

# REPORT ON THE 1:10,000 SCALE GEOHAZARDS ASSESSMENT AND MAPPING OF LORETO, AGUSAN DEL SUR



**Submitted to:**



**Mines and Geoscience Bureau**  
Department of Environment and Natural Resources  
Central Office - *MGB* Compound, North Avenue  
Diliman, Quezon City

**Submitted by:**



**SRDP Consulting Inc.**  
Units 119, 420 & 421 SJB Condominium  
130-B Panay Ave, South Triangle  
Quezon City, Philippines

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Republic of the Philippines  
Department of Environment and Natural Resources  
**MINES AND GEOSCIENCES BUREAU**  
**Regional Office No. XIII**

Km. 2 National Highway, Surigao City

Tel No. (+63 86) 826-5256; Fax No. (+63 86) 826-1058; E-mail: info@mgbr13.ph; website: www.mgbr13.ph

April 29, 2015

RD-G-15-04-295

**Honorable Dario E. Otaza**  
Municipal Mayor  
Municipality of Loreto  
Province of Agusan del Sur



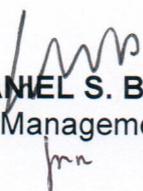
Dear Mayor Otaza:

Respectfully furnishing your end the document entitled "Report on the 1:10,000 Scale Geohazards (Landslide and Flooding) Assessment and Mapping of the Municipality of Loreto, Agusan del Sur submitted by SRDP Consulting Inc. to Mines and Geosciences Bureau as one of the outsource municipalities for CY 2014. The assessment is in line with the government's effort aimed at reducing, if not totally mitigating the destructive effects and impacts of natural hazards to the populace.

The Office expresses its deep gratitude for the support and assistance rendered to the Geohazard Mapping and Assessment Team of SRDP Consulting Inc. during the conduct of the field survey.

We look forward to a continuing partnership and collaboration with the LGU of Loreto, Agusan del Sur in the nation's overall disaster risk reduction program.

Very truly yours,  
By the Authority of the Regional Director:

  
**ENGR. DANIEL S. BELDEROL**  
OIC, Mine Management Division

GSD-15-04-Ghz-259

Cc: **DIRECTOR, MGB CO**  
**HON. GOVERNOR**, Agusan del Sur  
**HON. REPRESENTATIVE**, 2<sup>nd</sup> District, ADS  
**Office of Civil Defense, RDRMCC Caraga**

**REGIONAL EXECUTIVE DIRECTOR, DENR, R-XIII**  
**PENRO**, Agusan del Sur  
**CENRO**, Bunawan, ADS  
**REGIONAL DIRECTOR, DILG-Caraga**

"MINING SHALL BE PRO-PEOPLE AND PRO-ENVIRONMENT  
IN SUSTAINING WEALTH CREATION AND IMPROVED QUALITY OF LIFE."



## REPORT ON THE 1:10,000 SCALE GEOHAZARDS (LANDSLIDE AND FLOODING) ASSESSMENT AND MAPPING OF LORETO, AGUSAN DEL SUR

The SRDP Consulting Inc., tasked by the Mines and Geosciences Bureau Central Office- Department of Environment and Natural Resources (MGB-DENR), conducted flood and landslide assessment and mapping (1:10,000 scale) of barangays within the Municipality of Loreto, Agusan del Sur on November 6 - 7, 2014. The SRDP CARAGA technical geohazard team is composed of Jesse Segura (Geologist), Tina Marie de Peralta (Geologist), Llewe Lloyd Polinar (Geologist), Idzel Bonn Demetillo (Geologist), Filman Monceda (Geologist), Ryan Gantalao (Geologist), Mark Lim (Geologist), Tyson Epa (Geologist), Roberto Mirador (Area Coordinator) and Ria Acevedo (Encoder).

The geohazard assessment of landslide and flood susceptibility used 1:10,000 scale base maps from the National Mapping and Resource Information Authority (NAMRIA). The assessed areas were rated as having low, moderate, high or very high (critical) susceptibility to landslide. Similar flooding susceptibility rating (i.e. high, moderate or low) was also given to the assessed barangays. **Tables 1 and 2** show the parameters used in the assessment of landslide and flood.

**Table 1. Landslide susceptibility parameters used during the assessment**

<b>Landslide Susceptibility Parameters</b>	<b>Low</b>	<b>Moderate</b>	<b>High</b>	<b>Very High</b>
<b>A. Slope Gradient</b>	Low to moderate (6.5°-12.5°)	Moderate to steep (12.5°-22.5°)	Steep to very steep (22.5°-45°)	Steep to very steep (>45°)
<b>B. Weathering/Soil Characteristics</b>	Slight to moderate	Moderate	Intense; Soil usually non-cohesive	Intense; Soil usually non-cohesive
<b>C. Rock mass strength</b>	Very good to good	Fair	Poor to very poor	Poor to very poor
<b>D. Ground Stability</b>	Stable with no identified landslide scars, either old, recent or active	Soil creep and other indications for possible landslide occurrence are present.	Active and inactive landslides evident; tension cracks present	Active and inactive landslides evident; tension cracks, bulges, terracets, seepage present.
<b>E. Human Initiated effects</b>				May be an aggravating factor

**Table 2. Flood susceptibility parameters used during the assessment**

<b>Flood Susceptibility Parameters</b>	<b>Low</b>	<b>Moderate</b>	<b>High</b>	<b>Very High</b>
<b>A. Flood height</b>	Areas likely to experience flood heights of less than 0.5 meter	Areas likely to experience flood heights of 0.5 to 1 meter	Areas likely to experience flood heights 1 to 2 meters	Areas likely to experience flood heights greater than 2 meters
<b>B. Flood duration</b>	Areas likely to experience flooding of less than 1 day	Areas likely to experience flooding of 1 to 3 days	Areas likely to experience flooding of more than 3 days	Areas likely to experience flooding of more than 3 days
<b>C. Landform / Geomorphic feature</b>	Low hills and gentle slopes	Fluvial terraces, alluvial fans and in-filled valleys	Topographic lows such as active and abandoned river channels, and areas along river banks	Topographic lows such as active and abandoned river channels, and areas along river banks
<b>D. Drainage density</b>	Sparse to moderately-spaced drainage	Moderately-spaced drainage	Closely-spaced drainage	Closely-spaced drainage
<b>E. Prone to flashflood</b>	No	No	No	Yes

A list of the barangays covered by the geohazard mapping and assessment is given in **Table 3**. Results of the landslide mapping and assessment are tabulated in **Tables 4** (landslide) and **5** (flood), arranged alphabetically by barangay name as shown in **Table 3**. Photos of significant observation points are included in the latter part of this report.

**Table 3. List of barangays covered by the Geohazard mapping and assessment in the Municipality of Loreto, Agusan del Sur**

<b>Barangay</b>	<b>Page Number</b>	
	<b>Landslide</b>	<b>Flood</b>
Binucayan		
Johnson		
Kasapa		
Katipunan		
Kauswagan		
Magaud		
Nueva Gracia		
Poblacion		
Sabud		
San Isidro		

San Mariano		
San Vicente		
Santa Teresa		
Santo Niño		
Santo Tomas		
Violanta		
Waloe		

**Table 4. Results of the Landslide Hazard Assessment**

Location	Landslide Susceptibility Rating	Remarks/Recommendations
<b>Barangay Binucayan</b>		
LOR-BNY-447 Purok 2 Community area 8°0'36" N 125°49'8.7" E	Moderate	Some settlements are near the bank of Ihawan River which is constantly eroding.  Recommendations: Stabilize riverbanks especially at the outer bend of the meander. Develop an early warning system (e.g., signage). Observe for and/or monitor for presence of mass movement (e.g., landslides, tension cracks) and report to MGB/municipal authorities.
LOR-BNY-450 Community Area in Sitio Boom 7°59'57.1" N 125°49'20.9" E	Moderate	
LOR-BNY-451 Community Area in Sitio Boom 8°0'6.8" N 125°49'19.2" E	Moderate	
LOR-BNY-442 Binucayan Barangay Hall 8°0'34.1" N 125°49'11.7" E	Low	No landslide/mass movement component mapped.
LOR-BNY-443 Purok 1 Riverside Community 8°0'40.2" N 125°49'3.8" E	Low	
LOR-BNY-444 Purok 1 Riverside Community 8°0'37" N 125°49'3.4" E	Low	
LOR-BNY-445 Binucayan Elem. School 8°0'41.5" N 125°49'4.1" E	Low	
LOR-BNY-448 Junction of Ihawan River and Sabod River 7°59'52.6" N 125°49'17.2" E	Low	

LOR-BNY-449 Community Area in Sitio Pangian 7°59'51.2" N 125°49'19" E	Low	No landslide/mass movement component mapped.
LOR-BNY-452 Community Area in Sitio Union 8°1'18.8" N 125°50'3.9" E	Low	
LOR-BNY-453 Community Area in Purok 4 8°0'37.4" N 125°49'10.7" E	Low	
LOR-BNY-454 Community Area in Purok 7 8°0'41.7" N 125°49'16.1" E	Low	
LOR-BNY-455 Community Area in Purok 3 8°0'42.1" N 125°49'12.3" E	Low	
LOR-BNY-456 Community Area in Purok 6 8°0'27.3" N 125°49'13.3" E	Low	
LOR-BNY-457 Community Area in Sitio D.O. Plaza 8°0'23.6" N 125°49'1.1" E	Low	
LOR-BNY-458 Community Area in Sitio San Miguel 8°0'14.6" N 125°48'32.2" E	Low	
LOR-BNY-459 Community Area in Sitio San Miguel 8°0'22.1" N 125°48'39.3" E	Low	
LOR-BNY-460 Community Area in Sitio D.O. Plaza 8°0'27.8" N 125°49'2.8" E	Low	
LOR-BNY-461 Community Area in Purok 5 8°0'36.3" N 125°49'11.2" E	Low	
LOR-BNY-462 Community Area in Sitio D.O. Plaza 8°0'32.9" N 125°48'58.6" E	Low	

LOR-BNY-463 Ihawan River in Sitio Natividad 8°2'35" N 125°49'13.9" E	Low	No landslide/mass movement component mapped.
LOR-BNY-464 Community Area in Sitio Natividad 8°2'33.6" N 125°49'18.6" E	Low	
LOR-BNY-446 Binucayan High School 8°0'45.4" N 125°48'59" E	Low	Some settlements are near the bank of Ihawan River which is constantly eroding.  Recommendations: Stabilize riverbanks especially at the outer bend of the meander. Develop an early warning system (e.g., signage). Observe for and/or monitor for presence of mass movement (e.g., landslides, tension cracks) and report to MGB/municipal authorities.
<b>Barangay Johnson</b>		
LOR-JHN-01 Steep slopes along the road in Purok 3 8°5'31.9" N 125°50'28.4" E	Low	The area is flat. No landslide component mapped.
LOR-JHN-02 Purok 3 8°5'31.2" N 125°50'28.3" E	Low	
LOR-JHN-03 Purok 3 8°5'28.7" N 125°50'28.4" E	Low	
LOR-JHN-04 Purok 5 8°5'28.7" N 125°50'28.9" E	Low	
LOR-JHN-05 Purok 5 8°5'29.9" N 125°50'29.4" E	Low	
LOR-JHN-06 Purok 5 8°5'31.2" N 125°50'29.4" E	Low	
LOR-JHN-07 Purok 6 8°5'30.2" N 125°50'30" E	Low	
LOR-JHN-08 Purok 6 8°5'31.2" N 125°50'30.9" E	Low	
LOR-JHN-09 Purok 6 8°5'32" N 125°50'30.8" E	Low	

LOR-JHN-10 Purok 4 8°5'32.1" N 125°50'30.8" E	Low	The area is flat. No landslide component mapped.
LOR-JHN-11 Purok 4 8°5'33.2" N 125°50'30.8" E	Low	
LOR-JHN-12 Purok 4 8°5'33.9" N 125°50'30.9" E	Low	
LOR-JHN-13 Purok 7 8°5'33.9" N 125°50'31.3" E	Low	
LOR-JHN-14 Purok 7 8°5'33.9" N 125°50'32.8" E	Low	
LOR-JHN-15 Purok 7 8°5'33.9" N 125°50'34.7" E	Low	
LOR-JHN-16 Purok 2 8°5'33.9" N 125°50'29.5" E	Low	
LOR-JHN-17 Purok 2 8°5'35.2" N 125°50'29.5" E	Low	
LOR-JHN-18 Purok 2 8°5'35.7" N 125°50'29.5" E	Low	
LOR-JHN-19 Johnson Elementary School 8°5'36.6" N 125°50'29.5" E	Low	
LOR-JHN-20 Purok 1 8°5'36.4" N 125°50'29.4" E	Low	
LOR-JHN-21 Purok 1 8°5'36.3" N 125°50'28.8" E	Low	
LOR-JHN-22 Johnson High School 8°5'37.2" N 125°50'36" E	Low	
LOR-JHN-23 Johnson Barangay Hall 8°5'31" N 125°50'31.4" E	Low	

**Barangay Kasapa**

LOR-KSP-01 Steep slopes along the road in Purok 4 8°9'9.6" N 125°38'42" E	Low	The area is located on a gently rolling terrain. No landslide component mapped.
LOR-KSP-02 Purok 4 8°9'11.4" N 125°38'42.5" E	Low	
LOR-KSP-03 Purok 4 8°9'12.2" N 125°38'43" E	Low	
LOR-KSP-04 Purok 4 8°9'13" N 125°38'43.6" E	Low	
LOR-KSP-05 Purok 1 8°9'0.3" N 125°38'40.9" E	Low	
LOR-KSP-06 Purok 1 8°8'53" N 125°38'34" E	Low	
LOR-KSP-07 Purok 1 8°8'53.7" N 125°38'32.3" E	Low	
LOR-KSP-08 Purok 1 8°8'54.6" N 125°38'30.4" E	Low	
LOR-KSP-09 Purok 1 8°8'55.5" N 125°38'28.4" E	Low	
LOR-KSP-10 Purok 1 8°8'56.4" N 125°38'26.3" E	Low	
LOR-KSP-11 Purok 1 8°8'59.5" N 125°38'19.8" E	Low	
LOR-KSP-12 Purok 1 8°9'0.6" N 125°38'17.2" E	Low	
LOR-KSP-13 Purok 1 8°9'2" N 125°38'14.3" E	Low	

LOR-KSP-14 Kasapa Elementary School 8°9'6.1" N 125°38'11.4" E	Low	The area is located on a gently rolling terrain. No landslide component mapped.
LOR-KSP-15 Purok 2 8°9'2.8" N 125°38'9.7" E	Low	
LOR-KSP-16 Purok 2 8°9'1.3" N 125°38'12" E	Low	
LOR-KSP-17 Purok 2 8°8'59.4" N 125°38'16.1" E	Low	
LOR-KSP-18 Purok 2 8°8'58.1" N 125°38'18.7" E	Low	
LOR-KSP-19 Purok 2 8°8'56.3" N 125°38'22.5" E	Low	
LOR-KSP-20 Purok 3 8°8'53.6" N 125°38'28.2" E	Low	
LOR-KSP-21 Purok 3 8°8'50.7" N 125°38'30.6" E	Low	
LOR-KSP-22 Purok 3 8°8'52" N 125°38'27.7" E	Low	
LOR-KSP-23 Purok 3 8°8'53" N 125°38'25.8" E	Low	
LOR-KSP-24 Purok 3 8°8'54.9" N 125°38'21.6" E	Low	
LOR-KSP-25 Kasapa Barangay Hall 8°8'57" N 125°38'17.8" E	Low	
<b>Barangay Katipunan</b>		
LOR-KTP-01 Residential and agricultural area in Purok 3 8°10'57.3" N 125°53'50.6" E	Low	The terrain in the area is flat. No landslide component mapped.

LOR-KTP-02 Residential and agricultural area in Purok 3 8°11'7" N 125°53'50.9" E	Low	The terrain in the area is flat. No landslide component mapped.
LOR-KTP-03 Residential and agricultural area in Purok 3 8°11'7.5" N 125°53'50.1" E	Low	
LOR-KTP-04 Residential and agricultural area in Purok 1 8°11'12.5" N 125°53'47.6" E	Low	
LOR-KTP-05 Residential and agricultural area in Purok 1 8°11'17.2" N 125°53'47.4" E	Low	
LOR-KTP-06 Residential and agricultural area in Purok 1 8°11'10.4" N 125°53'47.6" E	Low	
LOR-KTP-07 Residential and agricultural area in Purok 2 8°11'8.5" N 125°53'48.7" E	Low	
LOR-KTP-08 Residential and agricultural area in Purok 2 8°11'7.8" N 125°53'49.3" E	Low	
LOR-KTP-09 Residential and agricultural area in Purok 3 8°10'56.4" N 125°53'49.1" E	Low	
LOR-KTP-10 Residential and agricultural area in Purok 3 8°10'54.3" N 125°53'48.5" E	Low	
LOR-KTP-11 Residential and agricultural area in Purok 3 8°10'59" N 125°53'49.9" E	Low	

LOR-KTP-12 Agricultural area in Purok 2 8°11'4.9" N 125°53'44.3" E	Low	The terrain in the area is flat. No landslide component mapped.
LOR-KTP-13 Agricultural area in River intersection going to Purok 4 8°10'52.4" N 125°53'37.6" E	Low	
LOR-KTP-14 Agricultural area in Purok 4 8°10'29.7" N 125°52'34.2" E	Low	
LOR-KTP-15 Agricultural area in Purok 4 8°10'37.5" N 125°52'7.5" E	Low	
<b>Barangay Kauswagan</b>		
LOR-KWN-202 Maisang Creek, Purok 3 7°59'17.7" N 125°45'46.1" E	Low	Area is flat. No landslide component mapped.
LOR-KWN-206 Kauswagan National High School 7°59'31.4" N 125°45'41.5" E	Low	Area is relatively flat and gently sloping. Area has low susceptibility from landslide.
LOR-KWN-198 Barangay Road located in Purok 9 7°59'0.7" N 125°45'7.7" E	Low	
LOR-KWN-199 Barangay Road located in Purok 9 7°59'0.7" N 125°45'20.2" E	Low	
LOR-KWN-200 Barangay Road located in Purok 3 7°59'6.6" N 125°45'44.3" E	Low	
LOR-KWN-201 Purok proper of Purok 9 7°59'8.5" N 125°45'47.9" E	Low	
LOR-KWN-203 Barangay road located in Purok 3 7°59'2.9" N 125°45'49.2" E	Low	

LOR-KWN-204 Purok proper of Purok 10 7°58'55" N 125°45'49.8" E	Low	Area is relatively flat and gently sloping. Area has low susceptibility from landslide.
LOR-KWN-205 Barangay road located in Purok 2B 7°59'25.2" N 125°45'42.5" E	Low	
LOR-KWN-207 Kauswagan Elementary School 7°59'32.2" N 125°45'40.7" E	Low	
LOR-KWN-208 Purok proper of 2B 7°59'38.5" N 125°45'41.9" E	Low	
LOR-KWN-209 Purok proper of 2A 7°59'45.7" N 125°45'54.9" E	Low	
LOR-KWN-210 Barangay Hall of Kauswagan 7°59'45.2" N 125°46'1.2" E	Low	
LOR-KWN-211 Barangay road/Purok 8 proper 7°59'50" N 125°45'58.8" E	Low	
LOR-KWN-212 Barangay road leading to Purok 7 proper 7°59'58.6" N 125°45'52.4" E	Low	
LOR-KWN-213 Barangay road leading to Purok 7 proper 7°59'48.6" N 125°46'10.4" E	Low	
LOR-KWN-214 Barangay road/Purok proper of Purok 12 7°59'40.9" N 125°46'24.9" E	Low	

