



Homer City Hall

491 E. Pioneer Avenue

Homer, Alaska 99603

www.cityofhomer-ak.gov

City of Homer Agenda

Public Works Campus Task Force Regular Meeting

Wednesday, March 24, 2021 at 2:30 PM

Cowles Council Chambers via Zoom Webinar

Dial: +1 669 900 6833 or +1 253 215 8782 or Toll Free 888 788 0099 or 877 853 5247

Webinar ID: 990 6794 3833 Passcode: 716429

CALL TO ORDER, 2:30 P.M.

AGENDA APPROVAL

PUBLIC COMMENTS UPON MATTERS ALREADY ON THE AGENDA

APPROVAL OF MINUTES

- [a.](#) Minutes for the Regular Meeting of March 10, 2021

VISITORS/PRESENTATIONS

REPORTS

- [a.](#) Memorandum from Public Works Director re: Probability Report

PENDING BUSINESS

- [a.](#) Review and Continuation of Cataloguing and Evaluating Risks - This information will be provided in the Supplemental Packet.

- Updated Inundation and Tsunami Mapping

NEW BUSINESS

- a. Next Steps
 - Drafting the Probable Risks Report to City Council
 - Identifying Strategies for Mitigation of Risks Identified
 - Short & Long Term Costs for Mitigation Strategies

INFORMATIONAL MATERIALS

COMMENTS OF THE AUDIENCE

COMMENTS OF CITY STAFF**COMMENTS OF THE TASK FORCE****ADJOURNMENT**

Next Regular Meeting is Wednesday, April 14, 2021, at 2:30 p.m. All meetings scheduled to be held in the City Hall Cowles Council Chambers located at 491 E. Pioneer Avenue, Homer, Alaska.

Session 21-03, a Regular Meeting of the Public Works Campus Task Force was called to order by Chair Donna Aderhold at 2:31 p.m. on March 10, 2021 via Zoom Webinar from the City Hall Conference Room located at 491 E. Pioneer Avenue, Homer, Alaska.

PRESENT: JULIE ENGBRETSSEN, JACOB ARGUETA, JAN KEISER, LARRY SLONE, CHARLES BARNWELL, CAROLINE VENUTI AND DONNA ADERHOLD

STAFF: RENEE KRAUSE, DEPUTY CITY CLERK

AGENDA APPROVAL

Chair Aderhold requested a motion to approve the agenda.

SLONE/KEISER MOVED TO APPROVE THE AGENDA.

There was no discussion.

VOTE. NON-OBJECTION. UNANIMOUS CONSENT.

Motion carried.

PUBLIC COMMENTS UPON MATTERS ALREADY ON THE AGENDA

APPROVAL OF MINUTES

A. Regular Meeting Minutes for February 24, 2021

Chair Aderhold requested a motion to approve the minutes.

SLONE/VENUTI MOVED TO APPROVE THE MINUTES AS PRESENTED

There was no discussion.

VOTE. NON-OBJECTION. UNANIMOUS CONSENT.

Motion carried.

VISITORS/PRESENTATIONS

REPORTS

PENDING BUSINESS

A. Memorandum from Member Engbretsen re: Risk Catalogue and Evaluation

Chair Aderhold introduced the item by reading of the title and invited Ms. Engebretsen to present her memorandum.

Member Engebretsen reported that Member Barnwell had provided some maps and Member Slone had presented some questions that were distributed by the Clerk and she would like to address those items before launching into the exercise of cataloguing the risks.

