Fremont Fire Department
Office of Emergency Services
3300 Capitol Avenue, Building "A"
Fremont, CA 94538
Attn: Hazard Mitigation Plan
(Submitted via email to jeanine.foster@fostermorrison.com)

February 16, 2024

Re: Comments on the Tri-City Local Hazard Mitigation Plan

Dear Tri-City LHMP Update Team,

Thank you for the opportunity to provide feedback on the Draft 2024 Tri-City Local Hazard Mitigation Plan (LHMP) Update. We are pleased to see that the draft addresses climate impacts like sea level rise, urban heat, flooding, wildfires, and earthquakes. In subsequent drafts of the LHMP, we encourage you to provide more specificity in the sea level rise, flood, earthquake, and multi-hazard resilience policies and to put a greater emphasis on nature-based solutions and preserving natural resources. To realize the following priorities, we encourage you to include the specific line-edit suggestions at the bottom of this document to more comprehensively incorporate disaster and climate resilience, nature-based solutions, and equity into the Tri-City LHMP.

- **Take a multi-hazard resilience approach to approving new developments, capital projects, and the city's climate resilience and adaptation plans.** The Tri-City area is exposed to multiple hazards that must be considered in parallel to determine effective mitigation policies.
- **Update earthquake mitigation actions to address structural and non-structural hazards for new and existing buildings, and critical lifeline services, in the event of a major earthquake.** Our region is operating on borrowed time and we must move swiftly to retrofit existing buildings and lifelines and adopt functional recovery performance standards for critical buildings.
- **Protect homes and facilities from current and future flood risk due to climate change.** Create collaborative sea level rise and groundwater rise resilience plans for all three cities. Update zoning and building codes to ensure new or significant construction and public infrastructure in flood risk zones can withstand future climate conditions. Understand and address flood risk due to stormwater.
- **Prioritize multi-benefit green solutions and protect wetlands to address sea level rise, flooding, urban heat, air pollution, and water pollution.** Green infrastructure (such as green streets and restored wetlands) can improve local water quality, minimize flooding, increase

shoreline resiliency, mitigate urban heat, and improve air quality. Prioritize multi-benefit green solutions in communities with overlapping vulnerabilities.

- **Co-develop solutions with community groups, community members, and the Ohlone people, such that residents feel ownership of the city and solutions reflect the lived experience of frontline communities.** Prioritize climate resilience solutions within historically underrepresented communities and communities most vulnerable to climate impacts. Compensate community members and community groups for their involvement and expertise.
- **Protect Environmental Justice (EJ) communities from exposure to toxic sites.** Assess the risk that toxic sites pose to nearby communities under future climate conditions, and require full cleanup of toxic sites before allowing housing to be built nearby.

The following specific recommendations draw on reports and guidance created by regional agencies and nonprofits. These include Save The Bay's Position Paper on San Francisco Bay Sea Level Rise & Flood Strategy, Greenbelt Alliance's Resilience Playbook, the San Francisco Estuary Institute's SF Bay Shoreline Adaptation Atlas, and the San Mateo County Flood & Sea Level Rise Resiliency District's (OneShoreline) Planning Policy Guidance.

Sincerely,

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Feedback On Goals

Goal 4: Build capacity and capabilities to increase disaster resilience for all hazards with a focus on the whole community.

- *Recommendation - Add or integrate new objective*: Develop disaster recovery plans that include strategies for shelter-in-place, emergency/interim housing and housing recovery, and how vulnerable communities with limited adaptive capacity will be supported through the process of post-disaster recovery (Adapted from 2022 San Francisco Safety and Resilience Element).

Goal 5 : Value the natural environment as a partner, recognize the ecological services provided by nature and harness these ecological processes to mitigate hazards.

- *Recommendation - Add or integrate new objective*:Prioritize nature-based solutions such as wetland protection and restoration, green stormwater infrastructure, riparian restoration, and open space protection.

Goal 7 : Build earthquake resiliency, prevent and reduce earthquake impacts, and mitigate undesirable earthquake outcomes.

- *Recommendation - Change "Make life safety a priority" to*: Make life safety and functional recovery a priority in building and infrastructure retrofits and new construction.

