

Implementation Technical Committee

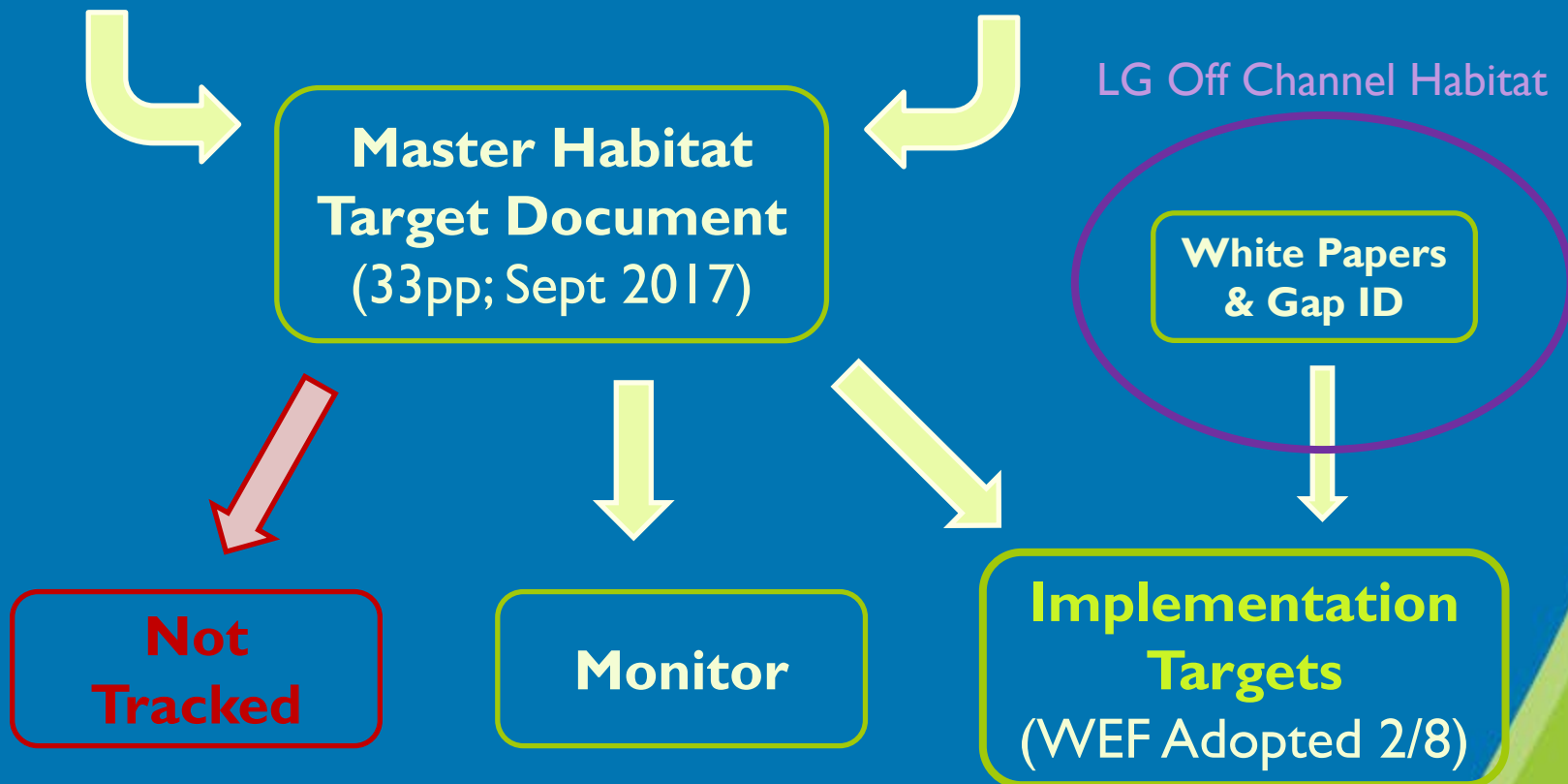
March 21, 2018; Tukwila Community Center

