REPORT TO THE ICS CANADA STEERING COMMITTEE

ICS Canada Doctrine Project - 2023

Tim Riecker

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Introduction

The ICS Canada Doctrine Review project was an analysis of seven key Incident Command System (ICS) themes identified in a document developed by ICS instructor Tom Cox, titled the Persimmon Papers. It is agreed upon, from consistent anecdotal evidence, that ICS Canada students are often confused by instruction and discussion of these seven themes, resulting in a lack of mastery of certain concepts both in class and in application through exercises and real-world incidents. The impact of this is considerable, since understanding of these concepts is critical to successful implementation of ICS, including core activities such as the planning process. Those seven themes are:

- Common Terminology and Plain Language
- PPOST
- Priorities
- Problems
- Management by Objectives
- SMART Objectives
- Safety

A meeting was hosted by ICS Canada on November 7-9, 2023, and facilitated by Vincent Demers, Training Manager with the Canadian Interagency Forest Fire Centre (CIFFC) and ICS Canada Chair. The panel of ICS subject matter experts was assembled through the networks of Mr. Demers and Sandy McKinnon, Coordinator of ICS Canada. Nine panelists from various affiliations across Canada and the US participated and provided critical input to this project. The panel was facilitated using the principles of Kaizen.

This report contains, for each of the seven themes, an identification of the root problems of the theme and solutions to address the problems; as analyzed and recommended by the panelists. Across each of the seven themes, the solutions identified involve action to be taken within existing ICS Canada documents, such as the ICS Operational Description and curriculum; while some also suggest development of supplemental documents to support implementation. None of the solutions involve new concepts, but focus on improved definitions, clarification of purpose, and development of standards. Any changes made, once approved, will have cascading implications, requiring ICS Canada instructors to be updated and documents to be socialized among practitioners in all provinces to ensure consistent instruction and application.

Panelist Biographies

Panel Facilitator: Vincent Demers

Vincent Demers ing.f. worked for SOPFEU for 24 years. He held several management positions including Director of Development and specialized services and Director of Operations. He joined CIFFC in 2020, as the Training Manager and ICS Canada Chair. He has 29 years of relevant experience in forest protection including management of human, financial and material resources, relations, organizational governance, optimization studies, training and strategic planning.

He has successfully carried out a wide range of mandates in various management positions: emergency and disaster measures, contract agreements, negotiations, human resources and projects.

ICT2, OPS2 and PSC2, he has been a member of SOPFEU' S IMT program for 17 years and has been involved in several large complex incidents.

Sandy McKinnon, ICS Canada

Retiring from the New Brunswick Department of Natural Resources in 2015, Sandy had worked within the New Brunswick wildfire program for 37 fire seasons. His career found him starting out as a student in 1979 with the provincial air attack program where he remained for 20 years, working up to the position of Chief Air Attack Officer. In 2006 he left the aviation program and accepted the position of Provincial Training Coordinator. One of his first tasks was to roll out and establish the Incident Command System within the Department and jumpstart the formation of 3 Type III Wildland IMTs for DNR. During this period, Sandy also developed his own ICS skills and experience, through his agency's association with the Northeastern Forest Fire Compact where he received his ICS training and attained certification as a Type 2 Logistics Section Chief for the Compact's International IMT. During his career within the training division, he was a member of several national/international committees and cadres teaching and developing ICS programs in Canada and the US. During the end of his career, Sandy moved over into the position of Fire Centre Manager, and he also represented the Department at the PEOC during provincial emergencies.

In 2013, Sandy was fortunate to receive a 1-year secondment to NB Emergency Management Organization where he worked in Operations for EMO. He also did a short tour with NB911 before returning to the Department of Natural Resources in 2014.

Sandy was also a member of several different volunteer fire departments in New Brunswick, working up through the ranks of Fire Fighter to Safety Officer to Fire Chief. Over 25 years within the fire service as a first responder and was a member of several provincial and national committees and working groups supporting the fire service in Canada.

