Vancouver Energy
Operations Facility Oil Spill Contingency Plan
REVISIONS

EFSEC Application for Site Certification No. 2013-01
Docket No. EF131590
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Prepared for

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Revision Summary

No.	Date	Edits/Comments
00	26 June 2015	Submittal for Application Review
01	11 January 2016	Revisions for EFSEC Comment Letter

Vancouver Energy
Operations Facility Oil Spill Contingency Plan
REVISIONS

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Plan Revisions

This document summarizes the revisions to the Vancouver Energy Operations Facility Oil Spill Contingency Plan originally submitted to EFSEC on 26 June 2015. Figures that have been revised are included within the document and are intended to replace the figures issued on 26 June 2015.

Table 1. Summary of Operations Facility Oil Spill Contingency Plan Revisions

Section	Page Number	Revision	26 June 2015 Version	11 January 2016 Revisions
1.4	1-6	Replace	For planning purposes, the geographic area at risk from a worst-case discharge (unabated release over ~~72~~ hours during maximum current speeds) extends from approximately 5 miles upriver from the facility (RM 109) to the mouth of the Columbia River and approximately 100 miles in either direction (north or south) along the Washington and Oregon coastlines (see Figure 1.5).	For planning purposes, the geographic area at risk from a worst-case discharge (unabated release over *48* hours during maximum current speeds) extends from approximately 5 miles upriver from the facility (RM 109) to the mouth of the Columbia River and approximately 100 miles in either direction (north or south) along the Washington and Oregon coastlines (see Figure 1.5).
2.7.2	2-6	Delete, Add	• ~~Ensure~~ primary boom is deployed before any material transfer operation begins.	• Primary boom is deployed before any material transfer operation begins, *unless prohibited by weather conditions.*
2.7.2	2-6	Delete	• Deploy secondary facility containment boom, and skimmers ~~if available,~~ to attempt to isolate the slick and reduce the spread and potential impact area. Monitor the boom for effectiveness.	• Deploy secondary facility containment boom, and skimmers to attempt to isolate the slick and reduce the spread and potential impact area. Monitor the boom for effectiveness.
Figure 2.3	2-17	Delete	Type: Tank Overfill/Failure; Mitigation Procedure: ~~Consider facility evacuation for gasoline and ethanol spills.~~	See Revised Figure 2.3
Figure 2.4	2-20	Delete	Environmental Observations: ~~Locations of kelp beds, seagrass beds, and other features that could be mistaken for oil~~	See Revised Figure 2.4
Vancouver Energy Field Document	2-27	Delete	Vancouver Energy Field Document Page 1; Identification of Reportable Spills to Ground: ~~• Releases from underground storage tanks~~	See Revised Page 1 of the Vancouver Energy Field Document
3.2	3-1	Replace, Add	– Tesoro Refining ~~and~~ Marketing Company	– Tesoro Refining & Marketing Company *LLC*
Figure 3.3	3-9	Delete	L. Local Accommodations: ~~Red Lion at The Quay, (360) 694-8341~~	See Revised Figure 3.3
4.1	4-1	Delete, Add	The Facility is owned and operated by Tesoro Savage Petroleum Terminal LLC (Company), a joint venture of Savage Companies and Tesoro ~~Corporation~~.	The Facility is owned and operated by Tesoro Savage Petroleum Terminal LLC (Company), a joint venture of Savage Companies and Tesoro *Refining & Marketing Company LLC.*
Figure 4.2	4-7	Delete	Position: Incident Commander/Deputy IC: ~~Schumacher, John – WA~~	See Revised Figure 4.2
Figure 4.2	4-7	Delete	Position: Safety: ~~Larrigan, Harry – TX~~	See Revised Figure 4.2

Section	Page Number	Revision	26 June 2015 Version	11 January 2016 Revisions
5.8	5-20	Replace	Recovered Oil and Water Management Plan, Section 1.0 – Recovered Oil: Recovered oil and water mixtures will be immediately transported to ~~designated waste staging areas to bulk storage fractionation tanks (frac tanks) used in the spill response operations.~~	Recovered oil and water mixtures will be immediately transported to *fractionation or other storage tanks on-shore.*
5.9	5-24	Delete	Recovered Oil Quantification Plan, Section 1.2 – Estimates of Recovered Oil and Oily Water: • Liquid will be removed from the water by pumping into ~~ballast tanks,~~ fractionation or other storage tanks on-shore.	• Liquid will be removed from the water by pumping into fractionation or other storage tanks on-shore.
Figure 6.4	6-12	Replace	Figure revised per October 2015 Lower Columbia River Geographic Response Plan	See Revised Figure 6.4
6.7	6-21	Replace	• **Figure ~~6.7~~** contains proposed booming and collection strategies for the Columbia River in areas near the terminal.	• **Figure *6.9*** contains proposed booming and collection strategies for the Columbia River in areas near the terminal.
Figure 6.9	6-24	Replace	Replace with Revised Figure	See Revised Figure 6.9
Figure 6.10	6-28	Replace	Figure revised per October 2015 Lower Columbia River Geographic Response Plan	See Revised Figure 6.10
Figure 6.11	6-34	Add		Add Pacific Biofuels, see Revised Figure 6.10
7.5	7-13	Replace	The largest crude oil tank at the terminal may contain up to ~~360,000~~ barrels of product. For planning purposes, it will be assumed that 100 percent of this tank spills into the Columbia River.	The largest crude oil tank at the terminal may contain up to *380,000* barrels of product. For planning purposes, it will be assumed that 100 percent of this tank spills into the Columbia River.

Figure 2.3 Spill Mitigation Procedures* - Revised

Type	Mitigation Procedure
Any identified failure	Activate emergency shutdown system (ESO) to close all landside valves and stop transfer pumps.
Failure of Manifold, Mechanical Loading Arm, Transfer Equipment, or Hoses at Dock	Notify vessel and terminal to stop all product transfers. Advise vessel and terminal to close all line and ship manifold discharge valves. Shut down all transfer pumps and close all dockside valves. Eliminate sources of ignition. If hose ruptured, drain hose in a manner that minimizes spillage into water. If other than hose ruptured, determine source of leak and control the source. Initiate spill response.
Tank Overfill/Failure	Stop transfer of product into tank. Eliminate sources of ignition. Consider transferring the product from the overflowing tank into an adjacent tank to stop overflow. Isolate tank by closing all valves. Secure area to protect pedestrian and vehicle traffic and prevent the spreading of spilled oil. Initiate spill response
Piping Rupture/Leak	Shut down pumps and close pipeline block valves on both sides of the spill. Determine if options are available to minimize line drainage. Secure area to protect pedestrian and vehicle traffic and to prevent spreading of spilled oil. Initiate spill response. Contact pipeline repair specialist. See **Figure 3.3**.
Explosion/Fire	Alert terminal employees. Request emergency assistance by dialing "911." Secure area to protect pedestrian and vehicle traffic from danger. Evacuate terminal as directed in the evacuation plan. Notify adjacent facilities. See **Figure 3.3**. Begin firefighting procedures.
Equipment Failure, such as Pumping or Relief Valve	Shut down and close adjacent valves. Eliminate sources of ignition. Secure area to protect pedestrian and vehicle traffic and to prevent spreading of oil. Initiate spill response.

*Worse-Case Discharge volume calculations are provided in **Appendix D**.

Figure 2.4 Oil Spill Surveillance Form - Revised

Record your observations of spilled oil either in a notebook or directly on a chart, of the area under observation. This checklist is an aid for organizing your observations.

General Information

Date _____ Time _____ Case name _____

Observer's name _____ Observer's affiliations _____

Current stage of tide (flood, ebb, slack) _____

On-scene weather (wind, sea state, visibility)

TIDES: HIGH(s) _____ _____ MAX CURRENT: _____ _____
LOW(s) _____ _____ (W/VELOCITY FLOOD) _____ _____

DAYLIGHT: SUNRISE _____ SLACK _____ _____
SUNSET _____ WATER _____ _____

WIND: SPEED _____ DIRECTION _____

CURRENT CONDITIONS:

_____

_____

FORECAST (NEXT OPERATIONAL PERIOD):

_____

_____

Platform (helicopter, fixed-wing aircraft, boat)_____
Flight path/trackline _____
Altitude where observation taken (feet) _____
Location of oil's source (if known) _____
Areas not observed (e.g., foggy locations, restricted air spaces, shallow water areas)

_____

_____

Figure 2.4 Oil Spill Surveillance Form (continued) - Revised

Oil Observations

Slick location(s) _____

Latitude _____ Longitude _____ (central point)

Slick dimension(s) _____

Orientation of slick(s) _____

Description of oil distribution (e.g., as windrows, streamers, pancakes, or patches)

_____

_____

Color and appearance (e.g., rainbow, dull or silver sheen, black, or brown in color, or mousse)

_____

Percent coverage _____

Is oil recoverable (Y/N)? _____

(examples or recoverable oil types include black oil, mousse, and heavy dull– or dark – colored sheens)

Considerations

1. During surveillance flights, travel beyond known impacted areas to check for oil beyond these areas.
2. Include the name and phone number of the person making the observations.
3. Clearly describe the locations where oil is observed, as well as the areas where no oil has been seen.

