

Green Duwamish Basin Technical Committee Meeting

Thursday, May 24, 1:30–3:30

City of Kent
Centennial Center, Room 401
400 W. Gowe St
Kent, WA 98055

A G E N D A

- | | |
|--|-----------------------------|
| 1. Introductions and Approve Minutes | John Koon
1:30 - 1:35 |
| 2. Advisory Committee Meeting Recap | Brian Murray
1:35 – 1:45 |
| 3. New Project Summary Sheets – Discussion and Recommendations | John Koon
1:45 – 2:10 |
| 4. Prioritized Project List – Discussion and Recommendations | Brian Murray
2:10 – 3:10 |
| 5. Proposed Subregional Project Criteria | Brian Murray
3:10 – 3:20 |
| 6. Schedule Next Meeting | John Koon
3:20 – 3:30 |

King County FCZD Preliminary Project Prioritization Criteria

The following prioritization scheme is intended to help prioritize KCFCZD projects based on the imperative to complete each project from a flood risk/vulnerability perspective only. The basis for these criteria is the 2006 King County Flood Hazard Management Plan policies related to flood risk hierarchy (G-2) and project prioritization (PROJ-1). Legal responsibility, environmental impacts or benefits, benefit-cost analyses, and funding or other opportunistic criteria, are not included in this prioritization scheme, but may be added at a later date.

1) What is the current land use? (Consequences)

This criterion is intended to give different weights to different types of land uses. If more than one type of land use is at risk, select the applicable land use with the highest score. Use the score range provided to give more or less weight base on site specific conditions. For example a sole access road would be given a higher score than one for which a reasonable alternative route exists.

Description	Score
Critical Facilities (See list on page 2)	11-12
Residential	9-10
Commercial (Some commercial structures are critical facilities - see list)	7-8
Agricultural (FPP land should be given higher score than non FPP lands)	5-6
Developed Recreational (Those with regional importance should receive higher scores.)	3-4
Undeveloped land in floodplain or Moderate CMZ	1-2
Undeveloped land in floodway or Severe CMZ	0

2) How serious is the potential impact? (Consequences and Severity)

This criterion is intended to evaluate the nature and severity of the impacts irrespective of the scale at which the impact will occur. The scoring range can be used to differentiate between similar types of impact that have different likelihoods of occurring.

Description	Score
Human injury or death could result from deep fast flows or sudden changes in flood conditions. (e.g. levee or road failure.)	9-12
Total loss of developed land use (e.g. developed land is converted to river channel.)	7-8
Severe flood or erosion damage that will heavily impact those affected.	5-6
Moderate flood or erosion damage which will not likely have a long term impact on those affected.	3-4
Flooding that interrupts human activity or will result in some clean up needs but which will results in little or no damage that will need to be repaired.	1-2

3) How extensive will the impact be? (Consequences and Severity)

This criterion describes the scale of the problem. Is the problem manifest over a large area or in a manner that will affect a large number of people, or is it largely localized. In instance were the physical impact is over a small area, but a larger number of people will be affected, apply score based on the impact rather than just the physical area. Scoring range can be used to differentiate between different degrees of extensiveness within the listed categories.

Description	Score
Regional (Impacts will be felt well outside the area in which the flooding or erosion occurred.)	7-8
Severe (City centers, larger neighborhood)	5-6
Moderate (Several structures, roads et impacted)	3-4
Localized (Affects a few homes or business)	1-2

4) How soon will the impact occur? (Urgency)

This criterion is used to describes how soon the flood risk needs to be addressed to avoid its occurrence or reoccurrence.

Description	Score
Some or all of the damages described will likely occur or recur during the next major high flow event.	5-6
Damages may occur during the next high water event, or the potential for them to occur is rapidly increasing.	3-4
Damages will eventually occur, but the risk of them occurring is not increasing rapidly	1-2

Critical Facilities Defined

The following list is intended to help understand what constitutes a "Critical Facility". This list has been compiled from the KC Critical Areas Ordinance and the International Building Code.