In 2016 just after retiring from government, Sandy stepped in as Program Coordinator for ICS Canada, a role he occupies to this day.

Tom Cox, Alberta Emergency Management Agency

Tom Cox is the Senior ICS Consultant with the Alberta Emergency Management Agency. As an ICS Canada instructor trainer, he has taught over 600 instructors in Canada and internationally. He has written a number of papers in instructing Incident Command as well as being a guest speaker at numerous conferences on emergency management including understanding communications failures and challenges in public warning.

In 2017, Tom was asked by Sandy Mckinnon "How do you get an Incident Commander to set good Objectives?" This led to Tom researching and writing series of papers ("The Persimmon Papers") identifying where key ICS concepts have gaps, misunderstandings, or flaws along with recommended solutions. While the initial focus was on the concept of Management by Objectives MBO), the insight that the issue lay within MBO itself and how it was integrated into ICS equally applied to other concepts like Common Terminology, Priorities, PPOST, Problems, SMART, and responder safety. The papers identified gaps, misunderstandings, misapplication, and poor integrated into ICS. Critically, there is a "system of errors" where concept's flaws reduces the effectiveness of any solution for another concept's source problem.

Tom's papers on each topic determined that because the flaws lay within the foundational concepts, a doctrinal change, rather than a curriculum update, would be required to provide a viable and effective solution.

In 2022, Tom entered into discussions with Vincent Demers of CIFFC into having a panel of experts determine if there was a problem, if the source was correctly identified, and if an effective solution could be suggested. As the issues identified exist in almost all incident management systems based on ICS, yet interoperability is a key feature of ICS, an international review panel was assembled for the review.

The November 20023 doctrinal review is the culmination of Tom's career as an ICS instructor trainer and the recommendations of the panel to ICS Canada are a validation of the work Tom presented in the seven Persimmon Papers. The members of the expert panel recognized the support of ICS Canada and CIFFC as a demonstration of willingness to improve doctrine and providing leadership in the advancement of ICS instruction, application, and evaluation.

Geoff Wilford, Incident Management Training and Consulting, LLC

Geoffrey Wilford retired in 2008 as an Operations Battalion for the Kern County (CA) Fire Department. Chief Wilford's career spanned 33 years in positions that included three years on a hand-crew and the ranks of firefighter, engineer, captain, and battalion chief. During that time, he served on the local extended-attack management team, a Federal interagency Type 2 team, and over 20 years with a Type 1 IMT in the planning section, including Planning Section Chief Type 1 (1995 to 2019), and Operations Section Chief Type 1 (2001 to 2019). He was also qualified as a Type 2 Incident Commander (2001 to 2019).

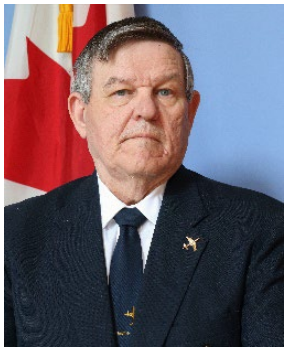
Chief Wilford represented the Firefighting Resources of California Organized for Potential Emergencies (FIRESCOPE) on the National Wildfire Coordinating Group (NWCG) Training Working Team (2001 to 2008), during the origination and rollout of the National Incident Management System (NIMS) and the national ICS program. One of his roles was to develop partnerships between FIRESCOPE, the nascent All-Hazards program, and the NWCG. He also co-chaired the "Incident Management Team Development Plan" (IMTDP) project (2005–2006) that began identifying the issues between the S-420 and S-520 courses.

From 2007 through early 2014, Chief Wilford was identified as a Key Staff and under subcontract to provide subject matter expertise and technical writing and editing to the working groups sponsored by the National Integration Center (NIC) that provided national guidelines and standards for the implementation of NIMS. Under that contract, Chief Wilford provided subject matter expertise in incident management to DHS's National Integration Center staff and was responsible for technical editing of numerous drafts of the All-Hazards guidance documents and standards for the NIMS. During that time, he wrote the drafts of the publication now known as the National Qualifications System, led the workgroup that developed the 2010 All-Hazards ICS forms, and assisted in the initial resource typing efforts of several dozen resources and positions.

