

Digital Volunteer-Supported Emergency Management Concept of Operations

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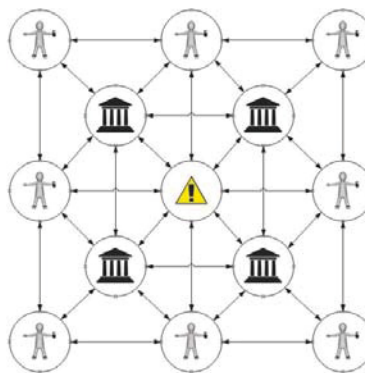
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1. INTRODUCTION

1.1 Background – digital volunteers and EM

1.1.1 The use of social media during emergencies

In April 2013, Defence Research and Development Canada's (DRDC) Centre for Security Science (CSS) initiated a targeted investment project on Social Media in Emergency Management (SMEM) (referred to hereafter as the SMEM project) in order to address an awareness and expertise gap within the Canadian emergency management (EM) community in the domain of social media and online collaboration. As part of the SMEM project, DRDC CSS partnered with the Calgary Emergency Management Agency to hold the project's SMEM Expert Roundtable, which brought together subject matter experts from amongst EM officials, first responders, digital volunteer (DV) groups and non-governmental organizations (NGOs). The workshop gave participants the opportunity to connect and bring forward critical issues, such as the unfulfilled potential of digital volunteers in bridging capability and capacity gaps within the EM community [1]. The Calgary workshop also revealed the need for a SMEM-focused experiment involving digital volunteers in order to assess and demonstrate the value of social media-aided cooperation between digital volunteers, EM officials, first responders, and NGOs for improving recovery outcomes [2].

1.1.2 Digital Volunteer-Supported Recovery Operations Experiment

In November 2014, an experiment was held to test these objectives. Dubbed the Digital Volunteer-Supported Recovery Operations Experiment (DVSROE), the experiment was held in Halifax, NS and used a tabletop exercise format to test the use of social media after an emergency. In particular, it used the guidance in this document to engage digital volunteers to support the Regional Municipality of Halifax in recovering from the impact of a Category 3 hurricane.

The outcomes of the DVSROE are incorporated in this document. [6]

1.1.3 Québec SMEM seminar

In August 2015, a seminar on SMEM was held in Québec City, QC. The seminar focused on

- How social media is currently being used and adapted in the francophone culture in the context of emergency management;
- How SMEM in francophone Canada can be better supported; and
- Barriers to the integration of SMEM in the bilingual context of Canadian Society.

The outcomes of the seminar are incorporated in this document [7].

1.2 Background – the Canadian landscape

1.2.1 Volunteers

1.2.1.1 *Digital volunteers*

Digital volunteer groups are teams of trusted agents who make use of social media tools to assist traditional emergency management groups that may not have the time or resources to monitor and make sense of the vast amount of data generated by the public during an emergency. Digital volunteers curate disaster information posted on social media and provide relevant information to official responders as well as the public. Two examples of digital volunteer groups in English Canada are CanVOST (Canadian Virtual Operations Support Team, <http://www.ptsc-online.ca/canvost>) and CrisisCommons (<http://crisiscommons.org>).

VISOV (Volontaire internationaux en soutien opérationnel virtuel) is the first French-speaking virtual community of digital volunteers for Emergency Management. VISOV makes use of traditional SMEM functions to perform web monitoring and crowd-sourcing for situational awareness that can support emergency organizations. VISOV was initiated in 2012, was officially founded in 2014, and has been applied a dozen times in French speaking countries around the world in times of crisis.

Typically, some spontaneous digital volunteers also emerge during an emergency event. They may not be part of any organized group of digital volunteers, but their input is important and can be leveraged by EM officials. For the purposes of the experiment, the term ‘digital volunteers’ will refer to organized and established digital volunteers, while emergent digital volunteers will be considered a part of ‘the public’ at large. (See Section 2.6.3 for a more detailed discussion on emergent digital volunteers.)

1.2.1.2 *Characteristics of digital volunteer groups*

The governance of digital volunteer groups is generally a flexible structure and distributed leadership that is quite different from the more rigidly structured and hierarchical governance of emergency management systems. The people who make up digital volunteer groups have an enthusiasm for technological innovation along with a desire to learn and share new technologies. The volunteers also use primarily open-source data and tools that may or may not be familiar or easily compatible with government agencies.

1.2.1.3 *Digitally enabled volunteers*

This type of volunteer is enabled through social media. They can be organized through the use of social media to perform on-the-ground tasks as part of the response to and recovery from an event.