1. Facilities in which > 300 people congregate
2. Daycares, elementary schools and secondary schools with > 250 people
3. College and adult education facilities with > 50 people
4. Hospitals and Healthcare facilities with > 50 resident patients
5. Jails and detention facilities
6. Facilities with > 5000 occupants
7. Power, Wastewater and potable water treatment facilities
8. Fire, rescue and police facilities
9. Designated emergency shelters
10. Power generation and public utility faculties
11. Aviation facilities
12. Critical national defense facilities
13. Nursing and personal care facilities
14. Senior citizen assisted housing
15. Public roadways and bridges
16. Sites that produce, use or store hazardous substances or hazardous waste (not including sites that temporarily store household products intended of sale on the site)

Ordinance 15051 (CAO), lines 605 - 614

Critical facility: a facility necessary to protect the public health, safety and welfare including, but not limited to, a facility defined under the occupancy categories of "essential facilities," "hazardous facilities" and "special occupancy structures" in the structural forces chapter or succeeding chapter in the K.C.C. Title 16. Critical facilities also include nursing and personal care facilities, schools, senior citizen assisted housing, public roadway bridges and sites that produce, use or store hazardous substances or hazardous waste, not including the temporary storage of consumer products containing hazardous substances or hazardous waste intended for household use or for retail sale on the site.

Section 1602 International Building Code

Esseintial Facilities. Buildings and other structures that are intended to remain operational in the event of extreme environmental loading from flood, wind, snow or earthquakes.

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**Green Duwamish
Risk Prioritized Project List**

<u>Project Name</u>	<u>Project Description</u>	<u>What is the current land use?</u>	<u>How serious is the potential impact?</u>	<u>How extensive will the impact be?</u>	<u>How soon will the impact occur?</u>	<u>Total Score</u>
Segale Levee #1	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	11	12	8	6	37
Briscoe Levee #4	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	11	10	7	5	33
Segale Levee #2 & #3	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	11	12	8	1	32
Boeing Setback Levee	Stabilize riverbanks, by creating a midslope bench and reconstructing the lower embankment slopes and levee toe.	11	11	8	1	31
Desimone Levee #3	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	11	10	6	4	31
Narita Levee	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	11	9	7	4	31
Nursing Home Levee	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	11	9	7	4	31
Segale Levee #4	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	11	9	8	3	31
Briscoe Levee #1-#3, #5-#8	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	11	10	7	2	30
Desimone Levee #4	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	11	10	6	3	30
Kent Shops Levee	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	11	9	7	3	30
Desimone Levee #1	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	11	10	6	2	29
Desimone Levee #2	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	11	10	6	2	29
Myer's Golf Levee	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	11	9	7	2	29
Gaco Western	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	8	9	7	2	26
Riverside Estates/Reddington	Remove or otherwise modify existing levee to increase floodplain capacity.	10	6	6	4	26
Gunter Levee Setback	Rebuild deteriorating levee in a setback alignment.	11	4	7	2	24
Russell Road #2	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	10	6	6	2	24
Russell Road #3	Rehabilitate levees to reduce the risk of flooding in the Lower Green River.	10	6	6	2	24

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**Green Duwamish
Risk Prioritized Project List**