LOR-KWN-215 Barangay road/Purok proper of Purok 11 7°59'44.8" N 125°46'40.6" E	Low	Area is relatively flat and gently sloping. Area has low susceptibility from landslide.
LOR-KWN-216 Barangay road/Purok proper of Purok 5 7°59'43.9" N 125°46'56.7" E	Low	
LOR-KWN-217 Purok proper of Purok 6 7°59'46.5" N 125°47'4.4" E	Low	
LOR-KWN-220 Purok proper of Purok 4 7°59'45.1" N 125°47'10" E	Low	
<b>Barangay Magaud</b>		
LOR-MGD-05 Residential area in Sitio Kabuhayan 8°12'15.3" N 125°48'0.5" E	Moderate	Purok is located on top of a moderate slope. Bounded by settlements on its foot.  Recommendation: Observe and monitor for presence of mass movement and report to the MGB/municipal authorities.
LOR-MGD-01 Residential area in Purok 8 8°12'2.1" N 125°48'50.2" E	Low	The area is relatively flat. Low landslide susceptibility.  Recommendation: Observe and monitor for presence of mass movement and report to MBG/municipal authorities.
LOR-MGD-02 Residential area in Purok 8 8°11'60" N 125°48'50.4" E	Low	
LOR-MGD-03 Residential and agricultural area in Sitio Kabuhayan 8°12'11.9" N 125°48'1" E	Low	
LOR-MGD-04 Residential and agricultural area in Sitio Kabuhayan 8°12'13.6" N 125°48'1.6" E	Low	
LOR-MGD-06 Agricultural area in Sitio Kabuhayan 8°11'55.2" N 125°47'54.2" E	Low	

LOR-MGD-07 Agricultural area in Sitio Kabuhayan 8°11'50.4" N 125°47'56.2" E	Low	<p>The area is relatively flat. Low landslide susceptibility.</p> <p>Recommendation: Observe and monitor for presence of mass movement and report to MBG/municipal authorities.</p>
LOR-MGD-08 Residential and agricultural area in Sitio Upper 8°11'26.8" N 125°47'55.5" E	Low	
LOR-MGD-09 Residential and agricultural area in Sitio Upper 8°11'25.9" N 125°47'56.2" E	Low	
LOR-MGD-10 Residential area in Sitio Upper 8°11'32.4" N 125°47'55.7" E	Low	
LOR-MGD-11 Residential area in Sitio Upper 8°11'34.9" N 125°47'56.7" E	Low	
LOR-MGD-12 Agricultural area in Purok 1 8°11'46.1" N 125°48'6" E	Low	
LOR-MGD-13 Residential and agricultural area in Purok 1 8°11'49.2" N 125°48'9.7" E	Low	
LOR-MGD-14 Agricultural area in Purok 1 8°11'48.9" N 125°48'9.8" E	Low	
LOR-MGD-15 Agricultural area in Purok 1 8°11'52.4" N 125°48'13.7" E	Low	
LOR-MGD-16 Residential and agricultural area in Purok 1 8°11'54.8" N 125°48'29.3" E	Low	
LOR-MGD-17 Residential and agricultural area in Purok 2 8°11'53.8" N 125°48'34.7" E	Low	

LOR-MGD-18 Residential area in Purok 3 8°11'54.9" N 125°48'48.6" E	Low	<p>The area is relatively flat. Low landslide susceptibility.</p> <p>Recommendation: Observe and monitor for presence of mass movement and report to MBG/municipal authorities.</p>
LOR-MGD-19 Residential and agricultural area in Purok 3 8°11'53.3" N 125°48'48.8" E	Low	
LOR-MGD-20 Residential and agricultural area in Purok 4 8°11'54.7" N 125°48'52.1" E	Low	
LOR-MGD-21 Residential and agricultural area in Purok 5 8°11'58.3" N 125°48'52.8" E	Low	
LOR-MGD-22 Residential area in Purok 5 8°12'1.5" N 125°48'52.6" E	Low	
LOR-MGD-23 Residential and agricultural area in Purok 5 8°12'3.6" N 125°48'51.5" E	Low	
LOR-MGD-24 Residential and agricultural area in Purok 8 8°12'3.3" N 125°48'50.2" E	Low	
LOR-MGD-25 Residential and agricultural area in Purok 6 8°11'59.2" N 125°48'55.8" E	Low	
LOR-MGD-26 Residential area in Purok 6 8°11'59.5" N 125°48'56.1" E	Low	
LOR-MGD-27 Residential and agricultural area in Purok 6 8°12'9.3" N 125°48'59.7" E	Low	

LOR-MGD-28 Residential and agricultural area in Purok 7 8°12'10.1" N 125°48'59.8" E	Low	The area is relatively flat. Low landslide susceptibility.  Recommendation: Observe and monitor for presence of mass movement and report to MBG/municipal authorities.
LOR-MGD-29 Residential and agricultural area in Purok 7 8°12'10.8" N 125°48'59.9" E	Low	
LOR-MGD-30 Residential and agricultural area in Purok 7 8°12'15" N 125°49'4.5" E	Low	
LOR-MGD-31 Residential and agricultural area in Purok 9 8°12'32.1" N 125°49'27.6" E	Low	
LOR-MGD-32 Agricultural area in Purok 9 8°12'31.8" N 125°49'32.6" E	Low	
<b>Barangay Nueva Gracia</b>		
LOR-NVG-486 Nueva Gracia Barangay hall 8°7'29" N 125°52'40.6" E	Low	No landslide component mapped.
LOR-NVG-487 Community Area in Purok 1 8°7'27.8" N 125°52'40.3" E	Low	
LOR-NVG-488 Community Area in Purok 1 8°7'27.6" N 125°52'42" E	Low	
LOR-NVG-489 Riverside Community in Purok 3 8°7'24.4" N 125°52'44.5" E	Low	
LOR-NVG-490 Riverside Community in Purok 3 8°7'25.3" N 125°52'48.9" E	Low	

LOR-NVG-491 Community Area in Purok 5 8°6'58.9" N 125°52'54.8" E	Low	No landslide component mapped.
LOR-NVG-492 Tawog creek in Purok 5 8°6'58.2" N 125°52'55.6" E	Low	
LOR-NVG-493 Along road in Purok 5 8°7'8.6" N 125°52'55" E	Low	
LOR-NVG-494 Along road in Purok 3 8°7'19.5" N 125°52'52.8" E	Low	
LOR-NVG-495 Community Area in Purok 2 8°7'25.9" N 125°52'41.4" E	Low	
LOR-NVG-496 Nueva Gracia Elem. School 8°7'27.2" N 125°52'36" E	Low	
LOR-NVG-497 Community Area in Purok 4 8°7'31.9" N 125°52'33.5" E	Low	
LOR-NVG-498 Community Area in Purok 6 8°8'12.6" N 125°52'22.3" E	Low	
LOR-NVG-499 Community Area in Purok 6 8°8'10.7" N 125°52'23.3" E	Low	
LOR-NVG-500 Along road in Purok 6 8°8'4.2" N 125°52'26.3" E	Low	
LOR-NVG-501 Along road in Purok 6 8°7'50.2" N 125°52'27.3" E	Low	

LOR-NVG-502 Community Area and rice field in Purok 7 8°6'29.7" N 125°52'31.8" E	Low	No landslide component mapped.
LOR-NVG-503 Community Area and rice field in Purok 7 8°6'34" N 125°52'35.3" E	Low	
LOR-NVG-504 Along road in Purok 7 8°6'35.6" N 125°52'41.6" E	Low	
LOR-NVG-505 Along road in Purok 7 8°6'42.2" N 125°52'48.1" E	Low	
LOR-NVG-506 Along road in Purok 5 8°6'52.6" N 125°52'48.6" E	Low	
LOR-NVG-507 Along road in Purok 5 8°6'52.1" N 125°52'51.5" E	Low	
<b>Barangay Poblacion</b>		
LOR-POB-35 Residential area in Purok 3 8°11'11.58" N 125°50'50.14" E	Moderate	A residential area which lies along elevated, low but moderately sloping ground was mapped.  Recommendations: Observe for and/or monitor for presence of mass movement (e.g., landslides, tension cracks), saturated ground or seeps and sunken or displaced road surfaces and report to MGB/municipal authorities. Develop an early warning system (e.g., signages). Constant communication and updates with Brgy. Poblacion on geohazard situation. Avoid building of houses near slope areas prone to ground failure.
LOR-POB-36 Residential area in Sitio Maputing 8°11'2.98" N 125°50'16.62" E		
LOR-POB-17 Road in Purok 4 8°11'7.84" N 125°51'14.83" E	Low	A low but steeply sloping road cut along the provincial road was mapped.  Recommendations: Observe for and/or monitor for presence of mass movement (e.g., landslides, tension cracks), saturated ground or seeps and sunken or displaced road surfaces and report to MGB/municipal authorities. Develop an early warning system (e.g., signages). Constant communication and updates with Brgy. Poblacion on geohazard situation. Avoid building of houses near slope areas prone to ground failure.
LOR-POB-25 Road in Sitio Kiawan 8°9'53.86" N 125°51'55.19" E		
LOR-POB-01 River in Purok 7 8°11'21.44" N 125°51'17.64" E	Low	No landslide component mapped.

LOR-POB-02 River in Purok 1 8°11'41.17" N 125°51'8.93" E	Low	No landslide component mapped.
LOR-POB-03 Sitio Moto 8°12'52.78" N 125°50'40.85" E	Low	
LOR-POB-04 Sitio Moto 8°12'54.54" N 125°50'41.17" E	Low	
LOR-POB-05 Sitio Moto 8°12'57.1" N 125°50'42.86" E	Low	
LOR-POB-06 Sitio Moto 8°12'59.18" N 125°50'40.13" E	Low	
LOR-POB-07 Sitio Jandayugong 8°12'18.25" N 125°50'59.42" E	Low	
LOR-POB-08 Sitio Jandayugong 8°12'12.38" N 125°50'57.08" E	Low	
LOR-POB-09 Residential area in Sitio Jandayugong 8°12'3.1" N 125°50'55.1" E	Low	
LOR-POB-10 Residential area in Sitio Jandayugong 8°12'0.97" N 125°51'1.19" E	Low	
LOR-POB-11 Residential area in Sitio Jandayugong 8°11'58.52" N 125°50'51.32" E	Low	
LOR-POB-12 Sitio Jandayugong 8°11'57.37" N 125°50'42.58" E	Low	
LOR-POB-13 Sitio Jandayugong 8°12'0.65" N 125°50'50.68" E	Low	
LOR-POB-14 Agricultural area in Sitio Tawilon 8°11'46.54" N 125°51'17.06" E	Low	

LOR-POB-15 Agricultural area in Purok 1 8°11'36.85" N 125°51'3.85" E	Low	No landslide component mapped.
LOR-POB-16 Purok 3 8°11'16.37" N 125°51'5.47" E	Low	
LOR-POB-18 Purok 8 8°11'1.46" N 125°51'24.88" E	Low	
LOR-POB-19 Residential area in Sitio Naligayan 8°10'36.66" N 125°51'43.16" E	Low	
LOR-POB-20 Sitio Mambaos 8°10'22.58" N 125°51'52.63" E	Low	
LOR-POB-21 Creek in Sitio Mambaos 8°10'24.92" N 125°51'53.78" E	Low	
LOR-POB-22 Residential area in Sitio Mambaos 8°10'25.39" N 125°51'54.97" E	Low	
LOR-POB-23 Residential area in Sitio Kiawan 8°9'39.46" N 125°52'2.21" E	Low	
LOR-POB-24 Residential area in Sitio Kiawan 8°9'44.28" N 125°52'0.37" E	Low	
LOR-POB-26 Municipal Hall 8°10'49.4" N 125°51'28.8" E	Low	
LOR-POB-27 Agricultural area in Purok 6 8°11'10.32" N 125°51'30.35" E	Low	
LOR-POB-28 Residential area in Purok 8 8°11'6.04" N 125°51'27.83" E	Low	
LOR-POB-29 River in Purok 8 8°11'12.8" N 125°51'43.52" E	Low	

LOR-POB-30 Agricultural area in Purok 8 8°11'11.33" N 125°51'39.67" E	Low	No landslide component mapped.
LOR-POB-31 Agricultural area in Upper Ilo-an 8°10'12.58" N 125°50'7.55" E	Low	
LOR-POB-32 Creek in Upper Ilo-an 8°10'21.79" N 125°50'11.08" E	Low	
LOR-POB-33 Residential area in Proper Ilo-an 8°10'46.31" N 125°50'36.71" E	Low	
LOR-POB-34 Creek in Proper Ilo-an 8°10'48.68" N 125°50'35.02" E	Low	
LOR-POB-37 River in Purok 5 8°11'32.21" N 125°50'26.63" E	Low	
LOR-POB-38 Residential area in Purok 1 8°11'24.07" N 125°51'3.56" E	Low	
LOR-POB-39 Residential area in Purok 2 8°11'20.51" N 125°51'5.98" E	Low	
<b>Barangay Sabud</b>		
LOR-SBD-187 Sitio Cabcab Proper/edge of slope 7°59'10.5" N 125°43'59.7" E	High	Area sits on top of a steep slope with active landslide. Massive deforestation was observed.  Recommendations: Observe for and/or monitor for further presence of mass movement and report to MGB/municipal authorities (e.g. landslide, tension cracks). Constant communication and updates with Brgy. Sabud on geohazard situation. Discourage future settlement along this area.
LOR-SBD-183 Sabud Barangay Hall 7°59'10.3" N 125°43'8.7" E	High	Barangay Hall was destroyed by wind during Typhoon Pablo. Rebuilding of Barangay hall is ongoing. Hall is being built on top of an unstable slope.  Recommendations: Observe for and/or monitor for presence of mass movement and report to MGB/municipal authorities (e.g. landslide, tension cracks). Constant communication and updates with Brgy. Sabud on geohazard situation.
LOR-SBD-179 Residential area in Purok 1/Purok 1 proper 7°59'12.3" N	High	Relic landslide was observed approximately 25-30 meters wide. Landslide took place during Typhoon Pablo. Houses were built on top of unstable slope.  Recommendations: Observe for and/or monitor for presence of mass

125°43'9.8" E		movement regeneration and report to MGB/municipal authorities (e.g. landslide, tension cracks). Constant communication and updates with Brgy. Sabud on geohazard situation. Discourage future settlement along this area.	
LOR-SBD-188 Barangay road/open field in Purok 1 7°59'9.1" N 125°43'6.2" E	High	Road cut with an active landslide. Area is approximately 30 meters wide with slope of 20 to 25 meters high. Slope material is mudstone overlain by loose soil deposit.  Recommendations: Observe for and/or monitor for presence of mass movement and report to MGB/municipal authorities (e.g. landslide, tension cracks). Constant communication and updates with Brgy. Sabud on geohazard situation. Discourage future settlement along this area.	
LOR-SBD-191 Barangay road/open field in Purok 4 7°58'43.9" N 125°43'9.9" E	Moderate	Area sits on top of a moderate steep slope. Minor landslides were observed in adjacent areas. Massive deforestation was observed in the area.  Recommendations: Observe for and/or monitor for presence of mass movement and report to MGB/municipal authorities (e.g. landslide, tension cracks). Constant communication and updates with Brgy. Sabud on geohazard situation.	
LOR-SBD-192 Barangay road/open field in Purok 4 7°58'39" N 125°43'21.8" E	Moderate		
LOR-SBD-194 Barangay road/Open field in Sitio New Maticon 7°58'51.1" N 125°43'48.1" E	Moderate		
LOR-SBD-195 Barangay road/Open field in Purok 6 7°58'49" N 125°43'3.7" E	Moderate		
LOR-SBD-196 Barangay road/Open field in Purok 7 7°58'59.5" N 125°43'22.8" E	Moderate		
LOR-SBD-197 Barangay road/Open field in Purok 7 7°59'3.5" N 125°43'54.1" E	Moderate		
LOR-SBD-190 Sitio Alpha base Proper/edge of slope 7°58'53.2" N 125°43'2.5" E	Moderate		Area sits on top of a moderate steep slope. Minor landslides were observed in adjacent areas.
LOR-SBD-193 Barangay road/Sitio New Maticon Proper 7°58'44.8" N 125°43'34.7" E			Recommendations: Observe for and/or monitor for further presence of mass movement and report to MGB/municipal authorities (e.g. landslide, tension cracks). Constant communication and updates with Brgy. Sabud on geohazard situation.

<p>LOR-SBD-185 Datu Subla Elementary School 7°59'12.3" N 125°43'3.4" E</p>	<p>Moderate</p>	<p>Datu Subla Elementary School is frequently used as evacuation center. Area sits on top of a moderate steep slope with observed minor landslides on adjacent areas.</p> <p>Recommendations: Observe for and/or monitor for presence of mass movement and report to MGB/municipal authorities (e.g. landslide, tension cracks). Constant communication and updates with Brgy. Sabud on geohazard situation.</p>
<p>LOR-SBD-189 Tanionan Creek in Sitio Alpha Base 7°59'3.8" N 125°43'11.8" E</p>	<p>Moderate</p>	<p>Observation was taken near the foot of an unstable slope. Area is moderately susceptible to landslide.</p> <p>Recommendations: Observe for and/or monitor for presence of mass movement and report to MGB/municipal authorities (e.g. landslide, tension cracks). Constant communication and updates with Brgy. Sabud on geohazard situation.</p>
<p>LOR-SBD-186 Residential area in Purok 1/Purok 1 proper 7°59'11" N 125°43'2.2" E</p>	<p>Moderate</p>	<p>Relic landslide that took place during Typhoon Pablo was observed. Houses were built on top of an unstable slope with an approximate slope height of 8-10 meters.</p> <p>Recommendations: Observe for and/or monitor for presence of mass movement regeneration and report to MGB/municipal authorities (e.g. landslide, tension cracks). Constant communication and updates with Brgy. Sabud on geohazard situation.</p>
<p>LOR-SBD-184 Residential area in Purok 1/Purok 1 proper 7°59'12.4" N 125°43'5.4" E</p>	<p>Moderate</p>	<p>Residential area in Purok 1/Purok 1 proper is located on top of a moderate steep slope. Soil creep was observed.</p> <p>Recommendations: Observe for and/or monitor for presence of mass movement and report to MGB/municipal authorities (e.g. landslide, tension cracks). Constant communication and updates with Brgy. Sabud on geohazard situation.</p>
<p>LOR-SBD-178 Residential area in Purok 1/Purok 1 proper 7°59'11.2" N 125°43'9" E</p>	<p>Moderate</p>	<p>Residential area in Purok 1/Purok 1 proper is situated on top of a moderate steep slope. Houses were built on the edge of unstable slope.</p> <p>Recommendations: Observe for and/or monitor for presence of mass movement and report to MGB/municipal authorities (e.g. landslide, tension cracks). Constant communication and updates with Brgy. Sabud on geohazard situation.</p>
<p>LOR-SBD-180 Residential area in Purok 2/Purok 2 proper 7°59'14.6" N 125°43'12.1" E</p>	<p>Low</p>	<p>Area is relatively flat and gentle.</p>
<p>LOR-SBD-181 Residential area in Purok 2/Purok 2 proper 7°59'19.4" N 125°43'14.6" E</p>	<p>Low</p>	
<p>LOR-SBD-182 Residential area in Purok 2/Purok 2 proper 7°59'21.3" N 125°43'17.6" E</p>	<p>Low</p>	

