GC31B-1183: Rapid Arctic Changes due to Infrastructure and Climate (RATIC) in the Russian North

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The Rapid Arctic Transitions due to Infrastructure and Climate (RATIC) initiative is a forum developed by the International Arctic Science Committee (IASC) Terrestrial, Cryosphere, and Social & Human working groups for developing and sharing new ideas and methods to facilitate the best practices for assessing, responding to, and adaptively managing the cumulative effects of Arctic infrastructure and climate change. An IASC white paper summarizes the activities of two RATIC workshops at the Arctic Change 2014 Conference in Ottawa, Canada and the 2015 Third International Conference on Arctic Research Planning (ICARP III) meeting in Toyama, Japan (Walker & Pierce, ed. 2015). Here we present an overview of the recommendations from several key papers and posters presented at these conferences with a focus on oil and gas infrastructure in the Russian north and comparison with oil development infrastructure in Alaska. These analyses include: (1) the effects of gas- and oilfield activities on the landscapes and the Nenets indigenous reindeer herders of the Yamal Peninsula, Russia; (2) a study of urban infrastructure in the vicinity of Norilsk, Russia, (3) an analysis of the effects of pipeline-related soil warming on trace-gas fluxes in the vicinity of Nadym, Russia, (4) two Canadian initiatives that address multiple aspects of Arctic infrastructure called Arctic Development and Adaptation to Permafrost in Transition (ADAPT) and the ArcticNet Integrated Regional Impact Studies (IRIS), and (5) the effects of oilfield infrastructure on landscapes and permafrost in the Prudhoe Bay region, Alaska.