Chief Wilford is the CEO of Incident Management Training and Consulting, LLC (IMTC), the original developer of 18 of the DHS Emergency Management Institute's (EMI's) All-Hazard Position-Specific curricula for the DHS AHIMT program (using NWCG and FIRESCOPE curricula) and provided the subject matter expertise for the DHS-sponsored video The NIMS Planning Process. IMTC was also the training provider for the U.S. Environmental Protection Agency (2003–2009) and the U.S. Coast Guard (2012–2017).

Chief Wilford is currently a member of the All-Hazards Incident Management Teams Association (AHIMTA), where he has served on the Incident Qualifications Committee since 2016. He is the author of the All-Hazards Incident Management Team Response and Planning Guide, an AHIMT reference guide and textbook for ICS courses in the U.S. and Canada. Chief Wilford has been under a multi-year contract to provide documents, guidance, guidelines, and enhancements to the USFA All-Hazards Incident Management Team program.

Thomas. L. Sand, Transport Canada



Thomas (Tom) Sand was born in Edmonton Alberta and joined the Canadian Forces in 1974 under the Regular Officer Training Plan. He graduated from the University of Alberta in 1977 with a Bachelor of Science in Mathematics and Physics. He has logged over 6200 flight hours as a Maritime Patrol Navigator/Air Combat Systems Officer on the CP-107 Argus, CP-140 Aurora and BAE Nimrod aircraft. He is a graduate of the Canadian Forces Aerospace Systems Course, the Canadian Forces Command and Staff Course and Canadian Forces Language School.

He earned his Navigator wings in 1979 and has completed operational flying tours with 405 and 415 Maritime Patrol Squadron at Greenwood Nova Scotia and with 42 Squadron Royal Air Force at RAF Station St Mawgan in Cornwall, UK. He has also served on 404 Maritime Patrol and Training Squadron, commanded the Maritime Patrol Standardization and Evaluation Team, commanded 14 Software Engineering Squadron, and completed a tour as the 14 Wing Operations Officer all at Canadian Forces Base Greenwood, Nova Scotia. He completed operational tours as a Detachment during Operation Sharpe Guard and the Chief of Plans for Kandahar Airfield, Afghanistan. He has held staff positions with Maritime Air Group Headquarters in Halifax, with Air Command Headquarters in Ottawa, and at the Canadian Forces Maritime Warfare Centre in Halifax. He was the Director of Operations at the 1 Canadian Air Division HQ Detachment Regional Air Coordination Element Atlantic in Halifax, Nova Scotia just prior to leaving the Regular Force.

After 35 years of military service in the Regular Force he transferred to the Reserves, returned to Alberta, and took up a position with the Government of Alberta as the manager of Training and Training Development with the Government of Alberta's Alberta Emergency Management Agency. In April of 2018 he accepted a position with Transport Canada in the Office of Incident Management.

Tim Sexton, United States Forest Service (ret.)

Tim's career in wildland fire management and emergency response has spanned more than five decades. Starting in 1970 on the Shasta-Trinity National Forest in northern California, Tim has worked on wildfire and other emergency responses in all ten geographic areas of the United States. He has a solid foundation of on-the-ground operations experience having worked on engines, helitack, airtanker bases and as a Hotshot Crew Superintendent. He served as a local unit Fire Management Officer, Deputy Regional Fire Management Officer and as Fire Ecologist and Fire Use Program Manager at National Headquarters of the National Park Service and US Forest Service, respectively. Immediately prior to his current position, he managed a research unit within Rocky Mountain Research Station that specialized in wildland fire decision support and technology transfer.

