Olympia Sea Level Rise Collaborative

The City of Olympia, the Port of Olympia, and LOTT Clean Water Alliance

MEMORANDUM

TO:	Olympia Sea Level Rise Response Collaborative Executive Committee
FROM:	Olympia Sea Level Rise Response Collaborative Technical Work Group
DATE:	May 27, 2025
SUBJECT:	Technical Workgroup Recommendation on FEMA Levee Accreditation for Flood Protection Related to Sea Level Rise

Accreditation is the process by which FEMA recognizes the protection afforded by a flood protection structure. Simplistically, if FEMA requirements are met, property protected by the accredited structures are no longer required to obtain flood insurance or meet regulations associated with building in a floodplain. As the Sea Level Rise Response Collaborative (Collaborative) Partners plan, design, finance, and construct physical adaptation strategies to address future flood risk from sea level rise, careful consideration of the costs and benefits of meeting – or not meeting – FEMA accreditation standards is required. While accredited flood protection may lessen the financial and regulatory burden on individual property owners and developers, building and maintaining accredited protection could be costly for the community.

This memo provides background on FEMA's National Flood Insurance Program and the purpose of accreditation, summarizes findings from the technical workgroup's research on the accreditation process, and describes the work group's recommendation not to pursue FEMA accreditation for flood protection related to sea level rise at this time. Understanding the implications of FEMA accreditation was identified as an informational strategy in the Olympia Seal Level Rise Response Plan.

Technical Workgroup Recommendation

Based on the information provided in this memo, the Technical Workgroup recommends that the Collaborative partners not pursue FEMA accreditation for flood protections structures at this time. The primary factors influencing this recommendation include:

1. **Limited Current Benefits:** The existing FEMA Flood Insurance Rate Maps (FIRM) for Olympia show a small number of structures within the Special Flood Hazard Area (SFHA), the area where the National Flood Insurance Program's (NFIP's) floodplain management regulations must be enforced. All structures within the SFHA are mandated to purchase flood insurance. Under current conditions, there are 16 properties who would benefit from the cost savings associated with accreditation and flood insurance reductions. This represents 10% of structures that are projected to be impacted by 2050 high-range sea level rise projections. The FEMA FIRM maps are not updated regularly and do not account for future sea level rise, meaning the full benefits of accreditation are currently minimal and will likely stay that way well into the future.

2. **Future Sea Level Rise Considerations:** Olympia's planning efforts already focus on a high-range sea level rise scenario (24" by 2050), which is more protective than FEMA's current, and likely future, requirements. The adaptation efforts align with the need to future-proof infrastructure. While future FIRM updates may incorporate projected sea level rise and could expand the SFHA, accreditation benefits would only be realized if a significant number of properties fall within the updated SFHA.

3. **FEMA Staff Feedback:** Our conversations with FEMA representatives and consultants confirmed that FEMA accreditation would not offer substantial benefits given the current mapping. Instead, FEMA staff recommended focusing our efforts on securing funding for the construction of flood protection infrastructure and pursuing accreditation only after the infrastructure is built, if warranted.

4. **Cost-Effectiveness:** The cost and effort of pursuing FEMA accreditation—particularly at this stage—may not be justified given the limited number of properties that would benefit. Instead, resources should be prioritized toward the actual construction and enhancement of flood protection infrastructure. The focus should be on building the physical protection needed to address sea level rise, with FEMA accreditation potentially pursued in the future once infrastructure is in place.

5. **Ability to Pursue Accreditation in the Future:** FEMA accreditation is the process by which FEMA recognizes and certifies the protectiveness of flood measures. The accreditation process can be pursued after systems are built. If the cost-benefit of accreditation changes in the future – for example, if the floodplains were re-mapped and more structures fell within the SFHA – we would be able to pursue accreditation, after the adaptation measures are constructed.

At this stage, the technical work group recommends that the SLR Collaborative partners prioritize planning, funding, and constructing flood protection infrastructure aligned with future sea level rise scenarios, without pursuing FEMA accreditation immediately. The Collaborative partners can revisit FEMA accreditation after the flood protection systems are built, should it be desired. This approach will ensure adequate protection while allowing flexibility for future regulatory requirements. The **decision to not pursue accreditation does not affect the level or quality of flood mitigation** that the Collaborative will be implementing.

