**Table 7-8 Unalaska's Mitigation Action Plan (MAP)**

*(Italicized Projects were brought forward from cross referenced – Identified Plans)*

(See acronym and abbreviations list for complete titles)

| Goal/ Action ID | Description | Priority (High, Medium, Low) | Responsible Department | Potential Funding Source(s) | Timeframe (1-3 Years 2-4 Years 3-5 Years) | Benefit-Costs (BC) / Technical Feasibility (T/F) | Update in 2018 |
|---|---|---|---|---|---|---|---|
| | and safety risks for this hazard. | | Tribe Executive Director | | | support community capacity enabling the public to appropriately prepare for, respond to, and recover from disasters.<br>TF: This project is technically feasible using existing City and Tribal staff. | distributing Tsunami information. The High school also hosts the annual Tsunami Bowl, which encourages high schoolers to learn about ocean science and Tsunami hazards. |
| **TS 8.3** | Provide customers in the hazard area with information about what to do if there is a tsunami including the best evacuation route to avoid a tsunami. | High | City Department of Public Safety, City LEPC, Tribe Executive Director | City, Tribe, DHS&EM, NOAA, NWS, Denali Commission | Complete | B/C: This project will ensure the community looks closely at their hazard areas to ensure they can safely evacuate their residents and visitors to safety during a natural hazard event.<br>TF: This is technically feasible using existing City and Tribal resources. | This action has been completed through the LEPC distributing Tsunami inundation and evacuation maps, and the City ensuring evacuation routes are marked clearly. |
| **TS 8.4** | Install tsunami warning and evacuation route signs in hazard areas. | High | City, Tribe | City, Tribe, DHS&EM, DOC/NOAA, RCASP, NWS, Denali Commission | Complete | B/C: Sustained emergency warning, response planning, and mitigation outreach programs enable communities to plan for, warn, and protect their hazard threatened populations. Each project type is cost dependent, but for the most part is cost effective and will help build and support community capacity enabling the public to prepare | This action has been completed. The City is recertified as a Tsunami Ready community, which includes signage that identifies Tsunami danger areas, evacuation routes, and assemblage areas. |

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(See acronym and abbreviations list for complete titles)

| Goal/ Action ID | Description | Priority (High, Medium, Low) | Responsible Department | Potential Funding Source(s) | Timeframe (1-3 Years 2-4 Years 3-5 Years) | Benefit-Costs (BC) / Technical Feasibility (T/F) | Update in 2018 |
|---|---|---|---|---|---|---|---|
| | | | | | | for, respond to, and recover from disasters.<br>TF: This project is technically feasible using existing City staff. | |
| **VOL 9.1** | Update public emergency notification procedures and develop an outreach program for ash fall events. | High | City LEPC, City Department of Public Safety, Tribe Executive Director | City, Tribe, DHS&EM, USGS, AVO, DOC/NOAA, RCASP, NWS, Denali Commission | (1-3 Years) | B/C: Sustained emergency warning, response planning, and mitigation outreach programs enable communities to plan for, warn, and protect their hazard threatened populations. Each project type is cost dependent, but for the most part is cost effective and will help build and support community capacity enabling the public to prepare for, respond to, and recover from disasters.<br>TF: This project is technically feasible using existing City staff. | The LEPC has completed this action and has a set of established procedures for ashfall events. The LEPC would like to purchase 5,000 emergency kits for distribution in the community to help residents prepare for disasters and is looking for funding to complete this. |
| **VOL 9.2** | Evaluate capability of water treatment plants to deal with high turbidity from ash fall events | High | City Public Utilities Department, Tribe Executive Director | City, Tribe, ANA, EPA, DEC/CWSRF | (1-3 Years) | B/C: Water Plant Protection plans are an essential disaster management tool. Focused and coordinated planning enables effective damage abatement and ensures proper attention is assigned to reduce losses, damage, and materials management. | The City has determined that ash fall events will shut down the open reservoirs at the Pyramid Water plant and the City will have to rely on enclosed reservoirs and wells |

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|---|---|---|---|---|---|---|---|
| | | | | | | TF: This action is feasible with limited fund expenditures. | until the ash issue is resolved. The City believes a sand filter may mitigate the risk of ash clogging the system. |
| **VOL 9.3** | Develop water plant protection or sustainability plan. | Medium | City Public Utilities Department, City Planning Department | City, Tribe, ANA, EPA, DEC/CWSRF | Completed | B/C: Water Plant Protection plans are an essential disaster management tool. Focused and coordinated planning enables effective damage abatement and ensures proper attention is assigned to reduce losses, damage, and materials management.<br>TF: This action is feasible with limited fund expenditures. | Completed. |
| **VOL 9.4** | Evaluate ash impact on storm water drainage systems and develop mitigation actions. | Low | City Public Utilities Department, Tribe | City, Tribe, ANA, EPA, DEC/CWSRF | (1-3 Years) | B/C: Storm water management plans are an essential disaster management tool. Focused and coordinated planning enables effective damage abatement and ensures proper attention is assigned to reduce losses, damage, and materials management.<br>TF: This action is feasible with limited fund expenditures. | A sand filter is needed. |

**Table 7-8 Unalaska's Mitigation Action Plan (MAP)**

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(See acronym and abbreviations list for complete titles)

| Goal/ Action ID | Description | Priority (High, Medium, Low) | Responsible Department | Potential Funding Source(s) | Timeframe (1-3 Years 2-4 Years 3-5 Years) | Benefit-Costs (BC) / Technical Feasibility (T/F) | Update in 2018 |
|---|---|---|---|---|---|---|---|
| | | | | | | *This project is associated with an identified City's 20/20 Plan project. | |
| **VOL 9.5** | Evaluate electric utility air intake filter quality and inspection processes within the facilities maintenance plan | Low | City Public Utilities Department | City, Tribe, HMA, ANA, EPA, DEC/CWSRF | (1-3 Years) | B/C: Critical Facility Maintenance plans are an essential disaster management tool. Focused and coordinated planning enables effective damage abatement and ensures proper attention is assigned to reduce losses, damage, and materials management.<br>TF: This action is feasible with limited fund expenditures.<br>**This project is associated with identified projects in the City's 20/20 Plan.* | The City is working to improve the filter system and maintenance schedule as it is already affected by particulate suspended from the road. |
| **VOL 9.6** | Purchase 5,000 emergency kits, which include respirators or mask to protect people from ash. Added in 2018. | High | City Department of Public Safety, City LEPC, Tribe Executive Director | City, Tribe | (1-3 Years) | B/C: Having emergency supplies on hand in a remote community like Unalaska will significantly improve the ability of the community to cope with emergencies and reduce the likelihood of injuries.<br>TF: This action is feasible but may require outside funding resources. | Selected in 2018. |

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| Goal/ Action ID | Description | Priority (High, Medium, Low) | Responsible Department | Potential Funding Source(s) | Timeframe (1-3 Years 2-4 Years 3-5 Years) | Benefit-Costs (BC) / Technical Feasibility (T/F) | Update in 2018 |
|---|---|---|---|---|---|---|---|
| **VOL 9.7** | Install sand filter at Pyramid Valley water treatment plant to filter ash from water reservoir in the event of ashfall event. Added in 2018. | Medium | City Public Utilities Department, City Public Works Department | City, Tribe, USDA | (3-5 Years) | B/C: Adding additional filtration for water coming from the reservoir will reduce the likelihood of shutdown in the event of an ashfall event and help the City maintain a clean water supply.<br>TF: This project is technically feasible, but may require outside funding. | Selected in 2018. |
| **WX 10.1** | Develop critical facility list needing emergency back-up power systems, prioritize, seek funding, and implement mitigation actions. | High | City Public Works Department, City Public Utilities Department, Tribe Executive Director | City, Tribe, Lindbergh Grants Program, FP&S, SAFER, ANA, HMGP, EMPG, EOC | (1-3 Years) | B/C: Emergency power generation is a relatively minor cost to ensure facilities' availability for use after a hazard strikes.<br>TF: Installing emergency generators is technically feasible for this community as they already have staff to maintain existing community power generation facilities. This project typically needs to be associated with essential facility upgrades for FEMA funding. | The community has back-up power systems in place at the Pyramid Water treatment plant. |
| **WX 10.2** | Develop, implement, and maintain partnership program with electrical utilities to use | Medium | City Mayor, City Council | City, Tribe, NNRCS, ANA, USACE, USDA, | Complete | B/C: This project would ensure threatened infrastructures are available for use – their loss would exacerbate potential | This project is complete. The City runs utilities underneath roadways, |

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|---|---|---|---|---|---|---|---|
| | underground utility placement methods where possible to reduce or eliminate power outages from severe winter storms. | | | LFGP, RFG | | damages and further threaten survivability.<br>F: This project is feasible using existing staff skills, equipment, and materials. | which protects them from wind damages. This is written as a City ordinance. |
| **WX 10.3** | Develop early warning test program partnering with NOAA, City Police, Fire Department, and local industries to coordinate tests. | Medium | City Department of Public Safety, NOAA | City, Tribe, Lindbergh Grants Program, FP&S, SAFER, ANA, EMPG, EOC | Complete | B/C: Sustained emergency warning and response planning programs enable communities to plan for, warn, and protect their hazard threatened populations. Each project type is cost dependent, but for the most part is cost effective and will help build and support community capacity enabling the public to prepare for, respond to, and recover from disasters.<br>TF: This project is technically feasible using existing City staff. | This project is complete. NOAA, the Department of Public Safety and local industries regularly partner to conduct test of the warning system. |
| **WX 10.4** | Review critical facilities and public facility energy efficiency, winter readiness, and electrical protection capability. Identify, prioritize and implement infrastructure upgrade or rehabilitation | Low | City Public Works Department, Tribe Executive Director | City, Tribe, NRCS, USACE, USDA/EWP, USDA/ECP, DCRA/ ACCIMP, AHFC | (1-3 Years) | B/C: Identifying threatened infrastructure proximity to natural hazards is vital to their sustainability. There are currently few mapped hazard areas. This is a vital first step. This knowledge will help the community focus on activities to protect their vital | AHFC conducted a study about the energy efficiency of public buildings across the state of Alaska, which included buildings from the Aleut Region. The City |

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|---|---|---|---|---|---|---|---|
| | project prioritization and development. | | | | | infrastructure.<br>Emergency power sustainability is essential to ensure facilities' availability for use after a hazard strikes.<br>TF: This project is technically feasible for this community as they already have staff to inspect and maintain existing community infrastructure. | is working toward studying energy efficiency in more detail and implementing infrastructure improvement projects that will improve buildings efficiency. |
| **WX 10.5** | Revise requirements to place utilities underground to reduce power disruption from wind storm/tree blow down damage | Low | City Public Utilities Department | City, NRCS, USACE, USDA/EWP, USDA/ECP, DCRA/ ACCIMP | Complete | B/C: This project would ensure threatened infrastructures are available for use – there loss would exacerbate potential damages and further threaten survivability.<br>F: This project is feasible using existing staff skills, equipment, and materials. | This project is complete. The City runs most utilities underneath roadways to prevent wind damage. |
| **Manmade / Technological Hazards** | | | | | | | |
| **UTD 11.1** | Develop redundant communications capability for the City and the Tribe to the outside world as well as all critical facilities | Medium | City Department of Public Safety | City, Tribe, Lindbergh Grants Program, FP&S, SAFER, ANA, EMPG, EOC | (1-3 Years) | B/C: Sustained emergency warning, communication, and response activity capabilities enable communities to warn and protect their hazard threatened populations.<br>This project is dependent on | In addition to regular phone and internet access, the City has access to Satellite phones, HAM radios, and single band radios on marine vessels. |

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| Goal/ Action ID | Description | Priority (High, Medium, Low) | Responsible Department | Potential Funding Source(s) | Timeframe (1-3 Years 2-4 Years 3-5 Years) | Benefit-Costs (BC) / Technical Feasibility (T/F) | Update in 2018 |
|---|---|---|---|---|---|---|---|
| | | | | | | emerging technology. The City is researching options to replace satellite communications (such as fiber optic undersea cabling) and their viability for development and implementation.<br><br>This project will help build and support community capacity enabling the public to prepare for, respond to, and recover from disasters.<br><br>TF: This project is technically feasible using existing City staff. | |

## 7.6 IMPLEMENTING MITIGATION STRATEGY INTO EXISTING PLANNING MECHANISMS

The requirements for implementation through existing planning mechanisms, as stipulated in the DMA 2000 and its implementing regulations, are described here.

| DMA 2000 Requirements |
|---|
| **Incorporation into Existing Planning Mechanisms**<br>**§201.6(c)(4)(ii):** [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate. |
| **ELEMENT C.** Incorporate into Other Planning Mechanisms |
| C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? |
| *Source: FEMA, October 2011.* |

After the adoption of the MJHMP, each Planning Team Member will ensure that the MJHMP, in particular each Mitigation Action Project, is incorporated into existing planning mechanisms. Each member of the Planning Team will achieve this incorporation by undertaking the following activities.

- Review the community-specific regulatory tools to determine where to integrate the mitigation philosophy and implementable initiatives. These regulatory tools are identified in the Section 7.1 Capability Assessment.
- Work with pertinent community departments to increase awareness for implementing MJHMP philosophies and identified initiatives. Provide assistance with integrating the mitigation strategy (including the Mitigation Action Plan) into relevant planning mechanisms (i.e. Comprehensive Plan, Capital Improvement Project List, Transportation Improvement Plan, etc.).
- Implementing this philosophy and activities may require updating or amending specific planning mechanisms.

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# Appendix A
# Funding Resources

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# Funding Resources

## Federal Funding Resources

The Federal government requires local governments to have a HMP in place to be eligible for mitigation funding opportunities through FEMA such as the UHMA Programs and the HMGP. The Mitigation Technical Assistance Programs available to local governments are also a valuable resource. FEMA may also provide temporary housing assistance through rental assistance, mobile homes, furniture rental, mortgage assistance, and emergency home repairs. The Disaster Preparedness Improvement Grant also promotes educational opportunities with respect to hazard awareness and mitigation.

- FEMA, through its Emergency Management Institute, offers training in many aspects of emergency management, including hazard mitigation. FEMA has also developed a large number of documents that address implementing hazard mitigation at the local level. Five key resource documents are available from FEMA Publication Warehouse (1-800-480-2520) and are briefly described here:
    - How-to Guides. FEMA has developed a series of how-to guides to assist states, communities, and tribes in enhancing their hazard mitigation planning capabilities. The first four guides describe the four major phases of hazard mitigation planning. The last five how-to guides address special topics that arise in hazard mitigation planning such as conducting cost-benefit analysis and preparing multi-jurisdictional plans. The use of worksheets, checklists, and tables make these guides a practical source of guidance to address all stages of the hazard mitigation planning process. They also include special tips on meeting DMA 2000 requirements.
    - Post-Disaster Hazard Mitigation Planning Guidance for State and Local Governments. FEMA DAP-12, September 1990. This handbook explains the basic concepts of hazard mitigation and shows state and local governments how they can develop and achieve mitigation goals within the context of FEMA's post-disaster hazard mitigation planning requirements. The handbook focuses on approaches to mitigation, with an emphasis on multi-objective planning.
    - A Guide to Recovery Programs FEMA 229(4), September 2005. The programs described in this guide may all be of assistance during disaster incident recovery. Some are available only after a Presidential declaration of disaster, but others are available without a declaration. Please see the individual program descriptions for details.
    - The Emergency Management Guide for Business and Industry. FEMA 141, October 1993. This guide provides a step-by-step approach to emergency management planning, response, and recovery. It also details a planning process that businesses can follow to better prepare for a wide range of hazards and emergency events. This effort can enhance a business's ability to recover from financial losses, loss of market share, damages to equipment, and product or business interruptions. This guide could be of great assistance to a community's industries and businesses located in hazard prone areas.
    - The FEMA Hazard Mitigation Assistance (HMA Unified Guidance, June 1, 2010. The guidance introduces the five HMA grant programs, funding opportunities, award

information, eligibility, application and submission information, application review process, administering the grant, contracts, additional program guidance, additional project guidance, and contains information and resource appendices (FEMA 2009).

- FEMA also administers emergency management grants (http://www.fema.gov/help/site.shtm) and various firefighter grant programs (http://www.firegrantsupport.com/) such as
    - Emergency Management Performance Grant (EMPG). This is a pass-through grant. The amount is determined by the State. The grant is intended to support critical assistance to sustain and enhance State and local emergency management capabilities at the State and local levels for all-hazard mitigation, preparedness, response, and recovery including coordination of inter-governmental (Federal, State, regional, local, and tribal) resources, joint operations, and mutual aid compacts state-to-state and nationwide. Sub-recipients must be compliant with National Incident Management System (NIMS) implementation as a condition for receiving funds. Requires 50% match.
    - Assistance to Fire Fighters Grant (AFG), Fire Prevention and Safety (FP&S), Staffing for Adequate Fire and Emergency Response Grants (SAFER), and Assistance to Firefighters Station Construction Grant programs.
- Department of Homeland Security (DHS) provides the following grants:
    - Homeland Security Grant Program (HSGP), State Homeland Security Program (SHSP) are 80% pass through grants. SHSP supports implementing the State Homeland Security Strategies to address identified planning, organization, equipment, training, and exercise needs for acts of terrorism and other catastrophic events. In addition, SHSP supports implementing the National Preparedness Guidelines, the NIMS, and the National Response Framework (NRF). Must ensure at least 25% of funds are dedicated towards law enforcement terrorism prevention-oriented activities.
    - Citizen Corps Program (CCP). The Citizen Corps mission is to bring community and government leaders together to coordinate involving community members in emergency preparedness, planning, mitigation, response, and recovery activities.
    - Emergency Operations Center (EOC) This program is intended to improve emergency management and preparedness capabilities by supporting flexible, sustainable, secure, strategically located, and fully interoperable Emergency Operations Centers (EOCs) with a focus on addressing identified deficiencies and needs. Fully capable emergency operations facilities at the State and local levels are an essential element of a comprehensive national emergency management system and are necessary to ensure continuity of operations and continuity of government in major disasters or emergencies caused by any hazard. Requires 25% match.
- U.S. Department of Commerce's grant programs include:
    - Remote Community Alert Systems (RCASP) grant for outdoor alerting technologies in remote communities effectively underserved by commercial mobile service for the purpose of enabling residents of those communities to receive emergency messages.

This program is a contributing element of the Warning, Alert, and Response Network (WARN) Act.

  - National Oceanic and Atmospheric Administration (NOAA), provides funds to the State of Alaska due to Alaska's high threat for tsunami. The allocation supports the promotion of local, regional, and state level tsunami mitigation and preparedness; installation of warning communications systems; installation of warning communications systems; installation of tsunami signage; promotion of the Tsunami Ready Program in Alaska; development of inundation models; and delivery of inundation maps and decision-support tools to communities in Alaska.

- Department of Agriculture (USDA). Disaster assistance provided includes: Emergency Conservation Program, Non-Insured Assistance, Emergency Forest Restoration Program, Emergency Watershed Protection, Rural Housing Service, Rural Utilities Service, and Rural Business and Cooperative Service.
- Department of Energy (DOE), Office of Energy Efficiency and Renewable Energy, Weatherization Assistance Program. This program minimizes the adverse effects of high energy costs on low-income, elderly, and handicapped citizens through client education activities and weatherization services such as an all-around safety check of major energy systems, including heating system modifications and insulation checks.
  - The Tribal Energy Program offers financial and technical assistance to Indian tribes to help them create sustainable renewable energy installations on their lands. This program promotes tribal energy self-sufficiency and fosters employment and economic development on America's tribal lands.
- US Environmental Protection Agency (EPA). Under EPA's CWSRF program, each state maintains a revolving loan fund to provide independent and permanent sources of low-cost financing for a wide range of water quality infrastructure projects, including: municipal wastewater treatment projects; non-point source projects; watershed protection or restoration projects; and estuary management projects.
  - Public Works and Development Facilities Program. This program provides assistance to help distressed communities attract new industry, encourage business expansion, diversify local economies, and generate long-term, private sector jobs. Among the types of projects funded are water and sewer facilities, primarily serving industry and commerce; access roads to industrial parks or sites; port improvements; business incubator facilities; technology infrastructure; sustainable development activities; export programs; brownfields redevelopment; aquaculture facilities; and other infrastructure projects. Specific activities may include demolition, renovation, and construction of public facilities; provision of water or sewer infrastructure; or the development of stormwater control mechanisms (e.g., a retention pond) as part of an industrial park or other eligible project.
- Department of Health and Human Services, Administration of Children & Families, Administration for Native Americans (ANA). The ANA awards funds through grants to American Indians, Native Americans, Native Alaskans, Native Hawaiians, and Pacific Islanders. These grants are awarded to individual organizations that successfully apply

for discretionary funds. ANA publishes in the Federal Register an announcement of funds available, the primary areas of focus, review criteria, and the method of application.

- Department of Housing and Urban Development (HUD) provides a variety of disaster resources. They also partner with Federal and state agencies to help implement disaster recovery assistance. Under the *National Response Framework,* the FEMA and the Small Business Administration (SBA) offer initial recovery assistance.
    - HUD, Office of Homes and Communities, Section 108 Loan Guarantee Programs. This program provides loan guarantees as security for Federal loans for acquisition, rehabilitation, relocation, clearance, site preparation, special economic development activities, and construction of certain public facilities and housing.
    - HUD, Office of Homes and Communities, Section 184 Indian Home Loan Guarantee Programs (IHLGP). The Section 184 Indian Home Loan Guarantee Program is a home mortgage specifically designed for American Indian and Alaska Native families, Alaska Villages, Tribes, or Tribally Designated Housing Entities. Section 184 loans can be used, both on and off native lands, for new construction, rehabilitation, purchase of an existing home, or refinance.
    - Because of the unique status of Indian lands being held in Trust, Native American homeownership has historically been an underserved market. Working with an expanding network of private sector and tribal partners, the Section 184 Program endeavors to increase access to capital for Native Americans and provide private funding opportunities for tribal housing agencies with the Section 184 Program.
    - HUD/CDBG provides grant assistance and technical assistance to aid communities in planning activities that address issues detrimental to the health and safety of local residents, such as housing rehabilitation, public services, community facilities, and infrastructure improvements that would primarily benefit low-and moderate-income persons.
- Department of Labor (DOL), Employment and Training Administration, Disaster Unemployment Assistance. Provides weekly unemployment subsistence grants for those who become unemployed because of a major disaster or emergency. Applicants must have exhausted all benefits for which they would normally be eligible.
    - The Workforce Investment Act contains provisions aimed at supporting employment and training activities for Indian, Alaska Native, and Native Hawaiian individuals. The Department of Labor's Indian and Native American Programs (INAP) funds grant programs that provide training opportunities at the local level for this target population.
- U.S. Department of Transportation (DOT), Hazardous Materials Emergency Preparedness Grant. DOT increases State, Territorial, Tribal and local effectiveness in safely and efficiently handling hazardous materials accidents and incidents, enhances implementation of the Emergency Planning and Community Right-to-Know Act of 1986, and encourages a comprehensive approach to emergency training and planning by incorporating the unique challenges of responses to transportation situations, through planning and training. Requires a 20% local match.