10:00	Agenda Review/Intros	Matt WRIA 9
10:05	Plan Update: Habitat Goals <ul style="list-style-type: none">• Lower Green	Matt & Kollin WRIA 9
10:25	CWM Funding – Monitoring Priorities	Karen, WRIA 9
10:40	Revegetation Ground Round	Karen WRIA 9
10:55	SRFB Update <ul style="list-style-type: none">• Project overview	Karen WRIA 9
11:10	March 27 th Workshop Update	Matt WRIA 9
11:20	Round Robin Updates	All
11:30	Adjourn	



Salmon Plan Update: Habitat Indicators & Targets

- 2005 Habitat Plan
- 2006 Implementation Guidance
- 2014 Duwamish Blueprint
- 2016 Re-green the Green



Lower Green River – Off Channel Habitat

Habitats outside of BFW.

1. Abandoned/high flow side channels (length) (ex.-Reddington)

2. Floodplain tributary channel (length) (ex. Johnson Creek)

a. Perennial

i. Natural

ii. Heavily modified (i.e. ag drainage)

b. Intermittent

i. Natural

ii. Heavily modified (i.e. ag drainage)

3. Backwater (area) (ex.-Leber backwater)

4. Floodplain wetlands (area)

5. Other 100 year floodplain (area)

a. High (~5000cfs)

i. Vegetated

ii. bare ground

iii. impervious

b. Low (<5000 csf)

i. Vegetated

ii. bare ground

iii. impervious



Lower Green River – In Channel Habitat

Located within River's BFW.

1. Low flow Side channels (e.g. Riverview)
2. Banks
 - a. *Armored*
 - b. *Unarmored*
 - i. *Vegetated*
 - ii. *Unvegetated*
3. Bars (gravel and sand)
4. Pools
5. Benches

Lower Green River – Implementation Targets

Project	Off Channel Habitat					In Channel
	HF Side Channel	FP Trib. Channel	Backwater	FP Wetland	Other 100-yr FP	LF Side Channel
Downey	0 ft	0 ft	0 ac	0 ac	14.0 10.7 ac	300 (7.4 ac) 2000 ft (6.3 ac)
L. Russel	500	0	17	0	19	0
Teufel	0	0	17.5	0	13.9	0
NE/Aurbum Creek	0	2800	28	0	21	0
Chateau	0	0	1	0	1	0
Wrecking Yards	0	0	5	0	25	1400
Johnson Cr.	0	0	0	60	0	0
Totals	500	2800	68.5	60	93.9 90.6	4400 3400
10% increase	550 ft	3080 ft	75.35 ac	66 ac	99 ac	3740 ft