**Barangay San Isidro**

LOR-SNI-1417 Anahawan River, Purok 3 8°2'46.2" N 125°48'42.8" E	Low	No landslide component mapped.
LOR-SNI-1418 Purok 3 near Anahawan River 8°2'46.5" N 125°48'42.6" E	Low	
LOR-SNI-1419 Purok 3 near Anahawan River 8°2'46.5" N 125°48'42.7" E	Low	
LOR-SNI-1420 Anahawan River, Purok 3 8°2'45.9" N 125°48'43.5" E	Low	
LOR-SNI-1421 Anahawan River, Purok 3 8°2'44.5" N 125°48'48" E	Low	
LOR-SNI-1422 Rice field in Purok 3 8°2'48.1" N 125°48'44.8" E	Low	
LOR-SNI-1423 Rice field in Purok 3 8°2'49.1" N 125°48'43.4" E	Low	
LOR-SNI-1424 San Isidro Barangay Hall 8°2'48.6" N 125°48'42.8" E	Low	
LOR-SNI-1425 San Isidro Health Center 8°2'47.8" N 125°48'41.2" E	Low	
LOR-SNI-1426 Purok 2 near Ihawan River 8°2'50.8" N 125°48'45.6" E	Low	
LOR-SNI-1427 Ihawan River, Purok 2 8°2'55.4" N 125°48'55.8" E	Low	

LOR-SNI-1428 Purok 2 near Ihawan River 8°2'52.8" N 125°48'55.4" E	Low	No landslide component mapped.
LOR-SNI-1429 Rice field in Sitio Kanhatan 8°3'1.1" N 125°48'59" E	Low	
LOR-SNI-1430 Rice field in Sitio Kanhatan 8°3'10.7" N 125°49'0" E	Low	
LOR-SNI-1431 Rice field in Sitio Tambo 8°3'14.1" N 125°48'52.6" E	Low	
LOR-SNI-1432 Rice field in Sitio Tambo 8°3'5.1" N 125°48'41.1" E	Low	
LOR-SNI-1433 Purok 1 proper 8°2'51.6" N 125°48'32" E	Low	
LOR-SNI-1434 San Isidro National High School 8°2'52.8" N 125°48'34.5" E	Low	
LOR-SNI-1435 San Isidro Elementary School 8°2'53" N 125°48'37.1" E	Low	
LOR-SNI-1436 Sagayon Creek, Purok 2 8°2'25" N 125°48'44.7" E	Low	
LOR-SNI-1437 Purok 3 proper 8°2'24.4" N 125°48'44.3" E	Low	
LOR-SNI-1438 Sitio San Miguel proper 8°2'10.2" N 125°48'52.7" E	Low	
LOR-SNI-1439 Sitio San Miguel proper 8°2'7" N 125°48'53.5" E	Low	

LOR-SNI-1440 Sitio San Miguel proper 8°2'7.8" N 125°48'54.4" E	Low	No landslide component mapped.
LOR-SNI-1441 Purok 1 proper 8°2'8" N 125°48'55" E	Low	
LOR-SNI-1442 Purok 1 proper 8°2'46.9" N 125°48'29" E	Low	
<b>Barangay San Mariano</b>		
LOR-MRN-1443 Anahawan River in Purok 3 8°2'39.2" N 125°47'20.6" E	Low	No landslide component mapped.
LOR-MRN-1444 Anahawan River in Purok 3 8°2'39.6" N 125°47'20.5" E	Low	
LOR-MRN-1445 Purok 3 waiting shed 8°2'44" N 125°47'27.6" E	Low	
LOR-MRN-1446 Purok 3 proper 8°2'43.4" N 125°47'30" E	Low	
LOR-MRN-1447 San Mariano Basketball Court 8°2'42.5" N 125°47'31.5" E	Low	
LOR-MRN-1448 Purok 2 waiting shed 8°2'41.6" N 125°47'32.5" E	Low	
LOR-MRN-1449 San Mariano Barangay Hall 8°2'44.4" N 125°47'33.7" E	Low	
LOR-MRN-1450 Along the road in Purok 4 8°2'43.9" N 125°47'37" E	Low	
LOR-MRN-1451 Along the road in Purok 4 8°2'45.4" N 125°47'37.9" E	Low	

LOR-MRN-1452 Along the road in Purok 4 8°2'46.1" N 125°47'39.3" E	Low	No landslide component mapped.
LOR-MRN-1453 Purok 4 waiting shed 8°2'46.1" N 125°47'41.7" E	Low	
LOR-MRN-1454 Along the road in Purok 4 8°2'49" N 125°47'41.5" E	Low	
LOR-MRN-1455 Purok 4 near Dayto Creek 8°2'49.3" N 125°47'41.3" E	Low	
LOR-MRN-1456 Purok 4 near Dayto Creek 8°2'49.7" N 125°47'41" E	Low	
LOR-MRN-1457 Dayto Creek in Purok 4 8°2'49.8" N 125°47'40.9" E	Low	
LOR-MRN-1458 San Mariano Elementary School 8°2'41.2" N 125°47'39.4" E	Low	
LOR-MRN-1459 Anahawan River in Purok 1 8°2'38.9" N 125°47'42.8" E	Low	
LOR-MRN-1460 Purok 1 near Anahawan River 8°2'39.1" N 125°47'42.9" E	Low	
LOR-MRN-1461 Purok 1 near Anahawan River 8°2'39.2" N 125°47'42.9" E	Low	
LOR-MRN-1462 Purok 1 waiting shed 8°2'39.6" N 125°47'44.9" E	Low	

LOR-MRN-1463 RCP in Dayto Creek, Purok 1 8°2'39.7" N 125°47'47.7" E	Low	No landslide component mapped.
LOR-MRN-1464 Along the road in Purok 1 8°2'40.4" N 125°48'11.9" E	Low	
LOR-MRN-1465 Yaki Creek in Purok 1 8°2'42.1" N 125°48'18.9" E	Low	
LOR-MRN-1466 Purok 1 near Yaki Creek 8°2'42.2" N 125°48'19.2" E	Low	
LOR-MRN-1467 Purok 1 near Yaki Creek 8°2'42.5" N 125°48'19.8" E	Low	
LOR-MRN-1468 Purok 1 near Yaki Creek 8°2'42.6" N 125°48'20" E	Low	
<b>Barangay San Vicente</b>		
LOR-SVN-240 Sitio Naliagan Proper 8°8'9.5" N 125°48'3.2" E	Moderate	Area sits on top of a moderately steep slope with active rill erosion. Soil creep was also observed in the area.  Recommendation: Observe for and/or monitor for presence of mass movement and report to MGB/municipal authorities (e.g. landslide, tension cracks).
LOR-SVN-247 Purok 4 proper 8°7'24.4" N 125°47'54.1" E	Moderate	
LOR-SVN-248 Purok 5 proper 8°7'16.2" N 125°47'54.6" E	Moderate	
LOR-SVN-221 Danuman River, Sitio Macopahon 8°7'15.7" N 125°49'2.2" E	Low	Area is relatively flat and gently sloping. No landslide component mapped.
LOR-SVN-223 Rice fields/Open fields in Sitio Macopahon 8°7'15.9" N 125°49'0.4" E	Low	

LOR-SVN-224 Macopahon Creek, Sitio Macopahon 8°7'17.2" N 125°48'59.2" E	Low	Area is relatively flat and gently sloping. No landslide component mapped.
LOR-SVN-225 Rice fields/Open fields in Sitio Macopahon 8°7'17.6" N 125°48'58.6" E	Low	
LOR-SVN-226 Sitio Macopahon Proper 8°7'19.8" N 125°48'58.3" E	Low	
LOR-SVN-227 Sitio Macopahon Proper 8°7'19.4" N 125°48'59.3" E	Low	
LOR-SVN-228 Danuman River 8°7'21.4" N 125°48'51" E	Low	
LOR-SVN-229 Rice fields/Open fields 8°7'21.2" N 125°48'51.1" E	Low	
LOR-SVN-230 Rice fields/Open fields 8°7'25.4" N 125°48'39.1" E	Low	
LOR-SVN-231 Rice fields/Open fields 8°7'26.3" N 125°48'28.8" E	Low	
LOR-SVN-232 Danuman River, Sitio Mabuhay 8°7'24.1" N 125°48'17" E	Low	
LOR-SVN-233 Kalimutan Creek, Sitio Mabuhay 8°8'7.1" N 125°48'25.8" E	Low	
LOR-SVN-234 Rice fields/Open fields, Sitio Mabuhay 8°8'6.5" N 125°48'27.8" E	Low	

LOR-SVN-235 Rice fields/Open fields, Sitio Mabuhay 8°8'5.4" N 125°48'31.1" E	Low	Area is relatively flat and gently sloping. No landslide component mapped.
LOR-SVN-236 Kalimutan Creek, Sitio Mabuhay 8°8'5.2" N 125°48'31.5" E	Low	
LOR-SVN-237 Rice fields/Open fields, Sitio Mabuhay 8°8'5.4" N 125°48'34.1" E	Low	
LOR-SVN-238 Sitio Mabuhay Proper 8°8'9.9" N 125°48'15.9" E	Low	
LOR-SVN-239 Sitio Mabuhay Proper 8°8'8.3" N 125°48'4.8" E	Low	
LOR-SVN-241 San Vicente National High School 8°7'48.7" N 125°48'8.7" E	Low	
LOR-SVN-242 Purok 1 Proper 8°7'39.5" N 125°48'5.2" E	Low	
LOR-SVN-243 Purok 1 Proper 8°7'34.8" N 125°48'2.8" E	Low	
LOR-SVN-244 Purok 2 Proper 8°7'31.8" N 125°48'1.6" E	Low	
LOR-SVN-245 Barangay Hall of San Vicente 8°7'28.7" N 125°47'55.4" E	Low	
LOR-SVN-246 Paciencia Elementary School 8°7'29" N 125°47'55" E	Low	

**Barangay Santa Teresa**

LOR-STS-01 Residential area in Purok 5 8°5'39.5" N 125°48'40" E	Low	No landslide component mapped.
LOR-STS-02 Residential area in Purok 5 8°5'37" N 125°48'43.1" E	Low	
LOR-STS-03 Residential area in Purok 5 8°5'30.2" N 125°48'42.6" E	Low	
LOR-STS-04 Residential area in Purok 5 8°5'28.1" N 125°48'39.2" E	Low	
LOR-STS-05 Residential area in Purok 4 8°5'41.9" N 125°48'36.8" E	Low	
LOR-STS-06 Residential area in Purok 4 8°5'43" N 125°48'34.7" E	Low	
LOR-STS-07 Residential area in Purok 4 8°5'45.2" N 125°48'30.3" E	Low	
LOR-STS-08 Residential area in Purok 4 8°5'46.1" N 125°48'28.5" E	Low	
LOR-STS-09 Residential area in Purok 3 8°5'47" N 125°48'27.3" E	Low	
LOR-STS-10 Residential area in Purok 3 8°5'48.4" N 125°48'26" E	Low	
LOR-STS-11 Residential area in Purok 3 8°5'50.3" N 125°48'24.5" E	Low	

LOR-STS-12 Residential area in Purok 3 8°5'51.3" N 125°48'24.2" E	Low	No landslide component mapped.
LOR-STS-13 Residential area in Purok 2 8°5'52.7" N 125°48'23.8" E	Low	
LOR-STS-14 Residential area in Purok 2 8°5'54.2" N 125°48'22.4" E	Low	
LOR-STS-15 Residential area in Purok 2 8°5'54.6" N 125°48'22.1" E	Low	
LOR-STS-16 Residential area in Purok 2 8°5'55.5" N 125°48'21.7" E	Low	
LOR-STS-17 Residential area in Purok 1 8°5'56.7" N 125°48'21" E	Low	
LOR-STS-18 Residential area in Purok 1 8°5'58" N 125°48'20.5" E	Low	
LOR-STS-19 Residential area in Purok 1 8°5'59.9" N 125°48'20.2" E	Low	
LOR-STS-20 Residential area in Purok 1 8°6'8.5" N 125°48'20" E	Low	
<b>Barangay Santo Niño</b>		
LOR-SNO-475 Community area near cliffs in Sitio Limpasan 8°0'48.7" N 125°48'16.2" E	Moderate	Some settlements are situated along a highly weathered slope.  Recommendations: Observe for and/or monitor for presence of mass movement (e.g., landslides, tension cracks), saturated ground or seeps and sunken or displaced road surfaces and report to MGB/municipal authorities.
LOR-SNO-465 Community area in Purok 7 8°1'11" N 125°48'37.7" E	Low	No landslide/mass movement component mapped.

LOR-SNO-466 Riverside Community in Purok 7 8°1'14.3" N 125°48'40.7" E	Low	No landslide/mass movement component mapped.
LOR-SNO-467 Community area in Purok 7 8°1'19.1" N 125°48'38.7" E	Low	
LOR-SNO-468 Community area in Purok 6 8°1'20.6" N 125°48'35.6" E	Low	
LOR-SNO-469 Community area in Purok 1 8°1'19.1" N 125°48'33.6" E	Low	
LOR-SNO-470 Community area in Purok 1 8°1'18.2" N 125°48'30.2" E	Low	
LOR-SNO-471 Community area in Purok 5 8°1'16.8" N 125°48'37.5" E	Low	
LOR-SNO-472 Community area in Purok 4 8°1'13.6" N 125°48'36.1" E	Low	
LOR-SNO-473 Community area in Purok 2 8°1'11.5" N 125°48'34.7" E	Low	
LOR-SNO-474 Community area in Purok 2 8°1'10.4" N 125°48'33.1" E	Low	
LOR-SNO-476 Along road in Sitio Limpasan 8°0'50.4" N 125°48'18" E	Low	
LOR-SNO-477 Along road in Sitio Limpasan 8°1'0.7" N 125°48'20" E	Low	

LOR-SNO-478 Along road in Purok 1 8°1'6.7" N 125°48'24.6" E	Low	No landslide/mass movement component mapped.
LOR-SNO-479 Community area in Purok 1 8°1'12.6" N 125°48'26.9" E	Low	
LOR-SNO-480 Community area in Purok 1 8°1'16.2" N 125°48'29.2" E	Low	
LOR-SNO-481 Community area in Purok 1 8°1'19.3" N 125°48'31.5" E	Low	
LOR-SNO-482 Community area in Purok 7 8°1'21.6" N 125°48'41.8" E	Low	
LOR-SNO-483 Community area in Purok 3 8°1'30.9" N 125°48'49.3" E	Low	
LOR-SNO-484 Community area in Purok 3 8°1'29.9" N 125°48'52" E	Low	
LOR-SNO-485 Sto Nino Barangay hall 8°1'13.8" N 125°48'37.7" E	Low	
<b>Barangay Santo Tomas</b>		
LOR-TOM-08 Purok 1 8°11'21.66" N 125°47'53.92" E	High	A residential area lies near the high, steep bank of Umayam river.  Recommendations: Observe for and/or monitor for presence of mass movement (e.g., landslides, tension cracks), saturated ground or seeps and sunken or displaced road surfaces and report to MGB/municipal authorities. Develop an early warning system (e.g., signages). Constant communication and updates with Brgy. Sto. Tomas on geohazard situation. Avoid building of houses near slope areas prone to ground failure.
LOR-TOM-22 Sitio Manawe (Special Barangay) 8°9'7.09" N 125°48'33.59" E	Moderate	Most of the residential areas at Sitio Manawe are located along moderately sloping ground.  Recommendations: Observe for and/or monitor for presence of mass movement (e.g., landslides, tension cracks), saturated ground or seeps and sunken or displaced road surfaces and report to MGB/municipal authorities. Develop an early warning system (e.g., signages). Constant communication and updates with Brgy. Sto. Tomas on geohazard situation. Avoid building of houses near slope areas prone to ground failure.

LOR-TOM-23 Sitio Manawe (Special Barangay) 8°9'25.34" N 125°48'43.74" E	Moderate	Most of the residential areas at Sitio Manawe are located along moderately sloping ground.  Recommendations: Observe for and/or monitor for presence of mass movement (e.g., landslides, tension cracks), saturated ground or seeps and sunken or displaced road surfaces and report to MGB/municipal authorities. Develop an early warning system (e.g., signages). Constant communication and updates with Brgy. Sto. Tomas on geohazard situation. Avoid building of houses near slope areas prone to ground failure.
LOR-TOM-24 Sitio Manawe (Special Barangay) 8°9'27.4" N 125°48'36.65" E	Moderate	
LOR-TOM-25 Sitio Manawe (Special Barangay) 8°9'35.64" N 125°48'46.33" E	Moderate	
LOR-TOM-26 Sitio Manawe (Special Barangay) 8°9'36.14" N 125°48'47.88" E	Moderate	
LOR-TOM-27 Sitio Manawe (Special Barangay) 8°10'4.15" N 125°48'56.84" E	Moderate	
LOR-TOM-06 Purok 6 8°11'22.52" N 125°47'22.74" E	Low	A low but steeply sloping road cut was mapped along the provincial road at Purok 6.  Recommendations: Observe for and/or monitor for presence of mass movement (e.g., landslides, tension cracks), saturated ground or seeps and sunken or displaced road surfaces and report to MGB/municipal authorities. Develop an early warning system (e.g., signages). Constant communication and updates with Brgy. Sto. Tomas on geohazard situation. Avoid building of houses near slope areas prone to ground failure.
LOR-TOM-07 Purok 6 8°11'21.52" N 125°47'33.54" E	Low	A residential area at Purok 6 is situated along low sloping undulating ground.  Recommendations: Observe for and/or monitor for presence of mass movement (e.g., landslides, tension cracks), saturated ground or seeps and sunken or displaced road surfaces and report to MGB/municipal authorities. Develop an early warning system (e.g., signages). Constant communication and updates with Brgy. Sto. Tomas on geohazard situation. Avoid building of houses near slope areas prone to ground failure.
LOR-TOM-01 Sitio New Visayas 8°11'17.92" N 125°46'53.8" E	Low	No landslide component mapped.
LOR-TOM-02 Sitio New Visayas 8°11'9.35" N 125°46'52.43" E	Low	
LOR-TOM-03 Sitio New Visayas 8°11'5.28" N 125°46'51.56" E	Low	

LOR-TOM-04 Sitio New Visayas 8°10'59.16" N 125°46'46.34" E	Low	No landslide component mapped.
LOR-TOM-05 Sitio New Visayas 8°11'18.82" N 125°46'53.11" E	Low	
LOR-TOM-09 Purok 1 8°11'22.74" N 125°47'57.73" E	Low	
LOR-TOM-10 Purok 1 8°11'22.16" N 125°47'57.91" E	Low	
LOR-TOM-11 Purok 2 8°11'23.17" N 125°48'3.28" E	Low	
LOR-TOM-12 Purok 2 8°11'22.92" N 125°48'2.99" E	Low	
LOR-TOM-13 Purok 1 8°11'17.92" N 125°47'58.49" E	Low	
LOR-TOM-14 Purok 3 8°11'15.76" N 125°48'10.48" E	Low	
LOR-TOM-15 Purok 3 8°11'23.35" N 125°48'19.87" E	Low	
LOR-TOM-16 Purok 3 8°11'19.43" N 125°48'16.02" E	Low	
LOR-TOM-17 Purok 4 8°11'11.4" N 125°48'14.47" E	Low	
LOR-TOM-18 Purok 5 8°11'1.64" N 125°48'18.72" E	Low	
LOR-TOM-19 Purok 7 8°10'49.73" N 125°48'22.18" E	Low	
LOR-TOM-20 Purok 7 8°10'50.59" N 125°48'21.1" E	Low	
LOR-TOM-21 Purok 7 8°10'50.92" N	Low	

