

# LOWER GREEN RIVER CORRIDOR FLOOD HAZARD MANAGEMENT PLAN

## Draft Programmatic Environmental Impact Statement

### BRIEFING

The Board of Supervisors (Board) for the King County Flood Control District (District) directed the preparation of a programmatic environmental impact statement (PEIS) for the proposed development of an area-specific Flood Hazard Management Plan (Plan) for the Lower Green River Corridor (Corridor). The Corridor encompasses 21 miles of the Lower Green River and its associated floodplain extending from river mile 11 to river mile 32. The Corridor includes portions of the cities of Auburn, Kent, Renton, SeaTac, Tukwila, and unincorporated King County. The goals and purposes of the Plan are to provide an integrated and reasonable long-term approach to reduce flood risks within the Corridor while balancing multiple objectives. This approach includes, but is not limited to, equity and social justice, economic vitality and environmental protection.

The issuance date for the draft PEIS is March 20, 2023, commencing a public comment period that extends through May 4, 2023.

The purpose of this briefing is to summarize the Board's legislative history that led to the draft PEIS, provide an overview of the findings in the draft PEIS, and describe the efforts to engage the public, Tribes, and stakeholders through the comment period.

### Legislative History

The Board's relevant legislative history is presented in reverse chronological order:

**FCD Motion 21-03 (October 2021):** Revised the name of the Plan to the "Lower Green River Corridor Flood Hazard Management Plan" and directed that the PEIS evaluate three new alternatives.

**FCD Motion 20-07 (November 2020):** Reaffirmed the District's commitment to integrated floodplain management and a set of multibenefits, and convened a committee of governments and stakeholders to advise the District on flood management on the Lower Green River.

**FCD Motion 18-01 (April 2018):** Initiated the planning process for the Plan in accord with SEPA requirements, and it defined alternatives and flood facility project types.

**FCD Resolution 2016-05 (February 2016):** Directed the preparation of a work plan for a Lower Green River Corridor Flood Hazard Management Plan and for a SEPA PEIS for the Plan and established an Advisory Committee.

### Draft PEIS Overview

The draft PEIS is in two volumes: Volume 1 is the draft PEIS and Volume 2 includes appendixes with the technical analysis. The draft PEIS will be available on the [lowergreensepa.org](http://lowergreensepa.org) website, at city halls, libraries, and community centers in Auburn, Kent, SeaTac, Tukwila, and Renton, and hard copies are available upon request.

- Volume 1 describes the affected environment within the Lower Green River Corridor, defines three alternative approaches to managing flood risk, and identifies potential impacts to the built and

natural environment for each of these alternative approaches. This is a programmatic level of review because it evaluates broad, general plans and policies.

- Volume 2 contains seven technical appendices and a glossary. The appendices are Alternatives Development; Natural Environment; Built Environment; Equity and Social Justice; Tribal Matters; Cumulative Impacts; and Outreach Summary.

The draft PEIS follows requirements of the Washington State Environmental Policy Act (SEPA). In addition, the draft PEIS applies FCD Motion 20-07 and analyzes the multibenefits the District identified for integrated floodplain management. The draft PEIS also includes analysis of tribal matters and equity and social justice. While climate change is not listed as an element of the environment under SEPA, the draft PEIS includes climate change analysis under the natural environment.

## Alternatives

Three alternatives are evaluated in the draft PEIS. The sections below first provide an overview of the alternatives including overarching benefits, then describe key findings for each of the alternatives, and finally summarize the planning-level costs.

### Overview

Each alternative evaluates different approaches to flood hazard management. However, all three alternatives would substantially reduce flooding in most areas during a 18,800 cfs flood (approximately a 500-yr flood). Today, 5,700 to 8,500 acres could be inundated with more than one foot of flood water. This could impact more than 27,000 residents and 28,000 jobs. Each of the three alternatives could reduce the number of residents and jobs potentially impacted by flooding by at least 50 percent. Each of the three alternatives could reduce the percentage of disadvantaged populations at risk of flooding even more substantially and prevent catastrophic flooding in regional growth centers and manufacturing industrial centers. Even with more flood hazard management, some places could still be inundated. This is because none of the alternatives would develop flood management facilities along the entire river. This would allow some flooding to persist and is not a result of the District's actions.

All three alternative require some property acquisition just to improve existing flood hazard management facilities to meet the provisional level of protection. However, opportunities to reduce these impacts would be considered during future facility design. Unavoidable impacts could be mitigated through acquisition and relocation in accordance with District policies.

