Republic of the Philippines
DEPARTMENT OF EDUCATION
CORDILLERA ADMINISTRATIVE REGION
Wangal, La Trinidad, Benguet, 2601
Tel: (074) 422 – 1318 | Fax: (074) 422-4074
Website: www.depedcar.ph | Email: car@deped.gov.ph

September 20, 2019

REGIONAL MEMORANDUM
No. 322 . 2019

VALIDATION OF SCHOOL LOCATIONS ON THE HAZARD HUNTER PH MAP AND ACCOMPLISHMENT OF THE ASSESSMENT CHECKLIST FOR SCHOOLS' LANDSLIDE SAFETY

To: Schools Division Superintendents
Heads, Public and Private Elementary and Secondary Schools
DRRM Coordinators

1. Hazard and risk assessments of schools are very crucial in ensuring the safety of learners and personnel, protecting school facilities and in formulating school disaster management plans and policies.

2. To address this concern, the Department of Education encourages all concerned school officials to utilize the Hazard Hunter PH, a web-based application developed by the Department of Science and Technology, designed to provide users with hazard maps as well as hazard assessment reports and corresponding recommendations (Enclosure 1).

3. In order to ensure the accuracy and efficiency of the tool, all school administrators are enjoined to verify their school locations as plotted on the Hazard Hunter PH Map. Schools Division Information Technology Officers are requested to assist the schools in this activity. Instructions on how to verify school location is contained on page 2, Enclosure 1 of this Memorandum.

4. Also attached is Cordillera Regional DRRM Council (CRDRRMC) Memorandum No. 52, s. 2019 requiring the accomplishment and submission of the assessment checklist for schools' landslide Safety (Enclosure 2). All school administrators are directed to accomplish the checklist (Annex **"A"** and **"C"** of Enclosure 2) together with their Local DRRM Officers (P/M/B DRRMO) and Engineers.

5. The output of this checklist will be the basis for prioritizing schools for geo-hazard assessment by the Mines and Geosciences Bureau (MGB). Schools are also encouraged to utilize the Hazard Hunter and the result of the checklist in preparing their disaster response/contingency plans. Private schools are likewise encouraged to utilize the Hazard Hunter PH application and accomplish the checklist.

Republic of the Philippines
DEPARTMENT OF EDUCATION
CORDILLERA ADMINISTRATIVE REGION
Wangal, La Trinidad, Benguet, 2601
Tel: (074) 422 – 1318 | Fax: (074) 422-4074
Website: www.depedcar.ph | Email: car@deped.gov.ph

6. Schools Division DRRM Coordinators shall submit the consolidated report using the attached template (Enclosure No. 3), together with the accomplished forms to the DepEd-CAR Regional Office on or before March 30, 2020, attention: Regional DRRM coordinator, Education Support Services Division, DepEd-CAR, Wangal, La Trinidad, Benguet.

7. Wide dissemination of and compliance to this memorandum is desired.

MAY B. ECLAR, Ph.D., CESO V
Regional Director

Encl:
DepEd Memorandum dated September 6, 2019
CRDRRM Memorandum No. 52, s. 2019
Consolidation Template

ABG/epm

ENCLOSURE NO. 1 TO REGIONAL MEMORANDUM NO. 322 . 2019

Republika ng Pilipinas

Kagawaran ng Edukasyon

Tanggapan ng Pangalawang Kalihim

MEMORANDUM
6 September 2019

For: All Concerned Officials, Teachers and Employees

Subject: **CROWDSOURCING FOR THE VALIDATION OF SCHOOL LOCATIONS ON HAZARD HUNTER PH MAP**

The Department of Education has signed a Memorandum of Agreement with the Philippine Institute of Volcanology and Seismology (PHIVOLCS) to develop hazard and risk assessment tools, one of which is Hazard Hunter PH.

Hazard Hunter PH is a website designed to provide users with hazard maps as well as assessment reports and their corresponding recommendations. The website has plotted elementary and secondary schools alongside health facilities and road networks.

