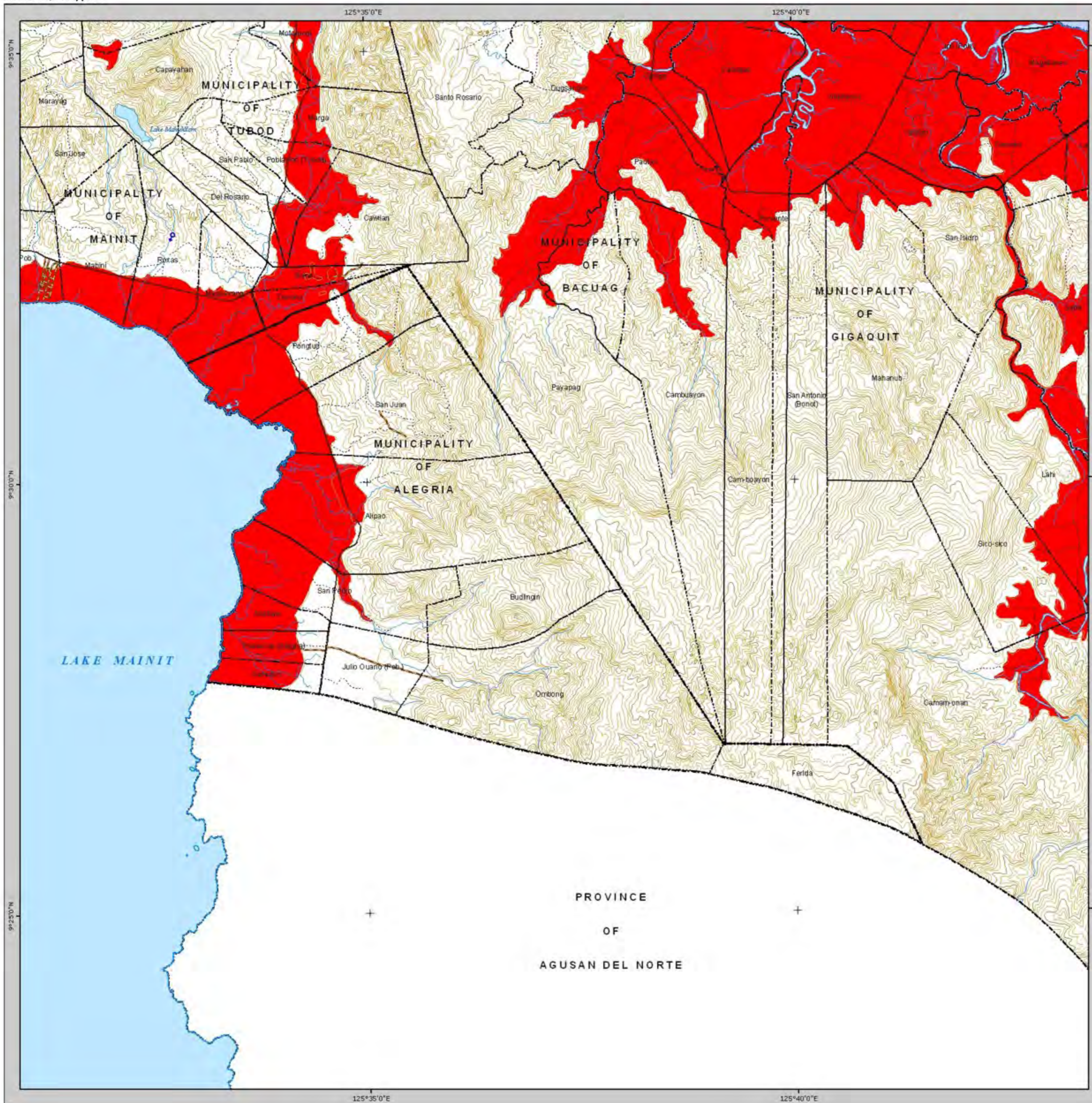


# FLOOD HAZARD MAP

Mindanao, Philippines

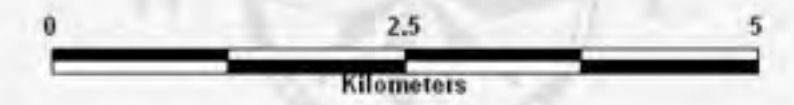


## MUNICIPALITY OF ALEGRIA

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- × 1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Prone to Flooding
- Not Prone to Flooding
- Flashflood Exit Point

### EXPLANATION

1. Prone to Flooding - areas subjected to recurring inundation when the level of a body of water rises and overflows its natural or artificial confines due to heavy or continues.
2. Not Prone to Flooding - areas where elevation is greater than 20 meters.
3. Flooding of short duration with relatively high peak discharge over a relatively small area is known as flashflood. Potential flashflood exit points are areas where flash flooding is expected to occur.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data, DENR, Mines and Geosciences Bureau (MGB - JICA) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Alegria  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

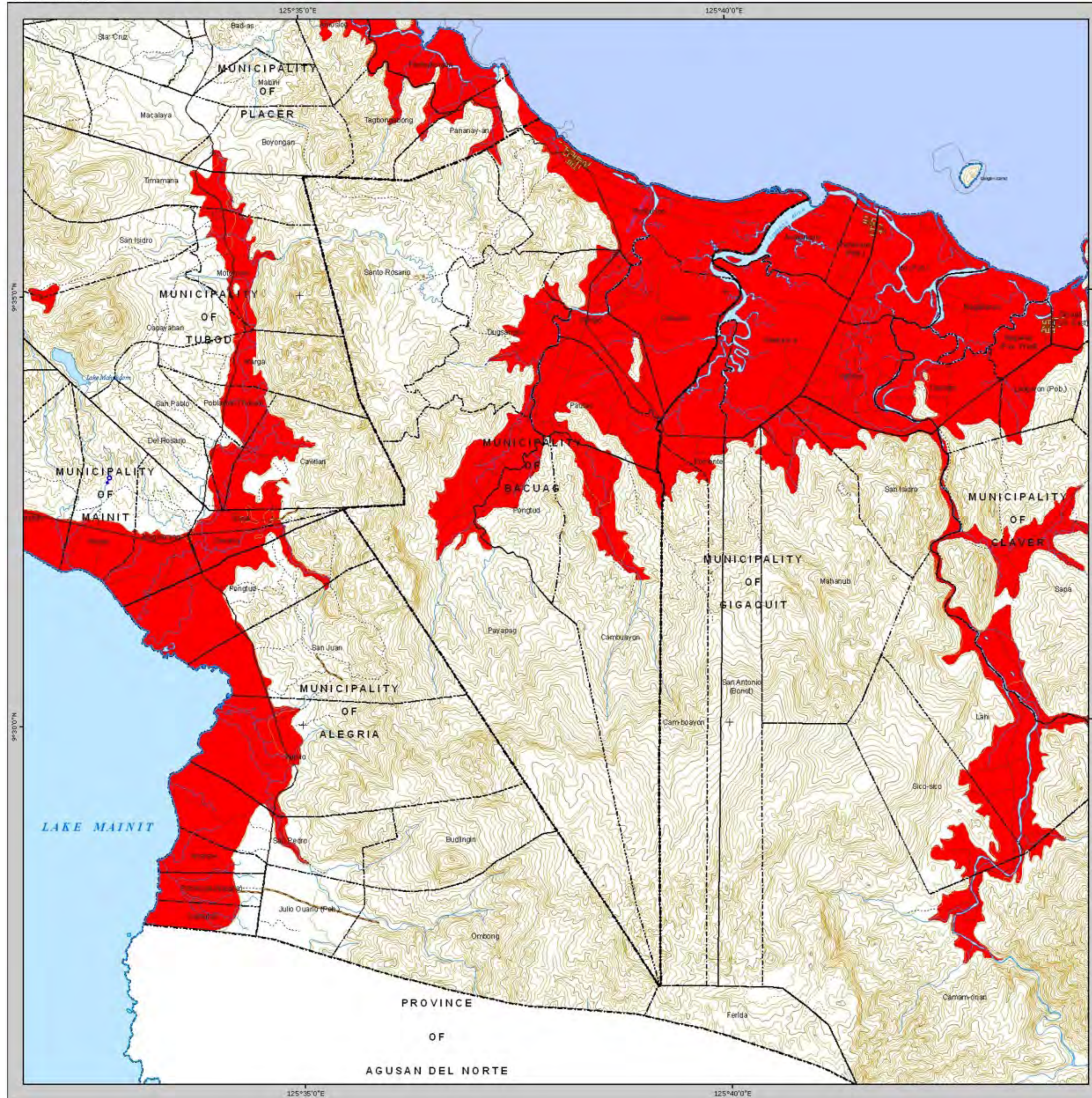
**Disclaimer:**  
 Administrative boundaries are approximate.





# FLOOD HAZARD MAP

Mindanao, Philippines

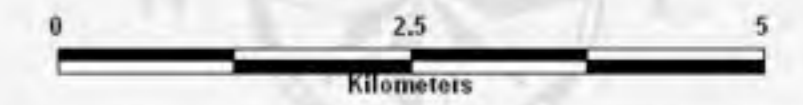


## MUNICIPALITY OF BACUAG

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- == Main Road
- == Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Prone to Flooding
- Not Prone to Flooding
- Flashflood Exit Point

### EXPLANATION

1. Prone to Flooding - areas subjected to recurring inundation when the level of a body of water rises and overflows its natural or artificial confines due to heavy or continues.
2. Not Prone to Flooding - areas where elevation is greater than 20 meters.
3. Flooding of short duration with relatively high peak discharge over a relatively small area is known as flashflood. Potential flashflood exit points are areas where flash flooding is expected to occur.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data, DENR, Mines and Geosciences Bureau (MGB - JICA) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Bacuag  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate.



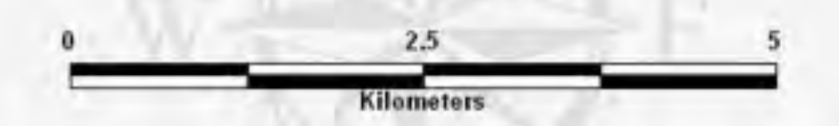


# FLOOD HAZARD MAP

## MUNICIPALITY OF CLAVER

Province of Surigao Del Norte  
Region XIII-CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Prone to Flooding
- Not Prone to Flooding
- Flashflood Exit Point

### EXPLANATION

1. Prone to Flooding - areas subjected to recurring inundation when the level of a body of water rises and overflows its natural or artificial confines due to heavy or continues.
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3. Flooding of short duration with relatively high peak discharge over a relatively small area is known as flashflood. Potential flashflood exit points are areas where flash flooding is expected to occur.

### LOCATION MAP

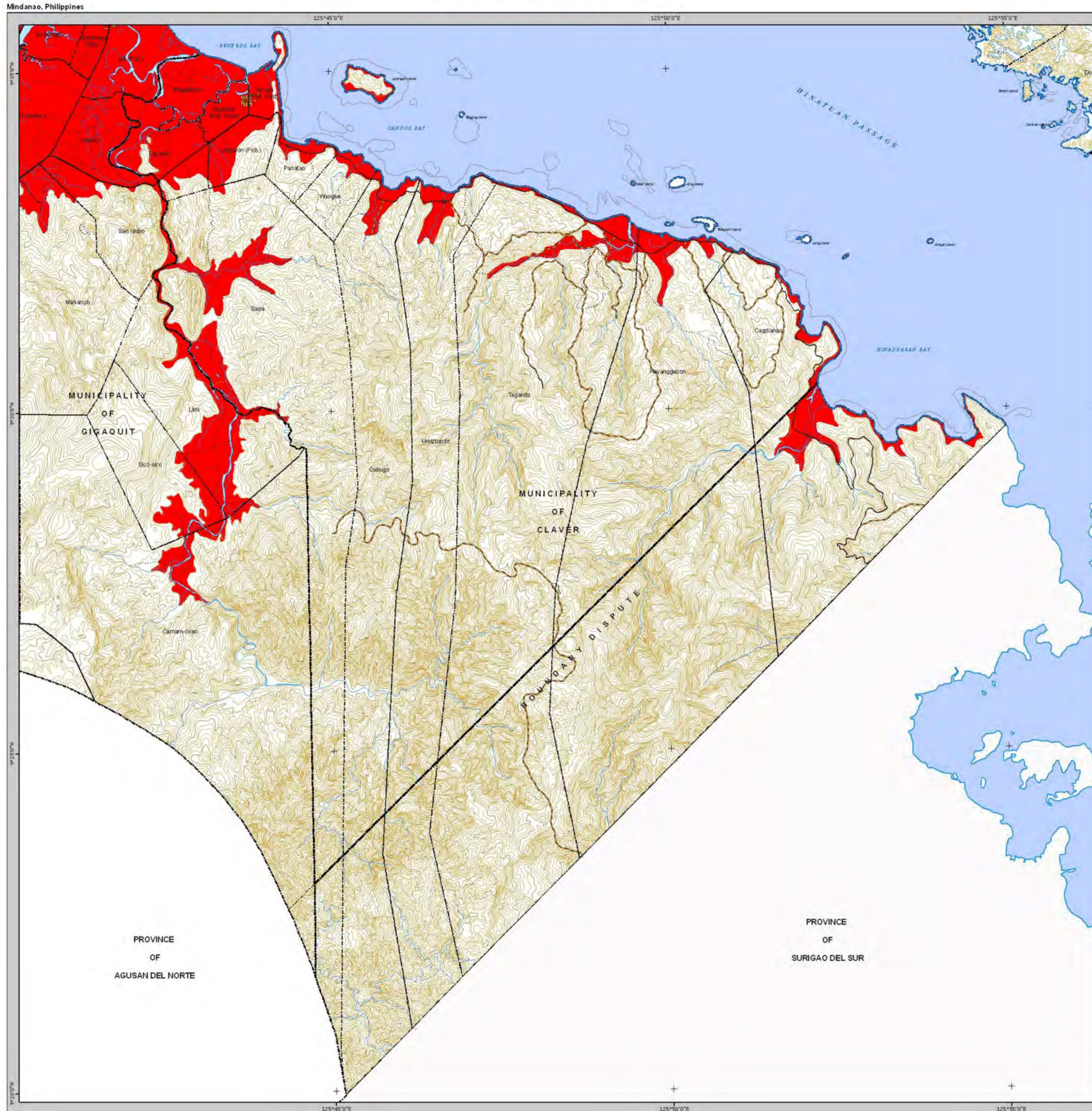
### SOURCES OF DATA

Hazard Data, DENR, Mines and Geosciences Bureau (MGB - JICA) 2007

Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Claver

Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

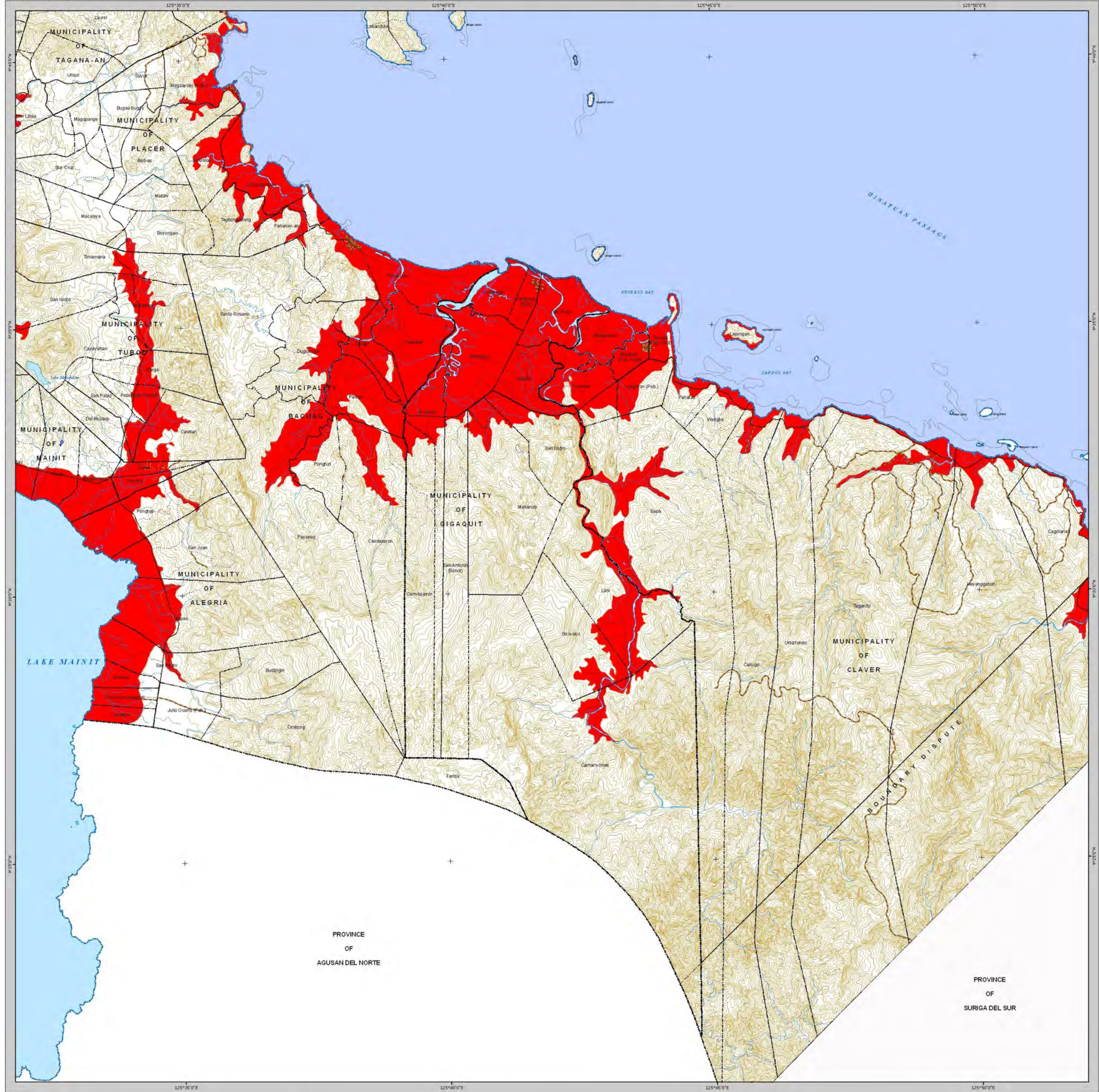
**Disclaimer:**  
Administrative boundaries are approximate





# FLOOD HAZARD MAP

Mindanao, Philippines



## SOURCES OF DATA

Hazard Data, DENR, Mines and Geosciences Bureau (MGSB - JICA) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Gigaquit  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate

## LEGEND

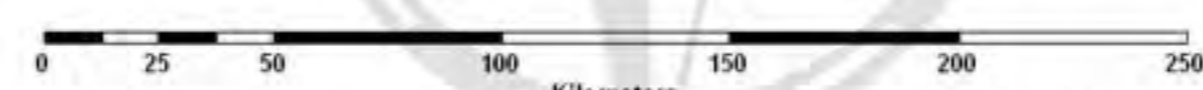
--- Provincial Boundary	— Coastline
--- Municipal Boundary	— Bridges
--- Barangay Boundary	1176 Spot Elevation
— Rivers and Creeks	Water Body
— Rivers Intermittent	
— Canals	
— Contour Index	
— Contour Intermediate	
— Contour Supplementary	
— Contour Depression	

## SUSCEPTIBILITY

<span style="background-color: red; color: white; padding: 2px;"> </span> Prone to Flooding
<span style="background-color: white; border: 1px solid black; padding: 2px;"> </span> Not Prone to Flooding
Flashflood Exit Point

## MUNICIPALITY OF GIGAQUIT Province of Surigao del Norte Region XIII-CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

## LOCATION MAP



## EXPLANATION

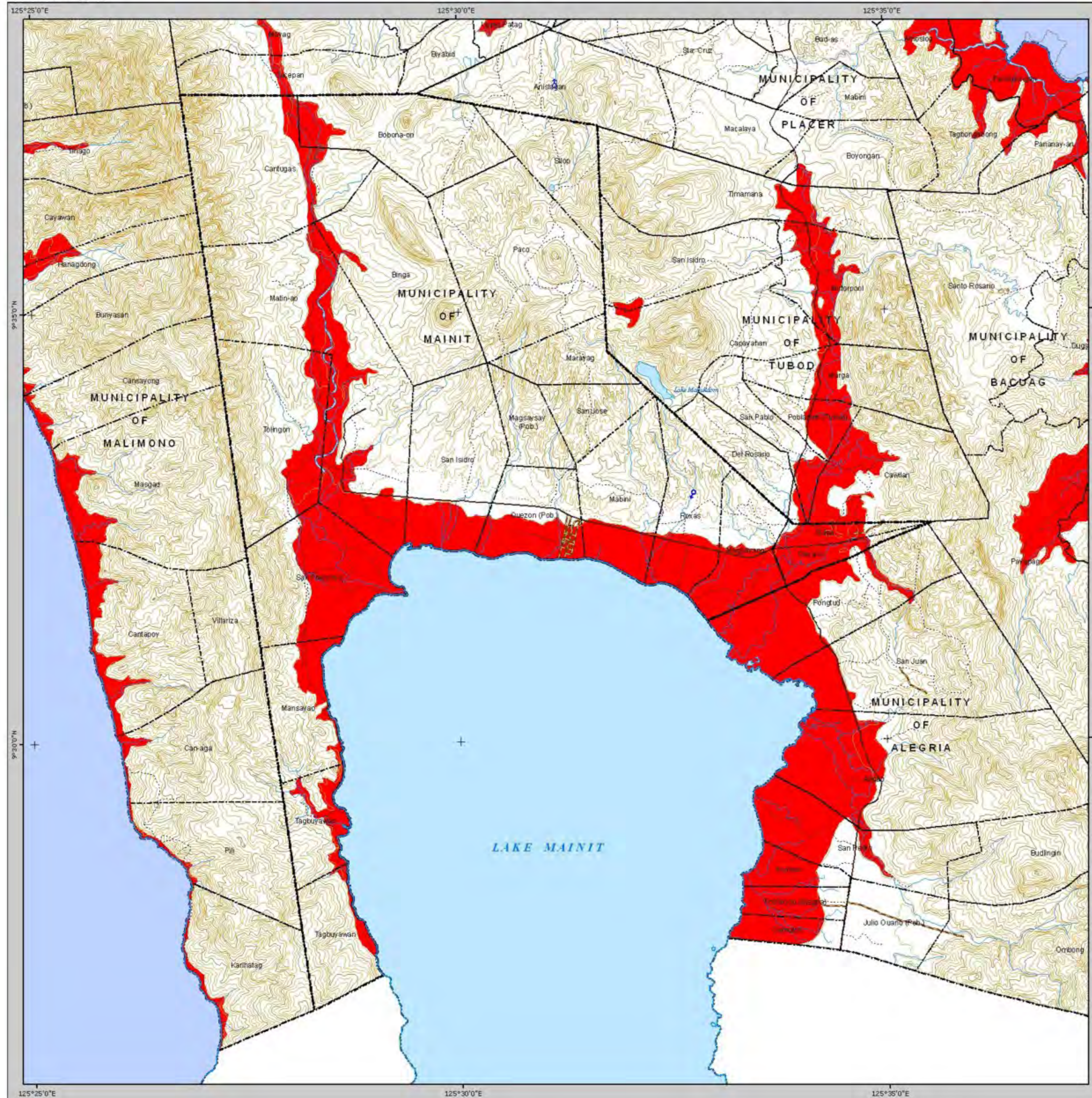
1. Areas with high landslide susceptibility rating have active/recent landslides and tension cracks that would directly affect the community. Those with steep slopes and drainages that are prone to landslide damming are also highly susceptible to landslides.
2. Areas with moderate landslide susceptibility rating have inactive/old landslides and tension cracks which are located away from the community. These areas usually have moderate slopes.
3. Areas with low to gentle slopes and lacking tension cracks have low landslide susceptibility rating.
4. These are areas where landslide debris could accumulate.





# FLOOD HAZARD MAP

Mindanao, Philippines

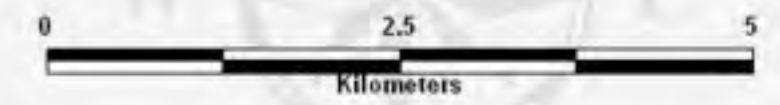


## MUNICIPALITY OF MAINIT

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- - - Municipal Boundary
- · - Barangay Boundary
- == Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Prone to Flooding
- Not Prone to Flooding
- Flashflood Exit Point

### EXPLANATION

1. Prone to Flooding - areas subjected to recurring inundation when the level of a body of water rises and overflows its natural or artificial confines due to heavy or continues.
2. Not Prone to Flooding - areas where elevation is greater than 20 meters.
3. Flooding of short duration with relatively high peak discharge over a relatively small area is known as flashflood. Potential flashflood exit points are areas where flash flooding is expected to occur.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data, DENR, Mines and Geosciences Bureau (MGB - JICA) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Mainit  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

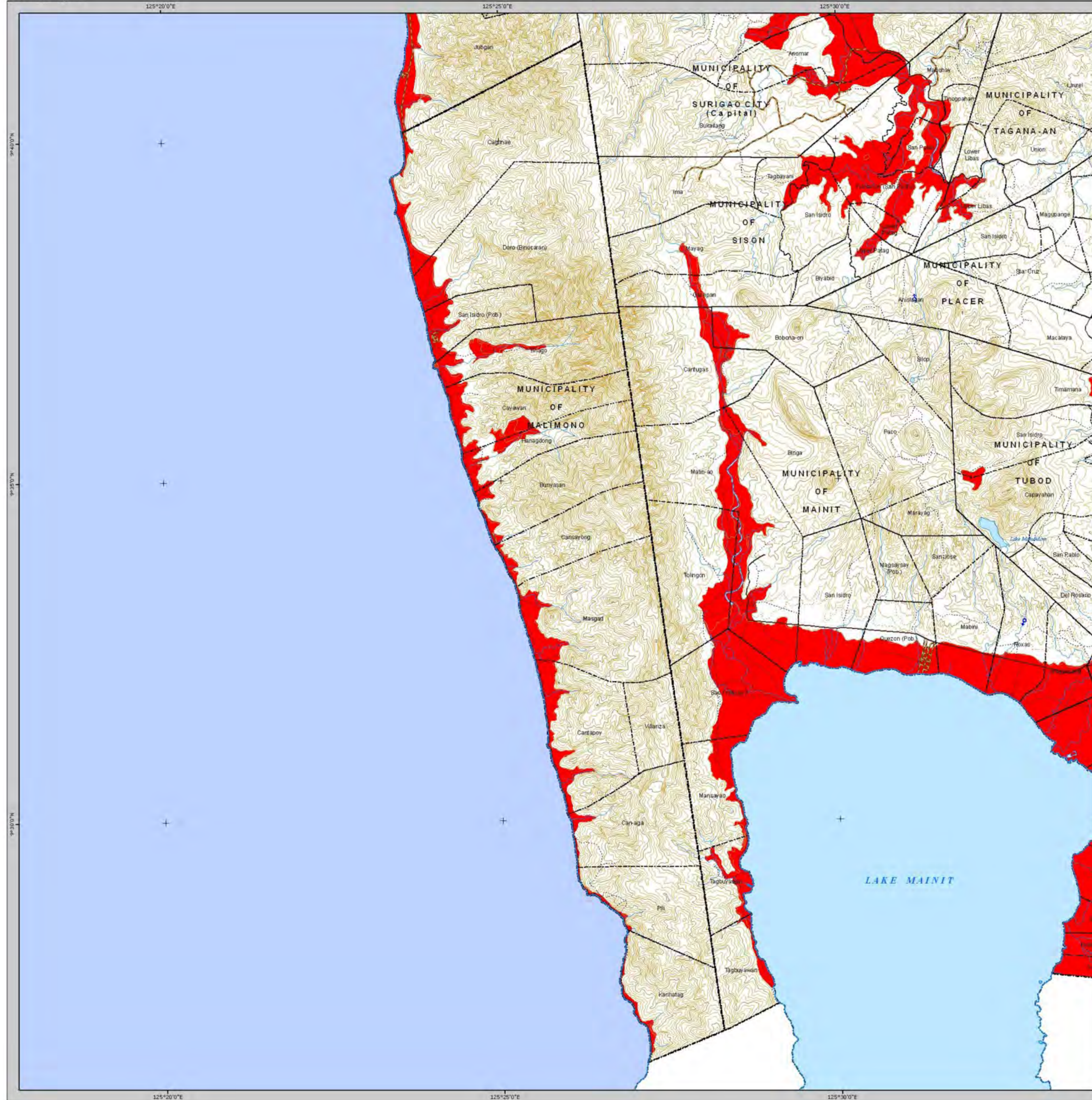
**Disclaimer:**  
 Administrative boundaries are approximate.





# FLOOD HAZARD MAP

Mindanao, Philippines

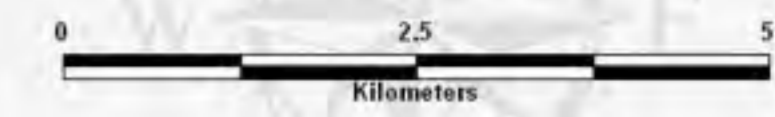


## MUNICIPALITY OF MALIMONO

Province of Surigao Del Norte

Region XIII-CARAGA

Scale 1:50,000



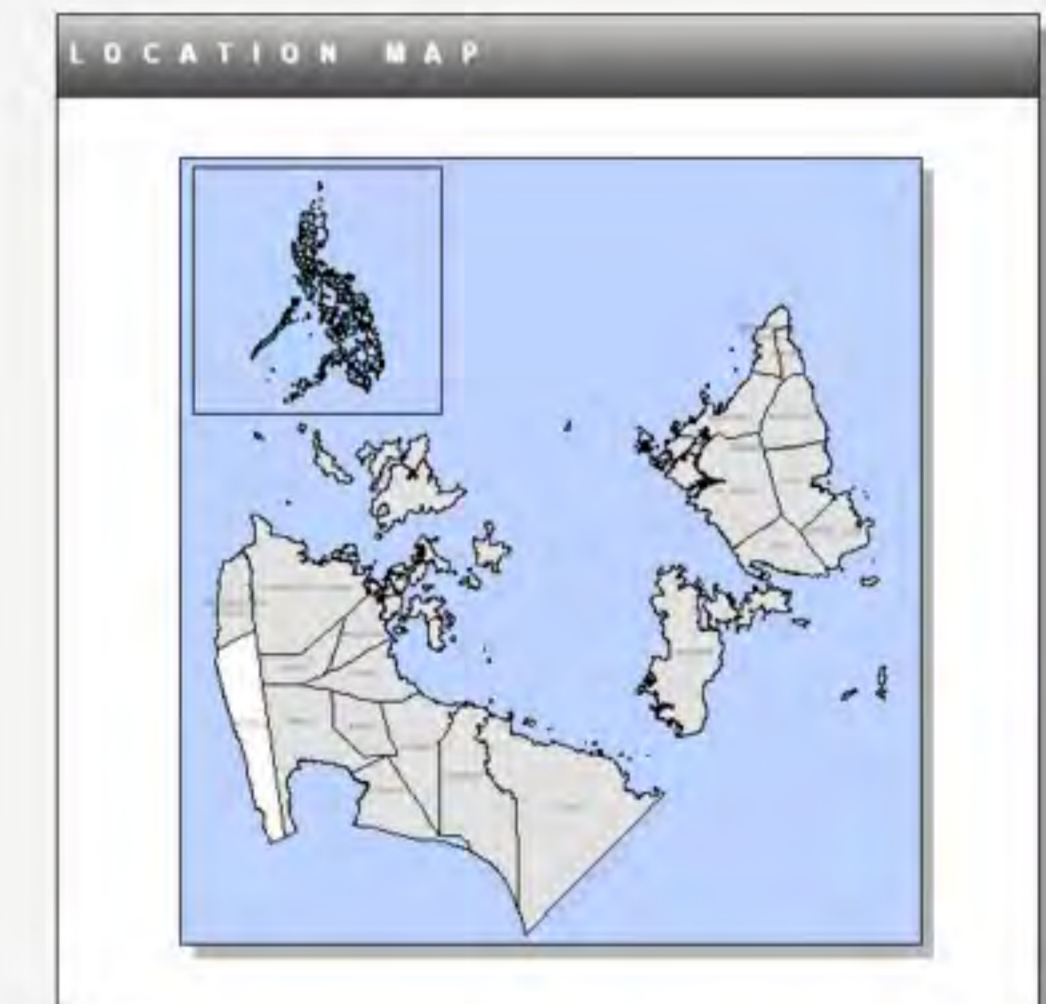
Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

LEGEND	
	Provincial Boundary
	Municipal Boundary
	Barangay Boundary
	Main Road
	Secondary Road
	Trails
	Rivers and Creeks
	Rivers Intermittent
	Contour Index
	Contour Intermediate
	Contour Supplementary
	Contour Depression
	Coastline
	Corals
	Bridges
	Spot Elevation
	Water Body

SUSCEPTIBILITY	
	Prone to Flooding
	Not Prone to Flooding
	Flashflood Exit Point

**EXPLANATION**

1. Prone to Flooding - areas subjected to recurring inundation when the level of a body of water rises and overflows its natural or artificial confines due to heavy or continues.
2. Not Prone to Flooding - areas where elevation is greater than 20 meters.
3. Flooding of short duration with relatively high peak discharge over a relatively small area is known as flashflood. Potential flashflood exit points are areas where flash flooding is expected to occur.