Tim has extensive experience in incident management. He has served in Logistics, Planning, and Operations Section Chief positions as well as many of the unit leader positions. He has commanded Type I and Type II Incident Management Teams and is now one of the three Area Commanders in the United States Interagency Wildland Fire Management program.

Tim has instructed at all levels of ICS, from entry level (100 series) courses through S 620 Area Command. He has served as Chair of the S590 Steering Committee and on the steering committee for S520/620. He has also taught at California's CIMC sessions.

Tim served on the National Wildfire Coordinating group as a member of three committees (Smoke, Danger Rating and Fuels) and for the last ten years on the NWCG Executive Board.

Mark Emrick, Team Rubicon Canada

Mark Emrick continues a career of over 31 years in emergency services including 19 years in the municipal fire service, 15 years as a member of CAN TF-4 USAR, and 14 years as an emergency services instructor, 12 of which include time as an ICS instructor. He presently serves as Chief ICS Instructor for Team Rubicon Canada and has extensive experience in standards-based program development. With Logistics Section and Planning Section qualifications, he has most notably deployed to multiple flooding incidents, over 50 missing person searches, and the Fort McMurray Wildfires.

Tim Riecker, Emergency Preparedness Solutions, LLC Mr.

Tim Riecker is a Certified Emergency and Disaster Professional with a progressive career in public safety and emergency management spanning over 27 years, including time as a local responder and chief officer, local emergency manager, senior staff for the New York State Office of Emergency Management, and public safety consultant. He is a founder, partner, and principal consultant for Emergency Preparedness Solutions, LLC and is recognized nationally as a specialist in various aspects of incident management and preparedness.

Tim has a depth of experience in major incident management, including direct involvement in the management of 21 Federally declared disasters. He has served in state and local Emergency Operations Centers and as a Planning Section Chief for responses including 9/11, United flight 587, Colgan Air flight 3407, Hurricane Sandy, and the COVID-19 pandemic.

Tim has had a range of benchmark opportunities in his career, including presenting to a member of the Joint Chiefs of Staff, and leading some of the largest full-scale exercises ever conducted in the US. He is chair of his town's public safety committee, serves as vice chair of the board of directors for the International Public Safety Association (IPSA), is a member of the industry advisory board for Embry Riddle Aeronautical University's emergency services programs, is a member of the NFPA 1600/1660 technical committee, and is the program manager and instructor of an academic emergency management program.

Tim regularly blogs about various emergency management topics under the moniker of The Contrarian Emergency Manager.

Daryl Black, Exigent, Inc.

With over 30 years of experience in crisis leadership and emergency management, Daryl is a highly sought-after speaker, facilitator, and author. He has collaborated with thousands of leaders in crisis leadership and has provided guidance through various platforms such as podcasts, books, and programs across North America, the Middle East, Australia, and New Zealand. Daryl is dedicated to equipping individuals and organizations with essential information to effectively navigate crises of any scale.

Daryl's journey in crisis leadership began in volunteer search and rescue, where he successfully led numerous missions to find lost and missing individuals. His expertise also extends to supporting responses to major events, including serving as the Task Force Leader for a Canadian team dispatched to Hurricane Katrina. Notably, he is an essential member of Canada Task Force 2, a team that responds to the most significant emergencies and natural disasters in the country. Daryl has actively participated in critical events such as the floods in Calgary and High River in 2013, the Ft. McMurray wildfire in 2016, and more than a dozen other highly impactful incidents across Canada.

Matthew Ducker, Canadian Coast Guard

Matthew Ducker is an Emergency Management professional currently serving with the Canadian Coast Guard's Office of Incident Management. Since 2015, Matthew has played a crucial role in advancing the adoption and implementation of the Incident Command System (ICS) within the Canadian Coast Guard. Matthew's expertise extends to serving within Incident Management Teams for pollution recovery operations, as well as in coordination roles during the agency's responses to critical events such as COVID-19 and Requests for Federal Assistance. Recognized as an endorsed ICS Instructor within the Coast Guard and by Ontario's Office of the Fire Marshal and Emergency Management, Matthew has facilitated the delivery of ICS training across Canada and has recently supported capacity-building efforts with the Kenyan Coast Guard Service, introducing them to ICS and the ICS Canada curriculum.