In order to ensure the accuracy and efficiency of the tool, **all are hereby enjoined to verify school locations as plotted on the Hazard Hunter PH map online**.

An instructional video can be accessed by going to this link: https://drive.google.com/file/d/1Fj83g1kQ8Ggkdu9jiWaLmaX8LsccLT6g/view. A copy of the instructions is also attached to this Memorandum.

Verification reports can be submitted by filling out the Hazard Hunter School Verification form in this link: **http://bit.ly/HazardHunterVerification**.

Widest dissemination and appropriate action are requested.

ALAIN DEL B. PASCUA
Undersecretary

Scan this QR Code to view Videos and Magazines of Major Programs

UAF00-0019-0015
To authenticate this document please scan the QR Code

Office of the Undersecretary for Administration
(Administrative Services, Information and Communications Technology, Disaster Risk Reduction and Management, Schools Health, Youth Formation, Baguio Teachers' Camp, Education Facilities/School Buildings)
Department of Education, Central Office, Meralco Avenue, Pasig City
Room 519, Mabini Building; Mobile: +639260320762; Landline: +6326337203, +6326376207
Email: usec.admin@deped.gov.ph; Facebook/Twitter @depedtayo

HAZARD HUNTER PH SCHOOL VERIFICATION INSTRUCTIONS

Kindly follow the steps below to verify your school's location as plotted on the Hazard Hunter PH online map. A video tutorial can also be accessed in this link: **https://drive.google.com/file/d/1Fj83g1kQ8Ggkdu9jiWaLmaX8LsccLT6g/view**.

1. Open your browser and go to **https://hazardhunter.georisk.gov.ph**
2. The screen will show a map which you can move around and zoom in and out of. On the left side menu, you can select the different display options.
3. Under Exposure Information, click on the box to show elementary schools or secondary schools, whichever is appropriate. Blue flags will appear on the map showing elementary schools, and green flags for secondary schools.
4. Click on the location search button and type the name of your school or select it from the drop down menu.
5. Zoom in to see in more detail your school's location on the map.
6. If you see that the flag marking your school's location is **incorrect**, search the map to locate your school's correct location and position the pointer over it.
7. The standard specific location of the school is determined by the coordinates of the flagpole.
8. Take note of its coordinates as displayed on the lower left portion of the screen.
9. If your school **does not appear on the map** or is not listed in the drop down menu, locate your school by zooming in or out of the map and taking note of its coordinates as shown on the lower left portion of the screen.
10. Complete the online form for reporting location accuracy by going to this link: **http://bit.ly/HazardHunterVerification**

Thank you for your efforts in making HazardHunterPH a more accurate and efficient tool for everyone.

UAP00-0919-0015

ENCLOSURE NO. 2 TO REGIONAL MEMORANDUM NO. 322 . 2019

Cordillera Regional Disaster Risk Reduction & Management Council

Office of Civil Defense Cordillera Administrative Region

MEMORANDUM No. 52, S. 2019

TO	:	**All Member-Agencies, Cordillera Regional DRRM Council** **All Chairpersons, Local DRRM Councils** **All Heads, Local DRRM Offices** **All Heads, Primary/Secondary/Tertiary Public/Private Schools**
FROM	:	**Chairperson, Cordillera Regional DRRMC &** **Regional Director, OCD-CAR**
SUBJECT	:	**ACCOMPLISHMENT AND SUBMISSION OF THE ASSESSMENT CHECKLIST/S FOR SCHOOLS' LANDSLIDE SAFETY**
DATE	:	**22 August 2019**

1. **REFERENCES:**
   a. Agreements During the Technical Working Group (TWG) Meeting on the Protocol Development for Blue Alert Conditions and Dam Monitoring in the Cordillera Administrative Region held on 20 August 2019 at CDRRMC EOC, Conference Hall, #55 First Road, Quezon Hill, Baguio City.
   b. Agreements During the Pre-Disaster Risk Assessment (PDRA) for the Possible Effects of Tropical Depression Falcon and Southwest Monsoon (Habagat) held on 16 July 2019 at CDRRMC EOC, Conference Hall, #55 First Road, Quezon Hill, Baguio City.
   c. Agreements During the Joint Technical Working Group (TWG) Meeting on the Countermeasures for the Identified and Landslide Risk-Assessed School Buildings in Itogon and Benguet and Updates on the July 2019 National Disaster Resilience Month Celebration held on 09 July 2019, at CDRRMC EOC, Conference Hall, 2/F AFSLAI Building, Camp Henry T. Allen, Baguio City.