The term “physical volunteers” is used later in this document to refer to people who volunteer to aid or lend support to recovery efforts in the emergency area.

1.2.2 Languages and social media use

Canada requires a unique approach to social media and emergency management in order to effectively engage citizens in both official languages. By their very nature, social media networks tend to be segmented by language. For example, Twitter, while extremely popular in the English world, sees much lower usage rates in French (9% of people in Québec, compared to 25% in Canada as a whole). As a whole, French Canadians tend to use social media less than Anglophones (73% vs. 82%). Any comprehensive strategy for social media engagement must be flexible enough to be implemented across multiple social media platforms in order to fully integrate both language groups [8][9].

Hashtags and other metadata tags are very useful tools for filtering social media traffic and for disseminating important messages. Unfortunately, hashtags do not always translate well between languages, as single words or phrases do not always have equivalent meanings in other languages. Organizations involved in emergency management must be aware of these discrepancies and work to ensure that all of their emergency messaging is relevant to the language it is written in.

1.3 Document purpose and scope

The purpose of this document is to provide a Concept of Operations (ConOps) for the integration of digital volunteer groups into conventional emergency response and recovery activities. It focuses on guiding the interactions between responding EM and disaster relief organizations such as the Canadian Red Cross and digital volunteers using social technology to interact with the public.

A ConOps is meant to define “what” must be done, providing a basis for plans that describe “how” it will be done.

This ConOps provides a concept for integrating the digital volunteer community into disaster response and recovery operations. We recognize that each organization, volunteer group, and crisis situation is unique, and that flexibility and strong relationships--rather than a rigid and prescribed process--are primarily what are needed. As only a few Canadian EM and relief organizations have experience with digital volunteers, this ConOps is intended to provide a basis for other organizations who wish to engage digital volunteers to complement and augment future recovery operations. The ConOps is a living document. It has been updated following validation exercises in Halifax and Québec and will continue to be updated as the foundation of SMEM knowledge in Canada matures.

1.4 Requirement

The requirement for this ConOps is as follows:

Emergency managers and humanitarian relief workers must improve response to and recovery from a major disaster by using social technology and the digital volunteer community to enhance situational awareness and to engage the public in the recovery.

2. CONCEPT OF OPERATIONS

2.1 Roles, responsibilities, policy and authority

This section describes the roles and responsibilities of organizations participating in recovery operations supported by digital volunteers. Emergency-related roles and responsibilities that do not directly relate to how digital volunteers are integrated into the response and recovery phases of an emergency are not included here.

2.1.1 Municipal Emergency Management Organizations

Emergency Management Organizations (EMOs) have the responsibility for managing the municipal response to an emergency within their jurisdictions. EMOs have authority and responsibility to direct first responders and members of the public in taking protective actions during and following an emergency.

EMOs are responsible for:

- Detailing their information needs to the digital volunteers for both recovery operations and public information requirements;
- Producing emergency messages and direction to the public; and
- Using products from the digital volunteers to support recovery-related operations.

Depending on their location in Canada, EMOs may have a need to communicate in a variety of languages beyond English and French. This depends on the local demographics, where there may be communities that do not speak either official language.

Municipal emergency services (e.g., fire, law enforcement) often take a lead role in providing messaging regarding emergency preparedness, ongoing operations, and community safety advice.

2.1.2 Provincial Emergency Management Organizations

In large-scale emergencies, provincial EMOs often take a lead role in providing messaging to the public. They provide support to municipal EMOs in their operations by coordinating support and providing access to provincial resources.

Provincial EMOs have the ultimate responsibility for the health and safety of their populations.

2.1.3 Humanitarian organizations and the Red Cross

There are a number of humanitarian organizations in Canada that provide support to people affected by an emergency. An important humanitarian organization in Canada is the Red Cross.

The Canadian Red Cross provides emergency social services during and following emergencies in Canada. These include:

- Family reunification;
- Emergency lodging;
- Reception and information;
- Emergency food;
- Emergency clothing; and
- Personal services. [3]

The Canadian Red Cross has social media teams that are able to provide messaging in both official languages in Canada.

For larger events, the Canadian Red Cross may be supported by the American Red Cross' Digital Operations Centre. The Digital Operations Centre monitors social media sources to improve the Red Cross's ability to engage with the public during emergencies, specifically by:

- Sourcing additional information from affected areas during emergencies to better serve those who need help;
- Spotting trends to better anticipate the public's needs; and
- Connecting people with resources they need such as food, water, shelter and emotional support [4].