### Alternative 1 – Project-by-Project Multibenefit Implementation (No-Action Alternative)

This alternative illustrates how the District would provide flood hazard management on the Lower Green River following established policies and practices without the guidance of an area-specific Plan. Project-by-project implementation would not provide comprehensive consideration of flood management project impacts or benefits. Multibenefits as described in FCD Motion 20-07 would be considered and incorporated to the extent feasible as individual projects are implemented. Flood hazard management projects would be implemented under successive capital improvement plans (CIPs) without guidance from an area-specific Plan for the Lower Green River. The planning-level cost estimated for this alternative is \$370M to \$780M over the 30- to 50-year implementation horizon, or an annualized planning-level cost of \$9.25M to \$19.5M.

Alternative 1 would have the least impacts on nearby land use and would provide the fewest multibenefits. New, improved, and relocated flood hazard management facilities could reduce the number of residents and jobs potentially impacted by flooding by at least 50 percent, reduce the percentage of disadvantaged populations at risk of flooding even more substantially, and prevent catastrophic flooding in regional growth centers and manufacturing industrial centers. However, the footprint of these same facilities could impact commercial or industrial land valued at \$330,000 – \$490,000 and could displace approximately 90 to 145 people.

Flood management projects on the Lower Green River could make space available that could be used to develop some types of habitat described in the WRIA 9 Salmon Habitat Plan goals. Of the three alternatives, Alternative 1 could make space available that could contribute to WRIA 9's goals for salmon recovery; however, compared to Alternatives 2 and 3, this alternative contributes less open space for WRIA 9 goals and would be the least aligned with preferences expressed by area Tribes.

Existing flood hazard management facilities that reduce flood risk for parks, recreation, and open space areas would be improved to provide protection during an 185,800 cfs flood. Up to 110 acres of parkland area in the Corridor could be impacted by the footprint of these improved facilities.

Some agricultural areas cannot be protected from flooding during an 18,800 cfs flood. One reason is that protecting them would require flood hazard management facilities in the floodway, which is prohibited by local government regulations. Also, some agricultural areas provide storage for flood waters and help reduce flooding in other areas. Alternative 1 would not substantially alter flood impacts to agricultural lands.

## Alternative 2 – Systematic Multibenefit Implementation

This alternative would provide flood hazard management and systematically implement the multibenefits as described in FCD Motion 20-07. Implementation would include habitat conservation and fish restoration. The District would develop and adopt an area-specific Plan for the Lower Green River Corridor in collaboration with Tribes, federal and state agencies, local jurisdictions, and stakeholders. The Plan would establish goals and indicators for managing flood hazards, would support a safe and healthy environment for communities along the river, and would conserve and, where possible, enhance aquatic and riparian habitats and conditions to support the recovery of threatened salmon and other species. The Plan would describe actions the District would take under its authority and would highlight potential partnership opportunities. The District would periodically review progress under the principles of adaptive management. The multibenefits would be systematically advanced in the Plan. This alternative would introduce the potential use of flood proofing to reduce the effects of flooding, rather than to reduce the risk of flooding. The planning-level cost estimated for this alternative is \$390M to \$830M over the 30- to 50-year implementation horizon, or an annualized planning-level cost of \$9.75M to \$20.75M.

Like Alternative 1, new, improved, and relocated flood hazard management facilities in Alternative 2 could reduce the number of residents and jobs potentially impacted by flooding by at least 50 percent, reduce the percentage of disadvantaged populations at risk of flooding even more substantially, and prevent catastrophic flooding in regional growth centers and manufacturing industrial centers. Alternative 2 would have more impacts on nearby land use and would provide more multibenefits compared to Alternative 1. Alternative 2 could impact commercial or industrial land valued at \$330,000 – \$490,000 due to new, improved, and relocated flood hazard management facilities and could displace approximately 90 to 145 people.

This Plan would place an emphasis on conserving and restoring habitat for threatened salmon and other species. The Plan would establish goals and indicators for managing flood hazards in a manner that

would protect, improve, and restore riparian and aquatic habitats, and it would establish conditions that would support the recovery of threatened salmon and other species. The Plan would describe the actions that the District would take under its authority, and it would highlight potential partnership opportunities. The multibenefits would be systematically and rigorously advanced. The District would periodically review progress under the Plan and could make adaptations if needed.

Flood management projects on the Lower Green River could make space available that could be used to develop some types of habitat described in the WRIA 9 Salmon Habitat Plan goals. Alternative 2 could make space available that could contribute to some of WRIA 9's goals for salmon recovery and would be more aligned with preferences expressed by area Tribes than Alternative 1.

Existing flood hazard management facilities that reduce flood risk for parks, recreation, and open space areas would be improved to provide protection during an 18,800 cfs flood. Up to 100 acres of parkland area in the Corridor could be impacted by the footprint of these improved facilities.

Alternative 2 would provide improved drainage and flood proofing to reduce the impacts of flooding on some agricultural lands. Some agricultural areas cannot be protected from flooding during an 18,800 cfs flood. One reason is that protecting them would require flood hazard management facilities in the floodway, which is prohibited by local government regulations. Also, some agricultural areas provide storage for flood waters and help reduce flooding in other areas.