2. **BACKGROUND**

Cordillera Administrative Region (CAR) is geographically a mountainous region which makes it unique compared to other regions in the Philippines. Within the bounds of this geographical characteristic, people have learned to adapt and positively adjusted their ways of living over the period time.

However, this set-up in the Cordillera region undeniably poses danger to life and property especially during Habagat or typhoon season and may also be affected by unpredicted ground shaking. Needless to say, the abovementioned natural hazards may induce landslides in majority of areas in the region.

In the aftermath of Typhoong "Ompong" and Tyohoon "Rosita", critical lifelines infrastructures like school/campus buildings were notably damaged/affected among others. Most of these schools were greatly affected by landslides and other ground movements. Some of these school establishments were declared under danger zone.

As a proactive measure, CRDRRMC conducted technical working group and coordination meetings to discuss, solicit technical inputs, and come up with a checklist for schools landslide safety that can be used by a non-geologist (e.g. school administrators, local engineers, or local DRRM officers) in assessing school premises or environment.

This checklist contains laymanized terms and descriptions of observable indicators of possible landslides anchored from the Landslide Susceptibility Parameters of Mines and Geosciences Bureau-CAR (MGB-CAR) presented below.

LANDSLIDE SUSCEPTIBILITY PARAMETERS	LOW	MODERATE	HIGH	VERY HIGH/ CRITICAL
A. **Slope Gradient**	Low to moderate (<18°)	Moderate to steep (18° - 35°)	Steep to very steep (>35°)	Steep to very steep (>35°)
B. **Weathering/ Soil Characteristics**	Slight to moderate	Moderate	Intense; Soil usually non-cohesive	Intense; Soil usually non-cohesive
C. **Rock mass strength**	Very good to good	Fair	Poor to very poor	Poor to very poor
D. **Ground Stability**	Stable with no identified landslide scares, either old, recent or active	Soil creep and other indications for possible landslide occurrence are present.	Inactive landslides evident; tension cracks present	Active landslides evident; tension cracks, bulges, terracettes, seepage present
E. **Human Initiated Effects**	-	-	-	May be aggravating Factor

Table 1: *Landslide Susceptibility Parameters from Mines and Geosciences Bureau-Cordillera Administrative Region (MGB-AR)*

3. OBJECTIVES

In response to the devastating effects of Typhoons "Ompong" and "Rosita", this prevention and mitigation mechanism was started as counter-measure for the identified and landslide risk-assessed school buildings in Itogon and the whole of Benguet province which has the most lands highly susceptible to landslides.

To maximize the application of this mechanism, this checklist was materialized in order to cater assessment needs and identify landslide or ground movement hazards in all schools in the Cordillera region.

The objectives of this Assessment Checklist for Schools Landslide Safety are the following:

a. Educate stakeholders on observable indicators for possible landslides;
b. Promote safety measures against landslides;
c. Support the MGB-CAR in prioritizing more critical areas for assessment;
d. Fasten the identification and assessment of landslide indicators; and
e. Serve as prevention and mitigation tool for landslide hazards.