Background on FEMA National Flood Insurance Program and Accreditation

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to reduce the impact of flooding on our nation's communities. It does so by providing insurance to property owners, renters, and businesses and encouraging communities to adopt and enforce floodplain management regulations. NFIP is voluntary and the City of Olympia has participated in the NFIP since 1981. For communities that participate in the NFIP, any property owner with structures in a high-risk area, as defined by FEMA, must purchase flood insurance if they hold a mortgage from federally regulated or insured lenders.

FEMA's Flood Insurance Rate Maps (FIRM) define areas at risk of flooding, known as Special Flood Hazard Areas (SFHAs). Development is permitted in SFHAs but must comply with federal and local floodplain management standards. These standards usually apply to areas within the 1% annual chance (100-year) riverine and coastal floodplains. The SFHA establishes where property owners are required by lenders to purchase flood insurance. Critical infrastructure located within the SFHA must be built to a 0.2% annual chance level of protection, i.e. the 500-year floodplain. This higher level of protection and freeboard requirements ensure critical services are provided without disruption[1].

Homes and businesses in SFHAs can be removed from the SFHA through relocation, elevation, or the construction of flood protection structures (e.g., floodwalls or levees). To meet FEMA's standards, flood protection structures must be certified by a licensed engineer and accredited by FEMA. Accreditation is the

[1] Critical facility as defined by FEMA at https://www.fema.gov/about/glossary/critical-facility

process by which FEMA recognizes the protection afforded by a flood protection structure. Accreditation requires that flood protection structures have appropriate freeboard above the 100-year flood elevation and that rigorous technical analyses have been documented as part of the design. Communities must also commit to maintaining these systems to retain accreditation.

Only once a levee or floodwall is accredited by FEMA will the homes and businesses behind it be removed from SFHA. **Removing a property from the SFHA relieves property owners from the insurance requirements and regulatory standards associated with building in the floodplain[2]. While accredited flood protection may lessen the financial and regulatory burden on individual property owners and developers, building and maintaining accredited protection could be costly for the community.**

Sea Level Rise Considerations

FIRMs only reflect current flood risk and do not consider sea level rise; however, future updates to FIRMs may result in changes to the mapped floodplain because of climate change, sea level rise, and other land use changes. For example, downtown Olympia FIRM maps only account for constructed infrastructure and do not include anticipated flood mitigation benefits from planned projects, like the Deschutes Estuary restoration.

In Olympia, the coastal floodplain is influenced by high tides, storm surges, and waves in Budd Inlet, while the riverine floodplain is shaped by high flows and water levels within Capitol Lake/Lower Deschutes Watershed. FEMA's most recent FIRM maps show a small portion of Percival Landing and the Port shorelines within the coastal SFHA, and a larger area of downtown near Capitol Lake within the riverine SFHA. While not currently mapped, it is likely that much of the downtown area and western portion of the Port peninsula would be within the FEMA floodplain under future conditions with low to moderate sea level rise (6 to 12 inches). These areas are currently not included because the FIRMs do not consider sea level rise.

The flood response strategy envisioned in the Olympia Sea Level Rise Response Plan will reduce the risk of flooding in downtown Olympia whether or not the flood protection structures are accredited by FEMA. The main benefit of accreditation is reducing the costs and barriers for property owners to develop in a floodplain.

A full description and understanding of the National Flood Insurance Program and FEMA Accreditation can be found on page 63 of the Olympia Sea Level Rise Response Plan.

Information Gathering

We pursued two forms of analysis to build our recommendation for whether or not to pursue FEMA accreditation at this time.

1. GIS Analysis: To understand the scale of benefits possible under current regulatory structure
2. Informational Interviews: To understand the process, and possible burdens, from other communities and experts

[2] No flood protection structure can fully eliminate the risk of flooding. Levee systems are designed to provide specific levels of protection, which can be overtopped, and can decay over time leading to increased risk of failure. FEMA strongly encourages people and property owners in levee-protected areas to understand their flood risk, purchase flood insurance, and take steps to floodproof their property.