Other Observations

Response Operations

Skimmer deployment (general locations where skimmers are working).

Are they working in the heaviest concentration of oil? Describe.

_____

_____

_____

_____

_____

Figure 2.4 Oil Spill Surveillance Form (continued) - Revised

Boom deployment

Describe general locations of boom(s). _____

Does the boom contain oil? _____Is oil entraining under the boom?_____

Environmental Observations

Locations of any convergence line, rip tides, and sediment plumes

_____

General description of wildlife present in area (locations and approximate numbers of birds and marine mammals)

BIRDS _____

_____

MARINE MAMMALS_____

_____

General Comments:

_____

_____

_____

_____

_____

_____

_____

_____

Vancouver Energy
Field Document

OIL SPILL RESPONSE – EMERGENCY PROCEDURES

- **STOP THE PRODUCT FLOW:** Act quickly. Secure pumps. Close valves, etc.
- **WARN PERSONNEL:** Enforce safety and security measures.
- **SHUT OFF IGNITION SOURCES:** Motors, electrical circuits, open flames, etc.
- **CONTAIN / CONTROL THE SPILL:** Use berms, boom, absorbents, etc.

DO NOT use any cleaning or dispersing agents on the spilled oil (e.g. no liquid soaps, chemical dispersants, and bio-agents). The use of such products is strictly controlled by government laws and regulations and will result in fines/penalties.

IDENTIFICATION OF REPORTABLE SPILLS TO GROUND

All spills are considered reportable spills to ground, except as follows:

- Spills of known volume less than 42 gallons,
- CERCLA releases,
- Air releases to atmosphere only.

- Spills contained within areas controlled by NPDES permitted systems that are not likely to threaten groundwater and do not exceed federal reportable quantities.

For spills of unknown volume, the spill should be considered reportable if the spill is ongoing, if the spill has a pathway to water of the state, if environmental conditions (rain or high groundwater) might lead to environmental exposure, if the volume is not known to be less than 42 gallons.

SPILL OBSERVER INITIAL PROCEDURES CHECKLIST

____ Make an immediate and rapid assessment to determine:

- If anyone has been injured
- If situation poses hazards to other personnel or the public (i.e., fire, explosion, fumes, etc.)
- Source of the spill
- Type of material spilled and approximate size

____ Take immediate steps to stop the flow.

____ Ensure the safety of personnel. If someone requires medical attention or there is an emergency, dial 911.

____ Notify the Terminal Manager and/or the Area Supervisor.

____ Evacuate personnel as necessary (refer to Figures 2.3 and 2.4 in the Spill Contingency Plan).

____ Shut down and control the source of the spill, if safe to do so. Assess the potential hazards for explosion and airborne toxins.

____ If safe to do so, shut down or direct appropriate personnel to shut down potential ignition sources.

____ Monitor the area for potential explosion and fire hazards. If fire is present, enable fire alarm and water system.

____ Ready the area for firefighting, if necessary.

Field Document Page 1

Figure 3.3 Notification Summary and Documentation Form - Revised

AFFILIATION	PHONE NUMBER	NAME OF PERSON CONTACTED	TIME CONTACTED
A. COMPANY PERSONNEL			
TBD	TBD		
B. MANDATORY NOTIFICATIONS			
National Response Center (NRC)	(800) 424-8802*		
Washington Emergency Management Division (EMD)	(800) 258-5990		
Port of Vancouver Security	360-992-1120		
C. SECONDARY NOTIFICATIONS			
Clean Rivers Cooperative	(503) 220-2040		
Marine Spill Response Corporation	(425) 252-1300 (800) 645-7745		
Department of Ecology – Southwest Office	(360) 407-6300		
Oregon Emergency Response System	(800) 452-0311		
Clark Regional Emergency Services Agency	(360) 737-1911		
USCG Marine Safety Unit – Portland	(503) 240-9301*		

*Represents after-hour telephone numbers

Figure 3.3. Notification Summary and Documentation Form (continued) - Revised

AFFILIATION	PHONE NUMBER	NAME OF PERSON CONTACTED	TIME CONTACTED
C. NOTIFICATIONS AS APPROPRIATE			
Federal Agencies			
EPA Region 10 – Seattle	(206) 553-1264*		
National Ocean and Atmospheric Association (NOAA) Seattle (Hazmat)	(206) 526-6317 (206) 526-4911		
National Weather Service Portland	(503) 326-2340 (503) 326-2720		
Federal Bureau of Investigation Portland	(503) 224-4181*		
U.S. Forest Service Mountlake Terrace, WA	(800) 627-0062		
U.S. Department of the Interior Portland, OR	(503) 326-2489		
Tribal Nations			
TBD	TBD		
Other State Agencies			
(EFSEC) State of Washington Energy Facility Site Evaluation Council	TBD		
Washington Highway Patrol (Emergency Only)	(360) 757-1175* (360) 753-6540		
Washington State Department of Fish and Wildlife	(800) 258-5990 (360) 534-8233 (pager) (360) 902-8124 (office)		
Washington State Department of Fish and Wildlife Oil Spill Response Team	(360) 534-8233 (pager) (360) 902-8124 (office)		
Washington State Department of Natural Resources (Regional)	(360) 856-3500		
Washington State Department of Parks and Recreation	(360) 755-9231		
Washington State Fire Marshall	(360) 596-3900		
Washington State Dept. of Transportation – Southwest Region	(360) 905-2000		
Oregon Department of Wildlife	(503) 872-5268		
Local Agencies			
Vancouver Public Works Operations Ctr	(360) 693-9302		
Clark Public Utilities	(360) 992-3000		
Clark County Public Works (waste water)	(360) 397-6118		
Vancouver-Clark Parks and Recreation	(360) 487-8311		
Clark County Public Health	(888) 727-6230		

*Represents after hours telephone numbers

Figure 3.3. Notification Summary and Documentation Form (continued) - Revised

AFFILIATION	PHONE NUMBER	NAME OF PERSON CONTACTED	TIME CONTACTED
D. EMERGENCY SERVICES			
Emergency Medical and Hospitals			
Legacy Salmon Creek Hospital	(360) 487-1000		
SW Washington Medical Center (Emergency Room)	(360) 514-2064		
Clark County/Vancouver Emergency Services	(360) 737-1911 or 911		
Clark County Public Health	(360) 397-8215		
Oregon Health & Science University (Portland)	(503) 494-7686		
Providence Portland Medical Center	(503) 215-1111		
Legacy Good Samaritan Hospital & Medical Center (Portland)	(503) 413-7711		
Fire Departments			
Vancouver Fire Department	911 or (360) 487-7211		
Clark County Fire Marshall	(360) 397-2375 x-2186		
Clark County Hazardous Materials	(360) 397-2375		
Police Departments			
Vancouver Police Administration	911 or (360) 487-7400		
Clark County Sheriff Administration	911 or (360) 397-2366		
E. MEDIA			
Radio			
AM 750 KXL, Portland	(503) 417-9595		
AM 1190 KEX, Portland	(503) 225-1190		
Television			
KING TV NBC, Channel 5 (Seattle)	(206) 448-5555		
KIRO TV CBS, Channel 7 (Seattle)	(206) 728-7777		
KOMO TV ABC, Channel 4 (Seattle)	(206) 404-4145		
KATU ABC, Channel 2 (Portland)	(503) 231-4222		
KOIN NBC, Channel 6 (Portland)	(503) 464-0600		
KGW NBC, Channel 8 (Portland)	(503) 226-5000		
Newspapers			
Seattle Times	(206) 464-2111 (206) 464-2261 (fax)		
Associated Press	(206) 682-1812		
The Columbian (Clark County)	(360) 699-6006		
The Oregonian (Portland)	(503) 221-8100		

Figure 3.3. Notification Summary and Documentation Form (continued) - Revised

AFFILIATION	PHONE NUMBER	NAME OF PERSON CONTACTED	TIME CONTACTED
F. RESPONSE CONTRACTORS			
Marine Spill Response Corporation	1-800-645-7745 (360) 417-9287 (Office) (206) 799-1621 (Cell)		
Clean Rivers Cooperative	(503) 220-2040*		
CARDNO ENTRIX Environmental Consultants	(800) 476-5886*		
Global Diving and Salvage Inc. (no contract in place)	(206) 623-0621* 1-800-441-3483		
NRC (no contract in place)	(800) 337-7455		
Harder Mechanical	(503) 281-1112		
G. MUTUAL AID			
Nustar	(360) 694-8591 (360) 772-5031 (Cell) (360) 567-8871 (Cell)		
H. MARINAS/PORTS			
Port of Vancouver	(360) 992-1120		
Port of Portland	(800) 547-8411		
Tomahawk Island Marina	(503) 289-5511		
Marineland at Pier 99	(503) 286-8221		
Ridgefield Marina	(360) 903-8517		
Kadow's Marina	(360) 693-0723		
I. LOCAL WATER SUPPLY			
City of Vancouver Municipal Water Treatment	(360) 696-8177		
Clark County Groundwater	(360) 397-6118		
Port of Vancouver Facilities	(360) 518-0501		
J. HELICOPTERS AND AIRCRAFT CHARTERS			
C&C Aviation (Portland)	(503) 760-6969		
Precision Helicopters	(503) 537-0108		
Hillsboro Helicopters (Contract with)	(503) 648-2831		

