

RECOMMEND MOVING FORWARD Tier I -- Continues/Completes Existing Project			FUNDING APPROACH:	
Project	Primary Benefits	Additional Benefits	State Capital Budget Request	To Be Addressed Locally
1. Aberdeen -- Fry Creek Flood Restoration & Flood Hazard Reduction (Phase IIb, New Pump Station)	<p>* Project has three phases. Phase I is to restore habitat and flood functions in lower creek. Phase I is currently funded. Phase II is to replace aging 60-CFS pump with modern 400-CFS pump. Phase II is to be funded through this request and a separate Washington Coastal Restoration Initiative (WCRI) grant request (\$2M). Phase III is to restore habitat and flood functions in upper creek and is not funded.</p> <p>* Phase I and II will reduce 100-year flood event surface water 67%. Pump alone will reduce 100-year flood event surface 35%.</p> <p>* Phase I and II will benefit to 400 homes, 40 commercial properties, several churches, medical facility, senior home, Grays Harbor PUD, and is integral to Northshore Levee Project.</p> <p>* Phase II is a prerequisite to other flood reduction actions, outcomes. E.g., Fry Creek daylighting between Simpson and Sumner Aves and Cherry St culvert reconstruction will increase flood capacity, lower water surface elevations by 2.75 feet for 100-year rainfall event. Note: This correlates with creek no longer overtopping its banks.</p> <p>* Identified as a Timberworks Master Plan project.</p> <p>Note -- \$2M WCRI funding request is tentative. Even so, and with reduced funding of \$2.5M here, City is confident critical pre-pump placement work can be accomplished.</p>	<p>* Habitat improvement -- Wetlands enlarged with benefit to fish, foraging, flood flow regulation, rearing though all phases.</p> <p>* Fish enhancement -- Offers refugia to juvenile fish, and likely to benefit chum, Coho, searun cutthroat, steelhead.</p> <p>* Fish mortality reduction -- New pump has fish screens.</p> <p>* Public open space improvement.</p>	\$ 2,499,011	\$ 500,989

2019-21 Local Flood Hazard Reduction Project Proposals (ordered, prioritized)

2. Centralia -- China Creek Flood and Habitat Mitigation (Phase 2)	<p>* Phase 1 and 2 will slow, store runoff from upper watershed during high flow. Delaying peak flow from upper basin (70% of watershed, 40% of flow) will enable more metered release of middle basin flood waters (15% of watershed, 50% of flow) and reduce frequency, intensity of downtown flooding.</p> <p>* Benefits 26 businesses, 1 hotel, Centralia/Chehalis School District's Bus Coop, Centralia College, more than 100 homes. Reduces lost business revenue, travel and emergency services disruption.</p> <p>* Reduction in flood levels are anticipated to be immediate with increased storage from the project.</p> <p>Note -- City is looking to reduce overall project costs for (1) dirt hauling and (2) vegetation plantings. These costs alone are around \$600K.</p>	<p>* Enhances native fish, wildlife habitat, including coho salmon and rare species (Olympia mud minnow). Riparian plantings will grow, stabilize banks, provide shade to cool water, and offer nutrients for aquatic ecosystem.</p> <p>* Improves recreational fishing and wildlife viewing opportunities through the creation of urban ponds and habitats.</p>	\$ 2,500,000	\$ -
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2019-21 Local Flood Hazard Reduction Project Proposals (ordered, prioritized)

3. Hoquiam -- Northshore Levee Segment). (West Segment)	<p>* Funding will provide for design of final segment of Northshore Levee (i.e., West Segment).</p> <p>* In addition to levee design, City's undersized and aging drainage system will be address as part of the FEMA CLOMR submittal to manage, minimize human, environmental risk from flood waters.</p> <p>* Ultimate project objective is to design a project where ~ 2,000 parcels are protected by future levee and other flood system improvements. Parcels (\$200M+) include multiple schools, fire stations, police station, etc. and provide 1,000+ full time jobs.</p> <p>* Project is continuation of Timberworks Master planning process and North Shore Levee process to provide comprehensive flood hazard, risk reduction throughout majority of community.</p> <p>* Hoquiam citizens paid over \$1.1M in annual flood insurance premiums in 2014. Since 1978, total paid claims have totaled less than \$3.7M. Levee will curb this substantial long-term economic loss while protecting community, emergency facilities.</p> <p>Note -- Reduced funding can be accommodated as "economy of scales" will come to play with developing and submitting the West Segment CLOMR and the fact that developing and submitting a successful CLOMR has now already been done (for the Northshore Levee).</p>	<p>* Project benefits water quality through updated, enhanced interior drainage control that prevents flood event from inundating pollution-generating streets, industrial areas.</p>	\$ 666,403	\$ 133,597
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2019-21 Local Flood Hazard Reduction Project Proposals (ordered, prioritized)