**SOURCES OF DATA**

Hazard Data, DENR, Mines and Geosciences Bureau (MGB - JICA) 2007

Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Malimono

Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate





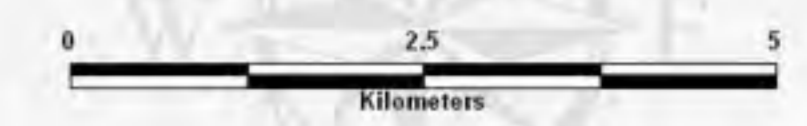
# FLOOD HAZARD MAP

## MUNICIPALITY OF PLACER

Province of Surigao Del Norte

Region XIII-CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Prone to Flooding
- Not Prone to Flooding
- Flashflood Exit Point

### EXPLANATION

1. Prone to Flooding - areas subjected to recurring inundation when the level of a body of water rises and overflows its natural or artificial confines due to heavy or continues.
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### LOCATION MAP



### SOURCES OF DATA

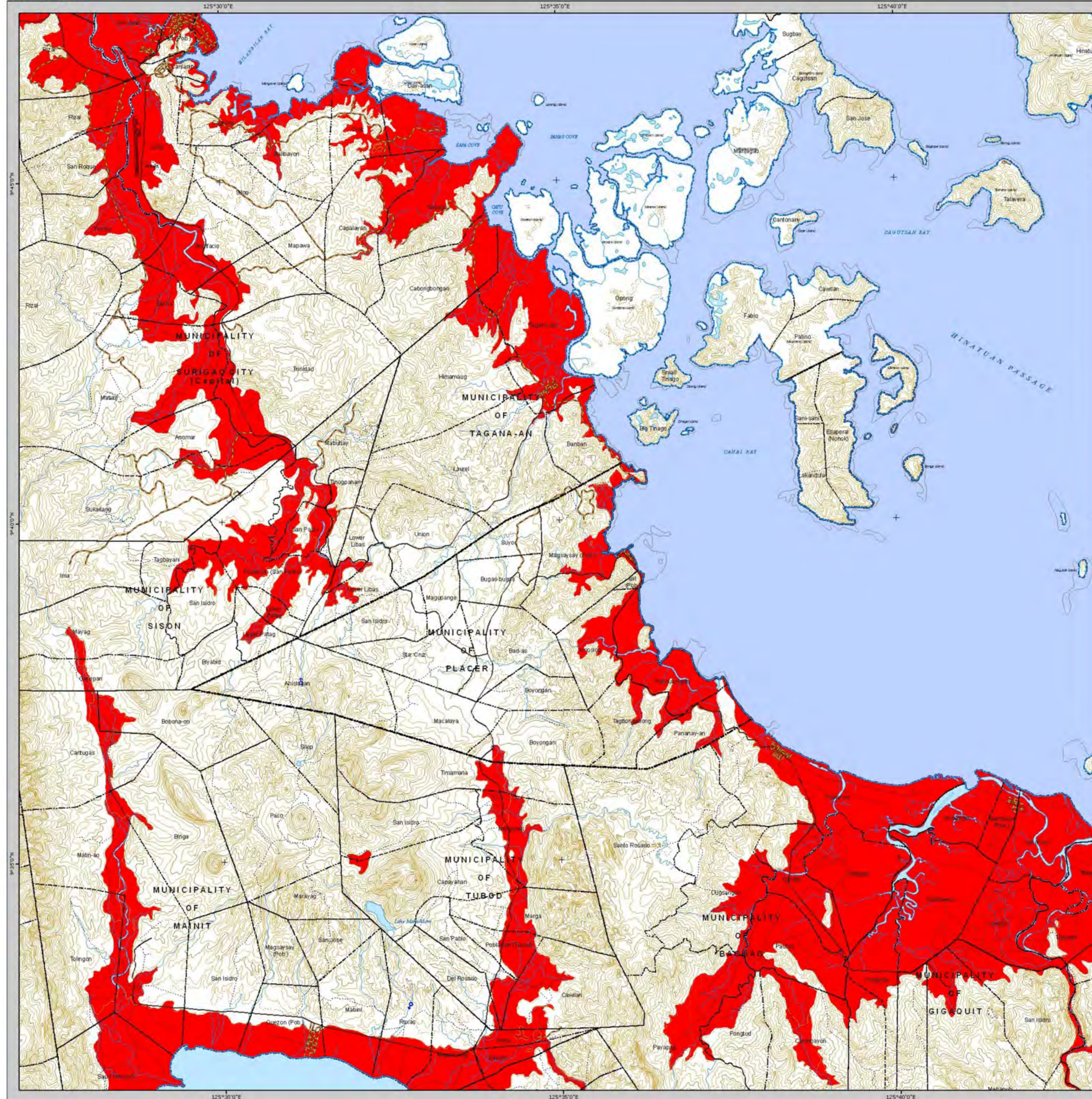
Hazard Data, DENR, Mines and Geosciences Bureau (MGB - JICA) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Placer  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

### Disclaimer:

Administrative boundaries are approximate



Mindanao, Philippines





# FLOOD HAZARD MAP



**SOURCES OF DATA**  
 Hazard Data from DENR, Mines and Geosciences Bureau (MGB - JICA) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP)  
 Topographic map 1:50,000 scale - NAMRIA - DMA Series 733  
 ED 1 - AMS, ED 2 - DMA, 1954 - 1955  
**Disclaimer:**  
 Administrative boundaries are approximate

**LEGEND**

--- Provincial Boundary	--- Coastline
--- Municipal Boundary	--- Rivers and Creeks
--- Main Road	--- Rivers Intermittent
--- Secondary Road	--- Corals
--- Trails	--- Spot Elevation
--- Bridges	--- Fishpen
--- Contour Index	--- Water Body
--- Contour Intermediate	
--- Contour Supplementary	
--- Contour Depression	

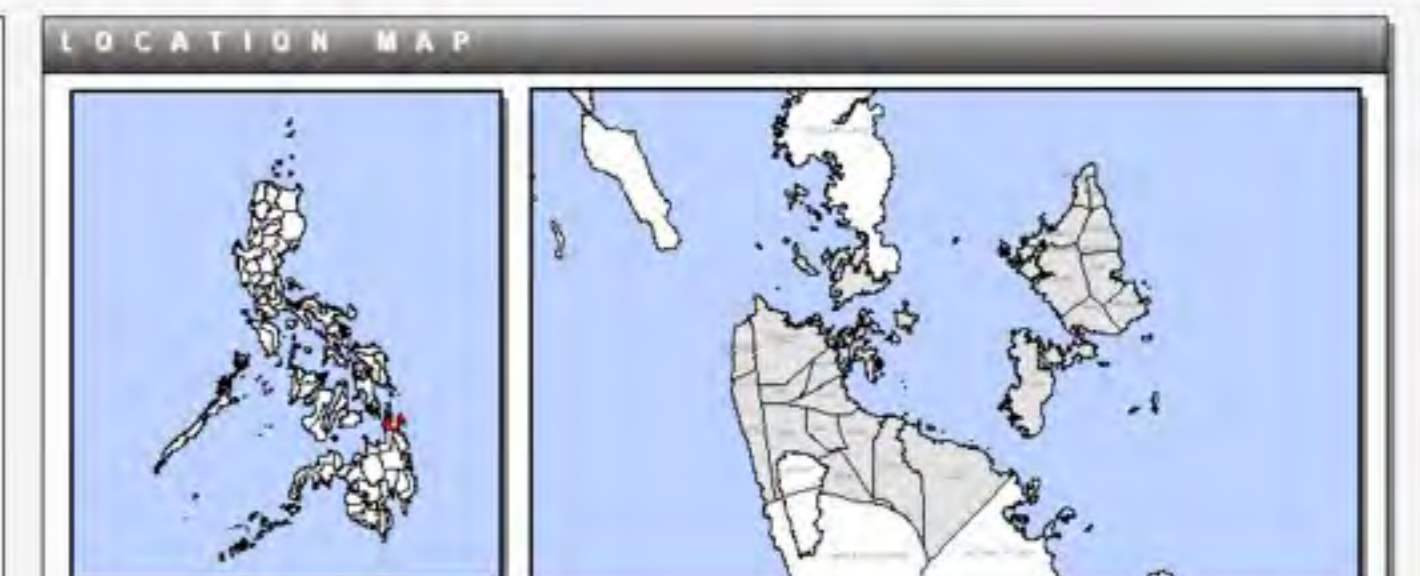
**SUSCEPTIBILITY**

■ Prone to Flooding
□ Not Prone to Flooding
♂ Flashflood Exit Points

## PROVINCE OF SURIGAO DEL NORTE REGION XIII - CARAGA

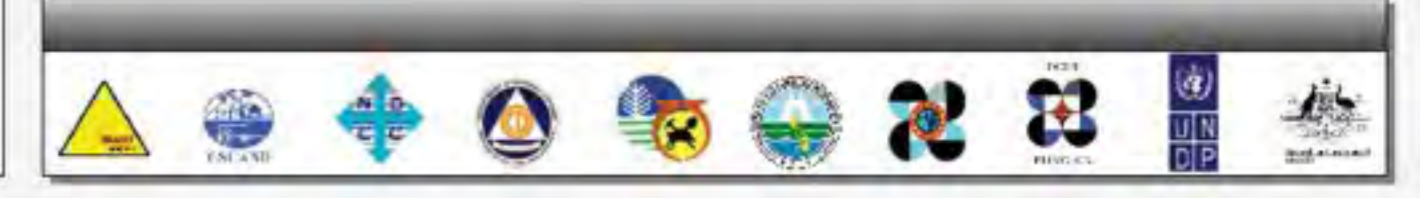


Spheroid ..... Clark 1866  
 Projection ..... Universal Transverse Mercator (UTM)  
 Horizontal Datum ..... Luzon 1911  
 Vertical Datum ..... Mean Sea Level



**EXPLANATION**

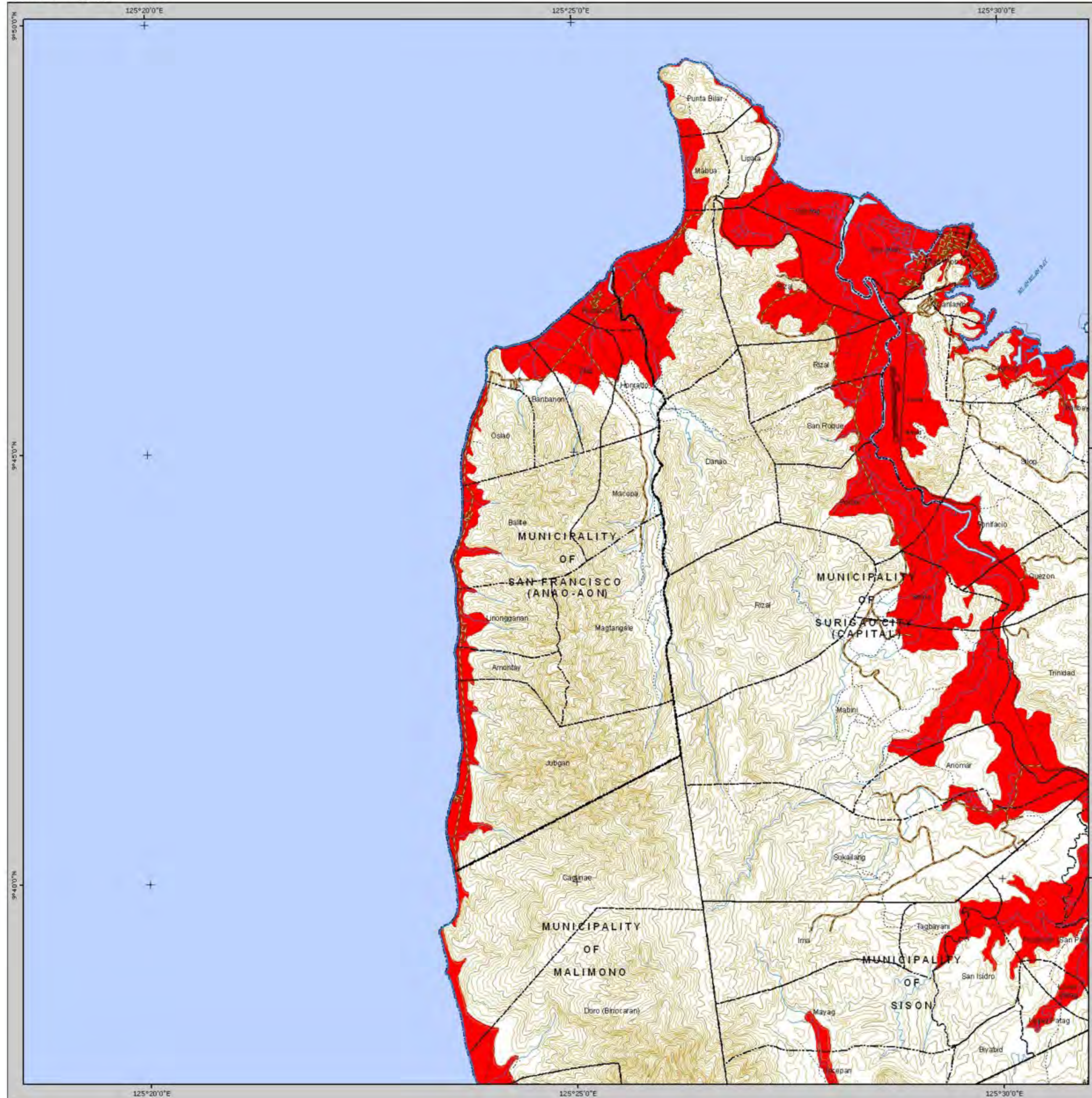
1. Prone to Flooding - areas subjected to recurring inundation when the level of a body of water rises and overflows its natural or artificial confines due to heavy or continuous.
2. Not Prone to Flooding - areas where elevation is greater than 20 meters.
3. Floods of short duration with relatively high peak discharge over a relatively small area is known as flashflood. Potential flashflood exit points are areas where flash flooding is expected to occur.





# FLOOD HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF SAN FRANCISCO

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Prone to Flooding
- Not Prone to Flooding
- Flashflood Exit Point

### EXPLANATION

1. Prone to Flooding - areas subjected to recurring inundation when the level of a body of water rises and overflows its natural or artificial confines due to heavy or continues.
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### LOCATION MAP



### SOURCES OF DATA

Hazard Data, DENR, Mines and Geosciences Bureau (MGB - JICA) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capital), Comprehensive Landuse Plan (CLUP) of San Francisco  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

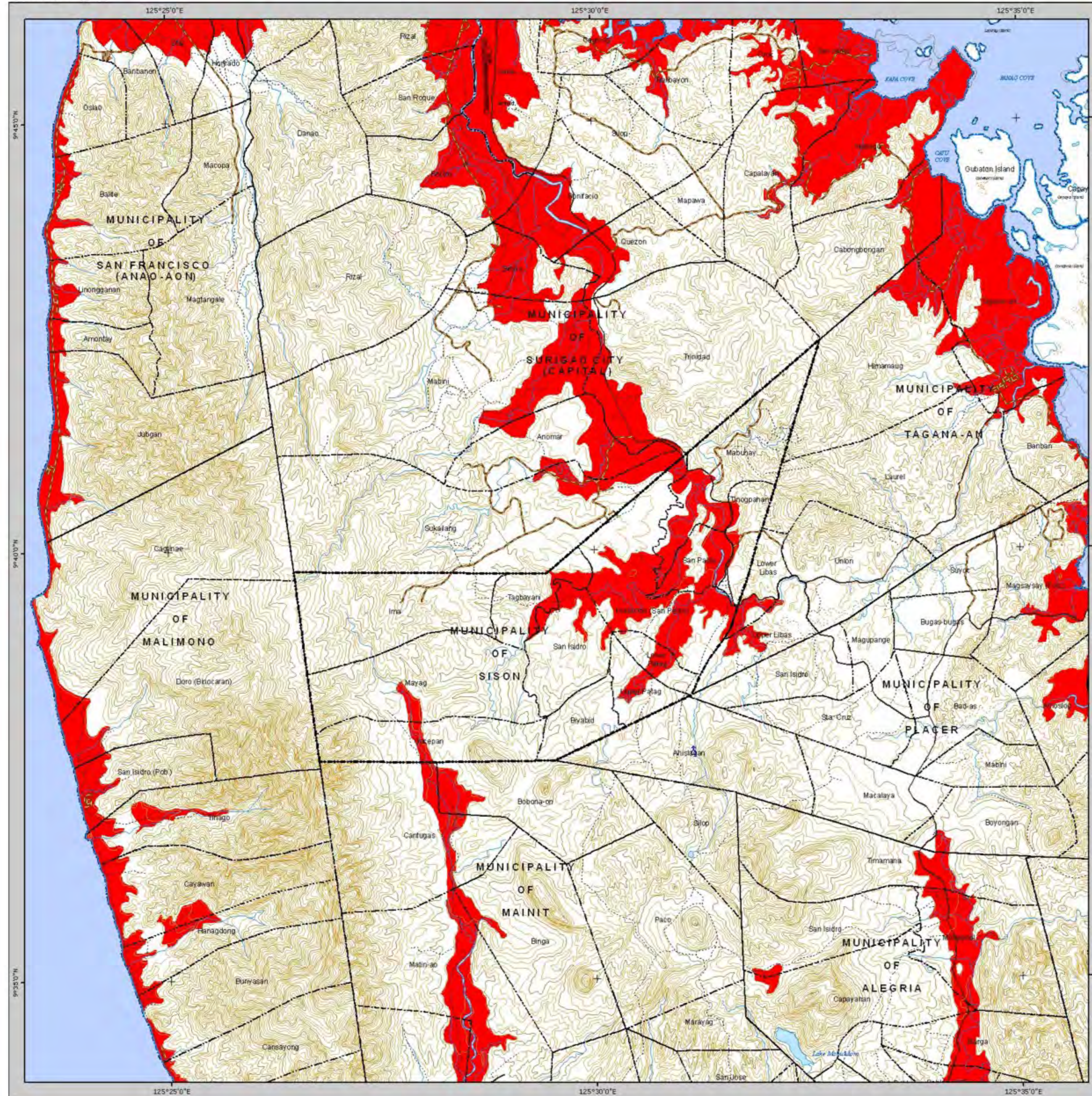
**Disclaimer:**  
 Administrative boundaries are approximate.





# FLOOD HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF SISON

Province of Surigao Del Norte  
Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- == Main Road
- == Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

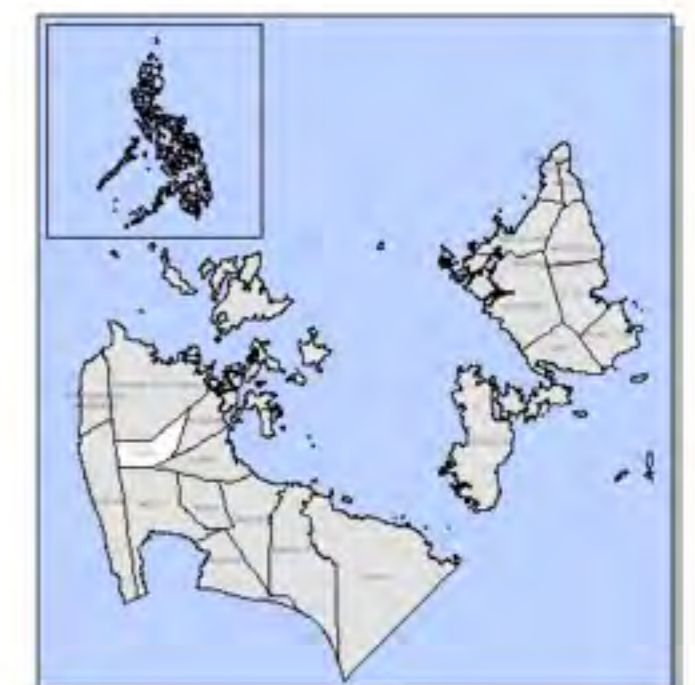
### SUSCEPTIBILITY

- Prone to Flooding
- Not Prone to Flooding
- Flashflood Exit Point

### EXPLANATION

1. Prone to Flooding - areas subjected to recurring inundation when the level of a body of water rises and overflows its natural or artificial confines due to heavy or continues.
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### LOCATION MAP



### SOURCES OF DATA

Hazard Data, DENR, Mines and Geosciences Bureau (MGB - JICA) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Sison  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

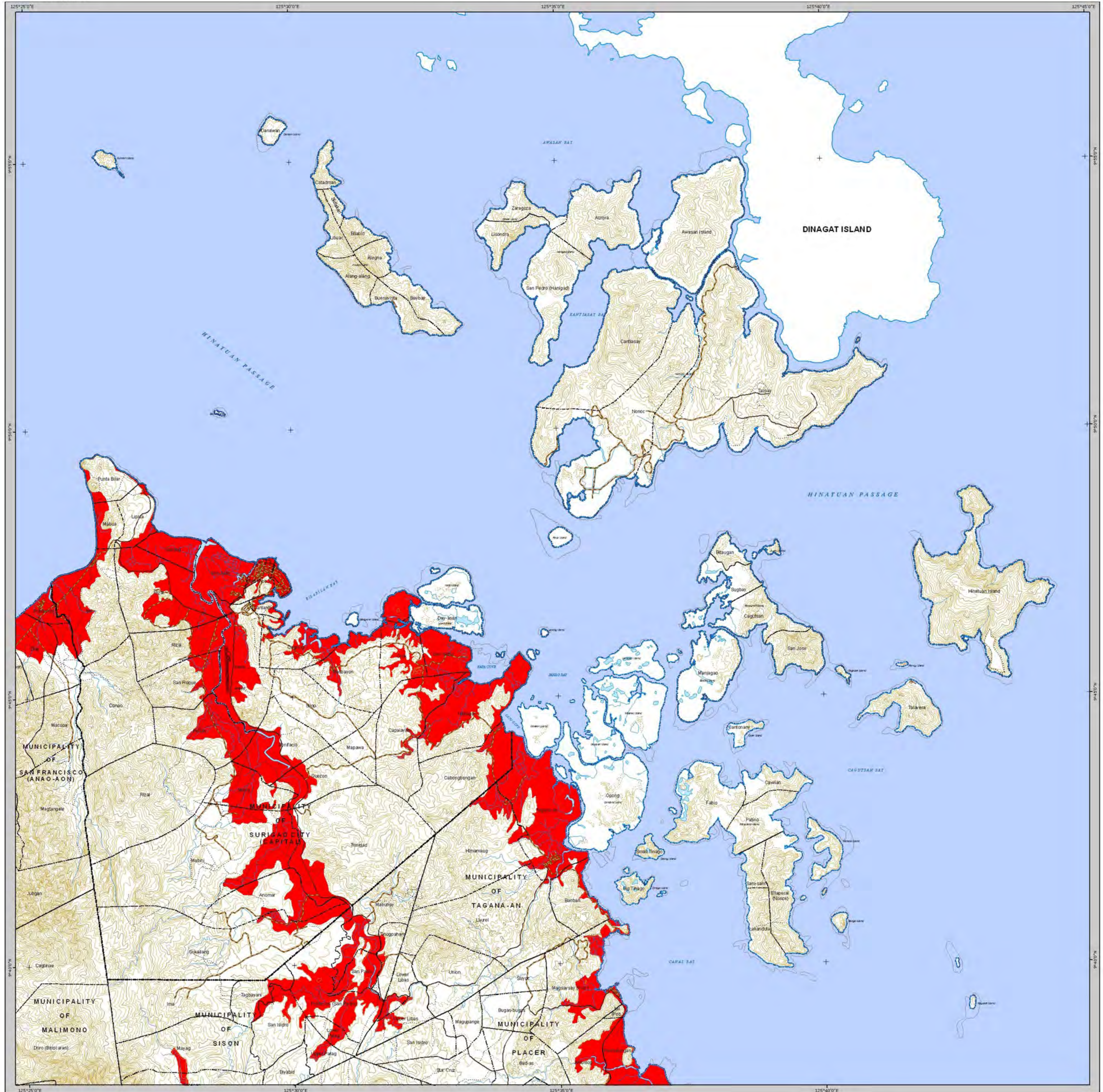
**Disclaimer:**  
Administrative boundaries are approximate.





# FLOOD HAZARD MAP

Mindanao, Philippines



### SOURCES OF DATA

Hazard Data: DENR, Mines and Geosciences Bureau (MGSB - JICA) 2007  
 Administrative boundary: Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Surigao City  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate

### LEGEND

- |                         |                     |
|-------------------------|---------------------|
| --- Provincial Boundary | — Coastline         |
| --- Municipal Boundary  | — Bridges           |
| --- Barangay Boundary   | 1176 Spot Elevation |
| — Rivers and Creeks     | — Water Body        |
| — Rivers Intermittent   |                     |
| — Canals                |                     |
| — Contour Index         |                     |
| — Contour Intermediate  |                     |
| — Contour Supplementary |                     |
| — Contour Depression    |                     |

### SUSCEPTIBILITY

- |  |
|--|
| <span style="background-color: red; color: red;">■</span> Prone to Flooding                    |
| <span style="background-color: white; border: 1px solid black;">□</span> Not Prone to Flooding |
| <span style="color: blue;">♂</span> Flashflood Exit Point                                      |

## SURIGAO CITY

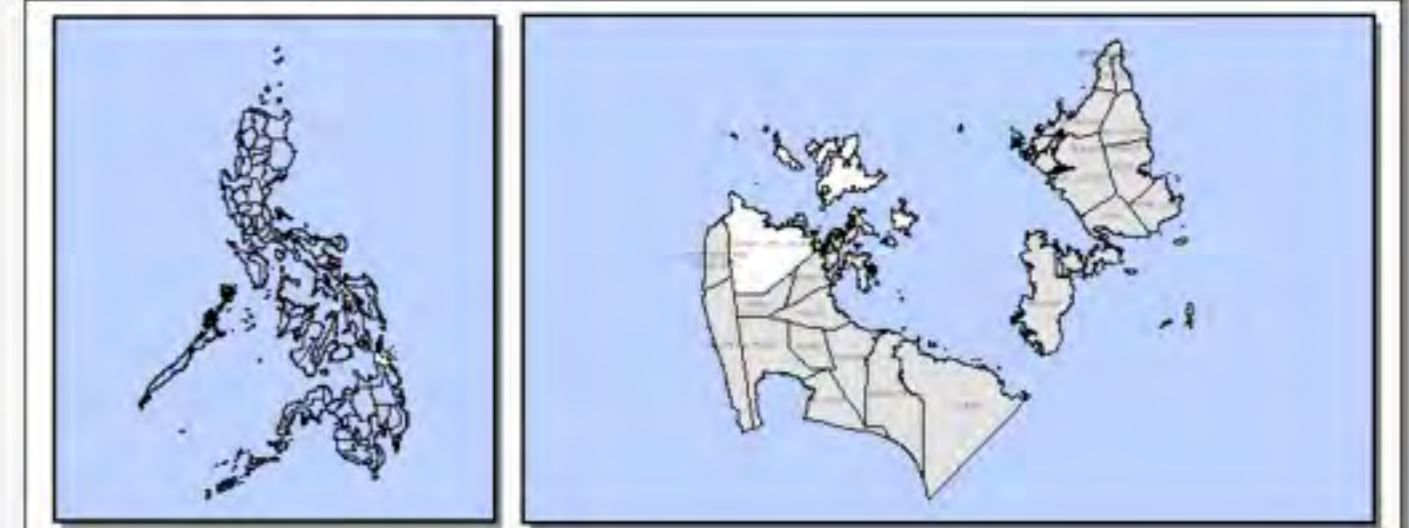
### Province of Surigao Del Norte

### Region XIII - CARAGA

Scale 1:50,000

Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LOCATION MAP



### EXPLANATION

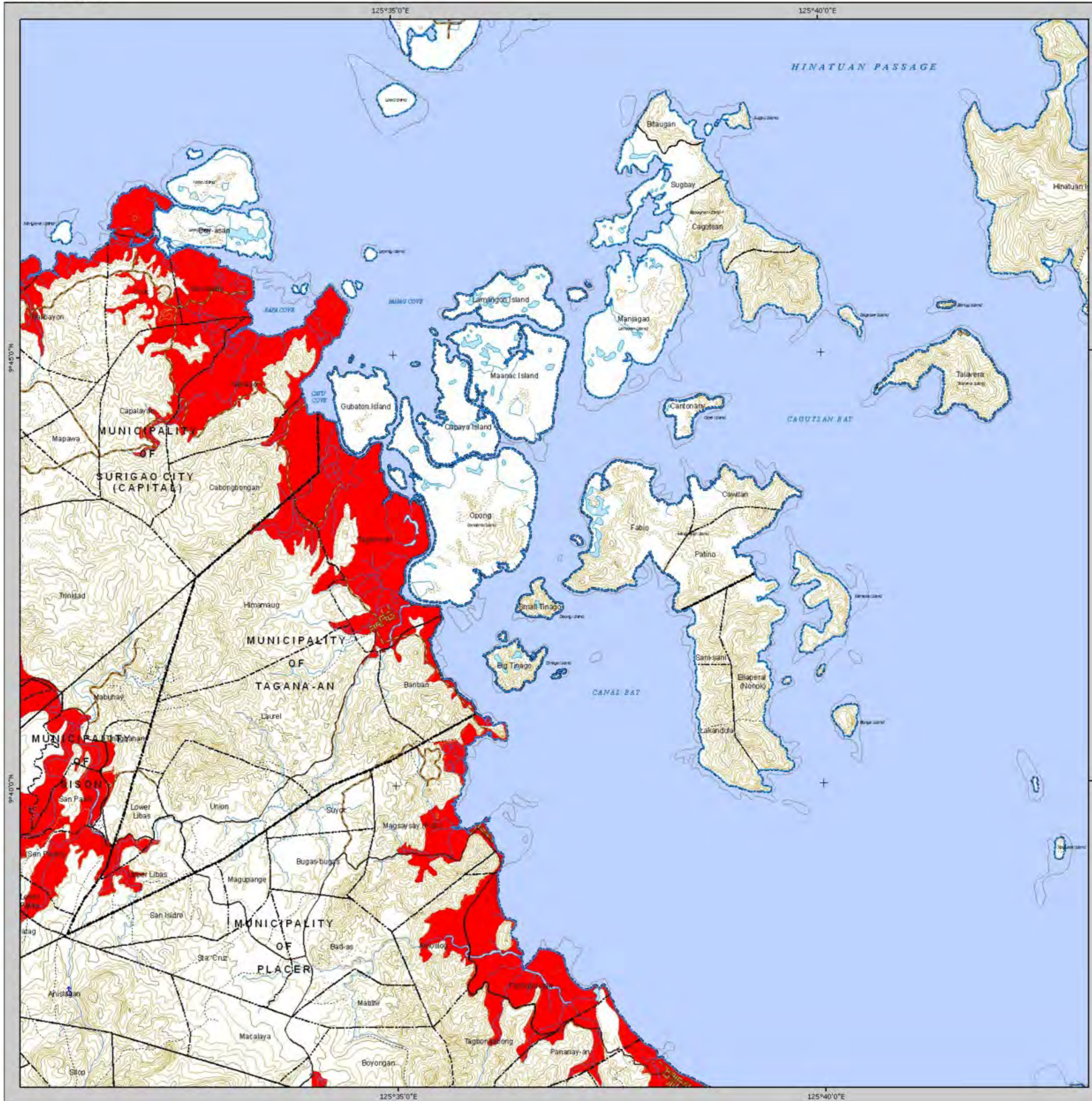
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2. Areas with moderate landslide susceptibility rating have inactive/old landslides and tension cracks which are located away from the community. These areas usually have moderate slopes.
3. Areas with low to gentle slopes and lacking tension cracks have low landslide susceptibility rating.
4. These are areas where landslide debris could accumulate.





# FLOOD HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF TAGANA-AN

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- × 1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Prone to Flooding
- Not Prone to Flooding
- ♂ Flashflood Exit Point

### EXPLANATION

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3. Flooding of short duration with relatively high peak discharge over a relatively small area is known as flashflood. Potential flashflood exit points are areas where flash flooding is expected to occur.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data, DENR, Mines and Geosciences Bureau (MGB - JICA) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Tagana-an  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

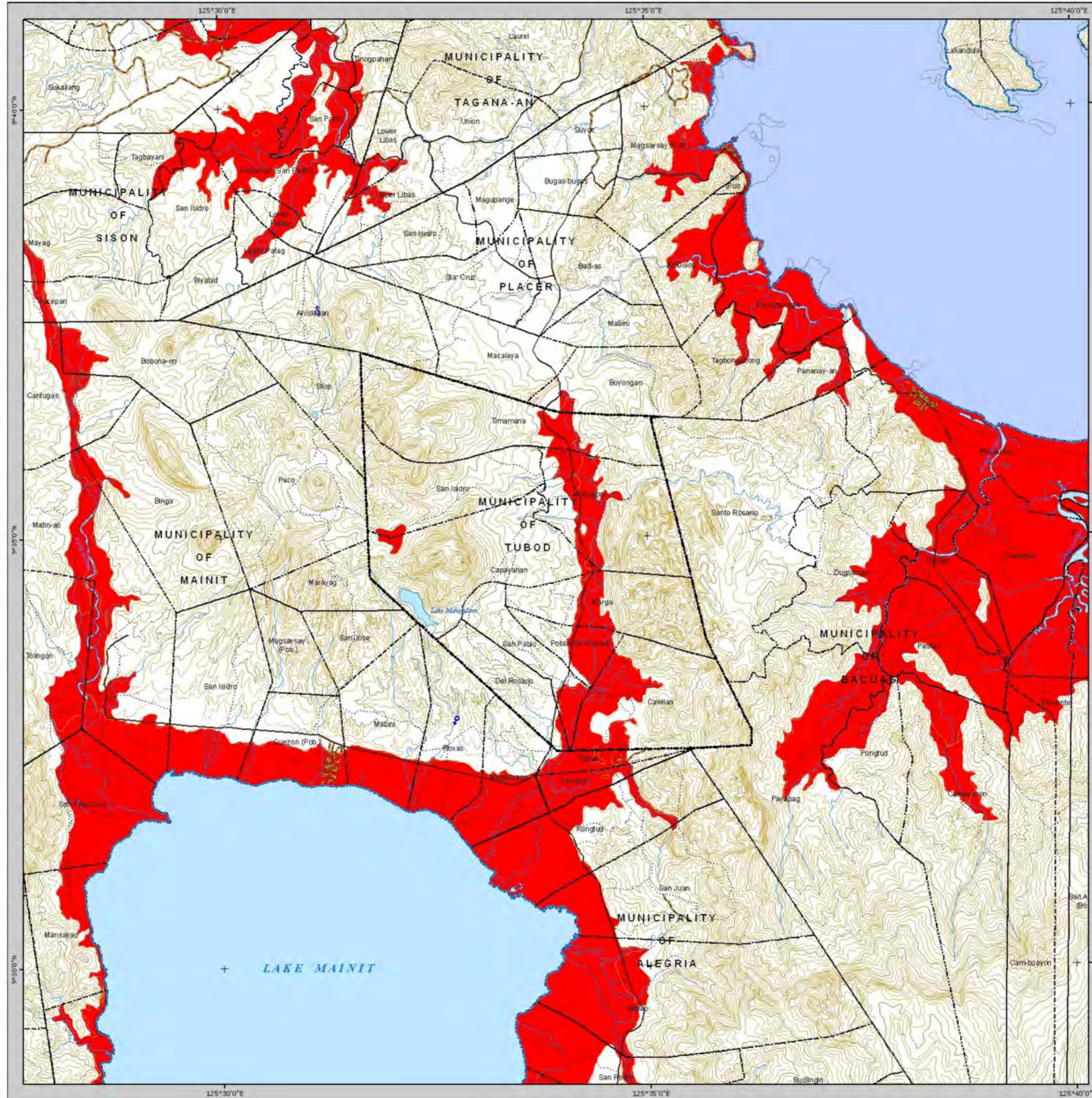
**Disclaimer:**  
 Administrative boundaries are approximate.





# FLOOD HAZARD MAP

Mindanao, Philippines

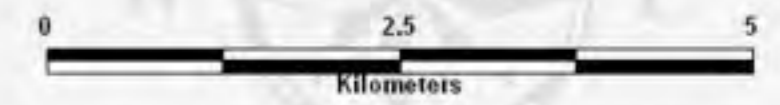


## MUNICIPALITY OF TUBOD

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- - - Municipal Boundary
- · - · - Barangay Boundary
- == Main Road
- == Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

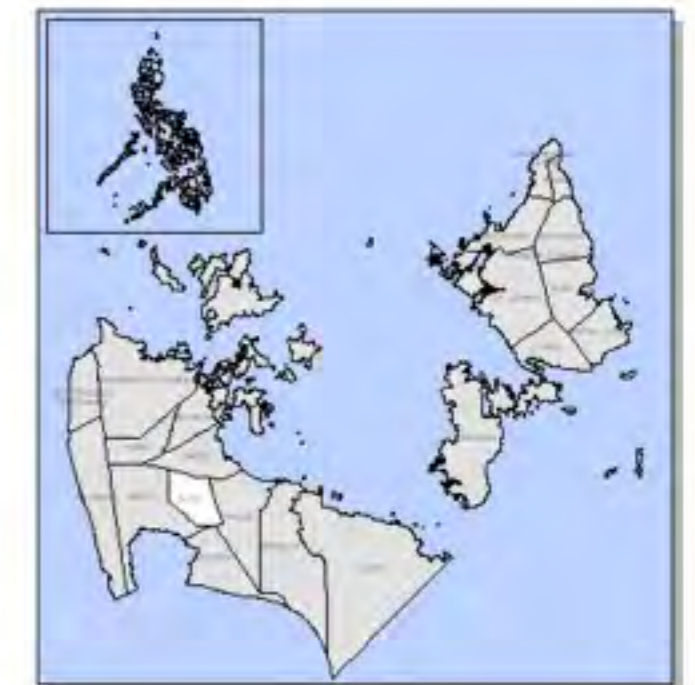
### SUSCEPTIBILITY

- Prone to Flooding
- Not Prone to Flooding
- Flashflood Exit Point

### EXPLANATION

1. Prone to Flooding - areas subjected to recurring inundation when the level of a body of water rises and overflows its natural or artificial confines due to heavy or continues.
2. Not Prone to Flooding - areas where elevation is greater than 20 meters.
3. Flooding of short duration with relatively high peak discharge over a relatively small area is known as flashflood. Potential flashflood exit points are areas where flash flooding is expected to occur.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data, DENR, Mines and Geosciences Bureau (MGB - JICA) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Tubod  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

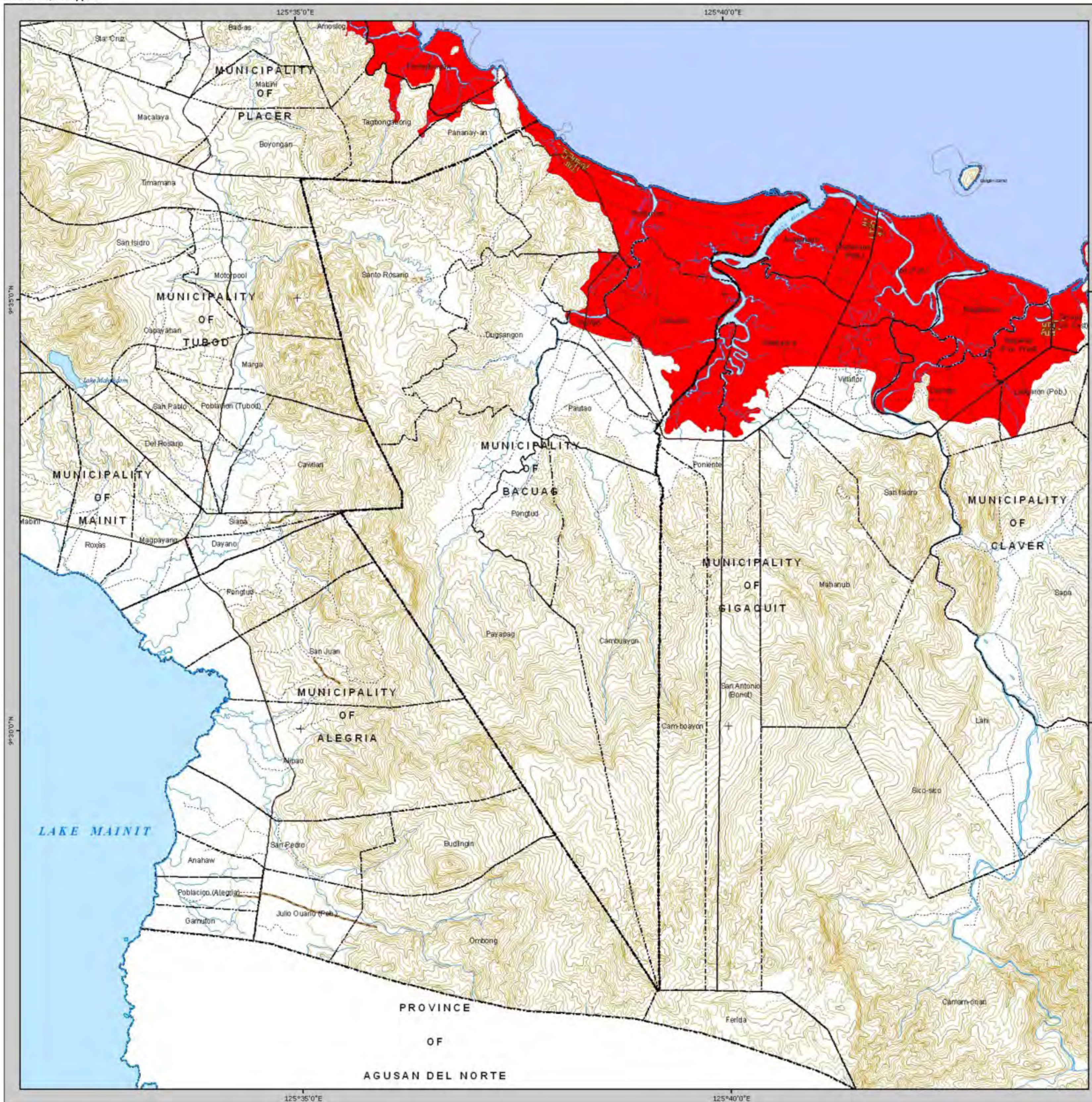
**Disclaimer:**  
 Administrative boundaries are approximate.