Member Barnwell reviewed the maps which indicated the following:

- various contours at 6 foot which provide the key elevation interval that were discussed during the presentation at the last meeting.
- the Public Works Campus in relationship to the maximum inundation at 36 feet, according to DGGs worst case scenario
- Scenarios depicted in the Inundation Report relative to the contour lines vary due to the different factors used in the computer modeling for the scenarios
- He supported the science used to depict the scenarios, which were vetted by various organizations to include FEMA
- Using the information in the report it is recommended that you go above the maximum inundation by 20-30% which is 7-10 feet.
- Using the GIS information provided, relative to the LIDAR data and the potential sites will prove our due diligence and it will just require the completion of the report and Council final decision.
- Frame of reference is the Mean Highest High Water is from DGGs
- GIS data can be looked at directly
- The full inundation of the Public Works Campus is 24 feet and the southern boundary would be reached at 18 feet
- Accuracy of LIDAR is 3 cm vertical and 2cm horizontal which is very high resolution data and is tightly monitored and controlled. The LIDAR data is calibrated against the flight data, the information was vetted since 2019 and was not released until 2020.
- The information was a great base for engineering and planning.
- There is a big difference in comparing evacuation planning versus building placement

Member Slone posed the following questions and or comments:

- Possible to receive additional info about earthquake event probabilities, perhaps in the form of a graph or matrix. This would be helpful on determining the potential risks to Public Works from a worst-case scenario that we discussed at the worksession, risks that Julie is refining for our next meeting.
- The information would list the generally accepted numbers for energy released for each magnitude between, 7.0 to a 9.2 earthquake. It would also list the frequency of occurrence. Example: Barrett Salisbury stated in the presentation that a M7.0 earthquake was 30 times less powerful but ten times more likely than a M8.0.
- once the actual elevation of Public Works is determined above MHHW (Mean Highest High Water) then we can work on determining what Tsunami level (Magnitude 7.0 or 8.0, for example, the other factors – depth of earthquake, slip-joint – remaining the same) constitutes a break-even point, above which Public Works would be vulnerable, but below which no threat would be posed.

- There are three factors, earthquake Magnitude is the dominant factor to us because it appears to be the one element most commonly used in discussions about Tsunami risk.

A brief discussion ensued on the following topics:

- Mean Highest High Water line that would reach but not flood the Public Works Facility is 18 feet while any water over 24 feet would flood the facility
- Current LIDAR data takes into account the Mean High Water line and it is the best data to in terms of topography
- LIDAR data accuracy
- Report and data was fully vetted by FEMA, USGS
- Recommendation from DGGs buffer is 20-30% beyond the maximum inundation line which amounts to 7-10 feet
- Reviewing evacuation routes is a different planning need

Member Engebretsen provided information regarding evacuation routes and community brochure and future work on that topic.

Member Slone stated that he is looking for additional information to figure reasonable probabilities and believes that it would provide a basis to enable their review.

Data presentation last meeting that every step, in other words like from seven to eight magnitude increases. The energy by 3232 32 times. But it's also only one 10th is likely.

Member Slone presented concerns regarding probability and believes that the Task Force requires additional information regarding probability before they can catalog the risks and recommend how to mitigate them as well.

Member Engebretsen suggested that Member Keiser contact Ms. Suleimani or Mr. Salisbury on the technical questions regarding probability and translate that technical information so the lay person can understand it.

There was brief dialogue on information provided in the All Hazard Mitigation document on page 31 regarding seismicity, earthquakes and probability of risk and getting further clarification on that information so that they can fully discern the various scenarios and probability of the Public Works Facility being inundated. A point made during discussion was that the likelihood may be low but if it does happen it will be catastrophic and believe that has relevancy and import to the determination.

Further discussion on the following items ensued:

- Translating this information so that it can be understood by the general public
- Possibility of minor event causing major damage
- Updating evacuation routes and emergency plans to reflect new information
- Homer first Tsunami and storm ready community
- The information in the report was intended for use in planning development and emergency response
- The damage cause by the earthquake in Japan in 2011

- Information is relevant to community planning and that is what this action is actually performing with the Public Works Building and if the City is going to use this red line or blue for designating evacuation routes and safe zones then the City needs to fund for the future
- There is limited ability to forecast earthquakes and any resulting tsunamis, the science is good but not exacting, there is not enough data available
- This action will assist the Community understand the importance of the issues such as human life, materials, equipment and overall impacts

Member Engebretsen facilitated an exercise in reviewing and rating the level of impact to the community with regard to the following:

Materials –

Calcium Chloride Storage – Quantity – unknown - Value of Materials – Approximately \$10,000

Fuel Island – Quantity would be nice since that would need to be mitigated - Value of Fuel

Member Keiser will provide those numbers for the next meeting.