125°48'21.2" E		
<b>Barangay Violanta</b>		
LOR-VLT-12 Residential and agricultural area in Purok 3 8°11'27.9" N 125°49'16.7" E	Low	The area is characterized by gently rolling topography. However, several portions of the hills beside Tagabaka creek is prone to riverbank erosion.  Recommendation: Observe for and/or monitor for presence of mass movement and report to MGB/Municipal authorities.
LOR-VLT-13 Residential and agricultural area in Purok 3 8°11'27.9" N 125°49'16.6" E		
LOR-VLT-01 Residential area in Purok 1 8°11'27.7" N 125°49'20.8" E	Low	The area is relatively flat. Low landslide susceptibility.  Recommendation: Observe and monitor for the presence of mass movement and report to MBG/municipal authorities.
LOR-VLT-02 Residential area in Purok 4 8°11'29.5" N 125°49'19.8" E	Low	
LOR-VLT-03 Residential area in Purok 1 8°11'32.2" N 125°49'17.1" E	Low	
LOR-VLT-04 Agricultural area in Purok 1 8°11'36.9" N 125°49'18.4" E	Low	
LOR-VLT-05 Agricultural area in Purok 1 8°11'34.4" N 125°49'16.9" E	Low	
LOR-VLT-06 Residential and agricultural area in Purok 1 8°11'33.2" N 125°49'17.7" E	Low	
LOR-VLT-07 Residential area in Purok 2 8°11'32.6" N 125°49'18.1" E	Low	
LOR-VLT-08 Residential area in Purok 2 8°11'32.6" N 125°49'18.1" E	Low	

LOR-VLT-09 Residential area in Purok 2 8°11'33.5" N 125°49'19.3" E	Low	<p>The area is relatively flat. Low landslide susceptibility.</p> <p>Recommendation: Observe and monitor for the presence of mass movement and report to MBG/municipal authorities.</p>
LOR-VLT-10 Residential area in Purok 3 8°11'32.8" N 125°49'20.1" E	Low	
LOR-VLT-11 Residential area in Purok 3 8°11'29.3" N 125°49'17.8" E	Low	
LOR-VLT-14 Residential area in Purok 4 8°11'29.3" N 125°49'18.7" E	Low	
LOR-VLT-15 Residential area in Purok 4 8°11'28.9" N 125°49'19.2" E	Low	
LOR-VLT-16 Residential area in Purok 5 8°11'27.3" N 125°49'21.3" E	Low	
LOR-VLT-17 Residential area in Purok 5 8°11'29.3" N 125°49'22.9" E	Low	
LOR-VLT-18 Residential area in Purok 5 8°11'28.4" N 125°49'24.1" E	Low	
LOR-VLT-19 Residential area in Purok 4 8°11'30.7" N 125°49'20.9" E	Low	
LOR-VLT-20 Residential area in Purok 4 8°11'31.8" N 125°49'19.7" E	Low	
LOR-VLT-21 Residential area in Purok 4 8°11'40" N 125°49'16.6" E	Low	

LOR-VLT-24 Residential and agricultural area in Sitio Immaculada 8°12'26.1" N 125°49'46.1" E	Low	The area is relatively flat. Low landslide susceptibility.  Recommendation: Observe and monitor for the presence of mass movement and report to MBG/municipal authorities.
LOR-VLT-25 Residential and agricultural area in Sitio Immaculada 8°12'9.8" N 125°49'52.5" E	Low	
LOR-VLT-26 Residential and agricultural area in Sitio Immaculada 8°12'11.8" N 125°49'52.5" E	Low	
LOR-VLT-27 Residential and agricultural area in Sitio Immaculada 8°12'9.9" N 125°49'51.1" E	Low	
LOR-VLT-28 Agricultural area in Sitio Immaculada 8°12'18.4" N 125°49'52.6" E	Low	
LOR-VLT-29 Residential and agricultural area in Sitio Batohon 8°12'42.6" N 125°50'1.7" E	Low	
LOR-VLT-30 Residential and agricultural area in Sitio Batohon 8°12'47.7" N 125°50'3.4" E	Low	
<b>Barangay Waloe</b>		
LOR-WAL-1469 Purok 1 waiting shed 8°11'57.1" N 125°45'40" E	Low	No landslide component mapped.
LOR-WAL-1470 Purok 2 waiting shed 8°11'57.1" N 125°45'40.3" E	Low	
LOR-WAL-1471 Umayam River in Purok 2 8°11'54.1" N 125°45'40.4" E	Low	

LOR-WAL-1472 Sitio Amapco near Umayam River 8°11'48.9" N 125°45'27.9" E	Low	No landslide component mapped.
LOR-WAL-1473 Sitio Amapco near Umayam River 8°11'48.4" N 125°45'27.7" E	Low	
LOR-WAL-1474 Sitio Amapco near Umayam River 8°11'49.1" N 125°45'27.8" E	Low	
LOR-WAL-1475 Along the road in Sitio Telocan 8°11'5.7" N 125°44'26.5" E	Low	
LOR-WAL-1476 Along the road in Sitio Telocan 8°11'7.7" N 125°44'30.9" E	Low	
LOR-WAL-1477 Sitio Telocan proper 8°11'12.4" N 125°44'35.9" E	Low	
LOR-WAL-1478 Don Enestorio S. Otaza Primary School 8°11'13.1" N 125°44'40" E	Low	
LOR-WAL-1479 Sitio Telocan proper 8°11'16.5" N 125°44'45.1" E	Low	
LOR-WAL-1480 Along the road in Sitio Amapco 8°11'37.1" N 125°45'7.9" E	Low	
LOR-WAL-1481 Sitio Amapco proper 8°11'41.4" N 125°45'38.7" E	Low	
LOR-WAL-1482 Purok 1 waiting shed 8°11'46.4" N 125°45'45.9" E	Low	

LOR-WAL-1483 Waloe Elementary School 8°11'45.7" N 125°45'46.2" E	Low	No landslide component mapped.
LOR-WAL-1484 Waloe Barangay Hall 8°11'42.8" N 125°45'46.8" E	Low	
LOR-WAL-1485 Waloe Day Care Center 8°11'43.1" N 125°45'47.2" E	Low	
LOR-WAL-1486 Purok 3 waiting shed 8°11'41.6" N 125°45'46.2" E	Low	
LOR-WAL-1487 Viva Sr. Sto Nino Church 8°11'41.5" N 125°45'50.3" E	Low	
LOR-WAL-1488 Purok 4 waiting shed 8°11'44.6" N 125°45'48.1" E	Low	
LOR-WAL-1489 Waloe National High School 8°11'58.7" N 125°45'42.6" E	Low	
LOR-WAL-1490 Along the road in Sitio Amapco 8°11'48.4" N 125°45'49.6" E	Low	
LOR-WAL-1491 Along the road in Sitio Amapco 8°11'48.2" N 125°45'57.2" E	Low	
LOR-WAL-1492 Along the road in Sitio Amapco 8°11'47.3" N 125°46'4.5" E	Low	
LOR-WAL-1493 Along the road in Sitio Amapco 8°11'46.1" N 125°46'15.7" E	Low	
LOR-WAL-1494 Purok 5, Sitio Guitas 8°11'42.1" N 125°46'22.6" E	Low	

LOR-WAL-1495 Purok 4, Sitio Guitas 8°11'36.3" N 125°46'30.5" E	Low	No landslide component mapped.
LOR-WAL-1496 Cornfield in Sitio Guitas 8°11'32.5" N 125°46'35.1" E	Low	
LOR-WAL-1497 Cornfield in Sitio Guitas 8°11'32.5" N 125°46'35.2" E	Low	
LOR-WAL-1498 Cornfield in Sitio Guitas 8°11'32.6" N 125°46'35.5" E	Low	
LOR-WAL-1499 Purok 3, Sitio Guitas 8°11'30" N 125°46'36.4" E	Low	
LOR-WAL-1500 Guitas Elementary School 8°11'27.1" N 125°46'38.1" E	Low	
LOR-WAL-1501 Purok 2, Sitio Guitas 8°11'23" N 125°46'40.8" E	Low	
LOR-WAL-1502 Purok 1, Sitio Guitas 8°11'22.6" N 125°46'48.2" E	Low	

**Table 5. Results of the Flood Hazard Assessment**

Location	Flood Susceptibility Rating	Remarks/Recommendations
<b>Barangay Binucayan</b>		
LOR-BNY-463 Ihawan River in Sitio Natividad 8°2'35" N 125°49'13.9" E	Very High	Flooding is confined only to Ihawan River channel.  Recommendation: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-BNY-448 Junction of Ihawan River and Sabod River 7°59'52.6" N	Very High	Junction of Ihawan River and Sabod River.  Recommendation: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).

125°49'17.2" E		
LOR-BNY-446 Binucayan High School 8°0'45.4" N 125°48'59" E	High	Flooding at the back area of Binucayan High School.  Recommendations: Develop an early warning system (e.g., signage). Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-BNY-443 Purok 1 Riverside Community 8°0'40.2" N 125°49'3.8" E	High	Flooding due to the overflowing of Ihawan River.  Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Develop an early warning system (e.g., signage). Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-BNY-444 Purok 1 Riverside Community 8°0'37" N 125°49'3.4" E		
LOR-BNY-452 Community Area in Sitio Union 8°1'18.8" N 125°50'3.9" E	Moderate	Flooding in the area is due to the overflowing of Dagaan creek.  Recommendations: Develop an early warning system (e.g., signage). Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-BNY-464 Community Area in Sitio Natividad 8°2'33.6" N 125°49'18.6" E	Moderate	Flooding in the area is due to the overflowing of Ihawan River.  Recommendations: Develop an early warning system (e.g., signage). Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-BNY-449 Community Area in Sitio Pangian 7°59'51.2" N 125°49'19" E	Low	Flooding does not reach the community area.  Recommendation: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-BNY-447 Purok 2 Community area 8°0'36" N 125°49'8.7" E	Low	Flooding only restricted in river channel.  Recommendation: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-BNY-445 Binucayan Elem. School 8°0'41.5" N 125°49'4.1" E	Low	No flooding reported in the Binucayan Elementary School.  Recommendation: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-BNY-453 Community Area in Purok 4 8°0'37.4" N 125°49'10.7" E	Low	The area was flooded during typhoon Pablo.  Recommendation: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-BNY-442 Binucayan Barangay Hall 8°0'34.1" N 125°49'11.7" E		No reported case of flooding.
LOR-BNY-450 Community Area in Sitio Boom 7°59'57.1" N 125°49'20.9" E		

LOR-BNY-451 Community Area in Sitio Boom 8°0'6.8" N 125°49'19.2" E		No reported case of flooding.
LOR-BNY-454 Community Area in Purok 7 8°0'41.7" N 125°49'16.1" E		
LOR-BNY-455 Community Area in Purok 3 8°0'42.1" N 125°49'12.3" E		
LOR-BNY-456 Community Area in Purok 6 8°0'27.3" N 125°49'13.3" E		
LOR-BNY-457 Community Area in Sitio D.O. Plaza 8°0'23.6" N 125°49'1.1" E		
LOR-BNY-458 Community Area in Sitio San Miguel 8°0'14.6" N 125°48'32.2" E		
LOR-BNY-459 Community Area in Sitio San Miguel 8°0'22.1" N 125°48'39.3" E		
LOR-BNY-460 Community Area in Sitio D.O. Plaza 8°0'27.8" N 125°49'2.8" E		
LOR-BNY-461 Community Area in Purok 5 8°0'36.3" N 125°49'11.2" E		
LOR-BNY-462 Community Area in Sitio D.O. Plaza 8°0'32.9" N 125°48'58.6" E		
<b>Barangay Johnson</b>		
LOR-JHN-01 Steep slopes along the road in Purok 3 8°5'31.9" N 125°50'28.4" E	Very High	Settlements are found to lie along the river channel. Rapid riverbank scouring results to the collapse of overlying soil materials, thus, making the river wider. The proximity of the area to Ihawan River which is 20 meters wide and 1.5 meters deep, makes it highly susceptible to flooding. Water rises up to 6 meters, breaching the 4-meter high riverbank, spreading laterally to the nearby areas and terminates at the base of the gently sloping terrain.
LOR-JHN-02 Purok 3	Very High	

8°5'31.2" N 125°50'28.3" E		Recommendations: Develop an early warning system (e.g., signage). Observe for rapid increase in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Evacuate whenever necessary. Moreover, the residents must also consider relocating to another area in the barangay not prone to flooding.
LOR-JHN-03 Purok 3 8°5'28.7" N 125°50'28.4" E	Very High	
LOR-JHN-04 Purok 5 8°5'28.7" N 125°50'28.9" E	High	<p>Settlements are found to lie along the river channel. Rapid riverbank scouring results to the collapse of overlying soil materials, thus, making the river wider. The proximity of the area to Ihawan River which is 20 meters wide and 1.5 meters deep, makes it highly susceptible to flooding. Water rises up to 6 meters, breaching the 4-meter high riverbank, spreading laterally to the nearby areas and terminates at the base of the gently sloping terrain.</p> <p>Recommendations: Develop an early warning system (e.g., signage). Observe for rapid increase in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Evacuate whenever necessary. Moreover, the residents must also consider relocating to another area in the barangay not prone to flooding.</p>
LOR-JHN-05 Purok 5 8°5'29.9" N 125°50'29.4" E	High	
LOR-JHN-06 Purok 5 8°5'31.2" N 125°50'29.4" E	High	
LOR-JHN-07 Purok 6 8°5'30.2" N 125°50'30" E	High	
LOR-JHN-08 Purok 6 8°5'31.2" N 125°50'30.9" E	High	
LOR-JHN-09 Purok 6 8°5'32" N 125°50'30.8" E	High	
LOR-JHN-10 Purok 4 8°5'32.1" N 125°50'30.8" E	High	
LOR-JHN-11 Purok 4 8°5'33.2" N 125°50'30.8" E	High	
LOR-JHN-12 Purok 4 8°5'33.9" N 125°50'30.9" E	High	
LOR-JHN-13 Purok 7 8°5'33.9" N 125°50'31.3" E	High	
LOR-JHN-14 Purok 7 8°5'33.9" N 125°50'32.8" E	High	
LOR-JHN-15 Purok 7 8°5'33.9" N 125°50'34.7" E	High	
LOR-JHN-16 Purok 2 8°5'33.9" N 125°50'29.5" E	High	

LOR-JHN-17 Purok 2 8°5'35.2" N 125°50'29.5" E	High	<p>Settlements are found to lie along the river channel. Rapid riverbank scouring results to the collapse of overlying soil materials, thus, making the river wider. The proximity of the area to Ihawan River which is 20 meters wide and 1.5 meters deep, makes it highly susceptible to flooding. Water rises up to 6 meters, breaching the 4-meter high riverbank, spreading laterally to the nearby areas and terminates at the base of the gently sloping terrain.</p> <p>Recommendations: Develop an early warning system (e.g., signage). Observe for rapid increase in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Evacuate whenever necessary. Moreover, the residents must also consider relocating to another area in the barangay not prone to flooding.</p>
LOR-JHN-18 Purok 2 8°5'35.7" N 125°50'29.5" E	High	
LOR-JHN-19 Johnson Elementary School 8°5'36.6" N 125°50'29.5" E	High	
LOR-JHN-20 Purok 1 8°5'36.4" N 125°50'29.4" E	High	
LOR-JHN-21 Purok 1 8°5'36.3" N 125°50'28.8" E	High	
LOR-JHN-22 Johnson High School 8°5'37.2" N 125°50'36" E	High	
LOR-JHN-23 Johnson Barangay Hall 8°5'31" N 125°50'31.4" E	High	
<b>Barangay Kasapa</b>		
LOR-KSP-01 Steep slopes along the road in Purok 4 8°9'9.6" N 125°38'42" E	High	<p>Flooding is experienced occasionally in this area during rainy season. Umayam River, a relatively big stream with 25 meters width and 2 meters depth, along with a minor tributary Kasapa River, affect the lower portion of the barangay once they reach their maximum water capacity. However, given an approximate elevation of 100 meters, water rapidly drains out</p>
LOR-KSP-02 Purok 4 8°9'11.4" N 125°38'42.5" E	High	
LOR-KSP-03 Purok 4 8°9'12.2" N 125°38'43" E	High	
LOR-KSP-04 Purok 4 8°9'13" N 125°38'43.6" E	High	
LOR-KSP-11 Purok 1 8°8'59.5" N 125°38'19.8" E	High	
LOR-KSP-12 Purok 1 8°9'0.6" N 125°38'17.2" E	High	

LOR-KSP-13 Purok 1 8°9'2" N 125°38'14.3" E	High	once raining stops. Recommendation: Observe for rapid increase in Umayam River water level and evacuate whenever necessary.
LOR-KSP-05 Purok 1 8°9'0.3" N 125°38'40.9" E	Moderate	<p>Flooding is experienced occasionally in this area during rainy season. Umayam River, a relatively big stream with 25 meters width and 2 meters depth, along with a minor tributary Kasapa River, affect the lower portion of the barangay once they reach their maximum water capacity. However, given an approximate elevation of 100 meters, water rapidly drains out once raining stops.</p> <p>Recommendation: Observe for rapid increase in Umayam River water level and evacuate whenever necessary.</p>
LOR-KSP-06 Purok 1 8°8'53" N 125°38'34" E	Moderate	
LOR-KSP-07 Purok 1 8°8'53.7" N 125°38'32.3" E	Moderate	
LOR-KSP-08 Purok 1 8°8'54.6" N 125°38'30.4" E	Moderate	
LOR-KSP-09 Purok 1 8°8'55.5" N 125°38'28.4" E	Moderate	
LOR-KSP-10 Purok 1 8°8'56.4" N 125°38'26.3" E	Moderate	
LOR-KSP-14 Kasapa Elementary School 8°9'6.1" N 125°38'11.4" E		
LOR-KSP-15 Purok 2 8°9'2.8" N 125°38'9.7" E		
LOR-KSP-16 Purok 2 8°9'1.3" N 125°38'12" E		
LOR-KSP-17 Purok 2 8°8'59.4" N 125°38'16.1" E		
LOR-KSP-18 Purok 2 8°8'58.1" N 125°38'18.7" E		
LOR-KSP-19 Purok 2 8°8'56.3" N 125°38'22.5" E		
LOR-KSP-20 Purok 3 8°8'53.6" N 125°38'28.2" E		

LOR-KSP-21 Purok 3 8°8'50.7" N 125°38'30.6" E		The area is slightly elevated. No reported case of flooding.
LOR-KSP-22 Purok 3 8°8'52" N 125°38'27.7" E		
LOR-KSP-23 Purok 3 8°8'53" N 125°38'25.8" E		
LOR-KSP-24 Purok 3 8°8'54.9" N 125°38'21.6" E		
LOR-KSP-25 Kasapa Barangay Hall 8°8'57" N 125°38'17.8" E		
<b>Barangay Katipunan</b>		
LOR-KTP-01 Residential and agricultural area in Purok 3 8°10'57.3" N 125°53'50.6" E	Very High	<p>The area is a natural floodplain of Agusan River, thus flooding is the primary hazard in the area. Flood heights in the barangay could reach up to 3.0 meters which lasts for 1 week.</p> <p>Recommendations: Early warning system and evacuation protocol must be critically planned for the community. Observe for rapid increase/decrease in river water levels, possibly accompanied by increased turbidity. Construction of structural designs in houses should adapt to flooding and must be carefully studied by LGUs.</p>
LOR-KTP-03 Residential and agricultural area in Purok 3 8°11'7.5" N 125°53'50.1" E	Very High	
LOR-KTP-05 Residential and agricultural area in Purok 1 8°11'17.2" N 125°53'47.4" E	Very High	
LOR-KTP-07 Residential and agricultural area in Purok 2 8°11'8.5" N 125°53'48.7" E	Very High	
LOR-KTP-09 Residential and agricultural area in Purok 3 8°10'56.4" N 125°53'49.1" E	Very High	
LOR-KTP-11 Residential and agricultural area in Purok 3 8°10'59" N 125°53'49.9" E	Very High	