<u>Project Name</u>	<u>Project Description</u>	<u>What is the current land use?</u>	<u>How serious is the potential impact?</u>	<u>How extensive will the impact be?</u>	<u>How soon will the impact occur?</u>	<u>Total Score</u>
Middle Green River Acquisition	Purchase one at-risk home and associated property.	9	8	1	4	22
Russell Road #1	Set road back from river and reconstruct lower bank using current design and construction methods.	7	6	6	2	21
Fort Dent Levee	Set back existing levees to improve flood storage and conveyance.	7	9	2	2	20
Green River 2006 Flood Damage Repairs	Complete 13 Green River flood protection facility repair projects	7	4	6	3	20
Lower Mill Creek to Lower Mullen Slough	Rehabilitate steep, eroding levees and revetments and increase floodplain capacity.	8	6	4	1	19
Gilliam Creek	Replace a 9-foot diameter flapgate that does not operate properly.	8	5	4	1	18
Horsehead Bend	Rehabilitate and stabilize eroding riverbank.	6	6	1	3	16
Hamakami Levee	Setback existing levees to improves flood storage and conveyance in agricultural area.	6	6	1	2	15
Lone's Levee Setback	Relocate deteriorating levee to edge of agricultural terrace.	6	6	1	2	15
Neely and Porter Levee Setback	Relocate deteriorating levees to edge of agricultural area and roadway.	6	6	1	2	15
Duwamish Revetment	Set back and stabilize existing revetment.	8	3	2	1	14
Northeast Auburn Creek	Improve floodplain capacity by restoring tributary access.	6	3	4	1	14
Horath-Kaech Levee Setback	Relocate deteriorating levee to edge of agricultural area.	6	5	1	1	13
Turley Levee Setback	Relocate deteriorating levee to edge of agricultural terrace.	5	5	1	2	13
78th Avenue South	Purchase degraded floodplain properties. Relocate roadway/revetment system landward.	7	2	2	1	12
Rosso Nursery	Purchase degraded floodplain properties, excavate floodplain area to increase floodplain capacity and relocate revetment system landward of its current location.	5	2	2	1	10
Pautzke and Fenster Levee Setback	Relocate deteriorating levees.	2	2	2	2	8
I-405 Levee	Set back or otherwise modify existing levee to increase floodplain capacity.	1	1	1	1	4

Draft Green River Project Sequence (5/21/07)



**King County Flood Control Zone District
Project Summary Sheet**

GENERAL INFORMATION

1. **Project Name:** Alaskan Way Seawall Replacement

2. **Project Proponent (Name and Agency):** Bob Chandler, Seattle Department of Transportation
Bob.Chandler@seattle.gov
(206) 684-7595

3. **Basin/Watershed:** Green River/WRIA 9

4. **Project Type:** check all that apply. See Criteria/Policy Handout for additional project type description.
 Proposed supplement to an existing project, identified as part of the Draft KC FCZD CIP list
 Newly identified major river flood CIP, not currently on the Draft KC FCZD CIP list
 Sub-regional project proposal, not currently on the draft KC FCZD CIP list,

5. **Total Estimated Project Cost (all phases):** Feasibility: \$9,500,000: \$2,000,000 requested

Amount requested for 2008 and 2009 is \$2,000,000 to support work with Corps of Engineers on the Feasibility Study and design of a test section of the seawall replacement.

Funding requests for future years will follow as the feasibility study is completed and the project progresses. The estimate total cost of the seawall repair is between \$600,000,000 and \$800,000,000.

6. **Proposed Local Share** (if sub-regional project). Provide other actual local share if known or proposed, if not known:
 \$ _____
 \$ 0

LOCATION INFORMATION

7. **Downstream River Mile # to Upstream RM #:** Seattle waterfront in Elliott Bay

8. **Right bank, Left bank, or Both banks:** Not applicable

9. **Jurisdiction(s):** City of Seattle

10. **Public or Private lands:** Public and Private

11. **Agriculture Production District or Farmland Preservation Program lands:** No

PROJECT INFORMATION

12. What's At Risk:

Several scenarios could cause a catastrophic failure of the seawall. This includes a seismic event that could be coupled with an on-shore surge of coastal waters (storm or tsunami related, or tidal changes). Damages associated with failure of the seawall may include:

- Failure of the existing structure could destabilize the infrastructure tied directly to the seawall, leading to a loss of lives and property. There is critical utilities infrastructure for the city and region with mainline systems for electricity, water, sewer and stormwater, natural gas and telecommunications, all vulnerable if the seawall fails.