Feedback On Mitigation Actions

The following table contains our recommendations for revising or adding new mitigation actions to the LHMP parties' mitigation action lists. The first column shows which of the LHMP's goal our recommendation helps to achieve, and the second column indicates which existing mitigation action our recommendation applies to and/or which city the recommended action should be added to. The third column includes our line edit recommendations, and the fourth column provides additional information, such as the sources of our policy recommendations.

Relevant Goals & Objectives	**City & Action #**	**Recommended Changes** Red text indicates language that should be added to the LHMP.	**Additional Supporting Information**
Multi-Hazard Actions			
Goal 1 Goal 2 Goal 4	[Add new Action to all cities]	*[Low-hanging fruit recommendations]* • Ensure foundations and structural systems are designed with consideration of site soils conditions when reviewing projects in areas subject to current or future risk of **liquefaction**, slope instability, sea level rise, **groundwater rise**, and other flood hazards. • Require multi-hazard risk assessments in private development, capital projects, and city's climate resilience programs. • New and/or substantial construction sited in "High" or "Very High" Liquefaction Susceptibility areas in the Bay Area Liquefaction Susceptibility Map provided by the U.S. Geological Survey shall account for liquefaction hazards and the impacts of rising shallow groundwater on liquefaction severity in project design. *[Next step recommendations]*	Low-hanging fruit recommendations: • Adapted from Oakland's Safety Element 2023 • Adapted from San Francisco Safety and Resilience Element • Adapted from OneShoreline Sea Level Rise Planning Guidance Next step recommendations:

		• Limit Development in Hazardous Areas and Minimize Erosion. Minimize threat to structures and humans by limiting development in areas subject to multi-hazard risks like landslide, **liquefaction,** repeated flooding, sea level rise, or other geologic threats. • Ensure that new developments are designed/constructed to meet functional recovery (beyond life safety standards) goals for all hazards. For known hazards, like liquefaction, development should seek performance equivalent to structures built on firm ground.	• Adapted from Oakland's Safety Element 2023 • Adapted from San Francisco Safety and Resilience Element
Goal 1 Goal 6	Newark Action 3: Continuously adopt the most current building standards and include appendices to mitigate hazards like floods, wildfires, and earthquakes Fremont Action 3: In the municipal code, adopt or exceed CA building code standards [Add Action to Union City]	*[Add to project description]* Create additional building standards for new development or significant redevelopment in developed areas that are at risk of hazards, including future climate hazards. For developed areas in current and future flood risk zones, set Base Floor Elevation standards and floodproofing requirements, and require new developments to plan for future flood conditions for the life of the project and contribute to shoreline resilience infrastructure. In developed areas at risk of groundwater rise, consider requirements for groundwater-resilient and corrosion-inhibiting building materials, sump pump restrictions, regular foundation inspections, and permitting limits in areas at risk of toxic contaminant mobilization.	These building requirements can be implemented through Shallow Groundwater Rise Overlay Districts and Sea Level Rise Overlay Zones (see our later recommendation regarding overlay zones). OneShoreline's Planning Policy Guidance offers model language for overlay zones.

Goal 1 Goal 6	Newark Action 4: Hardening and Retrofit of existing facilities [Add this action to Fremont and Union City]	*[Add to project description]* • Include an analysis of risk of future flooding over the life of the facilities and plan upgrades to these facilities with consideration for future increases in flooding, sea level rise, and shallow groundwater rise • Create an adaptation plan with clear triggers or time horizons detailing steps for maintenance, retrofitting, and/or relocation of the retrofitted facilities • Create a prioritization strategy with criteria such as the asset's vulnerability to inundation, sensitivity to inundation, and utility to disadvantaged communities • Develop sea level rise and stormwater checklists for Capital Improvement Projects to ensure flood resilience is incorporated and nature-based solutions are prioritized.	Example: San Francisco has Guidance for Incorporating Sea Level Rise into Capital Planning and a Sea Level Rise Checklist for capital planning.
Goal 1	Newark Action 6: Update and enhance the GIS data systems and mapping for water-related climate hazards Fremont Action 5: Enhance GIS mapping of natural hazard risks, with critical facilities and lifeline overlays	*[Add to project description]* Make sure updated maps address flood risk from all major sources, including major storms, sea level rise, and shallow groundwater rise, and compounding flood risk from these sources. Model the effects groundwater rise will have on buoyancy, seepage, infiltration, liquefaction, and corrosion. Include a layer showing where contaminated sites (as identified in Geotracker and EnviroStore) are located and which ones are at risk of inundation from flooding.	There are hundreds of hazardous sites in the Bay Area that will be exposed to sea level rise by 2100, over 20 of which are in Hayward.