Humanitarian organizations are responsible for:

- Detailing their information needs to the digital volunteers;
- Producing emergency messages and requests to the public; and
- Using products from the digital volunteers to support recovery-related operations.

2.1.4 Other EM stakeholders

There are many other agencies and organizations that have roles in the recovery efforts following an emergency. These groups may also engage digital volunteers to perform a variety of emergency-related digital support tasks.

Federal ministries often have responsibilities to respond to emergency events that touch on their responsibilities. For example, Aboriginal Affairs and Northern Development Canada has a responsibility to support emergency operations on Aboriginal lands; the Canadian Food Inspection Agency has a responsibility to respond to outbreaks of food-borne illnesses in Canada, etc. These departments engage with social media on topics related to their mandates.

Businesses can also be large stakeholders in emergencies, particularly in case of technological disasters or disasters that affect remote "company towns". These organizations may owe a duty of care to their employees or members of the public who are affected by their operations.

2.1.5 Digital volunteers

As stated earlier, digital volunteers are teams of trusted agents that make use of social media tools to assist traditional emergency management groups who may not have the time or resources to monitor and make sense of the vast amount of data generated by the public during an emergency.

During an emergency, digital volunteers can be activated to undertake task-based and autonomous activities in support of emergency recovery operations [5]. These activities are further described below:

- Task based
 - Detecting and analysing trends;
 - Finding/verifying specific information (e.g., confirming fallen power lines); and
 - Assisting in the dissemination of official messaging to a wider audience.
- Autonomous
 - Monitoring social media for emergent issues;
 - Amplifying official messaging; and
 - Addressing immediate safety issues identified through social media.

Digital volunteers may also be responsible for:

- Performing investigations as requested by EM and relief organizations;
- Producing reports, maps, and other information products as required in an agreed upon format at an agreed upon interval;
- Monitoring online social and conventional media for trends related to the emergency and/or to the involved EM and relief organizations;
- Distributing and amplifying official messaging; and
- Combating rumours circulating in social media by amplifying and redirecting official messaging provided by EM and relief organizations.

2.2 Preparedness

2.2.1 Establishment of trusted relationships

EM and relief organizations should establish working relationships with DV organizations as early as possible prior to the onset of any emergency. EM and relief organizations should engage with DV organizations and make themselves familiar with their capabilities in order to determine what types of support they could leverage during an emergency.

A memorandum of understanding (MOU) may be used to provide a formal mechanism for collaboration between the EM, relief and DV organizations. It is important that this MOU be put in place in advance of an emergency, as there may not be sufficient time during the response or recovery phases of an emergency to do so.

Digital volunteer groups may wish to make their capabilities known to potential partner

organizations (such as the Canadian Federation of Municipalities or the Senior Officials Responsible for Emergency Management [SOREM]). These organizations can assist DV organizations in making contact with organizations that they would potentially work with in an emergency. Working with these two organizations could assist the DV groups in reaching a broader community.

Finally it must be understood that not all DV organizations have the same mandates and capabilities. For instance, while some provide crowd-sourced mapping, others limit their services to providing social media monitoring and trend reporting.

2.2.2 Training and awareness

EM organizations that engage digital volunteer groups should consider establishing training and awareness standards for their staff as well as volunteers that might help them during an emergency. This training may include:

- A minimum level of competence with social technology;
- Awareness-level training of emergency operations (e.g., ICS-100);
- Assessment of information reliability; and
- Reporting guidelines for developing products that are usable by EM organizations.

2.2.3 Promoting official social media accounts

EM organizations that communicate using social media should promote their accounts before an emergency occur to ensure the public will receive critical messages during an emergency.

EM organizations that work closely with DV organizations can also promote their partnership as a way to extend their reach.

2.2.4 Cross-planning

EM and relief organizations and digital volunteer groups must include consideration for each other in their emergency planning to coordinate effectively during an emergency. Their planning should include a method of liaison between organizations as well as consideration for how they will accomplish the goals set out in this ConOps.

2.2.5 Quality control

Due to the dynamic nature of social media, a rigid quality assurance (QA) process may undermine the effectiveness of the DV organizations and the support they can provide to the EM and relief organizations. For example, false information reported through social media may need to be quickly corrected by official entities on social media, as occurred repeatedly during Hurricane Sandy in 2012.

At the same time, it is important for EM and relief organizations to be able to trust the products provided by DV organizations. These products may be maps derived from social media or reports of the results of social media monitoring. These groups must, to the best of their ability, ensure that the information provided is timely and accurate, as the provision

of false or inaccurate information will have an adverse impact on the trust placed in them by EM officials.