** This project summary sheet contains planning level information and preliminary cost estimates; final cost estimates will be developed as more detailed project level information is generated.

King County Flood Control Zone District Project Summary Sheet

- The stability of State Route 99 (SR 99), one of only two north-south routes through Seattle carrying approximately 110,000 vehicles per day, and the BNSF Railway mainline with approximately 75 trains per day depends on the seawall for stability.
- Washington State Ferries operations at Coleman Dock that handle approximately 5,000 vehicles and 50,000 pedestrians daily and approximately 250 yearly Port of Seattle cruise sailings would be disrupted.
- With a large seismic event, fill material held in place behind the seawall could mobilize (with liquefaction) and mud and debris could surge past the damaged seawall and deposit into Elliott Bay. This could lead to additional damages to sensitive Puget Sound ecological resources and interrupt navigable waterways around the ferry terminal, container port and waterfront maritime fire station.
- Additional significant damages could be expected if the failing of the seawall leads to ruptured gas lines, steam lines, and water mains in the landside area adjacent to the seawall. Fires could ignite and spread uncontrolled without adequate water delivery for containment. Major electrical transmission and distribution lines provide power for most of downtown.

The potential for catastrophic failure of the seawall and widespread damages are becoming better understood as local, state and federal agencies collect additional information on the existing conditions. Recently completed inspections of the seawall, complimented with newly released NOAA and USGS data on seismic and tsunami risks in the region, have underscored the need to act quickly. There is a 1 in 20 chance in the next 20 years of a failure due to a seismic event. Timely action to improve the seawall is necessary to reduce the risk for loss of life, and limit the potential for adverse impacts to the regional and national economy.

13. Problem Statement:

The 70-year-old Alaskan Way Seawall is failing and needs to be replaced. Tiny marine organisms, known as gribbles, are attacking and significantly weakening the wood timbers that make up the structural support of the seawall. In addition, the structure was damaged during the 2001 Nisqually Earthquake. Past and on-going damage is causing the seawall to deteriorate at a more rapid rate. Most of the structure of the seawall is buried 13 feet below the surface. This makes it difficult to inspect. Recent inspections done of the visible areas continue to show an increase in decay.

14. Proposed Project or Action:

The seawall will be designed and replaced to ensure the transportation, utility and private infrastructure is protected and preserved. Additionally the seawall replacement will ensure that shoreline remains stable during seismic and storm events, and the fill contained by the seawall will not damage the ecology of Puget Sound.

The Seattle Department of Transportation (SDOT) is a partner in a feasibility study with the Army Corps of Engineers to investigate potential federal funding for the Seawall project. The feasibility study is a \$9.5 million dollar effort that is expected to be completed by 2010, depending on the federal funding.

15. Project Benefits:

The project benefits are many and varied.

- Replace the seawall in advance of catastrophic failure during a large seismic event;
- Protect Elliott Bay from environmental damage due to seawall failure and utility failure;

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King County Flood Control Zone District Project Summary Sheet

- Protect transportation facilities, Alaskan Way and SR 99;
- Protect public and private utilities that serve the city and region from failure;
- Protect private infrastructure from the impacts of a seawall failure; and
- Improve the ecological function of the seawall/marine interface.

16. Coordination Needs:

The project will require coordination with federal and local agencies, FHWA, WSDOT, Corps of Engineers, Port of Seattle, King County, other City of Seattle departments. The projects planned for the waterfront that will need to be coordinated with the seawall replacement include, Alaskan Way Viaduct Project, Colman Dock (Ferries) Project, and Seattle Parks Central Waterfront Master Plan. All of these projects rely on the seawall for access and support of the fill behind the seawall.