Middle Green River Floodplain Connectivity

**Floodplain connectivity = area subject to lateral
channel migration**

Existing Conditions

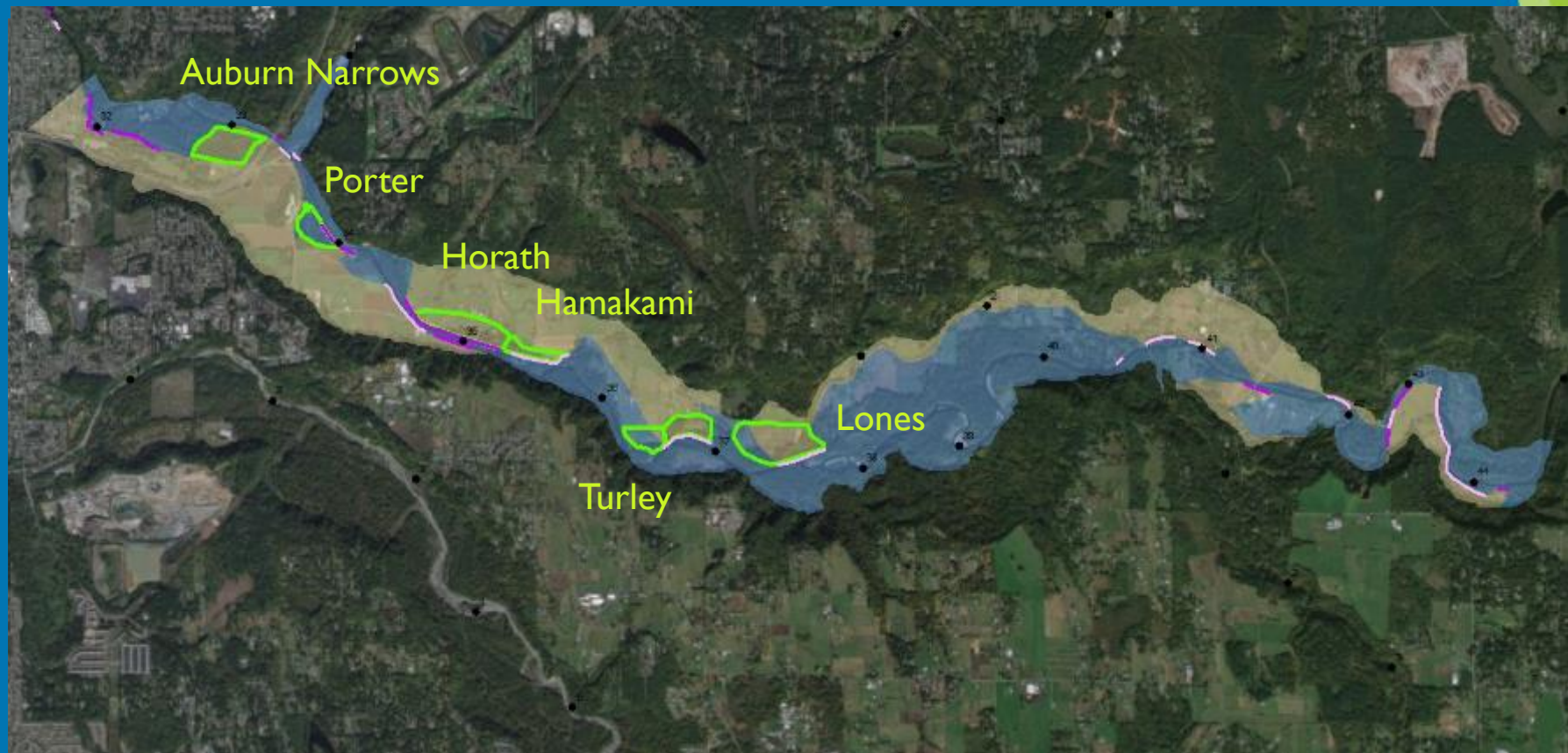
- ~1,683 ac.

Necessary Future Condition

- 65% of historical connectivity
- 2,070 of 3,185 ac.

Middle Green River

Quantifying potential gains



Middle Green River Floodplain Connectivity

Necessary Future Condition = 387 ac. (65 %)