*Represents after hours telephone numbers

Figure 3.3. Notification Summary and Documentation Form (continued) - Revised

AFFILIATION	PHONE NUMBER	NAME OF PERSON CONTACTED	TIME CONTACTED
K. WILDLIFE REHABILITATION SPECIALISTS			
International Bird Rescue & Research Center (IBRRC)	(888) 447-1743*		
Focus Wildlife	(310) 386-5965 (800) 578-3048		
Oiled Wildlife Care Network	(530) 979-7561 (800) 645-1911 (oil spill) (877) 823-6926 (oiled animal)		
Progressive Animal Welfare Society (PAWS)	(425) 787-2500 (425) 412-4040		
Tri-State Bird Rescue	(302) 218-7371 (cell) (302) 737-7241		
L. LOCAL ACCOMMODATIONS			
Staybridge Suites	(360) 891-8282		
Homewood Suites	(360) 750-1100		
Gateway Inn Express	(360) 576-1040		
La Quinta Inn	(360) 566-1100		
Hilton	(360) 993-4500		
M. NEIGHBORING FACILITIES			
Glacier/CalPortland	(360) 693-3611		
NGL Supply Terminal Company	(360) 892-5100 (360) 907-9607 (cell) (360) 694-9420 ext. 1 (Office)		
Clark Public Utilities	360-694-2844		
Clark County Jail Work Center	360-992-3000		
Tidewater Terminal Company	360-397-2138		
Farwest Steel	360-693-1491		
Subaru of America	360-735-8744		
Tri-Star Transload	360-737-7630		
West Vancouver Materials Recovery Center	503-807-2952 (24-hr)		
HME Construction	360-690-6842 (24-hr) or 360-904-0667		
BPA Substation	360-695-4553 or 888-699-1053		
Kelly Pipe	360-570-4338 (Office) 360-951-4464 (Cell)		

*Represents after hours telephone numbers

Figure 3.3. Notification Summary and Documentation Form (continued) - Revised

AFFILIATION	PHONE NUMBER	NAME OF PERSON CONTACTED	TIME CONTACTED
N. DOWNRIVER WATER USERS			
U.S. Fish & Wildlife Services Ridgefield Refuge (River Mile 94)	(360) 887-4106		
Bachelor Island Ranch (5 Intakes) (River Mile 90)	(360) 887-3883		
Boise Cascade Industrial Intake (River Mile 88)	(503) 397-2900		
Emerald Environmental (River Mile 75)	(360) 673-2550		
Trojan Nuclear Power Plant Intake (River Mile 73)	(503) 556-3713		
City of Rainier Drinking Water (River Mile 68)	(503) 556-7301 (City Hall) (503) 410-2173 (Cell)		
Longview Fiber (River Mile 68)	(360) 425-1550		
Weyerhaeuser Company (4 Intakes) (River Mile 64)	(360) 425-2150		
City of Longview (Discharge only) (River Mile 64)	(360) 442-5000		
Jammies Environmental (River Mile 58)	(360) 577-5691		
Portland General Electric (River Mile 53)	(503) 728-7470		

*Represents after hours telephone numbers

NOTE: For information about local food services and local transportation resources, consult the Vancouver-area yellow pages.

Figure 4.2. Company West Coast Regional Response Team - Revised

(Primary and Alternate Leaders)

Position	Last name	First name	Office	Cell	Location
Incident Commander/Deputy IC	Brown	Shawn			AK
	Carter	Jeffrey			AK
	Haugstad	Eric			TX
	Walker	John			CA
Legal	Haffner	Jeff			TX
	Harriss	Heather			TX
	Vail	Vanessa			TX
	Vining	Stoney			TX
Public Information Officer	Barbee	Christina			TX
	Marcy	Mike			CA
	Saletta	Jill			TX
Liaison	Bean	Jack			CA
	Dami	Kenneth			CA
	Gill	Matt			AK
	Marcy	Mike			CA
	Riley	Daniel			TX
	Sotelo	Brissa			CA
Safety	Alder	Anne			UT
	Pineda	Gerald			TX
Intelligence	Kohler	Jeffry			AK
Operations	Alleyn	Michael			WA
	Carter	Brock			UT
	Markee	Thomas			TX
	McCaughey	Robert			CA
	Miller	Bob			CA
	Rosin	Scott			AK
	Waldron	Clark			UT
Planning	Carter	Brock			UT
	Helberg	Pamela			WA
	Jungbluth	Robert			TX
	Miller	Bob			CA
	Shea	Mike			WA
	Waldron	Clark			UT
Environmental	Baker	Jeff			WA
	Donovan	Robert			WA
	Scheetz	Doug			ND
	Norcross	Neil			WA
	Ribbens	Peter			AK
	Spencer	Claire			CA
	Stockdale	Robert			CA
	Trujillo	Sharon			CA

Position	Last name	First name	Office	Cell	Location
Documentation	Courtney	Jeannie			HI
	Cox	Gloria			UT
	Grinton	Leilani			CA
	Stigall	Amanda			AK
	Straus	Michelle			WA
	Young	Carol			WA
Resources	Carter	Brock			UT
	Kestenbaum	Robert			CA
Situation	Cowan	Tracy			TX
	Harris	Sherry			UT
	Pedroza	Roel			WA
Logistics	Carroll	Jason			ND
	Havard	Tara			WA
	Kohler	Jeffry			AK
	Tingey	Roy			UT
Security	Burris	Mark			WA
	Griffin	Bonnie			TX
Finance	Devito	Aleja			AK
	Elsberry	Jamie			CA
	Gillett	Bruce			WA
Human Resources	Kimmel	Ryan			TX
	Sambrano	Rose			TX
IT	Keith	Kris			CA
	Necessary	Lance			AK

Figure 6.4 Environmental Response Map Index - Revised

Priority	Strategy Number
LCR-A (Port of Ilwaco LCR-3.0R)	
1	LCR-3.5R
2	LCR-2.2R
3	LCR-2.4R
4	CHINR-0.3
5	LCR-8.4R
6	LCR-8.5R
7	LCR-7.5L
8	LCR-6.8L
9	LCR-7.1L
10	LCR-10.1L
11	LCR-10.8L
12	LCR-10.9L
LCR-B (Port of Astoria/ US-101 LCR-13.0L)	
1	L&C-1.2
2	YOR-3.6L
3	LCR-10.1L
4	LCR-10.8L
5	LCR-10.9L
6	LCR-6.8L
7	LCR-7.1L
8	LCR-7.5L
9	L&C-1.7
10	L&C-2.3
11	L&C-2.6
12	YOR-4.1R
13	YOR-4.0R
14	YOR-3.3R
LCR-C (Highway Bridge/Cathlamet Marina LCR-40.7R)	
1	LCR-35.0M
2	LCR-35.3R
3	LCR-35.7R
4	LCR-36.0R
5	ELOCR-1.6
6	LCR-37.7M
7	LCR-37.2R
8	LCR-38.2L
9	LCR-38.5M
10	LCR-38.8L
11	LCR-38.6R

Priority	Strategy Number
LCR-D (James River Mill LCR-41.6L)	
1	LCR-35.0M
2	LCR-34.6M
3	LCR-33.7R
4	LCR-35.0R
5	LCR-35.3R
6	LCR-35.7R
7	LCR-36.0R
8	LCR-37.7M
9	LCR-37.2R
10	LCR-38.2L
11	LCR-38.5M
12	LCR-38.8L
13	LCR-38.6R
14	ELOCR-1.6
15	LCR-40.5M
16	LCR-41.3M
LCR-E (Clatskanie Crude Oil Terminal LCR-55.0L)	
1	LCR-49.8L
2	LCR-49.7L
3	LCR-49.1M
4	LCR-50.5L
5	LCR-48.1M
6	LCR-48.8M
7	LCR-48.6M
8	LCR-54.4M
9	LCR-55.1M
10	LCR-55.4L
11	LCR-55.3M
12	LCR-55.5M
13	LCR-54.2R
14	LCR-45.2M
15	LCR-45.0M
16	LCR-53.8R