17. Other Information or Needs:

PROJECT PROPOSAL CRITERIA AND POLICY BASIS (See policy/criteria handout for expanded policy text and criteria, used to generate draft KC FCZD CIP lists)

18. Policy G-2 Flood Risks: please check all that apply, as to be addressed by the proposed project and include a brief description of the risk.

- Threats to public safety: Collapse of SR 99, local arterial, sidewalk and utility failure in a dense area with heavy pedestrian and vehicle use.
- Damage to public infrastructure: Highway of state significance, surface road, waterfront streetcar, several critical regional utilities.
- Impacts on the regional economy: Extreme impact from failure of the infrastructure listed above and the effect it will have on the regional economy.
- Damage to private structures: Some structures are at risk if the seawall were to fail. The piers could be damaged and some buildings are at risk from the loss of fill due to a failure.

19. Policy PROJ-1 Prioritizing Flood Risks: please check all that apply, associated with proposed project and include a brief description of the risk.

- The consequences that will result if no action is taken. Consequences should be prioritized as identified in Policy G-2: Refer to detail provided in #12.
- Urgency, where urgency is a measure of how quickly an action needs to be taken in order to prevent a risk from growing worse: The seawall continues to deteriorate. It is difficult to inspect and repair. The likelihood of failure during an earthquake is very high.
- Legal responsibility and authority, where legal responsibility and authority is a contractual relationship between King County and another person or agency to maintain a flood protection facility:
- Funding or partnership opportunities: We are currently working with the Corps of Engineers on a Feasibility Study to determine the federal interest in the project. This funding will help to provide the local funding for this work. We expect requesting additional funds for project construction when more specific plans are developed.

20. Anticipated Project Start Date (to reflect feasibility, opportunity, and ‘ripeness’ of project proposal)

- 0-2 years - Feasibility Study and Test Section Design
- 3-6 years – Anticipated Start of Construction
- 6+ years

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**King County Flood Control Zone District
Project Summary Sheet**

21. Is the project identified within an adopted local hazard mitigation plan?

Yes
 No

22. Do property interests need to be acquired (fee simple or easement) for this project?

Yes - Temporary Use and Construction easements are expected
 No

23. If property interests need to be acquired, is the landowner willing to sell or sign a voluntary letter of agreement, expressing an interest in selling necessary property interests?

Yes – Likely not a problem because rites are temporary
 No

**King County Flood Control Zone District
Project Summary Sheet**

GENERAL INFORMATION

1. **Project Name:** South Park - 4th and Trenton Storm Drain
2. **Project Proponent (Name and Agency):** Alan Lord, Seattle Public Utilities
Alan.Lord@seattle.gov
(206) 684-0720
3. **Basin/Watershed:** Green River/ WRIA 9
4. **Project Type:** check all that apply. See Criteria/Policy Handout for additional project type description.
 Proposed supplement to an existing project, identified as part of the Draft KC FCZD CIP list
 Newly identified major river flood CIP, not currently on the Draft KC FCZD CIP list
 Sub-regional project proposal, not currently on the draft KC FCZD CIP list,
5. **Total Estimated Project Cost (all phases):** \$10,600,000: \$7,200,000 requested
6. **Proposed Local Share** (if sub-regional project). Provide other actual local share if known or proposed, if not known:
 \$ 0
 \$ 0

LOCATION INFORMATION

7. **Downstream River Mile # to Upstream RM #:** Approximately RM 2.4-2.5
8. **Right bank, Left bank, or Both banks:** Left Bank
9. **Jurisdiction(s):** City of Seattle
10. **Public or Private lands:** Public and Private
11. **Agriculture Production District or Farmland Preservation Program lands:** No

PROJECT INFORMATION

12. What's At Risk:

The South Park neighborhood, located adjacent to the Duwamish River, has areas that experience flooding related to tidal effects on the stormwater system and the lack of adequate infrastructure to collect and convey stormwater runoff from past development in the area. The flooding has affected both industrial and residential areas within the neighborhood.