	[Add this action to Union City]		
Goal 7 Objective: Mitigate secondary hazards associated with earthquake events…	Fremont Action 10: Improve the disaster-resistance of the natural gas delivery system to increase public safety and to minimize damage and service disruption following a disaster. [TBD if included in plan update]	*[Include referenced action in plan update and add the following to project description]* Retrofit existing buildings (prioritizing EJ communities) to use heat pumps, which provide cooling and air filtration on extreme heat and smoke days, and reduce post-earthquake fires. Consider an ordinance requiring installation and periodic inspection and maintenance of gas shut-off valves in existing buildings at the time of sale, transfer of title, and when upgrades are planned for gas piping to minimize the risk of post-earthquake fires due to gas pipeline ruptures.	
	Alameda County Water District 2022 Action: Consider a post-disaster recovery plan and coordinate with Tri Cities on their debris management plans.	*[Add to project description]* Commission Shallow Groundwater Rise Vulnerability and Mitigation Assessments, and incorporate groundwater rise modeling into water infrastructure upgrades plans. Groundwater rise should not be considered separate from other sources of flooding. Evaluate vulnerability of water systems to groundwater rise corrosion/infiltration.	

Climate Change Actions			
Goal 1 Goal 2 Goal 5	Newark Action 7: Sea level rise resiliency plan [Add this Action to Fremont and Union City]	*[Add to project description]* The sea level rise resiliency plan will: ● Be aligned with BCDC's shoreline resilience plan guidelines which will come out by Dec. 2024. ● Coordinate with other jurisdictions in the city's Operational Landscape Unit (OLU) as outlined in SFEI's Adaptation Atlas to ensure the plan is regional in scope. Align the plan with the Hayward Shoreline Master plan and coordinate regionally. ● Prioritize the shoreline's ecological value and ability to adapt to sea level rise. Incorporate "nature-based" design elements to the maximum extent possible to realize multiple benefits including water quality improvement, recreational opportunities, and habitat restoration. ● Seek, support, and center the needs and concerns of vulnerable communities to ensure that planning is community-led.	Currently only the Newark LHMP includes developing a sea level rise (SLR) action plan as an action. We strongly recommend all three cities to include this action and develop their plans on the same timeline, as it's important for SLR plans to be regionally collaborative. The sooner cities complete BCDC-approved sea level rise resilience plans, the sooner they can qualify for state funding to implement the plans.

Goal 5	Fremont Action 12: Implement the Urban Forest Management Plan	*[Add to project description]* Integrate flood resilience and stormwater capture into tree planting efforts.	
Goal 5 Goal 6	[Add new Action to Newark and Union City]	*[Add this action to the Newark and Union City action lists]* Action: Prioritize growth in transit-oriented development areas as identified in the General Plan. Preserve open space in shoreline and hill areas.	This action is already included in the Fremont mitigation actions list, and it should be replicated by the other cities as all cities.
Goal 6	Union City Action 10: Update climate action plan	*[Add to project description]* • Integrate climate adaptation measures into the GHG mitigation actions where relevant. For example, actions on expanding multi-benefit green infrastructure can be incorporated into many of the land use and transportation goals. • Expand on the "Climate Adaptation" section by breaking Goals down into concrete actions with timelines and responsible departments the same way the climate mitigation goals were done. • Conduct thorough community outreach & engagement.	
Coastal Flooding and Sea Level Rise, Groundwater Rise, Dam Failure, Flood 1%/0.2%, Localized Flooding, Severe Weather Heavy Rains and Storm Actions			