2.2.6 Message planning

EM and relief organizations can enhance their preparedness by pre-planning types of messages to distribute through social media platforms, both on their own and through engaging DV organizations. This pre-planning may in part take the form of so-called “canned” messaging. However, experience has shown that canned messages on their own do not permit the flexibility required to respond to the fast pace of social media. Therefore guidelines should also be provided for emergency messaging that can be distributed without senior approval. This provides a messaging capability that is flexible and readily usable by EM organizations.

2.3 Organization

This section provides an overview of how the community will operate together.

2.3.1 Structure and information flow

Up to this point digital volunteer groups have typically been coordinated by the Public Information section of the EM and/or humanitarian relief organization they are working with. It is important, however, that digital volunteers also be closely linked to the operations section so that their situational awareness products can support operational decisions. Figure 1 shows how information could flow between the involved groups when digital volunteers are engaged in the emergency recovery effort. Interactions between EM organizations are described in their own emergency plans and procedures.

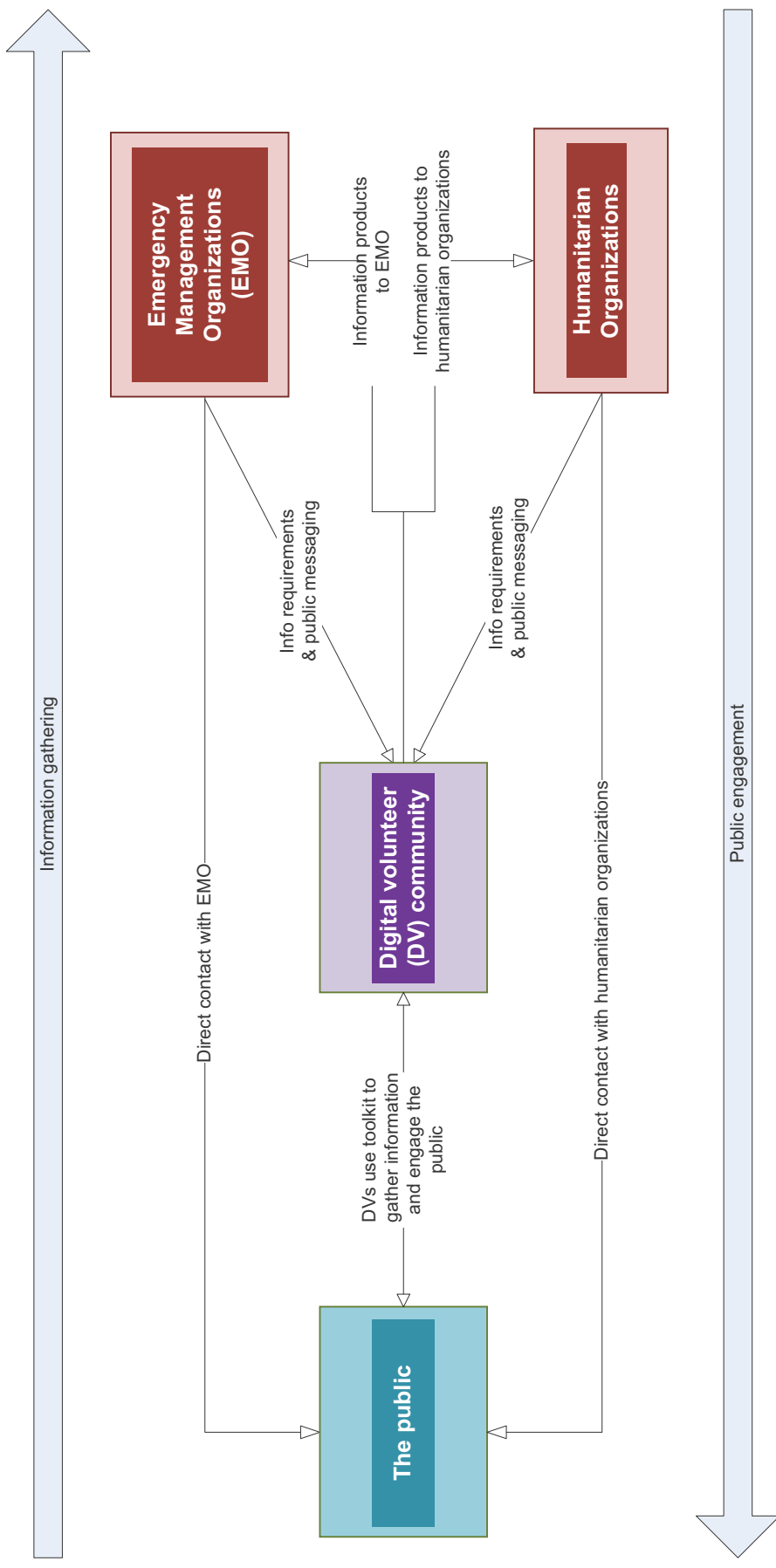


Figure 1: Information flow between organizations

2.3.2 Communication

Communication between DV organizations and EM organizations should be done primarily through phone (or through tools such as Skype) and email. Emergency management and relief organizations should brief the digital volunteer groups as part of their regular business cycle. Typically, this will be part of the Public Information section's back-brief.

Each digital volunteer group should have a person filling the role of being a designated point of contact prior to, and during activation.

2.4 Activation

Digital volunteer groups are activated at the request of an EM organization or humanitarian relief organizations such as the Red Cross. For many DV organizations, lengthy periods of activation are difficult to maintain. EM or relief organizations need to consider these limits and should consider activating DV organizations for short periods of time to perform distinct tasks. Additionally, it is suggested that the capabilities and limitations of particular DV organizations be explored and understood by EM organizations during the establishment of the relationship so they can be tasked appropriately.

Activation contact points must be established prior to an emergency. A tiered contact list is highly recommended in case the primary contact is not available. A draft guide on activating digital volunteers is presented in Annex A.

Once the decision to activate a DV organization has been made, the EM or relief organization will send them a request. At this point the digital volunteers activate, as per their internal plans.

This request should include, as a minimum:

- A brief description of the event;
- A point of contact for the digital volunteer group in the requesting organization;
- Initial taskings and a summary of anticipated future taskings;
- Anticipated duration of the event; and
- Any other requirements or restrictions.