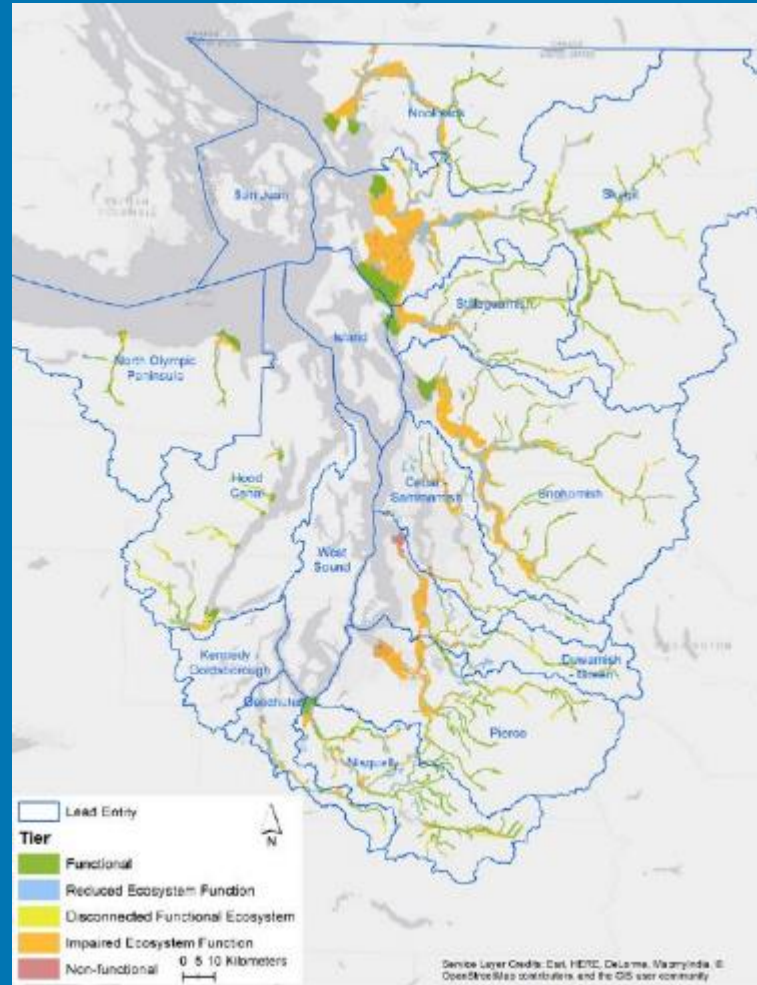
Estimated potential gains = 169 ac

- 150 ac. 51 → 57 %
- 175 ac. 51 → 58 %
- 200 ac. 51 → 59 %

Floodplain Vital Sign

Spatial data refinement project

Colin Hume, Ecology



Habitat Plan Update

March 27th Workshop Discussion

Topics

- 2005-2017 retrospective
- Update scope & timeline
- New science implications
- Sub-watershed breakouts
- New project & program solicitation

Green/Duwamish Salmon Habitat Plan Update

March 27th Workshop – We want your input!!

Join Green/Duwamish watershed stakeholders in reviewing over 10 years of salmon recovery and discussing priorities for the future!!

Salmon Habitat Plan Update

The Green/Duwamish Salmon Habitat Recovery Plan has guided recovery efforts since 2005. WRIA 9 has begun the process of updating the plan. The update will include new research findings, habitat targets, and an updated suite of projects, programs and policies.



2005 Salmon Habitat Plan

Workshop Details

- 2005-2017 retrospective
- Update scope & timeline
- Emerging science implications
- Sub-watershed breakout groups
- Project & program solicitation information

Time & Location

March 27th, 2018 | 10 am - 2:30 pm

Tukwila Community Center

12424 42nd Ave S, Tukwila

We request attendees stay for the entire event.

Light lunch provided.



Tukwila Community Center

RSVP

Please RSVP via [Eventbrite](#) by March 16th.

Contact: Laura West at LWest@kingcounty.gov

or (206) 477-7574

Please indicate any dietary restrictions in your RSVP.