4. Chehalis -- Flood Storage and Habitat Enhancement Master Plan (Phase II)	<p>* Planning process builds off earlier scoping phase and will evaluate storage volumes, costs. Hydraulic modelling will determine flows, storage, reductions in stage and done in iteration with design. Final design will quantify benefits, including # of people/structures benefitting, level of flood stage reduced, and will include recreation, habitat restoration, off-channel habitat for fish species.</p> <p>* Project will include restoration of riparian habitat, development of off-channel habitat, reconnection of the river to historic floodplain (removal of fill), and creation/restoration of riparian wetlands.</p> <p>Note -- As this is a planning project, the City can accommodate and scale to reduced funding.</p>	<p>* Restoration of riparian habitat, removal of infrastructure from the floodplain, creation of off-channel habitat, and creation/restoration of riparian wetlands.</p>	\$ 406,498	\$ 81,493
5. GHC -- Keys Road Flood Protection	<p>* This funding would provide for the design of a project to reduce flooding on Keys Road.</p> <p>* Keys Road is key infrastructure providing access to multiple residences, farms, and businesses. Provides 700+ vehicle trips per day, 20%+ being commercial trucks for agricultural, commercial businesses. Provides one of two access routes to Satsop Business Park (400+ jobs, 200+ acres developable land, ~547,000 sq. ft. commercial, warehouse buildings).</p> <p>* Keys Road is threatened with loss, damage due to oncoming Satsop River. Loss of Keys Road would be very costly.</p> <p>* Keys Road is part of larger Lower Satsop planning process being implemented like Timberworks process.</p> <p>Note -- As this is a planning project, the County can accommodate and scale to reduced funding.</p>	<p>* Likely proposed future work will be located above ordinary high water mark and designed to minimize any impact to fish and/or fish habitat.</p>	\$ 200,000	\$ 175,000

2019-21 Local Flood Hazard Reduction Project Proposals (ordered, prioritized)

6. Port of Chehalis -- Berwick Creek Flood Reduction, Restoration	<p>* Project reduces flood hazard to Pacific Power Plant, local residential properties. Berwick creek floods now causing damage at 5-year flood event.</p> <p>* Project continues ASRP design projects 17-1149 (Lower Reach Berwick Creek Barrier Removals -- Borovec Road) and 18-1497 (Lower Reach Berwick Creek Barrier Removal Projects -- Bishop Road) that contribute to flood hazard reduction benefits gained through full project.</p> <p>* Full Berwick Creek Project consists of five actions that once implemented will provide flood protection up to a 50 year flood event:</p> <p>#1 -- Replace culverts at Borovec and Bishop Roads. This action is not funded (though earlier design funding has been provided).</p> <p>#2 & #3 -- Replace portion of berm at PacifiCorp gas plant through (#2) Industrial Commission granting easement to Pacific Corps and (#3) PacifiCorp paying to replace berm. This action is not funded.</p> <p>#4 -- Clear Berwick Creek of choked non-native vegetation that increases flooding and blocks fish migration, remove fish blocking private dam upstream of Bishop road, and regrade creek to contain flood waters in the creek up to a 50 year flood event. Note: Currently, existing stream channel can not support minimal flood flows (5 year flood events frequently overflow into Pacific Power Plant and local residences).</p> <p>#5 -- Plant fish friendly vegetation along regraded creek and its basin.</p> <p>* Port's funding request is for #4 and #5.</p> <p>Note -- Port can accommodate reduced funding by reducing overall costs for #5, and will seek volunteer sources to provide vegetation plantings.</p>	<p>* Coho and Steelhead are the affected species benefiting from the project.</p> <p>* Side channels (as well cleaning of the channel for an overgrowth of invasive plant species) will prevent flooding and improve aquatic habitat.</p>	<p>\$ 416,502</p> <p>\$ 83,498</p>
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7. CRBFCZD -- Chehalis River Basin Comprehensive Flood Hazard Management Plan	<ul style="list-style-type: none">* Funding would provide for the development of a Comprehensive Flood Hazard Management Plan (CFHMP). It would integrate current flood hazard reduction plans into single cohesive guidance document managed by Chehalis Basin Flood Control Zone District (FCZD).* CFHMP is prerequisite under RCW 86.15 for FCZD to plan, develop, implement, and expend funds on capital projects. CFHMP will identify and prioritize capital projects using FEMA Cost-benefit Analysis tools and be consistent with NFIP Community Rating System.* CFHMP will be developed through a public process to guide, vet FCZD activities, projects, operations. <p>Note -- As this is a planning project, the County can accommodate and scale to reduced funding.</p>	\$ 229,076	\$ 45,924
8. Thurston -- Weather and Stream Flood Hazard Monitoring Telemetry	<ul style="list-style-type: none">* Project reduces flood hazards in basin by improving early warning as well water modeling accuracy.* Integrating additional weather, stream monitoring sites into basin's existing network will enable modelling, forecasting interests to generate more reliable, accurate products.* Sites will be equipped with telemetry to notify key personnel when important triggers are reached, such as sudden intense rainfall or spikes in river stage.	<ul style="list-style-type: none">* Project benefits accuracy of models (e.g., HEC-RAS) which in turn can have innumerable additional benefits.* Project leads to improved weather and water datasets that themselves can lead to better outcomes.	Consider for future funding.
9. WCSSF -- Chehalis Basin Habitat Work Schedule Documentation and Implementation	<ul style="list-style-type: none">* Project is to provide an informational data, mapping service by entering, tracking flood and fish projects in the basin from multiple entities.* Flood benefits come from being able to track and see historical and recent modifications taken upstream of a flooding area. This in turn allows basin managers to better understand and mitigate for potential contributing factors, as well avoid creating further impacts.	<ul style="list-style-type: none">* Fish, habitat benefits come from restoration engineers, ecologists being able to plan effective restoration projects by knowing historical, recent landscape modifications across the basin.	Consider for future funding.
		\$ 6,917,491	\$ 1,020,501