Member Slone stated that he had a conversation with Member Keiser and noted that while the material is consumed and when it comes to replacement it could be stored at another location, but that then brings the question of security that would be needed at a new location. This may take a few years. He then noted that they could check the requirements from the EPA for the Fuel Depot but maybe they could place a berm around the Public Works facility.

Chair Aderhold recommended that they include what the risk actually is such as the damage that calcium chloride does to the environment.

Member Engebretsen stated that is where she needs input and information from the scientists on the Task Force. She then reviewed the Workers Section noting that Administrative Staff, Mechanics, etc. would lose their place to work some may be able to work from home but others would require another location. This would require immediate relocation which would be difficult. The difficult part is determining the threat to life that is credible.

Member Slone noted that it is difficult to determine and the time that there is before the facility would be flooded would allow an able bodied person to get to safety, but knowing who is onsite at all times and being able to deal with a possible medical event and need for assistance to remove that person or persons.

Member Keiser agreed that in the best situation the loss of life may be a minimal risk but described the possible scenario of the greater potential to life with the current practice of everyone heading into the facility to remove all rolling equipment, the police coming in to fuel their vehicles, traffic conflicts, and just the general confusion.

Further comments on the topic of workers and fueling were offered as followed:

- Relocating fuel depot to the old police station
- Alternate fuel source or storage
- Traffic control during evacuation of rolling stock interacting with evacuating persons
- Lack of materials, tools to effect recovery from an incident

- Current equipment evacuation process does not impact too much on residential or visitor evacuation from the Spit
- Depending on the severity of the earthquake would affect the probability of tsunami and thus require the evacuation of Public Works
- What would Public Works Employees be able to do if they did not have perform the evacuation of Public Works assist other departments such as Police with notifications, Port and Harbor in relocating their equipment.
- There is no current plan other than remove and relocate the equipment
- Some mechanical services could be hired out, but most are specialized services and tools (equipment) so there would be difficulty in maintaining equipment
- Replacement of lost equipment, tools, etc. for administrative personnel as well as mechanics, parks, etc.
- Flood Insurance costs mentioned in the All Hazard Mitigation plan is for residential and Flood insurance does not cover tsunami waters
- It is not reasonable or feasible to contract out heavy equipment repair or maintenance or to create a vital tools/equipment list since there are multiple permutations of the possible list
- Movement of the Sewer Treatment Plant is not feasible due to the cost involved, possible mitigation of any environmental harm from the inundation, impact of tsunami wave to the structure may be minimal or repairable.
- Loss of historical files related to projects and subdivisions (drawings), mitigation efforts can be accomplished by making the drawings electronic or placing these documents in storage facility.
- Radio and Communications systems loss would be detrimental to the control of PRV systems which is part of the water system and the lift stations; loss of communication system capacity affects emergency response for the city.
- Bulk Water Use in winter or summer

Comments and discussions on equipment covered the following:

- Current mitigation plans does not cover all rolling stock especially the equipment that is on a trailer, in for repair or disabled up to 20-25%, hard to maneuver such as the asphalt machine; dependent on the weather materials and supplies are mostly protected there may be some piping or culverts
- All parks related equipment would not be moved including signage
- Loss of sand or gravel would impact repairs and maintenance of city roads and water service
- Motor Pool – other department rolling stock in maintained and repaired by PW
- Security and Vandalism issues if equipment and supplies are relocated to another location, currently the existing location is not in general view and there are personnel in the Public Works facility 24 hours a day
- Relocate all rolling equipment to Hazel Avenue but for long term storage mitigation equipment could be relocated to the HERC or Library parking lot.