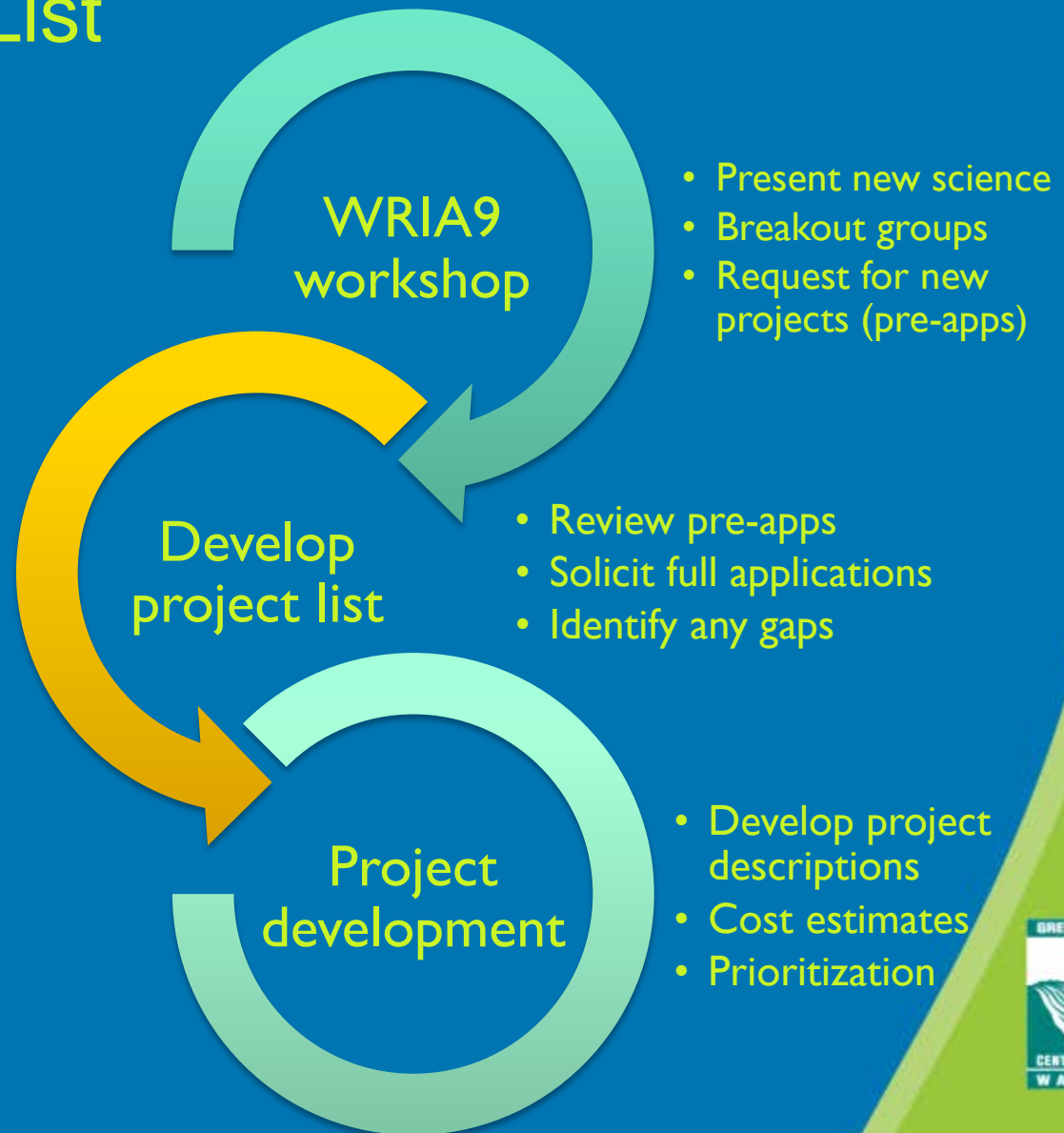
WORKING TOGETHER TO MAKE OUR WATERSHED FIT FOR A KING



WRIA 9 Habitat Plan Update

New Project List

Karen Bergeron,
WRIA 9



BREAK



Green/Duwamish Cooperative Riparian Improvement Project

Jasmin Ka, Forterra



Mid Sound Fisheries Enhancement Group Program Update

Jeanette Dorner, MSFEG



Nearshore

Habitat Indicator	Necessary Future Cond. (2005 Plan)	10-year Target (2005 Plan)	Current Condition	Recommended 10-year Target (by 2028)	Sources	Notes
Shoreline Armor*	65% of shoreline in natural condition	Restore 13,500 ft. of shoreline	64%/59 mi. of shoreline armored ¹ . 1500 ft. restored, but net gain of 70 ft. ²	Remove 3,000 ft. (<1% improvement) of hard armor and achieve an overall net reduction in hard armor	1) Salmon Plan 2) 2014 WRIA 9 Marine Shoreline Monitoring and Compliance	Armor setbacks and soft-shoreline stabilization? Track soft protection separately. Prioritize feeder bluffs
Marine Riparian Vegetation*	65% of marine shoreline characterized by riparian tree cover ¹ .	No target developed.	40%/36 mi. of shoreline has riparian tree cover [24%/21.8 mi. of shoreline is dense trees; 16%/14.8 mi. is patchy trees]	60 ac. and/or 3.25 mi. (~3.5% gain) of shoreline revegetated ³	1) Salmon Plan 2) WRIA 9 Status and Trends Monitoring Report: 2005-2010 3) Re-Green the Green 2016	Target mouths of creeks and areas without bluffs or shade on mainland.
Shoreline Conservation	Not Applicable	Protect 5 mi. of shoreline ² . As of 2014, 4 mi. were protected ³	9.5 mi. of adjacent upland protected as natural lands ¹	Acquire 2 mi. of shoreline for permanent protection, prioritizing beaches and feeder bluffs	1) 2017 GIS analysis of ownership and shoretype data 2) Implementation Guidance (2006) 3) WRIA 9 Status and Trends Report: 2005-2010	Outlier? Not a habitat measure and conservation not required for function. Does not include all public lands if management intent is not protective of natural features.
Pocket Estuaries*	Marine nearshore habitats improved to increase juvenile rearing, life stage diversity and productivity.	Restore 6 pocket estuaries	2 restored in previous 10 yrs.	Restore 5 pocket estuaries	1) Implementation Guidance (2006) 2) PSNERP Strategies for Nearshore Protection & Restoration (2012)	Capture as a priority area for shoreline armor removal? Lacking assessment of natural/modified conditions? 12 degraded; 5 existing barrier embayments ²

Duwamish

Habitat Indicator	Necessary Future Cond. (2005 Plan)	10-year Target (2005 Plan)	Current Condition	Recommended 10-year Target (by 2028)	Sources	Notes