Figure 6.4 Environmental Response Map Index (continued) - Revised

Priority	Strategy Number
LCR-F (Port of Kelso-Longview/Cowlitz River LCR-68.5R)	
1	LCR-58.7M
2	LCR-58.8R
3	LCR-58.9M
4	LCR-58.95M
5	LCR-59.8L
6	LCR-60.2M
7	LCR-64.0M
8	LCR-64.4L
9	LCR-65.9R
10	LCR-66.2R
11	CWLZR-1.0
12	CLWZR-1.45
LCR-G (Port of Kalama/Kalama River LCR-73.1R)	
1	LCR-64.0M
2	LCR-64.4L
3	LCR-65.9R
4	LCR-66.2R
5	LCR-70.0M
6	LCR-71.4R
7	LCR-71.5M
8	LCR-71.6R
9	KLMAR-0.7
10	LCR-59.8L
11	LCR-60.2M
Priority Table LCR-H (Lewis River LCR-86.5R)	
1	LCR-87.3R
2	LCR-87.5R
3	LCR-87.6R
4	LCR-81.0M
5	LCR-81.2R
6	LCR-81.8L
7	LCR-82.4L
8	LCR-85.6M
9	LCR-85.8M
10	LCR-86.2R
11	LEWR-1.9
12	LEWR-0.4
13	LEWR-0.35

Priority	Strategy Number
LCR-I (Whipple Creek LCR-94.5R)	
1	LCR-85.6M
2	LCR-85.8M
3	LCR-86.2R
4	LEWR-0.35
5	LCR-87.3R
6	LCR-87.5R
7	LCR-87.6R
8	LCR-91.0R
9	LCR-94.3R
10	LCR-94.5L
11	WPPLC-0.8
LCR-J (Port of Vancouver LCR-103.0)	
1	LCR-94.5L
2	LCR-94.8R
3	LCR-95.0R
4	LCR-97.0R
5	LCR-97.5R
6	LCR-98.6R
7	LCR-99.9R
8	LCR-100.8R
9	WR-0.9R
LCR-K (Linnton Tank Farms WR-5.7)	
1	MC-0.1
2	MC-0.5
3	MC-0.2
4	MC-0.4
5	WR-0.9R
6	MC-1.5
7	WR-3.7R
8	WR-3.8L
9	WR-4.2R
10	WR-4.3R
11	WR-4.5R

Figure 6.4 Environmental Response Map Index (continued) - Revised

Priority	Strategy Number
LCR-L (Port of Portland WR-8.6)	
1	WR-7.5L
2	WR-7.4R
3	WR-6.9L
4	SIL-0.4
5	WR-6.9R
6	WR-5.9L
7	WR-5.8R
8	MC-0.1
9	WR-4.5R
10	WR-4.3R
11	WR-4.2R
12	WR-0.9R
LCR-M (Willamette Falls Locks WR-26.5)	
1	WR-26.1L
2	WR-25.5R
3	WR-25.9R
4	WR-23.8L
5	WR-23.6L
6	WR-23.9R
7	WR-18.5R
8	WR-15.9R
9	WR-15.5M
LCR-N (Port of Camas-Washougal LCR-121.0)	
1	LCR-111.0R
2	LCR-113.3M
3	LCR-113.8R
4	LCR-114.8M
5	LCR-115.0R
6	LCR-115.7R
7	LCR-119.1R
8	LCR-119.8R
9	LCR-120.6R

Priority	Strategy Number
LCR-O (Franz Lake Refuge LCR-138.4R)	
1	LCR-128.0R
2	LCR-131.0R
3	LCR-137.0R
4	LCR-138.0L
5	LCR-138.2R
LCR-P (Bonneville Dam LCR-145.4)	
1	LCR-131.0R
2	LCR-137.0R
3	LCR-138.0L
4	LCR-138.2R
5	LCR-140.3R
6	LCR-141.4R
7	LCR-142.4R
8	LCR-143.4R
9	LCR-144.9L