Common Terminology and Plain Language

Common Terminology is perhaps the most foundational principle of ICS. Instructors and practitioners often speak to the concept of Common Terminology throughout ICS, yet this concept is not fully defined nor is it adequately differentiated from Plain Language within any doctrine or instructional materials. Similarly, the concept of Plain Language, especially when combined in the context of Common Terminology, is not clear. Because of the connectivity of these two concepts, they were discussed together by the panel. These issues with Common Terminology and Plain Language lead to inconsistencies in instruction which cascades to continued misunderstanding in implementation. As noted throughout this report, failures to identify certain terms and concepts as Common Terminology is a consistent issue.

The Panel posited several solutions to remedy these issues:

1. Define, explain, and provide context to the concepts of Common Terminology and Plain Language across all doctrine and curricula.
2. Standardize how to differentiate various Common Terminology within doctrine (i.e. bold, italics, etc.) to make each stand out and be readily identifiable as ICS Common Terminology.
3. Identify requirements for Common Terminology, to include:
    a. There must be one meaning or definition for the word or phrase as it applies to ICS.
    b. It must be within the context of ICS.
    c. It must be agreed to or accepted by ICS Canada stakeholders.
        i. A process should be developed for acceptance of Common Terminology within the ICS community.
    d. It must be coherent and consistently used within ICS (documentation, curricula, application).
        i. It was also noted that as possible, considerations should be given to implications of Common Terminology across both official languages of Canada.

The panel also developed draft definitions for each concept based upon various references:

Common Terminology

In the context of the Incident Command System (ICS), “common terminology” refers to a standardized set of language and vocabulary used by emergency responders and personnel to ensure clear and consistent communication during incident management. Common Terminology helps various agencies and organizations involved in emergency response to understand and convey information effectively, reducing the risk of miscommunication during crisis. ICS-related acronyms, codes (i.e., ICS forms), and other ICS-related terms and phrases that meet the four requirements of Common Terminology shall be accepted.

Plain Language

Plain Language is communication your audience can understand the first time they read or hear it. It does not allow for acronyms, jargon, or codes.

PPOST

PPOST is an acronym which stands for:

Priorities

Problems

Objectives

Strategies

Tactics

PPOST represents a flow of thought and analysis within incident management for identification of critical actions (tactics) to be taken when faced with the complexity of an incident. While PPOST has been identified as an effective practice, it has not been officially included as Common Terminology for ICS Canada, and requires improved definitions, clarity, and contextualization of the process and each component of the process. Absent these factors, the intent of PPOST has not been clear resulting in inconsistent instruction and application of PPOST. Further, it must be emphasized that PPOST is a continuous process of prioritization and reprioritization throughout the timeline of incident management. As a longer-term consideration, it was noted that PPOST as a concept should be fully integrated into the ICS Planning Process and better reflected in the Incident Action Plan (IAP).

Note that this discussion on PPOST is more wholistic of the concept, while the next several concepts outlined in this report specifically address the concepts of Priorities, Problems, Management by Objectives, and the development of SMART Objectives, which are all related to PPOST. The concept of Strategy development was not on the agenda for this panel, but it was recognized that the activities of development, communication, and documentation of strategies must be better defined and instructed as well.

Overall solutions for addressing the issues identified include:

1. Developing a doctrinal definition and description of PPOST from other similar existing practices.
    a. The Canadian Army Operational Guide was identified as one potential resource.
2. In the development of PPOST as a process, the linkage between each step must also be better contextualized, which will improve instruction and implementation outcomes.