Member Slone questioned the existing continuing operations plan for Public Works in the event of a tsunami.

Public Works Director Keiser responded that currently Public Works does not have one that would be effective and are working on it now which is what triggered the request for this Task Force to be created.

Additional discussion ensued with points made on the extent of Emergency Operations Planning by Departments and touching on that within the catalogue but for the most part that is beyond the scope of this task force.

Chair Aderhold inquired about adding the technology and administrative office computer equipment.

Member Engebretsen noted that due to COVID the technology part would be simple to mitigate but the loss of phones and office space is what would be hard to mitigate.

NEW BUSINESS

A. Next Steps

Member Engebretsen will refine and update the chart for the next meeting.

Member Keiser will be contacting Elena Suleimani regarding probability

Member Argueta will look into the toxicity to the environment for the fuel and calcium chloride and other additional chemicals that are located at Public Works.

A brief discussion ensued on the ability to have information for the worksession available and if they can cancel the worksession since the packet would need to be ready on Friday. It was noted that there was a typographical error on the date in the packet.

VENUTI/KEISER - MOVED TO CANCEL THE WORKSESSION ON MARCH 17, 2021 AND HAVE ALL RESEARCH AVAILABLE FOR THE MARCH 24, 2021 REGULAR MEETING.

There was a brief discussion.

VOTE. NON-OBJECTION. UNANIMOUS CONSENT.

Motion carried.

Chair Aderhold requested any additional items that they should address for the next meeting.

Deputy City Clerk asked about the insurance coverage information.

Chair Aderhold recommended that if any member thought of an item for the agenda to let the Clerk know and she will get it on the agenda.

INFORMATIONAL MATERIALS

COMMENTS OF THE AUDIENCE

COMMENTS OF THE CITY STAFF

Deputy City Clerk Krause commented on the retention of historical records retention and the intent of the City Clerk's Office implementing a City Wide Records Management System.

COMMENTS OF THE TASK FORCE

Ms. Venuti commented on learning some interesting facts regarding earthquake and tsunami that they are happening everywhere. It was interesting meeting. Have a good weekend.

Ms. Engebretsen thanked everyone for their time and attention.

Ms. Keiser commented on a remark made at the recent Council meeting by Councilmember Smith about having the meetings in the evenings since the meetings are conducted in the afternoon it does not allow for public participation.

Chair Aderhold requested Deputy City Clerk to contact Councilmember Smith regarding his concerns.

Mr. Barnwell commented on the questions from the Planning Commission regarding the work they are doing and believes there should be some more public involvement.

Chair Aderhold commented that once they have progressed a bit further that they can schedule some public engagement associated with the project for solicitation of public input.

ADJOURNMENT

There being no further business to come before the Task Force the meeting adjourned at 4:26 p.m. The next regular meeting is scheduled for Wednesday, March 24, 2021 at 2:30 p.m. at the City Hall Cowles Council Chambers via Zoom Webinar located at 491 E. Pioneer Avenue, Homer, Alaska.

RENEE KRAUSE, MMC, DEPUTY CITY CLERK

Approved: _____



Memorandum

TO: Public Works Campus Task Force
FROM: Janette Keiser, PE, Director of Public Works
DATE: March 18, 2021
SUBJECT: Conversation with Dr. Elena Suleimani, Alaska Earthquake Center

Issue: Drs. Elena Suleimani, AK Earthquake Center and Barrett Salisbury, AK DGGS, spoke to the Task Force about their 2019 report, Updated Tsunami Inundation Maps for Homer and Seldovia, Alaska. I followed up with Dr. Suleimani, asking questions about probability. The purpose of this memorandum is to summarize that conversation.