Figure 6.9 Proposed Booming Strategy Maps - Revised

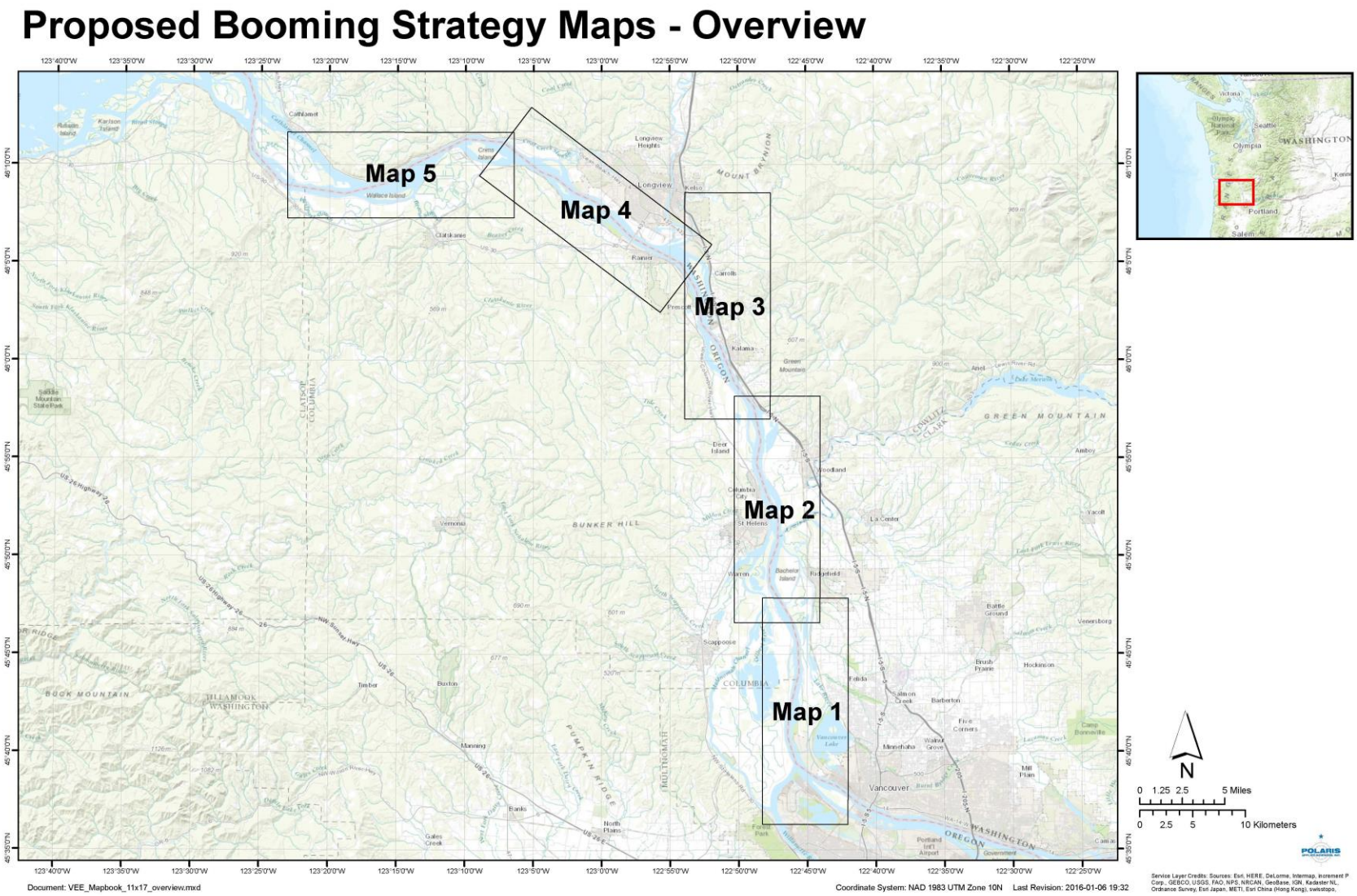

Figure 6.9 Proposed Booming Strategy Maps (continued) - Revised

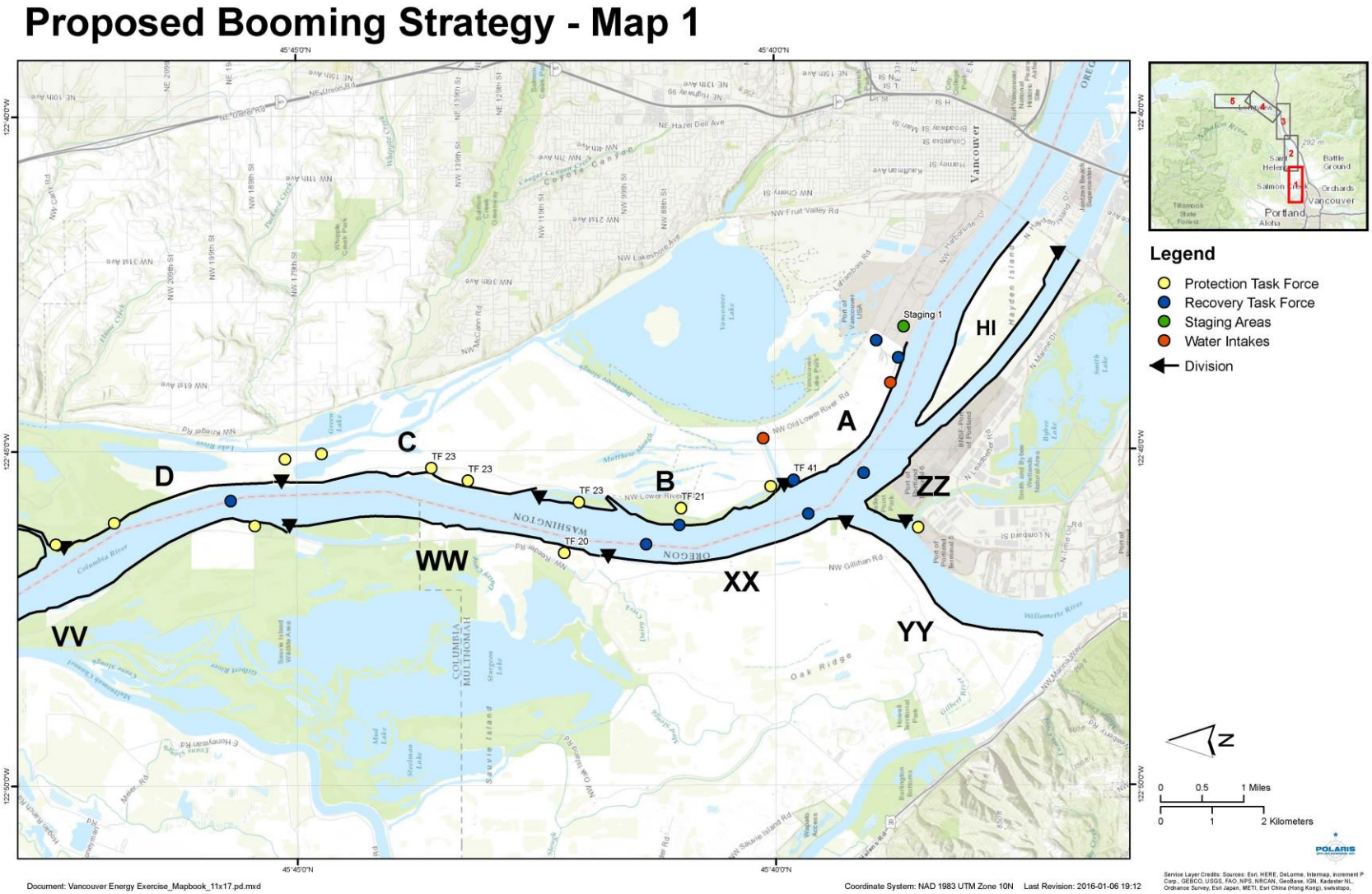

Figure 6.9 Proposed Booming Strategy Maps (continued) - Revised

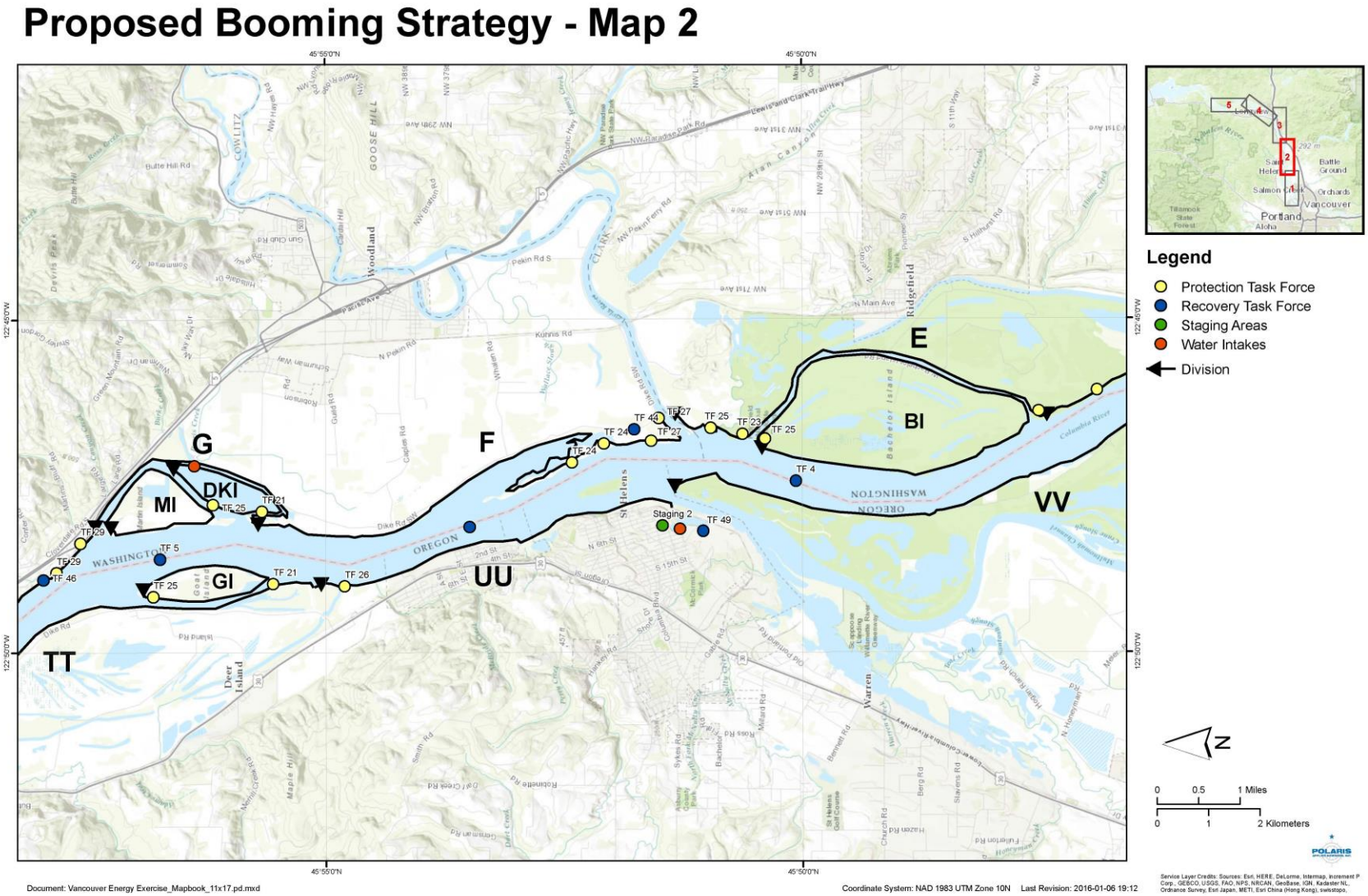

Figure 6.9 Proposed Booming Strategy Maps (continued) - Revised