LOR-KTP-13 Agricultural area in River intersection going to Purok 4 8°10'52.4" N 125°53'37.6" E	Very High	The area is a natural floodplain of Agusan River, thus flooding is the primary hazard in the area. Flood heights in the barangay could reach up to 3.0 meters which lasts for 1 week.  Recommendations: Early warning system and evacuation protocol must be critically planned for the community. Observe for rapid increase/decrease in river water levels, possibly accompanied by increased turbidity. Construction of structural designs in houses should adapt to flooding and must be carefully studied by LGUs.	
LOR-KTP-15 Agricultural area in Purok 4 8°10'37.5" N 125°52'7.5" E	Very High		
LOR-KTP-12 Agricultural area in Purok 2 8°11'4.9" N 125°53'44.3" E	Very High	The area is situated in Lake Dagan which is a part of the Agusan Marsh, thus intense flooding is the hazard in the area. Flood height in the area could reach 3.0 meters or higher and lasts for weeks.  Recommendations: Early warning system and evacuation protocol must be critically planned for the community. Observe for rapid increase/decrease in river water levels, possibly accompanied by increased turbidity. Construction of structural designs in houses should adapt to flooding and must be carefully studied by LGUs.	
LOR-KTP-02 Residential and agricultural area in Purok 3 8°11'7" N 125°53'50.9" E	Very High	The whole barangay is situated near/within the area of Agusan Marsh, thus intense flooding is the hazard in the area. Flood height in the barangay could reach 3.0 meters or higher and lasts for weeks.  Recommendations: Early warning system and evacuation protocol must be critically planned for the community. Observe for rapid increase/decrease in river water levels, possibly accompanied by increased turbidity. Construction of structural designs in houses should adapt to flooding and must be carefully studied by LGUs.	
LOR-KTP-04 Residential and agricultural area in Purok 1 8°11'12.5" N 125°53'47.6" E	Very High		
LOR-KTP-06 Residential and agricultural area in Purok 1 8°11'10.4" N 125°53'47.6" E	Very High		
LOR-KTP-08 Residential and agricultural area in Purok 2 8°11'7.8" N 125°53'49.3" E	Very High		
LOR-KTP-10 Residential and agricultural area in Purok 3 8°10'54.3" N 125°53'48.5" E	Very High		
LOR-KTP-14 Agricultural area in Purok 4 8°10'29.7" N 125°52'34.2" E	Very High		
<b>Barangay Kauswagan</b>			
LOR-KWN-202 Maisang Creek, Purok 3	Very High		Maisang Creek is frequently flooded during heavy rainfall. Highest flooding recorded was during Typhon Pablo which reached up to 1.9 meters.

7°59'17.7" N 125°45'46.1" E		Recommendation: Observe for rapid increase/decrease in creek/river water levels, possibly accompanied by increased turbidity (soil content).
LOR-KWN-198 Barangay Road located in Purok 9 7°59'0.7" N 125°45'7.7" E		No reported case of flooding.
LOR-KWN-199 Barangay Road located in Purok 9 7°59'0.7" N 125°45'20.2" E		
LOR-KWN-200 Barangay Road located in Purok 3 7°59'6.6" N 125°45'44.3" E		
LOR-KWN-201 Purok proper of Purok 9 7°59'8.5" N 125°45'47.9" E		
LOR-KWN-203 Barangay road located in Purok 3 7°59'2.9" N 125°45'49.2" E		
LOR-KWN-204 Purok proper of Purok 10 7°58'55" N 125°45'49.8" E		
LOR-KWN-205 Barangay road located in Purok 2B 7°59'25.2" N 125°45'42.5" E		
LOR-KWN-206 Kauswagan National High School 7°59'31.4" N 125°45'41.5" E		
LOR-KWN-207 Kauswagan Elementary School 7°59'32.2" N 125°45'40.7" E		
LOR-KWN-208 Purok proper of 2B 7°59'38.5" N 125°45'41.9" E		
LOR-KWN-209 Purok proper of 2A 7°59'45.7" N 125°45'54.9" E		

LOR-KWN-210 Barangay Hall of Kauswagan 7°59'45.2" N 125°46'1.2" E		No reported case of flooding.
LOR-KWN-211 Barangay road/Purok 8 proper 7°59'50" N 125°45'58.8" E		
LOR-KWN-212 Barangay road leading to Purok 7 proper 7°59'58.6" N 125°45'52.4" E		
LOR-KWN-213 Barangay road leading to Purok 7 proper 7°59'48.6" N 125°46'10.4" E		
LOR-KWN-214 Barangay road/Purok proper of Purok 12 7°59'40.9" N 125°46'24.9" E		
LOR-KWN-215 Barangay road/Purok proper of Purok 11 7°59'44.8" N 125°46'40.6" E		
LOR-KWN-216 Barangay road/Purok proper of Purok 5 7°59'43.9" N 125°46'56.7" E		
LOR-KWN-217 Purok proper of Purok 6 7°59'46.5" N 125°47'4.4" E		
LOR-KWN-220 Purok proper of Purok 4 7°59'45.1" N 125°47'10" E		
<b>Barangay Magaud</b>		
LOR-MGD-14 Agricultural area in Purok 1 8°11'48.9" N 125°48'9.8" E	Moderate	Agricultural areas are prone to flood inundation emanating from perennial creeks in the area. Flood can reach up to 1.0m in depth.  Recommendations: Local government should establish an early warning device. Develop proper drainage for the flood water.

LOR-MGD-15 Agricultural area in Purok 1 8°11'52.4" N 125°48'13.7" E	Moderate	Agricultural areas are prone to flood inundation emanating from perennial creeks in the area. Flood can reach up to 1.0m in depth.  Recommendations: Local government should establish an early warning device. Develop proper drainage for the flood water.
LOR-MGD-16 Residential and agricultural area in Purok 1 8°11'54.8" N 125°48'29.3" E	Moderate	
LOR-MGD-17 Residential and agricultural area in Purok 2 8°11'53.8" N 125°48'34.7" E	Moderate	
LOR-MGD-19 Residential and agricultural area in Purok 3 8°11'53.3" N 125°48'48.8" E	Moderate	
LOR-MGD-24 Residential and agricultural area in Purok 8 8°12'3.3" N 125°48'50.2" E	Moderate	
LOR-MGD-25 Residential and agricultural area in Purok 6 8°11'59.2" N 125°48'55.8" E	Moderate	
LOR-MGD-30 Residential and agricultural area in Purok 7 8°12'15" N 125°49'4.5" E	Moderate	
LOR-MGD-31 Residential and agricultural area in Purok 9 8°12'32.1" N 125°49'27.6" E	Moderate	
LOR-MGD-32 Agricultural area in Purok 9 8°12'31.8" N 125°49'32.6" E	Moderate	
LOR-MGD-06 Agricultural area in Sitio Kabuhayan 8°11'55.2" N 125°47'54.2" E	Moderate	
LOR-MGD-03 Residential and agricultural area in	Moderate	Flooding in the area is generally caused by low elevation and poor drainage.

Sitio Kabuhayan 8°12'11.9" N 125°48'1" E		Recommendation: Develop drainage system.
LOR-MGD-04 Residential and agricultural area in Sitio Kabuhayan 8°12'13.6" N 125°48'1.6" E	Moderate	
LOR-MGD-09 Residential and agricultural area in Sitio Upper 8°11'25.9" N 125°47'56.2" E	Moderate	
LOR-MGD-10 Residential area in Sitio Upper 8°11'32.4" N 125°47'55.7" E	Moderate	
LOR-MGD-18 Residential area in Purok 3 8°11'54.9" N 125°48'48.6" E	Moderate	
LOR-MGD-22 Residential area in Purok 5 8°12'1.5" N 125°48'52.6" E	Moderate	
LOR-MGD-01 Residential area in Purok 8 8°12'2.1" N 125°48'50.2" E	Low	Area is prone to low susceptibility of flooding and flashfloods due to poor/clogged drainage.  Recommendations: Implement flood control measures. Regular de-clogging of the creek must be implemented.
LOR-MGD-02 Residential area in Purok 8 8°11'60" N 125°48'50.4" E	Low	
LOR-MGD-05 Residential area in Sitio Kabuhayan 8°12'15.3" N 125°48'0.5" E	Low	
LOR-MGD-07 Agricultural area in Sitio Kabuhayan 8°11'50.4" N 125°47'56.2" E	Low	
LOR-MGD-08 Residential and agricultural area in Sitio Upper 8°11'26.8" N 125°47'55.5" E	Low	

LOR-MGD-11 Residential area in Sitio Upper 8°11'34.9" N 125°47'56.7" E	Low	<p>Area is prone to low susceptibility of flooding and flashfloods due to poor/clogged drainage.</p> <p>Recommendations: Implement flood control measures. Regular de-clogging of the creek must be implemented.</p>
LOR-MGD-12 Agricultural area in Purok 1 8°11'46.1" N 125°48'6" E	Low	
LOR-MGD-13 Residential and agricultural area in Purok 1 8°11'49.2" N 125°48'9.7" E	Low	
LOR-MGD-20 Residential and agricultural area in Purok 4 8°11'54.7" N 125°48'52.1" E	Low	
LOR-MGD-21 Residential and agricultural area in Purok 5 8°11'58.3" N 125°48'52.8" E	Low	
LOR-MGD-23 Residential and agricultural area in Purok 5 8°12'3.6" N 125°48'51.5" E	Low	
LOR-MGD-26 Residential area in Purok 6 8°11'59.5" N 125°48'56.1" E	Low	
LOR-MGD-27 Residential and agricultural area in Purok 6 8°12'9.3" N 125°48'59.7" E	Low	
LOR-MGD-28 Residential and agricultural area in Purok 7 8°12'10.1" N 125°48'59.8" E	Low	
LOR-MGD-29 Residential and agricultural area in Purok 7 8°12'10.8" N 125°48'59.9" E	Low	
<b>Barangay Nueva Gracia</b>		
LOR-NVG-489	Very High	The area is highly susceptible to flooding because it is situated along the

Riverside Community in Purok 3 8°7'24.4" N 125°52'44.5" E		Ihawan River with flood height reaching 1.50 m.  Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Develop an early warning system (e.g., signages). Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Discourage future habitation and construction of government structures in known/ identified landslide and flood-prone areas (along rivers and creeks).
LOR-NVG-490 Riverside Community in Purok 3 8°7'25.3" N 125°52'48.9" E	Very High	
LOR-NVG-502 Community Area and rice field in Purok 7 8°6'29.7" N 125°52'31.8" E	Very High	
LOR-NVG-503 Community Area and rice field in Purok 7 8°6'34" N 125°52'35.3" E	Very High	The whole area, including the rice fields and some settlements are highly susceptible to flooding due to the overflowing of Ihawan River and Kibanog Creek.  Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Develop an early warning system (e.g., signage). Consult Municipal Assessor's Office for re-assessment of destroyed farmlands. Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-NVG-504 Along road in Purok 7 8°6'35.6" N 125°52'41.6" E	Very High	
LOR-NVG-505 Along road in Purok 7 8°6'42.2" N 125°52'48.1" E	Very High	
LOR-NVG-488 Community Area in Purok 1 8°7'27.6" N 125°52'42" E	High	Flooding in the area due to the overflowing of Ihawan River with flood height of 1 meter.  Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Develop an early warning system (e.g., signages).
LOR-NVG-492 Tawog creek in Purok 5 8°6'58.2" N 125°52'55.6" E	High	Flooding in the area is along the creek and at the settlement near the channel of the creek.  Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains.
LOR-NVG-500 Along road in Purok 6 8°8'4.2" N 125°52'26.3" E	High	Flooding is along the creek channel towards the rice field of Purok 6.  Recommendations: Consult Municipal Assessor's Office for re-assessment of destroyed farmlands. Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-NVG-506 Along road in Purok 5 8°6'52.6" N 125°52'48.6" E	High	The road is located near the Ihawan River.  Recommendations: Develop an early warning system (e.g., signage). Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Observe for sunken or displaced road surface.
LOR-NVG-495 Community Area	Moderate	Flooding in the area is due to the overflowing of Ihawan River with flood height reaching 0.50 meter.

in Purok 2 8°7'25.9" N 125°52'41.4" E		Recommendation: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-NVG-507 Along road in Purok 5 8°6'52.1" N 125°52'51.5" E	Moderate	The road is located near the Ihawan River.  Recommendations: Develop an early warning system (e.g., signage). Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Observe for sunken or displaced road surface.
LOR-NVG-491 Community Area in Purok 5 8°6'58.9" N 125°52'54.8" E	Low	Low flooding susceptibility in the area because it is slightly elevated.  Recommendation: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-NVG-486 Nueva Gracia Barangay hall 8°7'29" N 125°52'40.6" E		No reported case of flooding.
LOR-NVG-487 Community Area in Purok 1 8°7'27.8" N 125°52'40.3" E		
LOR-NVG-493 Along road in Purok 5 8°7'8.6" N 125°52'55" E		
LOR-NVG-494 Along road in Purok 3 8°7'19.5" N 125°52'52.8" E		
LOR-NVG-496 Nueva Gracia Elem. School 8°7'27.2" N 125°52'36" E		
LOR-NVG-497 Community Area in Purok 4 8°7'31.9" N 125°52'33.5" E		
LOR-NVG-498 Community Area in Purok 6 8°8'12.6" N 125°52'22.3" E		
LOR-NVG-499 Community Area in Purok 6 8°8'10.7" N 125°52'23.3" E		
LOR-NVG-501 Along road in Purok 6 8°7'50.2" N 125°52'27.3" E		

Barangay Poblacion		
LOR-POB-01 River in Purok 7 8°11'21.44" N 125°51'17.64" E	Very High	An east flowing Umayam river which usually overflows during perilous weather conditions affects its surrounding agricultural and residential areas. Also progressive river bank erosion from the meandering movement was also mapped in most sections of the river.
LOR-POB-02 River in Purok 1 8°11'41.17" N 125°51'8.93" E		Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Avoid building of structures near river areas.
LOR-POB-29 River in Purok 8 8°11'12.8" N 125°51'43.52" E	Very High	An east flowing Umayam river which usually overflows during perilous weather conditions affects its surrounding agricultural and residential areas. Progressive river bank erosion from the meandering movement was also mapped in most sections of the river.  Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Avoid building of structures near river areas.
LOR-POB-21 Creek in Sitio Mambaos 8°10'24.92" N 125°51'53.78" E	Very High	Overflowing in this northeast flowing Mambaos creek is caused by the back flow of Umayam river.  Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Avoid building of structures near river areas.
LOR-POB-37 River in Purok 5 8°11'32.21" N 125°50'26.63" E	Very High	Overflowing of Umayam river causes the progressive river bank erosion at the agricultural area in Purok 5. The area lies along the bend of the meandering river and is moving further southward towards the residential area.  Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Avoid building of structures near river areas. Install proper engineering measures to mitigate bank erosion (ex.: re-channeling; dredging)
LOR-POB-32 Creek in Upper Ilo-an 8°10'21.79" N 125°50'11.08" E	High	Ilo-an creek which flows on a northeast direction overflows during perilous weather condition. Back flowing of Umayam river contributes to the overflowing of the creek.
LOR-POB-34 Creek in Proper Ilo-an 8°10'48.68" N 125°50'35.02" E		Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Avoid building of structures near river areas.
LOR-POB-22 Residential area in Sitio Mambaos 8°10'25.39" N 125°51'54.97" E	High	Sheet flooding in the area is caused by the overflowing of Umayam river and Mambaos creek.  Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Conduct pre-emptive evacuation during extreme weather conditions.
LOR-POB-27 Agricultural area in Purok 6 8°11'10.32" N 125°51'30.35" E	High	Sheet flooding in the area is caused by the overflowing of Umayam river.
LOR-POB-30		Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased

Agricultural area in Purok 8 8°11'11.33" N 125°51'39.67" E		turbidity (soil content). Observe for sunken or displaced road surfaces. Conduct pre-emptive evacuation during extreme weather conditions.
LOR-POB-23 Residential area in Sitio Kiawan 8°9'39.46" N 125°52'2.21" E	Moderate	Sheet flooding in the area is caused by the overflowing of Umayam river and Mambaos creek.  Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Conduct pre-emptive evacuation during extreme weather conditions.
LOR-POB-10 Residential area in Sitio Jandayugong 8°12'0.97" N 125°51'1.19" E	Moderate	Sheet flooding in the area is caused by the overflowing of Umayam river.  Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces.
LOR-POB-14 Agricultural area in Sitio Tawilon 8°11'46.54" N 125°51'17.06" E	Moderate	
LOR-POB-15 Agricultural area in Purok 1 8°11'36.85" N 125°51'3.85" E	Moderate	
LOR-POB-19 Residential area in Sitio Naligayan 8°10'36.66" N 125°51'43.16" E	Moderate	
LOR-POB-33 Residential area in Proper Ilo-an 8°10'46.31" N 125°50'36.71" E	Low	
LOR-POB-24 Residential area in Sitio Kiawan 8°9'44.28" N 125°52'0.37" E	Low	Sheet flooding in the area is caused by the overflowing of Umayam river and Mambaos creek.  Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Conduct pre-emptive evacuation during extreme weather conditions.
LOR-POB-09 Residential area in Sitio Jandayugong 8°12'3.1" N 125°50'55.1" E	Low	Sheet flooding in the area is caused by the overflowing of Umayam river.  Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces.
LOR-POB-11 Residential area in Sitio Jandayugong 8°11'58.52" N 125°50'51.32" E	Low	
LOR-POB-28 Residential area in Purok 8 8°11'6.04" N 125°51'27.83" E	Low	

LOR-POB-31 Agricultural area in Upper Ilo-an 8°10'12.58" N 125°50'7.55" E	Low	Sheet flooding in the area is caused by the overflowing of Umayam river.  Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces.
LOR-POB-38 Residential area in Purok 1 8°11'24.07" N 125°51'3.56" E	Low	
LOR-POB-03 Sitio Moto 8°12'52.78" N 125°50'40.85" E		No reported case of flooding.
LOR-POB-04 Sitio Moto 8°12'54.54" N 125°50'41.17" E		
LOR-POB-05 Sitio Moto 8°12'57.1" N 125°50'42.86" E		
LOR-POB-06 Sitio Moto 8°12'59.18" N 125°50'40.13" E		
LOR-POB-07 Sitio Jandayugong 8°12'18.25" N 125°50'59.42" E		
LOR-POB-08 Sitio Jandayugong 8°12'12.38" N 125°50'57.08" E		
LOR-POB-12 Sitio Jandayugong 8°11'57.37" N 125°50'42.58" E		
LOR-POB-13 Sitio Jandayugong 8°12'0.65" N 125°50'50.68" E		
LOR-POB-16 Purok 3 8°11'16.37" N 125°51'5.47" E		
LOR-POB-17 Road in Purok 4 8°11'7.84" N 125°51'14.83" E		
LOR-POB-18 Purok 8 8°11'1.46" N 125°51'24.88" E		
LOR-POB-20 Sitio Mambaos 8°10'22.58" N 125°51'52.63" E		