Background:

I first sent Dr. Suleimani an email to put my questions into context. I said,

"I'm used to talking about earthquakes in the context of the probability of occurrence and about floods in the context of 50-year storms, 100-year storms, etc. – again, somewhat in the context of probability of occurrence. Is there a similar methodology when talking about worst case scenarios in the context of Tsunami threats? The inundation zone depicted in the City of Homer report represents a worst case scenario. We understand that. Is it appropriate to ask – do you know, what is the probability of such a scenario happening?"

She called me and I asked, *"Do my questions make sense?"* She said, *"Yes, but we don't use that methodology in Alaska because we don't have enough data."* She explained there are two probabilities at issue: the probability of an earthquake and the probability of a tsunami. She went on to say they don't know enough about the history of tsunami events in Alaska, so the methodology doesn't exist for explaining them in the context of probability. That's why they use the worst-case scenario methodology. They do have enough data to look at the probability of tsunamis in other places: Washington, Oregon & California, but not Alaska.

The other issue, she said, is that in Alaska, earthquakes generated in Washington, Japan or even offshore in the Gulf of Alaska, are not the biggest problem. Rather, the greatest risk comes from earthquakes that are generated nearby – for Homer, this is in the Upper Cook Inlet or from underwater landslides across Kachemak Bay.

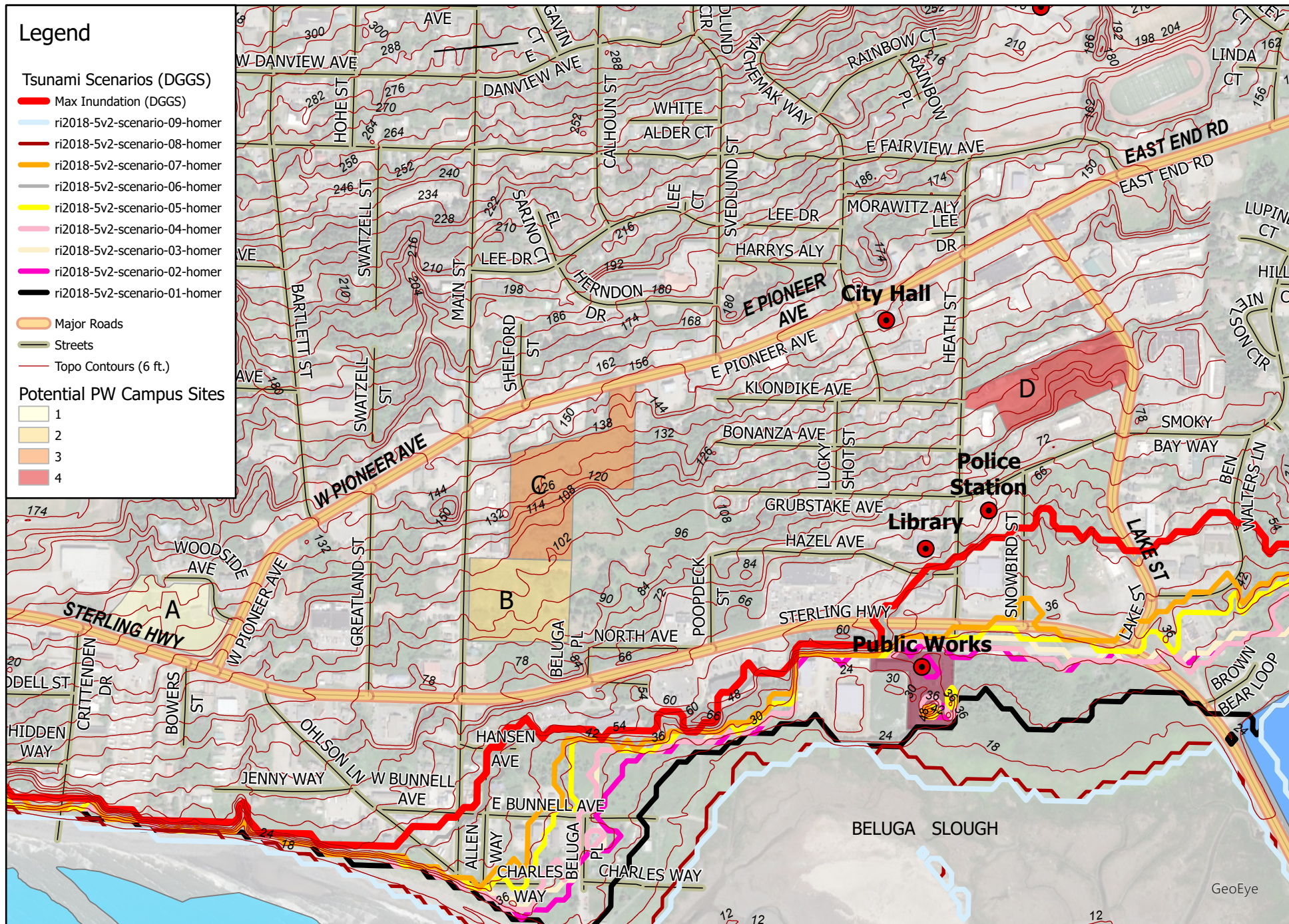
On a side note, this made me think, because I remembered reading that if a tsunami were triggered by a nearby earthquake or an underwater landslide, it could arrive in minutes, not the hours it takes for tsunamis generated from far away. *"Would we get any warning?"* I asked. She said, *"This is a*