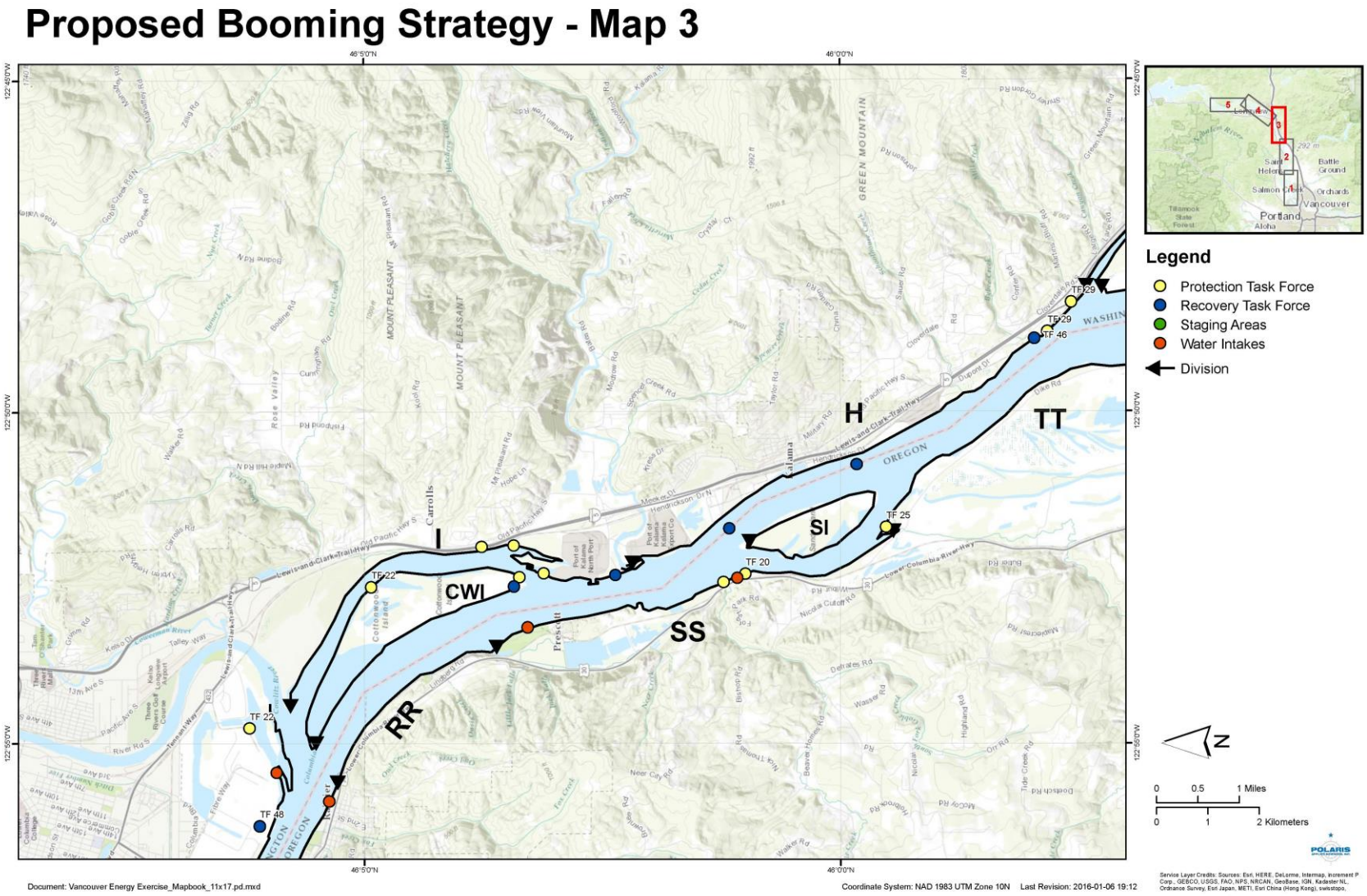

Figure 6.9 Proposed Booming Strategy Maps (continued) - Revised

Proposed Booming Strategy - Map 4

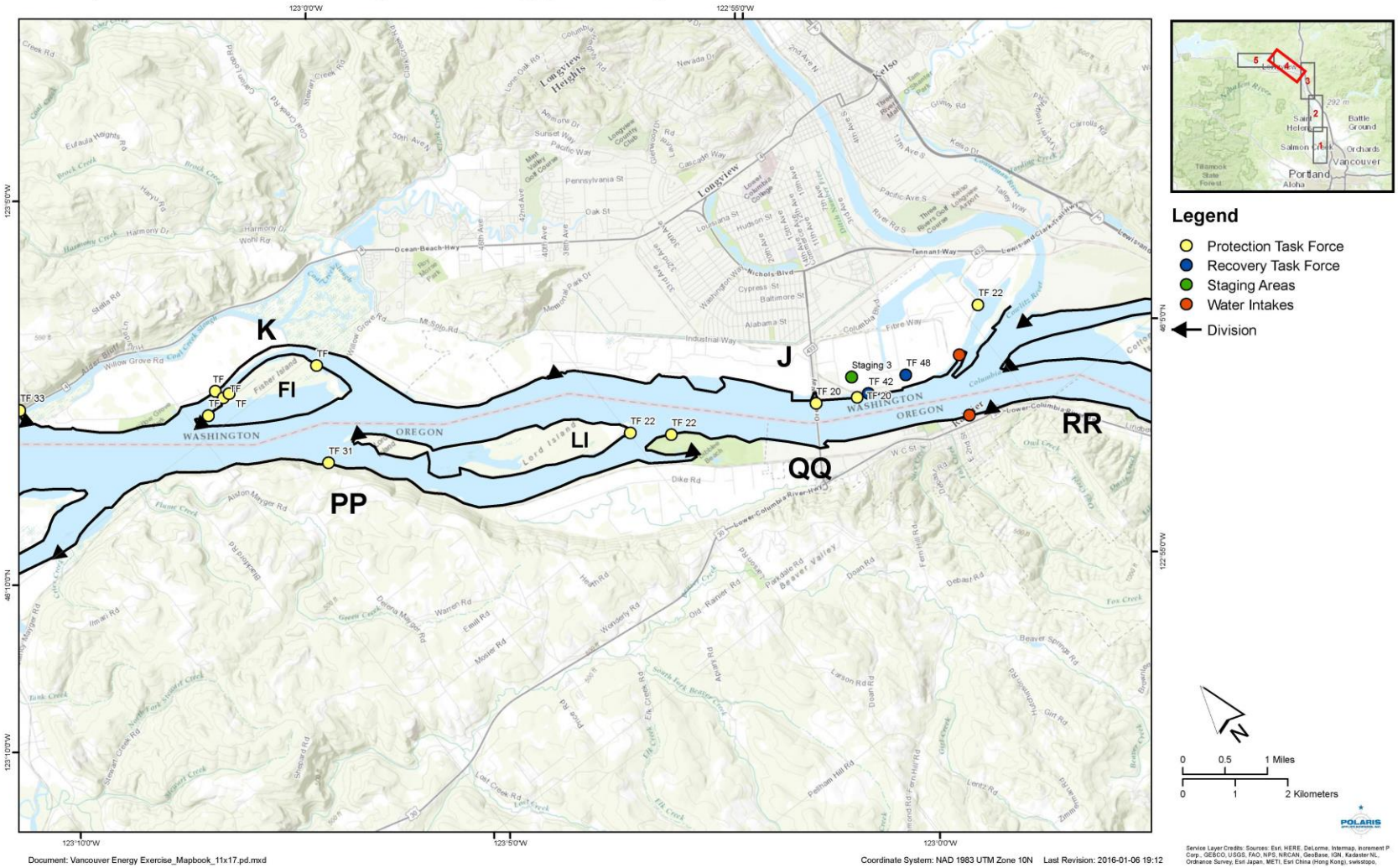

Figure 6.9 Proposed Booming Strategy Maps (continued) - Revised

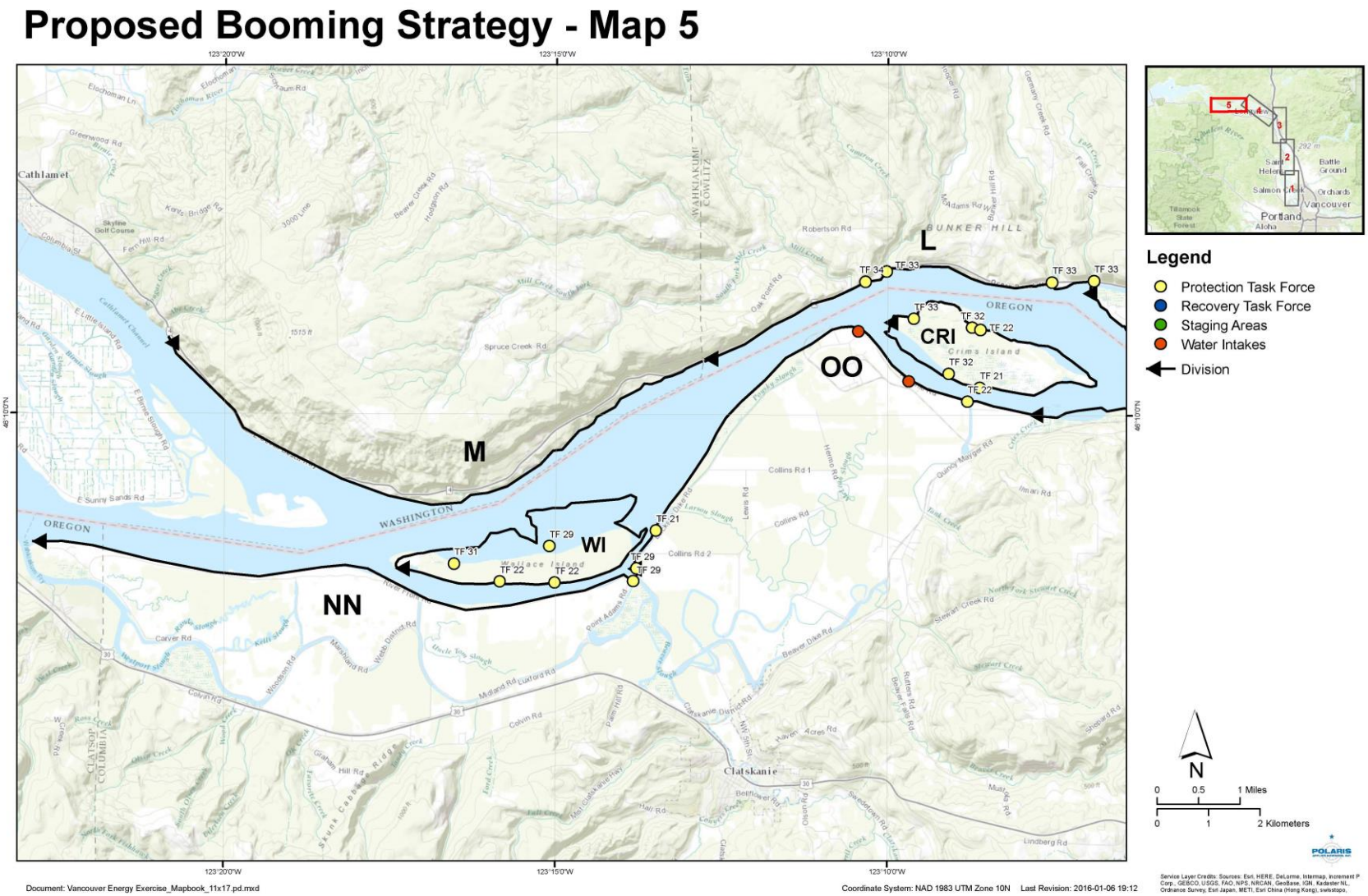

Figure 6.10 Proposed Booming and Collection Strategies – Lower Columbia River - Revised