- Federal Financial Institutions. Member banks of Federal Deposit Insurance Corporation, Financial Reporting Standards or Federal Home Loan Bank Board may be permitted to waive early withdrawal penalties for Certificates of Deposit and Individual Retirement Accounts.
- Internal Revenue Service (IRS), Disaster Tax Relief. Provides extensions to current year's tax return, allows deductions for disaster losses, and allows amendment of previous year's tax returns.
- Natural Resources Conservation Service (NRCS) has several funding sources to fulfill mitigation needs. The Emergency Watershed Protection Program (EWP). This funding source is designed is to undertake emergency measures, including the purchase of flood plain easements, for runoff retardation and soil erosion prevention to safeguard lives and property from floods, drought, and the products of erosion on any watershed whenever fire, flood or any other natural occurrence is causing or has caused a sudden impairment of the watershed.
    - WHIP. This is a voluntary program for conservation-minded landowners who want to develop and improve wildlife habitat on agricultural land, nonindustrial private forest land, and Indian land.
    - Watershed Planning. NRCS watershed activities in Alaska are voluntary efforts requested through conservation districts and units of government and/or tribes. The watershed activities are lead locally by a "watershed management committee" that is comprised of local interest groups, local units of government, local tribal representatives and any organization that has a vested interest in the watershed planning activity. This committee provides direction to the process as well as provides the decision-making necessary to implement the process. Technical assistance is provided to the watershed management committee through a "technical advisory committee" comprised of local, state and federal technical specialist. These specialists provide information to the watershed management committee as needed to make sound decisions. NRCS also provides training on watershed planning organization and process.
- U.S. Small Business Administration (SBA) Disaster Assistance provides information concerning disaster assistance, preparedness, planning, cleanup, and recovery planning.
    - May provide low-interest disaster loans to individuals and businesses that have suffered a loss due to a disaster. Requests for SBA loan assistance should be submitted to DHS&EM.
- United States Army Corps of Engineers (USACE) Alaska District's Civil Works Branch studies potential water resource projects in Alaska. These studies analyze and solve water resource issues of concern to the local communities. These issues may involve navigational improvements, flood control or ecosystem restoration. The agency also tracks flood hazard data for over 300 Alaskan communities on floodplains or the sea coast. These data help local communities assess the risk of floods to their communities and prepare for potential future floods. The USACE is a member and co-chair of the Alaska Climate Change Sub-Cabinet.

**State Funding Resources**

- Department of Military and Veterans Affairs (DMVA): Provides damage appraisals and settlements for VA-insured homes, and assists with filing of survivor benefits.
    - DHS&EM within DMVA is responsible for improving hazard mitigation technical assistance for local governments for the State of Alaska. Providing hazard mitigation training, current hazard information and communication facilitation with other agencies will enhance local hazard mitigation efforts. DHS&EM administers FEMA mitigation grants to mitigate future disaster damages such as those that may affect infrastructure including elevating, relocating, or acquiring hazard-prone properties.

      DHS&EM also provides mitigation funding resources for mitigation planning on their Web site at http://www.ready.alaska.gov.
- Division of Senior Services (DSS): Provides special outreach services for seniors, including food, shelter and clothing.
- Division of Insurance (DOI): Provides assistance in obtaining copies of policies and provides information regarding filing claims.
- DCRA within the DCCED administers the HUD/CDBG, FMA Program, and the Climate Change Sub-Cabinet's Interagency Working Group's program funds and administers various flood and erosion mitigation projects, including the elevation, relocation, or acquisition of flood-prone homes and businesses throughout the State. This division also administers programs for State's" distressed" and "targeted" communities.
    - DCRA Planning and Land Management staff provide Alaska Climate Change Impact Mitigation Program (ACCIMP) funding to Alaskan communities that meet one or more of the following criteria related to flooding, erosion, melting permafrost, or other climate change-related phenomena: Life/safety risk during storm/flood events; loss of critical infrastructure; public health threats; and loss of 10% of residential dwellings.

      The Hazard Impact Assessment is the first step in the ACCIMP process. The HIA identifies and defines the climate change-related hazards in the community, establishes current and predicted impacts, and provides recommendations to the community on alternatives to mitigate the impact. The community may then pursue these recommendations through an ACCIMP Community Planning Grant.
- Department of Environmental Conservation (DEC). DEC's primary roles and responsibilities concerning hazards mitigation are ensuring safe food and safe water, and pollution prevention and pollution response. DEC ensures water treatment plants, landfills, and bulk fuel storage tank farms are safely constructed and operated in communities. Agency and facility response plans include hazards identification and pollution prevention and response strategies.
    - The Division of Water's Village Safe Water Program works with rural communities to develop sustainable sanitation facilities. Communities apply each year to VSW for grants for sanitation projects. Federal and state funding for this program is administered and managed by the State of Alaska's Village Safe Water (VSW) program. VSW provides technical and financial support to Alaska's smallest

communities to design and construct water and wastewater systems. In some cases, funding is awarded by VSW through the Alaska Native Tribal Health Consortium, who in turn assist communities in design and construct of sanitation projects.

- Municipal Grants and Loans Program. The Department of Environmental Conservation / Division of Water administer the Alaska Clean Water Fund (ACWF) and the Alaska Drinking Water Fund (ADWF). The division is fiscally responsible to the Environmental Protection Agency (EPA) to administer the loan funds as the EPA provides capitalization grants to the division for each of the loan funds. In addition, it is prudent upon the division to administer the funds in a manner that ensures their continued viability.
- Under EPA's CWSRF program, each state maintains a revolving loan fund to provide independent and permanent sources of low-cost financing for a wide range of water quality infrastructure projects, including: municipal wastewater treatment projects; non-point source projects; watershed protection or restoration projects; and estuary management, [and stormwater management] projects.

  Alaska's Revolving Loan Fund Program, prescribed by Title VI of the Clean Water Act as amended by the Water Quality Act of 1987, Public Law 100-4. DEC will use the ACWF account to administer the loan fund. This Agreement will continue from year-to-year and will be incorporated by reference into the annual capitalization grant agreement between EPA and the DEC. DEC will use a fiscal year of July 1 to June 30 for reporting purposes.

- Department of Transportation and Public Facilities (DOT/PF) personnel provide technical assistance to the various emergency management programs, to include mitigation. This assistance is addressed in the DHS&EM-DOT/PF Memorandum of Agreement and includes but is not limited to: environmental reviews, archaeological surveys, and historic preservation reviews.
  - DOT/PF and DHS&EM coordinate buy-out projects to ensure that there are no potential right-of-way conflicts with future use of land for bridge and highway projects, and collaborate on earthquake mitigation.
  - Additionally, DOT/PF provides the safe, efficient, economical, and effective State highway, harbor, and airport operation. DOT/PF uses it's Planning, Design and Engineering, Maintenance and Operations, and Intelligent Transportation Systems resources to identify hazards, plan and initiate mitigation activities to meet the transportation needs of Alaskans, and make Alaska a better place to live and work. DOT/PF budgets for temporary bridge replacements and materials necessary to make the multi-modal transportation system operational following natural disaster events.
- DNR administers various projects designed to reduce stream bank erosion, reduce localized flooding, improve drainage, and improve discharge water quality through the storm water grant program funds. Within DNR,
  - The Division of Geological and Geophysical Survey (DGGS) is responsible Alaska's mineral, land, and water resources use, development, and earthquake mitigation collaboration.

Their geologists and support staff are leaders in researching Alaska's geology and implementing technological tools to most efficiently collect, interpret, publish, archive, and disseminate information to the public.

- The DNR's Division of Forestry (DOF) participates in a statewide wildfire control program in cooperation with the forest industry, rural fire departments and other agencies. Prescribed burning may increase the risks of fire hazards; however, prescribed burning reduces the availability of fire fuels and therefore the potential for future, more serious fires.
- DOF also manages various wildland fire programs, activities, and grant programs such as the FireWise Program, Community Forestry Program (CFP), Assistance to Fire Fighters Grant (AFG), Fire Prevention and Safety (FP&S), Staffing for Adequate Fire and Emergency Response Grants (SAFER), and Volunteer Fire Assistance and Rural Fire Assistance Grant (VFA-RFA) programs.

**Other Funding Resources**

The following provide focused access to valuable planning resources for communities interested in sustainable development activities.

- FEMA, http://www.fema.gov - includes links to information, resources, and grants that communities can use in planning and implementation of sustainable measures.
- American Planning Association (APA), http://www.planning.org - a non-profit professional association that serves as a resource for planners, elected officials, and citizens concerned with planning and growth initiatives.
- Institute for Business and Home Safety (IBHS), http://ibhs.org - an initiative of the insurance industry to reduce deaths, injuries, property damage, economic losses, and human suffering caused by natural disasters.
- American Red Cross (ARC). Provides for the critical needs of individuals such as food, clothing, shelter, and supplemental medical needs. Provides recovery needs such as furniture, home repair, home purchasing, essential tools, and some bill payment may be provided.
- Crisis Counseling Program. Provides grants to State and Borough Mental Health Departments, which in turn provide training for screening, diagnosing and counseling techniques. Also provides funds for counseling, outreach, and consultation for those affected by disaster.
- Denali Commission. Introduced by Congress in 1998, the Denali Commission is an independent federal agency designed to provide critical utilities, infrastructure, and economic support throughout Alaska. With the creation of the Denali Commission, Congress acknowledged the need for increased inter-agency cooperation and focus on Alaska's remote communities. Since its first meeting in April 1999, the Commission is credited with providing numerous cost-shared infrastructure projects across the State that exemplifies effective and efficient partnership between federal and state agencies, and the private sector.

- The Energy Program primarily funds design and construction of replacement bulk fuel storage facilities, upgrades to community power generation and distribution systems, alternative-renewable energy projects, and some energy cost reduction projects. The Commission works with the Alaska Energy Authority (AEA), Alaska Village Electric Cooperative (AVEC), Alaska Power and Telephone and other partners to meet rural communities' fuel storage and power generation needs.
- The goal of the solid waste program at the Denali Commission is to provide funding to address deficiencies in solid waste disposal sites which threaten to contaminate rural drinking water supplies.

- Lindbergh Foundation Grants. Each year, The Charles A. and Anne Morrow Lindbergh Foundation provides grants of up to $10,580 (a symbolic amount representing the cost of the Spirit of St. Louis) to men and women whose individual initiative and work in a wide spectrum of disciplines furthers the Lindberghs' vision of a balance between the advance of technology and the preservation of the natural/human environment.
- Rasmuson Foundation Grants. The Rasmuson foundation invests both in individuals and well-managed 501(c)(3) organizations dedicated to improving the quality of life for Alaskans.

  Rasmuson Foundation awards grants both to organizations serving Alaskans through a base of operations in Alaska, and to individuals for projects, fellowships and sabbaticals. To be considered for a grant award, grant seekers must meet specific criteria and complete and submit the required application according to the specific guidelines of each program.

  - Tier 1 Awards: Grants of up to $25,000 for capital projects, technology updates, capacity building, program expansion, and creative works.
  - Tier 2 Awards: Grants over $25,000 for projects of demonstrable strategic importance or innovative nature.
  - Pre-Development Program: Guidance and technical resources for planning new, sustainable capital projects.

  The Foundation seeks to support not-for-profit organizations that are focused and effective in the pursuit of their goals, with special consideration for those organizations that demonstrate strong leadership, clarity of purpose and cautious use of resources.

  The Foundation trustees believe successful organizations can sustain their basic operations through other means of support and prefer to assist organizations with specific needs, focusing on requests which allow the organizations to become more efficient and effective. The trustees look favorably on organizations which demonstrate broad community support, superior fiscal management and matching project support.

# Appendix B
# FEMA Hazard Mitigation Plan (MJHMP) Review Tool

To be FEMA provided and inserted after Final Review and Approval.

# Appendix C
# Community MJHMP Adoption Resolution

To be inserted after City and Tribal formal adoption.

# Appendix D
# Critical Facility and Infrastructure List

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## Critical Facilities and Infrastructure

Table D-1 provides an extensive list of the City of Unalaska's critical facilities and infrastructure, their physical address, GPS coordinates, estimated value, Hazus building types, and the natural hazards that may impact each facility. This data provides input to determine listed facilities' vulnerability to each identified hazard type. This enabled the Planning Team to estimate potential property losses defined in Section Six, Vulnerability Assessment.

**Table D-1 Critical Facilities and Infrastructure**

| Facilities | Number of Occupants | Facilities | Address | Latitude | Longitude | Estimated Value | Building Type | Earthquake | Erosion | Flood | Ground Failure | Tsunami | Volcano | Severe Weather |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Government | 50 | Unalaska City Hall | 43 Raven Way | 53.873 | -166.5377 | $5,200,000 | W2 | X | X | | | | X | X |
| | 20 | Court Building | 196 West Broadway Ave | 53.8746 | -166.5356 | $497,800 | W1 | X | X | X | X | X | X | X |
| | 20 | Qawalangin Tribal Office | 51 Driftwood Way | 53.8749 | -166.5353 | $479,300 | W1 | X | | X | | X | X | X |
| | 25 | Ounalashka Corporation Office | 400 Salmon Way | 53.8826 | -166.5506 | $761,980 | W1 | X | X | X | X | X | X | X |
| | 5 | Dutch Harbor Post Office | 1745 Airport Beach Road | 53.8841 | -166.5547 | $2,159,610 | S1L | X | | | | X | X | X |
| | 5 | Unalaska Post Office | 82 Airport Beach Road | 53.8725 | -166.5351 | Unknown | S1L | X | | | | | X | X |
| Transportation | 70 | Unalaska Airport (3,900' long by 100' wide paved runway) | 105 Terminal Drive | 53.8948 | -166.5425 | $9,100,000 | W1 | X | | | | X | X | X |
| | 0 | Seaplane Base | Henry Swanson Drive | 53.8964 | -166.5377 | Unknown | N/A | X | | | | X | X | X |
| | 70 | City of Unalaska Carl E. Moses Small Boat Harbor at Little South America Harbor | 570 Henry Swanson Drive | 53.8704 | -166.5546 | $72,000,000 | W2 | X | | | | X | X | X |
| | 0 | C&M Breakwater | Henry Swanson Drive | 53.8672 | -166.5549 | $18,000,000 | 655 FT | X | | | | X | X | X |
| | 75 | Unalaska Marine Center | 731 Ballyhoo Road (UMC | 53.9019 | -166.53011 | $28,515,631 | Unknown | X | | | | X | X | X |

## Table D-1 Critical Facilities and Infrastructure

| Facilities | Number of Occupants | Facilities | Address | Latitude | Longitude | Estimated Value | Building Type | Earthquake | Erosion | Flood | Ground Failure | Tsunami | Volcano | Severe Weather |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Dock) | | | | | | | | | | | |
| | 150 | US Coast Guard Dock | 939 Ballyhoo Rd | 53.9039 | -166.5261 | $300,000 | Unknown | X | | | | X | X | X |
| | 10 | Unalaska Light Cargo Dock (Pot Dock) at the Spit | 2633 Ballyhoo Rd | 53.9072 | -166.5097 | $12,220,300 | Unknown | X | | | | X | X | X |
| | 40 | Ballyhoo Dock (Tustumena Dock, Positions 3 & 4) | 731 Ballyhoo Road | 53.9021 | -166.5291 | $14,500,000 | Unknown | X | | | | X | X | X |
| | 0 | International Port of Dutch Harbor (5,200' moorage, 1,232' floating dock) | 731 Ballyhoo Road | 53.9057 | -166.5158 | $4,000,000 | Unknown | X | | | | X | X | X |
| | 35 | Robert Storrs Int'l. Small Boat Harbor | 22 Pacesetter Way | 53.8778 | -166.5536 | $2,271,390 | Unknown | X | | | | X | X | X |
| Emergency Response | 15 | Unalaska Police Department (Public Safety Building) | 29 Safety Way | 53.8713 | -166.5419 | $3,100,000 | S1L | X | | | | X | X | X |
| | 5 | State Troopers Post | 2315 Airport Beach Road (located within the "FTS Building" | 53.8894 | -166.5442 | $600,000 | S1L | X | | | | X | X | X |
| | 0 | Emergency Mooring Buoy | Broad Bay | 54.1092 | -166.7742 | $10,200,000 | | X | | | | X | X | X |
| | 5 | Amaknak Fire Station | 2713 Airport Beach Road | 53.89404 | -166.5399 | $776,000 | S1L | X | | | | X | X | X |
| Educational | 15 | Unalaska Pre-School (Head Start) | 77 W. Broadway Ave. | 53.8737 | -166.5329 | Unknown | W1 | X | | | | X | X | X |
| | | APIA Headstart | | | | | | | | | | | | |
| | 20 | Walkabout (Alternative | 55 E Broadway | 53.8728 | -166.5302 | $564,900 | MH | X | | | | X | X | X |

## Table D-1 Critical Facilities and Infrastructure

| Facilities | Number of Occupants | Facilities | Address | Latitude | Longitude | Estimated Value | Building Type | Earthquake | Erosion | Flood | Ground Failure | Tsunami | Volcano | Severe Weather |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | School) | Avenue | | | | | | | | | | | |
| | 229 | Eagles View Elementary Achigaalux | 501 E. Broadway Ave. | 53.869 | -166.5225 | $9,500,000 | W2 | X | | | | X | X | X |
| | 218 | Unalaska City School (High School) | 55 E. Broadway Ave. | 53.8728 | -166.5302 | $18,627,600 | S1L/W2 | X | | | | | X | X |
| | 7 | Unalaska School District Office | 55 E. Broadway Ave. | 53.8728 | -166.5302 | $774,200 | W2 | X | | | | | X | X |
| | 15 | University of Alaska (UAF) | 14 Mission Avenue | 53.87222 | -166.5286 | Unknown | W1 | X | | | | | X | X |
| Medical | 15 | Oonalaska Wellness Center | 34 Lavelle Court | 53.8721 | -166.5393 | Unknown | W1 | X | | | | | X | X |
| | 25 | Iliuliuk Medical Center (Family & Health Services, Inc.) | 34 Lavelle Court | 53.8724 | -166.5393 | $5,306,600 | W2 | X | | | | | X | X |
| | 40 | Father Ishmail Gromoff Senior Center | 79 Eleanor Drive | 53.87106 | -166.53058 | $1,709,400 | W2 | X | | | | | X | X |
| Community | 80 | Church, Russian Orthodox, Church of the Holy Ascension | 265 West Broadway Avenue | 53.8756 | -166.5363 | $433,210 | W1/W2 | X | | | | X | X | X |
| | 10 | PCR Community Center | 37 S. 5th Street | | | $10,400,000 | | X | | | | X | X | X |
| | 5 | Museum of the Aleutians Aleutian World War II National Park | Ulatka Head, Mt. Ballyhoo | 53.9159 | -166.5149 | $3,900,000 | W2/W1 | X | | | | X | X | X |
| | 250 | The Grand Aleutian | 498 Salmon Way | 53.8841 | -166.5511 | $9,141,000 | W2 | X | | | | X | X | X |
| | 50 | Carl's Bayview Inn | 404 W Broadway Avenue | 53.8771 | -166.5388 | Unknown | S1L | X | | | | | X | X |

## Table D-1 Critical Facilities and Infrastructure

| Facilities | Number of Occupants | Facilities | Address | Latitude | Longitude | Estimated Value | Building Type | Earthquake | Erosion | Flood | Ground Failure | Tsunami | Volcano | Severe Weather |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 100 | Unisea Inn | 188 Gilman Rd | 53.8784 | -166.5547 | $3,640,800 | W2 | X | | | | X | X | X |
| | 25 | Unalaska Senior Center | Same as Father Ishmail Gromoff Senior Center | 53.8711 | -166.5307 | Unknown | W2 | X | | | | | X | X |
| | | Aleutian Housing Senior Center | | | | | | X | | | | X | X | X |
| | 50 | Public Library | 64 Eleanor Drive | 53.8711 | -166.5319 | $3,500,000 | W2 | X | | | | | X | X |
| | Unknown | Alyeska Seafoods, LLC | 551 W. Broadway Ave | 53.8791 | -166.5409 | Unknown | S1L | X | | | | | X | X |
| | Unknown | North Pacific Fuel | 1654 Ballyhoo Rd | 53.9121 | -166.5103 | Unknown | S1L | X | | | X | | X | X |
| | Unknown | Off Shore Systems Inc. | Mile 4 Captains Bay Rd | 53.8435 | -166.5788 | Unknown | S1L | X | | | X | | X | X |
| | Unknown | Radiant Heating Fuel Service | 717 E. Broadway Ave. | 53.8666 | -166.5179 | Unknown | W1 | X | | | | | X | X |
| | Unknown | Westward Seafoods | 1200 Captains Bay Rd | 53.8579 | -166.5542 | $24,888,040 | S1L | X | | | | X | X | X |
| | Unknown | Unisea Seafoods | 88 Salmon Way | 53.8788 | -166.5531 | $27,376,760 | S1L | X | | | | X | X | X |
| | Unknown | Alyeska Seafoods, LLC | Listed above on line 41 | Unknown | Unknown | $16,171,050 | S1L | X | | | | X | X | X |
| | Unknown | Icicle Seafoods | 1829 Ballyhoo Rd | 53.9119 | -166.5069 | $1,547,100 | W2 | X | | | X | X | X | X |
| | Unknown | Trident Seafoods | 1787 Ballyhoo Rd | 53.9124 | -166.5085 | Unknown | W2 | X | | | X | X | X | X |
| | Unknown | Trident Bunkhouse | 1836 Ballyhoo Road | 53.9131 | -166.5078 | Unknown | W2 | X | | | X | | X | X |
| | Unknown | Trident Warehouse | 1712 Ballyhoo Road | 53.9124 | -166.5097 | Unknown | S1L | X | | | X | | X | X |
| | Unknown | Royal Aleutian Seafoods | 441 East Point Road | 53.8815 | -166.5422 | Unknown | S1L | X | | | | X | X | X |