RESIDENTIAL BASIN/AREA: 53 properties in the project subbasin report severe yard flooding 4 to 5 times a year and minor flooding with every rain event. During the 2-year and larger events, basement or foundation problems have been reported at 5 homes and the entire neighborhood is affected by yard and driveway flooding. Chronic street flooding also occurs within this area. In addition to the flooding problems, the property owner adjacent to an existing wetland has installed a culvert connecting the wetland to the combined sewer system. This connection routes ground water as well as surface flows to the combined sewer and effectively cuts off flow to the adjoining wetland on the east side of the street.

INDUSTRIAL BASIN/AREA: In addition to the 53 problems described above, there are 44 documented flooding problems in the 100 year FEMA floodplain lower in the basin. Many of these problems are caused by tidal influence of the Duwamish River (the actual number is unknown). This area is industrial

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King County Flood Control Zone District Project Summary Sheet

in nature and the chronic flooding affects transportation by through damaged roadway surfaces and severe street flooding, as well as economic impacts from business disruption.

13. Problem Statement:

The project area currently drains to the combined sewer system and experiences flooding problems which occur in both the right-of-way and on private property. These problems are due to the lack of existing infrastructure to collect and convey stormwater runoff and, in some instances, to tidal effects on the stormwater system. In addition, poor roadway conditions and lack of roadway grading does not adequately convey runoff which contributes to the flooding problem.

14. Proposed Project or Action:

The primary objective of the 4th Ave S and S Trenton St Storm Drain Project is to reduce flooding in the 7th Ave S drainage basin in the South Park neighborhood. Flooding and water/sediment quality are a concern to both the community and SPU. The intent of this project is to relieve flooding while at the same time minimizing impacts to water and sediment quality in the Duwamish Waterway.

The project will extend the existing storm drain system to a residential area currently served by the combined sewer system and will construct a new stormwater pump station in an industrial area to address the tidal influence on system flooding. The project will also include regrading of roadways to properly convey runoff to the storm drain system. The proposed drainage improvements will only perform work within the right-of-way to address flooding problems. There will still be properties that experience flooding due to causes outside the City's jurisdiction. For these properties the drainage improvement project will provide a functional conveyance system to enable adjacent properties to relieve onsite flooding problems by connecting to the storm drain system as needed.

15. Project Benefits:

Flooding mitigation for 70+ documented flooding problems plus improved transportation and pedestrian safety improvements.

16. Coordination Needs:

Coordination required with SDOT for roadway design, Parks Dept for water quality treatment and conveyance swales to be installed on Parks Property, easement needed from private resident for construction of conveyance pipe, agreement needed with Habitat for Humanity to reconnect wetland system to the wetland owned by Habitat for Humanity.

17. Other Information or Needs:

PROJECT PROPOSAL CRITERIA AND POLICY BASIS (See policy/criteria handout for expanded policy text and criteria, used to generate draft KC FCZD CIP lists)

18. Policy G-2 Flood Risks: please check all that apply, as to be addressed by the proposed project and include a brief description of the risk.

- Threats to public safety: roadway flooding causes traffic hazards and pedestrian safety hazards as pedestrians to walk in the driving lanes.
- Damage to public infrastructure: ponding of water on roadway has reduced the functionality of roads in the neighborhood. Extreme roadway surface damage caused by street flooding.
- Impacts on the regional economy: transportation in the industrial area is severely affected by poor roadway conditions and street flooding.

** This project summary sheet contains planning level information and preliminary cost estimates; final cost estimates will be developed as more detailed project level information is generated.

**King County Flood Control Zone District
Project Summary Sheet**

Damage to private structures: project will mitigate documented flooding on at least 70 properties and reported basement flooding in at least 5 homes.

19. Policy PROJ-1 Prioritizing Flood Risks: please check all that apply, associated with proposed project and include a brief description of the risk.