LOR-POB-25 Road in Sitio Kiawan 8°9'53.86" N 125°51'55.19" E		No reported case of flooding.
LOR-POB-26 Municipal Hall 8°10'49.4" N 125°51'28.8" E		
LOR-POB-35 Residential area in Purok 3 8°11'11.58" N 125°50'50.14" E		
LOR-POB-36 Residential area in Sitio Maputing 8°11'2.98" N 125°50'16.62" E		
LOR-POB-39 Residential area in Purok 2 8°11'20.51" N 125°51'5.98" E		
<b>Barangay Sabud</b>		
LOR-SBD-189 Tanionan Creek in Sitio Alpha Base 7°59'3.8" N 125°43'11.8" E	High	Tanionan Creek passing barangay road. Frequently flooded during heavy rainfall. Highest flood recorded was during Typhoon Pablo which reached up to 1.9 meters.  Recommendation: Observe for rapid increase/decrease in creek/river water levels, possibly accompanied by increased turbidity (soil content).
LOR-SBD-178 Residential area in Purok 1/Purok 1 proper 7°59'11.2" N 125°43'9" E	Low	Area is situated on a higher elevation. No flood component mapped.
LOR-SBD-179 Residential area in Purok 1/Purok 1 proper 7°59'12.3" N 125°43'9.8" E	Low	
LOR-SBD-180 Residential area in Purok 2/Purok 2 proper 7°59'14.6" N 125°43'12.1" E	Low	
LOR-SBD-181 Residential area in Purok 2/Purok 2 proper 7°59'19.4" N 125°43'14.6" E	Low	

LOR-SBD-182 Residential area in Purok 2/Purok 2 proper 7°59'21.3" N 125°43'17.6" E	Low	Area is situated on a higher elevation. No flood component mapped.
LOR-SBD-183 Sabud Barangay Hall 7°59'10.3" N 125°43'8.7" E	Low	
LOR-SBD-184 Residential area in Purok 1/Purok 1 proper 7°59'12.4" N 125°43'5.4" E	Low	
LOR-SBD-185 Datu Subla Elementary School 7°59'12.3" N 125°43'3.4" E	Low	
LOR-SBD-186 Residential area in Purok 1/Purok 1 proper 7°59'11" N 125°43'2.2" E	Low	
LOR-SBD-187 Sitio Cabcab Proper/edge of slope 7°59'10.5" N 125°43'59.7" E	Low	
LOR-SBD-188 Barangay road/open field in Purok 1 7°59'9.1" N 125°43'6.2" E	Low	
LOR-SBD-190 Sitio Alpha base Proper/edge of slope 7°58'53.2" N 125°43'2.5" E	Low	
LOR-SBD-191 Barangay road/open field in Purok 4 7°58'43.9" N 125°43'9.9" E	Low	
LOR-SBD-192 Barangay road/open field in Purok 4 7°58'39" N 125°43'21.8" E	Low	

LOR-SBD-193 Barangay road/Sitio New Maticon Proper 7°58'44.8" N 125°43'34.7" E	Low	Area is situated on a higher elevation. No flood component mapped.
LOR-SBD-194 Barangay road/Open field in Sitio New Maticon 7°58'51.1" N 125°43'48.1" E	Low	
LOR-SBD-195 Barangay road/Open field in Purok 6 7°58'49" N 125°43'3.7" E	Low	
LOR-SBD-196 Barangay road/Open field in Purok 7 7°58'59.5" N 125°43'22.8" E	Low	
LOR-SBD-197 Barangay road/Open field in Purok 7 7°59'3.5" N 125°43'54.1" E	Low	
<b>Barangay San Isidro</b>		
LOR-SNI-1420 Anahawan River, Purok 3 8°2'45.9" N 125°48'43.5" E	Very High	Worst flood recorded in Anahawan River happened during typhoon Pablo in December 2012. Flood height in this area reached as high as 2.1 meters.
LOR-SNI-1421 Anahawan River, Purok 3 8°2'44.5" N 125°48'48" E		Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Installation of river wall along the riverbanks may be considered to prevent from further bank erosion. Develop an early warning system (e.g., signage).
LOR-SNI-1427 Ihawan River, Purok 2 8°2'55.4" N 125°48'55.8" E	Very High	Worst flood recorded in Ihawan River happened during typhoon Pablo in December 2012. Flood height in this area reached as high as 2 meters.
LOR-SNI-1428 Purok 2 near Ihawan River 8°2'52.8" N 125°48'55.4" E	Very High	Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Installation of river wall along the riverbanks may be considered to prevent from further bank erosion. Develop an early warning system (e.g., signage).
LOR-SNI-1429 Rice field in Sitio Kanhatan 8°3'1.1" N 125°48'59" E	Very High	

LOR-SNI-1430 Rice field in Sitio Kanhatan 8°3'10.7" N 125°49'0" E	Very High	Worst flood recorded in Ihawan River happened during typhoon Pablo in December 2012. Flood height in this area reached as high as 2 meters.
LOR-SNI-1431 Rice field in Sitio Tambo 8°3'14.1" N 125°48'52.6" E	Very High	Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Installation of river wall along the riverbanks may be considered to prevent from further bank erosion. Develop an early warning system (e.g., signage).
LOR-SNI-1417 Anahawan River, Purok 3 8°2'46.2" N 125°48'42.8" E	Very High	Worst flood recorded on Anahawan River happened during typhoon Pablo in December 2012. Flood height in this area reached as high as 2.1 meters.  Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Installation of river wall along the riverbanks may be considered to prevent from further bank erosion. Develop an early warning system (e.g., signage).
LOR-SNI-1422 Rice field in Purok 3 8°2'48.1" N 125°48'44.8" E	High	Flooding in the rice paddies is due to the overflowing of nearby river which usually occur in the months of December to February.  Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-SNI-1436 Sagayon Creek, Purok 2 8°2'25" N 125°48'44.7" E	High	Overflowing of Sagayon Creek causes flooding in the rice paddies. Frequent flooding is usually experienced in the months of December to February.  Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Develop an early warning system (e.g., signage)
LOR-SNI-1426 Purok 2 near Ihawan River 8°2'50.8" N 125°48'45.6" E	High	The residents in this area experienced flood height that is about 1.8 meters high during typhoon Pablo in December 2012. Common flooding in the area usually occurs in the months of December to February.  Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Installation of river wall along the riverbanks may be considered to prevent from further bank erosion. Develop an early warning system (e.g., signage).
LOR-SNI-1423 Rice field in Purok 3 8°2'49.1" N 125°48'43.4" E	Moderate	Flooding in the rice paddies is due to the overflowing of nearby river which usually occur in the months of December to February.  Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-SNI-1441 Purok 1 proper 8°2'8" N 125°48'55" E	Moderate	Flooding in this area is caused by the overflowing of nearby creek which usually overflows in the months of December to February.  Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-SNI-1419 Purok 3 near Anahawan River 8°2'46.5" N 125°48'42.7" E	Moderate	Flooding of about 0.6 meter high is experienced in this area due to the overflowing of Anahawan River during typhoon Pablo in December 2012.  Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).

LOR-SNI-1432 Rice field in Sitio Tambo 8°3'5.1" N 125°48'41.1" E	Low	The area is situated on a higher elevation where flooding is only restricted in the rice paddies.  Recommendation: Advise for pre-emptive evacuation during inclement weather condition especially when flood continues to rise.
LOR-SNI-1433 Purok 1 proper 8°2'51.6" N 125°48'32" E	Low	
LOR-SNI-1437 Purok 3 proper 8°2'24.4" N 125°48'44.3" E	Low	
LOR-SNI-1418 Purok 3 near Anahawan River 8°2'46.5" N 125°48'42.6" E		No reported case of flooding.
LOR-SNI-1424 San Isidro Barangay Hall 8°2'48.6" N 125°48'42.8" E		
LOR-SNI-1425 San Isidro Health Center 8°2'47.8" N 125°48'41.2" E		
LOR-SNI-1434 San Isidro National High School 8°2'52.8" N 125°48'34.5" E		
LOR-SNI-1435 San Isidro Elementary School 8°2'53" N 125°48'37.1" E		
LOR-SNI-1438 Sitio San Miguel proper 8°2'10.2" N 125°48'52.7" E		
LOR-SNI-1439 Sitio San Miguel proper 8°2'7" N 125°48'53.5" E		
LOR-SNI-1440 Sitio San Miguel proper 8°2'7.8" N 125°48'54.4" E		
LOR-SNI-1442 Purok 1 proper 8°2'46.9" N 125°48'29" E		

**Barangay San Mariano**

LOR-MRN-1463 RCP in Dayto Creek, Purok 1 8°2'39.7" N 125°47'47.7" E	Very High	The reinforced culvert pipe is not enough to manage the flood water in Dayto Creek. Flood height in this area reached as high as 2.10 meters during typhoon Pablo.  Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains especially if the flood water continues to rise. Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-MRN-1465 Yaki Creek in Purok 1 8°2'42.1" N 125°48'18.9" E	Very High	Worst flood recorded in this creek happened during typhoon Pablo in December 2012. Frequent flooding in the area is usually experienced in the months of December to February.
LOR-MRN-1457 Dayto Creek in Purok 4 8°2'49.8" N 125°47'40.9" E	Very High	Recommendation: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-MRN-1443 Anahawan River in Purok 3 8°2'39.2" N 125°47'20.6" E	Very High	Worst flood recorded in this river happened during typhoon Pablo in December 2012. Frequent flooding in the area is usually experienced in the months of December to February.
LOR-MRN-1459 Anahawan River in Purok 1 8°2'38.9" N 125°47'42.8" E	Very High	Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Installation of river wall along the riverbanks may be considered to prevent from further bank erosion.
LOR-MRN-1445 Purok 3 waiting shed 8°2'44" N 125°47'27.6" E	High	Flooding in this area is due to the overflowing of Anahawan River where flood height reached as high as 1.1 meters high during typhoon Pablo.  Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Installation of river wall along the riverbanks may be considered to prevent from further bank erosion.
LOR-MRN-1444 Anahawan River in Purok 3 8°2'39.6" N 125°47'20.5" E	High	Flooding in this area is due to the overflowing of Anahawan River where flood height reached as high as 1.5 meters high during typhoon Pablo.  Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Installation of river wall along the riverbanks may be considered to prevent from further bank erosion.
LOR-MRN-1456 Purok 4 near Dayto Creek 8°2'49.7" N 125°47'41" E	High	Flooding in this area is due to the overflowing of Dayto Creek where flood height reached as high as 1.1 meters high during typhoon Pablo.  Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains especially if the flood water continues to rise. Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-MRN-1466 Purok 1 near Yaki Creek 8°2'42.2" N 125°48'19.2" E	High	Flooding in this area is due to the overflowing of Yaki Creek where flood height reached as high as 1.1 meters high during typhoon Pablo. Recommendation: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-MRN-1467 Purok 1 near Yaki	Moderate	Flooding is minimal in this area since it is situated on a higher elevation. This was once flooded during typhoon Pablo in December 2012.

Creek 8°2'42.5" N 125°48'19.8" E		Recommendation: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-MRN-1460 Purok 1 near Anahawan River 8°2'39.1" N 125°47'42.9" E	Moderate	Flooding is minimal in this area since it is situated on a higher elevation. This was once flooded during typhoon Pablo in December 2012.  Recommendation: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains especially if the flood water continues to rise.
LOR-MRN-1455 Purok 4 near Dayto Creek 8°2'49.3" N 125°47'41.3" E	Moderate	Flooding is minimal in this area since it is situated on higher elevation. This was once flooded during typhoon Pablo in December 2012.  Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains especially if the flood water continues to rise. Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-MRN-1446 Purok 3 proper 8°2'43.4" N 125°47'30" E	Moderate	The Purok 3 proper is situated on a higher elevation thus flooding is minimal. Flooding in the area during typhoon Pablo in December 2012 was due to the overflowing of Anahawan River.  Recommendation: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains especially if the flood water continues to rise.
LOR-MRN-1447 San Mariano Basketball Court 8°2'42.5" N 125°47'31.5" E	Low	Sheet flooding during typhoon Pablo in December 2012 was due to the overflowing of Anahawan River.  Recommendation: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-MRN-1448 Purok 2 waiting shed 8°2'41.6" N 125°47'32.5" E	Low	
LOR-MRN-1468 Purok 1 near Yaki Creek 8°2'42.6" N 125°48'20" E	Low	
LOR-MRN-1461 Purok 1 near Anahawan River 8°2'39.2" N 125°47'42.9" E	Low	
LOR-MRN-1449 San Mariano Barangay Hall 8°2'44.4" N 125°47'33.7" E		
LOR-MRN-1450 Along the road in Purok 4 8°2'43.9" N 125°47'37" E		No reported case of flooding.
LOR-MRN-1451 Along the road in Purok 4 8°2'45.4" N 125°47'37.9" E		

LOR-MRN-1452 Along the road in Purok 4 8°2'46.1" N 125°47'39.3" E		No reported case of flooding.
LOR-MRN-1453 Purok 4 waiting shed 8°2'46.1" N 125°47'41.7" E		
LOR-MRN-1454 Along the road in Purok 4 8°2'49" N 125°47'41.5" E		
LOR-MRN-1458 San Mariano Elementary School 8°2'41.2" N 125°47'39.4" E		
LOR-MRN-1462 Purok 1 waiting shed 8°2'39.6" N 125°47'44.9" E		
LOR-MRN-1464 Along the road in Purok 1 8°2'40.4" N 125°48'11.9" E		
<b>Barangay San Vicente</b>		
LOR-SVN-236 Kalimutan Creek, Sitio Mabuhay 8°8'5.2" N 125°48'31.5" E	Very High	Kalimutan Creek frequently flooded during heavy rainfall. Flooding reaches up to 2.4 meters. Highest flood was recorded during Typhoon Pablo.  Recommendation: Observe for rapid increase/decrease in creek/river water levels, possibly accompanied by increased turbidity (soil content).
LOR-SVN-232 Danuman River, Sitio Mabuhay 8°7'24.1" N 125°48'17" E	High	Danuman River frequently flooded during heavy rainfall. Bank erosion is active. Flooding reaches up to 1.3 meters.  Recommendation: Observe for rapid increase/decrease in creek/river water levels, possibly accompanied by increased turbidity (soil content).
LOR-SVN-228 Danuman River 8°7'21.4" N 125°48'51" E	High	Danuman River frequently flooded during heavy rainfall. Bank erosion is active. Flooding reaches up to 1.5 meters high.  Recommendation: Observe for rapid increase/decrease in creek/river water levels, possibly accompanied by increased turbidity (soil content).
LOR-SVN-221 Danuman River, Sitio Macopahon 8°7'15.7" N 125°49'2.2" E	High	Danuman River is frequently flooded during heavy rainfall. Highest recorded flooding reached up to 1.2 meters during typhoon Pablo.  Recommendations: Observe for rapid increase/decrease in creek/river water levels, possibly accompanied by increased turbidity (soil content). Discourage future settlement adjacent to this area.
LOR-SVN-233 Kalimutan Creek, Sitio Mabuhay 8°8'7.1" N 125°48'25.8" E	High	Kalimutan Creek frequently flooded during heavy rainfall. Flooding reaches up to 1.3 meters.  Recommendation: Observe for rapid increase/decrease in creek/river water levels, possibly accompanied by increased turbidity (soil content).
LOR-SVN-224	High	Macopahon Creek frequently flooded during heavy rainfall. Flood water

Macopahon Creek, Sitio Macopahon 8°7'17.2" N 125°48'59.2" E		reaches up to 2.0 meters.  Recommendation: Observe for rapid increase/decrease in creek/river water levels, possibly accompanied by increased turbidity (soil content).
LOR-SVN-237 Rice fields/Open fields, Sitio Mabuhay 8°8'5.4" N 125°48'34.1" E	High	Rice fields/open fields was frequently flooded due to river overflow of Kalimutan Creek.  Recommendation: Observe for rapid increase/decrease in creek/river water levels, possibly accompanied by increased turbidity (soil content).
LOR-SVN-227 Sitio Macopahon Proper 8°7'19.4" N 125°48'59.3" E	Moderate	Observation point taken from lower elevation of Sitio Macopahon. Flooded due to river overflow.  Recommendations: Observe for rapid increase/decrease in creek/river water levels, possibly accompanied by increased turbidity (soil content). Evacuate if warnings for evacuation has been issued by authorities.
LOR-SVN-223 Rice fields/Open fields in Sitio Macopahon 8°7'15.9" N 125°49'0.4" E	Moderate	Rice fields/open fields flooded due to river overflow of Danuman river and Macopahon Creek.  Recommendation: Observe for rapid increase/decrease in creek/river water levels, possibly accompanied by increased turbidity (soil content).
LOR-SVN-225 Rice fields/Open fields in Sitio Macopahon 8°7'17.6" N 125°48'58.6" E	Moderate	Rice fields/open fields frequently flooded due to river overflow.  Recommendation: Observe for rapid increase/decrease in creek/river water levels, possibly accompanied by increased turbidity (soil content).
LOR-SVN-234 Rice fields/Open fields, Sitio Mabuhay 8°8'6.5" N 125°48'27.8" E	Moderate	Rice fields/open fields frequently flooded during heavy rainfall. Flood water reaches up to 0.6 meters.  Recommendation: Observe for rapid increase/decrease in creek/river water levels, possibly accompanied by increased turbidity (soil content).
LOR-SVN-235 Rice fields/Open fields, Sitio Mabuhay 8°8'5.4" N 125°48'31.1" E	Moderate	Rice fields/open fields frequently flooded during heavy rainfall. Flood water reaches up to 0.8 meters.  Recommendation: Observe for rapid increase/decrease in creek/river water levels, possibly accompanied by increased turbidity (soil content).
LOR-SVN-229 Rice fields/Open fields 8°7'21.2" N 125°48'51.1" E	Moderate	Rice fields/open fields was frequently flooded due to river overflow.  Recommendation: Observe for rapid increase/decrease in creek/river water levels, possibly accompanied by increased turbidity (soil content).
LOR-SVN-230 Rice fields/Open fields 8°7'25.4" N 125°48'39.1" E	Moderate	
LOR-SVN-231 Rice fields/Open fields 8°7'26.3" N 125°48'28.8" E	Moderate	
LOR-SVN-226 Sitio Macopahon Proper 8°7'19.8" N	Moderate	Sitio Macopahon Proper experiences 0.5m high flooding caused by river overflow.  Recommendations: Observe for rapid increase/decrease in creek/river

125°48'58.3" E		water levels, possibly accompanied by increased turbidity (soil content). Evacuate if warnings for evacuation has been issued by authorities.
LOR-SVN-238 Sitio Mabuhay Proper 8°8'9.9" N 125°48'15.9" E		No reported case of flooding.
LOR-SVN-239 Sitio Mabuhay Proper 8°8'8.3" N 125°48'4.8" E		
LOR-SVN-240 Sitio Naliagan Proper 8°8'9.5" N 125°48'3.2" E		
LOR-SVN-241 San Vicente National High School 8°7'48.7" N 125°48'8.7" E		
LOR-SVN-242 Purok 1 Proper 8°7'39.5" N 125°48'5.2" E		
LOR-SVN-243 Purok 1 Proper 8°7'34.8" N 125°48'2.8" E		
LOR-SVN-244 Purok 2 Proper 8°7'31.8" N 125°48'1.6" E		
LOR-SVN-245 Barangay Hall of San Vicente 8°7'28.7" N 125°47'55.4" E		
LOR-SVN-246 Paciencia Elementary School 8°7'29" N 125°47'55" E		
LOR-SVN-247 Purok 4 proper 8°7'24.4" N 125°47'54.1" E		
LOR-SVN-248 Purok 5 proper 8°7'16.2" N 125°47'54.6" E		
<b>Barangay Santa Teresa</b>		
LOR-STS-03 Residential area in Purok 5 8°5'30.2" N	High	Flooding occurs and water spreads to the nearby areas once Tigbawan River, a tributary to Ihawan River, reaches its maximum water capacity.  Recommendation: Observe for rapid increase in river/creek water level,