function of how your emergency management team operates. You'd get a warning, if the tsunami were triggered by an earthquake."

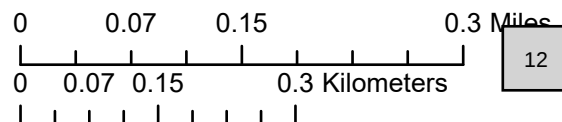
The purpose of their work is to *"...provide guidance to local emergency management agencies for tsunami inundation assessment, evacuation planning and public education to mitigate future tsunami hazards...The intended audience...is scientists, engineers, and planners interested in an applied approach to developing tsunami inundation maps and evacuation maps."*

She also told me they are putting the development of an educational brochure for Homer in their upcoming budget so they can work with the community to address this issue. They are also planning a state-wide emergency management meeting in Valdez in early June.

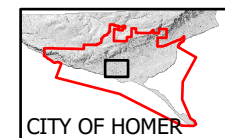
Conclusion: My conclusion is that the DGGS report is based on the best available science and its purpose was to warn people about the risks of earthquake-generated tsunamis, in the interests of saving lives and property damage. The scientist-authors studied the worst-case scenario for Homer, which shows an inundation zone extending to an elevation of more than 32.8 feet. The Public Works Campus sits on a bench that is at an elevation at, or a few feet below, 30 feet. If the worst-case scenario happened, the campus would get wet. There is no current methodology for computing the probability of that happening.



Map Date: 03/18/21
 Data Sources: KPB, COH,
 DGGS (GIS data, elevation),
 DGGS Report: RI 2018-5 v. 2
 Esri satellite imagery 2020.
 Map by: C.E.Barnwell



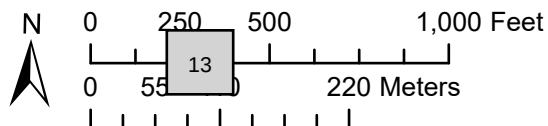
City of Homer
 PUBLIC WORKS SITE TASK FORCE
 MAP 1 - TSUNAMI RISK ZONES





Map Date: 03/18/21
 Data Sources: KPB, COH,
 DGGS (GIS data, elevation),
 Esri satellite imagery 2020.
 Map by: C.E.Barnwell

Major Roads
 Minor Streets



City of Homer
 PUBLIC WORKS SITE TASK FORCE
 MAP 2-- DETAIL



City of Homer

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To: Public Works Task Force
From: Julie Engebretsen, TF member
RE: Risk Catalogue and Evaluation
Date: March 22, 2021

Resolution Task Goal #1: (re-ordered)

- Catalog and Evaluate Risks
- Develop System for Evaluating Risks
- Deliverable: Report of Findings of probable risks

Please see the Attached Risk Table

Some Task Force members were going to do some research! Please email Renee with your info, or report back at the meeting!