# TSUNAMI HAZARD MAP

Mindanao, Philippines

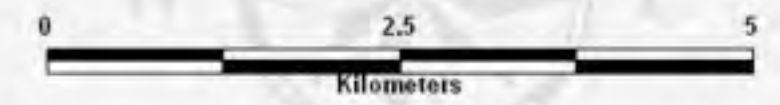


## MUNICIPALITY OF BACUAG

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Tsunami Inundation Area

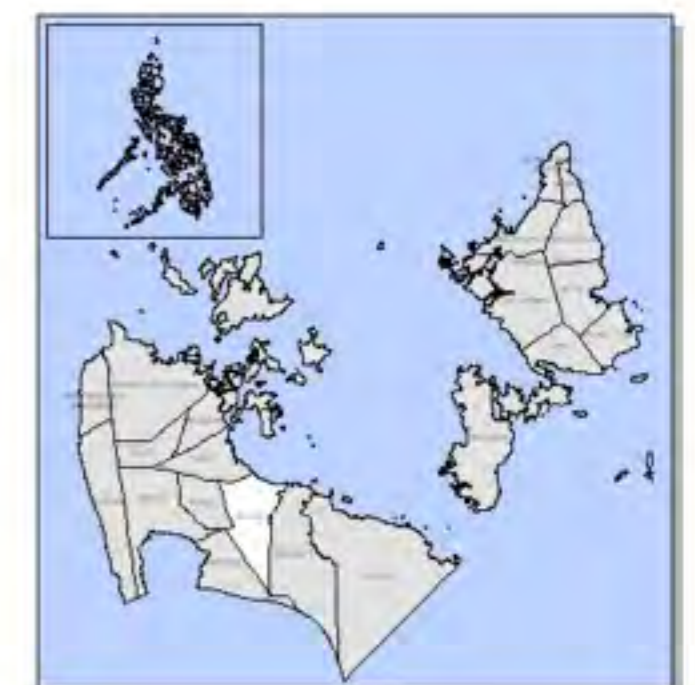
### EXPLANATION

This tsunami hazard map was generated using available tsunami programs, earthquake and tectonic data, and bathymetric maps.

Limitations of the map:

1. The extent of tsunami inundation is based on current physical conditions of the study area.
2. Does not reflect the hazard that could be generated by far-field tsunami
3. Earthquake-induced submarine landslides that could also generate tsunami are not covered by this map.
4. Significant erosion or deposition along the shore in the future could affect the level of tsunami hazard and may need hazard reassessment.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Bacuag  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

### Disclaimer:

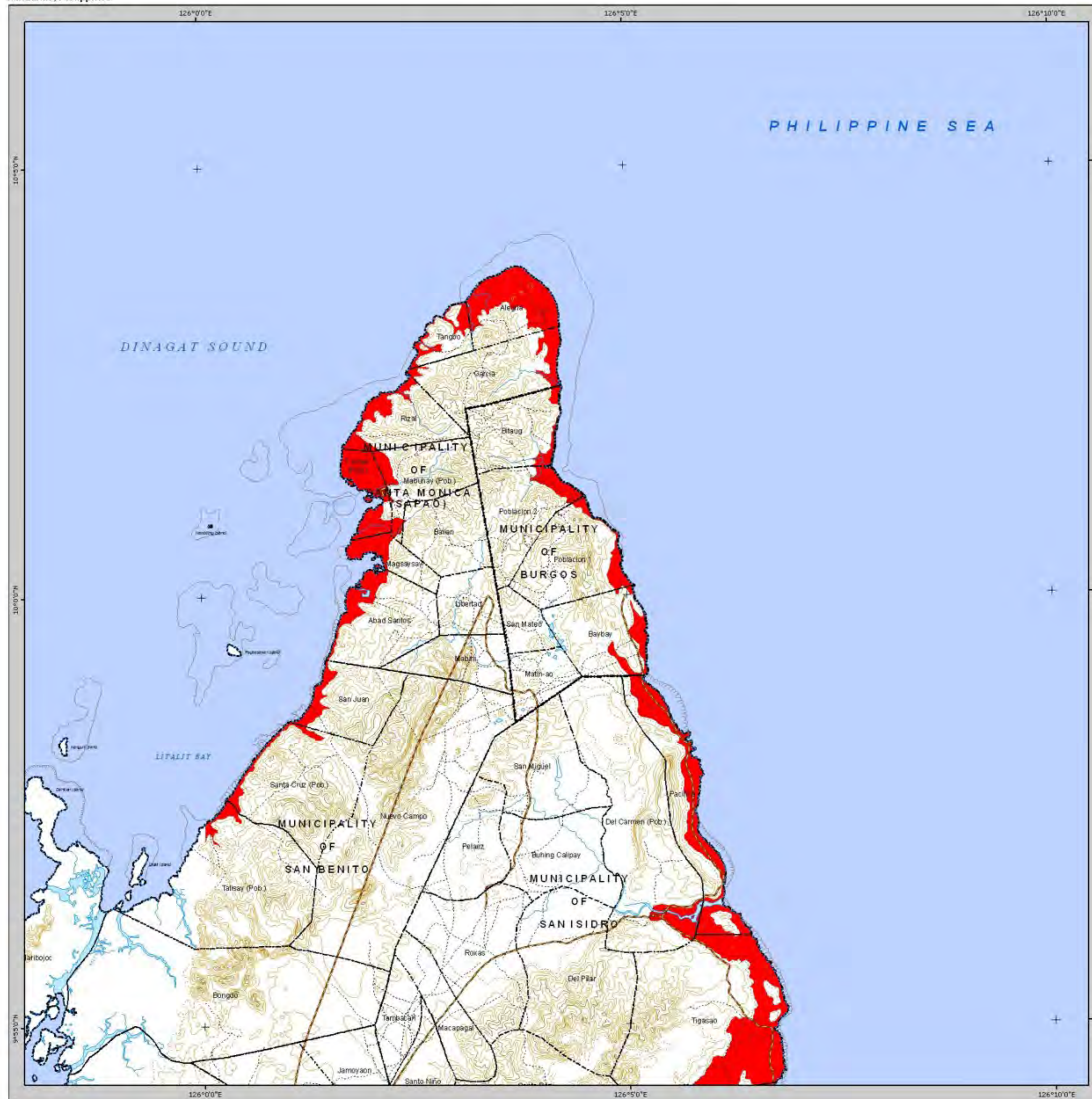
Administrative boundaries are approximate.





# TSUNAMI HAZARD MAP

Mindanao, Philippines

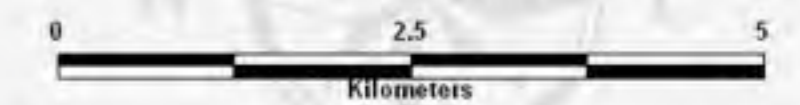


## MUNICIPALITY OF BURGOS

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Tsunami Inundation Area

### EXPLANATION

This tsunami hazard map was generated using available tsunami programs, earthquake and tectonic data, and bathymetric maps.

Limitations of the map:

1. The extent of tsunami inundation is based on current physical conditions of the study area.
2. Does not reflect the hazard that could be generated by far-field tsunami
3. Earthquake-induced submarine landslides that could also generate tsunami are not covered by this map.
4. Significant erosion or deposition along the shore in the future could affect the level of tsunami hazard and may need hazard reassessment.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Burgos  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

### Disclaimer:

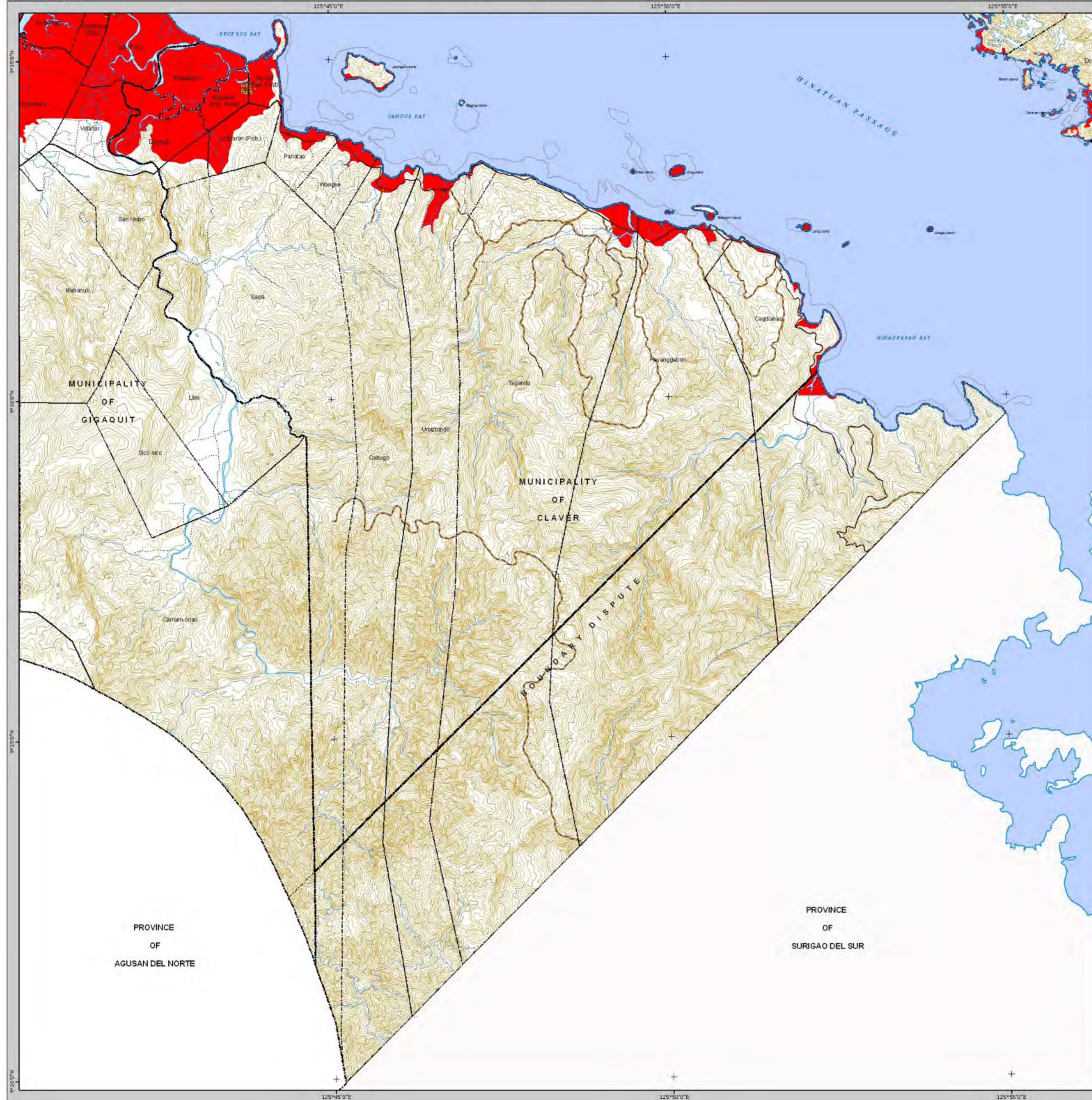
Administrative boundaries are approximate.





# TSUNAMI HAZARD MAP

Mindanao, Philippines

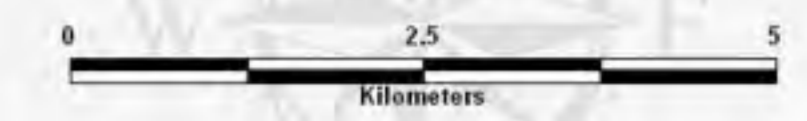


## MUNICIPALITY OF CLAVER

Province of Surigao Del Norte

Region XIII-CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- × 1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Tsunami Inundation Area

### EXPLANATION

This tsunami hazard map was generated using available tsunami programs, earthquake and tectonic data, and bathymetric maps.

Limitations of the map:

- The extent of tsunami inundation is based on current physical conditions of the study area.
- Does not reflect the hazard that could be generated by far-field tsunami
- Earthquake-induced submarine landslides that could also generate tsunami are not covered by this map.
- Significant erosion or deposition along the shore in the future could affect the level of tsunami hazard and may need hazard reassessment.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007

Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Claver

Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate





# TSUNAMI HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF DAPA

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- - - Municipal Boundary
- · - Barangay Boundary
- Main Road
- Secondary Road
- Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Tsunami Inundation Area

### EXPLANATION

This tsunami hazard map was generated using available tsunami programs, earthquake and tectonic data, and bathymetric maps.

Limitations of the map:

1. The extent of tsunami inundation is based on current physical conditions of the study area.
2. Does not reflect the hazard that could be generated by far-field tsunamis
3. Earthquake-induced submarine landslides that could also generate tsunamis are not covered by this map.
4. Significant erosion or deposition along the shore in the future could affect the level of tsunami hazard and may need hazard reassessment.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Dapa  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate.





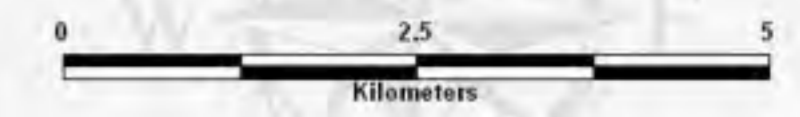
# TSUNAMI HAZARD MAP

## MUNICIPALITY OF DEL CARMEN

Province of Surigao Del Norte

Region XIII-CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Tsunami Inundation Area

### EXPLANATION

This tsunami hazard map was generated using available tsunami programs, earthquake and tectonic data, and bathymetric maps.

Limitations of the map:

- The extent of tsunami inundation is based on current physical conditions of the study area.
- Does not reflect the hazard that could be generated by far-field tsunami
- Earthquake-induced submarine landslides that could also generate tsunami are not covered by this map.
- Significant erosion or deposition along the shore in the future could affect the level of tsunami hazard and may need hazard reassessment.

### LOCATION MAP

### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007

Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Del Carmen

Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed 1 - AMS, ED 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate.





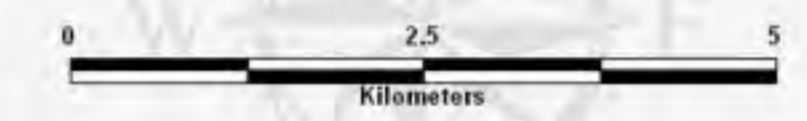
# TSUNAMI HAZARD MAP



## MUNICIPALITY OF GENERAL LUNA

Province of Surigao Del Norte  
Region XIII-CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Tsunami Inundation Area

### EXPLANATION

This tsunami hazard map was generated using available tsunami programs, earthquake and tectonic data, and bathymetric maps.

Limitations of the map:

1. The extent of tsunami inundation is based on current physical conditions of the study area.
2. Does not reflect the hazard that could be generated by far-field tsunami
3. Earthquake-induced submarine landslides that could also generate tsunami are not covered by this map.
4. Significant erosion or deposition along the shore in the future could affect the level of tsunami hazard and may need hazard reassessment.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Gen. Luna  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

### Disclaimer:

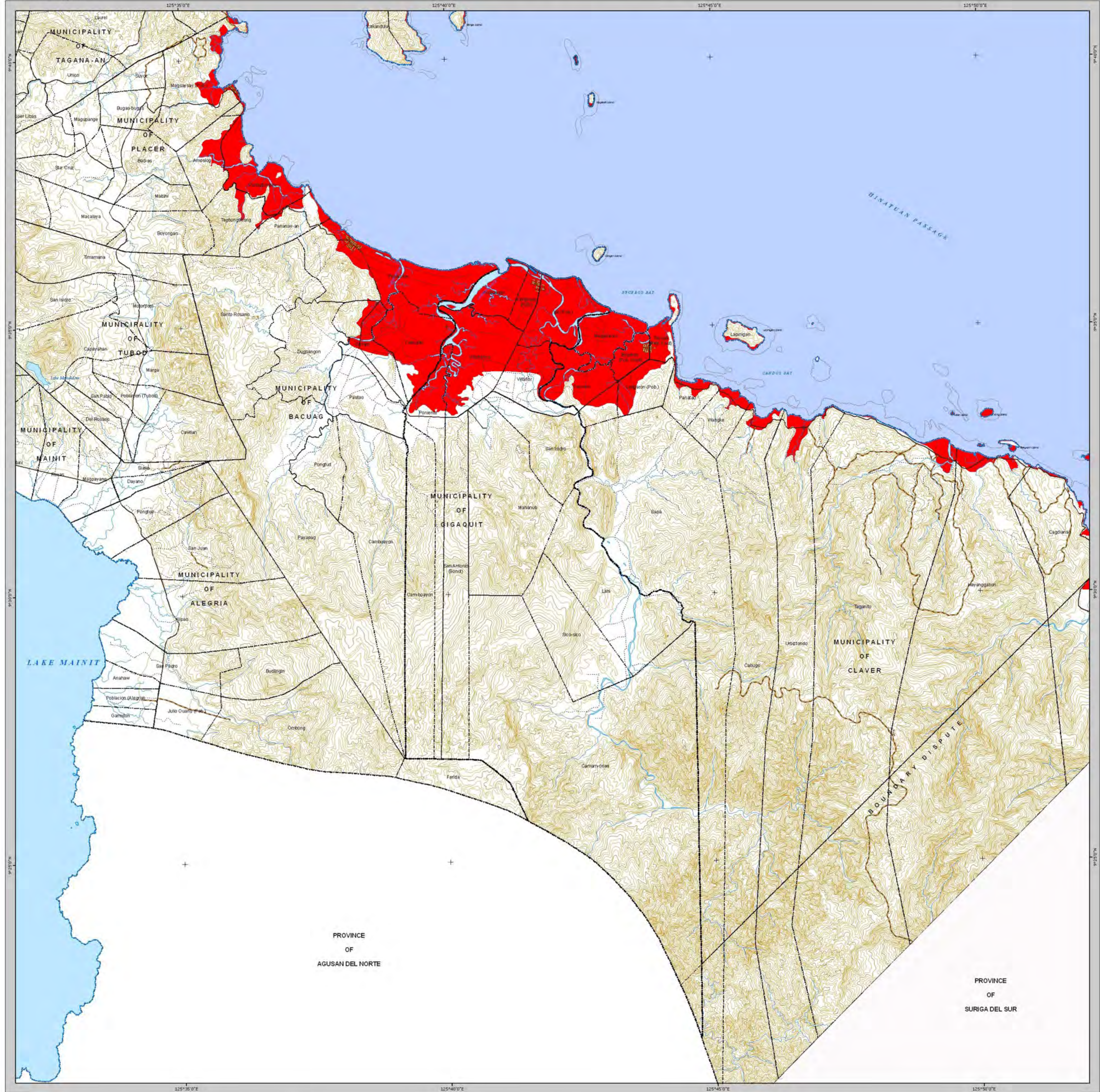
Administrative boundaries are approximate





# TSUNAMI HAZARD MAP

Mindanao, Philippines



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOSTI) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Gigaquit  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate

### LEGEND

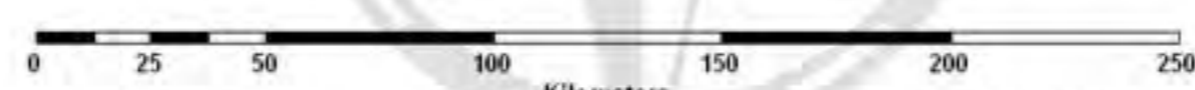
--- Provincial Boundary	— Coastline
--- Municipal Boundary	— Bridges
--- Barangay Boundary	1176 Spot Elevation
— Rivers and Creeks	Water Body
— Rivers Intermittent	
— Canals	
— Contour Index	
— Contour Intermediate	
— Contour Supplementary	
— Contour Depression	

### SUSCEPTIBILITY

■ Tsunami Inundation Area

## MUNICIPALITY OF GIGAQUIT Province of Surigao del Norte Region XIII-CARAGA

Scale 1:50,000



Spheroid: ..... Clark 1866  
 Projection: ..... Universal Transverse Mercator (UTM)  
 Horizontal Datum: ..... Luzon 1911  
 Vertical Datum: ..... Mean Sea Level

### LOCATION MAP



### EXPLANATION

This tsunami hazard map was generated using available tsunami programs, earthquake and tectonic data, and bathymetric maps.

#### Limitations of the map:

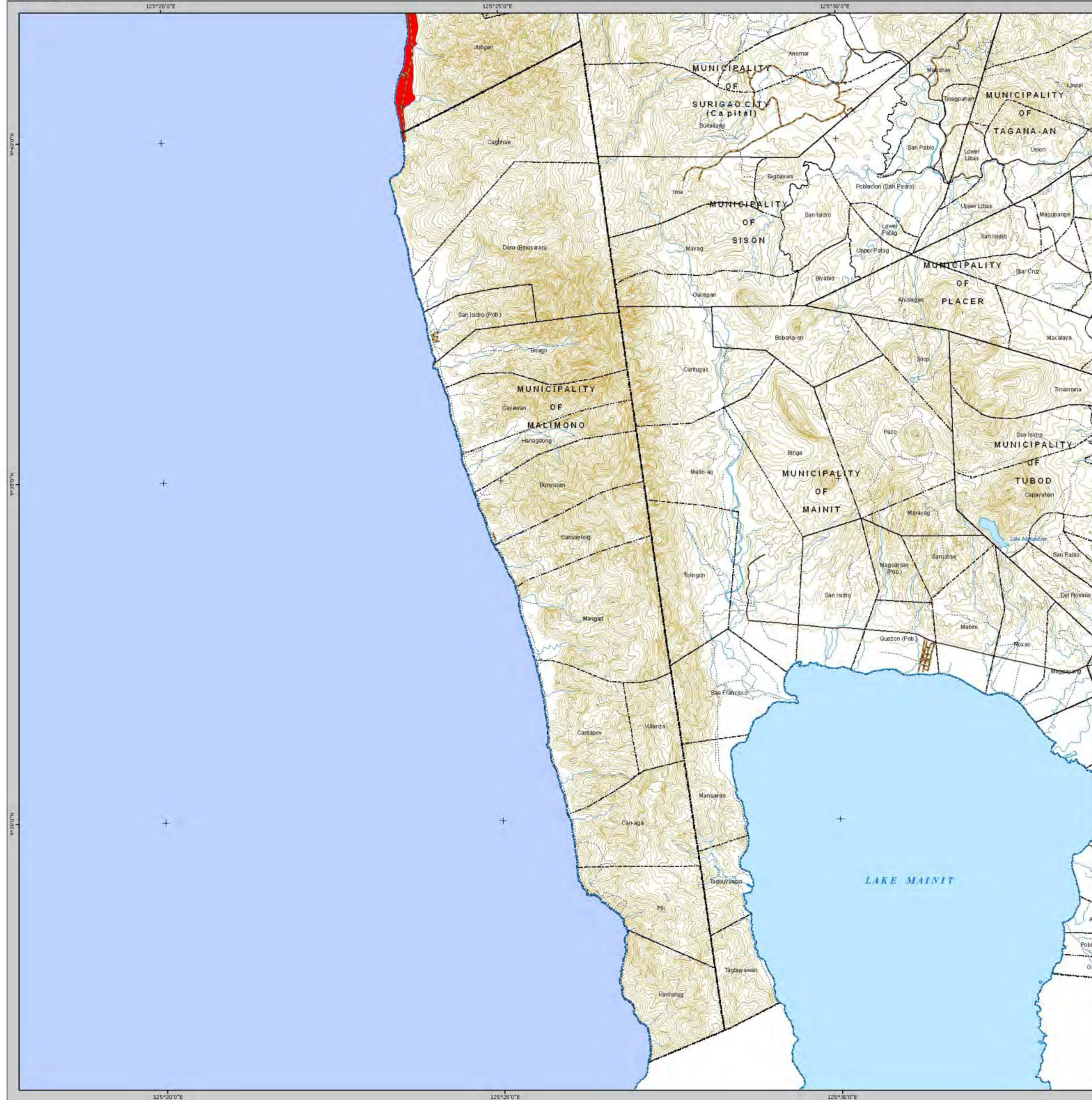
1. The extent of tsunami inundation is based on current physical conditions of the study area.
2. Does not reflect the hazard that could be generated by far-field tsunami
3. Earthquake-induced submarine landslides that could also generate tsunami are not covered by this map.
4. Significant erosion or deposition along the shore in the future could affect the level of tsunami hazard and may need hazard reassessment.





# TSUNAMI HAZARD MAP

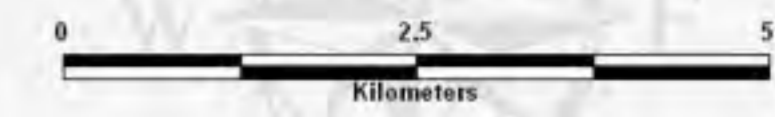
Mindanao, Philippines



## MUNICIPALITY OF MALIMONO

Province of Surigao Del Norte  
Region XIII-CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

LEGEND	
	Provincial Boundary
	Municipal Boundary
	Barangay Boundary
	Main Road
	Secondary Road
	Trails
	Rivers and Creeks
	Rivers Intermittent
	Contour Index
	Contour Intermediate
	Contour Supplementary
	Contour Depression
	Coastline
	Corals
	Bridges
	Spot Elevation
	Water Body

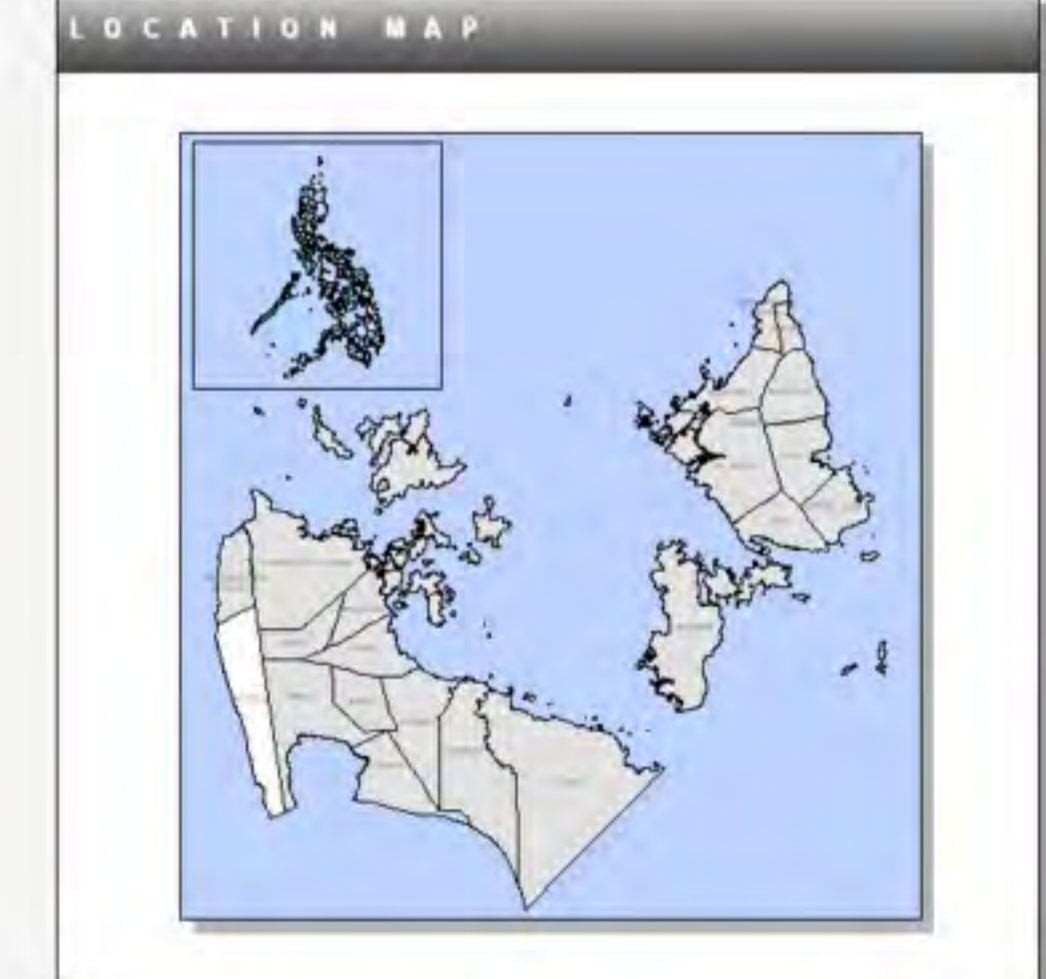
SUSCEPTIBILITY	
	Tsunami Inundation Area

**EXPLANATION**

This tsunami hazard map was generated using available tsunami programs, earthquake and tectonic data, and bathymetric maps.

Limitations of the map:

1. The extent of tsunami inundation is based on current physical conditions of the study area.
2. Does not reflect the hazard that could be generated by far-field tsunami
3. Earthquake-induced submarine landslides that could also generate tsunami are not covered by this map.
4. Significant erosion or deposition along the shore in the future could affect the level of tsunami hazard and may need hazard reassessment.



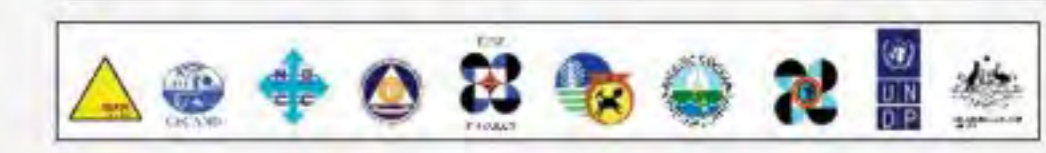
**SOURCES OF DATA**

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007

Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Malimono

Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

**Disclaimer:**  
Administrative boundaries are approximate





# TSUNAMI HAZARD MAP

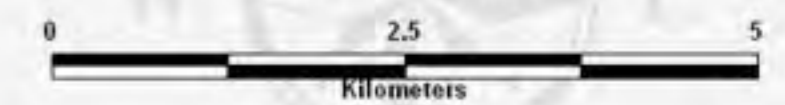
Mindanao, Philippines



## MUNICIPALITY OF PILAR

Province of Surigao Del Norte  
Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- × 1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Tsunami Inundation Area

### EXPLANATION

This tsunami hazard map was generated using available tsunami programs, earthquake and tectonic data, and bathymetric maps.

Limitations of the map:

1. The extent of tsunami inundation is based on current physical conditions of the study area.
2. Does not reflect the hazard that could be generated by far-field tsunami
3. Earthquake-induced submarine landslides that could also generate tsunami are not covered by this map.
4. Significant erosion or deposition along the shore in the future could affect the level of tsunami hazard and may need hazard reassessment.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Pilar  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

**Disclaimer:**  
Administrative boundaries are approximate.





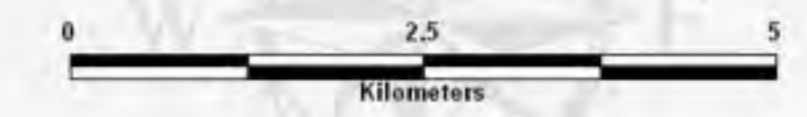
# TSUNAMI HAZARD MAP

## MUNICIPALITY OF PLACER

Province of Surigao Del Norte

Region XIII-CARAGA

Scale 1:50,000

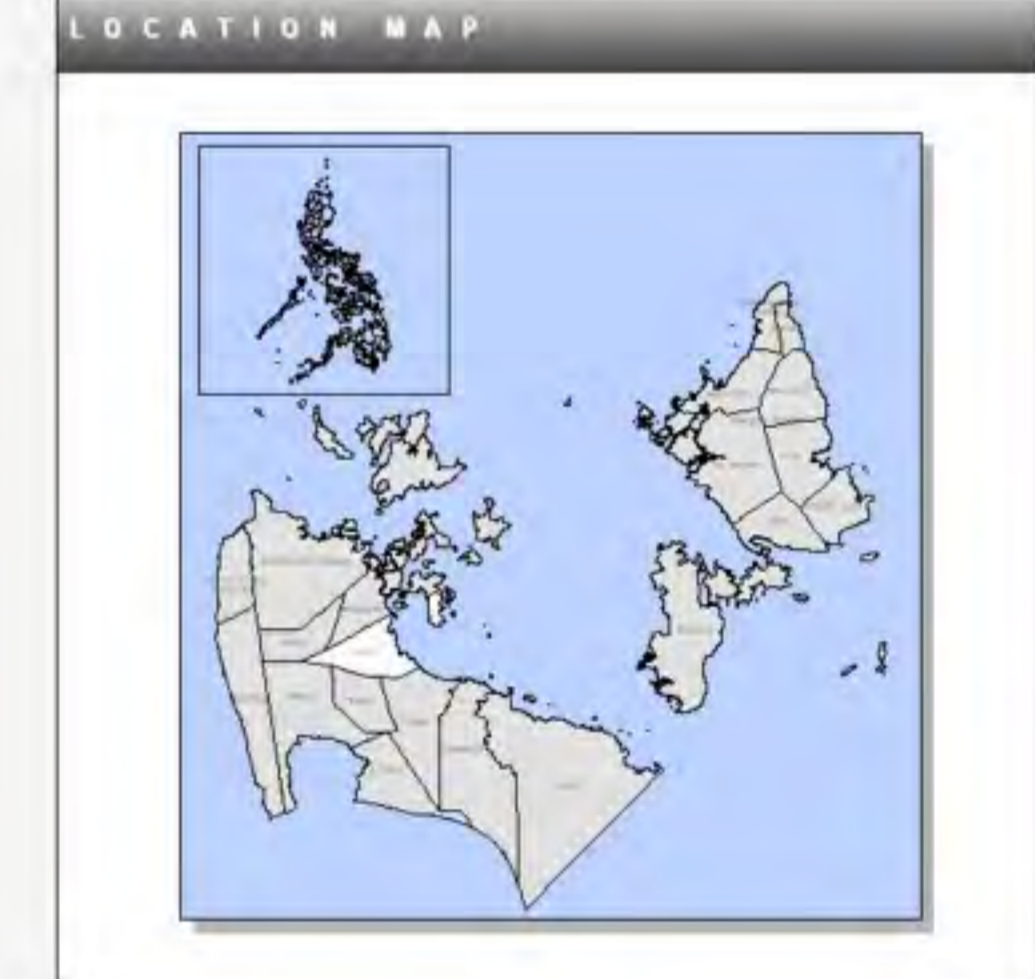


Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

LEGEND	
	Provincial Boundary
	Municipal Boundary
	Barangay Boundary
	Main Road
	Secondary Road
	Trails
	Rivers and Creeks
	Rivers Intermittent
	Contour Index
	Contour Intermediate
	Contour Supplementary
	Contour Depression
	Coastline
	Corals
	Bridges
	Spot Elevation
	Water Body

SUSCEPTIBILITY	
	Tsunami Inundation Area

**EXPLANATION**  
 This tsunami hazard map was generated using available tsunami programs, earthquake and tectonic data, and bathymetric maps.  
 Limitations of the map:  
 1. The extent of tsunami inundation is based on current physical conditions of the study area.  
 2. Does not reflect the hazard that could be generated by far-field tsunami  
 3. Earthquake-induced submarine landslides that could also generate tsunami are not covered by this map.  
 4. Significant erosion or deposition along the shore in the future could affect the level of tsunami hazard and may need hazard reassessment.