## Table D-1 Critical Facilities and Infrastructure

| Facilities | Number of Occupants | Facilities | Address | Latitude | Longitude | Estimated Value | Building Type | Earthquake | Erosion | Flood | Ground Failure | Tsunami | Volcano | Severe Weather |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roads | 0 | 2nd Street | ~41 miles (61 Km) | N/A | N/A | $3,813,330 | HRD1 | X | | | | | X | X |
| | 0 | 3rd Street | | | | | | X | | | | | X | X |
| | 0 | 4th Street | | | | | | X | | | | | X | X |
| | 0 | 5th Street | | | | | | X | | | | | X | X |
| | 0 | Aerie Drive | | | | | | X | | | | | X | X |
| | 0 | Airport Beach Road | | | | | | X | | | | | X | X |
| | 0 | Armstrong Court | | | | | | X | | | | | X | X |
| | 0 | Ballyhoo Road | | | | | | X | | | | | X | X |
| | 0 | Bayview Avenue | | | | | | X | | | | | X | X |
| | 0 | Bendiksen Road | | | | | | X | | | | | X | X |
| | 0 | Biorka Drive | | | | | | X | | | | | X | X |
| | 0 | Captains Bay Road | | | | | | X | | | | X | X | X |
| | 0 | Chernofski Drive | | | | | | X | | | | | X | X |
| | 0 | Choate Lane | | | | | | X | | | | | X | X |
| | 0 | Dutton Road | | | | | | X | | | | | X | X |
| | 0 | Eagle Crest Court | | | | | | X | | | | | X | X |
| | 0 | Eagle Drive | | | | | | X | | | | | X | X |
| | 0 | East Broadway | | | | | | X | | | | | X | X |
| | 0 | East Point Road | | | | | | X | | | | | X | X |
| | 0 | Gilman Road | | | | | | X | | | | | X | X |
| | 0 | Gromoff Lane | | | | | | X | | | | | X | X |
| | 0 | Haystack Drive | | | | | | X | | | | | X | X |
| | 0 | Henry Swanson | | | | | | X | | | | | X | X |

## Table D-1 Critical Facilities and Infrastructure

| Facilities | Number of Occupants | Facilities | Address | Latitude | Longitude | Estimated Value | Building Type | Earthquake | Erosion | Flood | Ground Failure | Tsunami | Volcano | Severe Weather |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Drive | | | | | | | | | | | | |
| | 0 | Jack London Drive | | | | | | X | | | | | X | X |
| | 0 | Kashega Drive | | | | | | X | | | | | X | X |
| | 0 | Lake Drive | | | | | | X | | | | | X | X |
| | 0 | Lavelle Court | | | | | | X | | | | | X | X |
| | 0 | Lear Road | | | | | | X | | | | | X | X |
| | 0 | Loop Road | | | | | | X | | | | | X | X |
| | 0 | Makushin Drive | | | | | | X | | | | | X | X |
| | 0 | Nirvana Drive | | | | | | X | | | | | X | X |
| | 0 | Overland Drive | | | | | | X | | | | | X | X |
| | 0 | Pacesetter Way | | | | | | X | | | | | X | X |
| | 0 | Ptarmigan Road | | | | | | X | | | | | X | X |
| | 0 | Pyramid Creek Road | | | | | | X | | | | | X | X |
| | 0 | Raven way | | | | | | X | | | | | X | X |
| | 0 | Riverside Drive | | | | | | X | | | | | X | X |
| | 0 | Safety Way | | | | | | X | | | | | X | X |
| | 0 | Salmon Way | | | | | | X | | | | | X | X |
| | 0 | Stewart Road | | | | | | X | | | | | X | X |
| | 0 | Summer Bay Road | | | | | | X | | | | | X | X |
| | 0 | Thompson Circle | | | | | | X | | | | | X | X |
| | 0 | Trapper Drive | | | | | | X | | | | | X | X |
| | 0 | Tundra Drive | | | | | | X | | | | | X | X |
| | 0 | Ulatka Drive | | | | | | X | | | | | X | X |
| | 0 | West | | | | | | X | | | | | X | X |

## Table D-1 Critical Facilities and Infrastructure

| Facilities | Number of Occupants | Facilities | Address | Latitude | Longitude | Estimated Value | Building Type | Earthquake | Erosion | Flood | Ground Failure | Tsunami | Volcano | Severe Weather |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Broadway | | | | | | | | | | | | |
| | 0 | Willow Drive | | | | | | X | | | | | X | X |
| | 0 | Wittern Lane | | | | | | X | | | | | X | X |
| Bridges | 0 | South Channel Bridge | Airport Beach Road (S310) | 53.8739 | -166.5465 | $30,024,907 | Unknown | X | | | | X | X | X |
| | 0 | UMC City Dock Facility Fill Bridge | Ballyhoo Road | 53.9028 | -166.5281 | $11,822,026 | Unknown | X | | | | X | X | X |
| | 0 | Summer Bay Bridge | Summer Bay Road | 53.8965 | -166.4595 | Unknown | Unknown | X | | | | X | X | X |
| | 0 | Captains Bay Road Bridge | Captains Bay Road | Unknown | Unknown | Unknown | Unknown | X | | | | X | X | X |
| Utilities | 0 | Bulk Fuel Storage Tank Farm: Delta Western North Pacific Offshore Systems | Fuel tank farms are not addressed in our system | Unknown | Unknown | Unknown | OTF | X | | | | | X | X |
| | 0 | Icy Creek Reservoir | 2500 Pyramid Creek Road | 53.8305 | -166.5534 | Unknown | Unknown | X | | | | | X | X |
| | 0 | Icy Lake Reservoir | 3175 Pyramid Creek Rd | 53.8081 | -166.5504 | Unknown | Unknown | X | | | | | X | X |
| | 0 | Water Storage Tanks | 410 Lear Road | 53.8601 | -166.5045 | Unknown | PWST | X | | | | | X | X |
| | 8 | Wastewater Treatment Facility | 19 Gilman Rd | 53.8797 | -166.5582 | $30,800,000 | WWTS | X | | | | | X | X |
| | 5 | Water Treatment Facility | 1400 Pyramid Creek Rd | 53.8504 | -166.5607 | $23,800,000 | PWTS | X | | | | | X | X |
| | 0 | City-wide piped water | Citywide | N/A | N/A | $17,800,000 | PWP | X | | | | | X | |
| | 0 | City-wide piped wastewater | Citywide | N/A | N/A | Unknown | WWP | X | | | | | X | X |
| | 7 | Unalaska Electric Utility | Citywide | N/A | N/A | $76,300,000 | EPPS | X | | | | | X | X |

## Table D-1 Critical Facilities and Infrastructure

| Facilities | Number of Occupants | Facilities | Address | Latitude | Longitude | Estimated Value | Building Type | Earthquake | Erosion | Flood | Ground Failure | Tsunami | Volcano | Severe Weather |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 4 | Unalaska Community Broadcasting Inc. | 28 East Broadway Ave (same building as Burma Road Chapel) | 53.8727 | -166.5313 | Unknown | CBO | X | | | | | X | X |
| | 2 | Chemical Storage Building | 2486 E. Broadway Ave. | 53.8455 | -166.5045 | $52,000,000 | Unknown | X | | | | | X | X |
| | | Solid Waste Facility | | | | $3,300,000 | | X | | | | | X | X |
| | | Department of Public Works Facility | | | | $5,800,000 | | X | | | | | X | X |
| **Total Occ.** | 1770 | | | | **Total Damages:** | $565,398,634 | | | | | | | | |

(Unalaska 2018, DHS&EM 2009a)

# Appendix E
# Figures
# Section Six, Vulnerability Analysis Support

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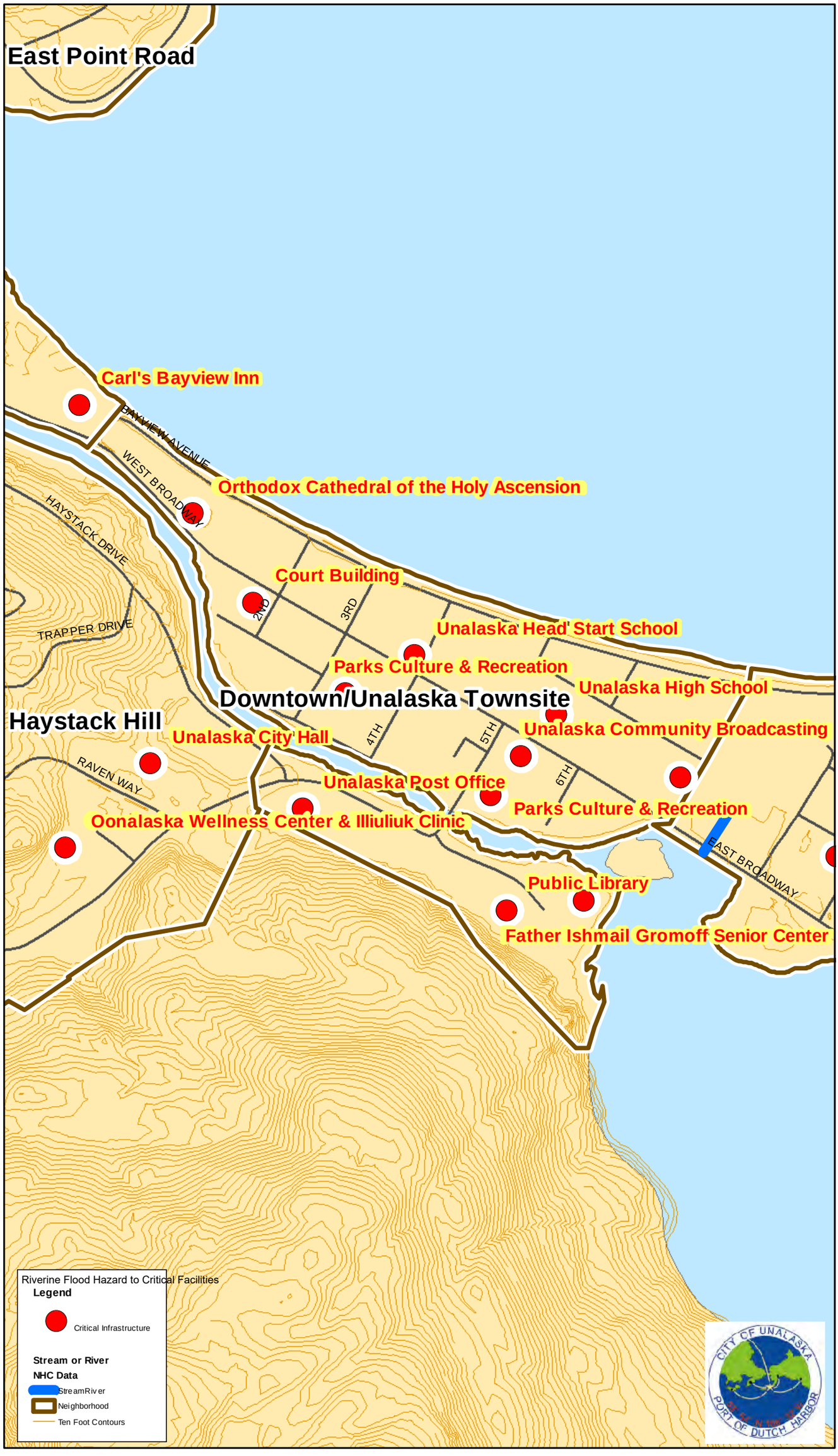
East Point Road
Carl's Bayview Inn
BAYVIEW AVENUE
WEST BROADWAY
Orthodox Cathedral of the Holy Ascension
HAYSTACK DRIVE
Court Building
2ND
3RD
TRAPPER DRIVE
Unalaska Head Start School
Parks Culture & Recreation
Unalaska High School
Downtown/Unalaska Townsite
Haystack Hill
Unalaska City Hall
4TH
5TH
6TH
Unalaska Community Broadcasting
RAVEN WAY
Unalaska Post Office
Parks Culture & Recreation
Oonalaska Wellness Center & Illiuliuk Clinic
EAST BROADWAY
Public Library
Father Ishmail Gromoff Senior Center
Riverine Flood Hazard to Critical Facilities
Legend
Critical Infrastructure
Stream or River
NHC Data
StreamRiver
Neighborhood
Ten Foot Contours
CITY OF UNALASKA
PORT OF DUTCH HARBOR