2.5 Information gathering

2.5.1 Tasked vs. autonomous information gathering

The priority for information gathering is to focus on the tasks that are given by the activating organization. This will ensure that the information provided by the digital volunteers is relevant to and required by the receiving organizations. Information gathered by digital volunteers must be relevant to EM and relief organizations if it is to have a positive impact on the recovery effort.

Activating organizations should meanwhile provide clear taskings to digital volunteers that describe exactly the information that they need. Organizations requesting information from digital volunteers should provide them with clear requirements of the products they need; at a minimum, taskings should include the following:

- Reporting method and timings;
- Content required;
- Product format; and
- Other needs or restrictions.

Autonomous information gathering can be done according to agreed-upon criteria between the activating organization and digital volunteer group. These criteria can be set up prior to any emergency and are generally involve location and organization-related searches rather than event-driven searches.

Some information will inevitably arise that does not fit the agreed-on search criteria but that upon discovery could have a significant impact on the recovery operations. Digital volunteers must use their training and judgement to determine how to pass the information along. Some basic guidelines for this are provided in Table 1.

Table 1: Guidelines for emergent information handling

Severity	Reporting method
Immediate threat to health or life	Call 9-1-1, then phone notification to EM point-of-contact
Situation that may evolve into threat to health, life, property or environment in the near future	Report at next regular phone briefing with EM organization and include in next regular report
Potential impediment to full emergency recovery	Include in next regular report

2.5.2 Reporting method and timings

Information gathering tasks should include the method of reporting, specifying at a minimum:

- Information transmission or sharing method (shared online storage, FTP, email, fax, etc.) and associated contact information ; and
- Expected time of completion for single tasks or reporting frequency for ongoing tasks (updated, hourly, daily, etc.).

The digital volunteers should also be directed to give verbal reports as part of the EM organization’s business cycle (e.g., during Public Information Team back-briefings).

2.5.3 Content

Required types of information should be specified – for example, locations of downed power lines, social media reactions to evacuation orders, etc. The information request should also include the scope and objectives of the assignment to ensure that searches are optimally focused.

The information request should also identify what type of product is needed (e.g., reports, spreadsheets, maps, etc.).

2.5.4 Format

The specific formatting requirements based on the type of product need to be defined. A general product type (e.g., maps, reports, spreadsheets, establishment of a wiki page, etc.) gives a high-level view of what is required, but detailed specifics about how the product should be formatted are needed for it to be useful. Some examples of formatting requirements are shown in Table 2.