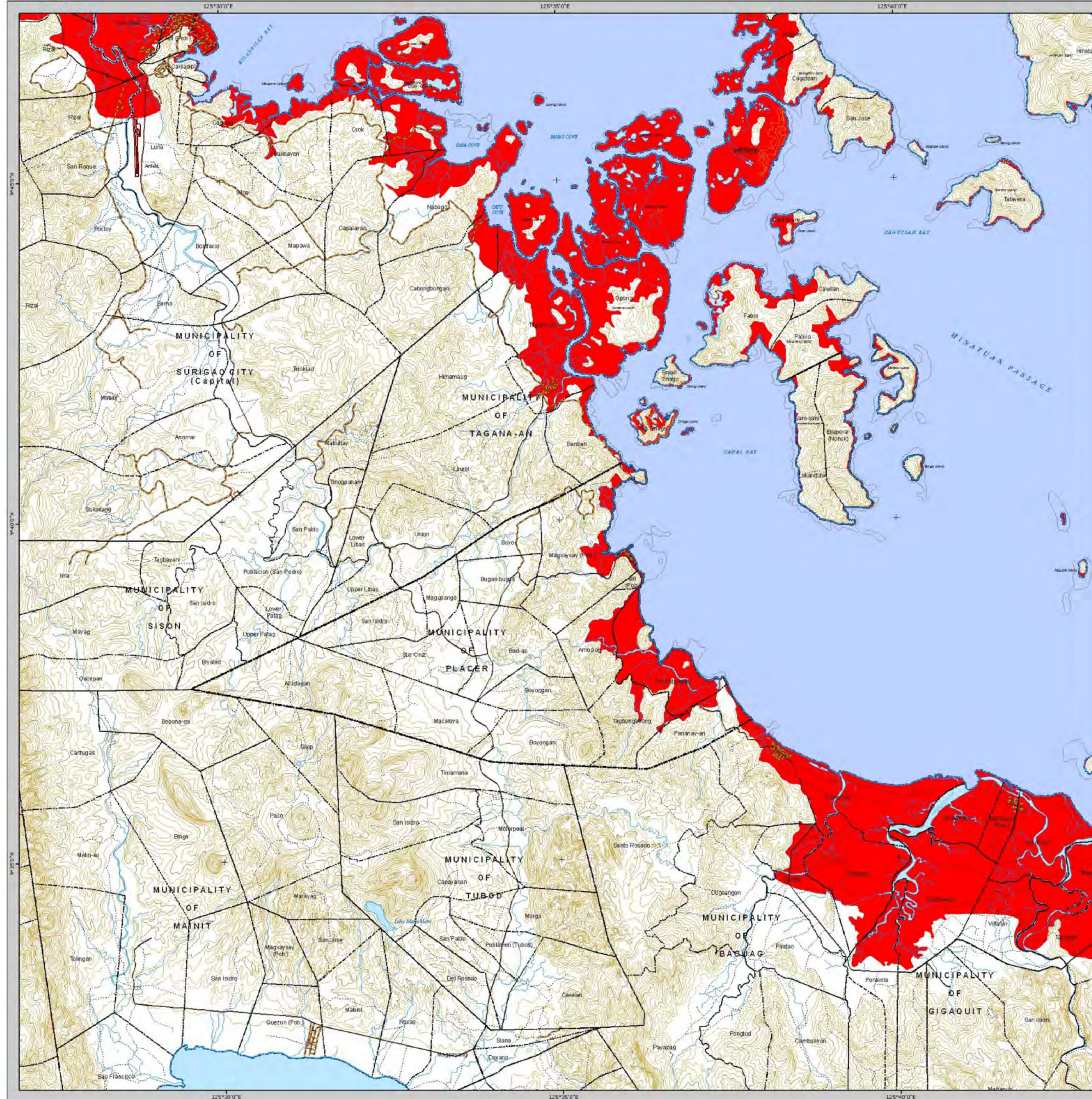


**SOURCES OF DATA**  
 Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Placer  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate

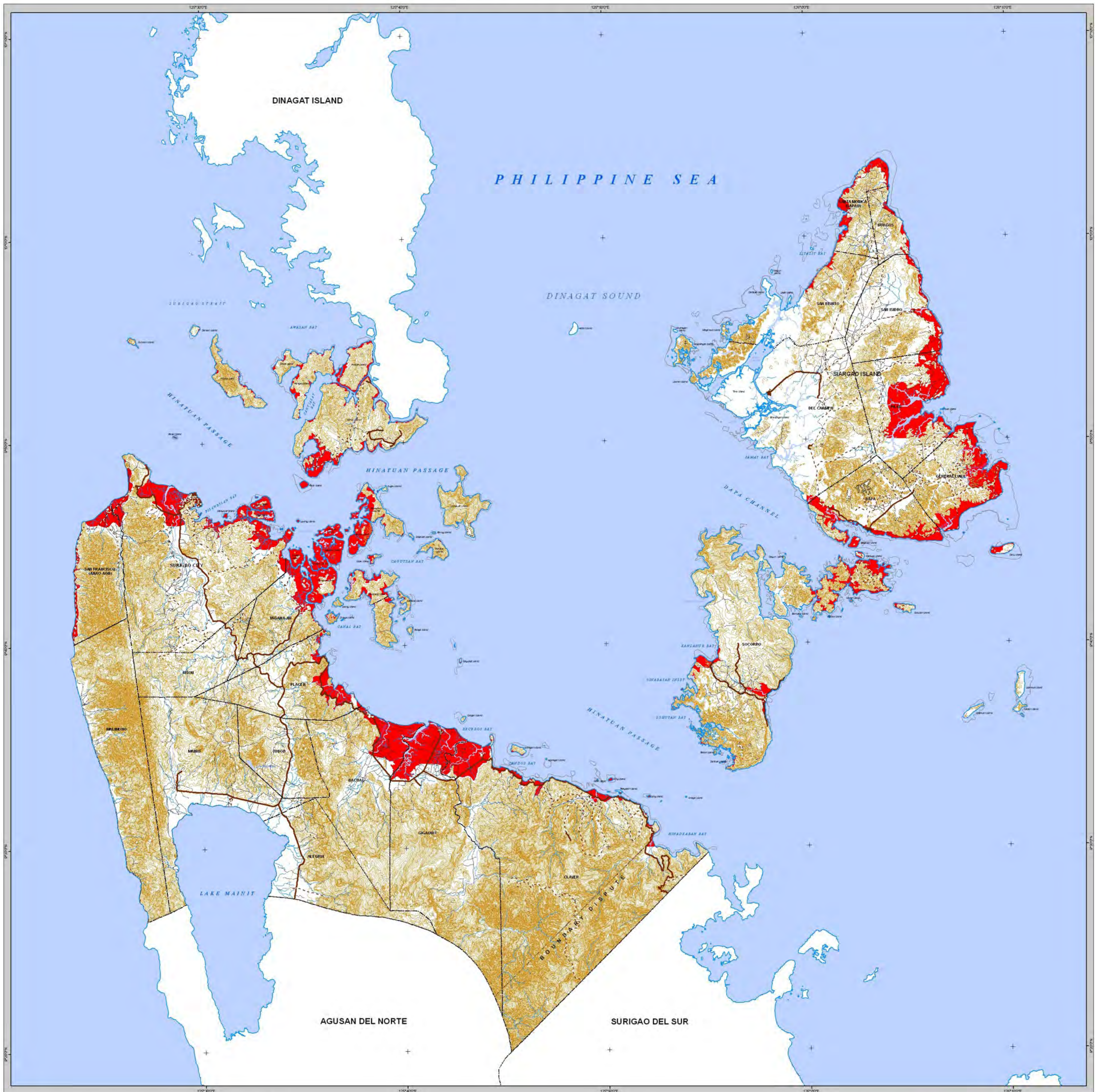


Mindanao, Philippines





# TSUNAMI HAZARD MAP



**SOURCES OF DATA**

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP)  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
 Ed. 1 - AMS, Ed. 2 - DMA, 1954 - 1995

**Disclaimer:**  
 Administrative boundaries are approximate.

**LEGEND**

Provincial Boundary	Coastline
Municipal Boundary	Rivers and Creeks
Main Road	Rivers Intermittent
Secondary Road	Coral
Trails	1176 Spot Elevation
Bridges	Fishpen
Contour Index	Water Body
Contour Intermediate	
Contour Supplementary	
Contour Depression	

**SUSCEPTIBILITY**

Tsunami Inundation Area

**PROVINCE OF SURIGAO DEL NORTE**  
**REGION XIII - CARAGA**

SCALE 1:120,000

10,000 5,000 0 10,000  
 Meters

Spheroid ..... Clark 1866  
 Projection ..... Universal Transverse Mercator (UTM)  
 Horizontal Datum ..... Luzon 1911  
 Vertical Datum ..... Mean Sea Level

**LOCATION MAP**

**EXPLANATION**

This tsunami hazard map was generated using available tsunami programs, earthquake and tectonic data, and topographic and bathymetric maps.

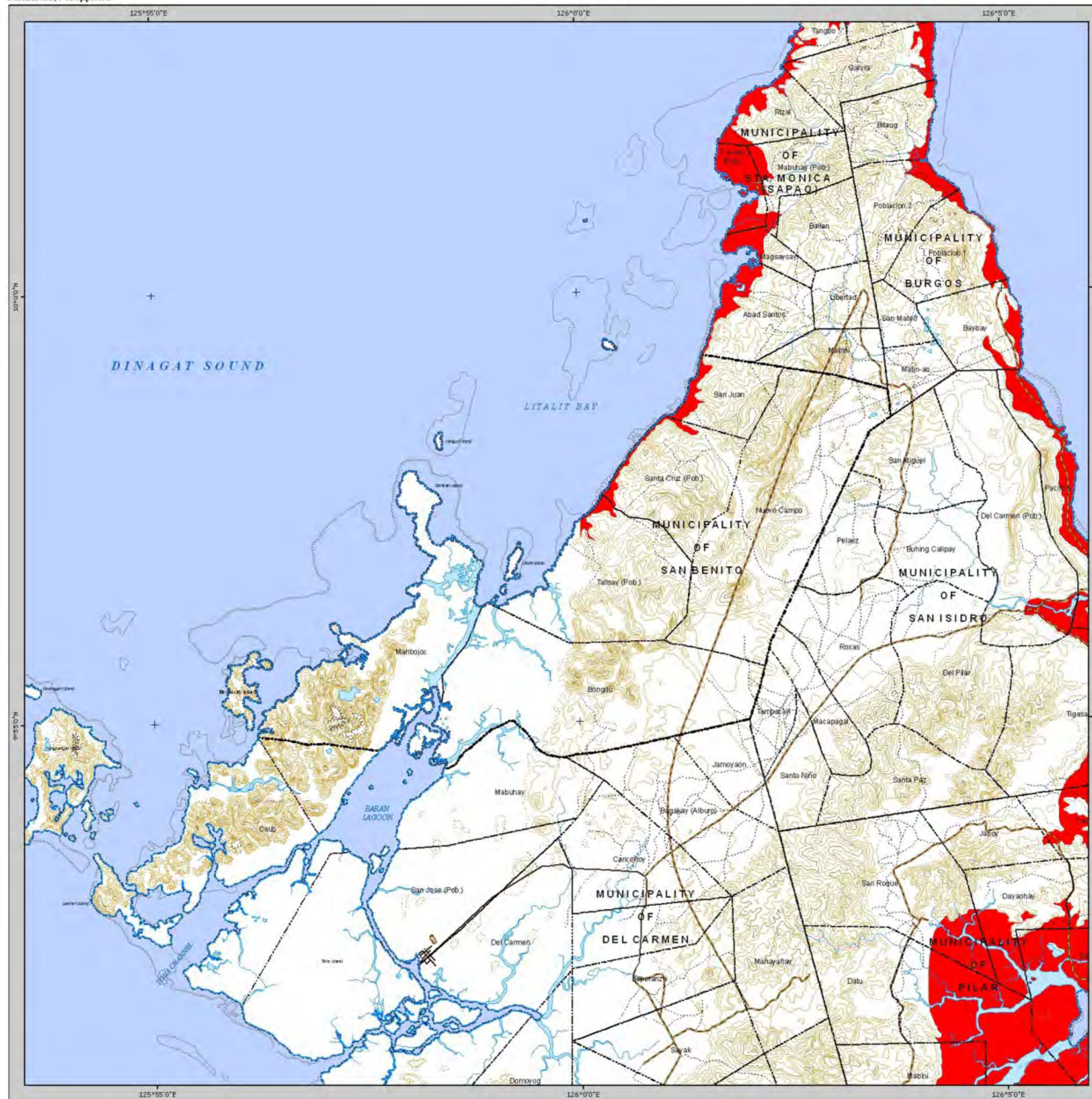
Limitations of the map:

1. The extent of tsunami inundation is based on current physical conditions of the study area
2. Does not reflect the hazard that could be generated by far-field tsunami.
3. Earthquake-induced submarine landslides that could also generate tsunami are not covered by this map.
4. Significant erosion or deposition along the shore in the future could affect the level of tsunami hazard and may need hazard reassessment.



# TSUNAMI HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF SAN BENITO

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- × 1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Tsunami Inundation Area

### EXPLANATION

This tsunami hazard map was generated using available tsunami programs, earthquake and tectonic data, and bathymetric maps.

Limitations of the map:

1. The extent of tsunami inundation is based on current physical conditions of the study area.
2. Does not reflect the hazard that could be generated by far-field tsunami
3. Earthquake-induced submarine landslides that could also generate tsunami are not covered by this map.
4. Significant erosion or deposition along the shore in the future could affect the level of tsunami hazard and may need hazard reassessment.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of San Benito  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

### Disclaimer:

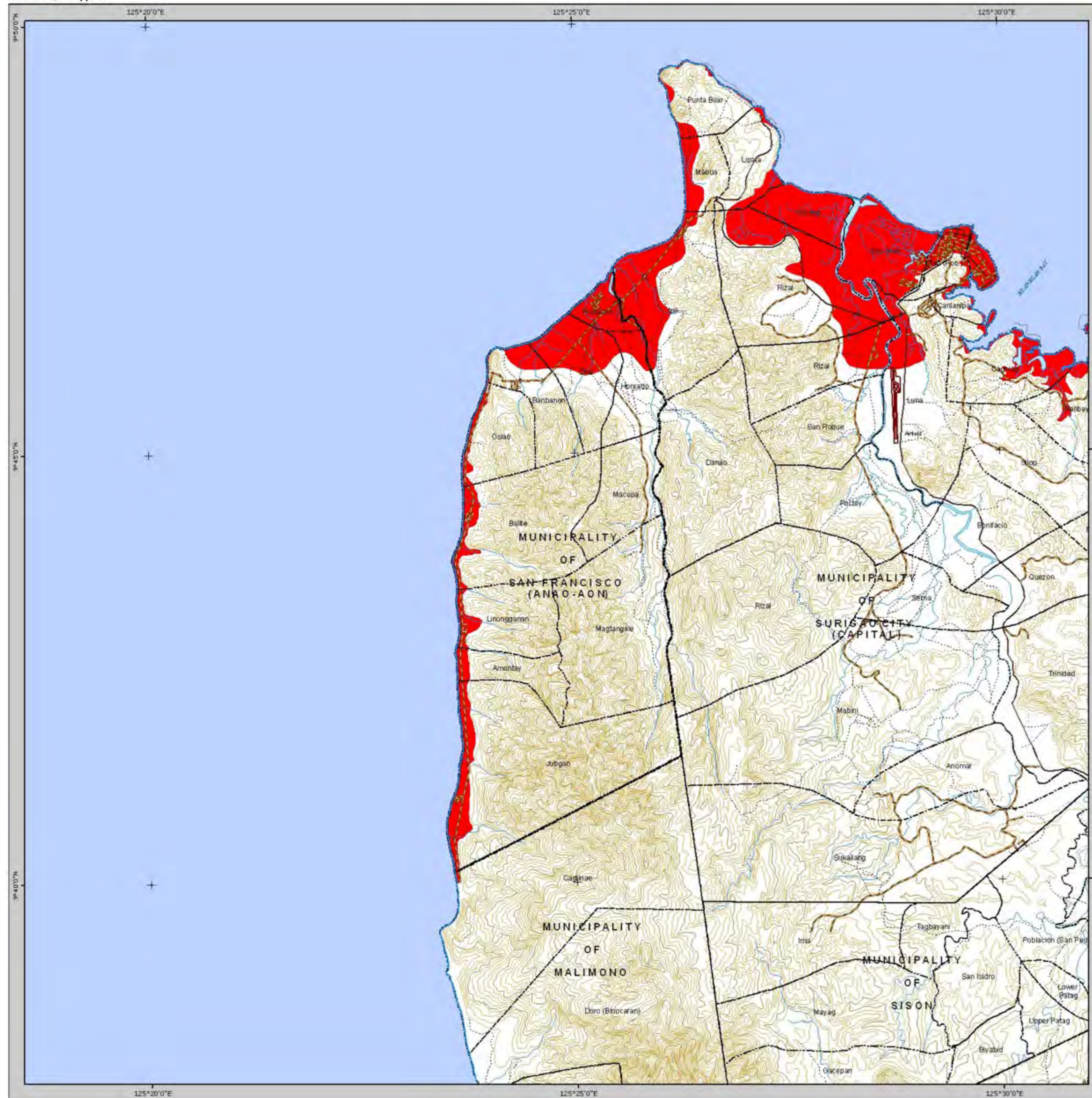
Administrative boundaries are approximate.





# TSUNAMI HAZARD MAP

Mindanao, Philippines

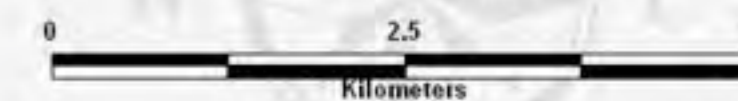


## MUNICIPALITY OF SAN FRANCISCO

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Tsunami Inundation Area

### EXPLANATION

This tsunami hazard map was generated using available tsunami programs, earthquake and tectonic data, and bathymetric maps.

Limitations of the map:

1. The extent of tsunami inundation is based on current physical conditions of the study area.
2. Does not reflect the hazard that could be generated by far-field tsunami
3. Earthquake-induced submarine landslides that could also generate tsunamis are not covered by this map.
4. Significant erosion or deposition along the shore in the future could affect the level of tsunami hazard and may need hazard reassessment.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capital), Comprehensive Landuse Plan (CLUP) of San Francisco

Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

### Disclaimer:

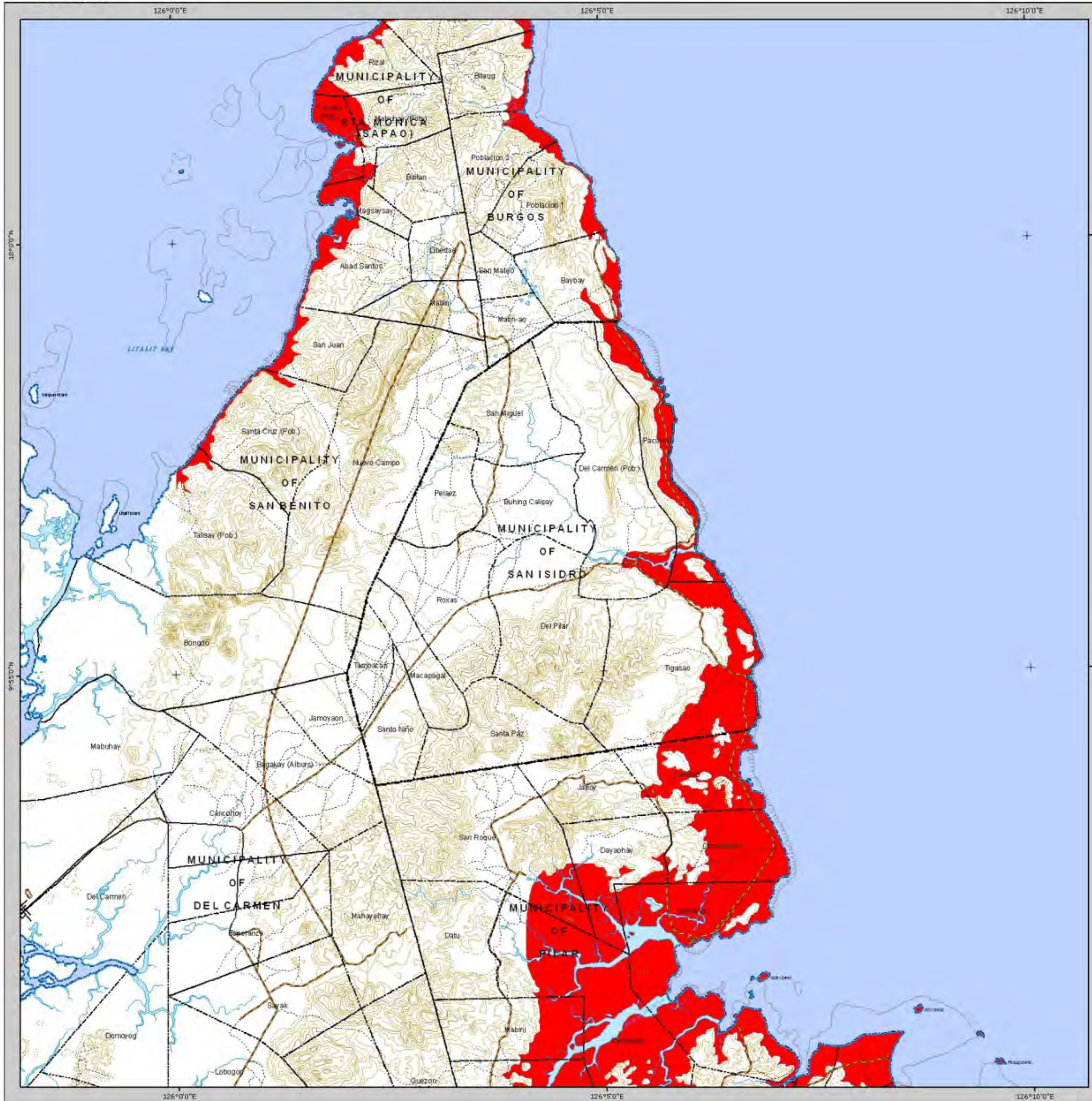
Administrative boundaries are approximate.





# TSUNAMI HAZARD MAP

Mindanao, Philippines

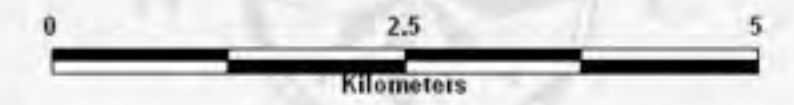


## MUNICIPALITY OF SAN ISIDRO

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- - - Municipal Boundary
- · - · - Barangay Boundary
- Main Road
- - - Secondary Road
- · · · · Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- × 1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Tsunami Inundation Area

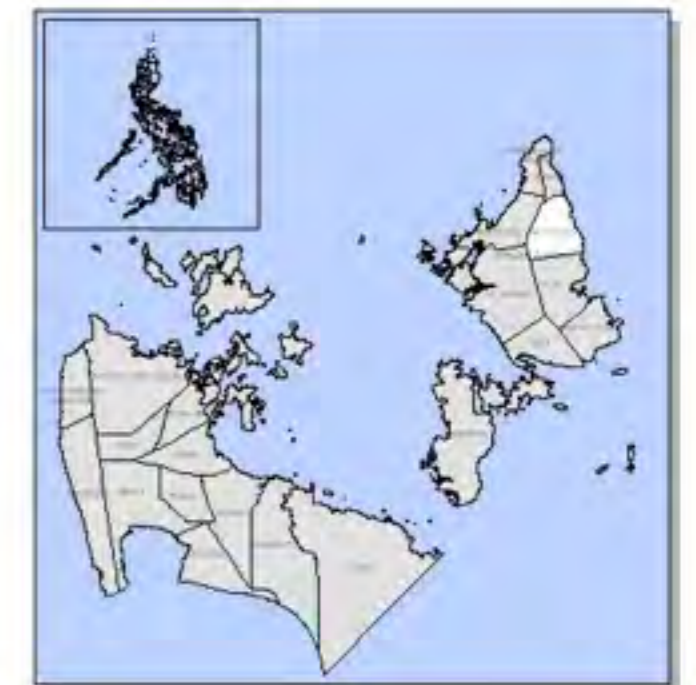
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### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of San Isidro  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

### Disclaimer:

Administrative boundaries are approximate.





# TSUNAMI HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF SOCORRO

Province of Surigao Del Norte  
Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
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- Corals
- Bridges
- ×1176 Spot Elevation
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### SUSCEPTIBILITY

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### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Socorro  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

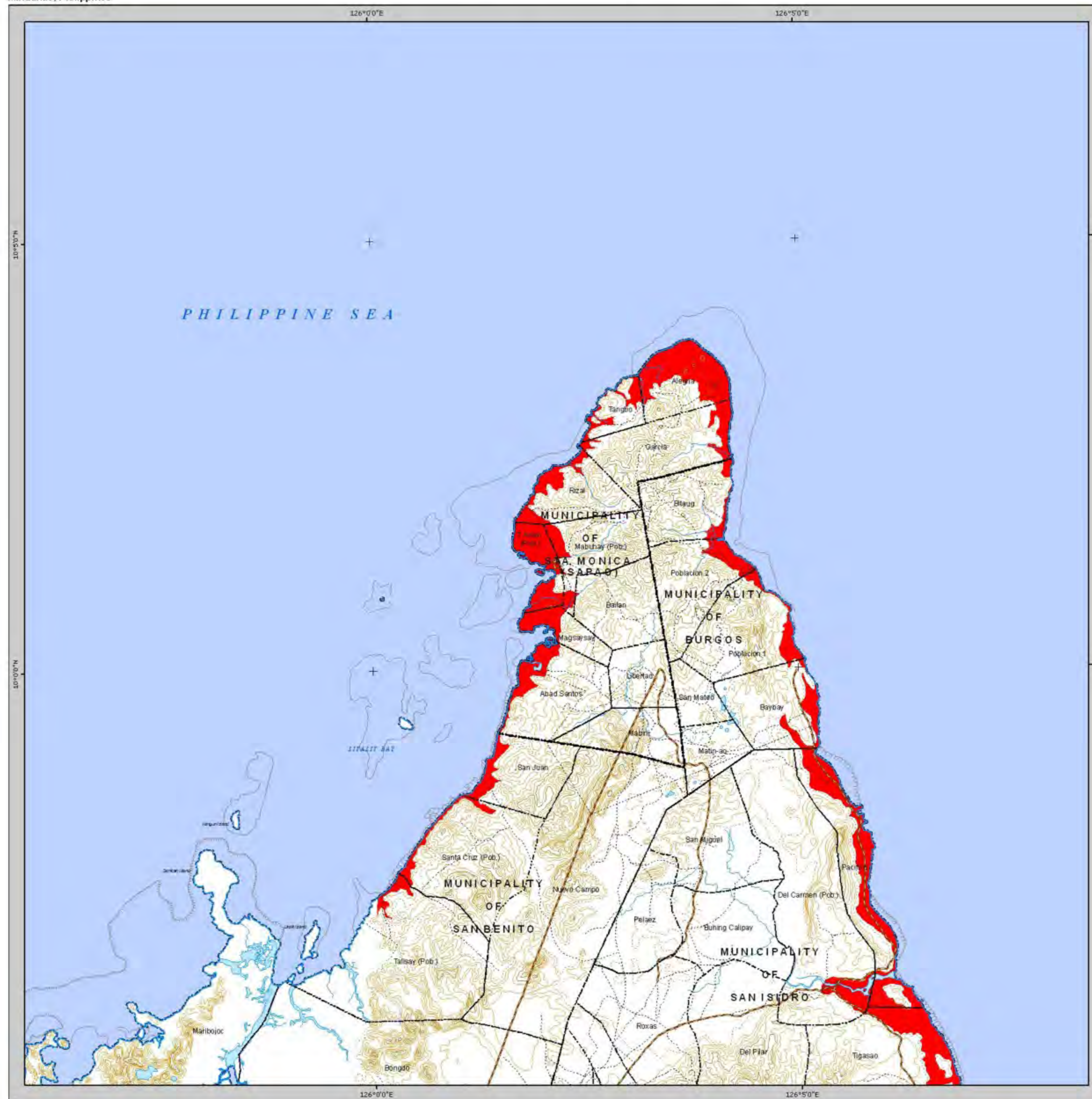
**Disclaimer:**  
Administrative boundaries are approximate.





# TSUNAMI HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF STA. MONICA

Province of Surigao Del Norte  
Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Tsunami Inundation Area

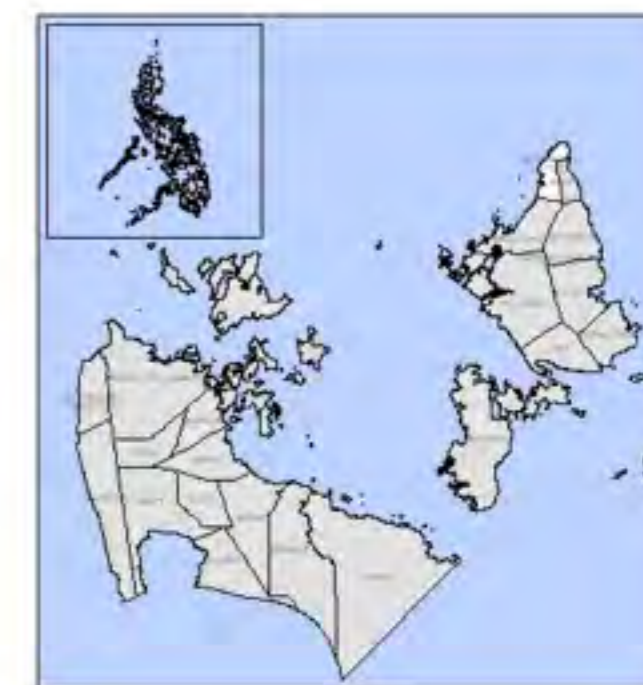
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Limitations of the map:

1. The extent of tsunami inundation is based on current physical conditions of the study area.
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### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Sta. Monica  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

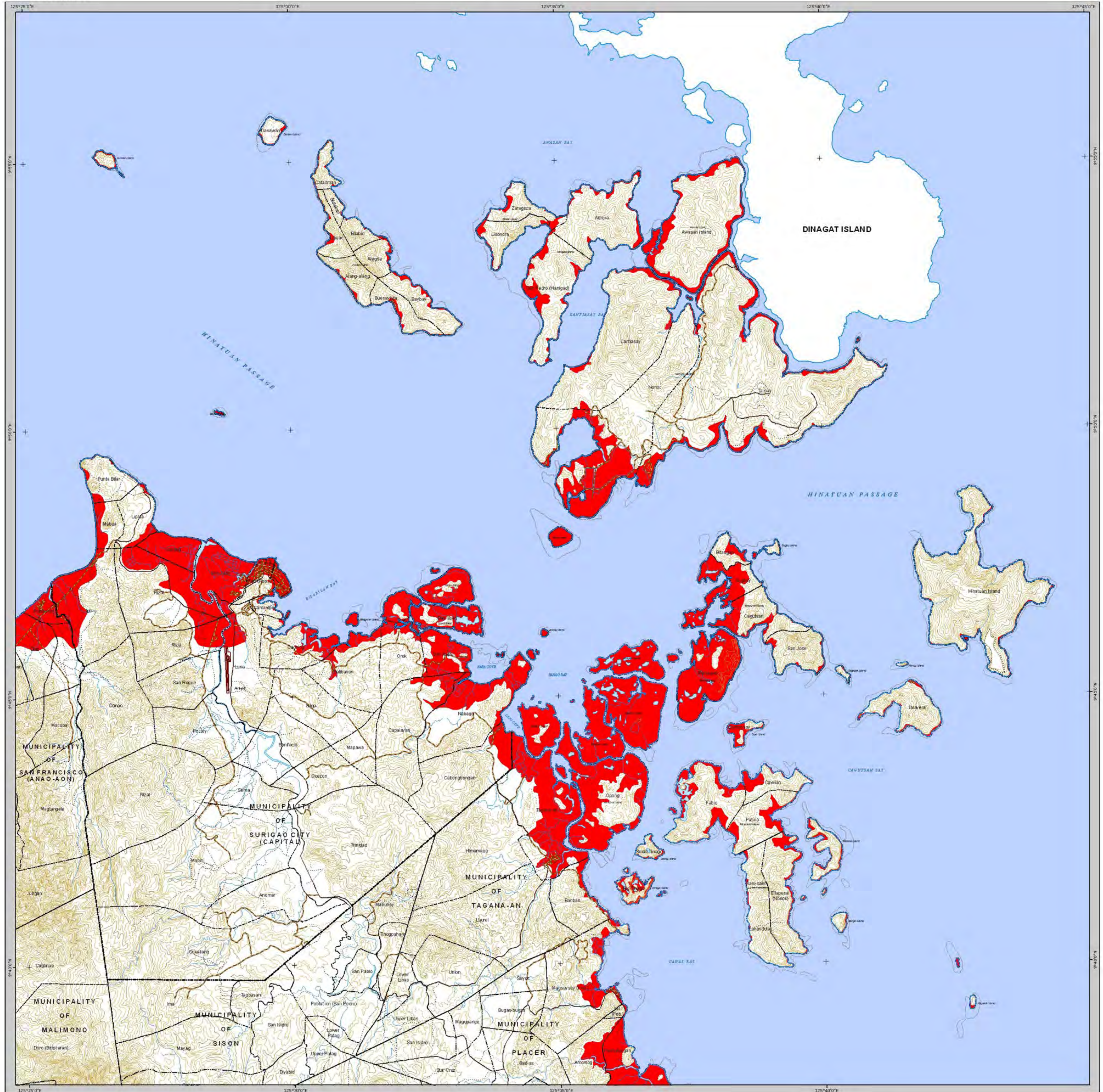
**Disclaimer:**  
Administrative boundaries are approximate.





# TSUNAMI HAZARD MAP

Mindanao, Philippines



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOSTI) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Surigao City  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate

### LEGEND

- |                         |                     |
|-------------------------|---------------------|
| --- Provincial Boundary | — Coastline         |
| --- Municipal Boundary  | — Bridges           |
| --- Barangay Boundary   | 1176 Spot Elevation |
| — Rivers and Creeks     | Water Body          |
| — Rivers Intermittent   |                     |
| — Canals                |                     |
| — Contour Index         |                     |
| — Contour Intermediate  |                     |
| — Contour Supplementary |                     |
| — Contour Depression    |                     |

### SUSCEPTIBILITY

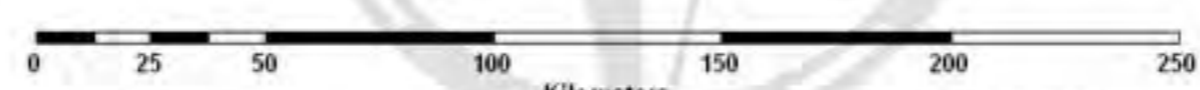
- Tsunami Inundation Area

## SURIGAO CITY

### Province of Surigao Del Norte

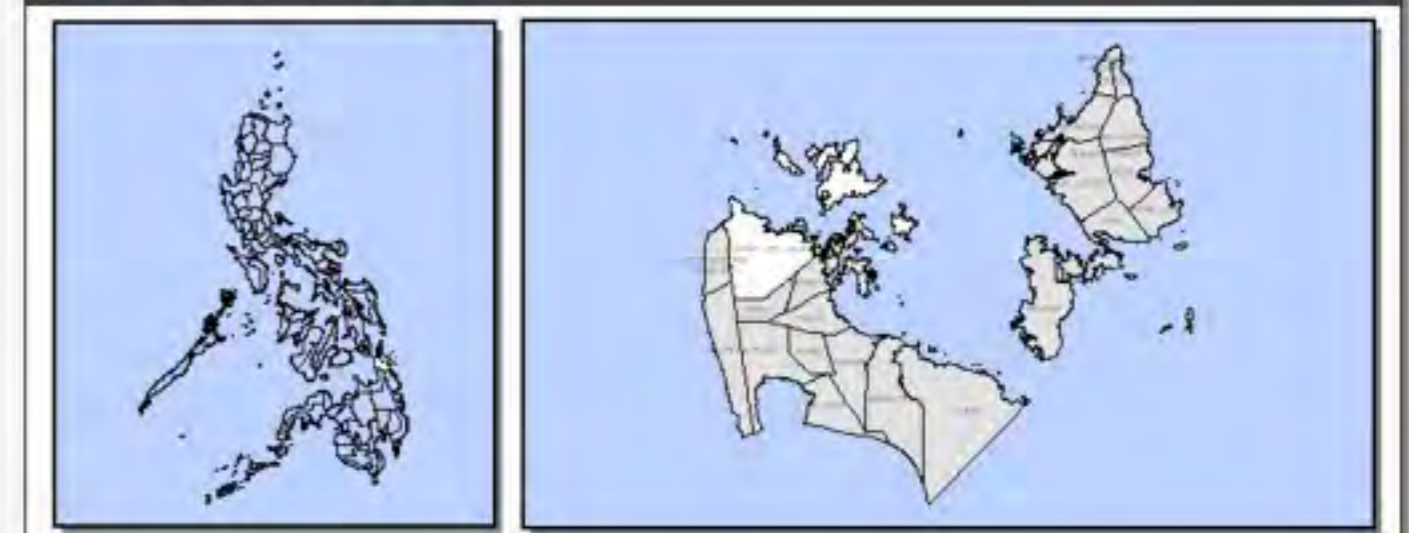
### Region XIII - CARAGA

Scale 1:50,000



Spheroid: ..... Clark 1866  
 Projection: ..... Universal Transverse Mercator (UTM)  
 Horizontal Datum: ..... Luzon 1911  
 Vertical Datum: ..... Mean Sea Level

### LOCATION MAP



### EXPLANATION

This tsunami hazard map was generated using available tsunami programs, earthquake and tectonic data, and bathymetric maps.