4. CHECKLIST

The Assessment Checklist for Schools Landslide Safety with reference to the Landslide Susceptibility Parameters from MGB-CAR is a laymanized (simpler version) checklist to be used in observing geological or environmental indicators within and outside school premises. This is intended for the use of non-geologists. **See Annex A.**

Definition of terms and sample photos are also provided as guide to assessors. **See Annex B.**

5. **IMPLEMENTING INSTRUCTIONS**
   a. The use of this checklist is intended for the following non-geologists experts:
      i. **School administrators** (e.g. principals, teachers/faculties, and other school officers);
      ii. **Local engineers**; and
      iii. **Local Disaster Risk Reduction and Management Officers**.

   b. The observed landslides indicators should be photographed with geo-tagging if possible (date and location). These photos should be attached to the accomplished checklist.
   c. Observations and findings should be collated by the school administrators, local engineers, and LDRRMOs.
   d. Upon collation, the concerned may deliberate and triangulate the observations and findings to come up with one assessment report per school signed by the assessors. **See Annex C.**
   e. Photo documentation of actions taken should be attached in the said assessment report.
   f. This report shall be submitted to CRDRRMC through OCD-CAR at civildefense.car@yahoo.com for consolidation, analysis, and prioritization for field assessment.
   g. The technical working group (TWG) led by MGB-CAR will conduct ensuing activities to make sure necessary interventions are made.

6. **ASSESSORS' SAFETY GUIDELINES**
   a. Assessment should be conducted within the school year during fair weather.
   b. Proper personal protective equipment (PPE) should be worn by assessor to ensure safety.
   c. The assessors in coordination among each other are advised to also take precautionary measures when doing the observation and assessment.

7. This memorandum will take effect upon approval and implementation by the concerned agencies, local government units, and school officials shall commence when the situation already warrants in consideration to Item 6.

8. For reference, guidance, and proper actions.

COMMO ALBERT A MOGOL AFP (RET)

ANNEX A
Checklist of Observable Indicators for Possible Landslide Vis-À-Vis Landslide Susceptibility Parameters
Note: *Intended for the Use of Non-Geologists*

Complete Name: _____
Agency/Office: _____
Position/Designation: _____
Location: _____
Date: _____

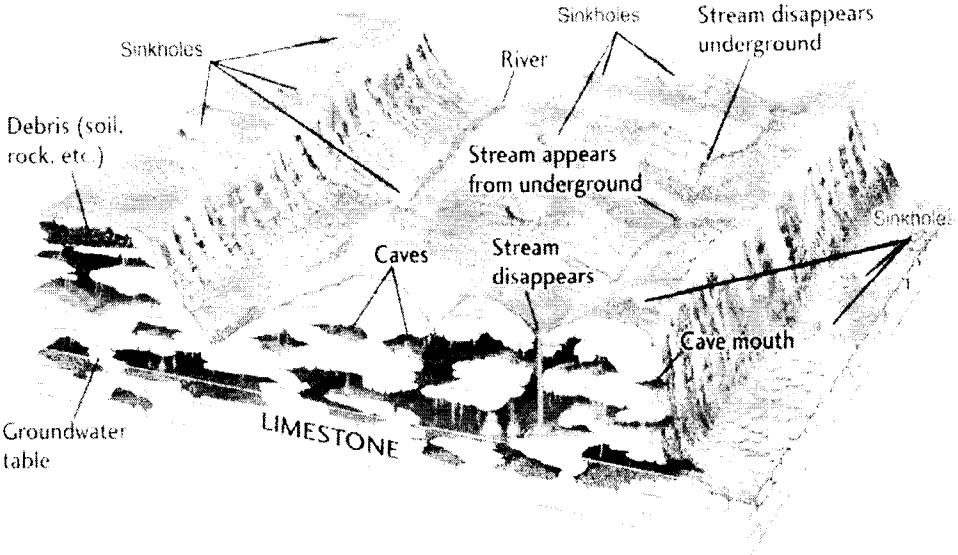
LANDSLIDE SUSCEPTIBILITY PARAMETERS	OBSERVABLE INDICATORS WITHIN AND OUTSIDE SCHOOL CAMPUS	YES	NO
A. Slope Gradient	Highly sloping (greater that 50% or 2:1 horizontal-to-vertical ratio)		
B. Weathering/ Soil Characteristics	Highly fractured rocks		
	Thick soil cover		
C. Ground Stability	Within a sinkhole (limestone)		
	Underlain by slide deposit/ debris		
	Underlain by alluvium		
	Underlain by artificial fill		
	Doors or windows stick or jam		
	New cracks appear in plaster, tile, brick or foundations		
	Outside walls, walks or stairs begin pulling away from the building		
	Slowly developing or widening of cracks appears on the ground or on paved areas such as streets or driveways		
	Terracette observed within the area		
	Seepage observed within the area		
	Tilted trees or posts		
	Bulging riprap walls		
	Within a gully or adjacent to a gully		
	Unprotected cut slopes		
D. Human Initiated Effects	Modification of slope Gradient		
	Deforestation		
	Presence of nearby small scale mining activity		
E. Others	Other observable indicators		