BENDIKSEN DRIVE
East Point Road
EAST POINT ROAD
Alyeska Seafoods
Alyeska
Carl's Bayview Inn
LOWER HAYSTACK ROAD
WEST BROADWAY
CATHEDRAL WAY
BAYVIEW AVENUE
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LEAR ROAD
EAGLE DRIVE
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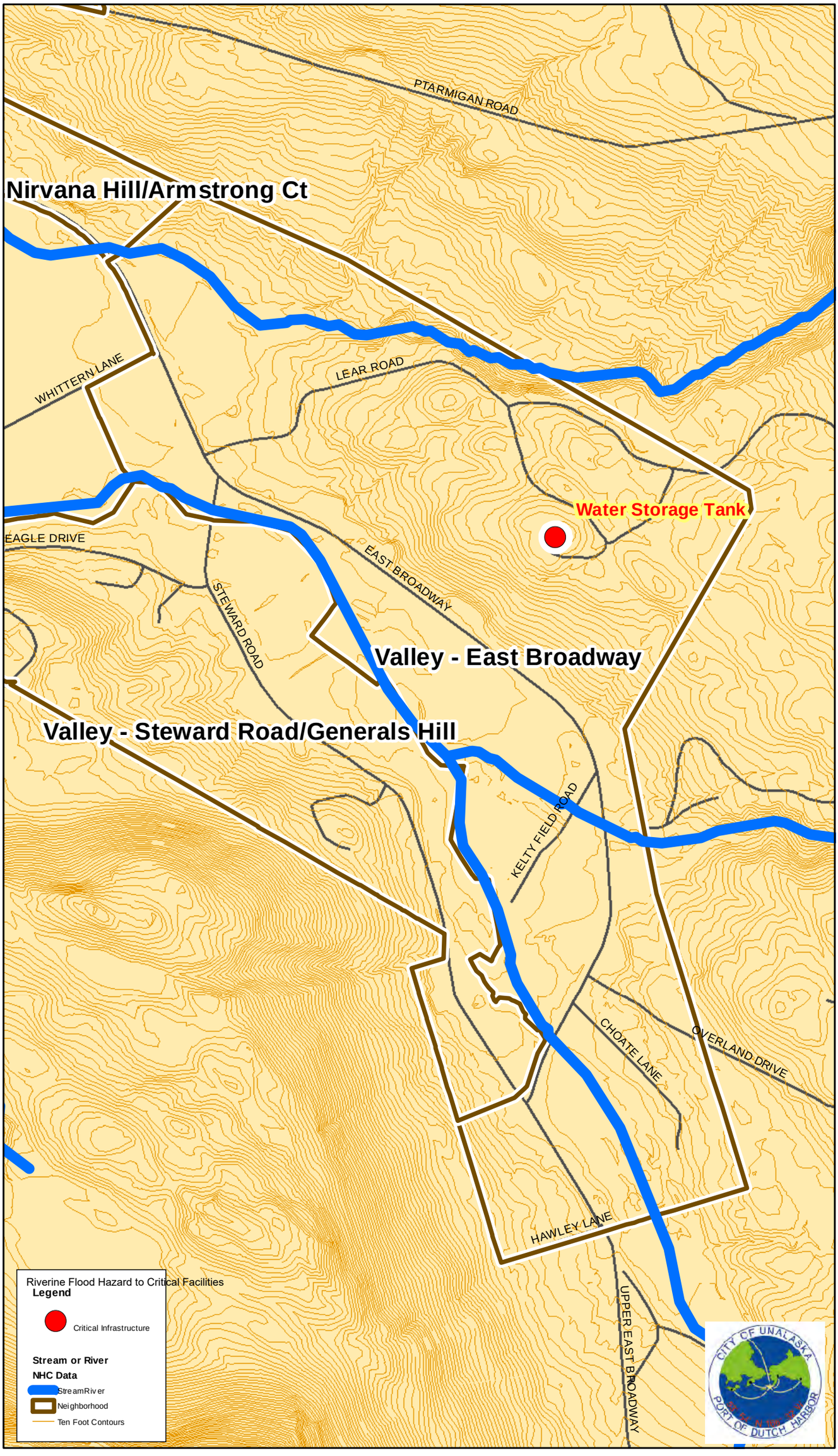
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Water Storage Tank
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OVERLAND DRIVE
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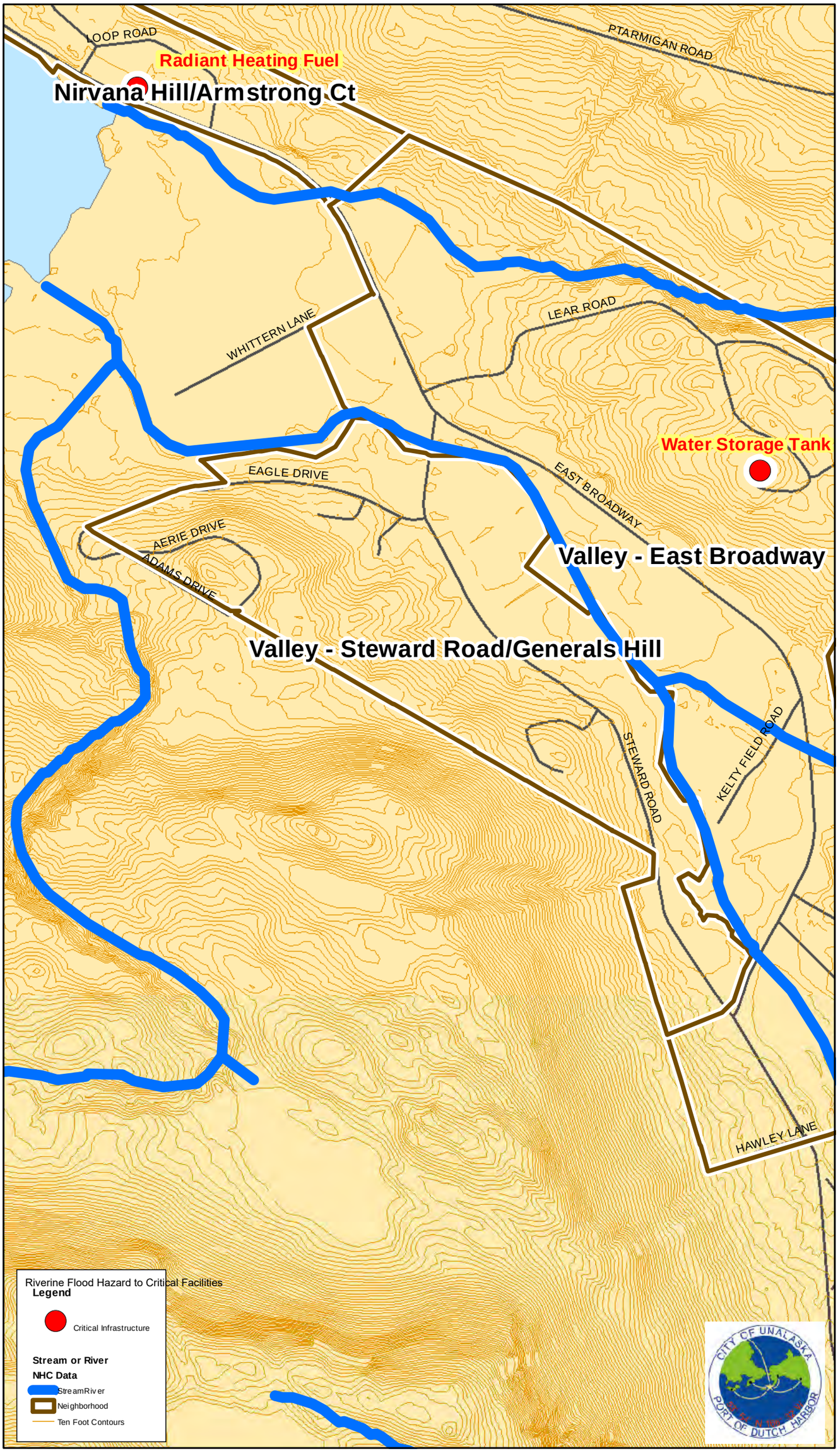
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AIRPORT BEACH ROAD
BUNKER HILL ROAD
South Channel Bridge
Bunker Hill/Little South America
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LITTLE SOUTH AMERICA ROAD
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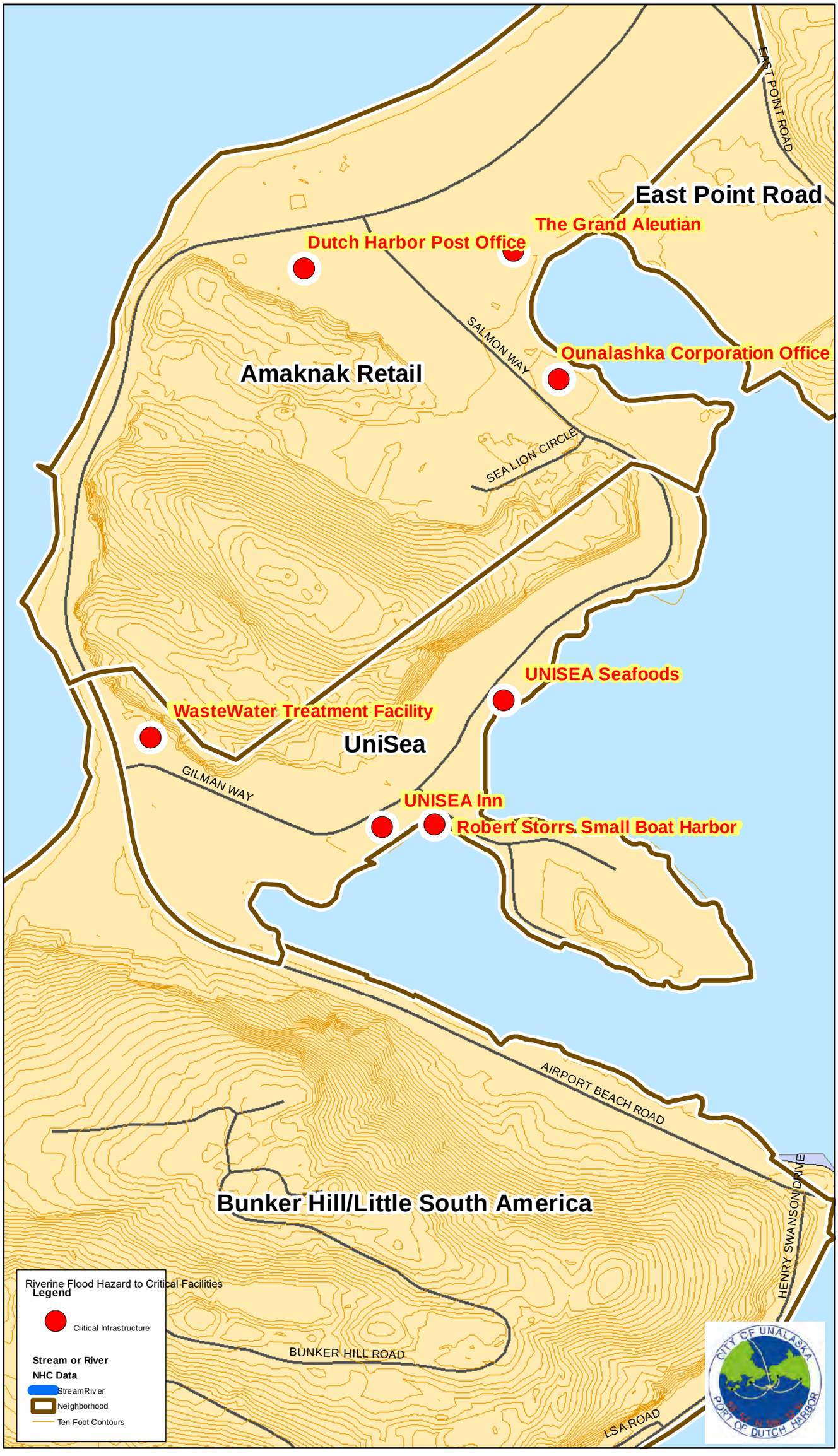
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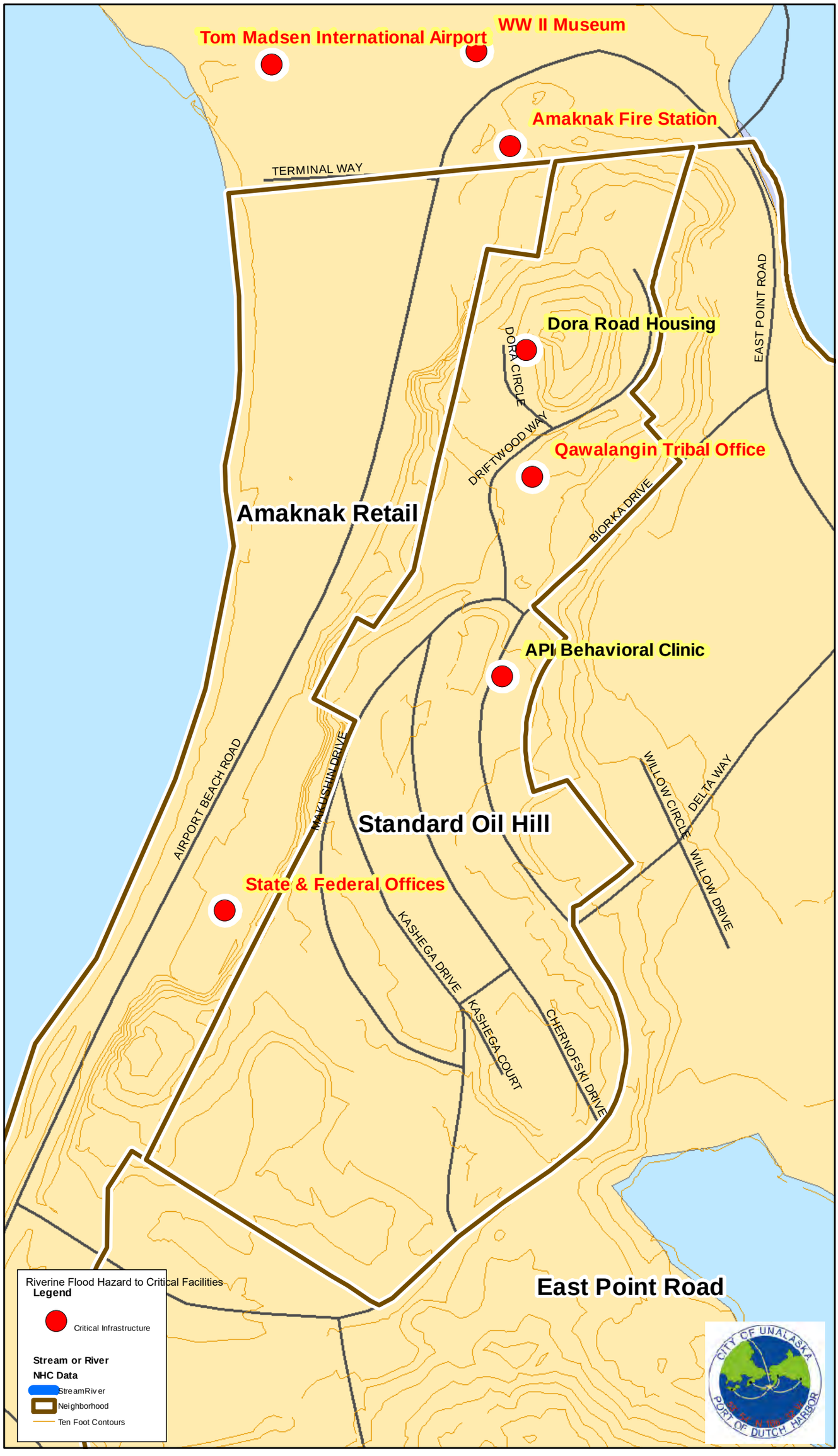
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US Coast Guard Dock
Unalaska Marine Center
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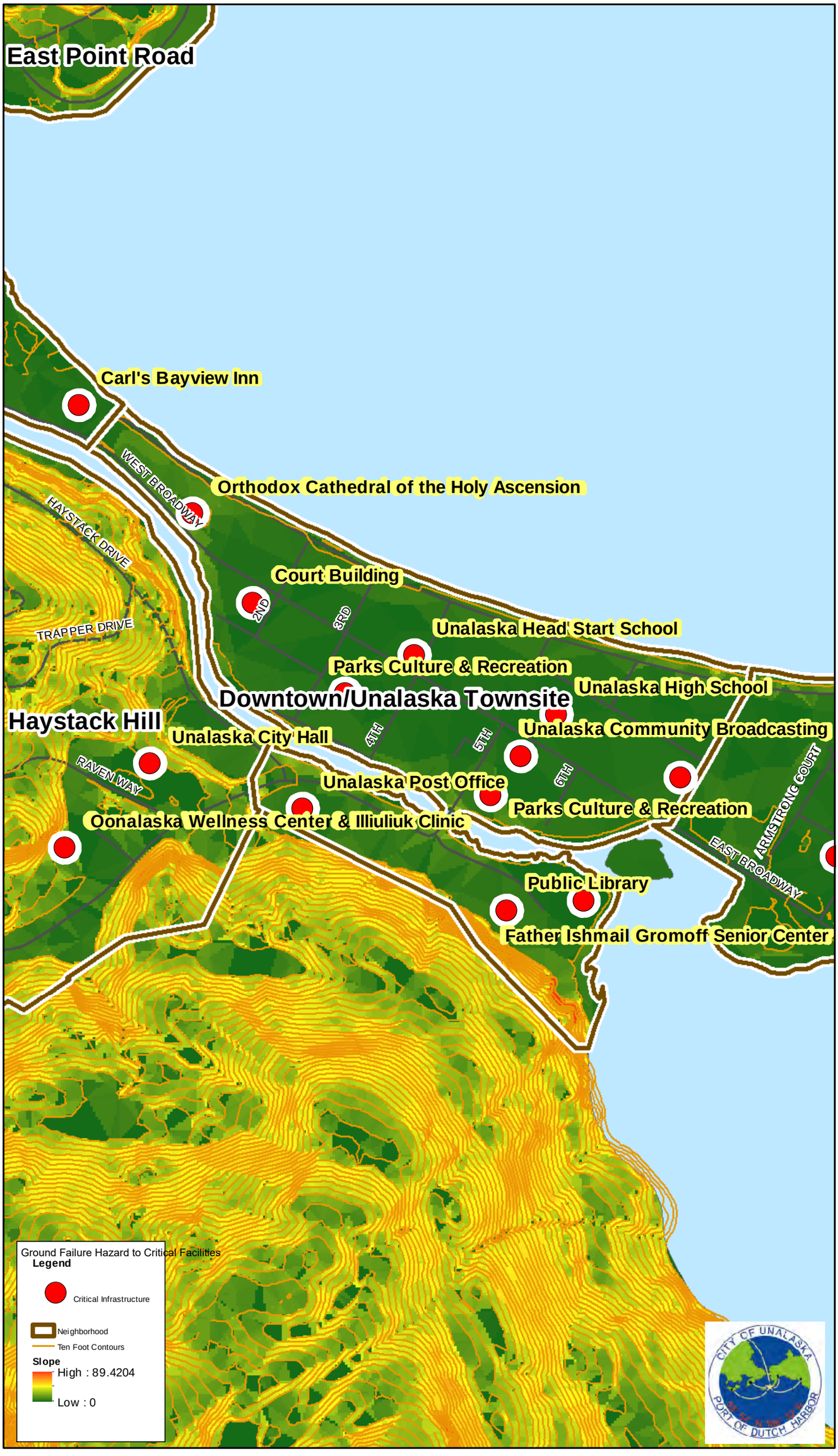
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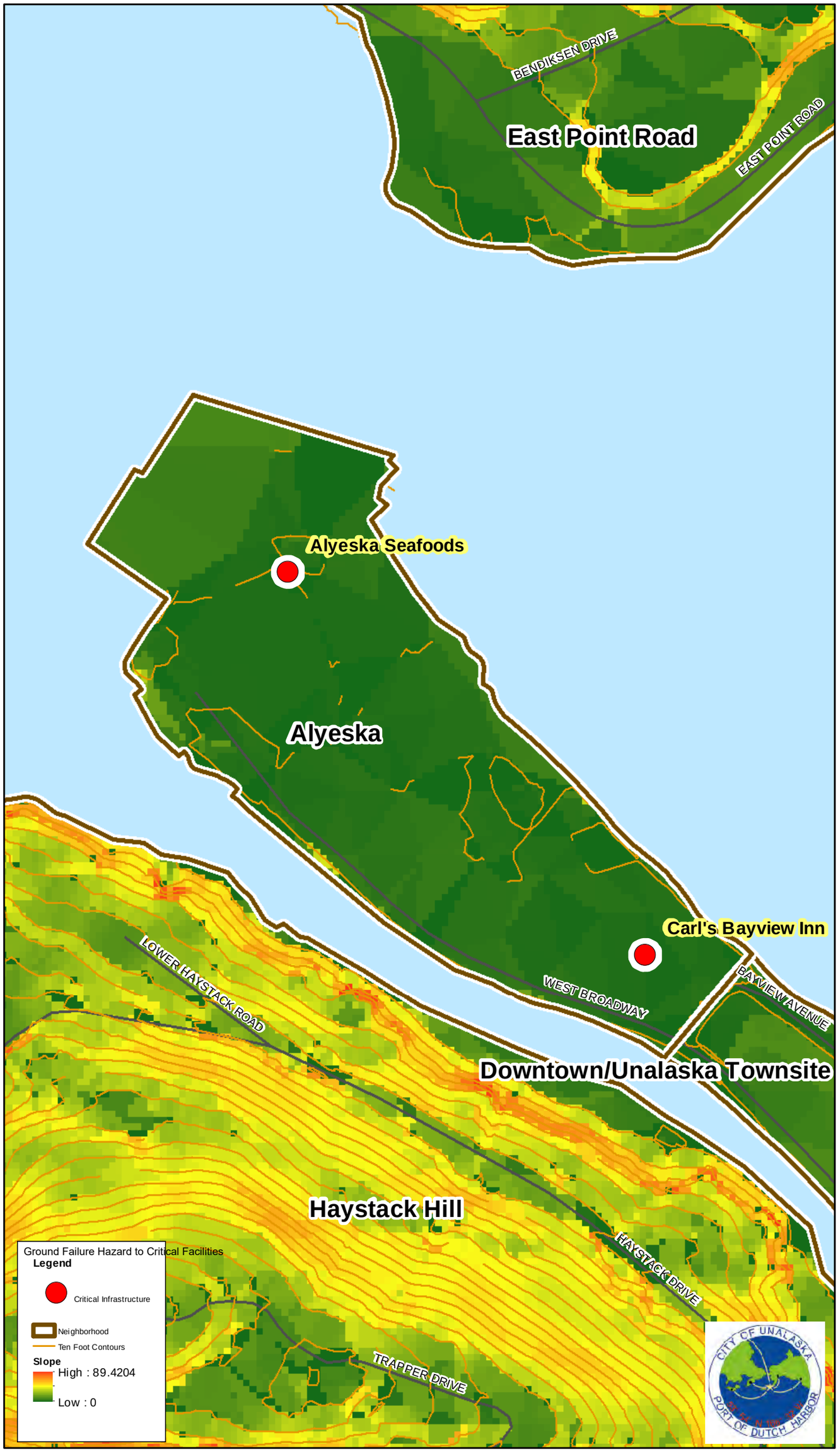
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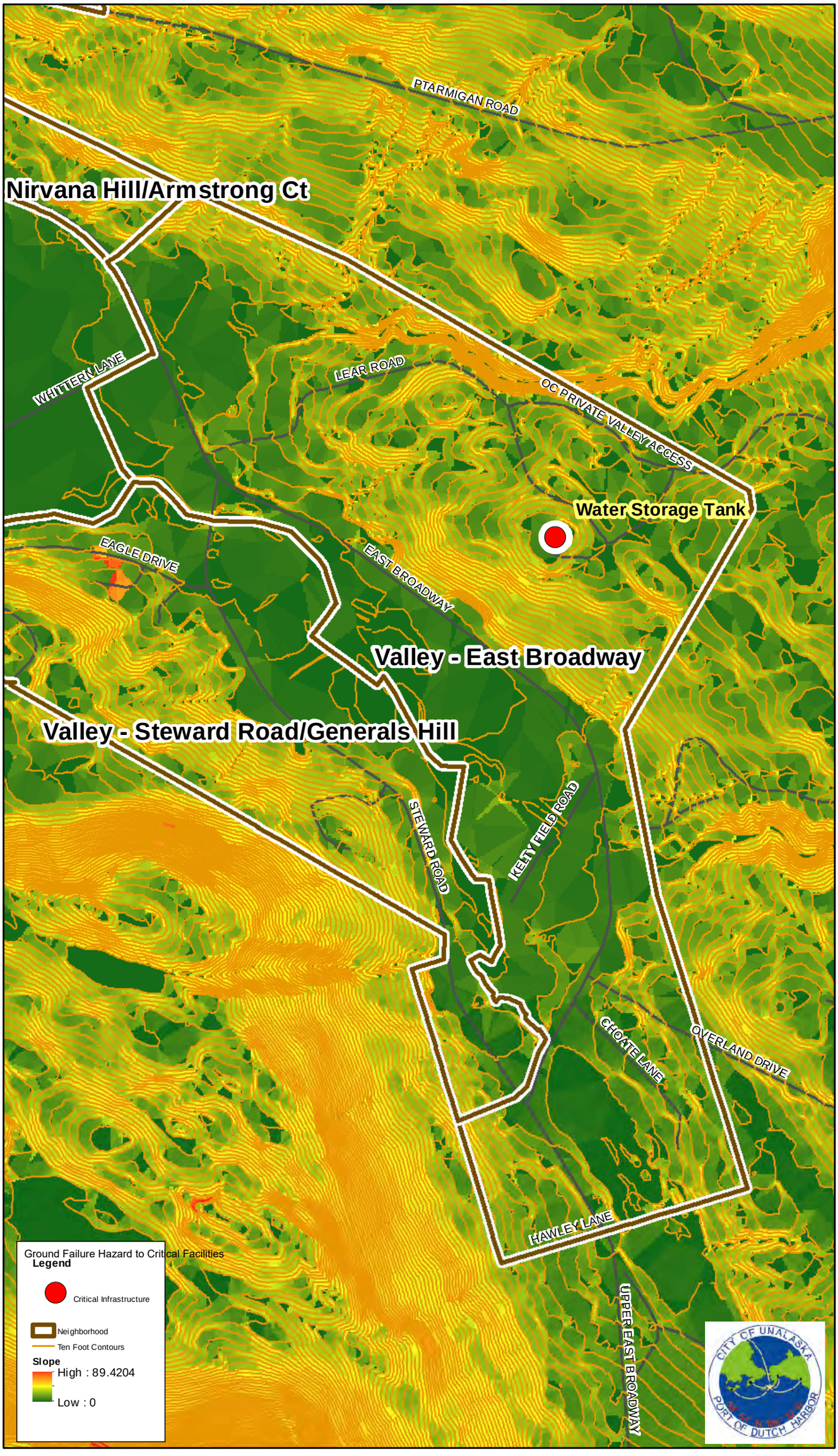
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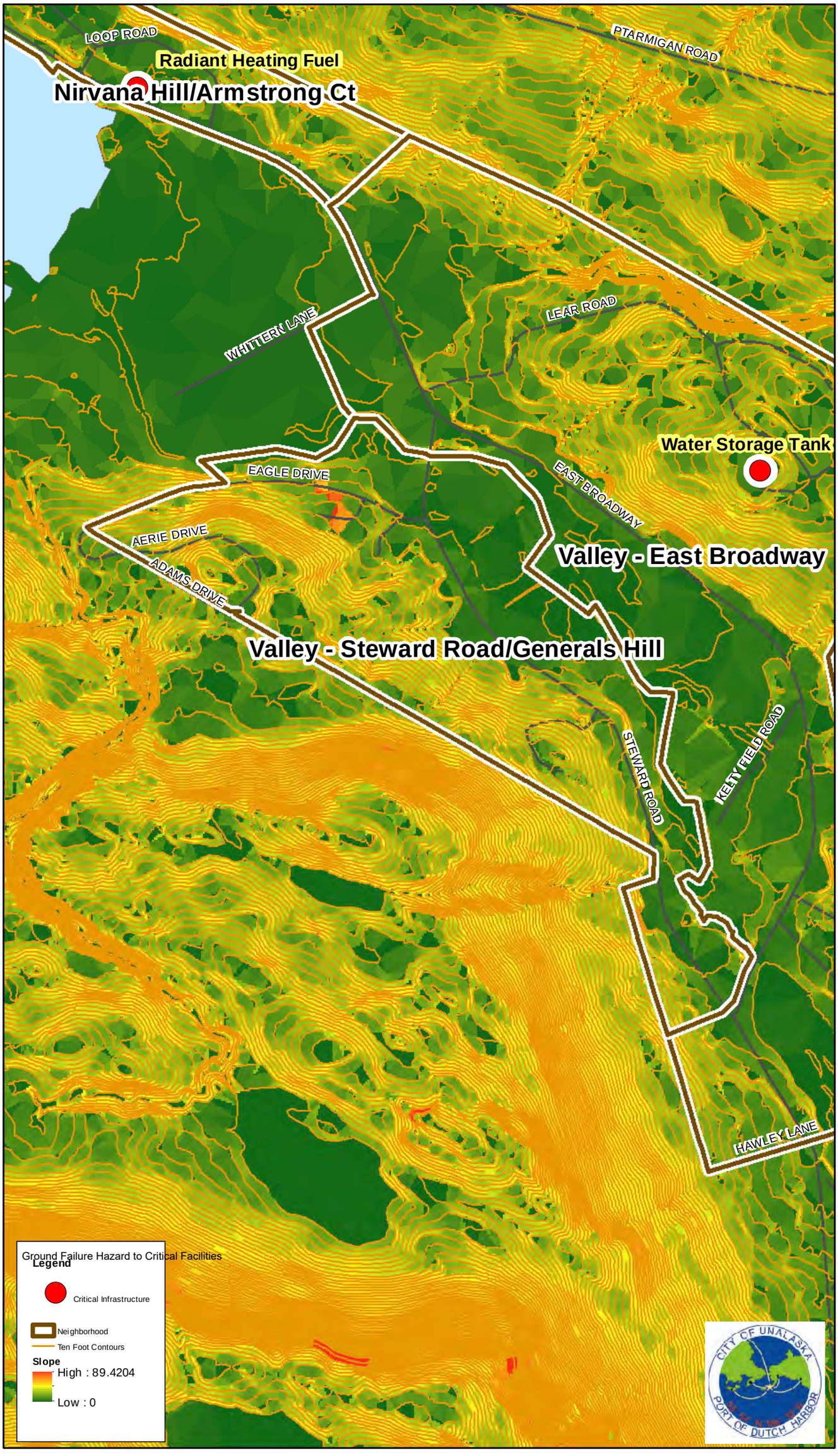
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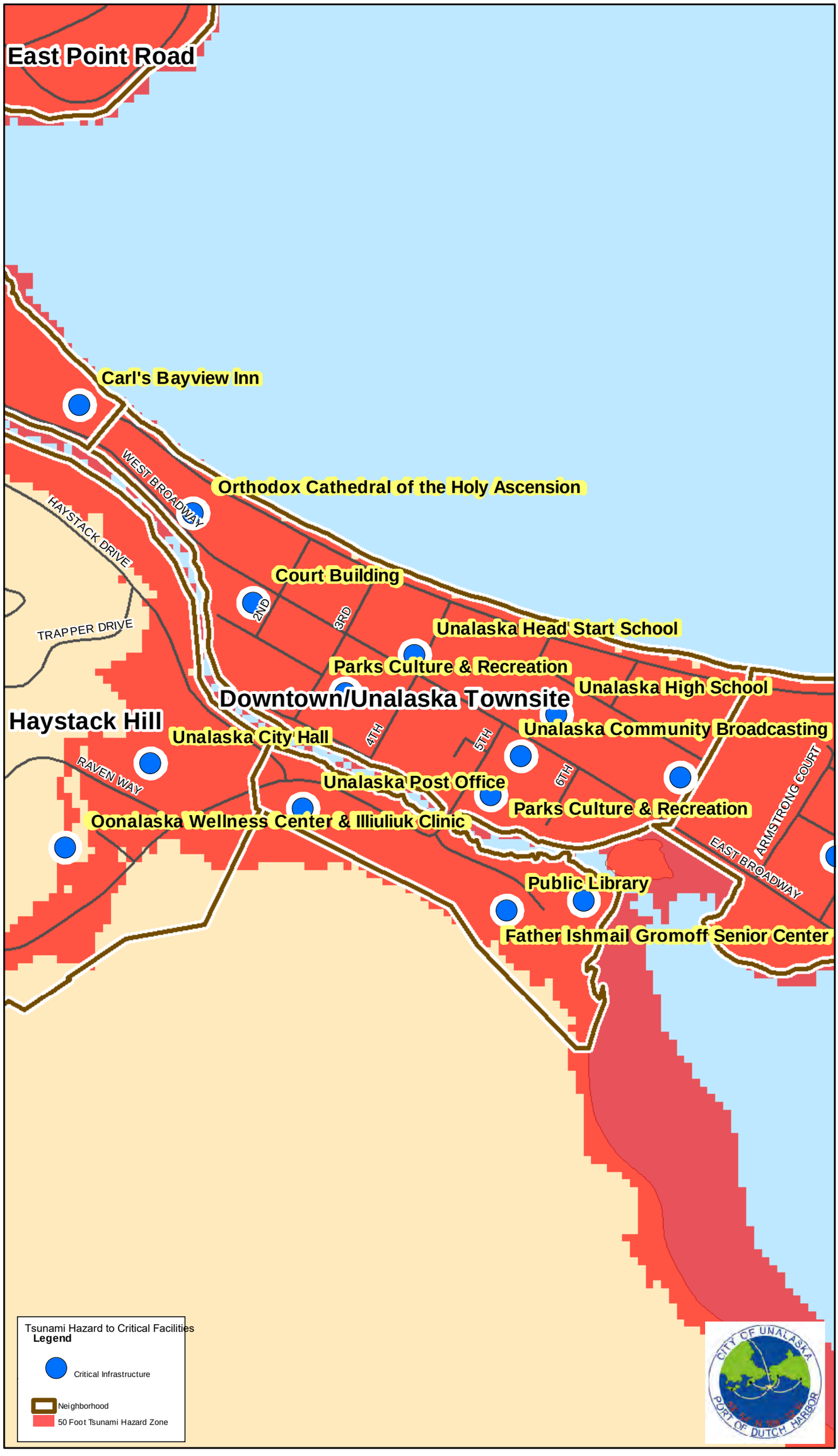
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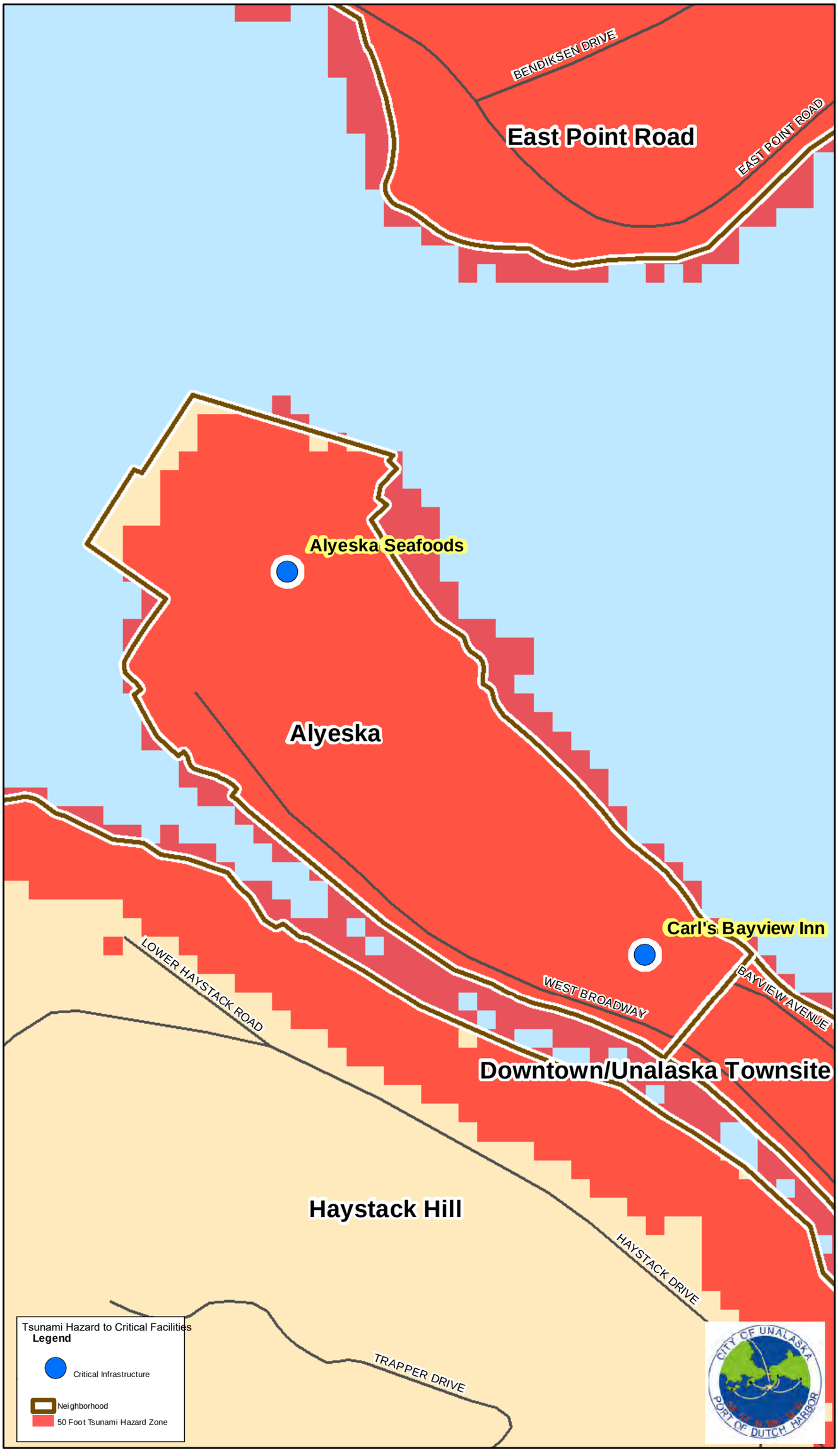
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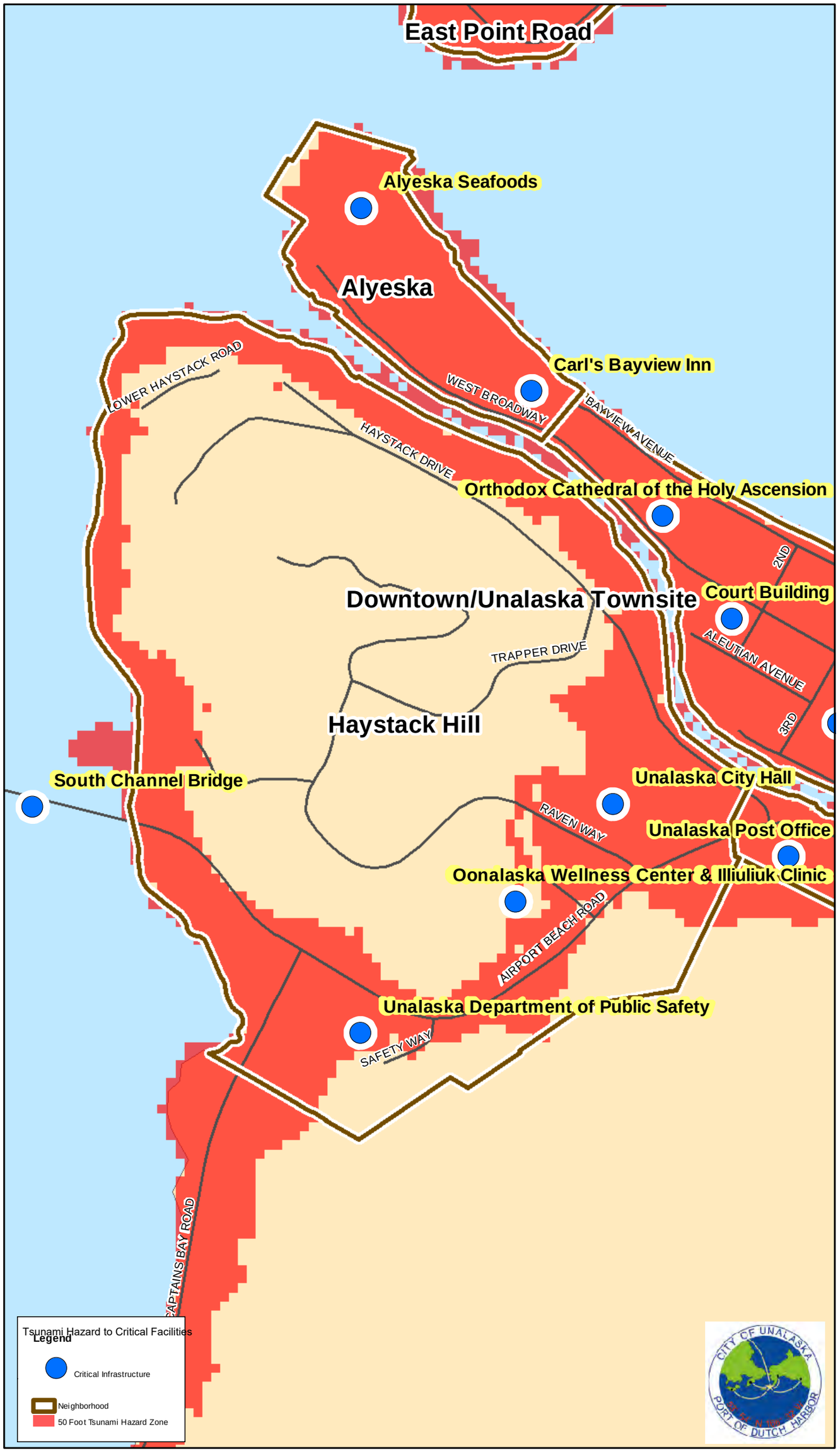
Carl's Bayview Inn
LOWER HAYSTACK ROAD
WEST BROADWAY
BAYVIEW AVENUE
Downtown/Unalaska Townsite
Haystack Hill
HAYSTACK DRIVE
TRAPPER DRIVE
Tsunami Hazard to Critical Facilities
Legend
Critical Infrastructure
Neighborhood
50 Foot Tsunami Hazard Zone
CITY OF UNALASKA
PORT OF DUTCH HARBOR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Carl's Bayview Inn
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HAYSTACK DRIVE
Orthodox Cathedral of the Holy Ascension
2ND
Downtown/Unalaska Townsite
Court Building
ALEUTIAN AVENUE
TRAPPER DRIVE
3RD
Haystack Hill
South Channel Bridge
Unalaska City Hall
RAVEN WAY
Unalaska Post Office
Oonalaska Wellness Center & Illiuliuk Clinic
AIRPORT BEACH ROAD
Unalaska Department of Public Safety
SAFETY WAY
CAPTAINS BAY ROAD
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Neighborhood
50 Foot Tsunami Hazard Zone
CITY OF UNALASKA
PORT OF DUTCH HARBOR