1. Quantity of Calcium Chloride storage at PW?
2. What is the impact of Calcium Chloride if it washes into the environment/Beluga Slough?
3. What chemicals, and quantity, are stored at PW that might harm people and the environment is spilled/flooded?
4. RV holding tank/dump station: how many gallons? How big a deal is it if it floods? Solutions?
5. During an evacuation at PW, is someone directing traffic at the Heath/Sterling intersection? (Julie has asked HPD)
6. Bulk water supply: are there other bulk water stations currently active? Yes; there are two other bulk water haulers who get water at locations other than PW.

Next steps: Evaluating the risks

We have four pages of potential risks! I think it might be helpful, in addition to the table, to have an 'executive summary' of the highest risks that we found, and to put those in two categories: items that can be mitigated without moving all of PW, like moving the fuel island, and items that can only be mitigated by moving the whole complex, like the mechanics shop. As Jan said early in this process, moving the whole operation is a big undertaking. I'd like to make it clear what can be mitigated without full relocation, and what will be lost (i.e. the risk) if the whole complex stays where it is. Suggestions welcome!

Attachment

1. **3 25 21 Risks Spreadsheet**

3/25/21 PWTF
Risks, Evaluation and Mitigation

	A	B	C	D
1	Impacted Group	Potential Risk/Outcome	Evaluation	Mitigation Options
2	Environment	Calcium Chloride storage	(Quantity? Value? Impact of washing into Beluga Slough?	Store at a higher elevation (easy to replenish in a new location over time)
3		Fueling depot for all city vehicles	Could cause a fuel spill	Move fuel depot? (berm depot? Berm PW?) move to old police station?
4		Toxicity to people and the environment from chemicals stored at PW, and potential impact on salmon, shorebirds and nearby area	? Can PWTF quantify this?	?
5		RV holding tank storage (potential for flooding)	?How many gallons? Is this a big deal?	
6		Sewer treatment plant flooding and raw sewage escapement	Sewage spills, but cleanup of facility is possible	Facility can not be reasonably moved.
7				
8				
9	Workers	All PW admin and mechanics are located on site	All administrative support and operations for PW would immediately need a new location, along with work stations, phones and IT capabilities	Remote work, re-home administrative functions in other city facilities (like city hall)
10		Workers are on site 12 hours a day, 7 days a week		
11		Potential loss of life,		Early Warning System provides warning, would take time for water to reach PW, and reach a flood elevation. ~Tracking who is on site or do a final sweep at evac. (PW emergency operations protocol?) Threat is from the evacuation process, injury or accident during evacuation

3/25/21 PWTF
Risks, Evaluation and Mitigation

	A	B	C	D
1	Impacted Group	Potential Risk/Outcome	Evaluation	Mitigation Options
12		All employees and rolling stock is evacuated during every Tsunami event warning. Takes about 45 minutes.		
13		Traffic risk for workers and the public as all the rolling stock is evacuated	? Does someone direct traffic at the Heath/Sterling intersection? Could they?	~Evac goes pretty well because we do it fairly often. HS is a problem because equipment and public are meeting. Evac to Hazel is closer, quicker, and have fewer traffic conflicts. Can use a flagger if needed. Equipment evac is smooth; it's the pipes valves tools that cant be evacuated
14				have started some stashes of water valves etc but don't have pipe storage, etc.
15				
16	Notes:			need to always move?
17		how could PW staff be helping if they were not moving equipment? How could they be helping with response?	~traffic control! Monitor water/sewer infrastructure, could be helping dispatch and other emergency responders. Could help evacuate low lying areas, or spit equipment. Could revise emergency management plan so PW is a resource, and better plan for utilities	
18				
19				