Instruction: Kindly check "Yes" when the indicator is observed and check "No" when the indicator is not observed.

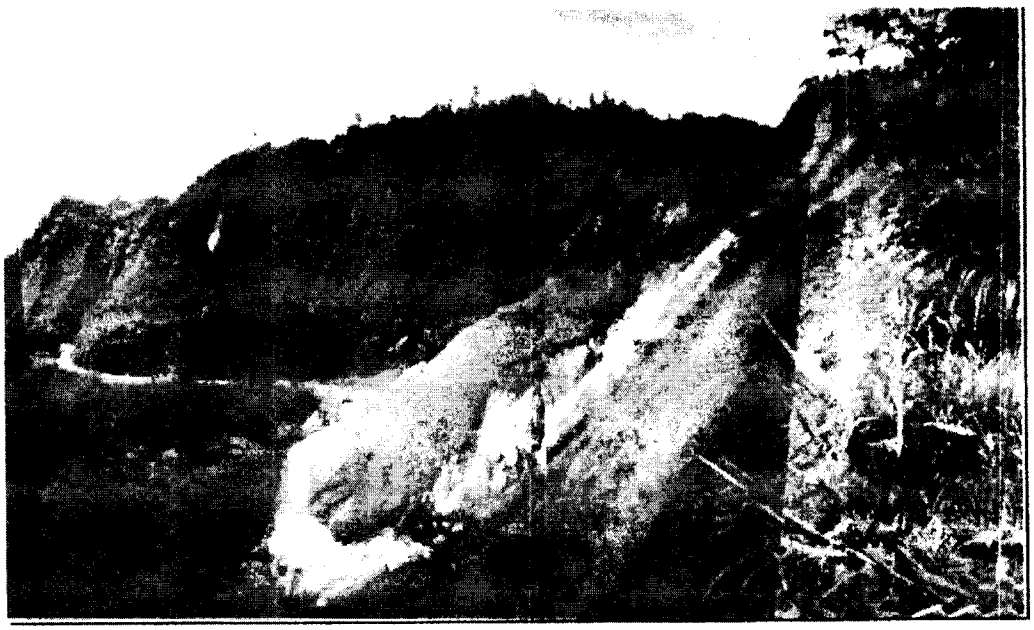
_____
(Print Name and Signature of the Assessor)

ANNEX B
Definition of Terms and Sample Photos

1. A **sinkhole** is a depression in the ground that has no natural external surface drainage. Basically, this means that when it rains, all of the water stays inside the **sinkhole** and typically drains into the subsurface. **Sinkholes** are most common in what geologists call, "karst terrain.

