The ACURA-CASCA Alternative Site Committee (hereafter, "the committee") was asked on September 28, 2016, to review the proposed alternative sites, should it not be possible to proceed with TMT construction on Maunakea. The committee consulted internally, and with the community, via email and two WebEx town-hall style meetings. The committee submitted their full report with recommendations to CASCA, ACURA and NRC representatives on October 19, one week prior to the TMT board alternative site selection meeting. The following is a summary of that report, approved for public release.

1. The Canadian community reaffirms Maunakea as the optimal site for TMT. Maunakea supports a wide range of observational capabilities ranging from the UV to the mid-infrared, provides unparalleled access to the Northern sky, and offers the possibility of scientific and operational synergy with existing observatories in which Canada is already a partner.

2. For Canadian science, the best alternative site that was under consideration is Cerro Honar. Although some members of the community expressed concern over the loss of access to the upper part of the northern sky, the consultation process revealed the overwhelming majority opinion that the north/south location was relevant, but should not be the primary site driver. Honar was the only alternative site which allowed TMT to have a scientific power comparable to the ESO E-ELT, offering improved performance in both the extreme blue and the thermal infrared spectral regions. A Chilean location also provided synergy with cutting edge ground based astronomical facilities such as ALMA and LSST. Although the community expressed concerns over cost, schedule and possible indigenous issues, the committee concluded that these matters were not currently sufficient (in magnitude or certainty) to reject Honar as Canada's preferred site.

3. The community is strongly divided over Observatorio del Roque de los Muchachos (ORM) on La Palma as an alternative site. ORM does provide northern sky access, and would make TMT the only ELT in the North. Data made available to the committee indicate that the atmosphere above ORM has an isoplanatic angle and a coherence time that yield an AO Strehl performance metric about 90% of the Maunakea value. This will provide good adaptive optics performance in the J and H bands (wavelengths of 1-2 microns). However, at a lower elevation than Maunakea or Cerro Honar, ORM is a poorer site for both the extreme blue and the thermal infrared. Although TMT at ORM would satisfy many scientific needs, it would not be competitive with the ESO E-ELT for the rapidly growing fields of exo-planet imaging, exo-planet atmospheres, and medium-to-high resolution spectroscopy of high redshift galaxies. These science cases require mid-infrared observations with a large collecting area. As ORM is a developed site, there are procedures and infrastructure already in place to allow cost savings.

Given that the TMT board selected ORM as the alternative site to MK, the committee strongly recommends undertaking a further study of best approaches to ORM operations and instrumentation in order to produce a more in-depth assessment of the degree to which locating TMT on ORM would satisfy Canadian expectations.