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-53.8L	Pacific Biofuels								
LCR-53.8R	Mill Creek (WA) 46.18850 -123.17569	Collection	Boom 1000ft	Yes	Onsite Stage onsite at large gravel parking area on W side of creek and N side of highway.	Downstream Resources	Strong currents, particularly during outgoing tides, may make collection difficult. Vehicle access from Highway 4 to parking area on west side of creek.	66	301
LCR-54.2R	Abernathy Creek (WA) 46.19092 -123.16740	Exclusion	Boom 300ft	Yes	Remote Stage at Port Westward boat launch, SA-LCR-53.8L. Launch from same BL-LCR-53.8L.	Herons and Other Wading Birds, Salmon Concentrations and Habitat, Sensitive Resources Nearby, Sensitive Shoreline and Back-Beach, Shorebirds	Strategy site has limited vehicle access but is best accessed via boat. Do not use stakes or anchor posts in this area.	69	303
LCR-54.4M	Gull/ Crims Islands - W opening (OR) 46.18419 -123.15950	Exclusion	Boom 500ft	Yes	Remote Stage at Port Westward boat launch, SA-LCR-53.8L. Launch from same BL-LCR-53.8L.	Wetland Habitat	Water in this area is very shallow. At low water, strategy may not be feasible or necessary.	69	305
LCR-55.1M	Crims Island-South Side (OR) 46.17278 -123.15106	Exclusion	Boom 700ft	Yes	Remote Stage at Port Westward boat launch, SA-LCR-53.8L. Launch from same BL-LCR-53.8L.	Mudflat Habitat, Wetlands Restoration Site	Water is very shallow in this area. During low water, strategy may not be feasible or necessary.	69	307

Figure 6.10 Proposed Booming and Collection Strategies – Lower Columbia River (continued) - Revised

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-55.3M	Gull Island-North Side (OR) 46.18309 -123.14644	Exclusion	Boom 800ft	Yes	Remote Stage from Willow Grove County Park, SA-LCR-57.8R	Mudflat Habitat, Wetland Habitat	Boat access only. This strategy is only needed during high flow conditions.	69	309
LCR-55.4L	John Slough (OR) 46.16923 -123.14627	Exclusion	Boom 200ft	Yes	Remote Stage at Port Westward boat launch, SA-LCR-53.8L. Launch from same BL-LCR-53.8L.	Wetland Habitat	Best access to this strategy is by boat, but there is limited vehicle access from Kallunki Rd. Water is very shallow in this area. Strategy may not be feasible at low water.	69	311
LCR-55.5M	Gull/Crims Islands - East opening (OR) 46.18175 -123.14447	Exclusion	Boom 400ft	Yes	Remote Stage at Willow Grove County Park, SA-LCR-57.8R	Wetland Habitat	Boat access only. Water is very shallow in this area and access will not be possible during low water. Strategy is only necessary during high water.	69	313
LCR-55.6M	Crims Island Channel (OR) 46.17158 -123.14226	Exclusion	Boom 300ft	Yes	Remote Stage at Port Westward boat launch, SA-LCR-53.8L. Launch from same BL-LCR-53.8L.	Wetland Habitat, Wetlands Restoration Site	Boat access only. This strategy is needed for all water levels.	69	315

Figure 6.10 Proposed Booming and Collection Strategies – Lower Columbia River (continued) - Revised

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-55.7R	Germany Creek (WA) 46.18975 -123.12534	Exclusion	Boom 100ft	Yes	Remote Stage at SA-LCR-57.8R, Willow Grove County Park	Osprey Nest(s), Salmonid Concentrations and Habitat, Sensitive Resources, Sensitive Shoreline and Back-Beach	Best access for this strategy is by boat, although there is limited landside access from WA-4. Do not use anchor posts in this area, particularly on east side of creek.	69	317
LCR-55.9R	Coal Creek Slough (WA) 46.18961 -123.11635	Exclusion	Boom 500ft	Yes	Remote Stage at SA-LCR-57.8R, Willow Grove County Park	Slough and Marsh Habitat, Wetland Habitat	Boat access only. Site is at the mouth of Coal Creek Slough.	69	319
LCR-58.7M	Fisher Island/ Hump Island (WA) 46.16916 -123.07608	Exclusion	Boom 800ft	Yes	Remote Stage at SA-LCR-57.8R, Willow Grove County Park	Wetland Habitat	This strategy is most necessary on incoming tide or a strong upriver wind. Boat access only. Water is very shallow in this area for much of the year.	68	321
LCR-58.8R	Fisher Island Slough - W end (WA) 46.17179 -123.07372	Collection	Boom 1000ft	Yes	Remote Stage at SA-LCR-57.8R, Willow Grove County Park	Downstream Resources, Wetland Habitat	Deploy both segments of boom if the strategy will be in place over multiple tidal cycles. Site can be accessed by vehicle via Willow Grove Road, but best access is via boat. Shoulders of road are narrow.	68	323
LCR-58.9M	Fisher Island - W end (WA) 46.17110 -123.07090	Exclusion	Boom 600ft	Yes	Remote Stage at Willow Grove County Park, SA-LCR-57.8R	Wetland Habitat	Boom length required will vary depending on water level in the marsh.	68	325

Figure 6.10 Proposed Booming and Collection Strategies – Lower Columbia River (continued) - Revised

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-58.95M	Fisher Island - West End (WA) 46.17043 -123.07205	Deflection	Boom 500ft	Yes	Remote Stage at Willow Grove County Park, SA-LCR-57.8R	Wetland Habitat	Boat access from the ramp at Willow Grove Park.	68	327
LCR-59.8L	Walker Island (OR) 46.15128 -123.06239	Collection	Boom 600ft	Yes	Remote Stage at SA-LCR-57.8R, Willow Grove County Park	Downstream Resources	Boat access only. At 30 feet from shore water is about 25 feet deep. Do not allow people/equipment within 25' of railroad tracks.	68	329
LCR-60.2M	Fisher Island - E end (WA) 46.16526 -123.05029	Exclusion	Boom 700ft	Yes	Remote Stage at SA-LCR-57.8R, Willow Grove County Park	Wetland Habitat	Boat access only. This strategy may be difficult to implement under high flow conditions.	68	331
LCR-64.0M	Lord Island - E end (OR) 46.12177 -122.99828	Collection, Exclusion	Boom 1600ft	Yes	Remote Stage at SA-LCR-57.8R, Willow Grove County Park	Waterfowl Use Area, Wetland Habitat	This strategy may only be feasible during low water and low flow conditions.	68	333
LCR-64.4L	Slaughters Dike (OR) 46.11830 -122.99029	Collection	Boom 600ft	Yes	Onsite Stage at SA-LCR-67.1L, Rainier City Marina. Launch at same BL-LCR-67.1L or from beach onsite.	Downstream Resources	Good vehicle access with sandy beach for recovery.	68	335
LCR-65.9R	Port of Longview (WA) 46.10691 -122.95932	Collection	Boom 700ft	Yes	Remote Stage at Gerhart Gardens Park, SA-CWLZR-1.6	Downstream Resources	Protected area under Lewis and Clark Bridge at the Port of Longview.	70	337

Figure 6.10 Proposed Booming and Collection Strategies – Lower Columbia River (continued) - Revised