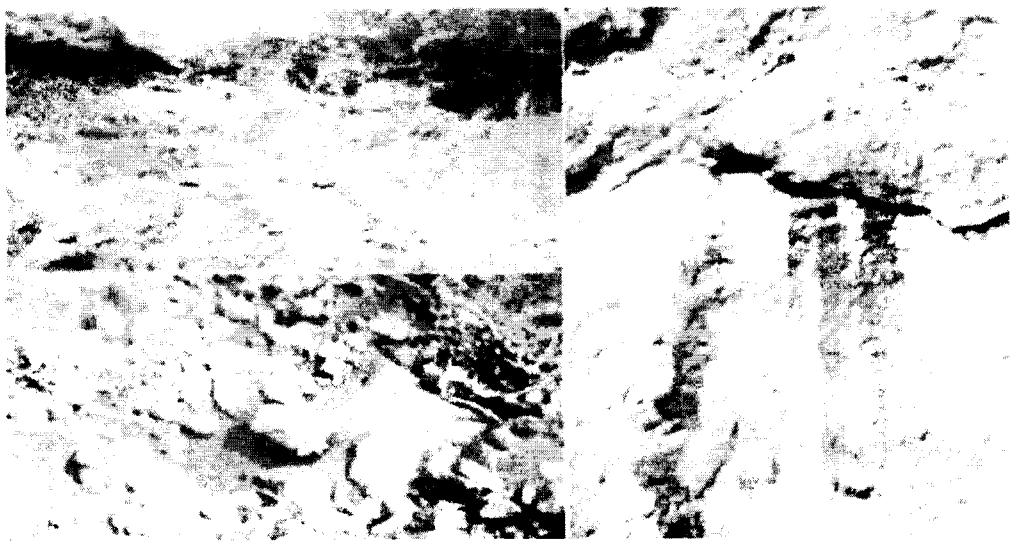


2. A **gully** is a landform created by running water, eroding sharply into soil, typically on a hillside. Gullies resemble large ditches or small valleys, but are metres to tens of metres in depth and width.



3. In geomorphology, a **terracette** is a type of landform, a ridge on a hillside formed when saturated soil particles expand, then contract as they dry, causing them to move slowly downhill.

4. **Seepage** - The process by which a liquid leaks through a porous substance; the process of seeping. Water that has seeped or oozed through a porous soil.



5. Unprotected cut slopes

6. **Alluvium** is loose, unconsolidated soil or sediment that has been eroded, reshaped by water in some form, and re-deposited in a non-marine setting. Alluvium is typically made up of a variety of materials, including fine particles of silt and clay and larger particles of sand and gravel.

ANNEX C
Assessment Report on Observable Indicators for Possible Landslide in (name of school and address)

I. BACKGROUD

This portion shall include the following but not limited to:
- Complete name of the school
- Address
- Number of school personnel and students
- Number of facilities and equipment (rooms or buildings)
- Land area
- Description of land characteristics (including surrounding land forms) where the school in located
- Other related details about the school

II. SUMMARY OF FINDINGS

This portion shall include the following but not limited to:
- Summary of observed indicators
- Tally results of observed indicators
- Other observed indicators which may be contributing as well to landslide/s

III. RECOMMENDATIONS

This portion shall include the following but not limited to:
- Recommendations
- Ways forward

IV. ATTACHMENTS

This portion shall include the following but not limited to:
- Individual checklist signed by assessors
- Photos of observed indicators (with geo-tag if necessary)
- Photo documentation of actions taken

(Print Name and Signature of LDRRMO)

(Print Name and Signature of Local Engineer)

(Print Name and Signature of the School Administrator)

Tel: (074) 422 – 1318 | Fax: (074) 422-4074
Website: www.depedcar.ph | Email: car@deped.gov.ph

CONSOLIDATION OF
ASSESSMENT CHECKLIST FOR SCHOOLS' LANDSLIDE SAFETY

Instructions: *Please indicate the number observable indicators under the "Yes" and "No" Column based on the checklist submitted by the schools. Each Observable indicator reflected by the assessors (letter "E" in the checklist) shall be counted as "Yes". This consolidation report must be submitted to the Regional Office in hard and soft copy (excel file), copy furrnished the LDRRMO.*

Sch ID	Name of School	District	LANDSLIDE SUSCEPTIBILITY PARAMETERS									Total Number of "Yes"
			Slope Gradient		Weathering/ Soil Charact-eristics		Ground Stability		Human Initiated Effects		Others (counted as "Yes")	
			Yes	No	Yes	No	Yes	No	Yes	No		
1234	*Example: Eswelaan NHS*	*IV*	*1*		*1*	*1*	*7*	*6*	*2*	*2*	*3*	*14*

Consolidated by:

_____
Name and Signature of
PDO II (DRRM)/DRRM Coordinator

Approved:

_____
Name and Signature of Schools
Division Superintendent