Limitations of the map:

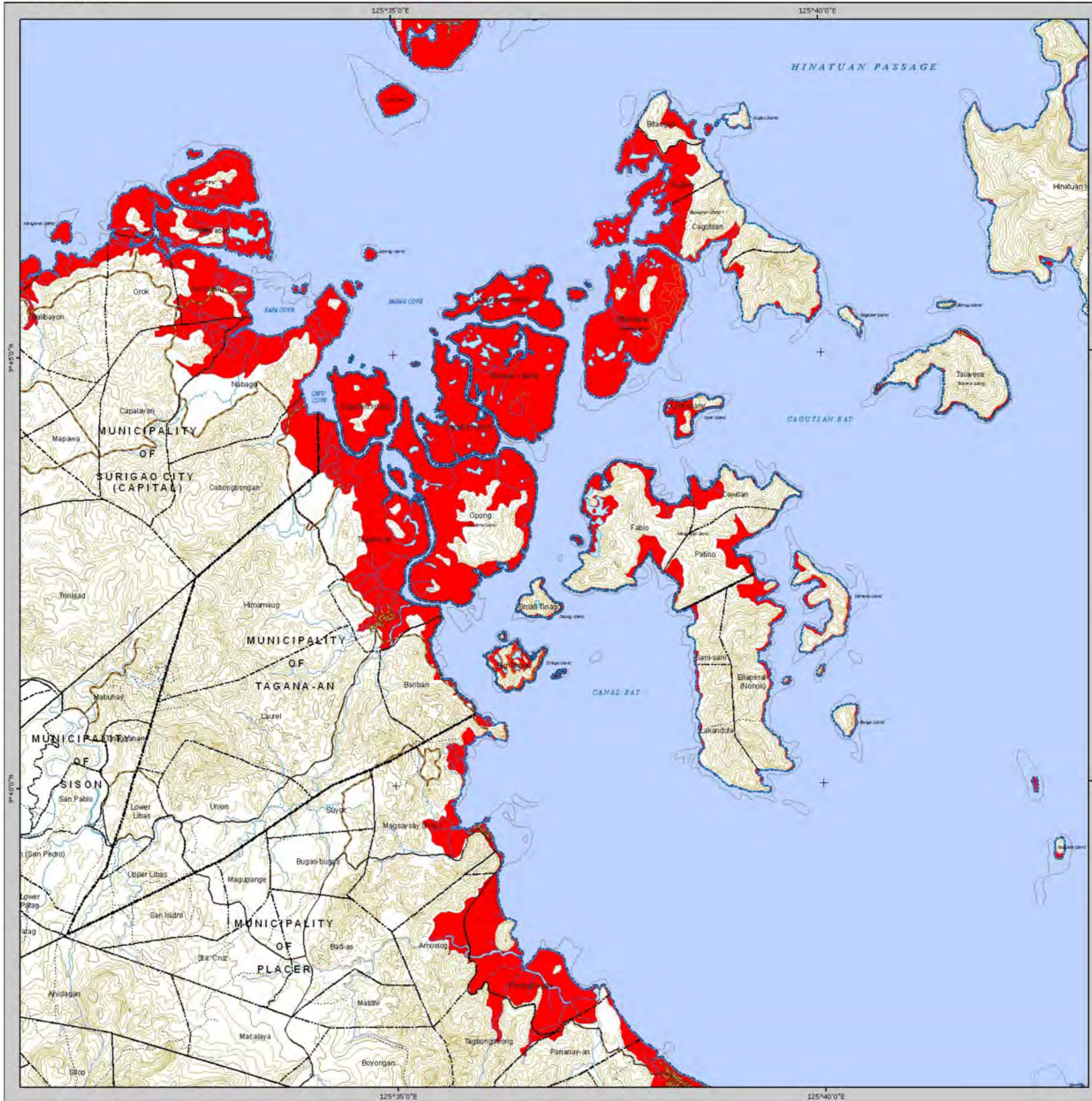
1. The extent of tsunami inundation is based on current physical conditions of the study area.
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# TSUNAMI HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF TAGANA-AN

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- × 1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- Tsunami Inundation Area

### EXPLANATION

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### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Tagana-an  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

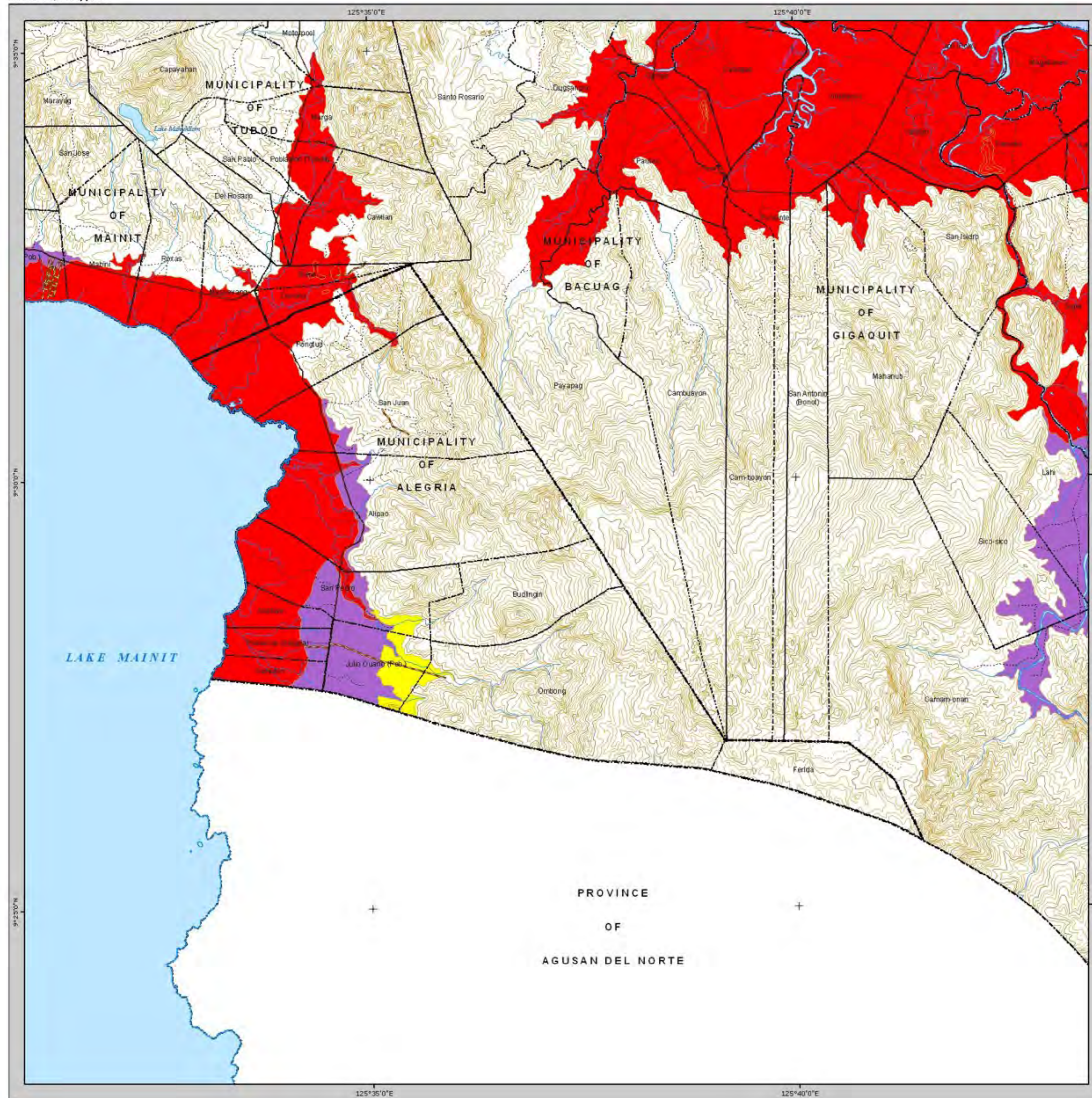
**Disclaimer:**  
 Administrative boundaries are approximate.





# LIQUEFACTION HAZARD MAP

Mindanao, Philippines

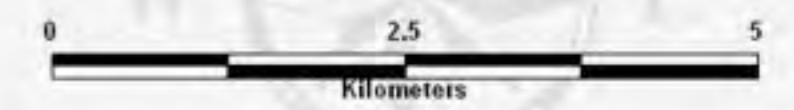


## MUNICIPALITY OF ALEGRIA

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility

### EXPLANATION

1. The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials.
2. This map is semi-detailed and may be used for land use, emergency response and mitigation planning, and should not be used for site specific evaluation.
3. The liquefaction hazard maps do not restrict construction of any structures and development in areas susceptible to liquefaction as long as proper engineering considerations are applied.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Alegria  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

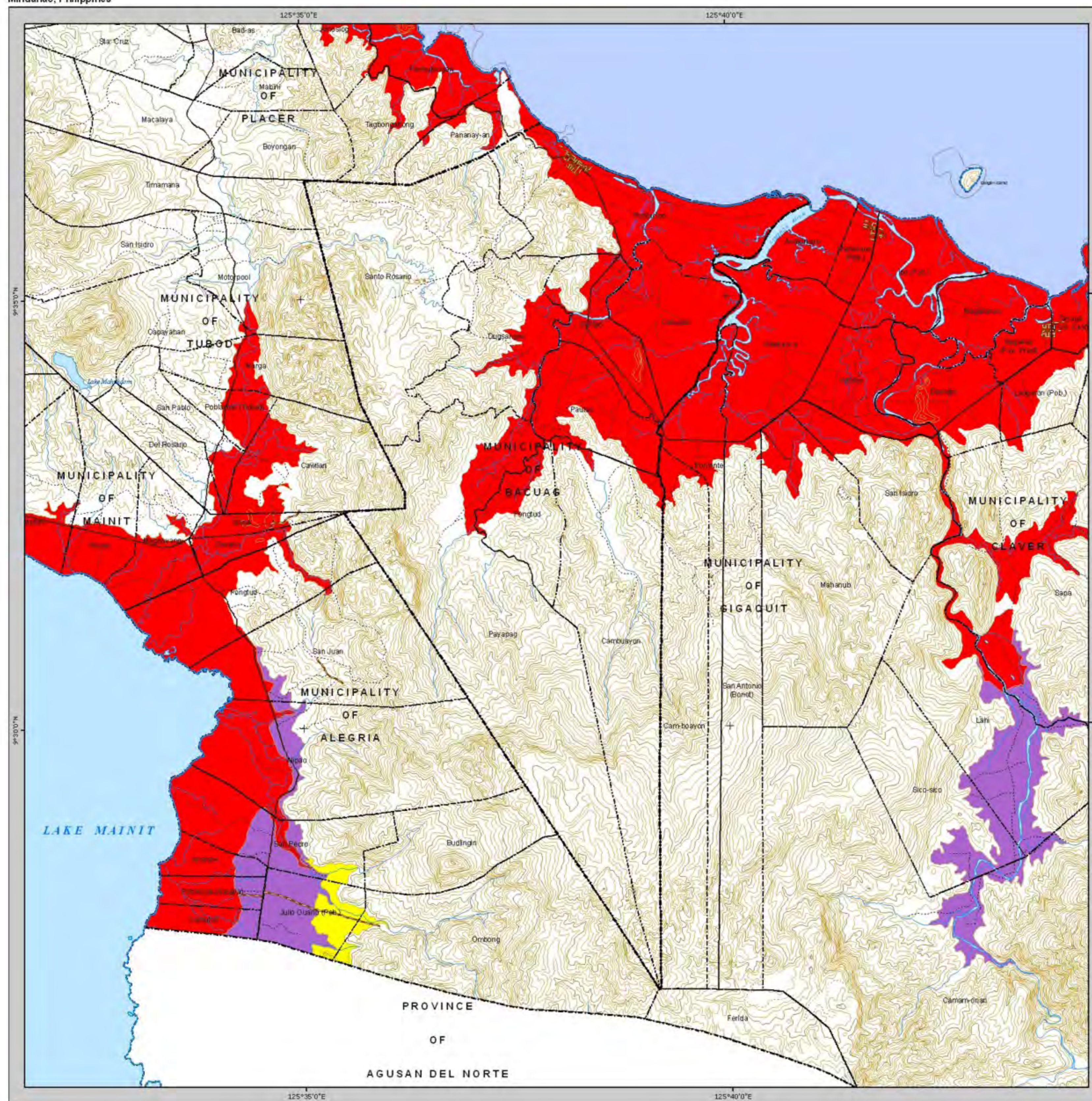
**Disclaimer:**  
 Administrative boundaries are approximate.





# LIQUEFACTION HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF BACUAG

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

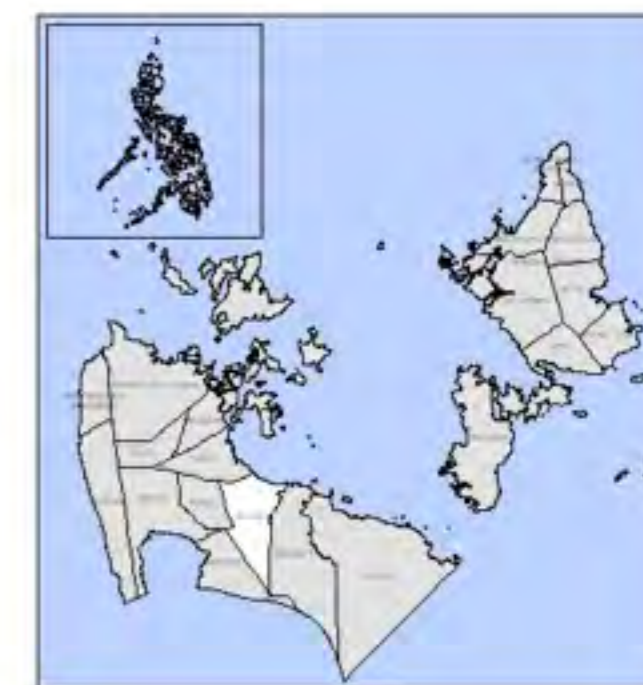
### SUSCEPTIBILITY

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility

### EXPLANATION

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### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Bacuag  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

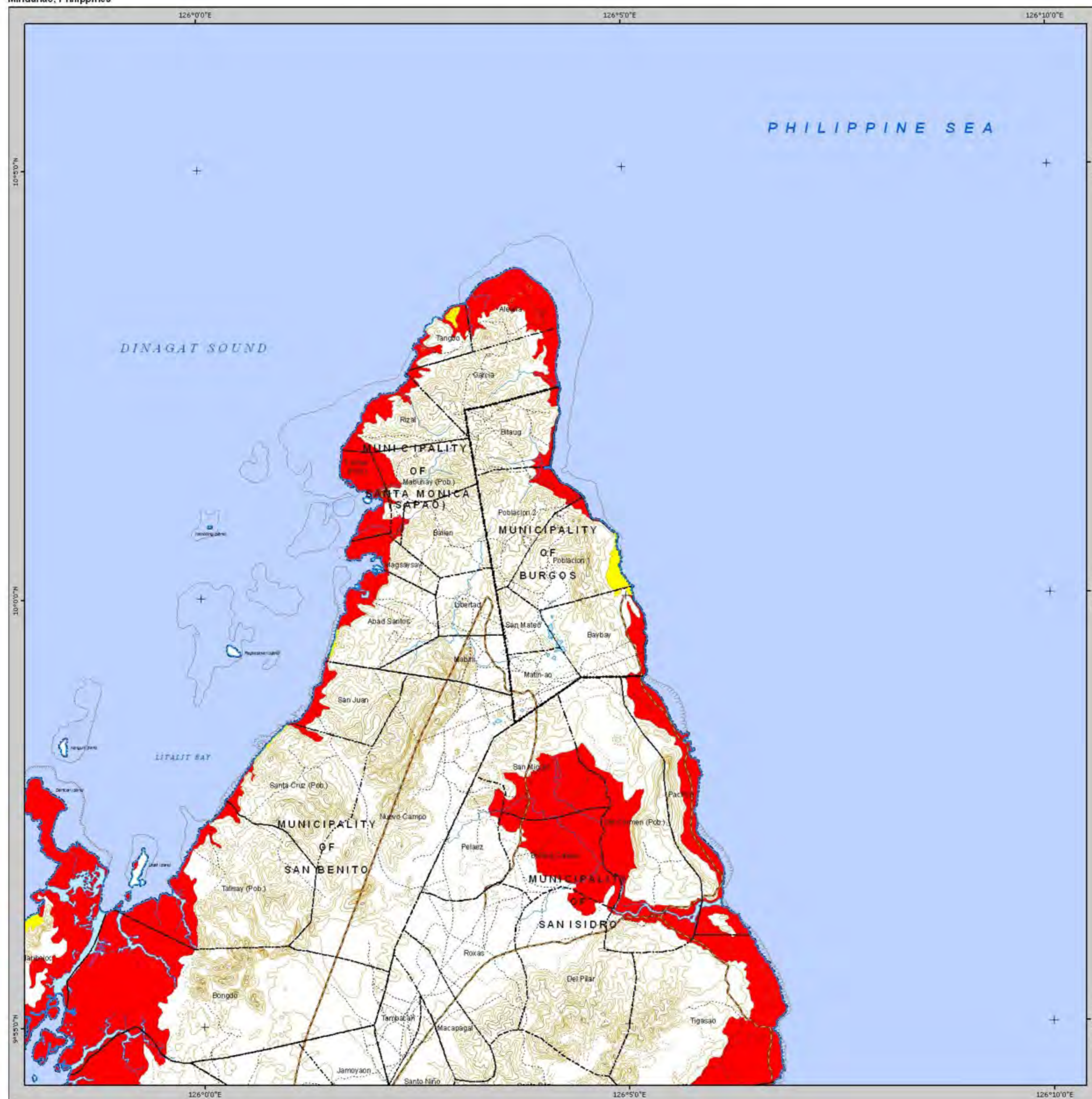
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# LIQUEFACTION HAZARD MAP

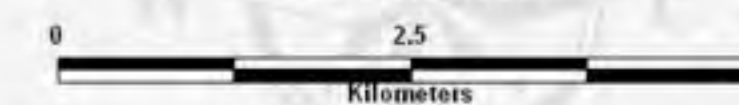
Mindanao, Philippines



## MUNICIPALITY OF BURGOS

Province of Surigao Del Norte  
Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- == Main Road
- == Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
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### SUSCEPTIBILITY

- High Susceptibility
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### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Burgos  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

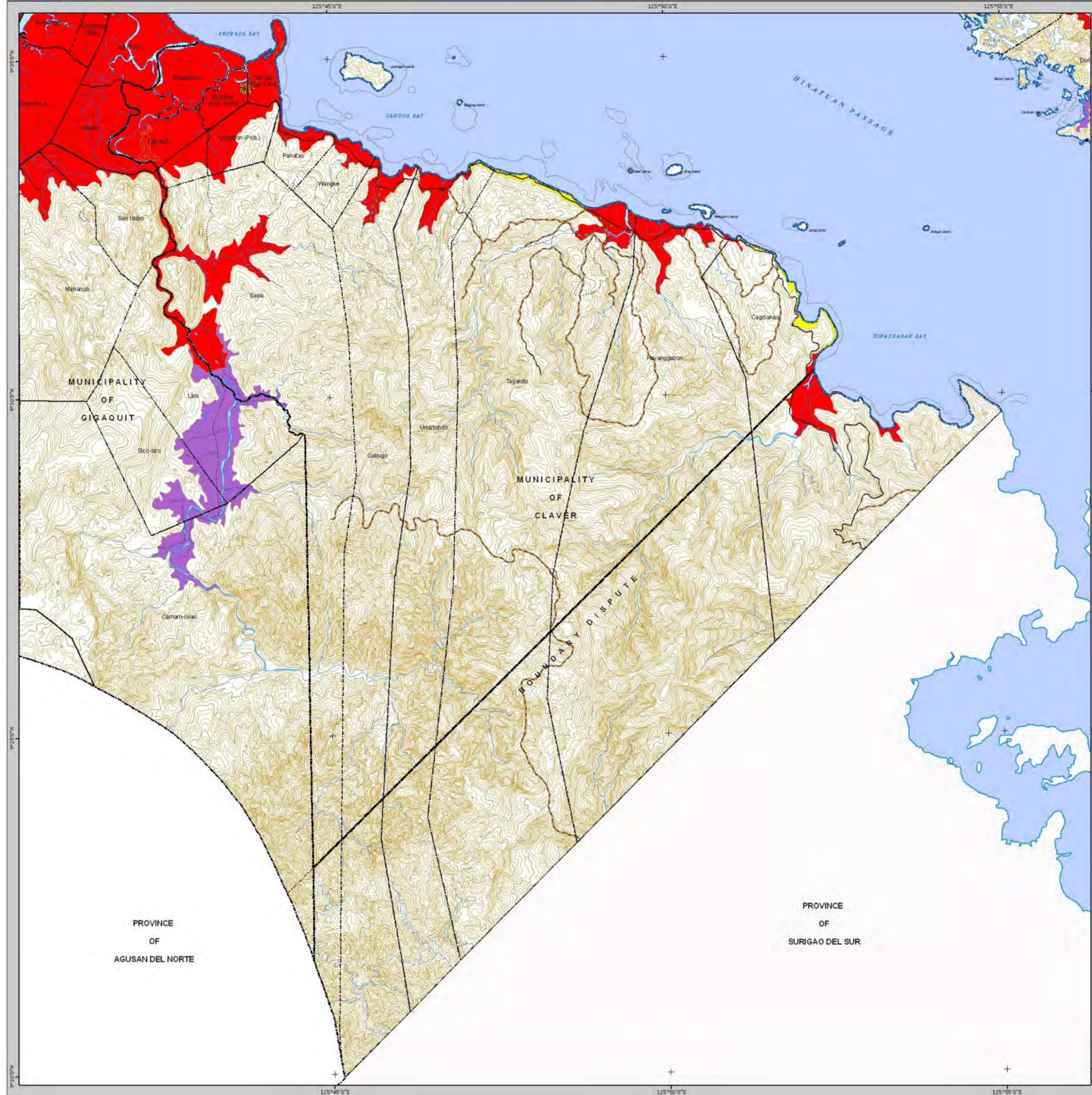
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# LIQUEFACTION HAZARD MAP

Mindanao, Philippines

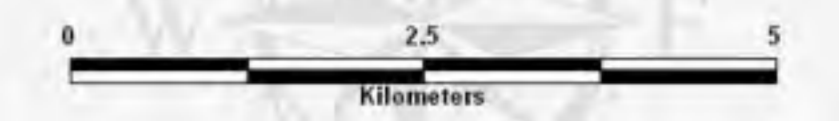


## MUNICIPALITY OF CLAVER

Province of Surigao Del Norte

Region XIII-CARAGA

Scale 1:50,000



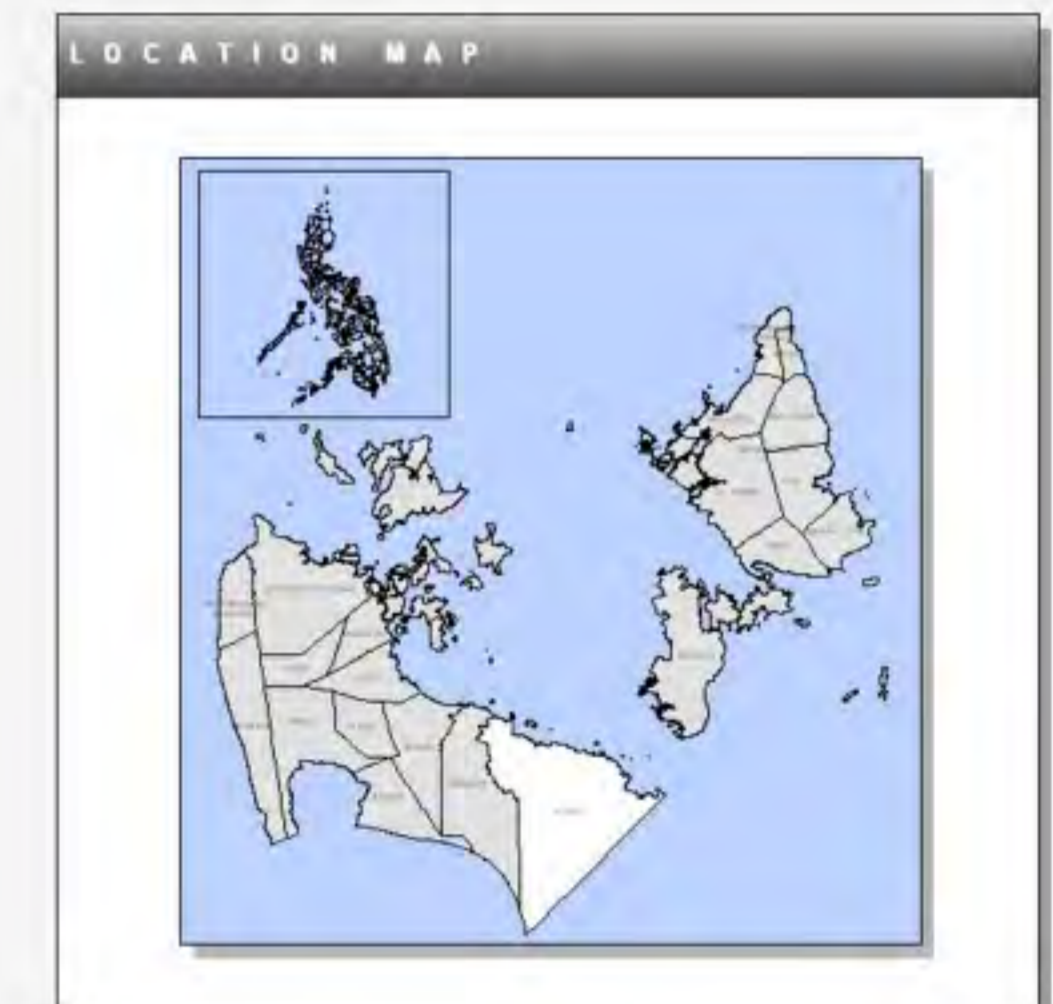
Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

LEGEND	
	Provincial Boundary
	Municipal Boundary
	Barangay Boundary
	Main Road
	Secondary Road
	Trails
	Rivers and Creeks
	Rivers Intermittent
	Contour Index
	Contour Intermediate
	Contour Supplementary
	Contour Depression
	Coastline
	Corals
	Bridges
	Spot Elevation
	Water Body

SUSCEPTIBILITY	
	High Susceptibility
	Moderate Susceptibility
	Low Susceptibility

**EXPLANATION**

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**SOURCES OF DATA**

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007

Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Claver

Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

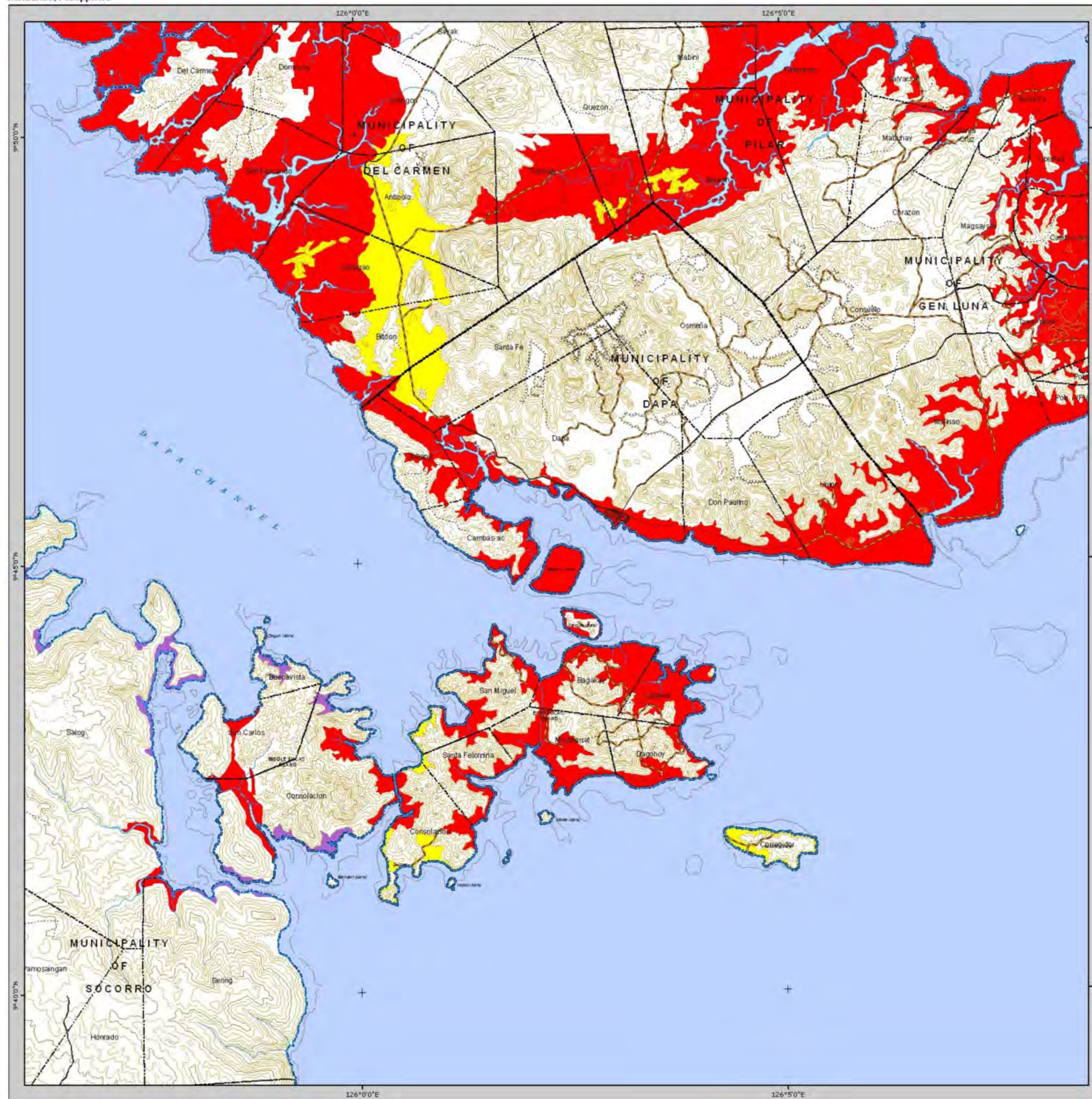
**Disclaimer:**  
 Administrative boundaries are approximate





# LIQUEFACTION HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF DAPA

Province of Surigao Del Norte  
Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- == Main Road
- == Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- × 1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility

### EXPLANATION

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### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Dapa  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

**Disclaimer:**  
Administrative boundaries are approximate.





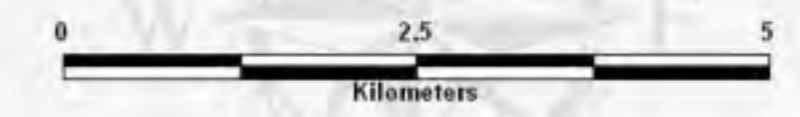
# LIQUEFACTION HAZARD MAP

## MUNICIPALITY OF DEL CARMEN

Province of Surigao Del Norte

Region XIII-CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
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- Rivers and Creeks
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### LOCATION MAP

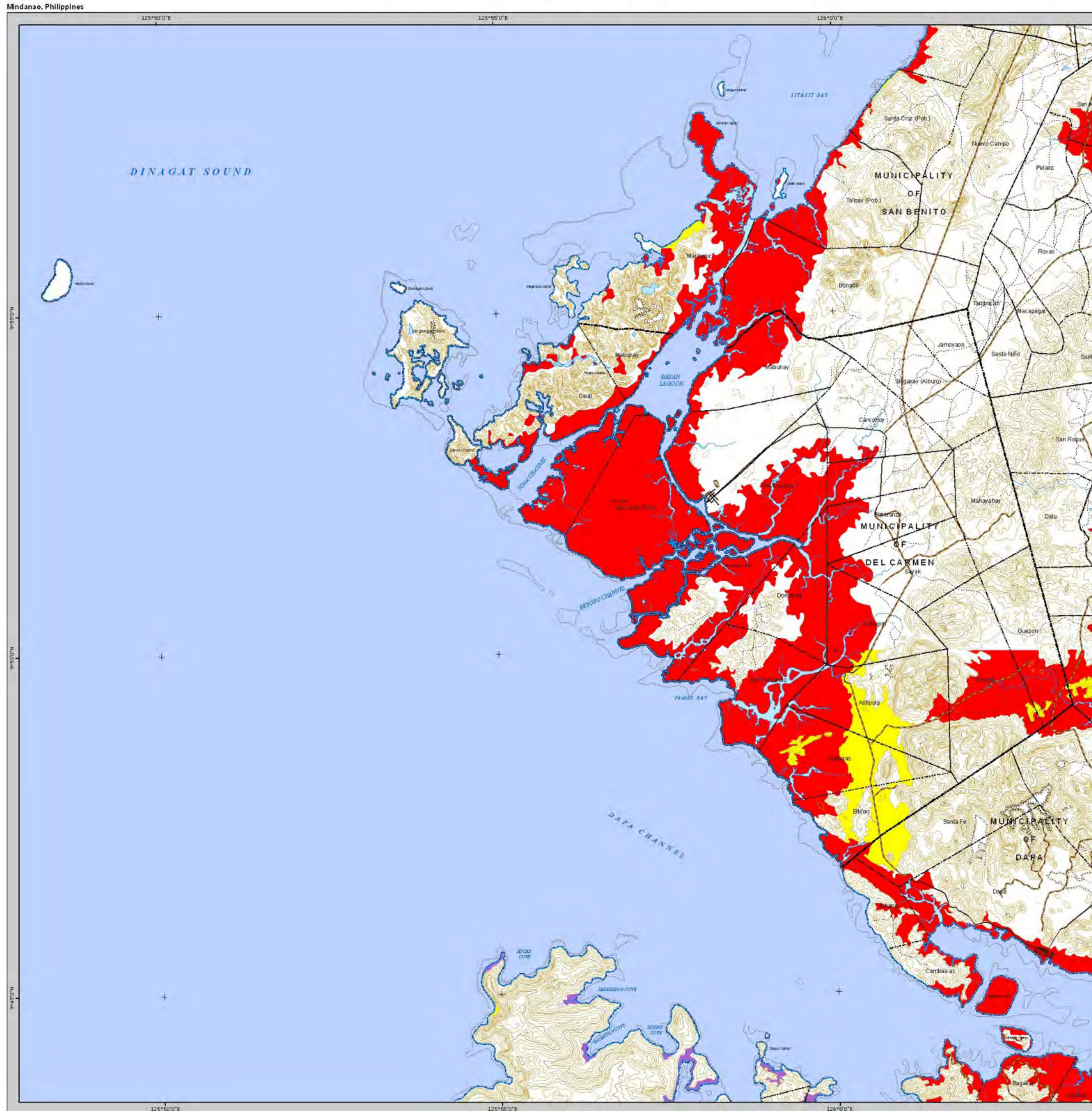
### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007

Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Del Carmen

Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed 1 - AMS, ED 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate.