3/25/21 PWTF
Risks, Evaluation and Mitigation

	A	B	C	D
1	Impacted Group	Potential Risk/Outcome	Evaluation	Mitigation Options
	City operations			
20		Loss of fueling depot	Immediate need to switch to local service stations. Likely to have fuel shortages for our rolling stock, including ambulances and fire trucks.	Backup fuel storage in another location, move fuel island. Needed for all disasters... supply chain...
21		Loss of PW mechanic services due to loss of personal and city tools, parts, materials and shop space	There is substantial investment in the mechanic shop that would be difficult to replace on short notice	Hire out repair services (light vehicles only)? May not be available or have the expertise needed for emergency vehicles. Short term solution only?
22				PW building is insured for \$2,500,000, with a \$250,000 deductible
23		Disruption to sewer treatment operations	Cleanup would be required, but the facility could be repaired	Not looking to relocate because the alternatives are not feasible. Any other mitigation? Berm? Or causes more problems? Slow water velocity into facility, reduce outflow of sewage into the slough. Raw sewage is in the building. Do berms work in tsunamis? ~are there examples? What would happen to the building? swept off of foundation? The deep shafts would remain... may need repair/electric etc but the concrete shafts are stable.
24		Loss of all PW administrative offices	Loss of historical files, including all city projects, paper plans are not replaceable... decades of projects.....	Scan plan sheets - intern or contract to scan all that.

3/25/21 PWTF
Risks, Evaluation and Mitigation

	A	B	C	D
1	Impacted Group	Potential Risk/Outcome	Evaluation	Mitigation Options
25		Radio and communication systems would be impacted	PRV stations/water system impacted Reduction in city phone service redundancy which could affect non-emergency phone calls to dispatch	~losing electronics for PRV and lift stations means losing the ability to identify leaks, water breaks, and pump water and pump sewers. Would require people on the ground to do it manually.
26		Ability to supply bulk water would be reduced	? Need to see how many and where other bulk water supply points are	
27				
28		Loss of rolling stock	PWTF: How do we quantify - value? Ease of replacement?~ Higher value stuff roll first, lower value stock does not moved - stuff on a trailer, or harder to move like the asphalt machine. Easy to move stuff gods, equipment that does not move does not get evacuated.	Quantify what is not rolling: 20-25% of equipment might not be moveable (repairs, etc) A few supplies would be frozen in although most are under sheds
29		~parks equipment doesn't move - lawnmowers, brush cutters, snow blowers, bobcat...signs etc		
30	Equipment	Loss of sand pile	Would not be able to sand roads. Use stockpile for road and water and were repairs, especially in winter. Would hinder repair capability. Calcium chloride make sit a usable pile year round	Store sand pile in a different location
31		Loss of other equipment and materials	Loss of culverts and other materials used for repairs	Consider storing some items (say in a connex) on higher ground.

3/25/21 PWTF
Risks, Evaluation and Mitigation

	A	B	C	D
1	Impacted Group	Potential Risk/Outcome	Evaluation	Mitigation Options
32		Loss of motor pool equipment shop	elimination of capacity to fix police and fire vehicles, could lose whatever apparatus is currently under repair such as an ambulance, port	
33		Leaving equipment in an unsecured area after evacuation leaves it vulnerable to vandalism	~right now, there are people on site most of the time, site is unsecured. Pipes etc. are more secured (connexes)	~game cameras? ~Equipment is out of sight, out of mind, so people don't see the equipment. If its moved to Hazel, its much more visible to people. Emergencies bring out the best and worst in people.
34		After initial phase, could equipment go someplace else (mitigation) can we re-house it around the city? Effect on operations?		
35				
36		PW operations: would library become PW operations location? Does city emergency response plan need to be reviewed?	(Coop plans, internal IMC,)	
37			~impacts to systems, operating plans, what happens after the disaster? PW need for incident management plan, working on one. But its focused on where the buildings are located. Need to address location as a longer term issue.	