GIS Analysis

As discussed above, one consideration for pursuing FEMA accreditation depends on whether the potential cost savings from flood insurance reductions for properties behind accredited flood protection outweigh the accreditation costs. Insurance cost savings only applies for structures that are within the current Special Flood Hazard Area of the FEMA mapped floodplains; after accreditation, all structures behind this protection would be removed from the restrictions.

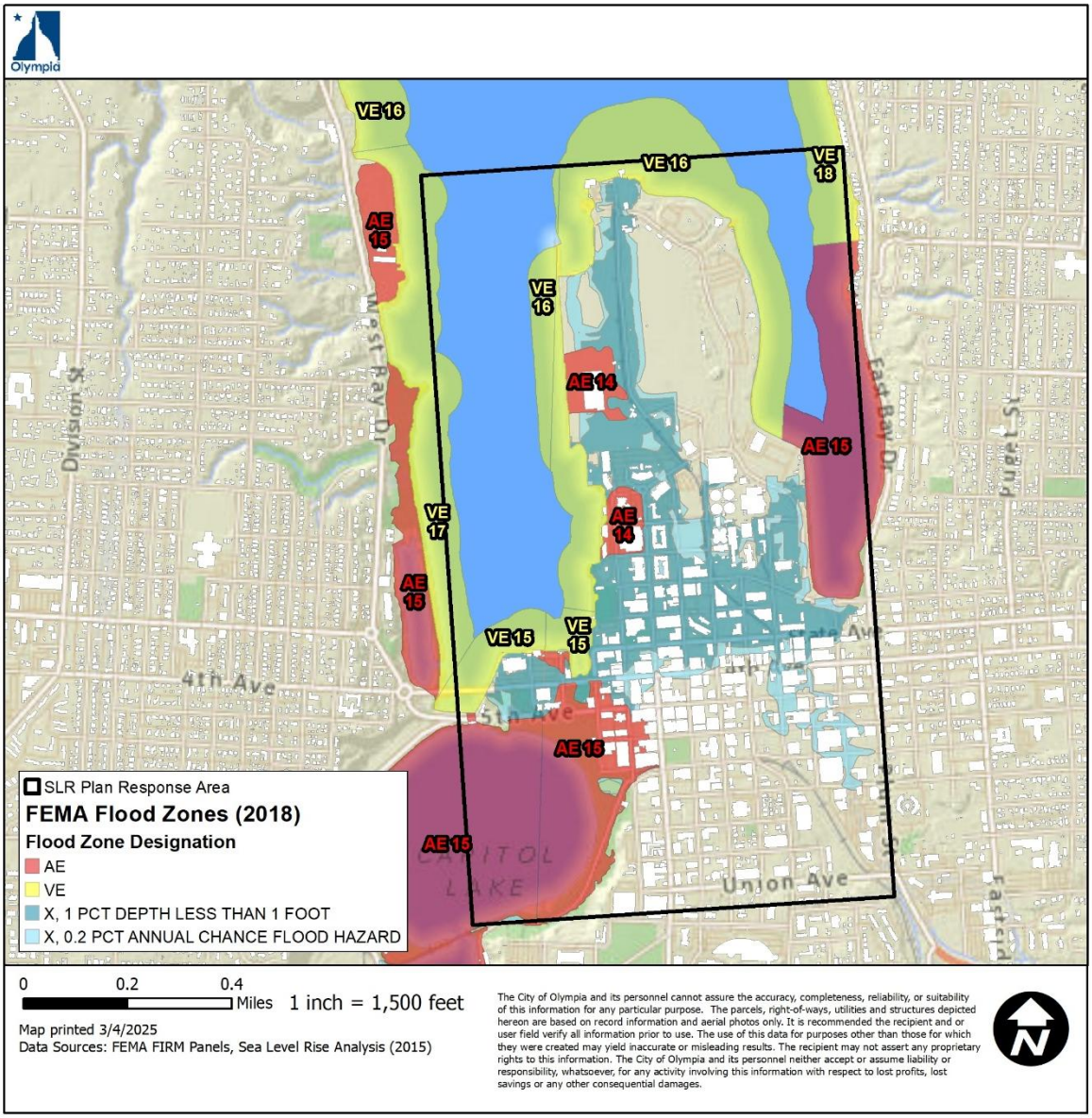
Current FIRM maps are based on historical flooding data and do not account for projected sea level rise. The FIRM maps for the Project Area were updated in 2018 and 2024 and are shown in Figure 1. The maps designate several flood zones:

- FIRM Panel # 53067C0158FP, Effective Date 5/15/2018
- FIRM Panel # 53067C0167F, Effective Date 5/15/2018
- FIRM Panel # 53067C0166G, Effective Date 5/8/2024

The FIRM panels are designated into the following flood zones:

- Zone AE – areas that present a 1% annual chance of flooding
- Zone VE – the velocity zone where wave heights are greater than 3 feet
- Zone X
    - 1% depth less than 1 foot – 100-year floodplain with less than 1 foot of flooding
    - 0.2% annual chance flood hazard – 500-year floodplain based on current conditions

Figure 1. FEMA FIRM map of Downtown Olympia.



The SFHA is made up of Zones AE and VE (red and yellow zones, respectively). In other words, special regulations, considerations, and flood insurance are only required in these zones. The maps show the 100-year floodplain extends beyond the shoreline with the potential to impact structures at AE14, near the Port Plaza and Farmers Market and Columbia St between B Ave and A Ave, and at AE15, near Capitol Lake and Heritage Park. These areas are known vulnerabilities downtown.

Future sea level rise will expand the 100-year floodplain into Zone X, exposing more structures to flood risks, than the maps currently suggest. If FIRM maps were updated to include projected sea level rise, much of Zone X could be designated as a SFHA in the future.

- If the most-likely sea level rise scenario (12" rise by 2050) was applied, the area currently mapped as *Zone X – 1% Depth Less than 1 Foot* could be considered in the Special Flood Hazard Zone.
- If the high-range sea level rise scenario (24" rise by 2050) was applied, the area currently mapped as *Zone X – 0.2% Annual Chance of Flood Hazard* could be considered in the Special Flood Hazard Zone.

As part of Olympia's sea level rise response, adaptation efforts are focused on reducing flood risks to nearly all areas within these flood zones, but insurance benefits from FEMA accreditation would only apply to properties within the current SFHA. Figure 2 shows the number of structures that are impacted within each of the current zones.

An outstanding question is regarding the future regulatory context of FEMA special flood hazard areas – if FEMA updates FIRM mapping of SFHA and flood insurance requirements to include projected sea level rise and precipitation scenarios, a larger number of property owners would benefit from accreditation to remove properties from the SFHA.

Figure 2. Number of structures, parcels, and property owners contained within FEMA Flood Zone designations for existing FIRM maps.

FLOOD ZONE DESIGNATION	INSIDE SFHA?	STRUCTURES IMPACTED	PARCELS IMPACTED
AE	Yes	11 (9%)	10 (8%)
VE	Yes	5 (4%)	5 (4%)
X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD	No	38 (30%)	38 (31%)
X, 1 PCT DEPTH LESS THAN 1 FOOT	No	73 (57%)	71 (57%)
TOTAL		**127 (100%)**	**124 (100%)**
For reference: SLR 2050 high-range scenario		*163*	*162*

Informational Interviews

To understand the process implications of FEMA accreditation, the Sea Level Rise Technical Work Group spoke with a group of FEMA representatives and consultants familiar with the process and with an engineer who led the City of Kent through the accreditation process.

Meeting with FEMA Region 10 Staff and Contractors – February 18, 2025

Participants: Josha Crowley (Atkins Realis), Erin Cooper (FEMA), Dale Meck (FEMA), Soumya Sagarika (FEMA), Marshall Rivers (FEMA), Hannah Snow (FEMA), Amanda Flegel (FEMA), Nicole Metzger (Atkins Realis), Will Zung (Stantec), Pamela Braff (City of Olympia).