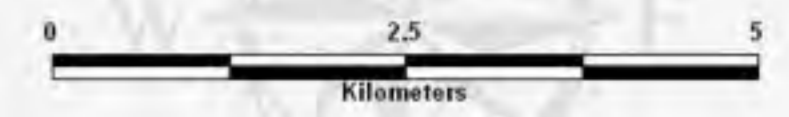
# LIQUEFACTION HAZARD MAP

## MUNICIPALITY OF GENERAL LUNA

Province of Surigao Del Norte

Region XIII-CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- Spot Elevation
- Water Body

### SUSCEPTIBILITY

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility

### EXPLANATION

1. The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials
2. This map is semi-detailed and may be used for land use, emergency response and mitigation planning, and should not be used for site specific evaluation.
3. The liquefaction hazard maps do not restrict construction of any structures and development in areas susceptible to liquefaction as long as proper engineering considerations are applied.

### LOCATION MAP

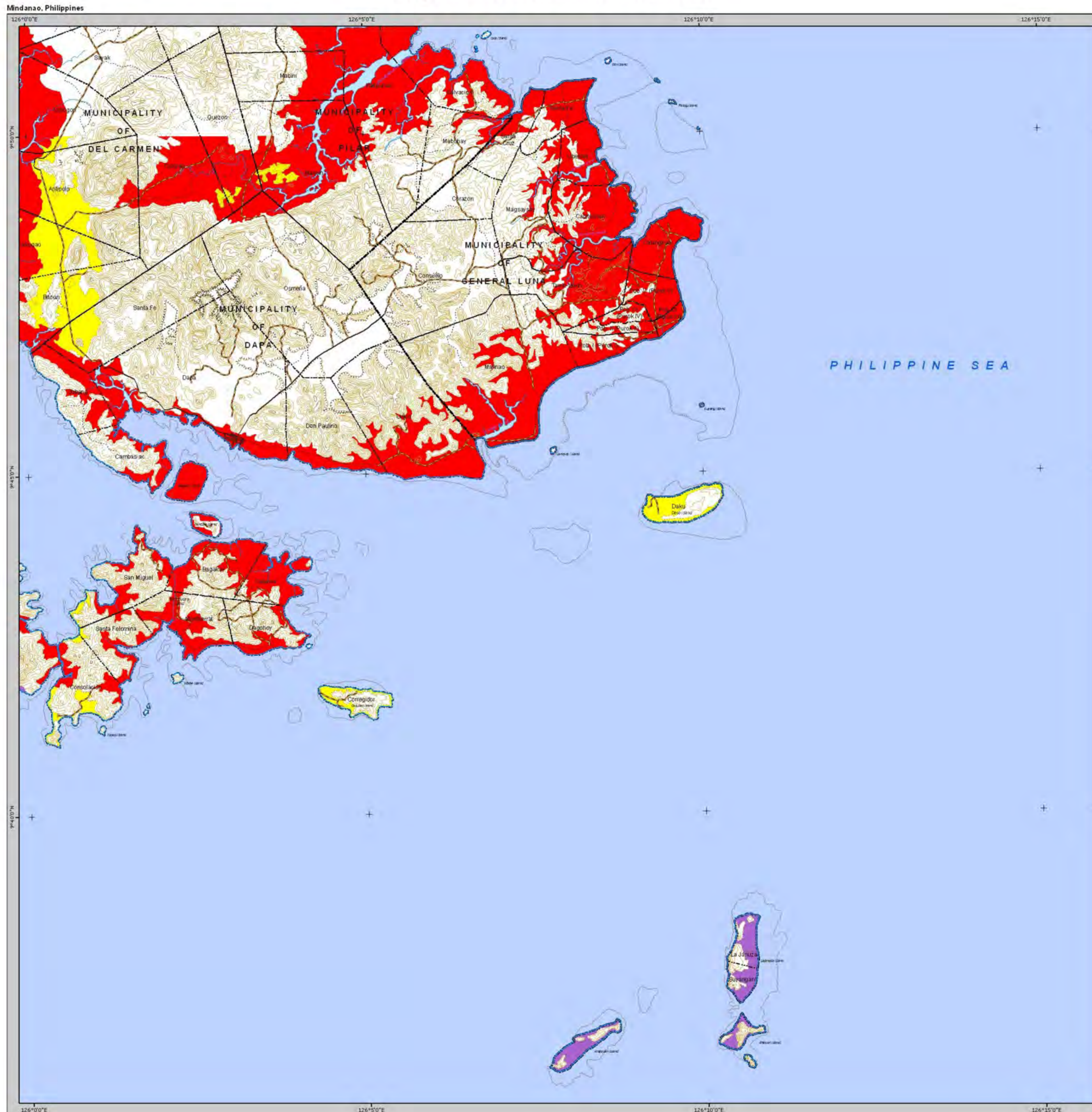
### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007

Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Gen. Luna

Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

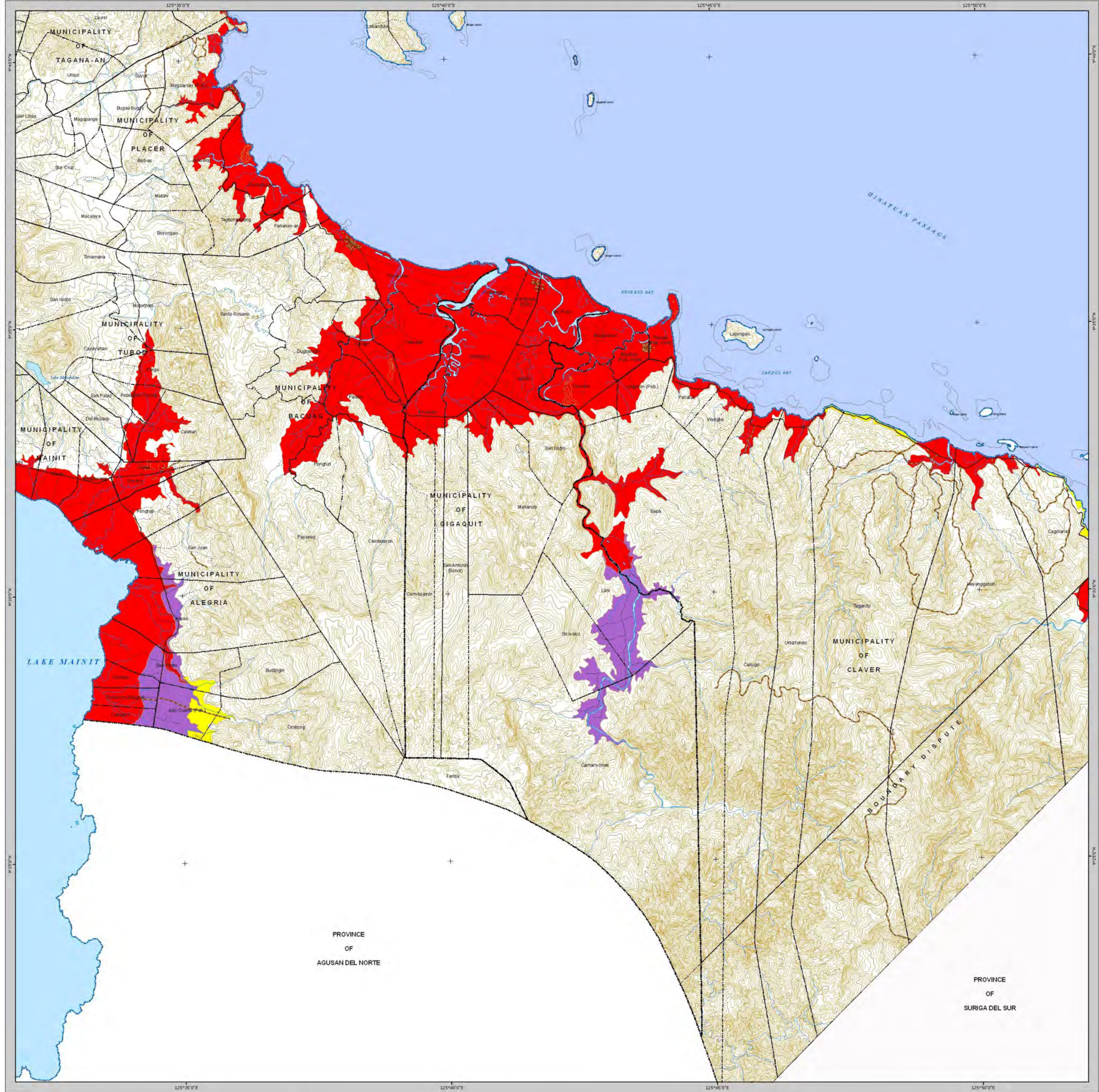
**Disclaimer:**  
 Administrative boundaries are approximate





# LIQUEFACTION HAZARD MAP

Mindanao, Philippines



## SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Gigaquit  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate

## LEGEND

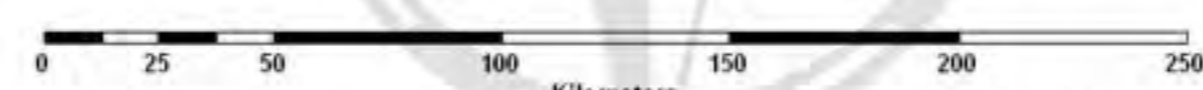
--- Provincial Boundary	— Coastline
--- Municipal Boundary	— Bridges
--- Barangay Boundary	1176 Spot Elevation
— Rivers and Creeks	Water Body
--- Rivers Intermittent	
--- Contour Index	
--- Contour Intermediate	
--- Contour Supplementary	
--- Contour Depression	

## SUSCEPTIBILITY

Red	High Susceptibility
Purple	Moderate Susceptibility
Yellow	Low Susceptibility

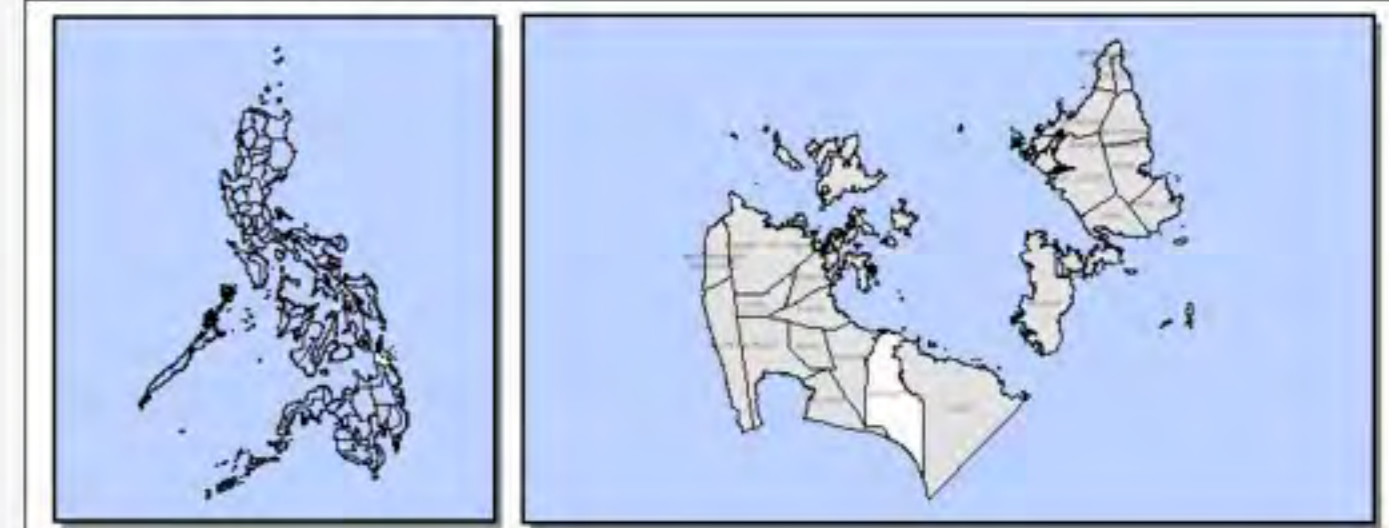
## MUNICIPALITY OF GIGAQUIT Province of Surigao del Norte Region XIII-CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

## LOCATION MAP



## EXPLANATION

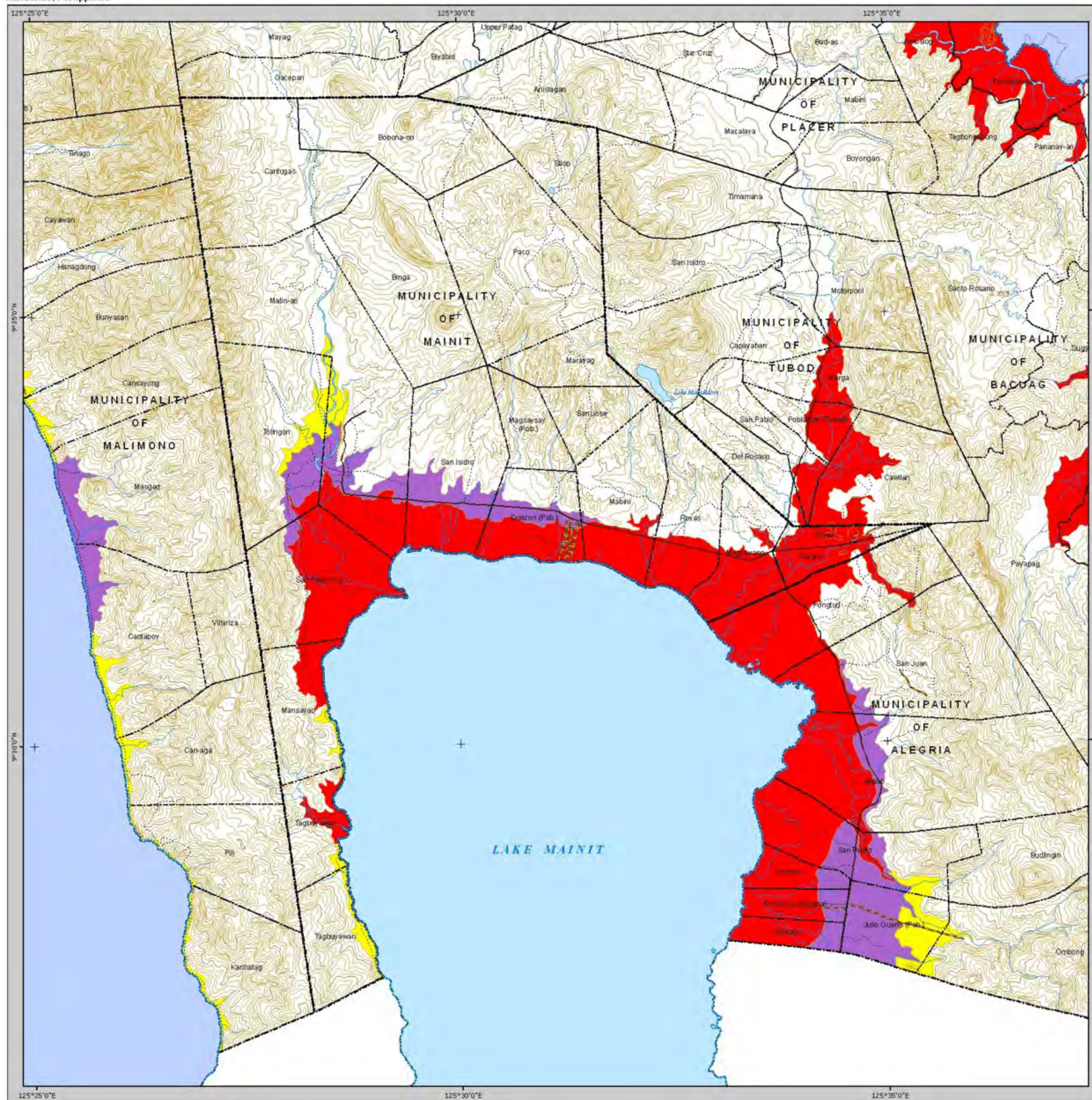
- The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials
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- The liquefaction hazard maps do not restrict construction of any structures and development in areas susceptible to liquefaction as long as proper engineering considerations are applied.





# LIQUEFACTION HAZARD MAP

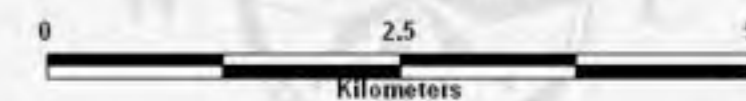
Mindanao, Philippines



## MUNICIPALITY OF MAINIT

Province of Surigao Del Norte  
Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- == Main Road
- == Secondary Road
- Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility

### EXPLANATION

1. The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials.
2. This map is semi-detailed and may be used for land use, emergency response and mitigation planning, and should not be used for site specific evaluation.
3. The liquefaction hazard maps do not restrict construction of any structures and development in areas susceptible to liquefaction as long as proper engineering considerations are applied.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Mainit  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

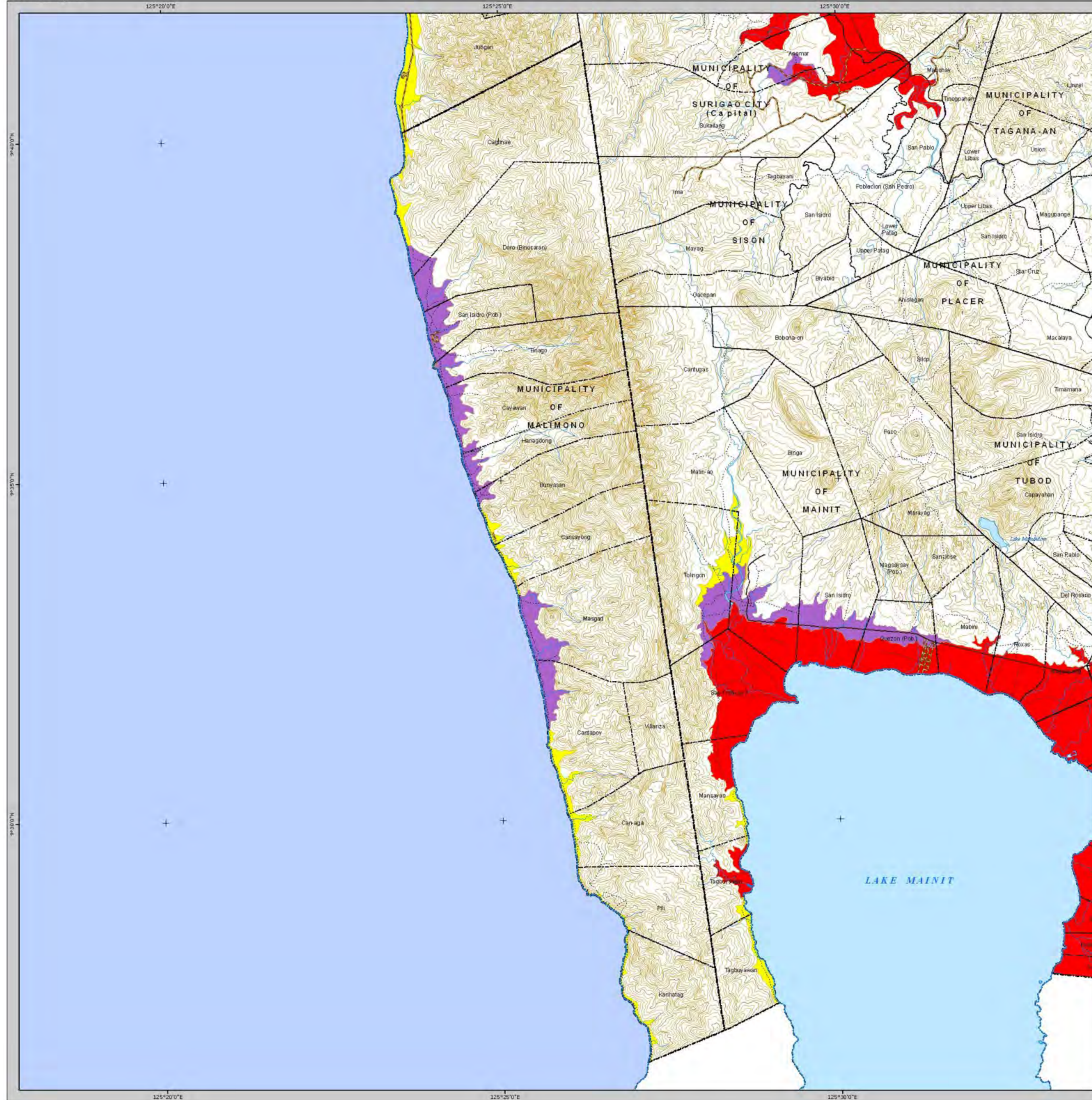
**Disclaimer:**  
Administrative boundaries are approximate.





# LIQUEFACTION HAZARD MAP

Mindanao, Philippines

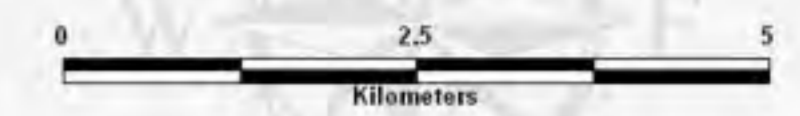


## MUNICIPALITY OF MALIMONO

Province of Surigao Del Norte

Region XIII-CARAGA

Scale 1:50,000



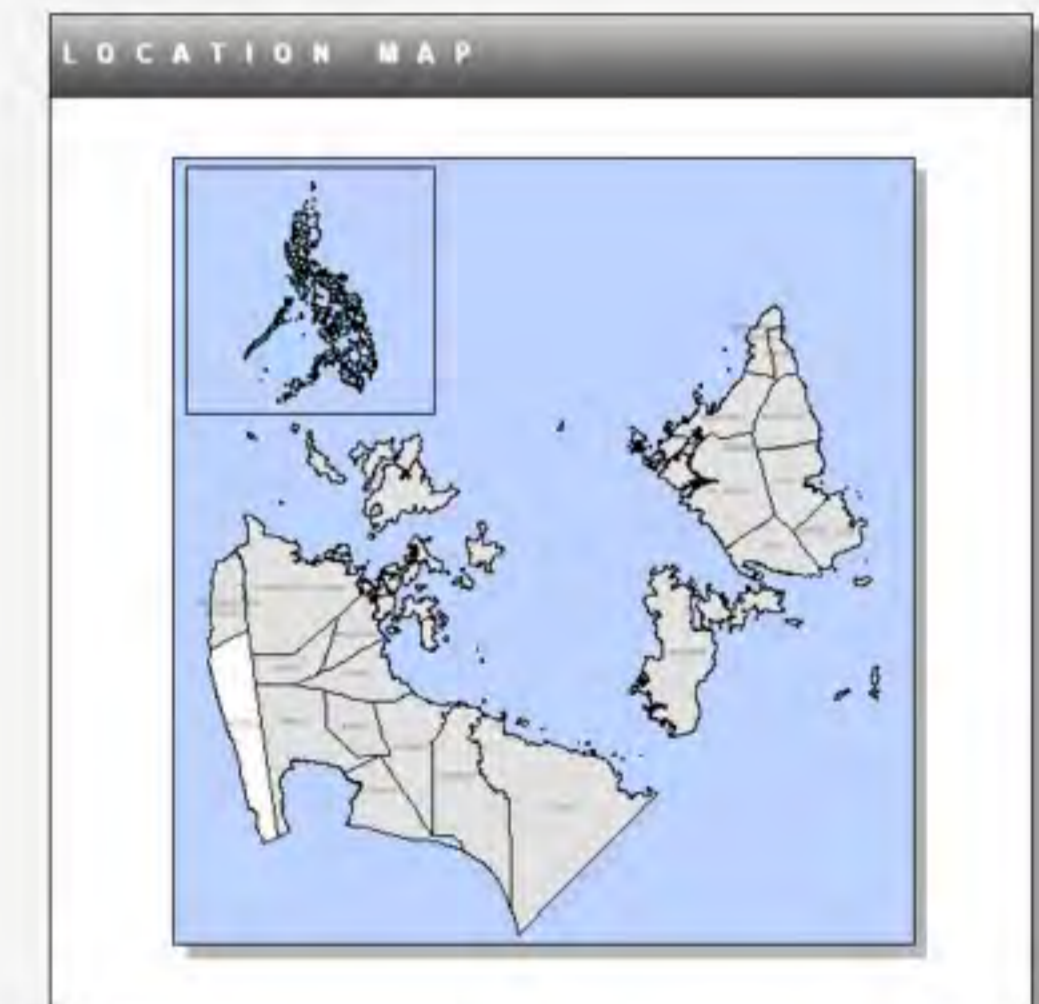
Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

LEGEND	
	Provincial Boundary
	Municipal Boundary
	Barangay Boundary
	Main Road
	Secondary Road
	Trails
	Rivers and Creeks
	Rivers Intermittent
	Contour Index
	Contour Intermediate
	Contour Supplementary
	Contour Depression
	Coastline
	Corals
	Bridges
	Spot Elevation
	Water Body

SUSCEPTIBILITY	
	High Susceptibility
	Moderate Susceptibility
	Low Susceptibility

**EXPLANATION**

- The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials.
- This map is semi-detailed and may be used for land use, emergency response and mitigation planning, and should not be used for site specific evaluation.
- The liquefaction hazard maps do not restrict construction of any structures and development in areas susceptible to liquefaction as long as proper engineering considerations are applied.



**SOURCES OF DATA**

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007

Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Malimono

Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

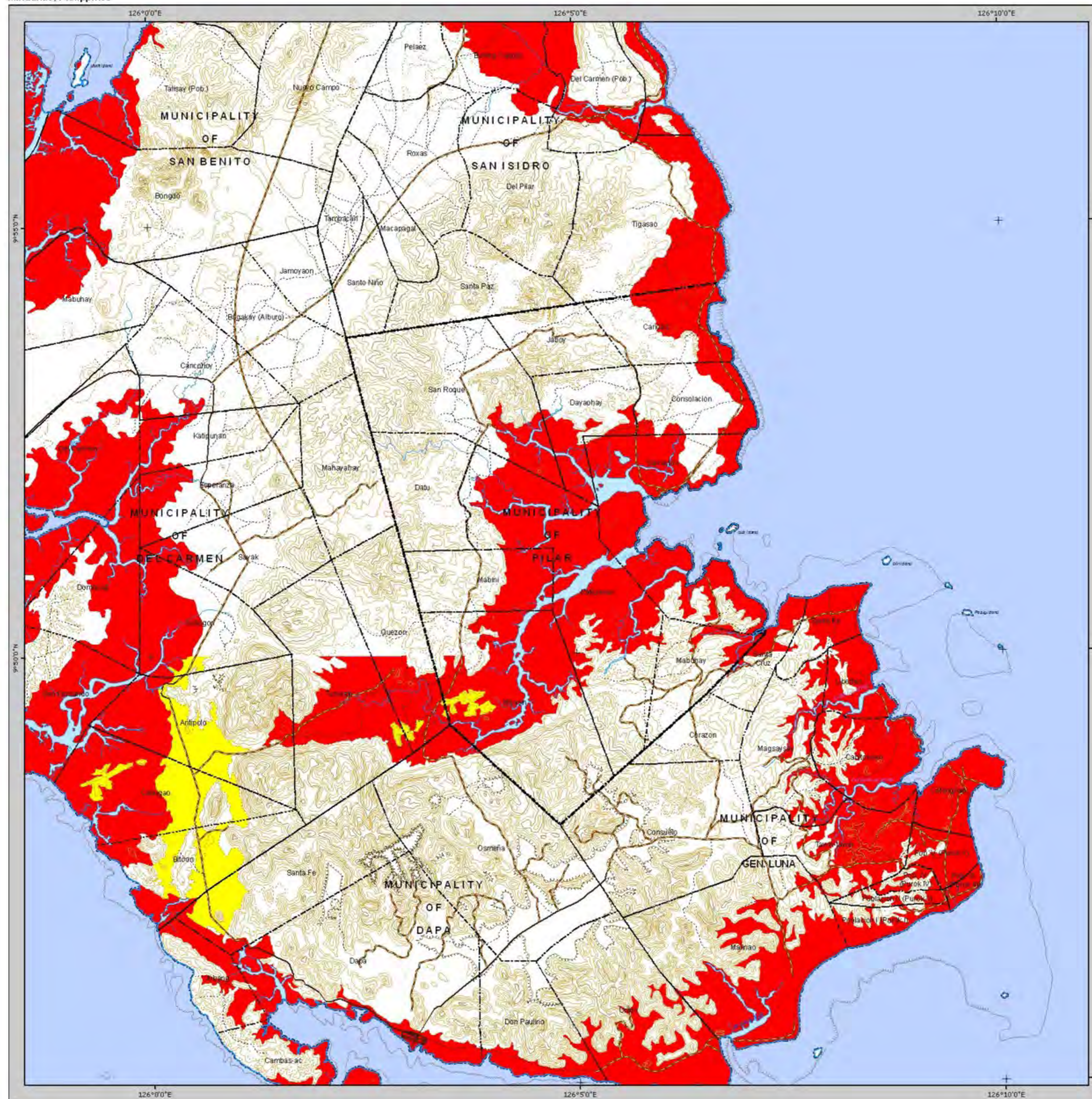
**Disclaimer:**  
 Administrative boundaries are approximate





# LIQUEFACTION HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF PILAR

Province of Surigao Del Norte  
Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- × 1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility

### EXPLANATION

1. The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials.
2. This map is semi-detailed and may be used for land use, emergency response and mitigation planning, and should not be used for site specific evaluation.
3. The liquefaction hazard maps do not restrict construction of any structures and development in areas susceptible to liquefaction as long as proper engineering considerations are applied.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Pilar  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

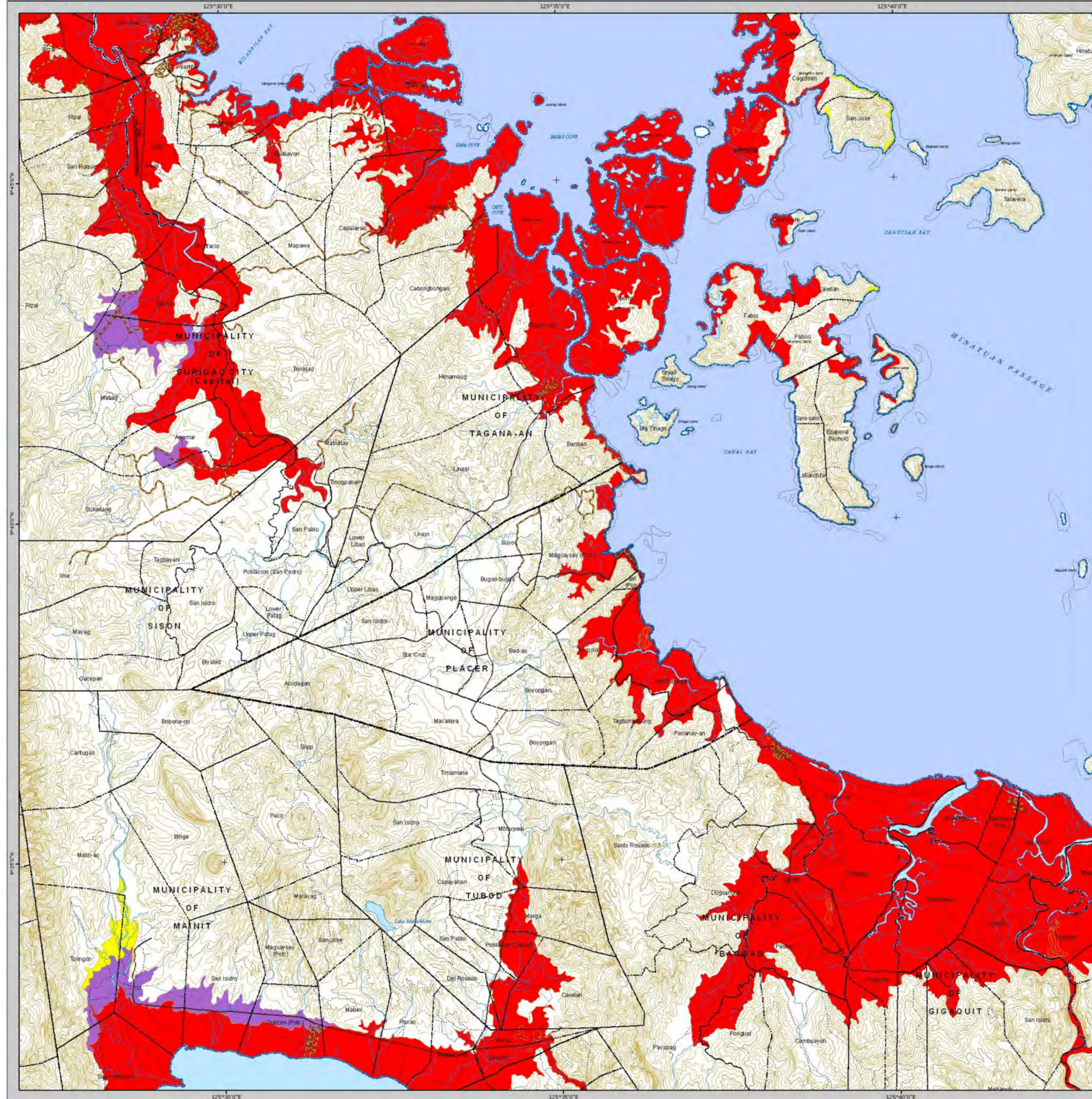
**Disclaimer:**  
Administrative boundaries are approximate.





# LIQUEFACTION HAZARD MAP

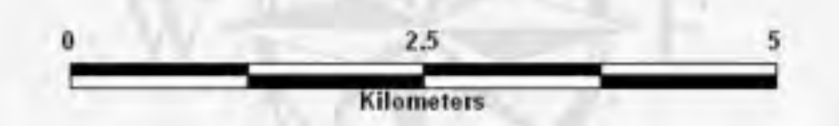
Mindanao, Philippines



## MUNICIPALITY OF PLACER

Province of Surigao Del Norte  
Region XIII-CARAGA

Scale 1:50,000



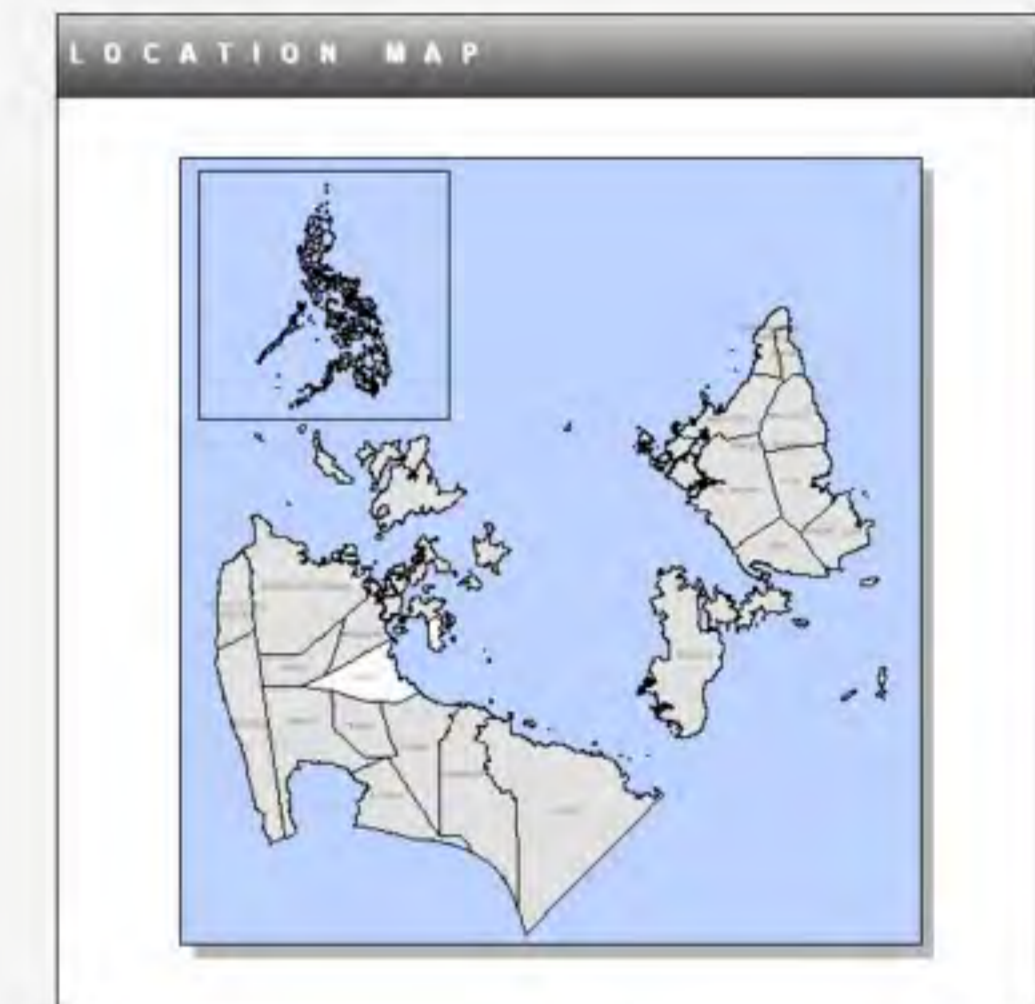
Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

LEGEND	
	Provincial Boundary
	Municipal Boundary
	Barangay Boundary
	Main Road
	Secondary Road
	Trails
	Rivers and Creeks
	Rivers Intermittent
	Contour Index
	Contour Intermediate
	Contour Supplementary
	Contour Depression
	Coastline
	Coral
	Bridges
	Spot Elevation
	Water Body

SUSCEPTIBILITY	
	High Susceptibility
	Moderate Susceptibility
	Low Susceptibility

**EXPLANATION**

- The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials.
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- The liquefaction hazard maps do not restrict construction of any structures and development in areas susceptible to liquefaction as long as proper engineering considerations are applied.