SUMMER BAY ROAD
CEMETERY ROAD
Unalaska High School
Unalaska Community Broadcasting
University of Alaska Aleutians Pribilof Islands
6TH
Old HUD Housing
DUTTON ROAD
Father Ishmail Gromoff Senior Center
Nirvana Hill Housing
EAST BROADWAY
Nirvana Hill/Armstrong Ct
Eagles View Elementary Achigaalux
PTARMIGAN ROAD
Radiant Heating Fuel
Valley - East Broadway
LEAR ROAD
EAGLE DRIVE
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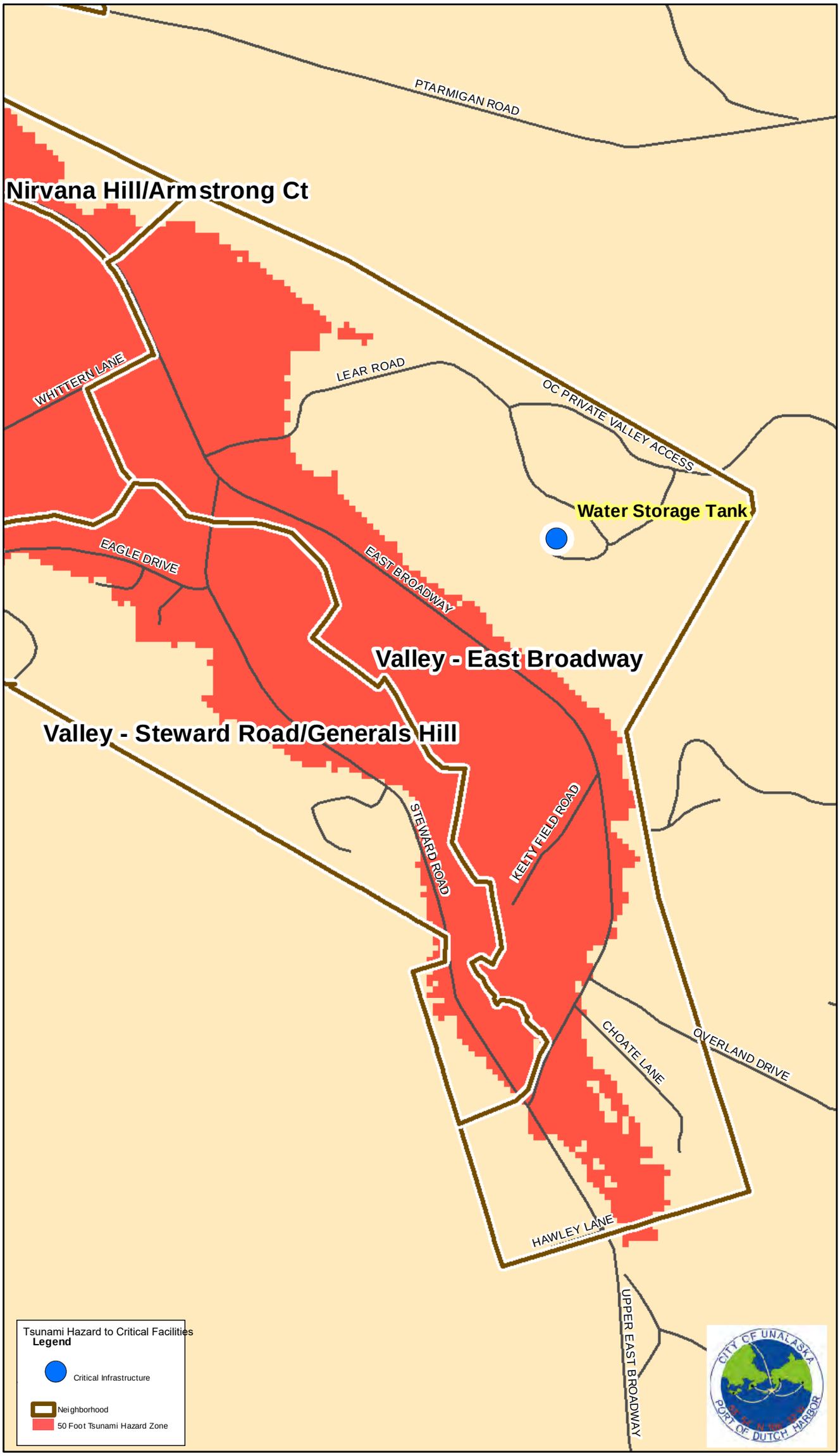
CITY OF UNALASKA
PORT OF DUTCH HARBOR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KELTY FIELD ROAD
CHOATE LANE
OVERLAND DRIVE
HAWLEY LANE
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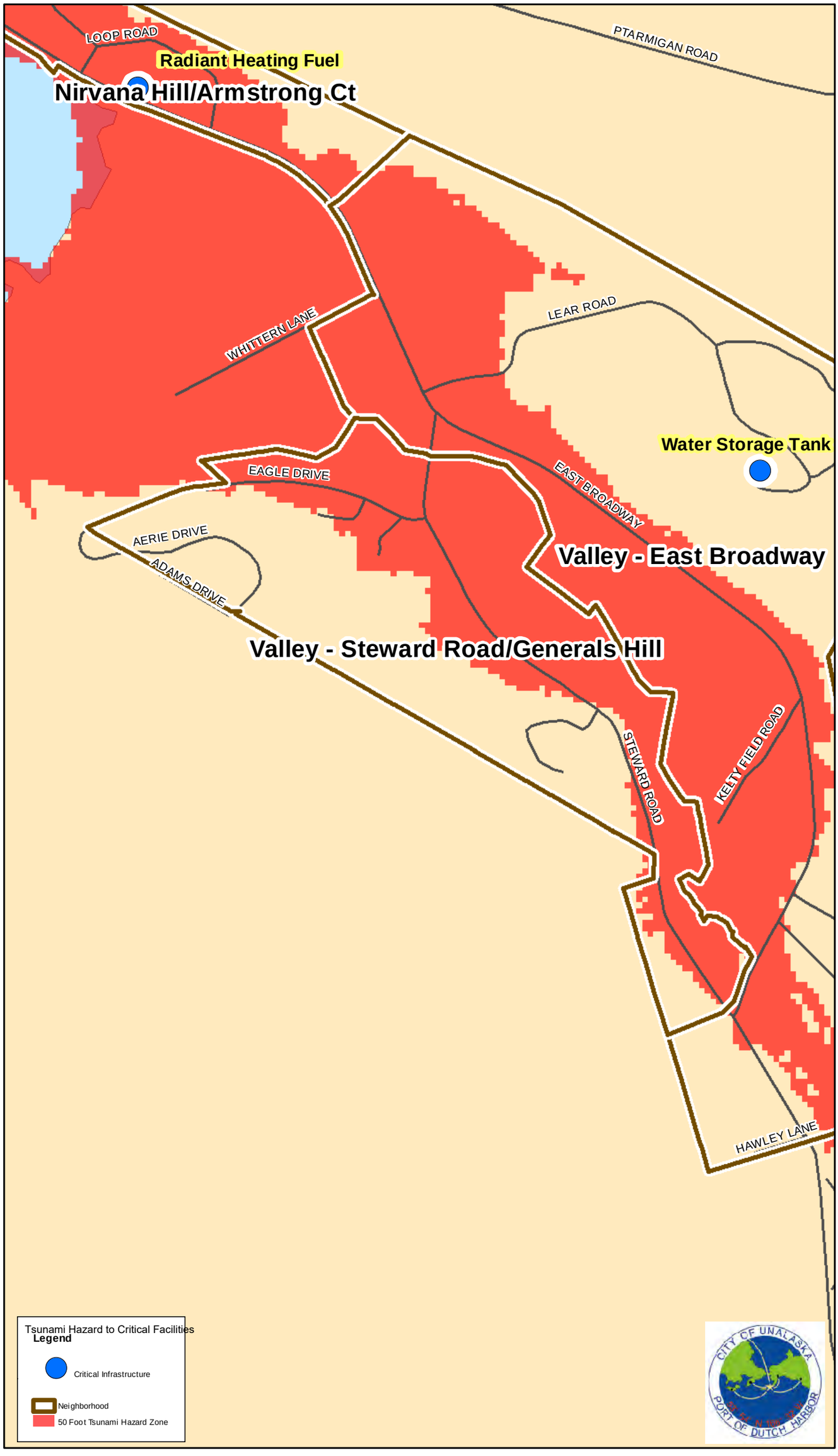
CITY OF UNALASKA
PORT OF DUTCH HARBOR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Critical Infrastructure
Neighborhood
50 Foot Tsunami Hazard Zone
CITY OF UNALASKA
PORT OF DUTCH HARBOR