A member of The Sea Level Rise Technical Work Group met with FEMA representatives and consultants to learn more about the process and benefits of accreditation. Their input confirmed the following:

- **Cost of Pursuing Accreditation:** Accreditation is both time-intensive and costly to pursue. The Collaborative partners are responsible for maintaining accreditation in perpetuity; this process includes a significant amount of administrative work and processing that does not have direct impact on quality of protection. The criteria for maintaining accreditation may also change in the future, leading to potential and unknown design and administrative burdens.

- **Impact on Federal Grant Funding:** FEMA accreditation is not a prerequisite to apply for federal funding. Therefore, Olympia should focus on securing the necessary funding to build infrastructure and can pursue FEMA accreditation later, if deemed appropriate.

- **Benefit of Accreditation:** The main benefit of pursuing FEMA accreditation is dependent on the number of properties within the SFHA that would benefit from alleviation of flood insurance costs. Currently, the FIRM maps for Olympia show a limited number of properties (10% of total structures projected to be impacted by 2050 high-range projections) in the SFHA (Figure 2).

- **FIRM Map Updates:** The most recent updates to Olympia's FIRM maps occurred in 2018 and 2024. Although FEMA is supposed to update its FIRM maps every five years, the process tends to take much longer in practice—often around 40-45 years between updates. It is reasonable to assume that these maps will not be updated soon, nor will they incorporate projections for sea level rise. As a result, the benefits of FEMA accreditation remain limited since so few properties are currently within the SFHA.

- **Accreditation After Construction:** The process of achieving FEMA accreditation could be pursued after flood protection infrastructure is built. Once a levee or floodwall is constructed, it could be certified by FEMA, and then accreditation would be added to the official FIRM.

- **Focus on Risk Reduction First:** FEMA staff representatives and consultants informally advised that the Collaborative may be better served by continuing to pursue funding, planning, and design efforts for sea level rise adaptation for the high-range sea level rise scenario. Since the Collaborative's design efforts are already aligned with a future-focused, more protective approach than FEMA's current standards, the project would also reduce flood risks in the current floodplain. Given the small number of structures in the SFHA, FEMA staff recommended prioritizing funding for the construction of physical infrastructure instead of pursuing accreditation at this stage. As we continue to pursue funding, we can monitor and adjust if FEMA criteria are updated in the future.