**SOURCES OF DATA**

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007

Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Placer

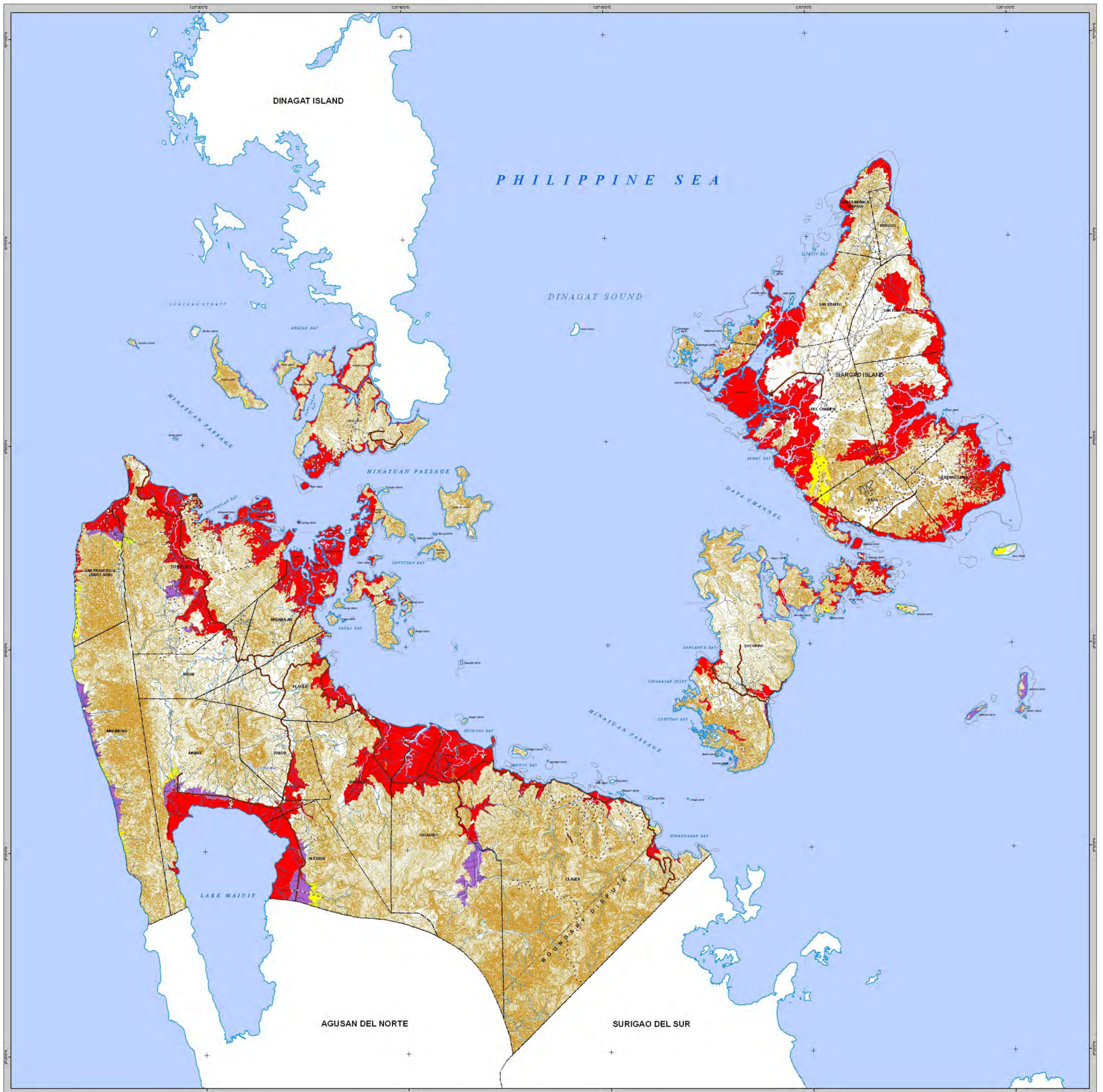
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

**Disclaimer:**  
Administrative boundaries are approximate





# LIQUEFACTION HAZARD MAP



**SOURCES OF DATA**  
 Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP)  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
 Ed. 1 - AMS, Ed. 2 - DMA, 1954 - 1955  
**Disclaimer:**  
 Administrative boundaries are approximate.

**LEGEND**

--- Provincial Boundary	--- Coastline
--- Municipal Boundary	--- Rivers and Creeks
--- Main Road	--- Rivers Intermittent
--- Secondary Road	--- Corals
--- Trails	--- Spot Elevation
--- Bridges	--- Fishpen
--- Contour Index	--- Water Body
--- Contour Intermediate	
--- Contour Supplementary	
--- Contour Depression	

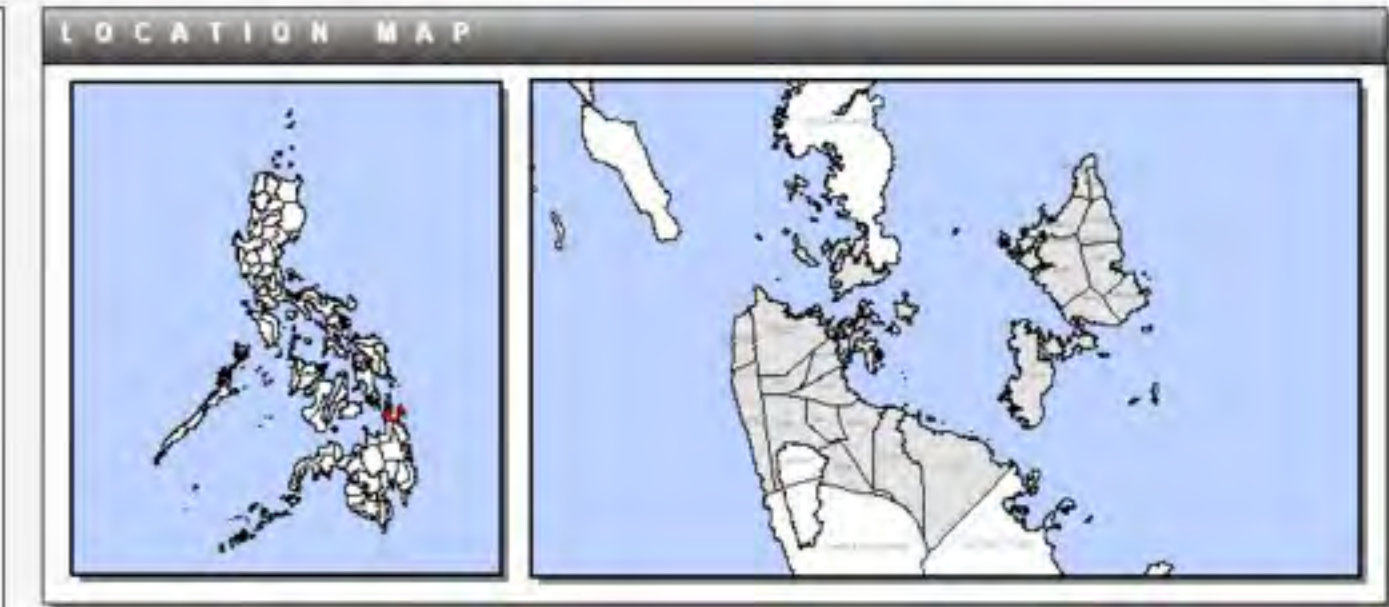
**SUSCEPTIBILITY**

Red	High Susceptibility
Purple	Moderate Susceptibility
Yellow	Low Susceptibility

## PROVINCE OF SURIGAO DEL NORTE REGION XIII - CARAGA



Spheroid ..... Clark 1866  
 Projection ..... Universal Transverse Mercator (UTM)  
 Horizontal Datum ..... Luzon 1911  
 Vertical Datum ..... Mean Sea Level



**EXPLANATION**

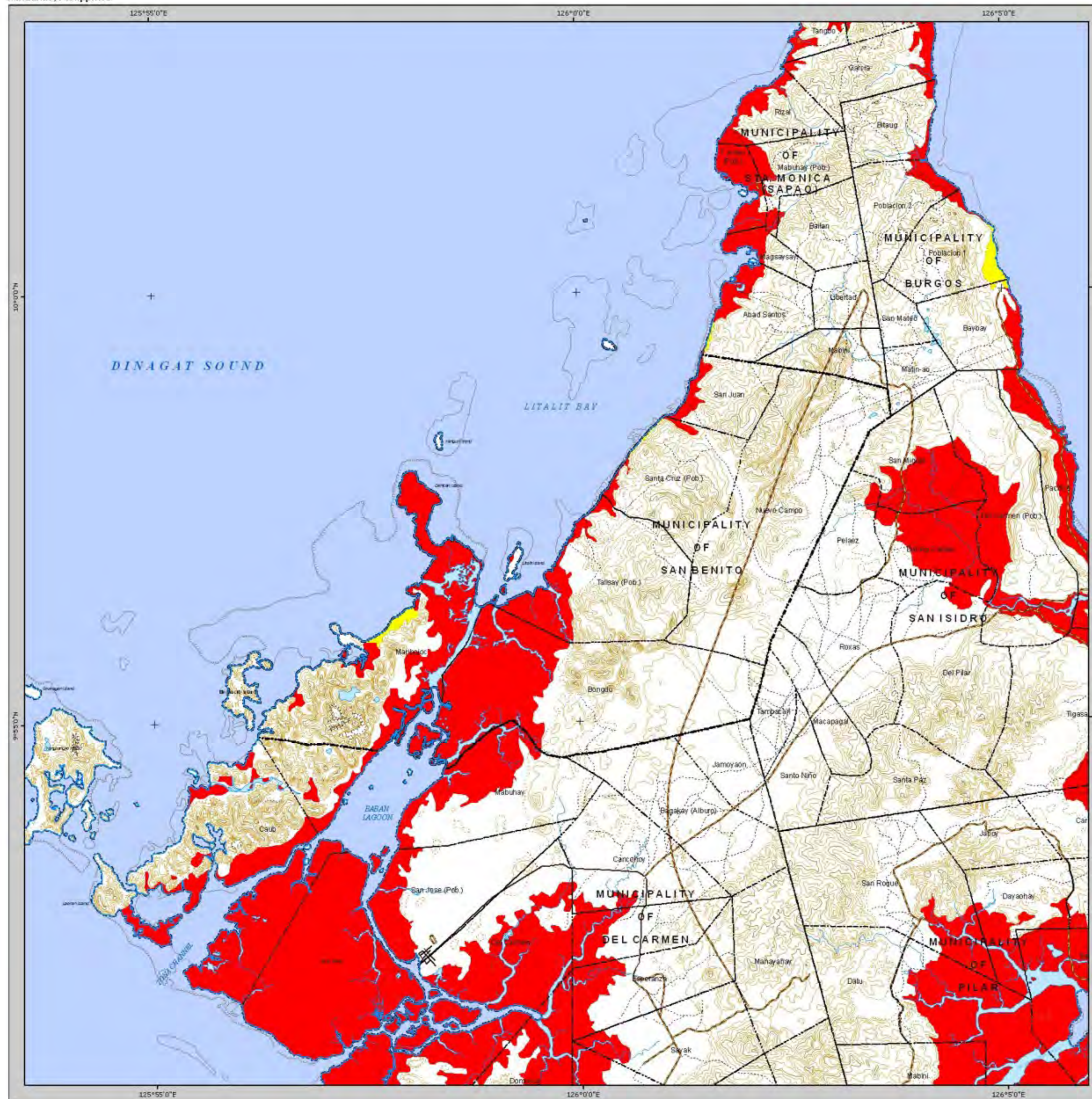
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- This map is semi-detailed and may be used for land use, emergency response and mitigation planning, and should not be used for site specific evaluation.
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# LIQUEFACTION HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF SAN BENITO

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

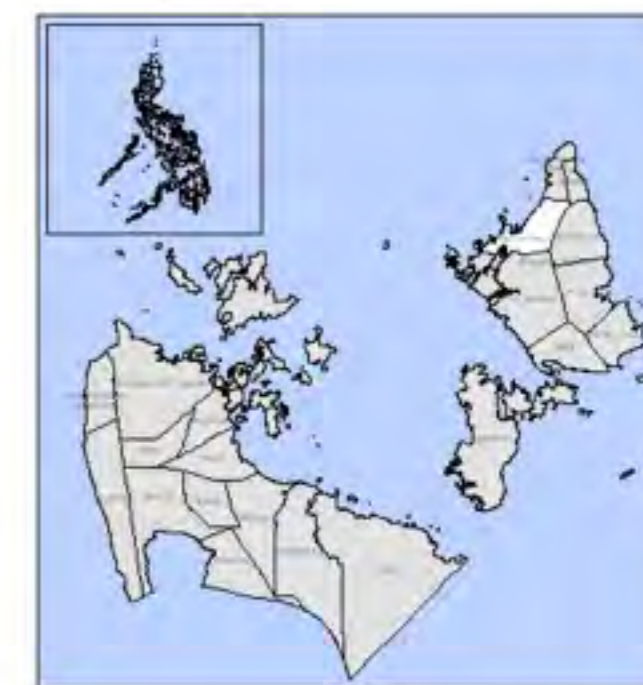
### SUSCEPTIBILITY

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility

### EXPLANATION

1. The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials.
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### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of San Benito  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

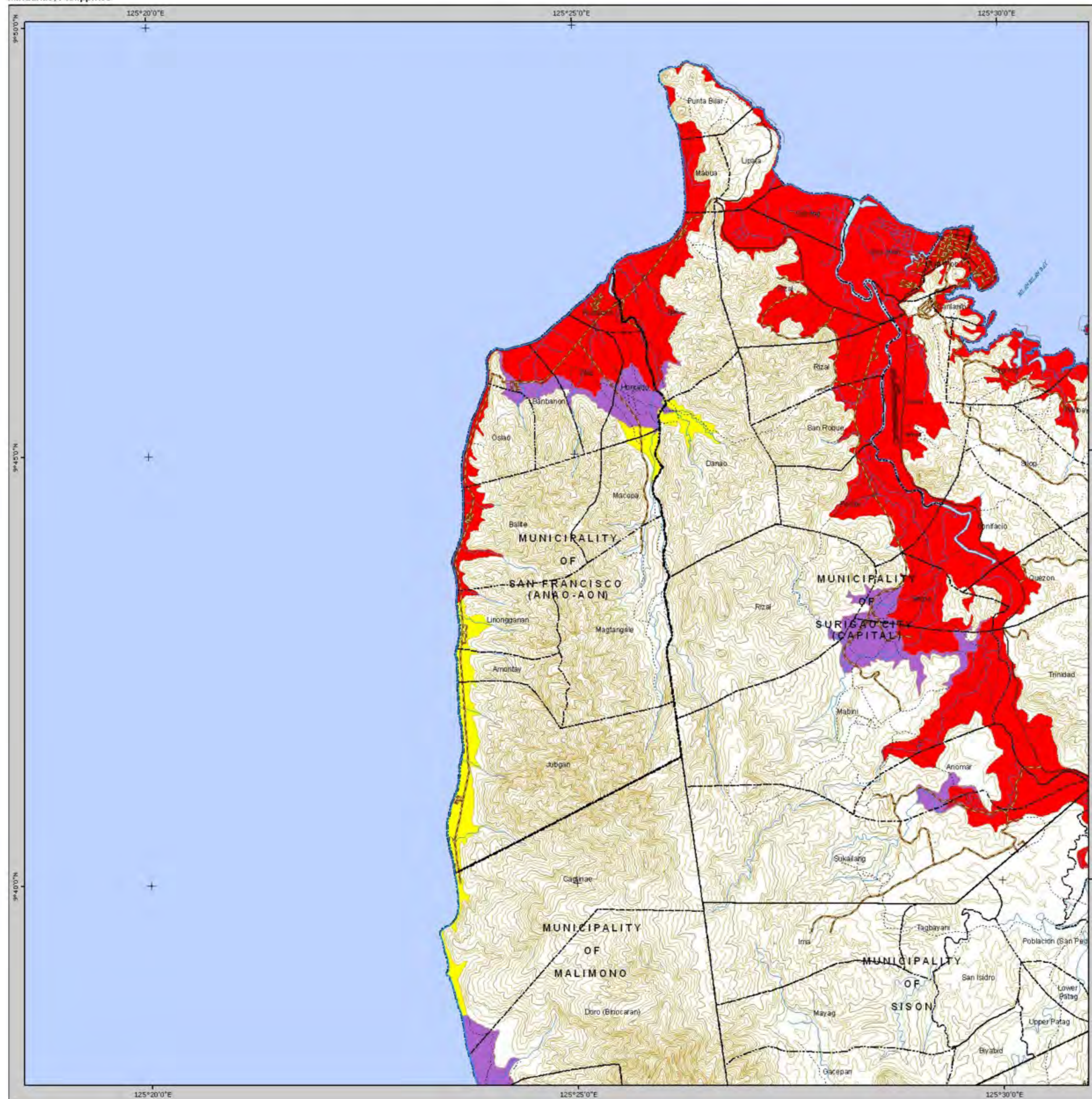
**Disclaimer:**  
 Administrative boundaries are approximate.





# LIQUEFACTION HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF SAN FRANCISCO

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

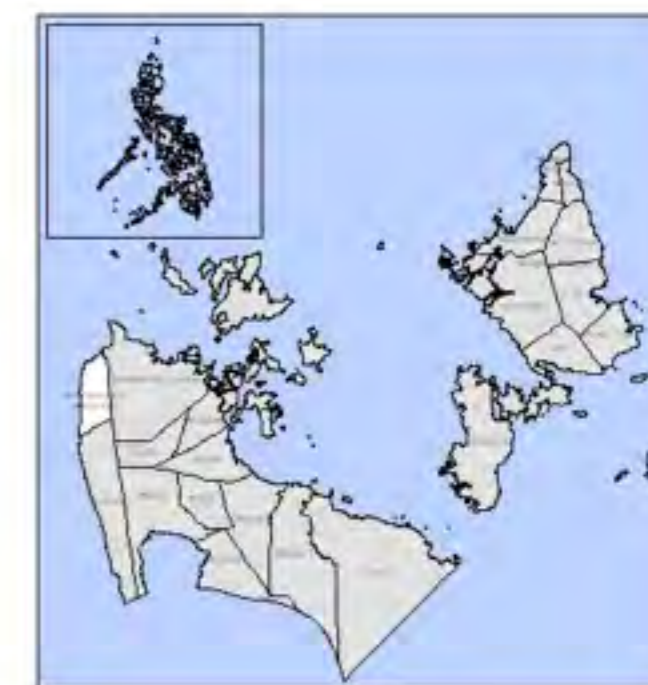
### SUSCEPTIBILITY

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility

### EXPLANATION

1. The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials.
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### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capital), Comprehensive Landuse Plan (CLUP) of San Francisco  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

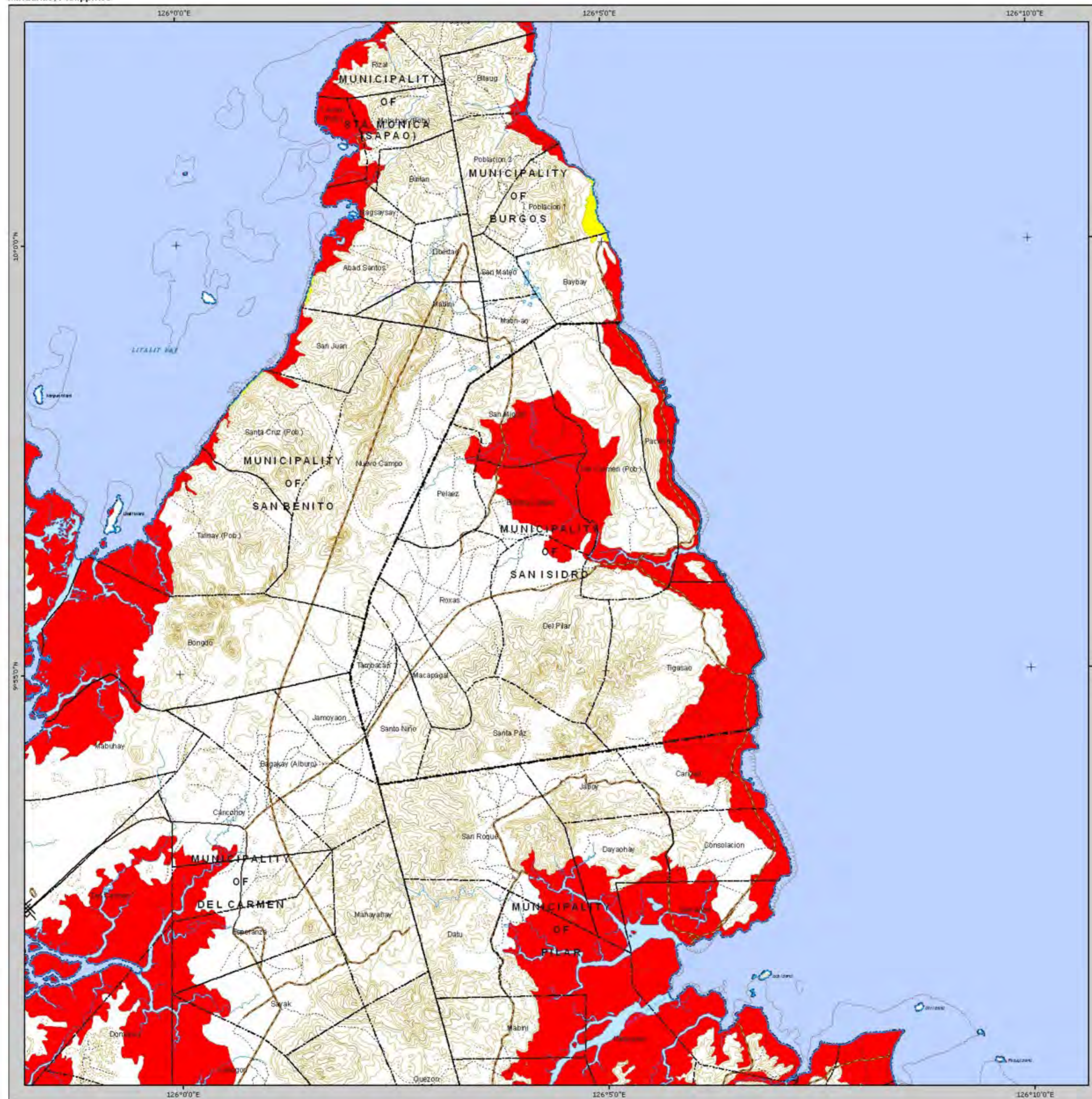
**Disclaimer:**  
 Administrative boundaries are approximate.





# LIQUEFACTION HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF SAN ISIDRO

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- × 1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility

### EXPLANATION

1. The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials.
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### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of San Isidro  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
 Ed. 1 - AMS, Ed. 2 - DMA, 1954 - 1955

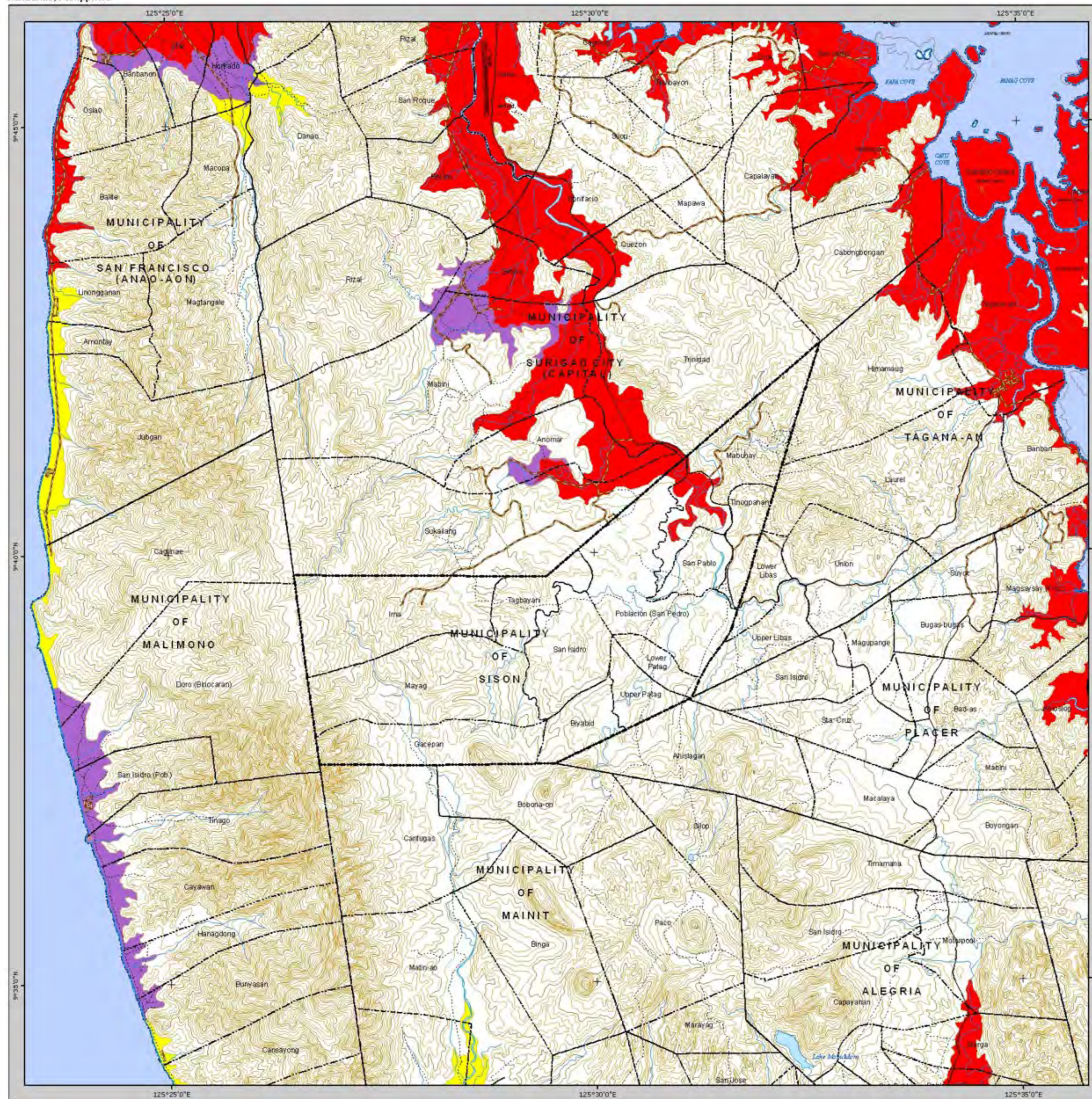
**Disclaimer:**  
 Administrative boundaries are approximate.





# LIQUEFACTION HAZARD MAP

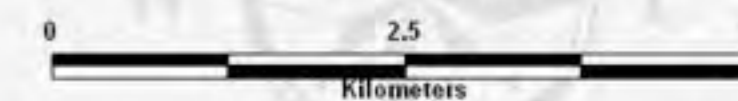
Mindanao, Philippines



## MUNICIPALITY OF SISON

Province of Surigao Del Norte  
Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

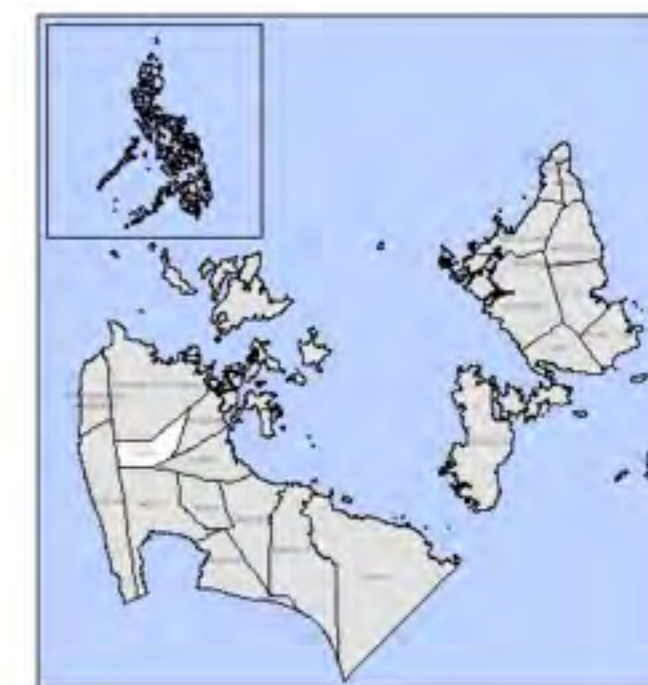
### SUSCEPTIBILITY

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility

### EXPLANATION

1. The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials.
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### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Sison  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

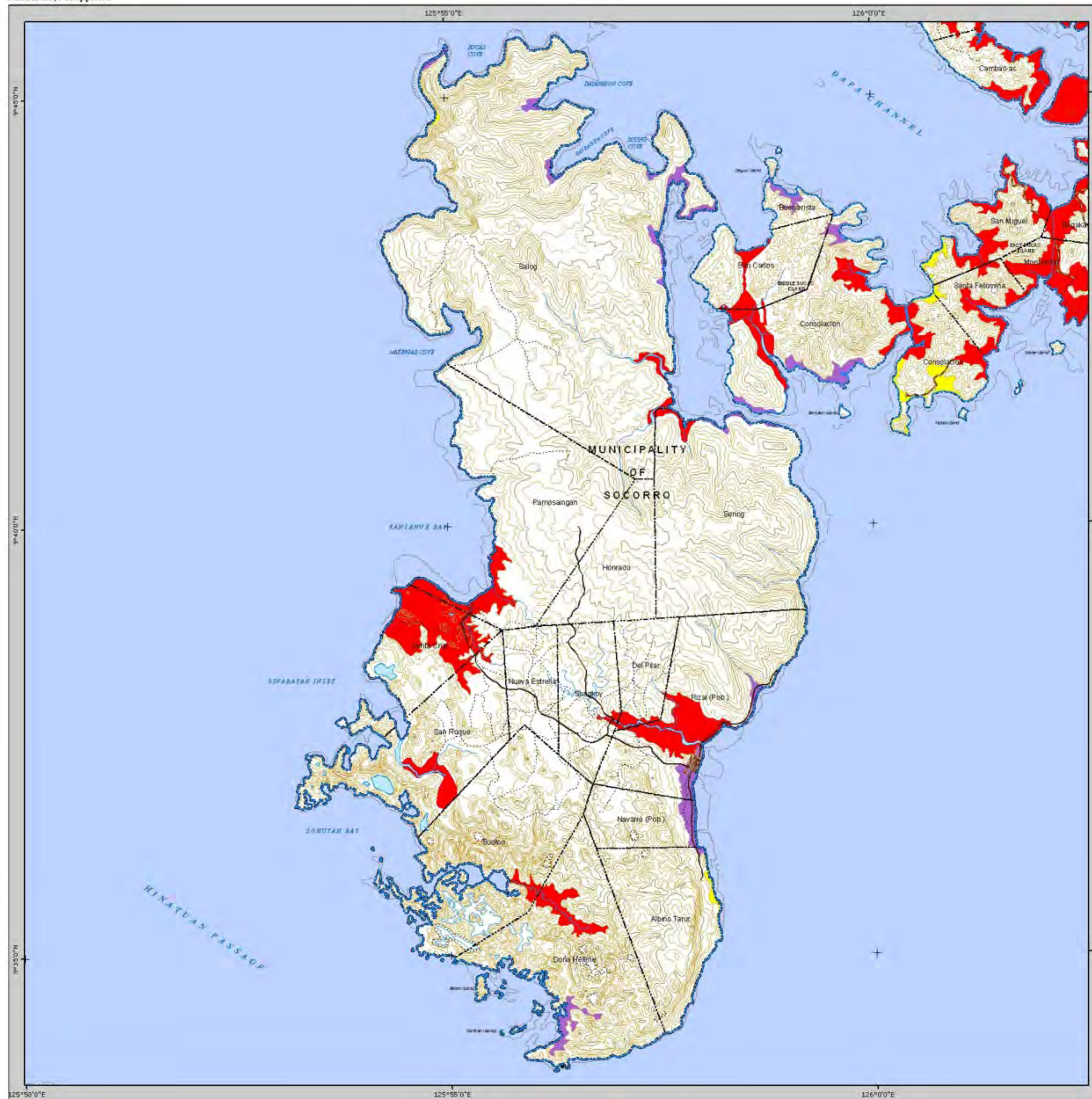
**Disclaimer:**  
Administrative boundaries are approximate.





# LIQUEFACTION HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF SOCORRO

Province of Surigao Del Norte  
Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ⊙ 1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility

### EXPLANATION

1. The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials.
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3. The liquefaction hazard maps do not restrict construction of any structures and development in areas susceptible to liquefaction as long as proper engineering considerations are applied.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capital), Comprehensive Landuse Plan (CLUP) of Socorro  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

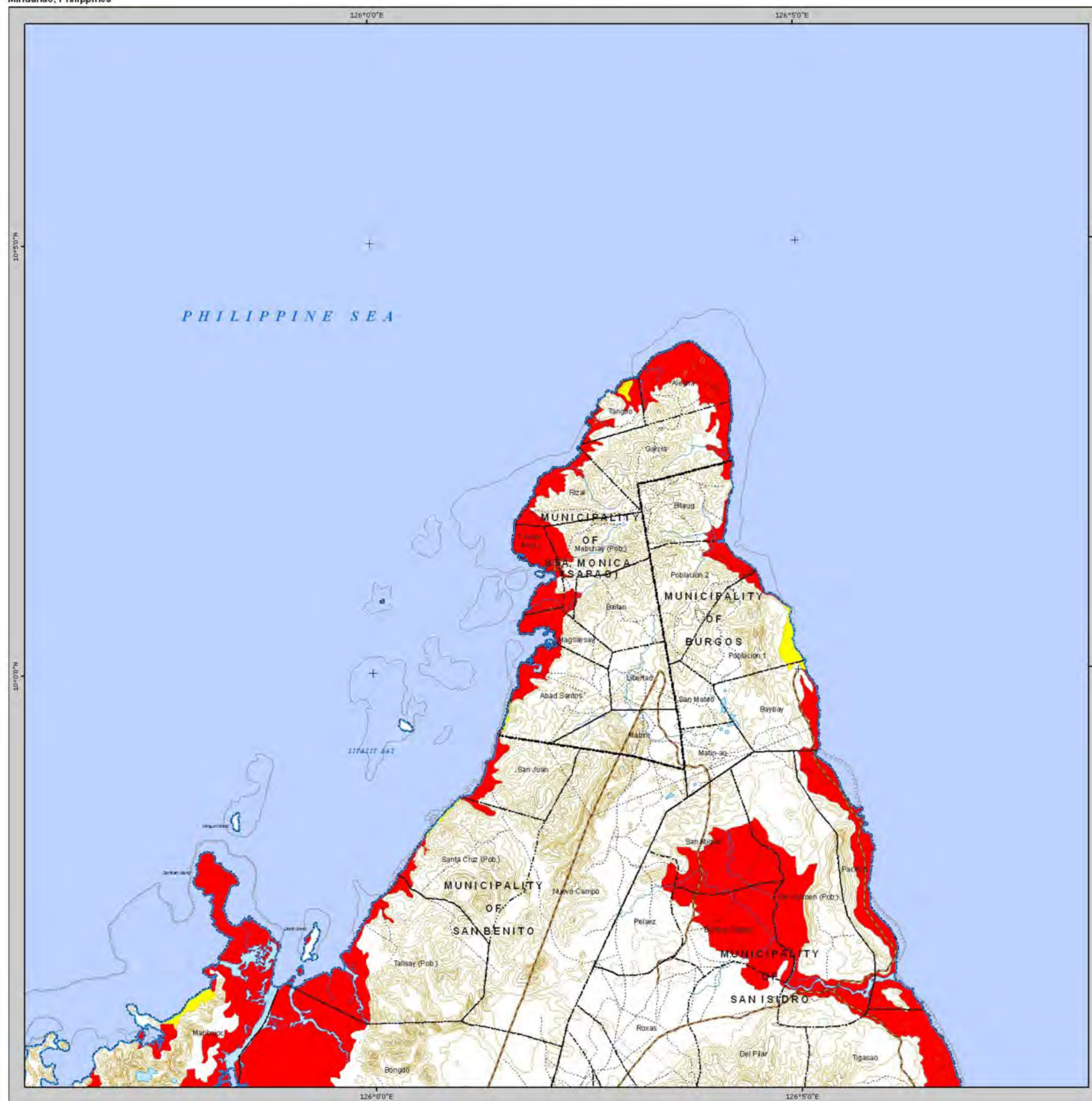
**Disclaimer:**  
Administrative boundaries are approximate.