HOLD FOR LATER FUNDING Tier II -- Starts New Project			
	Primary Benefits	Additional Benefits	Project Cost
1. Lewis -- Multi-Jurisdictional Flood Warning and Response Plans	* Project is to prepare a Chehalis Basin multi-jurisdictional flood warning and emergency response plan (Part I) and dam failure emergency warning and response plan (Part II) and do so consistent with FEMA's Community Rating System (Activity 610 -- Flood Warning and Response) and (Activity 630 -- Dams) for CRS credit.	* Key additional benefit is knowledge transfer and documentation.	\$ 130,000
2. Boistfort Valley Water -- Water System Plan Update	* Project is to develop Water System Plan Update (WSP) for BVW. WSP will look at potential alternative to water system delivery including moving Adna treatment plant out of floodway (current location). "If the Adna plant is left as-is, it will most likely be damaged or destroyed by future floods that occur every 3 to 5 years."	* Moves key infrastructure out of the floodway benefits water system users, emergency personnel and downstream interests.	\$ 150,000
3. Thurston CD -- Allen Creek Hydrologic Assessment	* Project will conduct a hydraulic assessment of Allen Creek flooding, impacts, and access issues to Scott Lake Community (1,400 population, 580 homes, 55 landowners adjacent Allen Creek). "(P)ast severe floods are congruent with 50 Year floods and have happened regularly."	* Project takes a phased approach (study, assessment first) for a sizable Thurston County population center.	\$ 62,500
4. Lewis -- Unnamed Tributary to Stearns Creek (Pleasant Valley Road MP 4.25) Stream Realignment	* Project replaces undersized culvert that annually floods road from hours to days. Average daily traffic count at location of project is 520 vehicles per day. * Project is anticipated to reduce road flooding to 10 yr. storm frequency or lower.	* Removing barrier culvert and re-aligning 1,200 feet of fish bearing stream will allow for fish passage of all life stages of coho salmon, cutthroat trout, and will minimize bank erosion.	\$ 846,000
5. Montesano -- South 9th Street Culvert Replacement	* Replaces existing undersized 24" culvert that causes localized flooding and impacts local business and home.	* Project will include clearing and restoration of associated drainage ditches.	\$ 140,000
			\$ 1,328,500

CONSIDER UNDER CFAR ("Community Flood Assistance and Resilience Program")				
Tier III -- Home Elevations, Buy-outs, Relocations				
	Primary Benefits	Additional Benefits	Project Cost	
1. Thurston -- Elevates or Buy Outs	* Reduces risk to priority properties through elevation or buy-out.	* Assists individuals who'd otherwise be forced to live with flood risk.	\$	500,000
2. GH CD -- Wynoochee Home Relocation	* Reduces risk to priority properties through elevation and relocation.	* Assists individuals who'd otherwise be forced to live with flood risk.	\$	104,033
			\$	604,033