Priorities

The panel had extensive discussion on the concept of Priorities and the complexity of the concept as the term 'priority' is so often used without a qualifier to provide meaningful differentiation. The distinction between Incident Priorities (Life Safety, Incident Stabilization, Property Conservation), other identified priorities, and the action of prioritization is certainly not clear within doctrine or curricula. The role of Incident Priorities and other identified priorities is not well established within the PPOST process. As with the previously discussed items, this often causes confusion in instruction and implementation.

Following the discussion of these issues regarding the concept of Priorities, the panel has identified the following solutions:

1. Within doctrine, curricula, and companion documents provide improved and consistent definitions and distinctions of Incident Priorities, other identified priorities, and the act of prioritization.
2. Expand explanations of the roles played and application of the Incident Priorities in the PPOST process.
3. Identify what should be taught about priorities at each level of instruction (ref: Bloom's Taxonomy). *

*Note that while instructional taxonomy was specifically mentioned in this discussion, it should be a consideration for all concepts.

Problems

Continuing through the early components of PPOST, the panel discussed the concept of Problems. It was readily identified that a definition for 'incident problem' does not currently exist within any doctrine, which is a critical omission as the identification of problems directly leads to the development of incident objectives. Problems can also arise from various sources and with various impacts and implications, such as problems created by the hazard directly or indirectly, problems of the response effort, and problems originating from other parties.

Aligned with this, the panel identified the following solutions:

1. Define 'problem' in reference to incident and event management*
    a. It is critical to include that problems are that which impact or negatively affect Incident Priorities.
    b. Include considerations for an impending occurrence and societal expectations.
    c. Consideration should also be included for identifying who is responsible for the problem and resolving it (this may be internal to a component of the incident management team or an external party).

*The panel had considerable discussion on the nuances between incident and event management. While that discussion was specific to the concept of Problems, it is a matter that has important distinctions throughout much of the PPOST process. Hallmarks of this differentiation should be included in any updates to doctrine, curricula, and supporting documents.

Management by Objectives

Management by Objectives (MBO) is a core tenet of ICS adopted from effective business management practices. For MBO to be successful, there must be a better understanding of objectives and how they should be developed. In the panel's examination of MBO led to extensive discussion of the various types of objectives may influence incident management, to include incident objectives, operational objectives, management objectives, strategic objectives, and others. Current ICS Canada doctrine and curricula lacks a definition of 'objective' within the scope of ICS and doesn't provide definitions or context of the different types of objectives which may be used.

Through their discussion, the panel identified the following solutions:

1. Develop an improved Common Terminology definition for an incident or operational objective.
2. Similarly, define and contextualize strategic objectives.
3. Identify the standard and criteria by which an incident objective will be developed, actioned, and assessed, to include:
    a. Objectives must be defined by identified problems and priorities.
    b. Operational objectives shall relate to the Incident Priorities, while management objectives shall relate to other established priorities.
    c. See the following item on SMART Objectives for additional information.
4. Address long-term continuous prioritization within the Planning Process considering all types of objectives, situations, intents, and resources.

Developing Objectives Using SMART

The SMART acronym serves has served as a litmus test of sorts for gauging quality objectives. While there are some slight variations, the SMART acronym commonly stands for:

Specific

Measurable

Attainable

Realistic

Timely

There has been a great deal of inconsistency observed in the development of objectives and the application of SMART. The panel identified that the SMART test has been generally promoted to apply to all objectives, while this is not the case, especially given the various types of objectives discussed previously as well as objectives which may not require such task-oriented specificity. Much of the lack of clarity regarding SMART is because, as with many previous items, the SMART acronym is not defined and contextualized in doctrine.

Solutions identified by the panel include:

1. Provide an authoritative definition and description of SMART in doctrine, leaving no room for ambiguity, and carry it through curricula.
    a. Include the concept that SMART is a standard to build task/tactical assignments and a tool to build incident objectives (operational and management)
2. Explore the potential of a complementary tool or process to construct incident objectives.
3. SMART should be taught at a basic level (ICS-200) where it is described and explained, with more emphasis provided in ICS-300 (create, design, defend, etc.).

