Communication with other ground elements, as well as with medical evacuation helicopters, Navy, National Guard, or any other agency or authority involved in an operation that is located in rural areas or outside the road network.

### Why choose the United States National Grid?

#### Interoperability between agencies & authorities:

The USNG is uniform in its appearance and usage. The standard for its datum is NAD83, or the international equivalent, WGS 84. This allows for multi-agency and multi-departmental communication that is required during operations such as Disaster Relief, Search and Rescue, and Homeland Security situations.

#### Simplistic and alleviates confusion:

With the growing use of GPS technology, latitude and longitude has become well known and common to use. However, a latitude/longitude pair can be communicated in at least 3 different forms and can cause serious confusion. (See example below) Other coordinate sets can also be confusing and hard to understand. Some are specific to a geographic area, and are not readily understood or known by people outside of that area. This can create a problem during events when multiple agencies are mobilized and need to coordinate efforts.

#### 3 methods of reporting Latitude / Longitude:

48° 28' 03.9" N, 122° 13' 33.2" W

(Degrees, Minutes, Seconds)

48° 28.065" N, 122° 13.554" W

(Degrees, Minutes, Decimal Minutes)

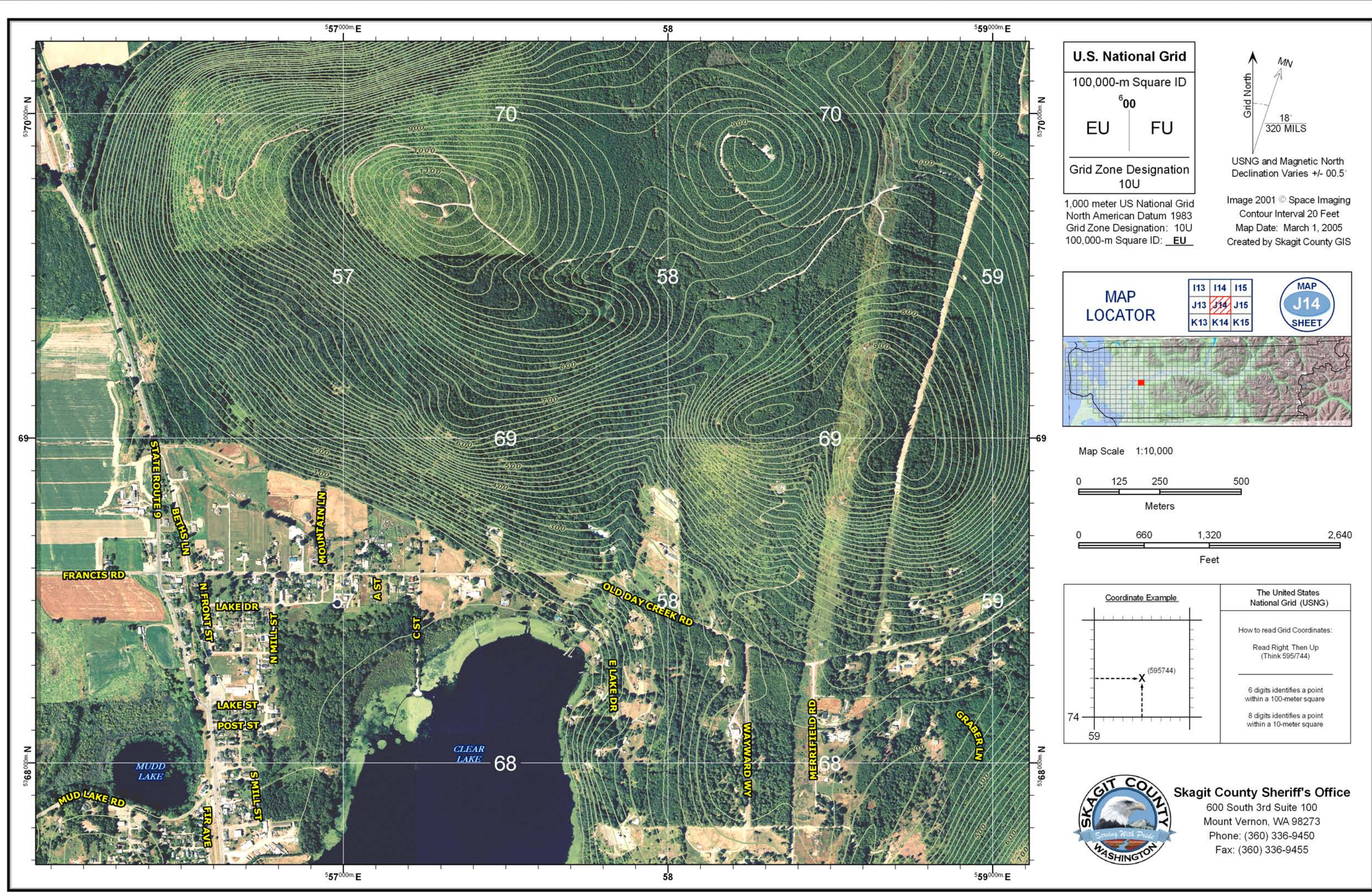
48.46775° N, 122.22590° W

(Degrees, Decimal Degrees)

Reporting the USNG coordinate for the same point:

**10U EU 57226858**

Sample Map (Actual Size is 11 x 17)



### The USNG Coordinate:

Full USNG: 10UEU57226858  
Without GZD: EU57226858  
Without GZD and 100,000-m Square ID: 57226858

**Grid Zone Designation (GZD):** Identifies the longitude zone number and the latitude band letter.

**100,000 Meter Square Identification:** Indicates the 100,000-meter square that is specific to the GZD.

**Grid Coordinate:** The UTM grid Easting and Northing point position within the 100,000 meter square.

10U EU 5722 6858

USNG can be truncated to meet different precision requirements, ranging from 1,000 meters to 1 meter. See examples below:

Four Digits	5768	Locates a point within a 1,000-meter square
Six Digits	572685	Locates a point within a 100-meter square
Eight Digits	57226858	Locates a point within a 10-meter square
Ten Digits	5722068580	Locates a point within a 1-meter square

