



City of Homer

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Public Works

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Memorandum 20-194

TO: City Council
THROUGH: Rob Dumouchel, City Manager
FROM: Janette Keiser, Director of Public Works
DATE: November 16, 2020
SUBJECT: Public Works Campus Task Force

Issue: In 2019, the Alaska Division of Geological and Geophysical Surveys (“AK DGGs”) published updated Tsunami Inundation Maps for Homer, showing that a landslide-generated tsunami could flood the existing Heath Street campus of the City’s Public Works Department by as much as 16.4 – 32.8 feet. If this is true, risks of personal injury, property damage and even death are high. We are requesting that a Task Force be convened to deliberate on the risks, develop mitigation strategies and make recommendations for action.

Background: The DGGs updated its Tsunami Inundation Maps for Homer by numerically modeling worst-case scenarios of inundation from tsunami waves generated by earthquakes and submarine landslides, including local underwater slope failure scenarios for Kachemak Bay. The model computes not only the projected height of an earthquake- or landslide-triggered tsunami, but also the time of arrival. The DGGs studied multiple scenarios, using different variables such as distance of the earthquake/landslide from Homer, possible volume of rock/earth displacement, tides, etc. Under some scenarios, the first wave could appear within one hour after the earthquake. Further, waves generated from earthquake-induced landslides could hit low-lying areas while the ground was still shaking from the earthquake. The model projects the maximum landslide-generated tsunami could flood the existing Heath Street campus of the City’s Public Works Department by as much as 16.4 – 32.8 feet.

Such flooding could heavily damage millions of dollars of buildings, heavy equipment, materials and supplies on the Public Works campus. Worse, substantial damage would undermine our ability to help the City recover after a tsunami event. Our heavy equipment could be ruined from salt water intrusion, stockpiled materials could be washed away, and our buildings could be rendered uninhabitable. Because of these risks, Public Works employees have a standard protocol when a Tsunami Warning is issued. All available personnel immediately deploy to the campus and begin evacuating major pieces of heavy machinery and other mobile equipment to higher ground. Currently, our evacuation site is on the west end of Heath Ave, behind Safeway. This site is above the Inundation Zone. The evacuation process takes at least forty-five minutes for the equipment alone.

Currently, we do not try to evacuate anything from the buildings – no tools, spare parts or anything from our extensive inventory of pipe, water meters, culverts, etc. Our fuel depot, which services all City rolling stock, consists of underground storage tanks with above-ground pumps and controls. This The fuel could become contaminated and the electronic elements could become inoperable. This means we would have little to work with in the event we would be called up to repair water line breaks, fix roads, or otherwise help the City recover from earthquake-induced damage.

We recently conducted an in-house round table to talk about this. We looked at what we would need to stay functional. We considered these questions:

- What would most likely happen in the way of damaged infrastructure?
- What would we need to do to restore functionality of damaged infrastructure?
- What would we need?

Our goal was to identify equipment, materials and supplies we could stash in some location off the Public Works Campus so we would have something to work with, in the event the worst-case scenario occurred. We concluded that it would cost hundreds of thousands, if not millions, of dollars to be properly prepared. And, worse, even if we created such stock piles, we would have no base of operations. We are the arms, legs and muscles of the City’s emergency recovery response team and we would be, for all practical purposes, unable to function. We concluded that if the Inundation Maps are right, the risks of personal injury, property damage and even loss of life could be high, either during the tsunami event itself or during recovery. We need a better plan!

Action Recommended:

We propose that a Task Force be created to evaluate the risks, deliberate about mitigation strategies and make an action plan for addressing the risks of maintaining the status quo.