Goal 5 Goal 6	Newark Action 12: Develop a storm drain master plan [Add this Action to Fremont and Union City]	*[Include red line edits in project description]* "Development of a Stormwater Master Plan will analyze the conditions of the City's existing storm drain system, performance, and operations, including its ability to function under future climate conditions. The results of the analysis will determine deficiencies in the system that will help in prioritizing improvements and eliminate the deficiencies and localized flooding under current and future flood conditions."	Here is an example of a Storm Drain Master Plan from East Palo Alto.
Goal 1 Goal 3 Goal 6	[Add new Action to all cities]	Action: Address the risk of toxic contaminant mobilization due to flooding. Project Description: Create a public inventory of toxic sites and pollutant sources at risk of contaminant mobilization due to sea level rise or shallow groundwater. Work with relevant agencies to comprehensively clean up contamination, prioritizing sites posing the highest and most immediate risk to communities. Partner with frontline communities to develop robust toxic site cleanup standards that must be adhered to before housing can be approved for the site: • Do not rely solely on capping as a solution for containing contaminants in areas that are at risk of inundation but sea level or groundwater rise • Requires all radioactive and hazardous materials to be completely removed from the site and disposed of in the	Hundreds of hazardous sites in the Bay Area will be exposed to sea level and groundwater rise, potentially mobilizing contaminants and threatening nearby communities. San Rafael's Safety Element Program S-5.4B requires hazardous soil cleanup. The City of Richmond passed an Action to Develop a Shoreline Resiliency Plan with Inclusion of an Inventory of Toxic Sites on the Richmond Shoreline

		least harmful way possible, in a facility that doesn't endanger EJ communities • Consider a site "cleaned" only when community-overseen independent testing determines that it reaches the highest Residential Standards, informed by the CalEnviroScreen 4.0 socio-economic, health, and environmental indicators	The recommended toxic site cleanup standards are adapted from the San Francisco Bay Shoreline Contamination Cleanup Coalition's Shoreline Cleanup Position Statement
Goal 1 Goal 2	[Add new Action to Union Sanitary District]	Action: Identify sewer pipes that are at risk of exposure to volatile organic compounds (VOCs) due to proximity to hazardous sites with VOC contaminants, and prioritize upgrading these pipes.	VOCs in soil at contaminated sites can be transported via sewer pipes into buildings and pose a serious health risk (Roghani et al., 2021).
Goal 2 Goal 4	[Add new Action to all cities]	Action: Adopt Shallow Groundwater Rise Overlay Districts and Sea Level Rise Overlay Zones that require specific design, retrofit requirements, and/or hazardous site cleanup requirements for underground infrastructure, roadways, and new shoreline development in already-developed high-hazard areas. Project Description: New developments in the overlay districts must meet the following requirements: • Have a minimum lowest floor elevation of 4 feet above the current base flood elevation and elevate critical equipment	OneShoreline, San Mateo County's Flood and Sea Level Rise Resiliency District, offers guidance for Shallow Groundwater Rise Overlay Districts and Sea Level Rise Overlay Districts in its *2023 Planning Policy Guidance*.[1]

[1] Ibid. *Planning Guidance Policy.* OneShoreline, 2023. https://oneshoreline.org/wp-content/uploads/2023/09/OneShoreline-Planning-Policy-Guidance-Final-June-21-2023-For-Web.pdf.

		• Maximize the use of natural infrastructure for flood resilience (i.e. wetland restoration, green stormwater infrastructure, flood plain restoration, and open space protection) before considering hardened structures • Plan for future flood conditions for the life of the project • Limit the building of emergency centers/shelters, fire stations, hospitals and health care facilities, schools, major electrical and natural gas distribution facilities, and subsurface parking in the overlay zones • Contribute to regional shoreline infrastructure funds • Additionally, existing wetlands and space for upland migration should be preserved for flood protection, habitat restoration, public access, and recreation.	
Goal 1 Goal 5	[Add new Action to all cities]	Action: Prioritize building and maintaining complete green streets. Project Description: Complete green streets are designed to be safe for all users, including pedestrians, bicyclists, and public transit users, and incorporate green stormwater infrastructure (GSI) which minimizes flooding, extreme heat, and pollution. The City will: • Identify communities experiencing heightened flood risk, urban heat, air pollution, and lack of green space to ensure equitable distribution of multi-benefit urban greening strategies • Align safe street, pedestrian and bicycle, climate resilience, storm drain, and urban tree canopy projects to ensure there	Fremont, Union City, and Newark have street safety programs or plans which should be integrated with urban greening and GSI goals so that there are no missed opportunities to include greening into roadway projects. The San Jose Conservation Corps is an example of a workforce development