# LIQUEFACTION HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF STA. MONICA

Province of Surigao Del Norte  
Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

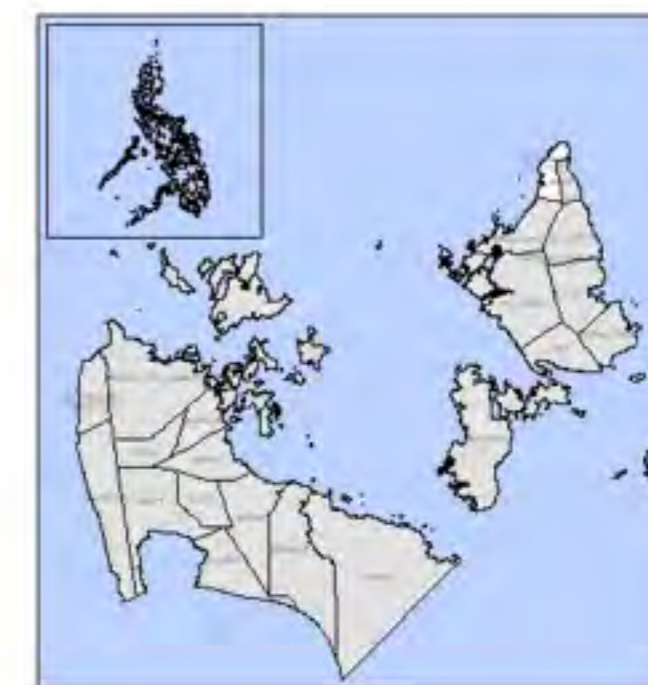
### SUSCEPTIBILITY

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility

### EXPLANATION

1. The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials.
2. This map is semi-detailed and may be used for land use, emergency response and mitigation planning, and should not be used for site specific evaluation.
3. The liquefaction hazard maps do not restrict construction of any structures and development in areas susceptible to liquefaction as long as proper engineering considerations are applied.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Sta. Monica  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

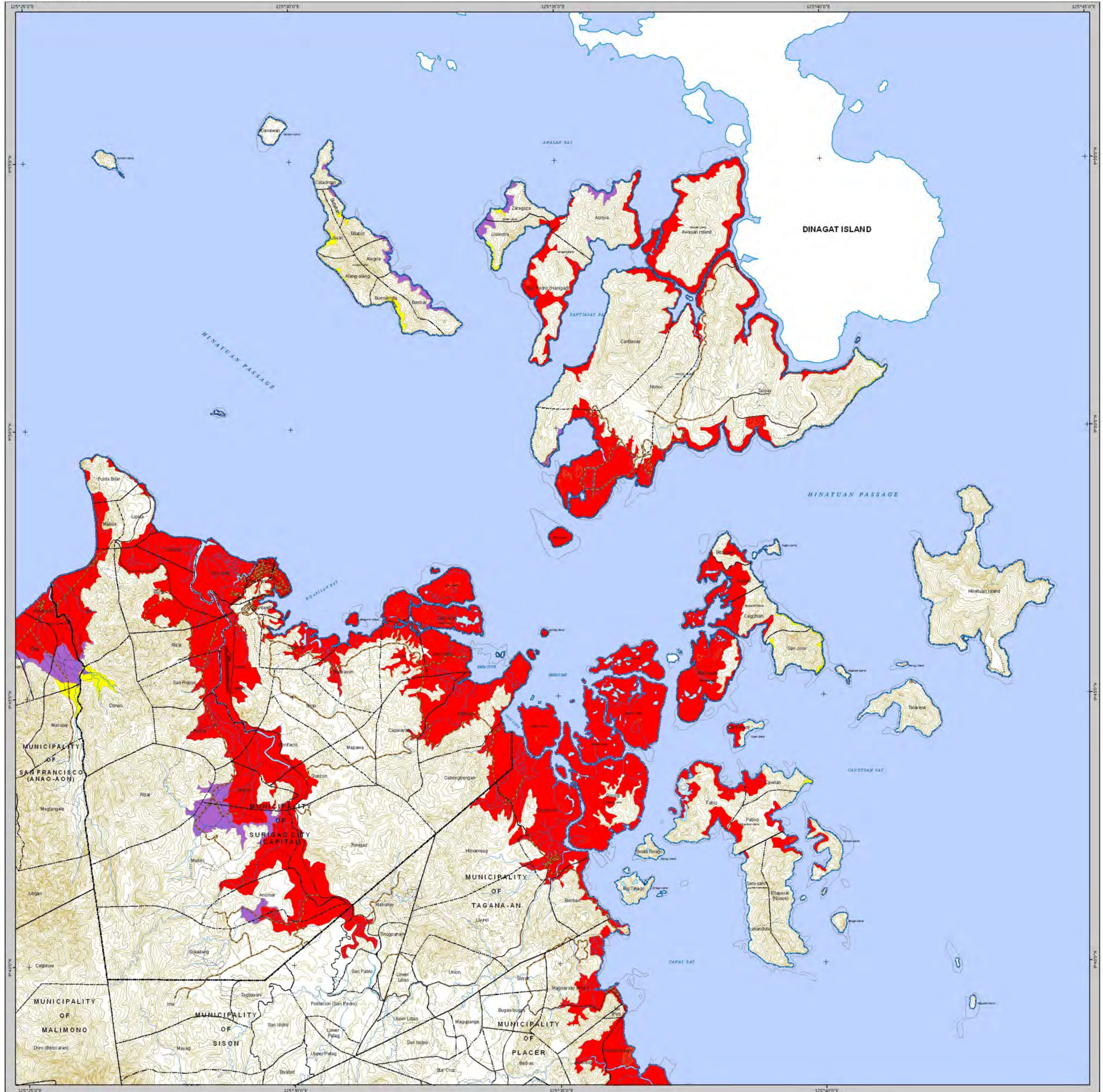
**Disclaimer:**  
Administrative boundaries are approximate.





# LIQUEFACTION HAZARD MAP

Mindanao, Philippines



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOSTI) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Surigao City  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Rivers and Creeks
- Rivers Intermittent
- Corals
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Bridges
- 1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility

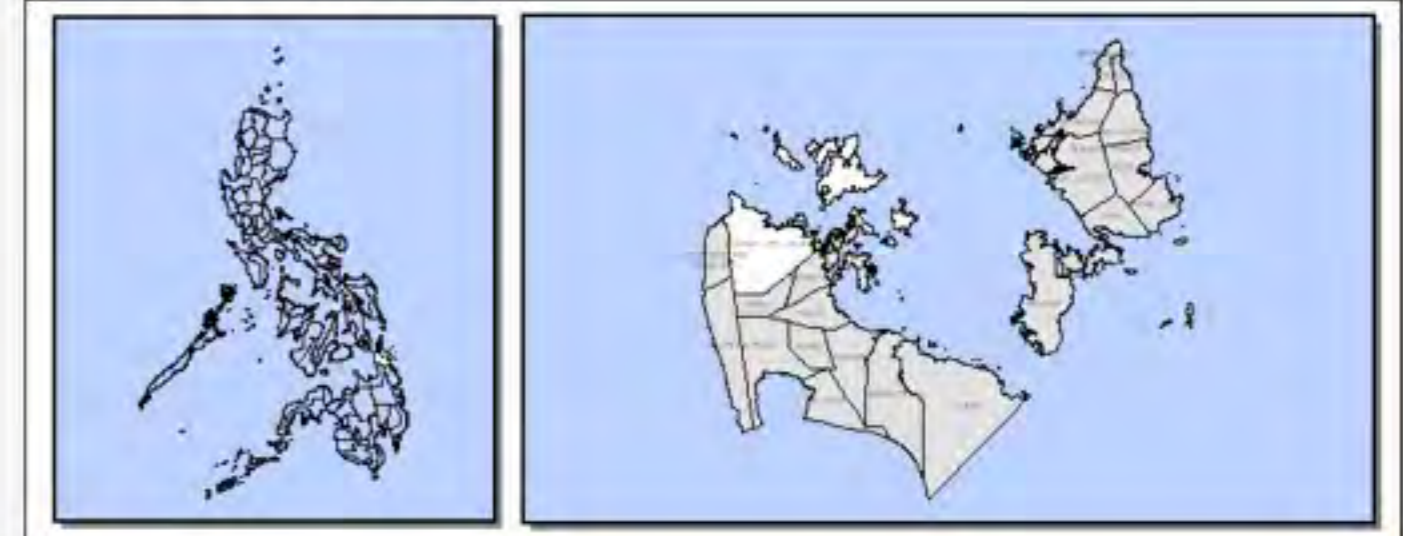
## SURIGAO CITY Province of Surigao Del Norte Region XIII - CARAGA

Scale 1:50,000

0 25 50 100 150 200 250  
 Kilometers

Spheroid: ..... Clark 1866  
 Projection: ..... Universal Transverse Mercator (UTM)  
 Horizontal Datum: ..... Luzon 1911  
 Vertical Datum: ..... Mean Sea Level

### LOCATION MAP



### EXPLANATION

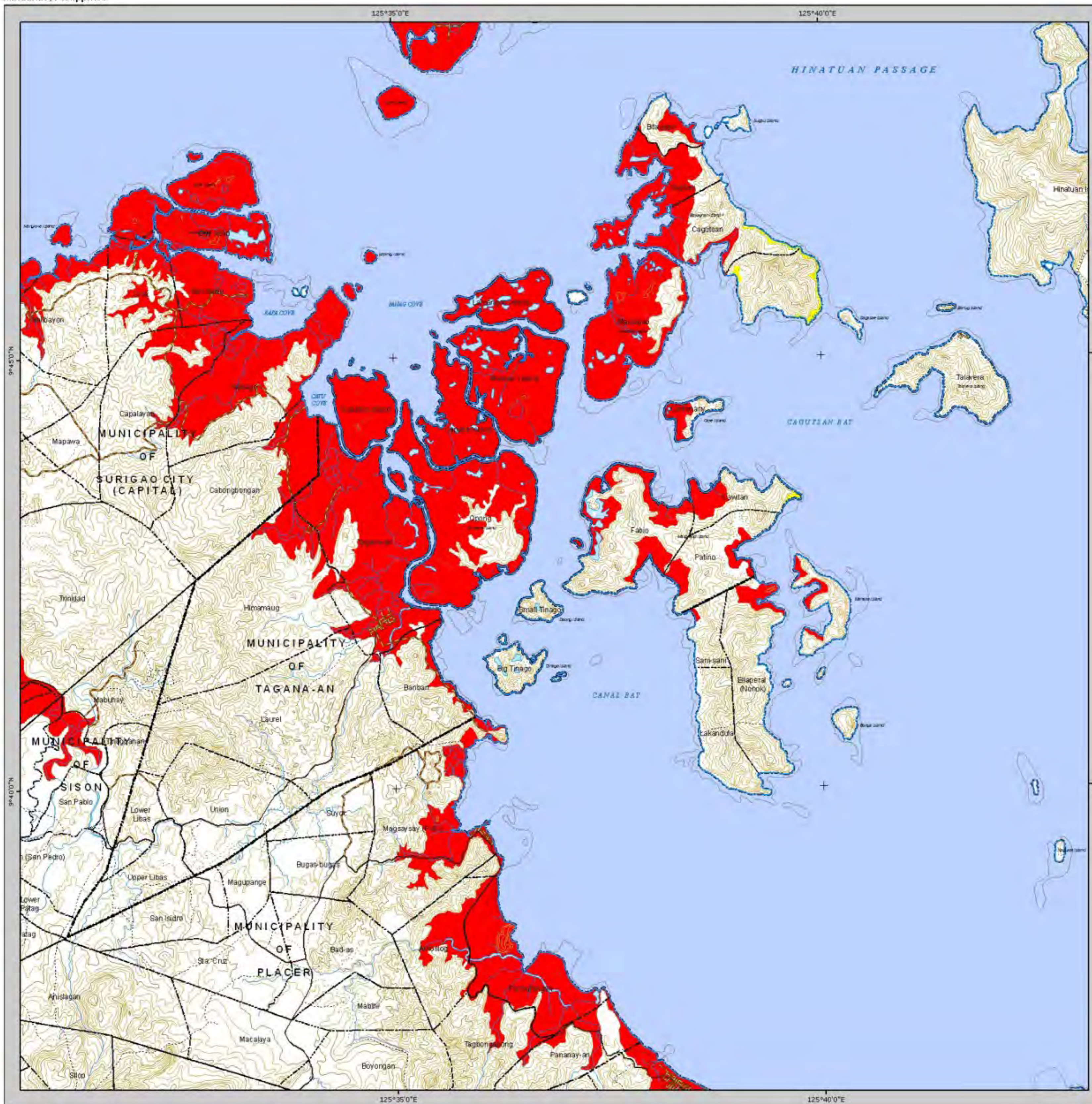
1. The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials
2. This map is semi-detailed and may be used for land use, emergency response and mitigation planning, and should not be used for site specific evaluation.
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# LIQUEFACTION HAZARD MAP

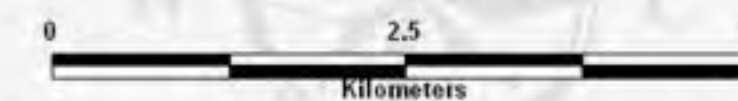
Mindanao, Philippines



## MUNICIPALITY OF TAGANA-AN

Province of Surigao Del Norte  
Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- × 1176 Spot Elevation
- Water Body

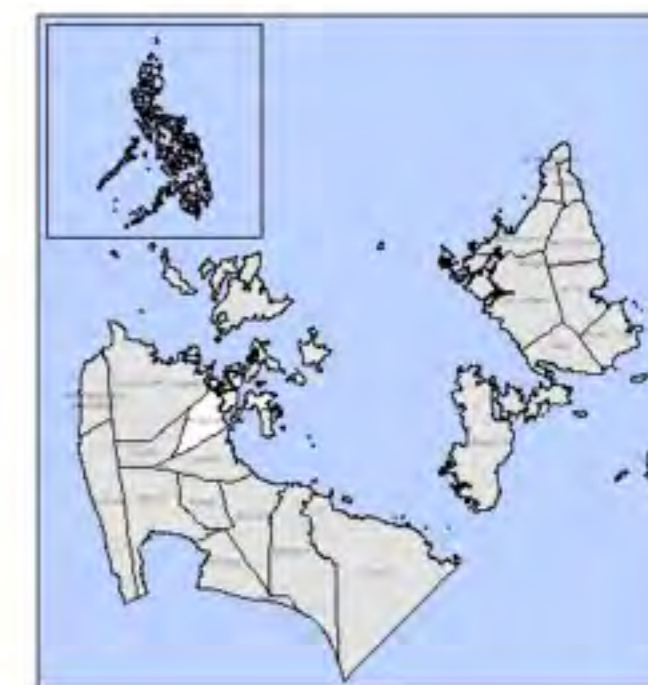
### SUSCEPTIBILITY

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility

### EXPLANATION

- The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials.
- This map is semi-detailed and may be used for land use, emergency response and mitigation planning, and should not be used for site specific evaluation.
- The liquefaction hazard maps do not restrict construction of any structures and development in areas susceptible to liquefaction as long as proper engineering considerations are applied.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Tagana-an  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

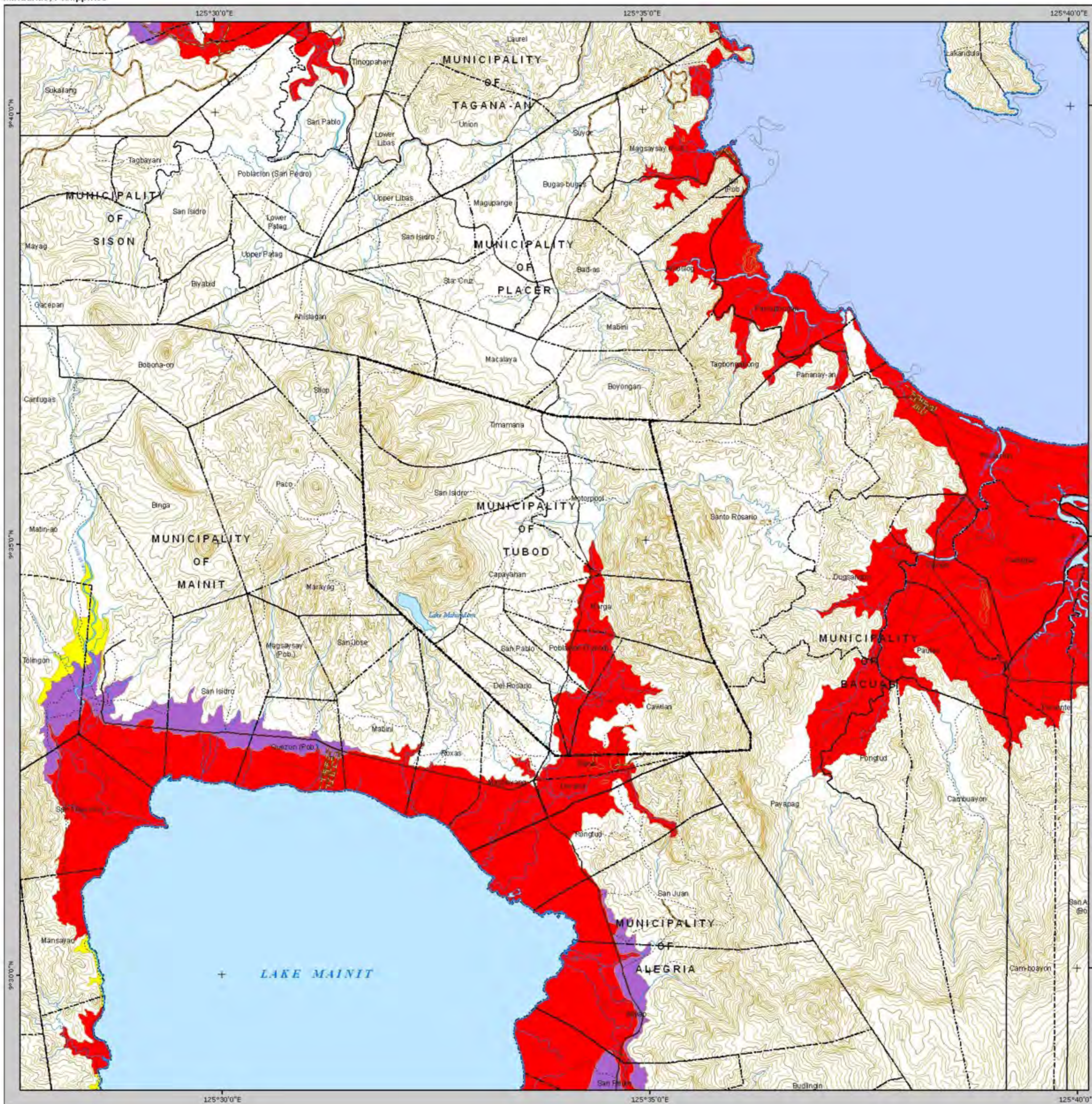
**Disclaimer:**  
Administrative boundaries are approximate.





# LIQUEFACTION HAZARD MAP

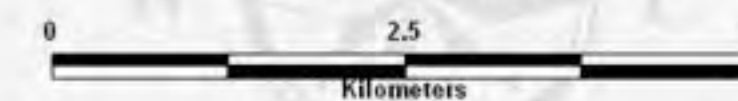
Mindanao, Philippines



## MUNICIPALITY OF TUBOD

Province of Surigao Del Norte  
Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ×1176 Spot Elevation
- Water Body

### SUSCEPTIBILITY

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility

### EXPLANATION

1. The map was based on the geology, presence of active faults, historical accounts of liquefaction, geomorphology and hydrology of the area, and preliminary microtremor survey data utilized to validate type of underlying materials.
2. This map is semi-detailed and may be used for land use, emergency response and mitigation planning, and should not be used for site specific evaluation.
3. The liquefaction hazard maps do not restrict construction of any structures and development in areas susceptible to liquefaction as long as proper engineering considerations are applied.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Tubod  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

**Disclaimer:**  
Administrative boundaries are approximate.





# GROUND RUPTURE HAZARD MAP

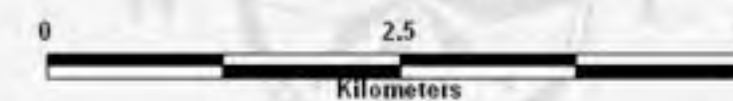
Mindanao, Philippines



## MUNICIPALITY OF MAINIT

Province of Surigao Del Norte  
Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- △ 1176 Spot Elevation
- Water Body

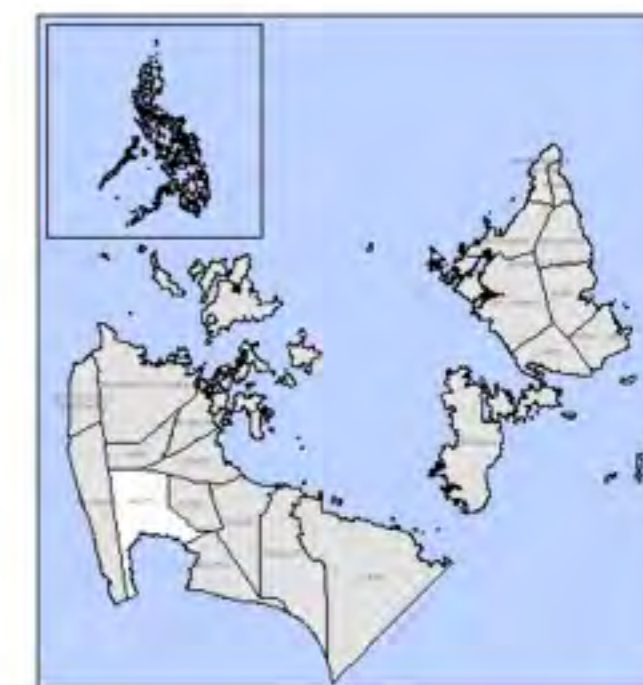
### ACTIVE FAULT LEGEND

- Active fault: Solid line - trace certain
- - - Active fault: Dashed line - trace approximate
- Hachures indicate downthrown area

### EXPLANATION

Recommended minimum buffer zone from the fault is 5 meters as reckoned from both sides of the fault trace or from the edge of the deformation zone.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Mainit  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED. 2 - DMA, 1954 - 1955

**Disclaimer:**  
Administrative boundaries are approximate.





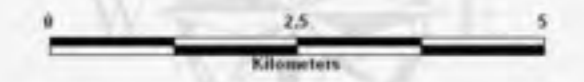
# GROUND RUPTURE HAZARD MAP

## MUNICIPALITY OF PLACER

Province of Surigao Del Norte

Region XIII-CARAGA

Scale 1:50,000

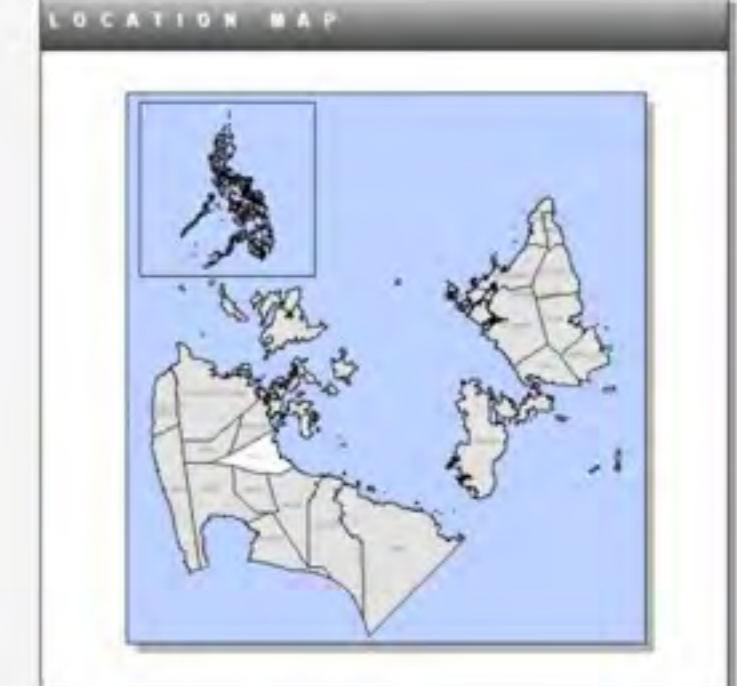


Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

LEGEND	
	Provincial Boundary
	Municipal Boundary
	Barangay Boundary
	Main Road
	Secondary Road
	Trails
	Rivers and Creeks
	Rivers Intermittent
	Contour Index
	Contour Intermediate
	Contour Supplementary
	Contour Depression
	Coastline
	Corals
	Bridges
	Spot Elevation
	Water Body

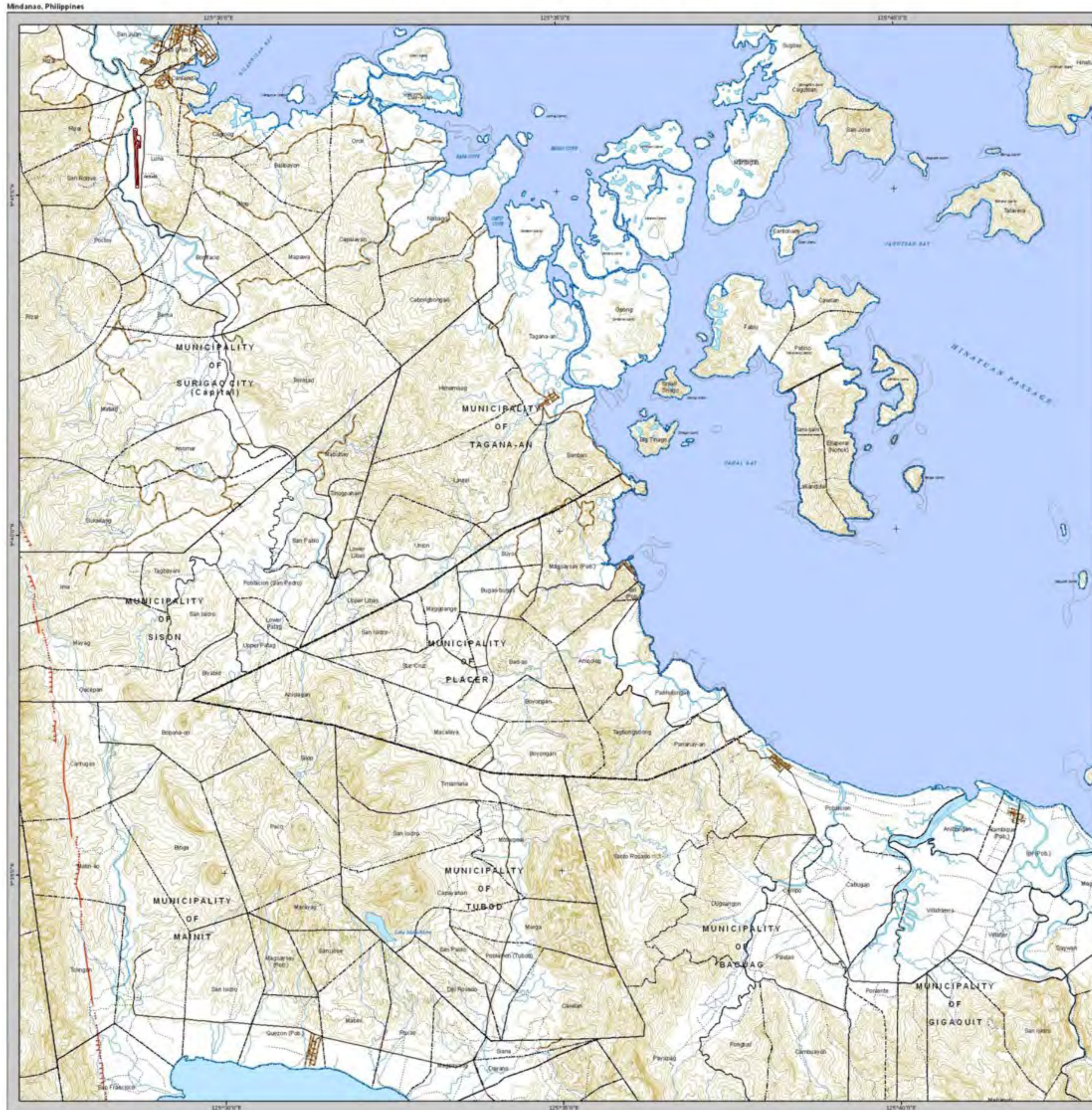
ACTIVE FAULT LEGEND	
	Active fault - Solid line - trace certain
	Active fault - Dashed line - trace approximate
	Hachures indicate downthrown area

**EXPLANATION**  
 Recommended minimum buffer zone from the fault is 5 meters as reckoned from both sides of the fault trace or from the edge of the deformation zone.



**SOURCES OF DATA**  
 Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Placer  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed. 1 - AMS, ED 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate





# GROUND RUPTURE HAZARD MAP



**SOURCES OF DATA**  
 Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP)  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
 Ed. 1 - AMS, Ed. 2 - DMA, 1954 - 1965  
**Disclaimer:**  
 Administrative boundaries are approximate.

**LEGEND**

Provincial Boundary	Coastline
Municipal Boundary	Rivers and Creeks
Main Road	Rivers Intermittent
Secondary Road	Coral
Trails	Spot Elevation
Bridges	1174
Contour Index	Fishpen
Contour Intermediate	Water Body
Contour Supplementary	
Contour Depression	

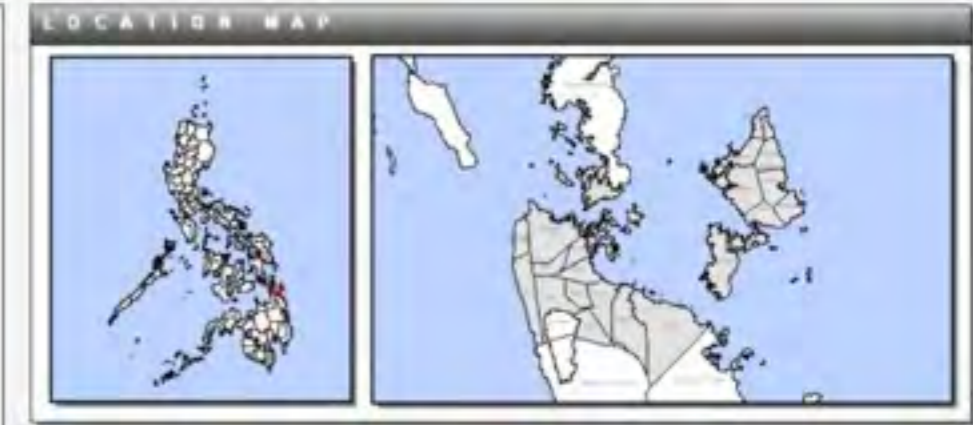
**ACTIVE FAULT LEGEND**

Active fault: Solid line - trace certain
Active fault: Dashed line - trace approximate
Hachures indicate downthrown area

## PROVINCE OF SURIGAO DEL NORTE REGION XIII - CARAGA



Spheroid ..... Clark 1866  
 Projection ..... Universal Transverse Mercator (UTM)  
 Horizontal Datum ..... Luzon 1911  
 Vertical Datum ..... Mean Sea Level



**EXPLANATION**  
 Recommended minimum buffer zone from the fault is 5 meters as reckoned from both sides of the fault trace or from the edge of the deformation zone.





# GROUND RUPTURE HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF SAN FRANCISCO

Province of Surigao Del Norte  
Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
Projection: Universal Transverse Mercator (UTM)  
Horizontal Datum: Luzon 1911  
Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- X1176 Spot Elevation
- Water Body

### ACTIVE FAULT LEGEND

- Active fault: Solid line - trace certain
- - - Active fault: Dashed line - trace approximate
- Hachures indicate downthrown area

### EXPLANATION

Recommended minimum buffer zone from the fault is 5 meters as reckoned from both sides of the fault trace or from the edge of the deformation zone.

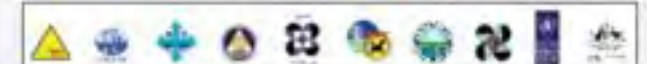
### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of San Francisco (Anao-aon)  
Topographic map 1:50,000 scale, NAMRIA - DMA Series 733 Ed 1 - AMS, ED 2 - DMA, 1954 - 1955

**Disclaimer:**  
Administrative boundaries are approximate.





# GROUND RUPTURE HAZARD MAP

Mindanao, Philippines



## MUNICIPALITY OF SISON

Province of Surigao Del Norte

Region XIII - CARAGA

Scale 1:50,000



Spheroid: Clark 1866  
 Projection: Universal Transverse Mercator (UTM)  
 Horizontal Datum: Luzon 1911  
 Vertical Datum: Mean Sea Level

### LEGEND

- Provincial Boundary
- Municipal Boundary
- Barangay Boundary
- Main Road
- Secondary Road
- ..... Trails
- Rivers and Creeks
- Rivers Intermittent
- Contour Index
- Contour Intermediate
- Contour Supplementary
- Contour Depression
- Coastline
- Corals
- Bridges
- ⊕ Spot Elevation
- Water Body

### ACTIVE FAULT LEGEND

- Active fault: Solid line - trace certain
- - - Active fault: Dashed line - trace approximate
- Hachures indicate downthrown area

### EXPLANATION

Recommended minimum buffer zone from the fault is 5 meters as reckoned from both sides of the fault trace or from the edge of the deformation zone.

### LOCATION MAP



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Sison  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
 Ed. 1 - AMS, Ed. 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate.





# GROUND RUPTURE HAZARD MAP

Mindanao, Philippines



### SOURCES OF DATA

Hazard Data from Philippine Institute of Volcanology and Seismology (PHIVOLCS - DOST) 2007  
 Administrative boundary, Administrative Map of Surigao del Norte (Provincial Capitol), Comprehensive Landuse Plan (CLUP) of Surigao City  
 Topographic map 1:50,000 scale, NAMRIA - DMA Series 733  
 ED 1 - AMS, ED 2 - DMA, 1954 - 1955

**Disclaimer:**  
 Administrative boundaries are approximate

### LEGEND

- |                         |                       |
|-------------------------|-----------------------|
| --- Provincial Boundary | — Coastline           |
| --- Municipal Boundary  | — Bridges             |
| --- Barangay Boundary   | • 1174 Spot Elevation |
| — Rivers and Creeks     | — Water Body          |
| — Rivers Intermittent   |                       |
| — Corals                |                       |
| — Contour Index         |                       |
| — Contour Intermediate  |                       |
| — Contour Supplementary |                       |
| — Contour Depression    |                       |

### ACTIVE FAULT LEGEND

- Active fault - Solid line - trace certain
- - - Active fault - Dashed line - trace approximate
- Hachures indicate downthrown area

## SURIGAO CITY

### Province of Surigao Del Norte

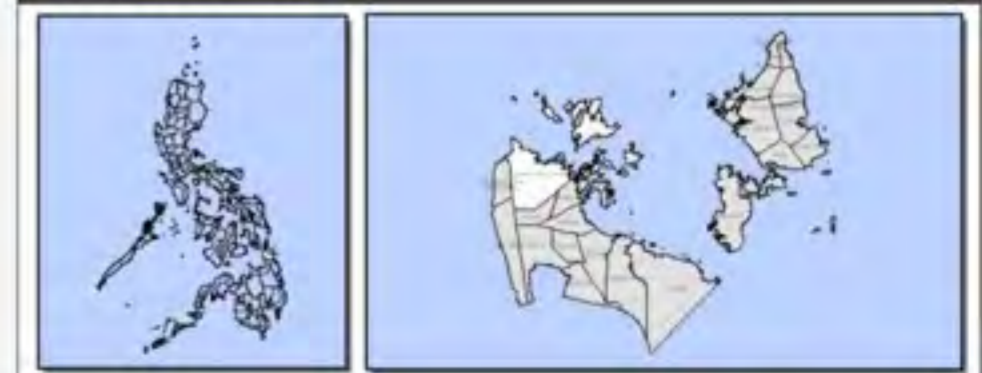
### Region XIII - CARAGA

Scale 1:50,000

0 25 50 100 150 200 Kilometers

Spheroid: ..... Clark 1866  
 Projection: ..... Universal Transverse Mercator (UTM)  
 Horizontal Datum: ..... Luzon 1911  
 Vertical Datum: ..... Mean Sea Level

### LOCATION MAP



### EXPLANATION

Recommended minimum buffer zone from the fault is 5 meters as reckoned from both sides of the fault trace or from the edge of the deformation zone.