125°48'42.6" E		possibly accompanied by increased turbidity (soil/rock content) and evacuate whenever necessary.	
LOR-STS-04 Residential area in Purok 5 8°5'28.1" N 125°48'39.2" E	High		
LOR-STS-05 Residential area in Purok 4 8°5'41.9" N 125°48'36.8" E	Moderate	<p>Flooding occurs and water spreads to the nearby areas once Tigbawan River, a tributary to Ihawan River, reaches its maximum water capacity.</p> <p>Recommendation: Observe for rapid increase in river/creek water level, possibly accompanied by increased turbidity (soil/rock content) and evacuate whenever necessary.</p>	
LOR-STS-06 Residential area in Purok 4 8°5'43" N 125°48'34.7" E	Moderate		
LOR-STS-07 Residential area in Purok 4 8°5'45.2" N 125°48'30.3" E	Moderate		
LOR-STS-08 Residential area in Purok 4 8°5'46.1" N 125°48'28.5" E	Moderate		
LOR-STS-13 Residential area in Purok 2 8°5'52.7" N 125°48'23.8" E	Moderate		
LOR-STS-14 Residential area in Purok 2 8°5'54.2" N 125°48'22.4" E	Moderate		
LOR-STS-15 Residential area in Purok 2 8°5'54.6" N 125°48'22.1" E	Moderate		
LOR-STS-16 Residential area in Purok 2 8°5'55.5" N 125°48'21.7" E	Moderate		
LOR-STS-01 Residential area in Purok 5 8°5'39.5" N 125°48'40" E			No reported case of flooding.
LOR-STS-02 Residential area in Purok 5 8°5'37" N 125°48'43.1" E			

LOR-STS-09 Residential area in Purok 3 8°5'47" N 125°48'27.3" E		No reported case of flooding.
LOR-STS-10 Residential area in Purok 3 8°5'48.4" N 125°48'26" E		
LOR-STS-11 Residential area in Purok 3 8°5'50.3" N 125°48'24.5" E		
LOR-STS-12 Residential area in Purok 3 8°5'51.3" N 125°48'24.2" E		
LOR-STS-17 Residential area in Purok 1 8°5'56.7" N 125°48'21" E		
LOR-STS-18 Residential area in Purok 1 8°5'58" N 125°48'20.5" E		
LOR-STS-19 Residential area in Purok 1 8°5'59.9" N 125°48'20.2" E		
LOR-STS-20 Residential area in Purok 1 8°6'8.5" N 125°48'20" E		
<b>Barangay Santo Niño</b>		
LOR-SNO-473 Community area in Purok 2 8°1'11.5" N 125°48'34.7" E	High	<p>Flooding due to overflowing and backflow of a nearby creek and Ihawan River.</p> <p>Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Develop an early warning system (e.g., signage). Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains.</p>
LOR-SNO-469 Community area in Purok 1 8°1'19.1" N 125°48'33.6" E	High	<p>Flooding is due to overflowing and backflow of a nearby creek and Ihawan River.</p> <p>Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Develop an early warning system (e.g., signage). Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains.</p>
LOR-SNO-470 Community area in Purok 1 8°1'18.2" N 125°48'30.2" E	High	<p>Flooding is due to overflowing and backflow of a nearby creek and Ihawan River.</p> <p>Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Develop an early warning system (e.g., signage). Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains.</p>

LOR-SNO-467 Community area in Purok 7 8°1'19.1" N 125°48'38.7" E	High	<p>Flooding is experienced in the area and in the rice fields. Flood height reaches 1 meter.</p> <p>Recommendations: Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Develop an early warning system (e.g., signage). Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).</p>
LOR-SNO-483 Community area in Purok 3 8°1'30.9" N 125°48'49.3" E	High	<p>The area is located along Ihawan River.</p> <p>Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Develop an early warning system (e.g., signage). Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Stabilize riverbanks especially at the outer bend of the meander.</p>
LOR-SNO-484 Community area in Purok 3 8°1'29.9" N 125°48'52" E	High	
LOR-SNO-466 Riverside Community in Purok 7 8°1'14.3" N 125°48'40.7" E	High	<p>The area is located along the Ihawan River with active bank erosion.</p> <p>Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Develop an early warning system (e.g., signage). Advise for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains. Stabilize riverbanks especially at the outer bend of the meander.</p>
LOR-SNO-465 Community area in Purok 7 8°1'11" N 125°48'37.7" E	Low	<p>Low flooding susceptibility in the area.</p> <p>Recommendation: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).</p>
LOR-SNO-468 Community area in Purok 6 8°1'20.6" N 125°48'35.6" E	Low	
LOR-SNO-471 Community area in Purok 5 8°1'16.8" N 125°48'37.5" E	Low	
LOR-SNO-472 Community area in Purok 4 8°1'13.6" N 125°48'36.1" E	Low	
LOR-SNO-474 Community area in Purok 2 8°1'10.4" N 125°48'33.1" E	Low	
LOR-SNO-481 Community area in Purok 1 8°1'19.3" N 125°48'31.5" E	Low	

LOR-SNO-482 Community area in Purok 7 8°1'21.6" N 125°48'41.8" E	Low	Low flooding susceptibility in the area.
LOR-SNO-485 Sto Nino Barangay hall 8°1'13.8" N 125°48'37.7" E	Low	Recommendation: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content).
LOR-SNO-475 Community area near cliffs in Sitio Limpasan 8°0'48.7" N 125°48'16.2" E		No reported case of flooding.
LOR-SNO-476 Along road in Sitio Limpasan 8°0'50.4" N 125°48'18" E		
LOR-SNO-477 Along road in Sitio Limpasan 8°1'0.7" N 125°48'20" E		
LOR-SNO-478 Along road in Purok 1 8°1'6.7" N 125°48'24.6" E		
LOR-SNO-479 Community area in Purok 1 8°1'12.6" N 125°48'26.9" E		
LOR-SNO-480 Community area in Purok 1 8°1'16.2" N 125°48'29.2" E		
<b>Barangay Santo Tomas</b>		
LOR-TOM-09 Purok 1 8°11'22.74" N 125°47'57.73" E	Very High	East flowing Umayam river which overflows during extreme weather condition affects its surrounding residential and agricultural areas. River bank erosion was also mapped along most sections of the river.
LOR-TOM-11 Purok 2 8°11'23.17" N 125°48'3.28" E		Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Avoid building of structures near river areas.
LOR-TOM-05 Sitio New Visayas 8°11'18.82" N 125°46'53.11" E	Very High	Northeast flowing Kinawan creek overflows during extreme weather conditions.  Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Avoid building of structures near river areas.

LOR-TOM-01 Sitio New Visayas 8°11'17.92" N 125°46'53.8" E	High	<p>Flooding in the area is caused by the overflowing of Kinawan creek.</p> <p>Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Conduct pre-emptive evacuation during perilous weather conditions.</p>
LOR-TOM-03 Sitio New Visayas 8°11'5.28" N 125°46'51.56" E		
LOR-TOM-21 Purok 7 8°10'50.92" N 125°48'21.2" E	High	<p>Northeast flowing Tumba creek overflows during extreme weather conditions.</p> <p>Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Avoid building of structures near river areas.</p>
LOR-TOM-12 Purok 2 8°11'22.92" N 125°48'2.99" E	High	<p>Sheet flooding along the area is caused by the overflowing of Umayam river.</p> <p>Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Conduct pre-emptive evacuation during perilous weather conditions.</p>
LOR-TOM-15 Purok 3 8°11'23.35" N 125°48'19.87" E		
LOR-TOM-02 Sitio New Visayas 8°11'9.35" N 125°46'52.43" E	Moderate	<p>Flooding in the area is caused by the overflowing of Kinawan creek.</p> <p>Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Conduct pre-emptive evacuation during perilous weather conditions.</p>
LOR-TOM-16 Purok 3 8°11'19.43" N 125°48'16.02" E	Moderate	<p>Sheet flooding along the area is caused by the overflowing of Umayam river.</p> <p>Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Conduct pre-emptive evacuation during perilous weather conditions.</p>
LOR-TOM-20 Purok 7 8°10'50.59" N 125°48'21.1" E		
LOR-TOM-04 Sitio New Visayas 8°10'59.16" N 125°46'46.34" E	Low	<p>Flooding in the area is caused by the overflowing of Kinawan creek.</p> <p>Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Conduct pre-emptive evacuation during perilous weather conditions.</p>
LOR-TOM-10 Purok 1 8°11'22.16" N 125°47'57.91" E	Low	<p>Sheet flooding along the area is caused by the overflowing of Umayam river.</p> <p>Recommendations: Develop an early warning system. Observe for rapid increase/decrease of water levels, possibly accompanied with increased turbidity (soil content). Observe for sunken or displaced road surfaces. Conduct pre-emptive evacuation during perilous weather conditions.</p>
LOR-TOM-18 Purok 5 8°11'1.64" N 125°48'18.72" E	Low	
LOR-TOM-19 Purok 7 8°10'49.73" N 125°48'22.18" E	Low	
LOR-TOM-06 Purok 6 8°11'22.52" N 125°47'22.74" E		No reported case of flooding.

LOR-TOM-07 Purok 6 8°11'21.52" N 125°47'33.54" E		No reported case of flooding.
LOR-TOM-08 Purok 1 8°11'21.66" N 125°47'53.92" E		
LOR-TOM-13 Purok 1 8°11'17.92" N 125°47'58.49" E		
LOR-TOM-14 Purok 3 8°11'15.76" N 125°48'10.48" E		
LOR-TOM-17 Purok 4 8°11'11.4" N 125°48'14.47" E		
LOR-TOM-22 Sitio Manawe (Special Barangay) 8°9'7.09" N 125°48'33.59" E		
LOR-TOM-23 Sitio Manawe (Special Barangay) 8°9'25.34" N 125°48'43.74" E		
LOR-TOM-24 Sitio Manawe (Special Barangay) 8°9'27.4" N 125°48'36.65" E		
LOR-TOM-25 Sitio Manawe (Special Barangay) 8°9'35.64" N 125°48'46.33" E		
LOR-TOM-26 Sitio Manawe (Special Barangay) 8°9'36.14" N 125°48'47.88" E		
LOR-TOM-27 Sitio Manawe (Special Barangay) 8°10'4.15" N 125°48'56.84" E		
<b>Barangay Violanta</b>		
LOR-VLT-04 Agricultural area in	High	Intense flooding in the past on this area before the diversion of Tagabaka creek and Umayam river was reported. But during a typhoon or heavy

Purok 1 8°11'36.9" N 125°49'18.4" E		outpour of rain, this creek can still inundate the area up to 1.0m flood.
LOR-VLT-05 Agricultural area in Purok 1 8°11'34.4" N 125°49'16.9" E	High	Recommendations: Observe for rapid increase/decrease in creek/river water levels. Early warning device should be developed. Settlements along the banks should be restricted.
LOR-VLT-26 Residential and agricultural area in Sitio Immaculada 8°12'11.8" N 125°49'52.5" E	High	Intense flooding is experienced in the area when Umayam River overflows especially on the rice/cornfields. Inundation in the area could reach up to 1.0m flood.
LOR-VLT-27 Residential and agricultural area in Sitio Immaculada 8°12'9.9" N 125°49'51.1" E	High	Recommendations: Observe for rapid increase/decrease in creek/river water levels. Early warning device should be developed. Settlements along the banks should be restricted.
LOR-VLT-21 Residential area in Purok 4 8°11'40" N 125°49'16.6" E	Moderate	
LOR-VLT-25 Residential and agricultural area in Sitio Immaculada 8°12'9.8" N 125°49'52.5" E	Moderate	The area is relatively elevated with respect to Umayam river, thus, flooding is rated to have moderate susceptibility. But waters from creeks causes flooding in the area.  Recommendation: Early warning device should be established and exercised.
LOR-VLT-28 Agricultural area in Sitio Immaculada 8°12'18.4" N 125°49'52.6" E	Moderate	
LOR-VLT-03 Residential area in Purok 1 8°11'32.2" N 125°49'17.1" E	Moderate	The lithology of the barangay is composed mainly of sand-sized sediments with minor pebbles suggesting that the area is part of Umayam river floodplain.
LOR-VLT-06 Residential and agricultural area in Purok 1 8°11'33.2" N 125°49'17.7" E	Moderate	Recommendation: Develop early warning system (i.e. signages).
LOR-VLT-01 Residential area in Purok 1 8°11'27.7" N 125°49'20.8" E	Low	No significant flood reported in the area.
LOR-VLT-02 Residential area in Purok 4 8°11'29.5" N 125°49'19.8" E	Low	Recommendation: Develop early warning system (i.e. signages).

LOR-VLT-07 Residential area in Purok 2 8°11'32.6" N 125°49'18.1" E	Low	<p>No significant flood reported in the area.</p> <p>Recommendation: Develop early warning system (i.e. signages).</p>
LOR-VLT-08 Residential area in Purok 2 8°11'32.6" N 125°49'18.1" E	Low	
LOR-VLT-09 Residential area in Purok 2 8°11'33.5" N 125°49'19.3" E	Low	
LOR-VLT-10 Residential area in Purok 3 8°11'32.8" N 125°49'20.1" E	Low	
LOR-VLT-11 Residential area in Purok 3 8°11'29.3" N 125°49'17.8" E	Low	
LOR-VLT-12 Residential and agricultural area in Purok 3 8°11'27.9" N 125°49'16.7" E	Low	
LOR-VLT-13 Residential and agricultural area in Purok 3 8°11'27.9" N 125°49'16.6" E	Low	
LOR-VLT-14 Residential area in Purok 4 8°11'29.3" N 125°49'18.7" E	Low	
LOR-VLT-15 Residential area in Purok 4 8°11'28.9" N 125°49'19.2" E	Low	
LOR-VLT-16 Residential area in Purok 5 8°11'27.3" N 125°49'21.3" E	Low	
LOR-VLT-17 Residential area in Purok 5 8°11'29.3" N 125°49'22.9" E	Low	

LOR-VLT-18 Residential area in Purok 5 8°11'28.4" N 125°49'24.1" E	Low	No significant flood reported in the area.  Recommendation: Develop early warning system (i.e. signages).
LOR-VLT-19 Residential area in Purok 4 8°11'30.7" N 125°49'20.9" E	Low	
LOR-VLT-20 Residential area in Purok 4 8°11'31.8" N 125°49'19.7" E	Low	
LOR-VLT-24 Residential and agricultural area in Sitio Immaculada 8°12'26.1" N 125°49'46.1" E	Low	
LOR-VLT-29 Residential and agricultural area in Sitio Batohon 8°12'42.6" N 125°50'1.7" E	Low	
LOR-VLT-30 Residential and agricultural area in Sitio Batohon 8°12'47.7" N 125°50'3.4" E	Low	
<b>Barangay Waloe</b>		
LOR-WAL-1471 Umayam River in Purok 2 8°11'54.1" N 125°45'40.4" E	Very High	Worst flood in Umayam River happened during typhoon Pablo in December 2012. Frequent flooding is usually experienced in the months of December to February.  Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Settlements situated near Umayam River are advised for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains.
LOR-WAL-1498 Cornfield in Sitio Guitas 8°11'32.6" N 125°46'35.5" E	High	Flooding in the cornfield was caused by the overflowing of Umayam River during typhoon Pablo on December 2012.  Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Settlements situated near Umayam River are advised for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains.
LOR-WAL-1474 Sitio Amapco near Umayam River 8°11'49.1" N 125°45'27.8" E	High	The residential area which is situated 60 meters away from Umayam River experienced 1.1 meter high flooding during typhoon Pablo in December 2012.  Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Settlements situated near Umayam River are advised for pre-emptive evacuation during inclement weather condition and occasions of heavy and

		prolonged rains.
LOR-WAL-1497 Cornfield in Sitio Guitas 8°11'32.5" N 125°46'35.2" E	Moderate	0.5 meter high flooding associated with Umayam River overflow was experienced in this area during typhoon Pablo in December 2012.  Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Settlements situated near Umayam River are advised for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains.
LOR-WAL-1472 Sitio Amapco near Umayam River 8°11'48.9" N 125°45'27.9" E	Moderate	The residential area which is situated 70 meters away from Umayam River experienced 0.5 meter high flooding during typhoon Pablo in December 2012.  Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Settlements situated near Umayam River are advised for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains.
LOR-WAL-1496 Cornfield in Sitio Guitas 8°11'32.5" N 125°46'35.1" E	Low	Sheet flooding in the area near the cornfield is caused by the overflowing of Umayam River.  Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Settlements situated near Umayam River are advised for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains.
LOR-WAL-1473 Sitio Amapco near Umayam River 8°11'48.4" N 125°45'27.7" E	Low	Sheet flooding in the residential area is caused by the overflowing of Umayam River.  Recommendations: Observe for rapid increase/decrease in river/creek water level, possibly accompanied by increased turbidity (soil/rock content). Settlements situated near Umayam River are advised for pre-emptive evacuation during inclement weather condition and occasions of heavy and prolonged rains.
LOR-WAL-1469 Purok 1 waiting shed 8°11'57.1" N 125°45'40" E		No reported case of flooding.
LOR-WAL-1470 Purok 2 waiting shed 8°11'57.1" N 125°45'40.3" E		
LOR-WAL-1475 Along the road in Sitio Telocan 8°11'5.7" N 125°44'26.5" E		
LOR-WAL-1476 Along the road in Sitio Telocan 8°11'7.7" N 125°44'30.9" E		
LOR-WAL-1477 Sitio Telocan proper 8°11'12.4" N 125°44'35.9" E		

LOR-WAL-1478 Don Enestorio S. Otaza Primary School 8°11'13.1" N 125°44'40" E		No reported case of flooding.
LOR-WAL-1479 Sitio Telocan proper 8°11'16.5" N 125°44'45.1" E		
LOR-WAL-1480 Along the road in Sitio Amapco 8°11'37.1" N 125°45'7.9" E		
LOR-WAL-1481 Sitio Amapco proper 8°11'41.4" N 125°45'38.7" E		
LOR-WAL-1482 Purok 1 waiting shed 8°11'46.4" N 125°45'45.9" E		
LOR-WAL-1483 Waloe Elementary School 8°11'45.7" N 125°45'46.2" E		
LOR-WAL-1484 Waloe Barangay Hall 8°11'42.8" N 125°45'46.8" E		
LOR-WAL-1485 Waloe Day Care Center 8°11'43.1" N 125°45'47.2" E		
LOR-WAL-1486 Purok 3 waiting shed 8°11'41.6" N 125°45'46.2" E		
LOR-WAL-1487 Viva Sr. Sto Nino Church 8°11'41.5" N 125°45'50.3" E		
LOR-WAL-1488 Purok 4 waiting shed 8°11'44.6" N 125°45'48.1" E		
LOR-WAL-1489 Waloe National High School 8°11'58.7" N 125°45'42.6" E		

LOR-WAL-1490 Along the road in Sitio Amapco 8°11'48.4" N 125°45'49.6" E		No reported case of flooding.
LOR-WAL-1491 Along the road in Sitio Amapco 8°11'48.2" N 125°45'57.2" E		
LOR-WAL-1492 Along the road in Sitio Amapco 8°11'47.3" N 125°46'4.5" E		
LOR-WAL-1493 Along the road in Sitio Amapco 8°11'46.1" N 125°46'15.7" E		
LOR-WAL-1494 Purok 5, Sitio Guitas 8°11'42.1" N 125°46'22.6" E		
LOR-WAL-1495 Purok 4, Sitio Guitas 8°11'36.3" N 125°46'30.5" E		
LOR-WAL-1499 Purok 3, Sitio Guitas 8°11'30" N 125°46'36.4" E		
LOR-WAL-1500 Guitas Elementary School 8°11'27.1" N 125°46'38.1" E		
LOR-WAL-1501 Purok 2, Sitio Guitas 8°11'23" N 125°46'40.8" E		
LOR-WAL-1502 Purok 1, Sitio Guitas 8°11'22.6" N 125°46'48.2" E		

## PHOTOS

### Barangay Binucayan



Purok 1 ( $8^{\circ} 0' 37''$  N,  $125^{\circ} 49' 3.4''$ E). A photo showing the Ihawan River at Purok 1, measuring approximately 54 meters wide and 2 meters deep flowing NW.