The consequences that will result if no action is taken. Consequences should be prioritized as identified in Policy G-2: See above descriptions of consequences for public safety, infrastructure, economy, and private structures.

Urgency, where urgency is a measure of how quickly an action needs to be taken in order to prevent a risk from growing worse: Flooding occurs annually.

Legal responsibility and authority, where legal responsibility and authority is a contractual relationship between King County and another person or agency to maintain a flood protection facility:

Funding or partnership opportunities: \$3.4M SPU has available must be spent by Feb. 2010

20. Anticipated Project Start Date (to reflect feasibility, opportunity, and 'ripeness' of project proposal)

0-2 years: Construction scheduled for 2008 and 2009

3-6 years

6+ years

21. Is the project identified within an adopted local hazard mitigation plan?

Yes

No

22. Do property interests need to be acquired (fee simple or easement) for this project?

Yes: Easement required through residential property to construct new storm drain system, agreement is needed to convey water to the wetland owned by Habitat for Humanity.

No

23. If property interests need to be acquired, is the landowner willing to sell or sign a voluntary letter of agreement, expressing an interest in selling necessary property interests?

Yes: Owners have been agreeable at this early stage.

No

Project	Description	Total Project Budget	Requested Funds	Expected Construction
Regional, Major River Projects				
South Park – 4 th and Trenton GREEN BASIN	This project installs conveyance improvements along S Trenton St, 3 rd Ave S, 4 th Ave S, S Director St and 7 th Ave s to resolve a number of documented flooding problems in these areas.	\$10.6M	\$7.2M	Preliminary engineering
Elliott Bay Seawall GREEN BASIN	Support seawall repair along Seattle’s waterfront on Elliott Bay. A feasibility study is in process with the U.S. Army Corps of Engineers. The funds would support that feasibility study which will identify failure scenarios, possible repairs, and cost-benefit ratios. We expect to apply for	\$600-\$800M	\$2M	Feasibility study with Corps
Tolt Levee Setback SNOQUALMIE BASIN	The project is at the Tolt-Snoqualmie on King County land (Tolt MacDonald Memorial Park). Project relocates a historical levee away from the channel along about 2,600 ft of the Tolt river, setting back about 800 ft, reconnecting 45 acres of floodplain. Total cost is about \$6M – funds coming from King County, grants, and Seattle (\$2.5M). The project needs \$1M in funding for completion. This project is in the Flood Hazard Management Plan, although at a low amount of funding.	\$6M	\$1M	70% design, King County poised to release SEPA notice of action and apply for permits.
Sub-Regional Projects				
Madison Valley Long Term Solution	This project will implement a long-term solution to storm water flooding and side sewer back-ups in the Madison Valley area.	\$23.7M		Planning/ preliminary engineering
Madison Valley “sag”	Address flooding on Madison Ave near Washington Park playfield.			Investigation
MLK Way/Norfolk Street Storm Improvements	Reduce flooding problems along Martin Luther King Jr Way S and adjacent streets by rehabilitating the existing system, eliminating bypasses to the sanitary sewer systems and providing a functional conveyance system for further roadway and drainage improvements.	\$11.6M		Project design

Project	Description	Total Project Budget	Requested Funds	Expected Construction
N 125 th and Aurora N storm drain	Stormwater facilities associated with SDOT Aurora corridor street improvement project. Proposing regional detention facility at Stone Pond to reduce flooding problems from N 145 th to 110 th and downstream.	\$9.4M		Preliminary engineering
Thornton Creek confluence	The confluence of the north and south branches of Thornton Creek is subject to flooding due to sediment deposition and encroachment into the creek floodplain. SPU has purchase about 4 properties in this area that are repeatedly flooded. This project would purchase additional flood-prone properties in the area and remove the structures to improve floodplain conveyance and capacity.	\$1.7M		Investigation
Thornton Creek South Branch	Improvement of floodplain conveyance and capacity	\$700,000		Investigation