Dutch Harbor Post Office
The Grand Aleutian
East Point Road
Ounalashka Corporation Office
SALMON WAY
Amaknak Retail
UNISEA Seafoods
WasteWater Treatment Facility
Robert Storrs Small Boat Harbor
UNISEA Inn
UniSea
Haystack Hill
AIRPORT BEACH ROAD
BUNKER HILL ROAD
South Channel Bridge
ISA ROAD
Bunker Hill/Little South America
HENRY SWANSON DRIVE
LITTLE SOUTH AMERICA ROAD
Carl E Moses Boat Harbor
Carl E Moses Boat Harbor
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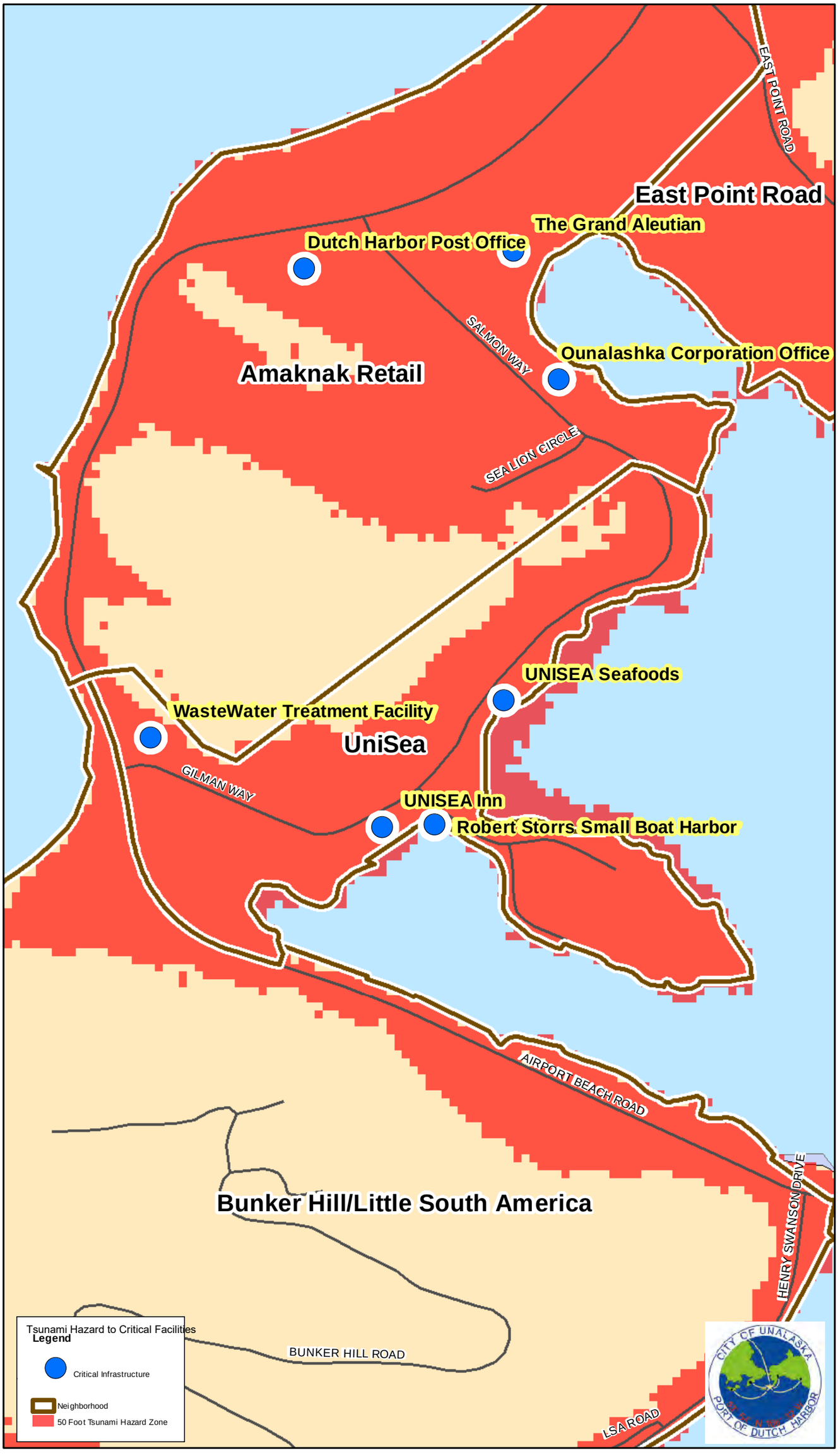
Neighborhood
50 Foot Tsunami Hazard Zone
CITY OF UNALASKA
PORT OF DUTCH HARBOR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50 Foot Tsunami Hazard Zone
CITY OF UNALASKA
PORT OF DUTCH HARBOR


Tom Madsen International Airport
WW II Museum
Amaknak Fire Station
TERMINAL WAY
Dora Road Housing
Qawalangin Tribal Office
API Behavioral Clinic
Standard Oil Hill
State & Federal Offices
MAKUSHIN DRIVE
CHERNOFSKI DRIVE
BIORKA DRIVE
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Tsunami Hazard to Critical Facilities
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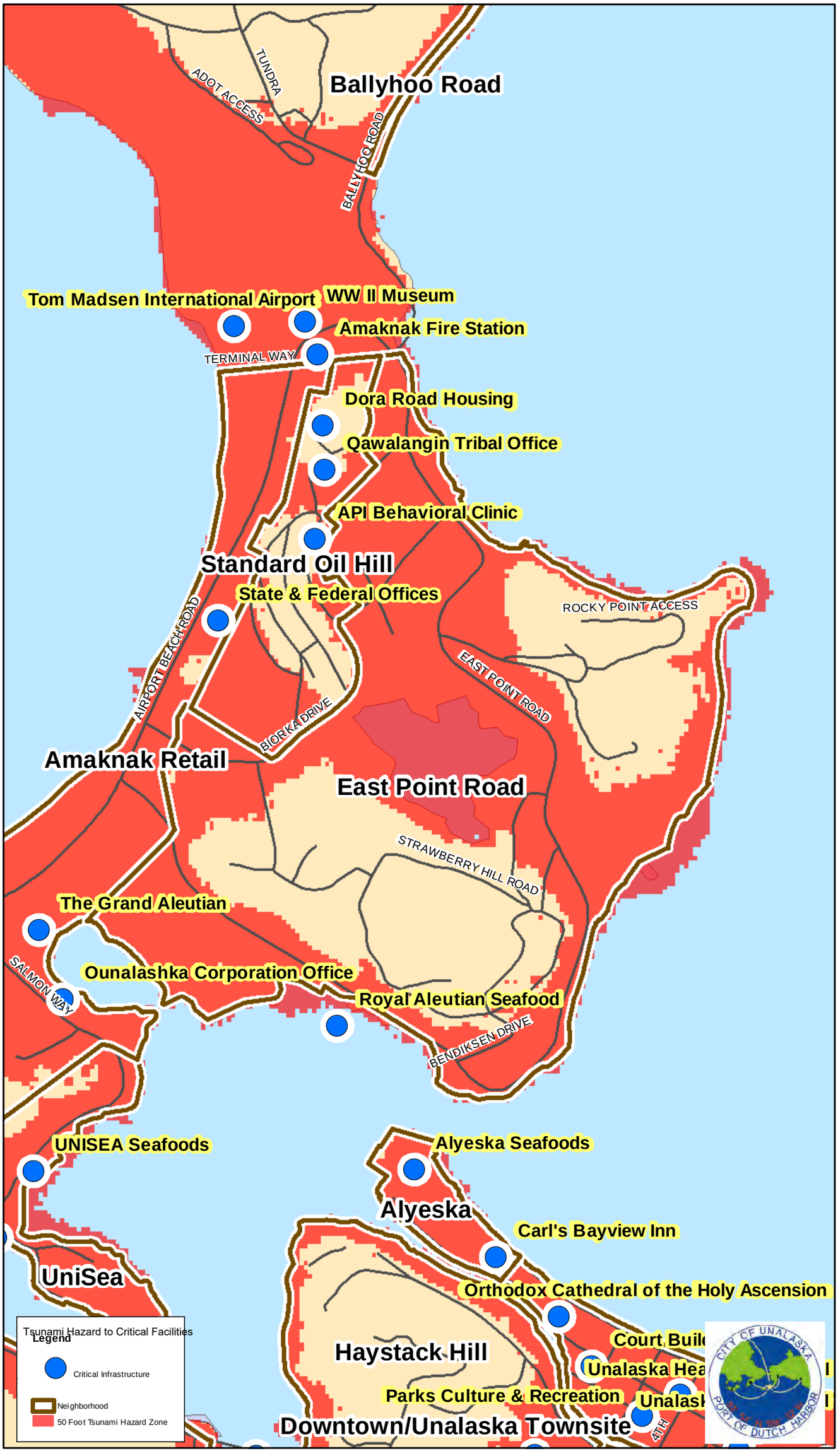
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API Behavioral Clinic
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The Grand Aleutian
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Ounalashka Corporation Office
Royal Aleutian Seafood
BENDIKSEN DRIVE
UNISEA Seafoods
Alyeska Seafoods
Alyeska
Carl's Bayview Inn
UniSea
Orthodox Cathedral of the Holy Ascension
Court Build
Haystack Hill
Unalaska Hea
Parks Culture & Recreation
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Downtown/Unalaska Townsite
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Tsunami Hazard to Critical Facilities
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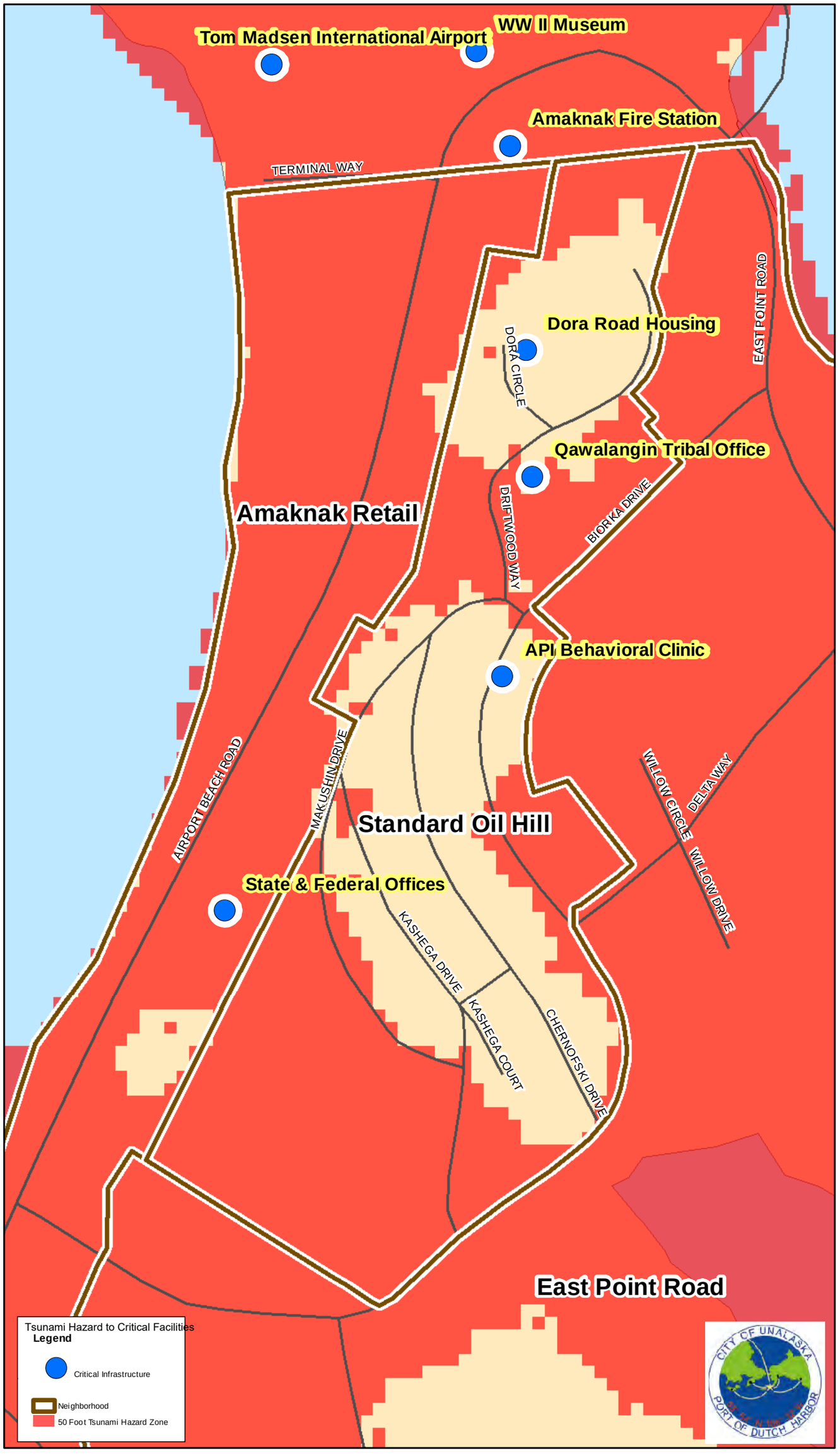
50 Foot Tsunami Hazard Zone
CITY OF UNALASKA
PORT OF DUTCH HARBOR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Neighborhood
50 Foot Tsunami Hazard Zone
CITY OF UNALASKA
PORT OF DUTCH HARBOR


TRIDENT Seafoods
ICICLE Seafoods
TRIDENT Warehouse
North Pacific Fuel
ULATKA DRIVE
Ballyhoo Road
Unalaska Light Cargo Dock
US Coast Guard Dock
Unalaska Marine Center
UMC City Dock Facility Fill Bridge
BALLYHOO ROAD
AIRPORT HEIGTHS ROAD
TUNDRA
WW II Museum
Amaknak Fire Station
Dora Road Housing
Qawalangin Tribal Office
Tsunami Hazard to Critical Facilities
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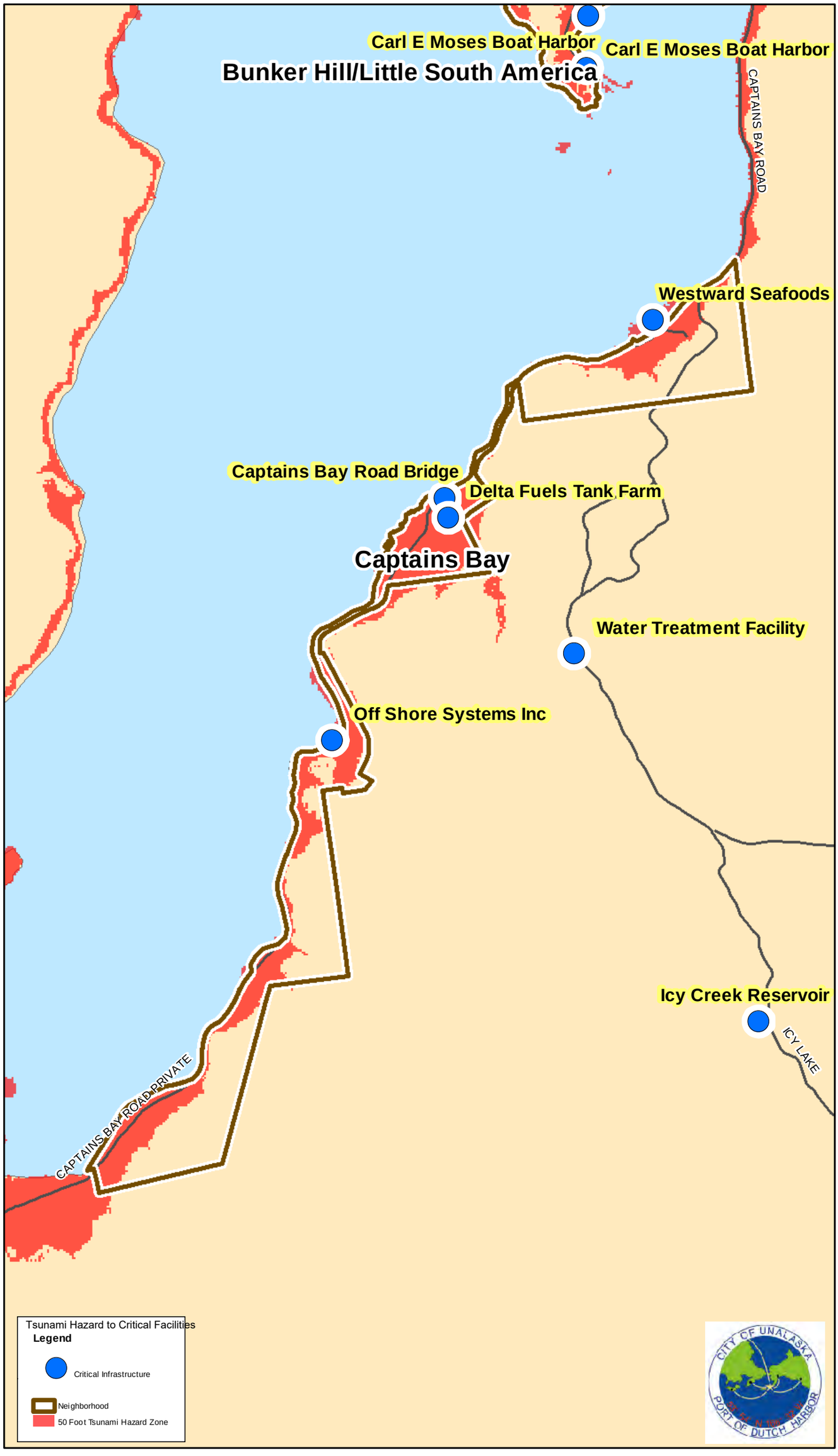
CITY OF UNALASKA
PORT OF DUTCH HARBOR


Carl E Moses Boat Harbor
Carl E Moses Boat Harbor
Bunker Hill/Little South America
CAPTAINS BAY ROAD
Westward Seafoods
Captains Bay Road Bridge
Delta Fuels Tank Farm
Captains Bay
Water Treatment Facility
Off Shore Systems Inc
Icy Creek Reservoir
ICY LAKE
CAPTAINS BAY ROAD PRIVATE
Tsunami Hazard to Critical Facilities
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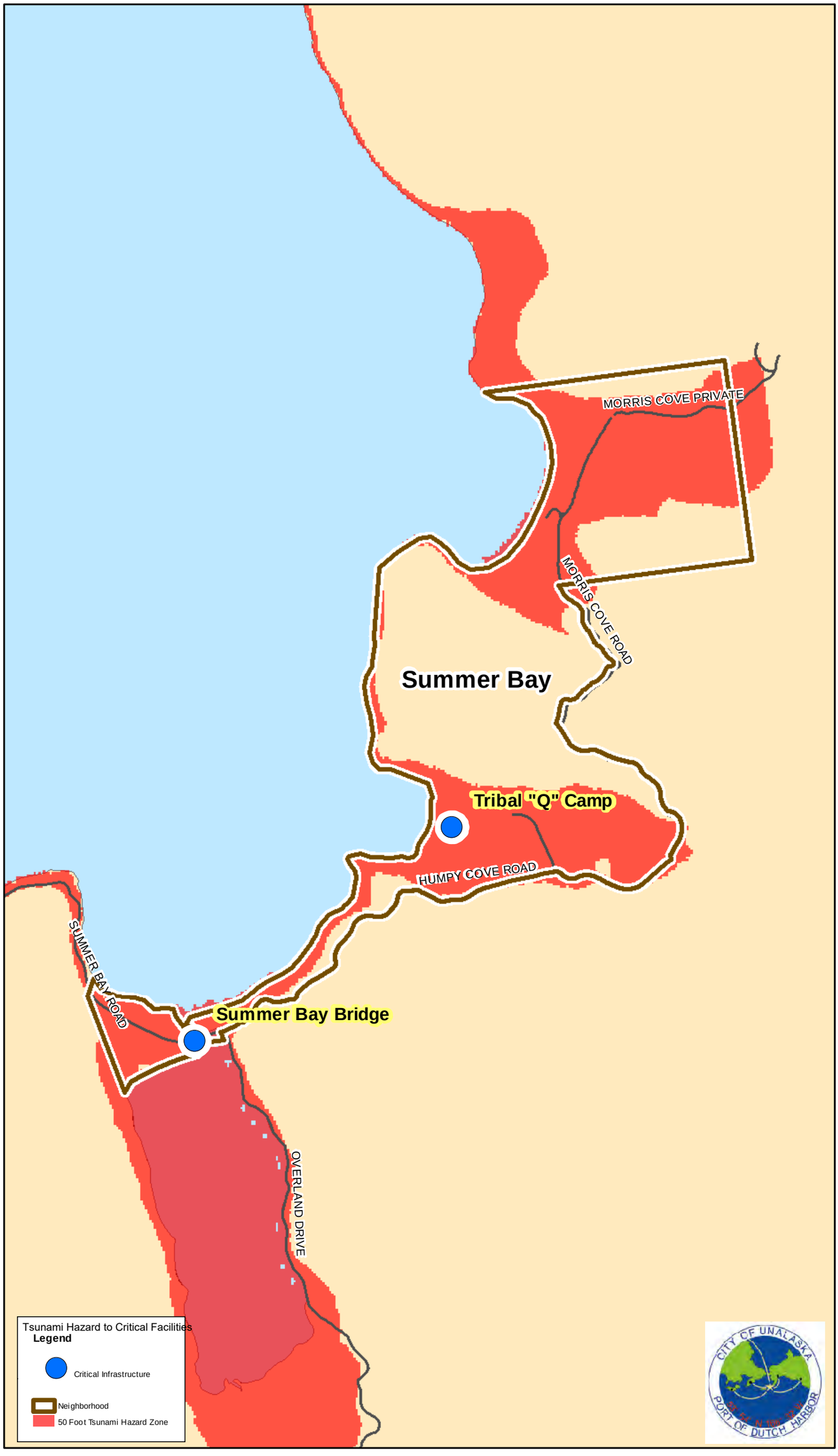
CITY OF UNALASKA
PORT OF DUTCH HARBOR


MORRIS COVE PRIVATE
MORRIS COVE ROAD
Summer Bay
Tribal "Q" Camp
HUMPY COVE ROAD
SUMMER BAY ROAD
Summer Bay Bridge
OVERLAND DRIVE
Tsunami Hazard to Critical Facilities
Legend
Critical Infrastructure
Neighborhood
50 Foot Tsunami Hazard Zone
CITY OF UNALASKA
PORT OF DUTCH HARBOR

# Appendix F
# Public Outreach

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CITY OF UNALASKA
DEPARTMENT OF PLANNING
P.O. BOX 610
UNALASKA, ALASKA 99685-0610
(907) 581-3100 • FAX (907) 581-4181


March 12, 2018

Brent Nichols, CFM
State of Alaska
DMVA DHS&EM
P.O. Box 5750
Joint Base Elmendorf-Richardson, Alaska 99505-5750

Mr. Nichols:

This letter serves as the City of Unalaska's Letter of Commitment to support DMVA DHS&EM and LeMay Engineering & Consulting, Inc. in their Federal Emergency Management Agency (FEMA) Pre-Disaster Mitigation (PDM) planning grant to update the 2013 hazard mitigation plan for the City of Unalaska. The end goal of this grant is a State- and FEMA- approved hazard mitigation plan that the City of Unalaska will adopt.