Sea Level Rise Technical Work Group Meeting: December 18, 2024

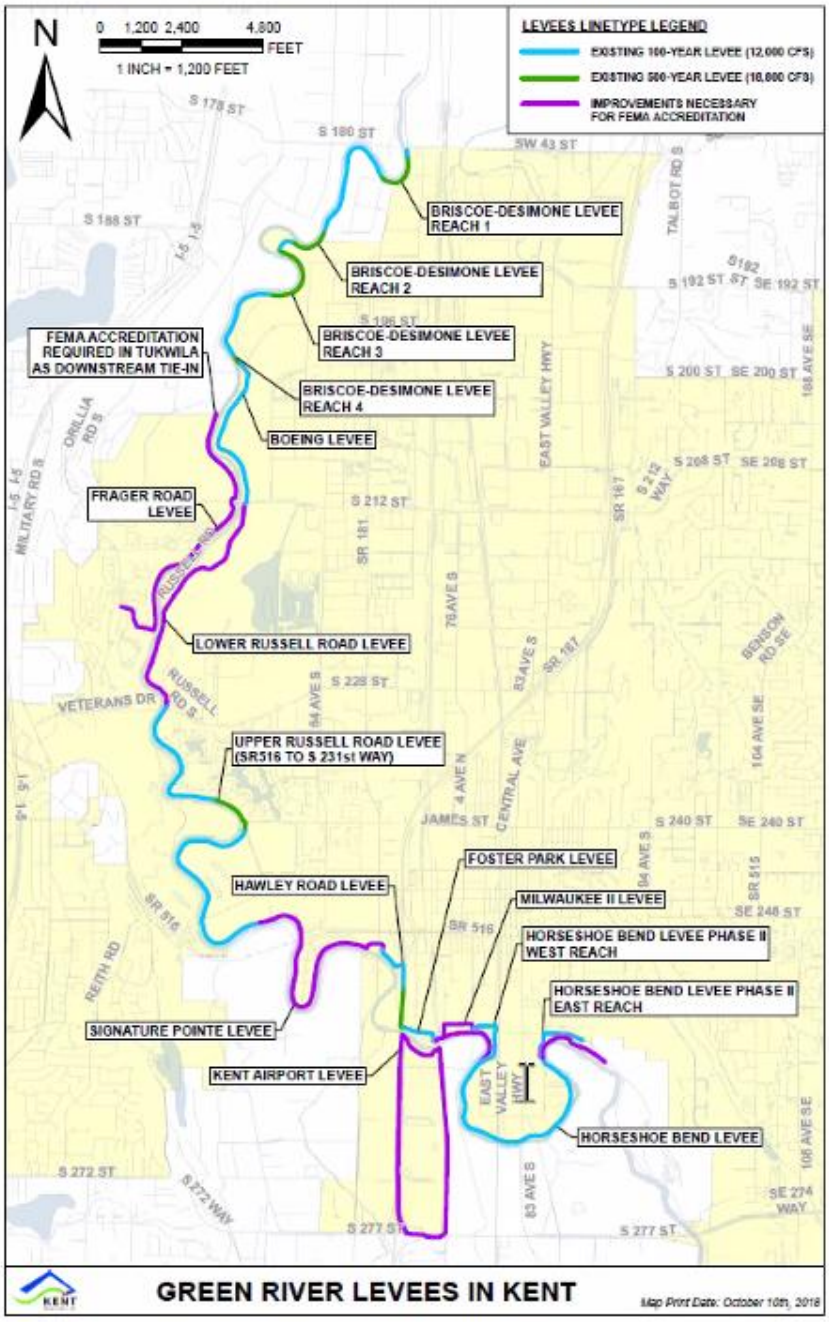
Participants: Pamela Braff (City of Olympia), Lisa Dennis-Perez (LOTT Clean Water Alliance), Wendy Steffensen (LOTT Clean Water Alliance), Shawn Gilbertson (Port of Olympia), Jonathon Wolf (Port of Olympia), Susan Clark (City of Olympia), Shaina Thompson (WA Department of Enterprise Services), Natalie Weiss (City of Olympia), Mike Mactutis (City of Kent), Erik Jensen (City of Olympia)

The Technical Workgroup also discussed the accreditation process with Mike Mactutis, an Environmental Engineering Manager from Kent, and is leading a levee reconstruction and FEMA accreditation process along the

Green River (Figure 3). Kent's context differs significantly from Olympia's—Kent deals with extensive riverine flooding along 12 miles of the Green River, whereas Olympia has about 2 miles of marine shoreline. Kent also has many structures within the floodplain, primarily industrial and commercial properties. Kent's draft FIRM maps had established the entire valley as riverine floodplain; City and regional mapping suggested that the floodplain was more refined than FEMA maps showed and, following county analysis, the maps that were adopted recognized that refinement. Without FEMA accreditation on the levees, any new construction or substantial reconstruction within the floodplain area would require an environmental assessment and existing construction would have to mitigate flood risks through floodproofing or elevating. The City of Kent aimed to address development restrictions and prevent commercial retreat from the area by pursuing accreditation.

To fund the operation and maintenance of levees in the Green River Valley, King County has previously operated the Green River Flood Control Zone District which generated about $1 million per year in revenue. King County established a county-wide flood control district in 2007 which currently is expected to generate over $80 million in revenue next year. The Flood Control District is also incorporating community benefits, like salmon habitat, trails and recreation areas, into its levee upgrades, which are significantly increasing the project's cost but are also attracting regional support and funding.

Figure 3. Map of levees in Kent (provided by the City of Kent).



Next Steps

Using the information provided in this memo, the Olympia Sea Level Rise Collaborative Executive Committee will review and discuss a path forward. By the end of 2025, the Executive Committee will provide a final recommendation to the Collaborative Members on whether or not to pursue FEMA accreditation for mid-term adaptation strategies.