		are no missed opportunities to incorporate GSI into the public right of way • Invest in workforce development programs for maintenance of urban greening features. • Engage and prioritize community knowledge when designing and planning greening projects.	program that maintains urban greening projects. See the San Mateo County Sustainable Streets Master Plan for an example of a green streets plan.
Earthquake Resilience Actions			
Goal 7	City of Fremont Action 24: Evaluate seismic risk to Lifelines (e. g., roads and bridges, water, natural gas, and/or electrical distribution) using data collection and Hazus modeling.	*[Add to project description]* Establish a Lifelines Council to provide a mechanism for comprehensive planning for lifelines recovery & response.	See SPUR Report on Lifelines.
Goal 7	[Add new Action to Newark and Union City]	1. Develop and implement an earthquake retrofit plan to reduce hazards from earthquakes. The plan should identify and tally the seismically unsafe buildings and structures, including unreinforced masonry, unreinforced concrete and soft-story buildings, and require inspection for these structures. It should also identify sources of funding to help reconstruct or replace inadequate structures and assist homeowners with earthquake	1. See Safety Element of the Alameda County General Plan, A15 2. See SPUR Report on Lifelines 3. See City of Fremont, Action 25

		retrofitting, and provide timelines for action and public education. 2. Evaluate seismic risk to lifelines (e. g., roads and bridges, water, natural gas, and/or electrical distribution) using data collection and Hazus modeling (Fremont's Action 24). **New Recommended Action:** Establish a Lifelines Council to provide a mechanism for comprehensive planning for lifelines recovery & response. See SPUR Report on Lifelines. 3. Ensure development complies with the Alquist-Priolo Earthquake Fault Zone Act, and otherwise avoid development of public facilities or intensive residential, commercial, or industrial development in the immediate vicinity of the Hayward Fault (Fremont Action 25).	
Goal 7	[Add new Action to all cities]	Abate structural and non-structural hazards in City-owned properties as well as special use buildings like retirement homes, childcare centers, schools, and community centers.	Adapted from San Francisco Safety & Resilience Element
Goal 7	[Add new Action to all cities]	1. Maintain up-to-date building codes and encourage or require new and existing buildings and infrastructure to be designed or retrofitted for timely restoration of service (functional recovery) following an earthquake, with particular attention on the effects of liquefaction on buildings and infrastructure. 2. Adopt recovery-based seismic performance targets for new buildings serving recovery-critical functions, so that citywide improvements can advance through the natural	1. Adapted from City of Alameda General Plan 2040. Policy HS-9 2. Recommendation from SPUR Report Building it Right the First Time.

		process of new development, building replacement, and adaptive reuse. Create incentives such as priority permit processing or	
Wildfire and Severe Weather Extreme Heat Actions			
Goal 1	Newark Action 15: Urban Forest Master Plan development Union City Action 23: Develop a long term urban forest management plan to address adverse future impacts on city's natural resources	*[Add to hazards addressed]*: Localized Flooding, Severe Weather Heavy Rains and Storm *[Add to project description]*: In the plan, identify opportunities for urban trees to also serve stormwater capture and flood resilience purposes, such as by incorporating tree wells, bioswales, or other GSI features. Assess opportunities to maintain the urban forest through partnerships with workforce development programs.	Green stormwater infrastructure (GSI) can improve local water quality, minimize flooding by absorbing and filtering stormwater, increase shoreline resiliency, mitigate urban heat, and improve air quality.