Sincerely,

William M Homka, AICP
Planning Director

QAWALANGIN
Tribe of Unalaska

P.O. Box 334
Unalaska, Alaska 99685
phone (907) 581-2920
fax (907) 581-3644
nicole.qtribe@gmail.com

# LETTER OF COMMITMENT

03/16/2018

City of Unalaska
43 Raven Way
Unalaska, AK 99685

RE: Letter of Commitment as Participating Jurisdiction in the City of Unalaska Multi-jurisdictional Hazard Mitigation Planning

Dear State Hazard Mitigation Officer:

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively by coordinating at the county, regional, or watershed level, the Qawalangin Tribe of Unalaska is submitting this letter of commitment to confirm that Qawalangin Tribe of Unalaska has agreed to participate in the City of Unalaska Multi-jurisdictional Hazard Mitigation Planning.

Furthermore, as a condition of participation in the mitigation planning, Qawalangin Tribe of Unalaska, agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as is necessary and in a timely manner to the City of Unalaska to complete the plan in conformance with FEMA requirements.

Qawalangin Tribe of Unalaska understands that it must engage in the following planning process, as more fully described in FEMA's Local Multi-Hazard Mitigation Planning Guidance, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction. ;
- Demonstration that there has been proactively offered an opportunity for participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.); and
- Documentation of an effective process to maintain and implement the plan; and,
- Formal adoption of the Multi-jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I Nicole Johnson, Tribal Administrator, commit the Qawalangin Tribe of Unalaska to the City of Unalaska Multi-jurisdictional Hazard Mitigation Planning effort.

This document is executed this 16 day of March, 2018.

Please contact Nicole Johnson at 907-581-2920 or Nicole.qtribe@gmail.com with questions.

Sincerely,

Nicole Johnson
Tribal Administrator

**Unalaska City and Tribe Hazard Mitigation Plan Introductory Meeting**

**December 18, 2017**

**10 am at City Hall**

| Name | Organization | Contact Information (phone or email) |
|---|---|---|
| Thomas Roufos | City of Unalaska Planning | 907 581 3100 troufos@ci.unalaska.ak.us |
| Bil Homka | " | |
| Peggy McLaughlin | City of Unalaska | 907 581-1254 pmclaughlin@ci.unalaska.ak.us |
| Jennifer Shockley | City of Unalaska Dept. of Public Safety | 907-581-1233 jshockley@ci.unalaska.ak.us |
| Clay Darnell | Unalaska Finance | 907-359-4123 cdarnell@ci.unalaska.ak.us |
| Roger Blakeley | City of Unalaska Alaska PCR | 907-359-1297 rblakeley@ci.unalaska.ak.us |
| Albert Burnham | City PCR | aburnham@ci.unalaska.ak.us |
| Nichole Gordon | Ounalashka Corporation | smoller@ounalashka.com gordon@ounalashka.com |
| Marjie Veeder | City of Unalaska City Clerk | mveeder@ci.unalaska.ak.us 581-1251 |
| Erin Reinders | City of Unalaska | ereinders@ci.unalaska.ak.us |
| Tom Cohenour | City of Unalaska | tcohenour@ci.unalaska.ak.us |
| Robert Lund | COU-DPW | rlund@ci.unalaska.ak.us |
| Tom Robinson | President | 581-2920 |
| James Price | City of Unalaska | jprice@ci.unalaska.ak.us |
| Jennifer LeMay | LeMay Engineering + Consulting, Inc. | jlemay@lemayengineering.com |

# Hazard Mitigation Planning Process

Updates to existing plans

Plans must be updated every five years and approved by DHS&EM and FEMA and then adopted by the community by resolution for the community to remain eligible for FEMA grant funding

This is a public process.  Everyone who wants to be involved will be given the opportunity to be involved in this process.  Send Jennifer LeMay, PE, PMP an email if you'd like more information at jlemay@lemayengineering.com or call her at (907) 350-6061.

We welcome public input and will have a public comment hearing at a public meeting for you to provide input on the plan.

Which hazards are applicable for your community?

- Flood
- Erosion
- Wildland Fire
- Tsunami/Seiche
- Earthquake
- Volcano
- Avalanche
- Ground Failure/Landslide
- Permafrost Degradation
- Severe Weather
- Climate Change

We're interested in information related to:

- hazard identification,
- profiles,
- previous occurrences,
- probability of occurrences, and
- typical recurrence intervals

for each potential hazard.

Plan Process

- Today's introductory meeting
- Gathering of data
- Draft Plan available for public comment (December is our goal month)
- Public hearing for Draft Plan (public comment period)
- State/FEMA review and pre-approval
- Newsletter announcing Final Plan (the public may still comment)
- City and/or Tribal adoption
- Final Approval from State/FEMA (prior to April 23, 2018).

After Plan is completed, approved, and adopted, your community will be eligible to apply for mitigation project funds from DHS&EM and FEMA for five years until the plan requires another update.

Contacts:
Patrick LeMay, PE, LeMay Engineering & Consulting, Inc. Planner (907) 250-9038
Jennifer LeMay, PE, PMP LeMay Engineering & Consulting, Inc. Planner (907) 350-6061
Brent Nichols, CFM, State of Alaska DHS&EM Hazard Mitigation Officer (907) 428-7085

**Jennifer L. LeMay, PE, PMP**
**Vice President**
4272 Chelsea Way
Anchorage, AK 99504
(907) 350-6061
jlemay@lemayengineering.com

December 18, 2017

Brent A. Nichols, EMSII, CFM
Emergency Management Specialist II & Certified Floodplain Manager
Department of Military and Veterans Affairs
Division of Homeland Security and Emergency Management
P.O. Box 5750
JBER, AK 99505-5750

**Subject: Draft Hazard Mitigation Plan Introductory Meeting Trip Report, Unalaska, Alaska**

On December 16 and 17, 2017, Jennifer LeMay, PE, PMP of LeMay Engineering & Consulting, Inc. traveled to Unalaska, Alaska. The purpose of this trip was to attend the Introductory Community meeting and summarize the plan update process. Fifteen people were present, and the sign-in sheet will be included in Appendix F of the Plan. I led meeting attendees through the list of hazards, critical facilities, vulnerabilities, and mitigation actions. I also met with Public Works for two hours to determine the current status of mitigation actions since the 2013 Plan was developed.

If you have any questions, please do not hesitate to call me at (907) 350-6061.

12/18/17
Jennifer L. LeMay, PE, PMP/Date
LeMay Engineering & Consulting, Inc.

# Hazard Mitigation Plan Update for Unalaska, Alaska

**Newsletter: March 7, 2018**

LeMay Engineering & Consulting, Inc. was contracted to assist the City of Unalaska and the Qawalangin Tribe of Unalaska update their 2013 HMP. The HMP identifies all applicable natural hazards, identifies the people and facilities potentially at risk, and ways to mitigate damage from future hazard impacts.

**Offer your comments on the Draft HMP Update:** The goal of this newsletter is to announce the availability of the Draft Update and invite you to provide comments, identify key issues or concerns, and improve mitigation ideas. This plan has been posted at the Unalaska Planning Department and the Qawalangin Tribal Office for your review. Comments can be provided verbally to Jennifer LeMay at (907) 350-6061 or emailed to: jlemay@lemayengineering.com.

**Attend the Monday, March 12, 2018, Meeting at 10 AM at City Hall.** One of the agenda items will be a summary of the Draft Plan Update by Jennifer LeMay. You can request a copy of the plan be emailed to you now by emailing jlemay@lemayengineering.com You're invited to provide input to the plan and can present your comments verbally. We'll be discussing:

- 2018 Plan Hazards, which include:
  - Erosion
  - Flood
  - Earthquake
  - Ground Failure
  - Tsunami/Seiche
  - Volcanic Ashfall
  - Severe Weather
  - Climate Change
  - Transportation of System Disruptions

  What would be your top three hazards from the above list?

- Critical Infrastructure/Vulnerability Overview/Mitigation Projects

*For more information, contact:*
*Bill Homka, AICP, Planning Director (907) 581-3100*
*Chris Price, Qawalangin Tribal Environmental Director (907) 581-2920*
*Jennifer LeMay, PE, PMP, Lead Planner (907) 350-6061*
*Brent Nichols, DMVA, DHS&EM Project Manager (907) 428-7085*

**Unalaska City and Tribe Hazard Mitigation Plan Public Hearing**

**March 12, 2018**

**10 am at City Hall**

| Name | Organization | Contact Information (phone or email) |
|---|---|---|
| Scott Brown | City of Unalaska | 581-1254 |
| Thomas Roufos | COU Planning | 359 1984 |
| James A Price | COU PLANNING | 359-2007 |
| Jennifer Shockley | COU Public Safety | 581-1233 |
| Peggy McLaughlin | COU Ports | 581-7254 |
| CHRIS PRICE | Qawalangin Tribe | 581-2920 |
| Tom Robinson | Q TRIBE | 581-2920 |
| BIL HOMKA | PLANNING DEPT. | 581-3100 |
| JR Pearson | DPU | 581-1260 |
| * Debra Hanson Zueger | City Risk Manager Administrator | 581-1251 ext. 1202 riskmanager@ci.unalaska.ak.us |
| Erin Reinders | City of Unalaska | 581-1251 |
| Clay Darnell | " | " |
| | | |
| | | |

# Unalaska Multi-Jurisdictional Hazard Mitigation Plan

Prepared by LeMay Engineering & Consulting, Inc.
for the City and Tribe of Unalaska

# Unalaska Hazard Mitigation Plan (HMP) Update

- The City and Tribe developed a HMP in 2013 that expires on December 4, 2018.
- FEMA requires HMPs to be updated every 5 years.
- The State of Alaska, Department of Military and Veterans Affairs, Division of Homeland Security and Emergency Management (DHS&EM) was awarded a Pre-Disaster Mitigation Program grant from FEMA to update the HMP.
- LeMay Engineering & Consulting, Inc. was contracted to assist the City and Tribe with updating the HMP in 2017.

# What is a Hazard Mitigation Plan (HMP)?

HMPs are community plans which include:

- 1. Profiles of natural hazards that affect a community.
- 2. An assessment of the community's vulnerability to hazards.
- 3. Mitigation actions to reduce the community's vulnerability to hazards.

# Natural Hazard Profiles

Hazard profiles detail the:

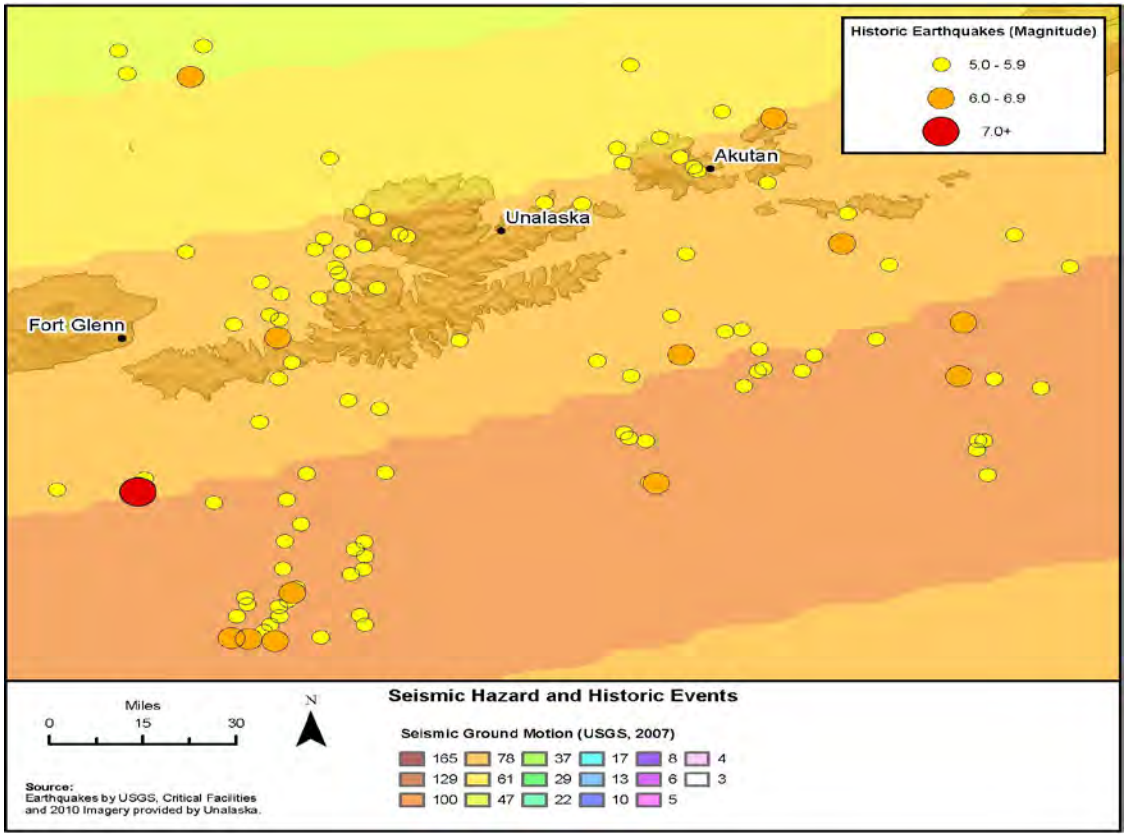
- Nature of hazard
- History of hazard's impacts on community
- Location (proximity to community)
- Extent (magnitude and severity)
- Impact on the City and Tribe
- Probability of future events

# Natural Hazards affecting Unalaska

The Unalaska HMP identifies and profiles the following hazards:

- Earthquake
- Erosion
- Flood
- Ground Failure (Avalanches, Landslides, Rockfalls)
- Tsunami
- Volcano
- Severe Weather
- Transportation and Utility Disruptions
- Climate Change

# Earthquake



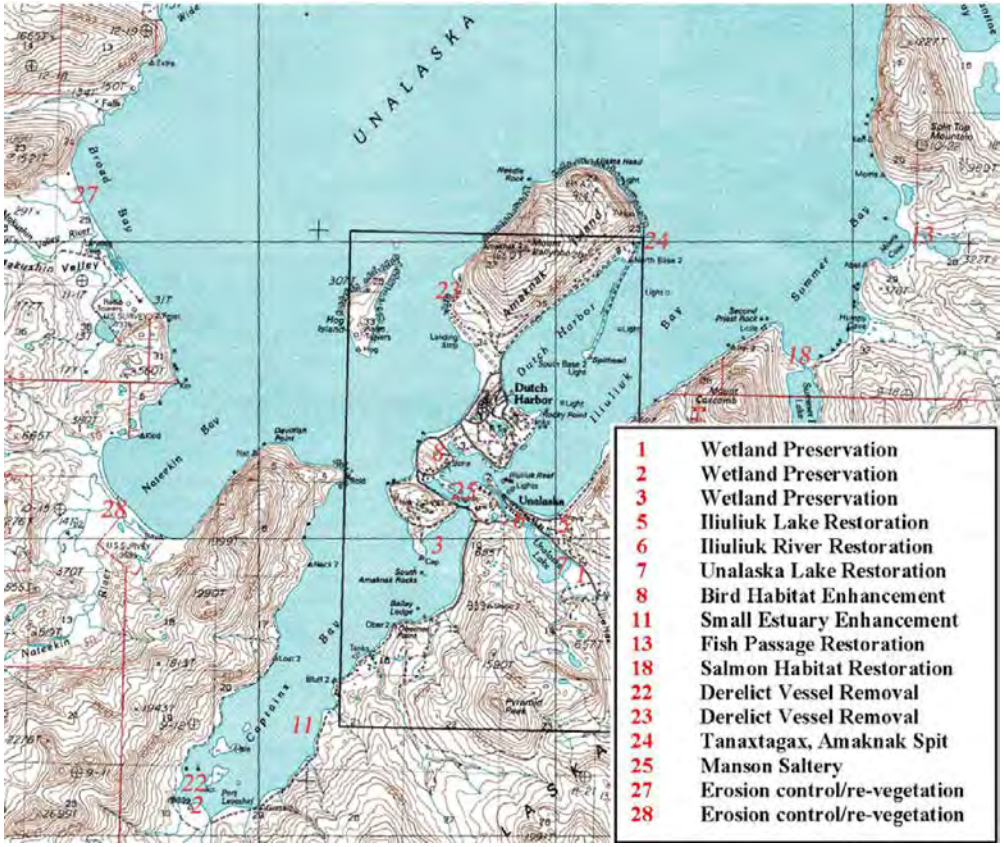

- Unalaska is located in close proximity to the Ring of Fire.
- The USGS database lists 3,711 earthquakes that have occurred within 100 miles of Unalaska since 1973. The average magnitude is 3.3. Twenty earthquakes have exceeded a magnitude of 6.0 with the two highest events at 6.9 (1980 and 1987).
- The extent of earthquake damage in Unalaska could be “critical”.
- The probability of earthquakes occurring in the future is “highly likely,” with a 100% chance of occurring.

Image Source: USGS Website

# Erosion

- Unalaska experiences coastal and riverine erosion. The 2008 State of Alaska Coastal Management Plan identified erosion-impacted areas and project narratives for Unalaska. The program was discontinued in 2011.
- The extent of erosion is considered “limited.”
- The probability of wind erosion is considered “likely,” with a 1 in 3 year’s chance of occurring.

# Erosion Continued



# Flood

- As with erosion, the 2008 Coastal Management Plan summarized the City's flood-impacted areas (Iliuliuk Lake, Summers Bay, Broad Bay, and Nateekin Bay).
- Unalaska also experiences minor flood locations from the Iliuliuk River, Lake Ilulaq, and Captains Bay.
- The extent of a flood event is considered "limited."
- The probability of a flood event is considered "highly likely" in the valley with a 100% chance of occurring.

# Ground Failure

- Debris avalanches, landslides, and rock falls
- Within the last five years, rockfalls have occurred along Captains Bay Road, Ballyhoo Road, and Summer Bay Road.
- The extent of a ground failure event is considered “limited.”
- The probability of a ground failure event is considered “likely” with a 1 in 3 year’s chance of occurring.

# Tsunami and Seiche

| Table 5-7 Historic Aleutian Tsunamis -Waves at Dutch Harbor | | | | | |
|---|---|---|---|---|---|
| Date | Location | Earthquake Moment Magnitude (MW) | Wave Height (meters) | Source | |
| | | | | Latitude | Longitude |
| November 10, 1938 | Alaska Peninsula | 8.2 | 0.1 | 54.48 | -158.37 |
| April 1, 1946 | Near Unimak Island, Eastern Aleutian Islands, AK | 8.6 | Unknown | 25.8 | -163.5 |
| March 9, 1957 | South of Andreanof Islands, Central Aleutian Islands, AK | 8.3 | Unknown | 51.5 | -175.7 |
| March 27, 1964 | Prince William Sound | 9.2 | 0.35 | 61.05 | -147.48 |
| February 4, 1965 | Rat Islands, Western Aleutian Islands, AK | 8.7 | <0.1 | 51.29 | -178.49 |
| May 7, 1986 | Central Aleutian Islands, AK | 8.0 | 0.15 | 51.52 | -166.54 |
| February 21, 1991 | Bering Sea | 6.7 | 0.15 | 58.43 | -175.45 |
| June 10, 1996 | Central Aleutian Islands, AK | 7.9 | 0.6 | 51.56 | -177.63 |

# Tsunami Continued

- The extent of a tsunami is considered “limited.”
- The probability of a tsunami event is considered “possible” with a 1 in 5 year’s chance of occurring.

# Volcanic Ashfall

Figure 8. *Flight paths of commercial freight and passenger airlines crossing the North Pacific. Future explosive eruptions of Makushin Volcano may inject ash as high as 20,000 meters into the atmosphere, causing disruption of normal trans-Pacific flight schedules. The circle shows areas in Alaska that might be affected by ash fallout during a typical eruption of Makushin Volcano. The exact area of ash fallout will depend on synoptic weather conditions and wind directions, but it is likely to affect areas mainly east of the volcano (shaded area). Ashfall during some small eruptions will be restricted only to the immediate vicinity of the volcano and surrounding parts of Unalaska Island, whereas larger eruptions will produce thicker and more widespread ash falls. Fallout of large bombs and blocks will be restricted to areas within 5 kilometers of the vent.*


- The impact of volcanoes on Unalaska is considered “limited.”
- The Probability of Volcanic Ashfall events occurring is considered “likely,” with a 1 in 3 year’s chance of occurring.

# Severe Weather

- Severe weather for Unalaska includes:
  - Winter Storms
  - High Winds
  - Freezing Rain/Ice Storm
  - Extreme Cold
  - Hail
  - Heavy and Drifting Snow
- The extent of a severe weather event is considered “limited.”
- Severe weather has a “highly likely” probability of occurring with a 100% chance of occurring each year.

# Technological and Manmade Hazards

- These hazards include:
  - Road, airport, and harbor closures
  - Utility system disruptions
  - Telecommunication Systems
- The extent of a technological and manmade hazard event is considered “critical.”
- This hazard has a “possible” probability of occurring with a 1 in 5 year’s chance of occurring.

# Climate Change

- Residents reported the following observations in December 2017:
  - Increasing sea level
  - Drier weather in summer months
  - Warmer temperatures throughout the year
  - Less snowfall at higher elevations which will affect the water supply
  - Ocean acidification is affecting local sea life
  - Less water in rivers

# Mitigation Actions

A mitigation action is a planned activity that will reduce the community's vulnerability to natural hazards. Mitigation actions are broadly categorized as:

- Prevention
- Property Protection
- Public Education and Awareness
- Natural Resource Protection
- Emergency Services
- Structural Projects

The Plan has 21 pages of actions.

# Take Action

- Remember the HMP is a plan. It is ultimately the responsibility of the community to initiate projects and seek out funding.
- The HMP should also be referenced and incorporated into other community planning mechanisms to create a cohesive strategy for future actions.