Shallow Water Habitat	173 ac. of shallow water habitat in the transition zone (RM 1-10) (30% of historic) ¹	Restore 26.5 ac. of shallow water habitat	5.8 ac. as of 2014 has been restored	40 ac. of shallow water habitat created between RM 1-10 ²	1) Salmon Plan 2) Duwamish Blueprint 2014	Need to define categories of shallow water habitat. Chinook Wind should be ~2-3 ac.
Riparian Forest*	65% of each bank of the river has > 165 ft. of riparian tree coverage (586 ac. total)	No Target was developed	69 ac./12% of 165 ft. buffer contains trees. 34 ac./ 20% of 50 ft. buffer contains trees. ³	170 ac. (~29% of 165 ft. buffer) /9.8 mi. of bank revegetated ²	1) Salmon Plan 2) Re-Green the Green 2016 3) Hand-digitized for Lower Green SWIF, 2013	Discuss feasibility of target given land use constraints (e.g., 59% of 165 ft. buffer is impervious surface).

Lower Green

Habitat Indicator	Necessary Future Cond. (2005 Plan)	10-year Target (2005 Plan)	Current Condition	Recommended 10-year Target (by 2028)	Sources	Notes
Off Channel Habitat	45% of historical off-channel habitat (2.8 mi. side channels; 450 ac. wetlands; 5039 ac. floodplains)	16.5 ac. of reconnected off-channel habitat (including riparian area). ¹ Create 1.4 mi. of side channel by 2034 ²	TBD	Needs to be developed	1) Implementation Guidance (2006) 2) Approved by WEF as Technical Recommendations May 8, 2014	Habitat categories: 1. side channel 2. floodplain tributary 3. backwaters 4. floodplain wetland 5. other floodplain
Riparian Forest*	75% of each bank of the river to >165 ft. wide ¹ (828 ac. total)	No target was developed	222 ac./27% of 165 ft. buffer has trees. 84 ac./34% of 50 ft. buffer (248 ac.) has trees. ³	250 acres (~30% of 165 ft. buffer)/ 8.52 mi. of high priority, unforested shoreline planted with trees by 2025 ²	1) Approved by WEF as Technical Recommendations May 8, 2014 2) Re-Green the Green: 2016 3) Hand-digitized for Lower Green SWIF, 2013	Discuss feasibility of target (e.g., 24% of 165 ft. buffer is impervious surface).
Large Woody Debris*	1705 pieces per mi. (21 key pieces) ¹	No target was developed, but there was a decrease over 10 years	2004: 54 pieces/mi. ³ 2014: 48.5 pieces/mi. ²	425 pieces/mi., which is half of 2014 20-year targets ¹	1) Approved by the WEF as Technical Recommendations May 8, 2014 2) LG/Duwamish River Habitat Assessment 2014 3) LG River Baseline Habitat Survey Report, 2004	
Bank Armor	No new, decreasing amount ¹	No new, decreasing amount ¹	2014: 42 mi. of river bank, 17.7 mi. are KC levees and 9.8 mi. are KC maintained revetments. The other 14.5 mi. are combination of semi-armored roads and natural banks ²	Set back 1 mi. of levee (based on Lower Russell Rd)	1) Salmon Plan 2) 2017 King County unpublished GIS data	Difficult to measure. Measured incorrectly in Status & Trends. 2004 baseline data not collected in a way that allows tracking of changes in armor. Levee setbacks count only if expands CMZ.