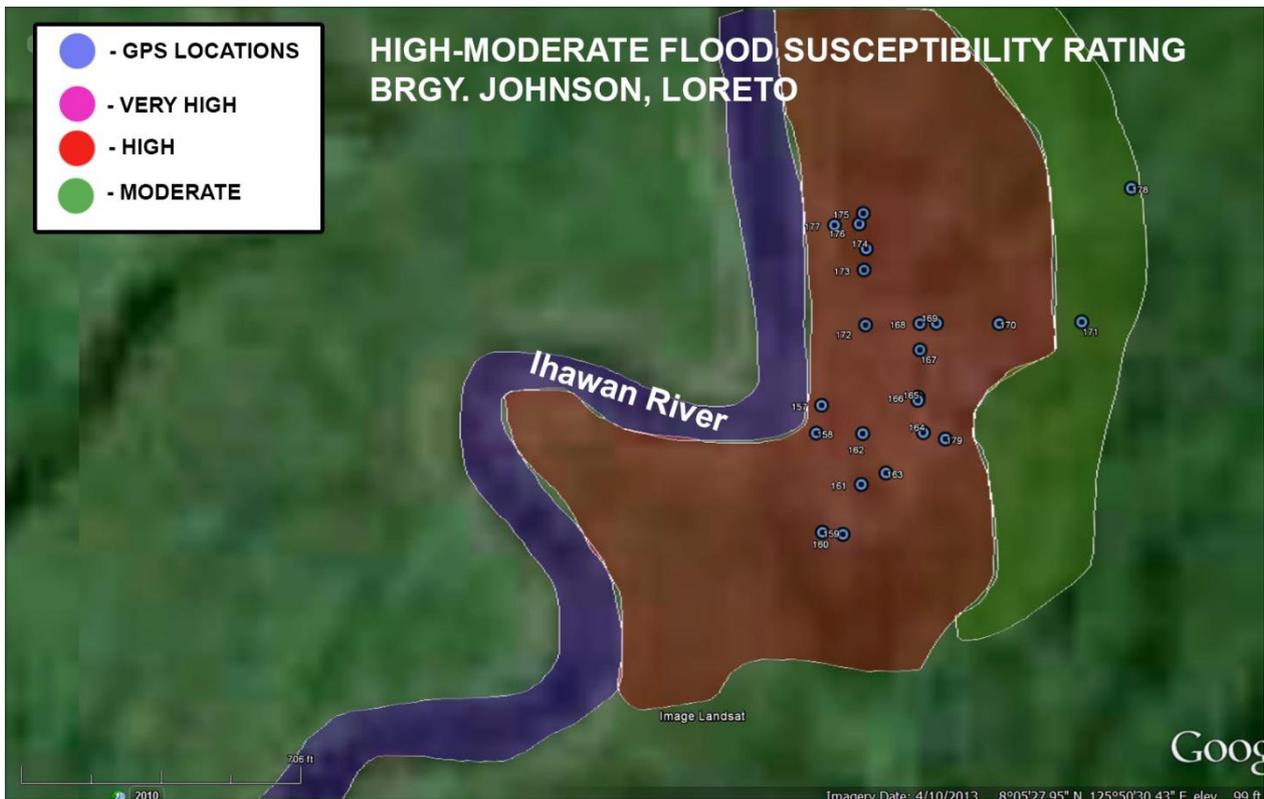


Sitio Boom ( $7^{\circ} 59' 57.1''$  N,  $125^{\circ} 49' 20.9''$ E). A photo showing a settlement near a cliff below Ihawan River, the area is also susceptible to landslide.

## Barangay Johnson

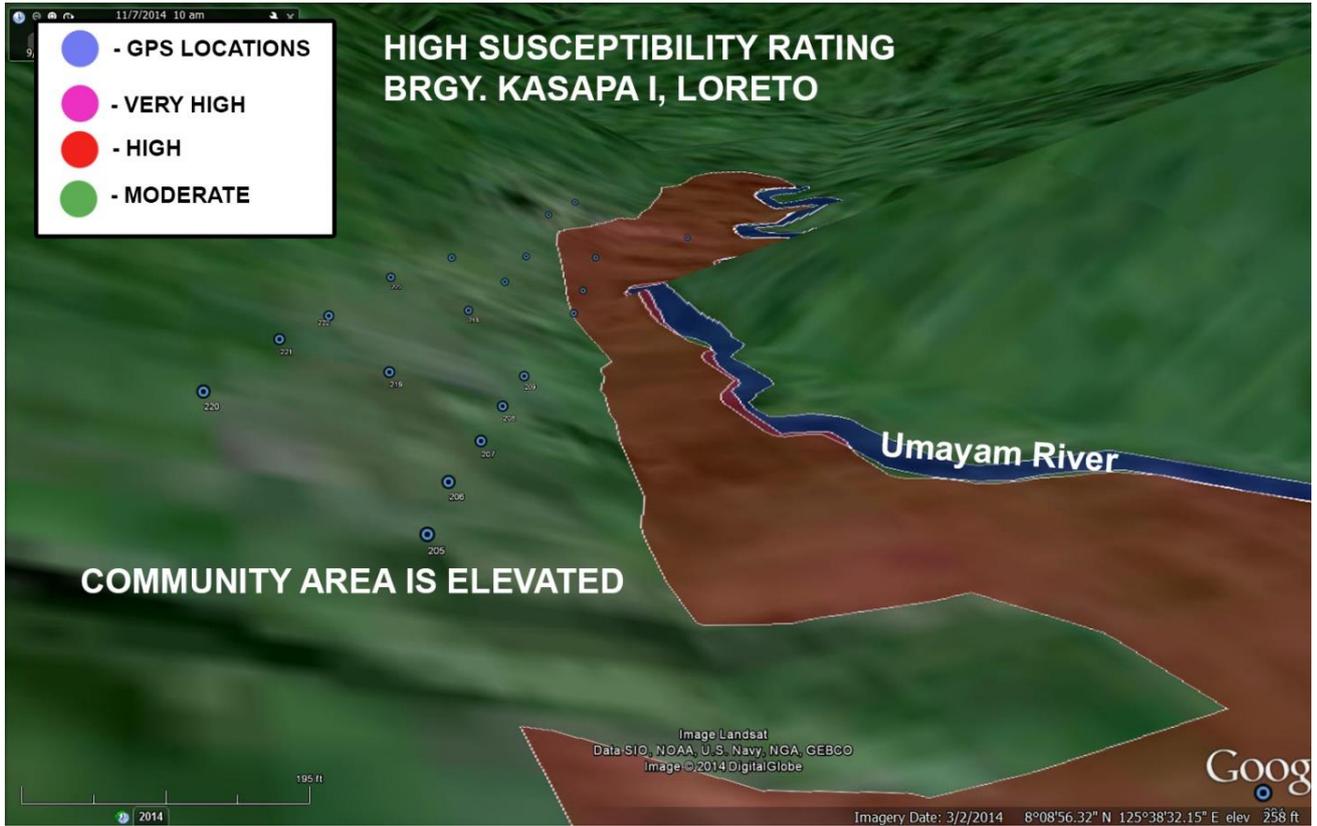


There used to be a street in this part of Purok 1, Barangay Johnson. The rapid erosion of the riverbanks caused the overlying soil materials to collapse.



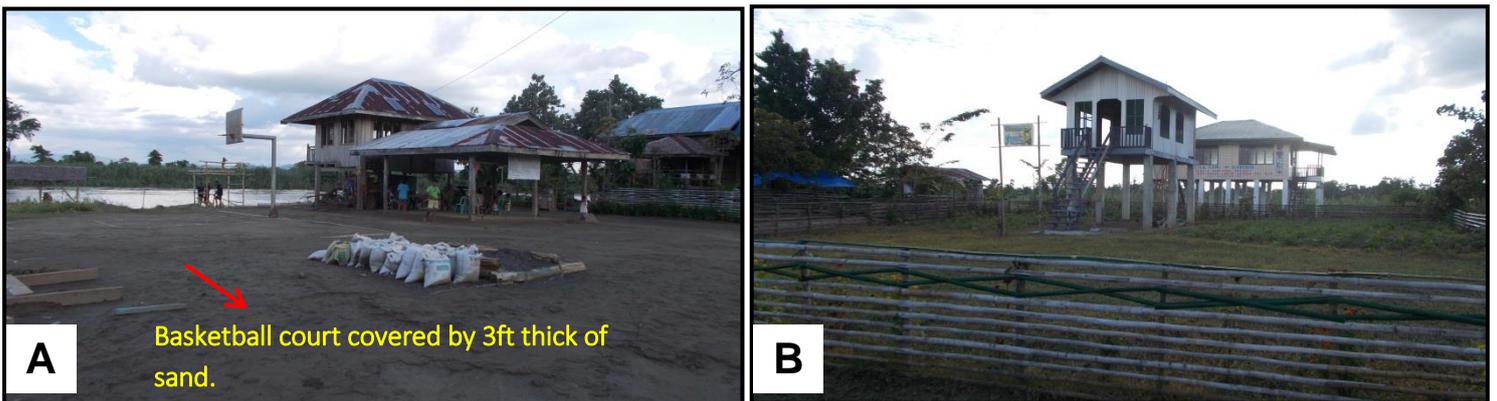
The satellite image above shows the over-all geohazards situation of Barangay Johnson, Loreto. Source: Google Earth

## Barangay Kasapa



The satellite image above shows the over-all geohazards situation of Barangay Kasapa, Loreto. The community area is relatively elevated compared to Umayam River. Source: Google Earth

## Barangay Katipunan



(A) Barangay office of Katipunan. Intense flooding and deposition of sand in the area. In every recorded flood, the deposition of sand reaches ~2ft. During persistent rain Agusan River overflows to the area with flood depth up to 3m. (B) Structural design of daycare center to counter the flood depth. It also serves as an evacuation area during flooding.



(C and D) Barangay Kagawad pointing the highest recorded flood depth in the area.



Flood in Barangay Katipunan during Typhoon Pablo, 2012.



(A) River scouring in Purok 2. (B) Photo archive of the flooding in Purok 1 during Typhoon Pablo in 2012. (C) The present situation of the school in Photo B. (D) Photo showing Lake Dagan which is a part of the Agusan Marsh. The whole Barangay of Katipunan is the same level as the lake. When rain and the overflow of Agusan River stops the flood water recedes 2-3weeks.

**Barangay Kauswagan**



Barangay Hall of Kauswagan, Purok 1. Photo showing Barangay Hall of Kauswagan. Area situated on a gentle terrain. No flooding recorded in the area. GPS Coordinates: 125° 46' 1.2"E 7° 59' 45.2" N



Kauswagan Elementary School, Purok 2-B. Photo showing Kauswagan Elementary School. The area is situated in a gentle terrain. No flooding recorded in the area. GPS Coordinates: 125° 45' 40.7"E 7° 59' 32.2" N



Recreational Area/Kauswagan Plaza, Purok 1. Area adjacent to Barangay Hall. The area is situated in a flat terrain. No flooding recorded in the area. GPS Coordinates: 125° 46' 1.2"E 7° 59' 45.2" N

**Barangay Magaud**



(A and B) Sitio Kabuhayan shed is on top of a moderate to steep slope. Houses at the bottom of the hill are at risk of landslide. The overlooking area at the bottom is generally flat that could be flooded easily. (C.) During persistent heavy rains, floodwaters in Purok 7 are ~1.0 m deep especially in the rice field areas.

**Barangay Nueva Gracia**



Sitio Bayug (8° 6' 29.7" N,125° 52' 31.8"E). Panoramic view of a residential and farmland areas in Sitio Bayug. This area is inundated when Ihawan River and Kibanog Creek overflow. Flood depth is approximately 2 meters.

**Barangay Poblacion**



Areas affected with sheet flooding at Sitio Proper Ilo-an (left) and agricultural area at Purok 6 (right).

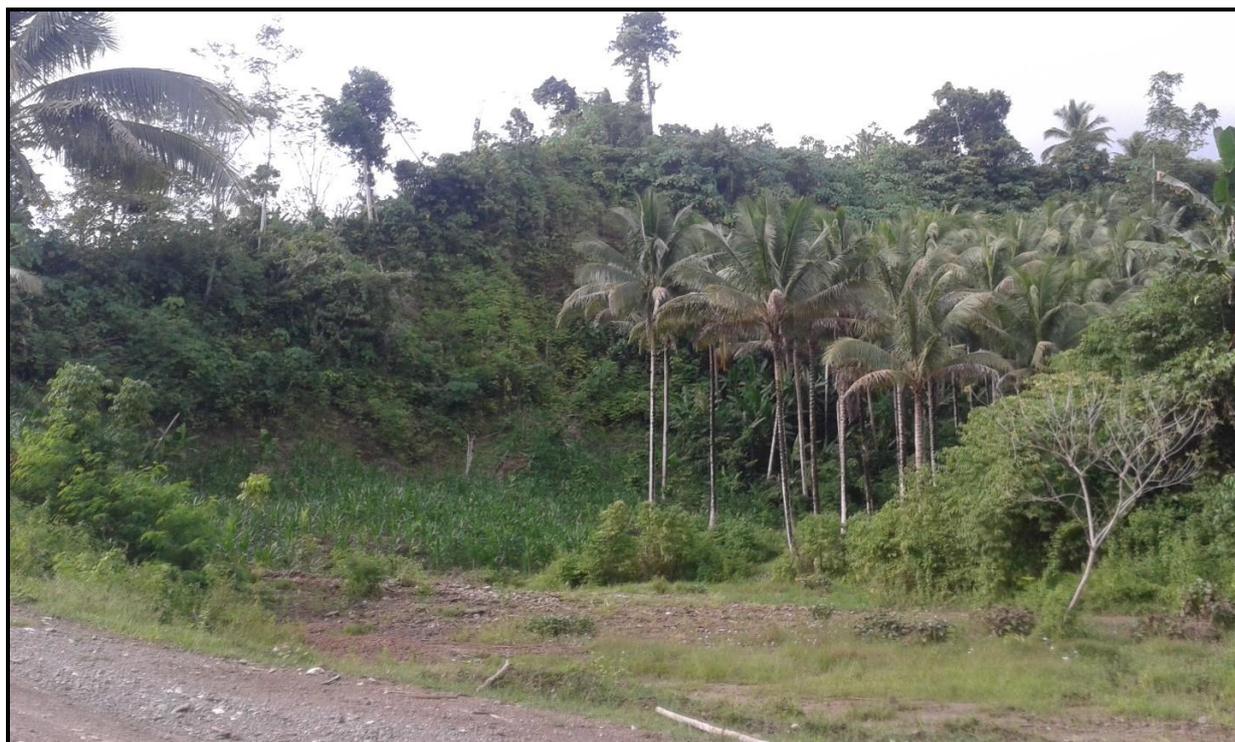


Photos. Main cause of flooding at the area is overflowing of river and creek. Image of Umayam River taken at Purok 1 (above left) and Purok 5 (above right) with noticeable bank erosion along agricultural areas and creeks at Sitio Upper Ilo-an (bottom left) and Sitio Mambaos (bottom right).

## Barangay Sabud



Barangay road, Purok 1. Photo showing a road cut with an active landslide. Area is approximately 30 meters wide with slope of 20 to 25 meters high. Slope material is mudstone overlain by loose soil deposit. GPS Coordinates: 125° 43' 6.2"E 7° 59' 9.1" N



Relic Landslide, Purok 1. Photo showing relic landslide approximately 25-30 meters wide. Landslide took place during Typhoon Pablo. Area situated adjacent to Tanionan Creek. GPS Coordinates: 125° 43' 11.8"E 7° 59' 3.8" N

**Barangay San Isidro**



A barangay official shows the approximate flood height of 1.8 meters in one of the residences of Purok 2 during typhoon Pablo. (Geographical Location: 8° 2' 50.8" N 125° 48' 45.6" E)



A resident of Purok 2 shows the approximate flood height of 2.1 meters in his house during typhoon Pablo. (Geographical Location: 8° 2' 52.8" N 125° 48' 55.4" E)

**Barangay San Mariano**



This photo shows severe bank erosion along the riverbank of Anahawan River. (Geographical Location: 8° 2' 39.6" N 125° 47' 20.5" E)

**Barangay Santa Teresa**



Tigbawan Creek, a tributary of Ihawan River, is shown in the photo. This stream tend to overflow once Ihawan reaches its maximum water capacity.



The satellite image above shows the over-all geohazards situation of Barangay Sta. Theresa, Loreto. Source: Google Earth

**Barangay Santo Niño**



Purok 7 (8° 1' 14.3" N 125° 48' 40.7"E). A photo showing the Ithawan River where bank erosion is highly active (left) affecting the land area of Purok 7. Photo on the left is a google earth generated image of the barangay showing the area of concern (red circle).

## Barangay Santo Tomas



Clockwise: Images of Umayam River taken at Purok 1 and Kinawan Creek at Purok 1 Sitio New Visayas. These are the main cause of sheet flooding at the area. Some of the residential area affected with sheet flooding at Purok 2 Sitio New Visayas and Purok 5 (photos below).



Sitio Manawe considered as a special Barangay by the local government is generally situated along moderately sloping terrain. Images above show some of the residential areas at Purok 3 (left) and Purok 4 (right).

**Barangay San Vicente**



Danuman River, Sitio Macopahon. Photo showing Danuman River. Area adjacent to this river is frequently flooded especially during heavy rainfall. Highest recorded flooding reaches up to 1.2 meters during typhoon Pablo. GPS Coordinates: 125° 49' 2.2"E 8° 7' 15.7" N



Paciencia Elementary School, Purok 3. Photo showing Paciencia Elementary School. The school is situated in a flat terrain with no flooding recorded. Area can be used as evacuation center. GPS Coordinates: 125° 47' 55"E 8° 7' 29" N



Barangay Hall of San Vicente, Purok 3. Photo showing Barangay Hall of San Vicente. This area is situated in a flat terrain with no flooding recorded. Area can be used as evacuation center. GPS Coordinates: 125° 47' 55.4"E 8° 7' 28.7" N

### **Barangay Violanta**



Photo A Showing the original path of Tagabaka Creek that inundates the surrounding area.



Photo B Shows the diverted Tagabaka creek beside Umayam River. It was diverted under the leadership of Mr. Ely Ybanez on October 1996 to prevent flooding on the residential area of the barangay. Photos C and D The barangay hall and School is in an elevated ground, with a flat terrain.

**Barangay Waloe**



A resident of Sitio Guitas shows the approximate flood height of 0.8 meter during Typhoon Pablo.  
(Geographical Location: 8° 11' 32.5" N 125° 46' 35.2" E)