Ken served for 33 years in the Canadian Forces. He started his military service as an infantry officer in the 2nd Battalion of The Royal Canadian Regiment, joining the Office of the Judge Advocate General in 1982. As a military legal officer his duties included serving as the Deputy Judge Advocate Petawawa and the Assistant Judge Advocate General Atlantic Region. He was the legal advisor on the 1993 joint civilian/military Board of Inquiry investigating the Canadian Airborne Battlegroup in Somalia; served as Government legal counsel in respect of inquiries and investigations arising from the 1994 genocide in Rwanda, which included appearing before the International Criminal Tribunal for Rwanda in 2004; and was responsible for operational law advice to Canadian Forces Army, Navy, Air Force and Special Forces units for a significant portion of the 2001-2010 time period following the attacks of 9/11. Ken finished his military service as the Judge Advocate General for the Canadian Forces (2006-2010).

Upon retirement Ken was appointed as a Foreign Observer to the Israeli Independent Commission investigating the 31 May 2010 Gaza blockade incident, as the Charles H. Stockton Professor of International Law at the United States Naval War College (2011-2012), and more recently has worked as a counterterrorism/national security consultant for the United Nations in Nigeria (2017-2018) and the Canadian Government (2019).

Ken Watkin has written extensively about the application of international law to contemporary conflict and counterterrorism. His book Fighting at the Legal Boundaries: Controlling the Use of Force in Contemporary Conflict (Oxford University Press, 2016) was awarded the 2017 Francis Lieber Prize by the American Society of International Law (ASIL). More recently Ken co-authored a second book, Law in War: A Concise Overview (Routledge, 2018), and has published over forty articles, on-line commentaries and book reviews on humanitarian law, human rights and national security law. He was awarded the 2008 ASIL Lieber Society Military Prize for an article on targeting: Assessing Proportionality: Moral Complexity and Legal Rules. His work has been cited by both the Canadian and Israeli Supreme Courts. He is a member of the Editorial Committee of the International Committee of the Red Cross project to update the 1949 Geneva Convention (III) on Prisoners of War commentaries, and has participated as an expert in international working groups tasked with clarifying the law and developing manuals/studies regarding Cyberwarfare, Occupied Territory, Air and Missile Warfare, Direct Participation in Hostilities, The Conduct of Hostilities, and State Self-defence (the "Jus ad Bellum").

Ken is a graduate of The Royal Military College (Hons BA), Queens University (LLB and LLM) and was a visiting fellow at the Human Rights Program at Harvard University (2002-2003). In 1997 Ken received the Maritime Commander's Commendation, in 2002 was appointed to the Order of Military Merit, in 2006 a Queen's Counsel, and in 2010 received the Canadian Bar Association (CBA) President's Award that recognizes the significant contribution of a Canadian jurist to the legal profession, to the CBA or to the public life of Canada.