Table 2: Example formatting requirements

Product	Example requirements
Report	File type (.doc, .pdf, .odf, etc.) Document structure – an outline of how the document contents should be presented
Raw data	File type (.csv, .xls, MySql database, etc.) Field definitions, including units of measurement
Maps	Sharing of Open Geospatial Consortium (OGC) services Map in a digital format (PDF or other) Others (vector/raster data formats)

Until such time as the digital volunteer group has demonstrated a high level of comfort working with a particular EM and/or disaster relief organization, the latter organizations should strive to provide a specific example of the type of product they need. This reduces the risk of the volunteers not understanding the requirements.

It is highly recommended that EM organizations establish formats for reporting prior to an emergency or rely on forms that are well known such as Incident Command System (ICS) or Incident Management System (IMS) forms. This will reduce the likelihood of reporting errors.

2.5.5 Other reporting requirements

There may be other reporting requirements that need to be communicated to volunteers up-front, including:

- Confidentiality and trust requirements or other types of sensitivities;
- Any special expertise that may be called for (language skills, etc.); and
- Potential safety issues (depending on the volunteer’s proximity to affected emergency areas).

2.5.6 Information confidence

When providing information products, digital volunteers should indicate their level of confidence in the accuracy of the information they are providing based on the procedures of analysis and verification they have used. The activating organization should be provided with the criteria the digital volunteers use to determine confidence in

social media information, so they can make appropriate resourcing decisions.

Some excellent guidance on verifying online information can be found in the Verification Handbook [10].

2.5.7 Example tasking

Robert Ross

From: Paul Lee [mailto: emergencyinfo@nowherenovascotia.ca]
Sent: Wednesday, June 11, 2013 9:25 AM
To: Robert Ross [mailto: robert.ross@amazingdigitalsupport.ca]
Subject: Task – locate blocked streets

Hello Robert,

Please conduct a search of social media for locations where debris from the storm may have blocked streets in the town. Collect what you find in the attached spreadsheet and send me an updated file via email every two hours. The spreadsheet has the columns we need set up – just a brief description of the location and the specific coordinates. Make sure the lat-long coordinates are in decimal degrees so that we can put them directly into our mapping system.

You should call into the briefing meetings at 11:00, 14:00 and 16:00 today.

Thanks,
Paul Lee
Public Information Officer
Town of Nowhere
45 Main St.
Nowhere, NS
902-177-2000

[attachment: street status.xlsx]

2.6 Public engagement

2.6.1 Amplifying official messaging

2.6.1.1 Guidelines for message amplification

If requested by EM or relief agencies to amplify official messaging when interacting with the public, DV organizations should aim to get official messaging out to as large an audience as possible. Amplification can be done effectively through shares, retweets, reblogs, reposts and other methods of distributing the official message outside of its original circulation.

EM and disaster relief organizations should provide DV organizations with public information releases they are producing so that their volunteers can amplify the messaging.

Digital volunteers should not attempt to explain recovery efforts on behalf of responding

organizations or direct the public to take actions outside of the content of official messaging provided. This reduces the risk of conflicting messages in the public eye.

2.6.1.2 Multilingual message amplification

Amplification of official messaging can be of particular use in multilingual communities, where EM organizations may not have the capability to provide messaging in multiple languages. This is particularly important for two aspects of the Canadian landscape:

- Providing messaging in both official languages; and
- Providing emergency messaging to vulnerable populations in communities where the primary language is not English or French.

EM organizations may engage DV organizations with multilingual capabilities to broadcast their messaging in other languages. The DV organization should, when tasked in this fashion, quote the entirety of the official message and then offer a summary of the message in the desired language. An example of how this can be done on Twitter is shown in Figure 2.



Figure 2: Traffic Tweet amplified in a second language

Using DV organizations to amplify messaging in other languages should only be considered in an emergency context where timely distribution is critical. If translation is requested, EM organizations should remain cognizant of the risk of mistranslation and provide messages using the simplest wording possible.

2.6.2 Engaging the public directly

During a large-scale emergency, public information officers of responding organizations may not have the capacity to respond to all social media enquiries. They may choose to engage digital volunteer groups to assist them. Digital volunteer groups will interact with the public within the following recommended guidelines.

Do not pretend to be an official voice. Only the official accounts for EM organizations should speak for themselves.

Redirect people to official messaging. Many unofficial “experts” and other members of the public will attempt to tell people what to do during an emergency. Digital volunteers can help redirect the public from these people to official sources. An example of redirection is contained in Figure 3.



Figure 3: Redirection to official sources

Correct safety issues. Digital volunteers should intervene where there are clear safety issues involved. In the simulated exchange shown in Figure 3, a hurricane is approaching Halifax and the bridges have been shut down. The digital volunteer would be expected to reply to the citizen’s tweet by indicating that the area is not safe and directing the individual to seek shelter, as per HRM EMO emergency bulletins.