Middle Green

Habitat Indicator	Necessary Future Cond. (2005 Plan)	10-year Target (2005 Plan)	Current Condition	Recommended 10-year Target (by 2028)	Sources	Notes
Floodplain Connectivity / Lateral Channel Migration	Floodplain subject to lateral channel migration represents 65% of historical conditions. Historic floodplain was 3,185 ac. ¹		1751 ac. or 55% of floodplain current connected at 100 yr. flood. ²	Needs to be developed	1) Historical Aquatic Habitats in the Green and Duwamish River Valleys and the Elliot Bay Nearshore, KC WA 2005. 2) 2017 analysis comparing UW historic data to KC FEMA mapped 100 yr. floodplain.	Metric emphasizes process restoration vs. habitat substitution (e.g., Lower Green)
Riparian Forest*	> 65% of Channel Migration Zone (1424 of 2,190 ac.) and up to 165 ft. wide where possible ¹	No target was developed	2005: 50.3% 2009: 50.5% of the Channel Migration Zone forested ¹	175 acres (8% of CMZ) / 4.4 mi. revegetated ²	1) WRIA 9 Status and Trends Monitoring Report: 2005-2010, WRIA 9 ITC, 2012 2) Re-Green the Green: 2016	Track implementation by bins of 0-50, 50-100, 100--165 ft.
Large Wood Debris*	10 jams/mi. ¹	No target was developed	2006: 2.2 jams/mi. ³ 2015: 3.8 jams/mi. ²	5 jams/mi.	1) WRIA 9 Strategic Assessment 2005 2) Middle Green River LWD Monitoring, 2016 3) WRIA 9 Status and Trends Monitoring Report: 2005-10	Likely achievable within 10 years. Sustaining >5 jams/mile in an ongoing basis may take longer. From RM 32.0 to 61.0
Bank Armor	No new, decreasing amount ¹	No new, decreasing amount ¹ <i>Target met</i>	2004=25% 2009=24% ^{2,3}	Set back 1 mi. of revetment/levee (Based on Porter, Lones and Hurley projects, which together are a little under a mile)	1) Salmon Plan 2) Analysis lumped part of the LG and MG, numbers are higher than should be. 3) WRIA 9 Status and Trends Monitoring Report: 2005-2010, WRIA 9 ITC, 2012	Is bank armoring duplicative of possible metric for CMZ? Include levee setbacks if result in expansion of CMZ.

Upper Green

Habitat Indicator	Necessary Future Cond. (2005 Plan)	10-year Target (2005 Plan)	Current Condition	Recommended 10-year Target (by 2028)	Sources	Notes
Fish Passage	Up and downstream fish passage provided at Howard Hanson Dam	Fish passage. Target not met	Upstream passage facility complete. Downstream passage not complete	Downstream passage at HHD		Upstream passage facility built by TPU. Downstream facility to be built by ACOE is 10 years behind schedule unclear when they will start.
Bank Armor	No new, decreasing amount ¹	No new, decreasing amount ¹ Target met	2004=15% armored 2009=15% armored ²	Set back 0.5 mi. of levee	1) Salmon Plan 2) WRIA 9 Status and Trends Monitoring Report: 2005-2010, WRIA 9 ITC, 2012	Majority of armor is associated with BNSF. No tally of road armoring, but it is likely to decrease as river migrates and landowners adjust road alignments per Forest Practices guidelines.