# Keeping the HMP Current

- Perform annual reviews using the review sheet in Appendix H of plan.
- Gather public information about hazards using the survey in Appendix H of plan.
- Initiate HMP update process before 2023.

# Questions or Comments about the HMP Update

If you have any questions/comments about the HMP Update, please contact the City Planning or Tribal Environmental Departments. They can forward all questions to the relevant entity.

# Steps to 2018 HMP Update Completion

- March 12:  Draft HMP Update Public Meeting
  - Provide overview of Planning Team's progress in updating the HMP
  - Comment on plan
    - 1. Commenting verbally at March 12 meeting
    - 2. Email your comments to Jennifer LeMay
    - 3. Call Jennifer LeMay with your comments-907-350-6061
- March 19-23:  State of Alaska reviews 2018 HMP Update
- March 26 – May 15:  FEMA reviews 2018 HMP Update
- June:  City Council adopts plan by resolution

**Jennifer L. LeMay, PE, PMP**
**Vice President**
4272 Chelsea Way
Anchorage, AK 99504
(907) 350-6061
jlemay@lemayengineering.com

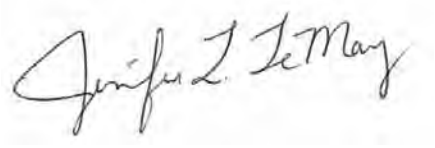
March 28, 2018

Brent A. Nichols, EMSII, CFM
Department of Military and Veterans Affairs
Division of Homeland Security and Emergency Management
P.O. Box 5750
JBER, AK 99505-5750

**Subject: Draft Hazard Mitigation Plan Public Hearing Trip Report, Unalaska, Alaska**

From March 11 to 12, 2018, Jennifer LeMay, PE, PMP of LeMay Engineering & Consulting, Inc. traveled to Unalaska, Alaska. The purpose of this trip was to attend the public hearing for the Draft HMP Update. No members of the public attended; however, the meeting was very beneficial with twelve members of the Planning Committee. The sign in sheet is included in Appendix F of the Draft HMP Update. I summarized the plan at the meeting via a Powerpoint presentation. My presentation is also included in Appendix F. On the afternoon of the 12th, I spent additional time at the Tribal office with Tom Robinson, Tribal President, and Chris Price, Tribal Environmental Director. They hired a new Tribal Administrator in February who was not in Unalaska during my site visit as she was at a conference. Nicole Johnson, Tribal Administrator, and I spoke the following week, and she reviewed the Draft HMP Update. Her review was helpful, and I feel that this Draft HMP Update is a collaborative effort of both the City and Tribe. In the 2013 plan, the Tribe was only mentioned in one paragraph as a participant rather than as a jurisdiction. In this 2018 Draft HMP Update, the Tribe is a jurisdiction and the planning process and both site visits to Unalaska included them.

If you have any questions, please do not hesitate to call me at (907) 350-6061.



3/28/18
Jennifer L. LeMay, PE, PMP/Date
LeMay Engineering & Consulting, Inc.

## jlemay@lemayengineering.com

**From:** Nicole Johnson <nicole.qtribe@gmail.com>
**Sent:** Monday, April 2, 2018 12:41 PM
**To:** jlemay@lemayengineering.com
**Subject:** Re: Unalaska Hazard Mitigation Plan

Good Afternoon Jennifer,

I wanted to let you know that I have talked with Chris and we are both in agreement that there is not really a reason to separate out tribe information in the tables. With the way our tribal jurisdiction overlays the city's there isn't really enough differences to justify a separate table.

As for the information you requested. We sent several inquires to the City of Unalaska for the information and have not received a response with the information.

Otherwise, I am happy with moving forward with this version.

Thanks,
Nicole

**Nicole Johnson**
Tribal Administrator
Qawalangin Tribe of Unalaska
PO Box 334
Unalaska, AK 99685
Office: 907-581-2920
Cell: 907-359-2921
Fax: 907-581-3644
nicole.qtribe@gmail.com

On Mon, Mar 19, 2018 at 8:57 AM, <jlemay@lemayengineering.com> wrote:

> Thanks, Nicole.
>
> I will add the clarification as you suggested to the statement that the tribe does not own the land. I am out of the office this week and look forward to speaking with you next week.
>
> Jennifer

Jennifer LeMay, PE, PMP

Vice President

(907) 350-6061


**From:** Nicole Johnson <nicole.qtribe@gmail.com>
**Sent:** Friday, March 16, 2018 3:46 PM
**To:** jlemay@lemayengineering.com
**Subject:** Re: Unalaska Hazard Mitigation Plan

Good Afternoon,

I have attached a signed letter of commitment. I based it off one that I have used in the past for these plans. Let me know if you would like to see it changed in any way.

Chris is helping me in attempting to obtain the information you requested in question 2.

3. I think that using one table in this instance is acceptable since the two jurisdictions are co-located. Though the statement that the tribe does not own in land, without the clarification that we do provide operational funding to the facilities that listed in question #2. Without this clarification, I do worry about the tribe being able to use this to get effective amounts of funding for preparing the sites we have a vested interest in.

Chris and I will be sitting down next week to work on questions 4 and 5 in more detail.

Thanks,

Nicole

**Nicole Johnson**

Tribal Administrator

Qawalangin Tribe of Unalaska

PO Box 334

Unalaska, AK 99685

Office: 907-581-2920

Cell: 907-359-2921

Fax: 907-581-3644

nicole.qtribe@gmail.com

On Wed, Mar 14, 2018 at 11:02 AM, <jlemay@lemayengineering.com> wrote:

> Good morning, Nicole,
>
> I am a contractor to the State of Alaska, Department of Military and Veterans Affairs, Division of Homeland Security and Emergency Management (DHS&EM). DHS&EM was awarded a Pre-Disaster Mitigation Program grant from the Federal Emergency Management Agency (FEMA) to update the 2013 hazard mitigation plan (HMP) for the City and Tribe of Unalaska. The update process began in November, and we are in the final stretch of wrapping up the process.
>
> I was in Unalaska in December and met with Tom. I was also in Unalaska this past Sunday and Monday and met with Tom and Chris. They're excited to have you on board as Tribal Administrator, and the three of us would welcome your input on the Draft Plan. I do not want to overwhelm you with the plan but I'd like to let you know that my contract with the DHS&EM ends May 23. Working backward from that date, FEMA's review of the Draft HMP typically takes 45-60 days which is why I was planning to submit the Draft HMP to the State for initial review and then the State submits the plan to FEMA for review by March 23. That way I can incorporate FEMA comments on the plan before my contract is up. However, I realize that you are in the office today after an absence (March 14) and that Draft HMP Submittal to the State by the 23rd may not be feasible with your schedule. Please let me know what is realistic with

your schedule, and I'll try to accommodate and plan my schedule accordingly and also provide the State/FEMA with a heads up of when they can expect to see the HMP.

Feel free to comment on the Draft HMP in its entirety. Based on my discussion with Tom and Chris Monday afternoon, we specifically need you to provide the following:

1. Signed letter of commitment (please email me a pdf copy).
2. I will add nine Tribal-Owned critical facilities to Table D-1 in Appendix D (Aleutian Housing senior center, APA Headstart, Tribal Office, API Clinic, Behavioral Health, Cultural Camp, Door Circle Housing, Old HUD Housing, and Nirvanna Housing). Please provide me the number of occupants in each, address, latitude, longitude, estimated value, and building type. I am requesting that the City add these locations to the updated maps currently being prepared.
3. Table 6-1 on page 6-2. Typically in a multi-jurisdictional plan, I include a vulnerability overview table for the City and one for the Tribe. In your opinion, should there be separate tables or should we combine them into one since the geographic areas are essentially co-located? Tom and Chris stated that approximately 95% of the Tribe's area is the same as the City limits.
4. Tables 7-1, 7-2, and 7-3 on pages 7-2 thru 7-4. Please markup additions and deletions to these tables to adequately reflect Tribal capabilities.
5. Table 7-8 on pages 7-13 thru 7-32. Please add mitigation actions for the Tribe. If it'd be beneficial, we could have a separate table for the Tribe or we could add Tribal mitigation actions to the existing Table 7-8. Please talk to Chris for direction as I believe he started this based on our discussion on Monday.

You may provide comments by writing them on the hard copy and scanning me a pdf, provide comments via email, or set up a phone conference to talk through the plan.

I look forward to working with you. I will send a link to the document in the next email.

Thanks,

Jennifer LeMay, PE, PMP

Vice President

(907) 350-6061

LeMay Engineering & Consulting, Inc.

# Appendix G
# Benefit–Cost Analysis Fact Sheet

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# Benefit-Cost Analysis Fact Sheet

Hazard mitigation projects are specifically aimed at reducing or eliminating future damages. Although hazard mitigation projects may sometimes be implemented in conjunction with the repair of damages from a declared disaster, the focus of hazard mitigation projects is on strengthening, elevating, relocating, or otherwise improving buildings, infrastructure, or other facilities to enhance their ability to withstand the damaging impacts of future disasters. In some cases, hazard mitigation projects may also include training or public-education programs if such programs can be demonstrated to reduce future expected damages.

A Benefit-Cost Analysis (BCA) provides an estimate of the "benefits" and "costs" of a proposed hazard mitigation project. The benefits considered are avoided future damages and losses that are expected to accrue as a result of the mitigation project. In other words, benefits are the reduction in expected future damages and losses (i.e., the difference in expected future damages before and after the mitigation project). The costs considered are those necessary to implement the specific mitigation project under evaluation. Costs are generally well determined for specific projects for which engineering design studies have been completed. Benefits, however, must be estimated probabilistically because they depend on the improved performance of the building or facility in future hazard events, the timing and severity of which must be estimated probabilistically.

**All Benefit-Costs must be:**

- Credible and well documented
- Prepared in accordance with accepted BCA practices
- Cost-effective (BCR $\geq$ 1.0)

**General Data Requirements:**

- All data entries (other than Federal Emergency Management Agency [FEMA] standard or default values) MUST be documented in the application.
- Data MUST be from a credible source.
- Provide complete copies of reports and engineering analyses.
- Detailed cost estimate.
- Identify the hazard (flood, wind, seismic, etc.).
- Discuss how the proposed measure will mitigate against future damages.
- Document the Project Useful Life.
- Document the proposed Level of Protection.
- The Very Limited Data (VLD) BCA module cannot be used to support cost-effectiveness (screening purposes only).
- Alternative BCA software MUST be approved in writing by FEMA HQ and the Region prior to submittal of the application.

**Damage and Benefit Data**

- Well documented for each damage event.
- Include estimated frequency and method of determination per damage event.
- Data used in place of FEMA standard or default values MUST be documented and justified.

- The Level of Protection MUST be documented and readily apparent.
- When using the Limited Data (LD) BCA module, users cannot extrapolate data for higher frequency events for unknown lower frequency events.

**Building Data**

- Should include FEMA Elevation Certificates for elevation projects or projects using First Floor Elevations (FFEs).
- Include data for building type (tax records or photos).
- Contents claims that exceed 30% of building replacement value (BRV) MUST be fully documented.
- Method for determining BRVs MUST be documented. BRVs based on tax records MUST include the multiplier from the County Tax Assessor.
- Identify the amount of damage that will result in demolition of the structure (FEMA standard is 50% of pre-damage structure value).
- Include the site location (i.e., miles inland) for the Hurricane module.

**Use Correct Occupancy Data**

- Design occupancy for Hurricane shelter portion of Tornado module.
- Average occupancy per hour for the Tornado shelter portion of the Tornado module.
- Average occupancy for Seismic modules.

**Questions to Be Answered**

- Has the level of risk been identified?
- Are all hazards identified?
- Is the BCA fully documented and accompanied by technical support data?
- Will residual risk occur after the mitigation project is implemented?

**Common Shortcomings**

- Incomplete documentation.
- Inconsistencies among data in the application, BCA module runs, and the technical support data.
- Lack of technical support data.
- Lack of a detailed cost estimate.
- Use of discount rate other than FEMA-required amount of 7%.
- Overriding FEMA default values without providing documentation and justification.
- Lack of information on building type, size, number of stories, and value.
- Lack of documentation and credibility for FFEs.
- Use of incorrect Project Useful Life (not every mitigation measure = 100 years).

# Appendix H
# Plan Maintenance Documents

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## Annual Review Questionnaire

| PLAN SECTION | QUESTIONS | YES | NO | COMMENTS |
|---|---|---|---|---|
| PLANNING PROCESS | Are there internal or external organizations and agencies that have been invaluable to the planning process or to mitigation action | | | |
| | Are there procedures (e.g., meeting announcements, plan updates) that can be done more efficiently? | | | |
| | Has the Task Force undertaken any public outreach activities regarding the MHMP or implementation of mitigation actions? | | | |
| HAZARD PROFILES | Has a natural and/or human-caused disaster occurred in this reporting period? | | | |
| | Are there natural and/or human-caused hazards that have not been addressed in this HMP and should be? | | | |
| | Are additional maps or new hazard studies available? If so, what have they revealed? | | | |
| VULNERABILITY ANALYSIS | Do any new critical facilities or infrastructure need to be added to the asset lists? | | | |
| | Have there been changes in development patterns that could influence the effects of hazards or create additional risks? | | | |
| MITIGATION STRATEGY | Are there different or additional resources (financial, technical, and human) that are now available for mitigation planning within the | | | |
| | Are the goals still applicable? | | | |
| | Should new mitigation actions be added to the a community's Mitigation Action Plan? | | | |
| | Do existing mitigation actions listed in a community's Mitigation Action Plan need to be reprioritized? | | | |
| | Are the mitigation actions listed in a community's Mitigation Action Plan appropriate for available resources? | | | |

# Mitigation Action Progress Report



Progress Report Period: _____ (date) to _____ (date)

Project Title: _____ Project ID# _____

Responsible Agency: _____

Address: _____

City: _____

Contact Person: _____ Title: _____

Phone #(s): _____ email address: _____

List Supporting Agencies and Contacts:

_____

_____

Total Project Cost: _____

Anticipated Cost Overrun/Underrun: _____

Date of Project Approval: _____ Start date of the project: _____

Anticipated completion date: _____

Description of the Project (include a description of each phase, if applicable, and the time frame for completing each phase): _____

_____

_____

_____

| Milestones | Complete | Projected Date of Completion |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Plan Goal (s) Addressed:

Goal: _____

Indicator of Success: _____

_____

_____

_____

Project Status

☐ Project on schedule

☐ Project completed

☐ Project delayed*

*explain: _____

_____

☐ Project canceled

Project Cost Status

☐ Cost unchanged

☐ Cost overrun*

*explain: _____

_____

☐ Cost underrun*

*explain: _____

_____

Summary of progress on project for this report:

A. What was accomplished during this reporting period?

_____

_____

_____

_____

B. What obstacles, problems, or delays did you encounter, if any?

_____

_____

_____

_____

C. How was each problem resolved?

_____

_____

_____

_____

Next Steps: What is/are the next step(s) to be accomplished over the next reporting period?

Other Comments:

**Community Local Hazard Mitigation Plan Survey**

This survey is an opportunity for you to share your opinions and participate in the mitigation planning process. The information that you provide will help us better understand your concerns for hazards and risks, which could lead to mitigation activities that will help reduce those risks and the impacts of future hazard events.

**The hazard mitigation process is not complete without your feedback.** All individual responses are strictly confidential and will be used for mitigation planning purposes only.

***Please help us by taking a few minutes to complete this survey and return it to:***

Director of Planning or Tribal Environmental Director

## Vulnerability Assessment

The following questions focus on how vulnerable the community or its facilities are to damage from a particular hazard type using the following vulnerability scale:

0= Don't Know  1 =Minimally Vulnerable  2=Moderately Vulnerable  3=Severely Vulnerable

1. How vulnerable to damage are the *structures* in the community from:

| | |
|---|---|
| a. Flooding? | 0 1 2 3 |
| b. Wildfire? | 0 1 2 3 |
| C. Earthquakes? | 0 1 2 3 |
| d. Volcanoes? | 0 1 2 3 |
| e. Snow Avalanche? | 0 1 2 3 |
| f. Tsunami/Seiches? | 0 1 2 3 |
| g. Severe weather storms? | 0 1 2 3 |
| h. Ground failure (landslide, permafrost)? | 0 1 2 3 |
| i. Coastal erosion? | 0 1 2 3 |
| j. Climate change? | 0 1 2 3 |
| k. Other hazards? *Please Specify:* | 0 1 2 3 |

2. How vulnerable to damage are the *critical facilities* within our community from:

[Critical facilities include airport, community shelter, bulk fuel storage tanks, generators, health clinic, law enforcement office (VPO, VPSO, police department), school, public works, e.g. washeteria/water treatment, reservoir/water supply, satellite dish, communications tower, landfills, sewage lagoons, and stores.]

| | |
|---|---|
| a. Flooding? | 0 1 2 3 |
| b. Wildfire? | 0 1 2 3 |
| C. Earthquakes? | 0 1 2 3 |
| d. Volcanoes? | 0 1 2 3 |
| e. Snow Avalanche? | 0 1 2 3 |
| f. Tsunami/Seiches? | 0 1 2 3 |
| g. Severe weather storms? | 0 1 2 3 |
| h. Ground failure (landslide, permafrost)? | 0 1 2 3 |
| i. Coastal erosion? | 0 1 2 3 |
| j. Climate change? | 0 1 2 3 |
| k. Other hazards? | 0 1 2 3 |

*Please Specify:*

**3.** How vulnerable to displacement, evacuation or life-safety is the community from:

| | |
|---|---|
| a. Flooding? | 0 1 2 3 |
| b. Wildfire? | 0 1 2 3 |
| C. Earthquakes? | 0 1 2 3 |
| d. Volcanoes? | 0 1 2 3 |
| e. Snow Avalanche? | 0 1 2 3 |
| f. Tsunami/Seiches? | 0 1 2 3 |
| g. Severe weather storms? | 0 1 2 3 |
| h. Ground failure (landslide, permafrost)? | 0 1 2 3 |
| i. Coastal erosion? | 0 1 2 3 |
| j. Climate change? | 0 1 2 3 |
| k. Other hazards? | 0 1 2 3 |

*Please Specify:*

**4.** Do you have a record of damages incurred during past flood events? Yes No

If yes, please describe:_____

_____

_____

**Preparedness**

Preparedness activities are often the first line of defense for protection of your family and the community. In the following list, please check those activities that you have done, plan to do in the near future, have not done, or are unable to do. *Please check one answer for each preparedness activity*.

| Have you or someone in your household: | Have Done | Plan to do | Not Done | Unable to do |
|---|---|---|---|---|
| Attended meetings or received written information on natural disasters or emergency preparedness? | ☐ | ☐ | ☐ | ☐ |
| Talked with family members about what to do in case of a disaster or emergency? | ☐ | ☐ | ☐ | ☐ |
| Made a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster? | ☐ | ☐ | ☐ | ☐ |
| Prepared a "Disaster Supply Kit" extra food, water, medications, batteries, first aid items, and other emergency supplies)? | ☐ | ☐ | ☐ | ☐ |
| In the last year, has anyone in your household been trained in First Aid or CPR? | ☐ | ☐ | ☐ | ☐ |

**5**. Would you be willing to make your home more resistant to natural disasters? ☐ Yes ☐ No

**6**. Would you be willing to spend more money on your home to make it more disaster resistant? ☐ Yes ☐ No ☐ Don't know

**7.** How much are you willing to spend to better protect your home from natural disasters? *(Check only one)*

| | | | |
|---|---|---|---|
| ☐ | Less than $100 | ☐ | Desire to relocate for protection |
| ☐ | $100-$499 | ☐ | Other, please explain |
| ☐ | $500 and above | | |
| ☐ | Nothing / Don't know | | |
| ☐ | Whatever it takes | | |

## Mitigation Activities

A component of the Local Hazard Mitigation Plan activities is developing and documenting additional mitigation strategies that will aid the community in protecting life and property from the impacts of future natural disasters.

Mitigation activities are those types of actions you can take to protect your home and property from natural hazard events such as floods, severe weather, and wildfire. Please check the box for the following statements to best describe their importance to you. Your responses will help us determine your community's priorities for planning for these mitigation activities.

| Statement | Very Important | Somewhat Important | Neutral | Not Very Important | Not Important |
|---|---|---|---|---|---|
| Protecting private property | ☐ | ☐ | ☐ | ☐ | ☐ |
| Protecting critical facilities (clinic, school, washeteria, police/fire department, water/sewer, landfill) | ☐ | ☐ | ☐ | ☐ | ☐ |
| Preventing development in hazard areas | ☐ | ☐ | ☐ | ☐ | ☐ |
| Protecting natural environment | ☐ | ☐ | ☐ | ☐ | ☐ |
| Protecting historical and cultural landmarks | ☐ | ☐ | ☐ | ☐ | ☐ |
| Promoting cooperation within the community | ☐ | ☐ | ☐ | ☐ | ☐ |
| Protecting and reducing damage to utilities, roads, or water tank | ☐ | ☐ | ☐ | ☐ | ☐ |
| Strengthening emergency services (clinic workers, police/fire) | ☐ | ☐ | ☐ | ☐ | ☐ |

**8.** Do you have other suggestions for possible mitigation actions/strategies?

_____

_____

_____

_____

_____

## General Household Information

**9.** Please indicate your age: _____

and Gender: ☐ Male ☐ Female

**10.** Please indicate your level of education:

| | | | |
|---|---|---|---|
| ☐ | Grade school/no schooling | ☐ | College degree |
| ☐ | Some high school | ☐ | Postgraduate degree |
| ☐ | High school graduate/GED | ☐ | Other, please specify |
| ☐ | Some college/trade school | | |

**11.** How long have you lived in Unalaska?

☐ Less than 5 years ☐ 5 to 10 years ☐ 11 to 20 years ☐ 21 or more years

**12.** Do you have internet access? ☐ Yes ☐ No

**13.** Do you own or rent your home? ☐ Own ☐ Rent

## Thank You for Your Participation!

This survey may be submitted anonymously; however, if you provide us with your name and contact information below we will have the ability to follow up with you to learn more about your ideas or concerns (optional):

Name: _____

Address: _____

_____

Phone: _____