Figure 4: DV providing positive safety messaging

2.6.3 Emergent digital volunteers

Employees of EM organizations can be empowered to use their personal accounts and connections to disseminate information relevant to the mandate of the organization. Individuals at the parent organization who have access to a high degree of knowledge are ideally positioned to assist full-time communications staff in communicating with the public.

For this type of employee communication to be effective, organizations need to establish policies and guidelines on acceptable communications from their employees. These policies need to clearly delineate.

2.6.4 Empowering members of EM organizations

Employees of EM organizations can be empowered to use their personal accounts and connections to disseminate information that was relevant to the mandate of the organization. Individuals with a high degree of knowledge with their parent organization are ideally positioned to assist full-time communications staff in communicating with the public.

For this type of communication to be effective, organizations need to establish policies and guidelines on acceptable communications from their employees. These policies need to clearly delineate:

- What topics are within the organization’s mandate;
- Types of messaging that staff can communicate freely, as well as types of messages that require official authorization to release to the public; and
- Guidelines on personal communications unrelated to official messaging.

2.7 Digital management of physical volunteers

Online tools can be used to coordinate physical volunteers during the recovery phase following an emergency. These online tools, frequently referred to as “**volunteer portals**,” allow physical volunteers to be matched with tasks in order to meet community needs.

2.7.1 Establishment of volunteer portals

Some digital volunteer groups have the capacity to establish volunteer portals when an emergency occurs. In addition, local communities often establish portals following an emergency to assist in ground-level coordination. For example, local communities frequently use Facebook group pages to host volunteer portals during emergencies.

Prior to an emergency, emergency management, community and humanitarian organizations should establish online tools for coordinating physical volunteers and educate the public about their existence and how to use them. Trying to establish awareness of volunteer portals once an emergency has already happened will drain scarce communication resources, but preparatory work can alleviate this burden. However, the online community is constantly shifting, and EM organizations must monitor social media traffic during emergencies to detect new portals as they arise.

Digital volunteer groups, whether involved in the establishment of volunteer portals or not, can be used to increase awareness of such portals prior to, during, and following emergencies. This may be performed as described in Section 2.6.1.

2.7.2 Use of volunteer portals

The most straightforward use of these online tools is to connect volunteers with community and humanitarian organizations that need volunteer support. Volunteer portals are a fast and convenient way to match physical volunteers with an organization that matches their skill set, interests, and values. A portal of this type was used to get volunteers for the 2015 Pan Am Games in Toronto.

More complex online tools can be developed to connect volunteers with tasks on an individual-needs basis. This typically involves an EM or relief organization identifying tasks that need to be done and specifying types of people who might be able to address these needs.

Regardless of the level of sophistication of groups running volunteer portals, EM groups should strive to engage with these groups as much as is practical. These groups can provide more detailed ground-level information than may otherwise be available; the groups can also be used as an avenue for providing specific direction to particular communities.

2.8 Deactivation

The decision to deactivate DV groups will be made in consultation with the disaster management organizations they are working with. In keeping with their volunteer nature,

the final authority for deactivation lies with the volunteer group itself. The activating organization may inform the digital volunteers that their services are no longer required, at which point the group may decide to continue to operate for their own benefit, or shut down operations.

In the final days of an event, it is likely that full-time activation will not be necessary, but that some partial work may still be beneficial (e.g., daily reports on twitter trends). The activating organization may continue to task the digital volunteers on a more minimal basis, and the volunteer groups may manage the activation of their personnel to an appropriate level.

2.9 After-action review process

Following the emergency, each organization should take the opportunity to meet as a team and examine their own performance, the key outcomes and the challenges encountered, with a particular focus on how the groups worked together. The organization should hear from each member of their team and come to a consensus on the most important items concerning:

- Potential areas for improvement;
- Any practices that worked exceptionally well; and
- The steps that the organization can take to improve their performance.

The after-action review should also examine the effectiveness of social media technologies that were used and should identify any emergent technologies or platforms used by the online community during the emergency. This information will assist EM organizations and DV organizations to enhance future responses by maintaining up-to-date engagement methods with the online community.

3. SUMMARY

This document presents a Concept of Operations (ConOps) for the integration of digital volunteer groups into emergency response and recovery activities. It focuses on guiding the interactions between responding organizations and digital volunteers that use social technology to interact with the public and support recovery operations. The goal is to improve emergency management in Canada through social media-aided cooperation between digital volunteers, EM officials, first responders and humanitarian workers.