### **Alternative 3 – Enhanced Systematic Multibenefit Implementation**

This alternative would be a substantial shift from the District's current practices. The District would develop and adopt an area-specific Plan for the Lower Green River as in Alternative 2; however, in addition to flood hazard reduction, the Plan would pursue habitat conservation and restoration to a notably greater extent than under either of the other alternatives, while achieving multiple benefits as described in FCD Motion 20-07 across the Lower Green River. The District would develop an area-specific Plan for the Lower Green River in collaboration with Tribes, federal and state agencies, local jurisdictions, and stakeholders. In addition to flood proofing, this alternative would introduce the potential acquisition of property that would meet certain criteria to preserve floodplain storage.

This Plan would place a greater emphasis on conserving and restoring habitat for threatened salmon and other species. The Plan would establish goals and indicators for managing flood hazards in a manner that would protect, improve, and restore riparian and aquatic habitats, and it would establish conditions that would support the recovery of threatened salmon and other species. The Plan would describe the actions that the District would take under its authority, and it would highlight potential partnership opportunities. The multibenefits would be systematically and rigorously advanced. The District would periodically review progress under the Plan and could make adaptations if needed.

With this alternative, the District would, in conjunction with flood hazard management actions, support flood management improvements at a scale and design supporting progress towards achieving adopted salmon habitat goals. With cooperation from local jurisdictions, some adjacent property owners could be given incentives to help accommodate these changes. In addition to flood proofing, this alternative would introduce the potential acquisition of property that would meet certain criteria to preserve floodplain storage. The planning-level cost estimated for this alternative is \$560M to 1,100M over the 30- to 50-year implementation horizon, or an annualized planning-level cost of \$14M to \$27.5M.

Like Alternatives 1 and 2, new, improved, and relocated flood hazard management facilities in Alternative 3 could reduce the number of residents and jobs potentially impacted by flooding by at least 50 percent, reduce the percentage of disadvantaged populations at risk of flooding even more substantially, and

prevent catastrophic flooding in regional growth centers and manufacturing industrial centers. Alternative 3 would intentionally provide more multibenefits than Alternative 1 or Alternative 2 by increasing floodplains, habitat, and open space. Because of this Alternative 3 would acquire more property and would have more impacts on adjacent land uses. Alternative 3 could impact commercial or industrial land valued at \$23,200,000 – \$34,800,000. Alternative 3 could displace 110 to 170 people.

Flood management projects on the Lower Green River could make space available that could be used to develop some types of habitat described in the WRIA 9 Salmon Habitat Plan goals. Alternative 3 could make space available that could contribute to meeting all of WRIA 9’s goals for salmon recovery. Alternative 3 would be more aligned with preferences expressed by area Tribes than Alternatives 1 or 2.

Existing flood hazard management facilities that reduce flood risk for parks, recreation, and open space areas would be improved to provide protection during an 18,800 cfs flood. Some of these facilities may be relocated farther away from the river, impacting more parkland than the other two alternatives. Up to 170 acres of parkland area in the Corridor could be impacted by the footprint of these improved facilities. However, a portion of the area on the river side of the setback facilities could provide an opportunity for open space, shoreline visual access, and potential points of seasonal passive recreation.

Alternative 3 would provide flood management up to 11,900 cfs (approximately a 100-year flood). Higher flows would be allowed to inundate agricultural lands and would provide flood storage that would help reduce impacts elsewhere in the Corridor. Flood proofing could also be provided. Some agricultural areas cannot be protected from flooding during an 18,800 cfs flood. One reason is that protecting them would require flood hazard management facilities in the floodway, which is prohibited by local government regulations. Also, some agricultural areas provide storage for flood waters and help reduce flooding in other areas.

Under Alternative 3 the District would contemplate acquisition of certain property to preserve flood storage and provide other multibenefits.

## Impact Summary

SEPA Environmental Element	Summary of Potential Direct Impacts		
	Alternative 1:	Alternative 2:	Alternative 3:
Hydraulics and Hydrology	Overall extent of flooding reduced by approximately 50 percent, from 5,700 to 8,500 acres under existing conditions to 2,900 to 4,500 acres under the three alternatives		
Aquatic Species and Habitats	85 to 125 acres of Floodplain Bench and/or Riparian Habitat Made Available for Restoration	100 to 150 acres of Floodplain Bench and/or Riparian Habitat Made Available for Restoration	265 to 405 acres of Floodplain Bench and/or Riparian Habitat Made Available for Restoration
	Potentially support achieving 2 of 7 WRIA 9 Habitat Goals	Potentially support achieving 2 to 3 of 7 WRIA 9 Habitat Goals	Potentially support achieving 6 to 7 of 7 WRIA 9 Habitat Goals
Land Use Plans and Policies	Impacts to 190 to 270 acres of adjacent land uses and 16 to 24 structures due to new, improved, and relocated flood hazard management facilities	Impacts to 180 to 280 acres of adjacent land uses and 16 to 24 structures due to new, improved and relocated flood hazard management facilities	Impacts to 270 to 410 acres of adjacent land uses and 63 to 95 structures due to new, improved, and relocated flood hazard management facilities
Housing	Number of housing units flooded reduced by approximately 66 percent, from 9,700 to 14,590 under existing conditions to 3,200 to 5,170 under the three alternatives		