Safety

The discussion of Safety (most specifically responder safety) began with the assertion of a common perception that Life Safety (an Incident Priority) is a distinct incident objective, which it is not. Again, the lack of adequate context in doctrine has led to erroneous implementation. Additionally, while this matter of Safety as an objective was the intended focal point of the discussion, the panel also discussed the lack of inclusion of mental health in incident safety operations. With the recognition of responder mental health being a significant contemporary concern, it's become more apparent that mental health is not overtly addressed within ICS and should be treated with the same consideration as physical safety. Incidents are seeing a greater need for awareness and understanding of responder mental health and related impacts.

Through their discussions, the panel identified the following solutions to these matters of Safety:

1. Doctrine and curricula must recognize that responder safety is a legal, legislative, and regulatory occupational health and safety requirement and moral obligation, and as such should be inherent/emphasized in incident objectives and all response activities.
    a. Emphasize that Safety is not to be listed as an objective but is systematically addressed by giving it the priority it demands through our operations.
    b. Emphasize that Safety is a common responsibility for all supervisory positions and single resources.
    c. Curricula should reinforce that emergency response is required to follow occupational health and safety rules and regulations.
2. Curricula and ICS processes should emphasize the embedded safety-related practices inherent in ICS, to include the role of the Safety Officer, operational briefings, and ICS forms such as the ICS 208 and 215a.
3. Include a standard printed statement regarding operational safety in the ICS 202
4. Include throughout the ICS curricula (and reinforce in other documents) speaking points on responder mental health from a safety perspective and include external resources as appropriate.
5. Related to mental health as well as other human resources practices, the concepts of diversity, equity, and inclusion as well as cultural safety should be considered for inclusion in ICS doctrine and instruction.

Conclusion and Recommendations

While the content of ICS doctrine, curricula, and other documents should be regularly reviewed for relevance, gaps, inconsistency, poor implementation, and effective practices; the concepts discussed by this project panel are believed to be of the utmost importance. These concepts have the broadest reach throughout all of ICS because of their commonality, interconnectedness, frequency of use, and severity of consequence. Each of the solutions contained herein should be considered priorities for action.

As identified throughout the report, doctrine must serve as the foundation for every aspect of the Incident Command System. No concept should be taught without having a clear connection to doctrine, which will support consistency in instruction and application. An expansion of ICS Canada doctrine is needed to address these matters and will contribute to continuous improvement. Development of companion documents can support further explanation and context of various concepts and processes.

Regarding instruction, each concept taught should be structured, as appropriate, throughout ICS courses, in a progressive nature, ensuring that valuable class time is spent focusing on what class participants at each level should know, with the level of knowledge reflecting course objectives. Reference Bloom's Taxonomy for additional information on this instructional design standard.

Implementation of the solutions contained in this report should be overseen by a small project committee and carried out by experts in ICS who have experience in the development of standards and doctrine. The same or a different slate of experts with experience in instructional design should address updates across all ICS curricula that reflect changes to doctrine. All changes to doctrine and instructional material, once approved, should be provided to all ICS Canada instructors, with discussion facilitated ideally through a series of webinars, and participation made mandatory for each to maintain their instructor credentials. All doctrine and other related documents should be published on the ICS Canada website and promoted for availability to the community of practice.

Finally, as a measure of continuous improvement, operational results (identified from incidents and exercises) should be assessed through a pre-determined rubric to gauge the effectiveness of implementation of updated materials. This assessment may include document reviews, interviews, and surveys and may need to be carried out multiple years for adequate data to be obtained.

Members of the panel appreciated the opportunity to have these discussions and input on the continued evolution and improvement of ICS practices. The topics discussed and solutions identified are likely to have impact reaching beyond Canada, with future consideration by American practitioners and those in other nations who use ICS or similar systems. Through these improvements, ICS Canada has an opportunity to continue leadership in ICS standards and application for all hazards.