This ConOps is a living document that presents a concept for integrating the digital volunteer community into the response and recovery phases of emergency management. This ConOps is expected to be validated, updated and expanded in the future as the knowledge base of social media and emergency management matures.

ANNEX A. ACRONYMS

Note: not all of these acronyms appear in this document. They are provided for reference purposes.

ConOps	Concept of operations
DRDC CSS	Defence Research and Development Canada – Centre for Security Science
DV	Digital volunteer
DVSROE	Digital Volunteer-Supported Recovery Operations Experiment
EM	Emergency management
EMO	Emergency management/measures organization/office (depending on context)
FTP	File transfer protocol
ICS / IMS	Incident Command System / Incident Management System
JIC / JIB	Joint Information Centre / Joint Information Bureau
MOU	Memorandum of understanding
NGO	Non-governmental organization
PA	Public affairs
PIO	Public Information Officer
QA	Quality assurance
SMEM	Social media and emergency management
SOREM	Senior Officials Responsible for Emergency Management
VOST	Virtual operations support team

ANNEX B. ENGAGING VIRTUAL VOLUNTEERS – HOW-TO GUIDE

The following is a potential guide for both official and volunteer organizations on how they can work together. It could form the basis for procedures and plans within both organizations.

B.1 PRE-DEPLOYMENT

1. Establish relationships with virtual volunteer groups and organizations;
2. Learn about the groups' particular expertises It is helpful for certain tasks if the volunteers have relevant knowledge, experience and skills in relation to the organization they are supporting, the geography of the region, and the people/communities affected by the crisis;
3. Understand how the groups are organized, structured and governed and their internal processes; and
4. Identify key liaisons within digital volunteer organizations.

B.2 ACTIVATION

1. Identify the anticipated need (deployment specifics):
 - a. Need to inform: public information (including responding to questions from the public about recovery operations), public education, alerting, and warning. This includes programs and resources to help people cope and recover (i.e. insurance, grants and other financial resources);
 - b. Need to be aware: identify, verify, interpret, map and update relevant information according to operational needs and priorities, collect information about local needs and conduct needs assessment, confirm availability of resources, identify reputational threats, misinformation and rumours. For example: identify vulnerable populations, status of essential services, and incidents of infrastructure damage; and
 - c. Need to engage: reach out to and communicate with citizens and local volunteers on the ground to answer questions, crowd-source information (e.g., document damage) and coordinate volunteer work. For example: provide community support by encouraging dialogue and being available for questions, provide instructions on how to communicate with recovery organizations, give people concrete tasks and questions to answer that are operationally relevant, connect people with the resources they need.
2. Designate a volunteer liaison within your organization, establish contact with the digital volunteer organizations and confirm their capacity and availability;

3. Specify the tasks to be accomplished and decide if volunteers should be enabled to communicate independently on behalf of your organization or if they are to remain passive and defer to your staff. Highlight any sensitivities that must be taken into account;
4. Provide a simple decision matrix (i.e., a decision-making guide) for virtual volunteers who are engaged in two-way communication, potentially including issues management and reputational threat management;
5. Determine how the volunteers are expected to deal with particularly urgent or sensitive information (e.g., 911 situation, reputational threat, and potentially harmful misinformation);
6. Define reporting needs, including required format and frequency and the need for transmission of raw vs. filtered/analyzed data. Clearly identify the kind of analysis required, if any, and share what is of concern to your organization;
7. Determine what tools and data formats are going to be used and if the volunteer groups need to be given access to internal tools and accounts;
8. Address the expected length of the deployment and any capacity issues that may arise with an extended deployment. Communicate minimum expectations. Assess criticality of the task and risk involved;
9. Determine need to archive and document the work (process and deliverables) of digital volunteers;
10. Formulate the request, providing an overall picture of why the deployment is necessary and important (e.g., to the affected population) and transmit to identified volunteer group or organization; and
11. Volunteer group responds to request by confirming/agreeing to activation request and identifying any potential issues.

B.3 DEPLOYMENT

The following are general forms of guidance that should be provided to digital volunteer groups while they are deploying/deployed:

1. Give a clear signal to deploy;
2. Provide regular feedback on periodic reports and overall performance;
3. Acknowledge volunteer impact internally and publicly whenever possible;
4. Make changes as required by the evolving situation; and
5. Give a clear signal when to stop.

B.4 POST-DEPLOYMENT

1. Conduct a review session with the digital volunteers to provide opportunities for learning and improvement, highlight successes and analyze shortcomings; and
2. Acknowledge volunteer contributions.

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