SEPA Environmental Element	Summary of Potential Direct Impacts		
	Alternative 1:	Alternative 2:	Alternative 3:
Population and Demographics	Impacts to 90 – 145 residents due to new, improved, and relocated flood hazard management facilities	Impacts to 90 – 140 residents due to new, improved, and relocated flood hazard management facilities	Impacts to 110 – 170 residents due to new, improved, and relocated flood hazard management facilities
Employment and Business	Impacts to structures on commercial or industrial land valued at up to \$330,000 – \$490,000 due to flooding or new, improved, and relocated flood hazard management facilities		Impacts to structures on commercial or industrial land valued at up to \$23,200,000 – \$34,800,000 due to flooding or new, improved, and relocated flood hazard management facilities
Agriculture	Acres of farmland flooded reduced by approximately 6 percent, from 1,677 acres under existing conditions to 1,585 acres under the three alternatives		
			At 11,900 cfs, 15 percent decrease in acres of farmland flooded
Public Services	Impacts to 80 – 110 acres of parks and open space due to new, improved, and relocated flood hazard management facilities	Impacts to 70 – 100 acres of parks and open space due to new, improved, and relocated flood hazard management facilities	Impacts to 110 – 160 acres of parks and open space due to new, improved, and relocated flood hazard management facilities
	Parks and open space flooding reduced 41 percent	Parks and open space flooding reduced 37 percent	Parks and open space flooding reduced 34 percent
Historic and Cultural Resources	High or very high probability of encountering archaeological resources, during ground disturbance, particularly for new or relocated flood hazard management facilities		
			Larger setback areas increase potential to disturb cultural resources

## Cost Summary

The planning-level opinions of costs below (presented in 2022 dollars) are for comparison only. The differences in costs are primarily due to estimated property acquisition. Mitigation costs are not included.

Alternative	Annualized Planning- Level Cost	Total Planning-Level Cost
Alternative 1: Project-by-Project Implementation	\$9.25M to \$19.5M	\$370M to \$780M
Alternative 2: Systematic Implementation	\$9.75M to \$20.75M	\$390M to \$830M
Alternative 3: Enhanced Systematic Implementation	\$14M to \$27.5M	\$560M to \$1,100M

## Outreach and Engagement

To encourage public comment on the draft PEIS, the District is:

- Directly reaching out to area Tribes and offering a briefing on the draft PEIS.
- Providing the draft PEIS and outreach materials in eight languages: Chinese, Korean, Russian, Somali, Spanish, Tagalog, Ukrainian, and Vietnamese.
- Working with Community Navigators to engage historically disadvantaged communities.
- Mailing postcards announcing the draft PEIS to approximately 30,000 addresses.
- Issuing a press release.
- Hosting a website with all draft PEIS documents and opportunities to comment.
- Publishing ads in local, community-based news sources.
- Making copies of the draft PEIS available to over a dozen public locations such as libraries, community centers, and city halls.
- Providing briefings about the draft PEIS.
- Providing social media tool kits.
- Holding two virtual (online) public meetings.

## Next Steps

- Public comments on the draft PEIS will be accepted until May 4, 2023.
- A final PEIS could be issued by mid-2024 and would identify a preferred alternative.
- The Board could direct preparation of a Flood Hazard Management Plan after the final PEIS is issued. The final PEIS could inform such Plan by providing guidance as to how future investments can reduce flood risks over the next 30- to 50-year implementation horizon.
- Under any alternative, individual projects would have project-specific environmental review as part of the design and permitting process.

## Background on Draft PEIS Analysis

Parametrix is the prime contractor. Lund Consulting, Inc. provides the District with overall project management services, Cascadia Policy Solutions provides strategic counsel, policy development support and facilitates the Lower Green River Executive Steering Committee, and Lund-Faucett provides outreach and communications services.

The consulting team included the following firms as subject matter experts: BERK Consulting Inc.; Confluence Environmental Company; Globalwise, Inc.; Historic Research Associates, Inc.; Northwest Hydraulic Consultants; and WEST Consultants, Inc.

Parametrix developed methodologies for the built and natural environment; studied historical and current conditions; analyzed potential impacts; assessed cumulative impacts, and considered climate change.