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-66.2R	Port of Longview (WA) 46.10407 -122.95160	Collection	Boom 800ft	Yes	Onsite Stage onsite at Port of Longview.	Downstream Resources	Vehicle access from Longview to the port docks. Boat access from the Ramp at Willow Grove Park or Rainier.	70	339
LCR-70.0M	Cottonwood Island - E side slough (WA) 46.08176 -122.87675	Exclusion	Boom 600ft	Yes	Remote Stage at Sportsmen's Club, SA-LCR-72.7R	Wetland Habitat	Boat access only. Slough entrance is very shallow.	71	341
LCR-71.4R	Carrolls Channel - S end (WA) 46.05817 -122.86829	Exclusion	Boom 1000ft	Yes	Remote Stage at Sportsmen's Club, SA-LCR-72.7R	Wetland Habitat	Boat access only. Water is shallow with little current.	72	343
LCR-71.5M	Carrolls Channel - S End (WA) 46.05537 -122.87633	Collection	Boom 1400ft	Yes	Remote Stage at SA-LCR-72.7R, Sportsmen's Club	Downstream Habitat, Wetland Habitat	Boat access only. Large beach area.	72	345
LCR-71.6R	Carrolls Channel - S end (WA) 46.05253 -122.87491	Collection, Deflection	Boom 800ft	Yes	Remote Stage at SA-LCR-72.7R, Sportsmen's Club	Downstream Resources, Wetland Habitat	Vehicle access from east shore, Port of Kalama property.	72	347
LCR-73.7L	Goble Creek (OR) 46.02052 -122.87656	Exclusion	Boom 100ft	Yes	Remote Stage at SA-LCR-74.5L, Goble Marina. Launch at same BL-LCR-74.5L.	Salmon Concentrations and Habitat	Railroad tracks and US-30 cross Goble Creek at this site. Salmon habitat. Peak times are Sept - Oct, Apr - May.	71	349
LCR-76.0L	Tide Creek (OR) 45.99420 -122.86667	Exclusion	Boom 1000ft	Yes	Remote Stage at Port of Kalama Marina, SA-LCR-75.2R	Salmon Concentrations and Habitat, Wetland Habitat	Boat access only. Log rafts in area may complicate deployment. Numerous pilings in water.	71	351

Figure 6.10 Proposed Booming and Collection Strategies – Lower Columbia River (continued) - Revised

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-78.9R	Mill Creek Outfall 45.95777 -122.80413	Collection	Boom 200ft, Sorbent 200ft	Yes	Remote Stage and launch from Port of Kalama Marina, BL-LCR-75.2R	Canadian Goose Nesting Habitat, Downstream Resources, Waterfowl (Wintering)	Confluence of Mill Creek and Columbia River just downstream of Martin Island. Mill Creek is submerged under I-5 and BNSF tracks and enters river via outfall pipe.	73	353
LCR-79.5R	Martin Island - N end (WA) 45.95598 -122.80060	Exclusion	Boom 800ft	Yes	Remote Stage at Woodland Bottoms, SA-LCR-82.1R	Canadian Goose Nesting Habitat, Waterfowl (Wintering)	Boat access only. Shallow water and pilings at north end of Martin Island.	73	355
LCR-79.8L	Goat Island - N end (OR) 45.94802 -122.82068	Exclusion	Boom 700ft	Yes	Remote Stage at Woodland Bottoms, SA-LCR-82.1R. Launch at same BL-LCR-82.1R.	Geese (Summer), Waterfowl (Wintering)	Boat access only. This strategy is mainly needed if oil is moving upriver due to wind or tidal current.	73	357
LCR-81.0M	Martin Island - S end (WA) 45.93539 -122.79825	Exclusion	Boom 800ft	Yes	Remote Stage at Woodland Bottoms, SA-LCR-82.1R	Geese (Summer), Waterfowl (Wintering)	Boat access only. Need a shallow water skiff. Dredge dump site, very shallow. Pilings in slough prevent access from north.	73	359
LCR-81.2R	Burke Island - S end (WA) 45.92988 -122.79852	Exclusion	Boom 400ft	Yes	Remote Stage at Woodland Bottoms, SA-LCR-82.1R. Launch at same BL-LCR-82.1R.	Geese (Summer), Waterfowl (Wintering)	Boat access only. Use caution around the long row of wood pilings just north of the strategy.	73	361

Figure 6.10 Proposed Booming and Collection Strategies – Lower Columbia River (continued) - Revised

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-81.8L	Goat Island - S end (OR) 45.92590 -122.81556	Exclusion	Boom 900ft	Yes	Remote Stage at Woodland Bottoms, SA-LCR-82.1R	Geese (Summer), Waterfowl (Wintering)	Boat access only. Water is shallow with moving sand bars. Amount of boom needed will vary greatly depending on flow conditions.	73	363
LCR-82.4L	Deer Island Slough (OR) 45.91417 -122.81704	Exclusion	Boom 400ft	Yes	Remote Stage at Woodland Bottoms, SA-LCR-82.1R. Launch at same BL-LCR-82.1R.	Creek Habitat, Freshwater Clams, Wetland Habitat	Boat access only. Shallow water and pilings in area. Slough opening will vary greatly in width depending on water flow.	73	365
LCR-85.6M	Goerig Slough (WA) 45.87282 -122.78510	Exclusion	Boom 1000ft	Yes	Remote Stage at St. Helens Marina, SA-LCR-85.8L	Downstream Resources	Pilings are present across the entire channel. Shallow water during summer and fall.	75	367
LCR-85.8M	Goerig Slough (WA) 45.86952 -122.78161	Exclusion	Boom 800ft	Yes	Remote Stage at St. Helens Marina, BL-LCR-85.8L.	Downstream Resources	Boat access from the south only. Piling walls prevent boat access into Goerig Slough. Very shallow during summer and fall.	75	369
LCR-86.2R	Port of Woodland at Austin Point 45.86051 -122.78109	Collection	Boom 800ft	Yes	Onsite Stage onsite on undeveloped sandy beach.	Downstream Resources	Good sandy beach with vehicle access and ability to launch small workboat from shore.	75	371
LCR-87.3R	Gee Creek (WA) 45.84815 -122.77770	Exclusion	Boom 100ft	Yes	Remote Stage at Stevens' Moorage, SA-LEWR-0.4	National Wildlife Refuge, Sensitive Resources Nearby, Wetland Habitat	Boat access only. Will likely require a shallow-draft boat.	75	373

Figure 6.10 Proposed Booming and Collection Strategies – Lower Columbia River (continued) - Revised

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-87.5R	Ridgefield NWR/ Bachelor Is. Slough (WA) 45.84418 -122.78059	Deflection	Boom 700ft	Yes	Remote Stage at SA-LKRVR-1.0, Port of Ridgefield	Sensitive Resources Nearby, Waterfowl and Shorebird Concentrations, Wetland Habitat, Wildlife Refuge	North entrance to Bachelor Island Slough/Lake River. Shoreline is heavily vegetated. Sensitive resources in area.	75	375
LCR-87.6R	Ridgefield NWR/ Bachelor Is. Slough (WA) 45.84185 -122.78120	Deflection	Boom 700ft	Yes	Remote Stage at SA-LKRVR-1.0, Port of Ridgefield	Bald Eagle Nesting, Great Blue Heron Rookeries, National Wildlife Refuge, Sandhill Crane (Wintering), Sensitive Resources Nearby, Waterfowl, Wetland Habitat	North entrance to Lake River/Bachelor Island Slough. Boat access only. Will need boat to tend boom due to heavy boat traffic.	75	377
LCR-91.0R	Ridgefield NWR/ Bachelor Is. Slough (WA) 45.79324 -122.77448	Exclusion	Boom 700ft	Yes	Remote Stage at Port of Ridgefield Marina, SA-LKRVR-1.0	Bald Eagle Nests, Great Blue Heron Rookeries, National Wildlife Refuge, Sandhill Crane (Wintering), Sensitive Resources Nearby, Waterfowl, Wetland Habitat	South entrance of Bachelor Island Slough. Boat access only. Oil may collect naturally at this site.	74	379

Figure 6.10 Proposed Booming and Collection Strategies – Lower Columbia River (continued) - Revised

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-92.3R	Campbell Lake (WA) 45.78263 -122.76911	Exclusion	Boom 300ft	Yes	Remote SA-LKRVR-1.0 / Lake River	National Wildlife Refuge, Sandhill Crane Roost Area, Sensitive Resources Nearby, Waterfowl, Wetland Habitat	Boat access only. Use ramp at the Ridgefield Marina or St Helens.	74	381
LCR-94.3R	Post Office Lake (WA) 45.75425 -122.75797	Exclusion	Boom 200ft	Yes	Remote Stage at Langsdorf Landing, SA-LCR-97.7R	National Wildlife Refuge, Sensitive Resources Nearby, Waterfowl, Wetland Habitat	Boat access only. Site is adjacent to decommissioned dike road, but it is largely eroded away.	74	383
LCR-94.5L	Willow Bar Island (OR) 45.75319 -122.76813	Collection, Exclusion	Boom 600ft	Yes	Remote Stage at Langsdorf Landing, SA-LCR-97.7R	State Protected Area/Lands, Wetland Habitat	If necessary, site can be accessed land-side from Brown Road on Sauvie Island.	74	385
LCR-94.8R	Ridgefield Levee Breach #1 45.74761 -122.75813	Exclusion	Boom 300ft	Yes	Remote Stage at SA-LCR-97.7R, Langsdorf Landing	Sensitive Resources Nearby, Waterfowl and Shorebird Concentrations, Wildlife Refuge	Site is decommissioned dike road at Ridgefield National Wildlife Refuge where drainage has eroded the road and dike to create breach that could open to Post Office Lake at high water.	74	387

Figure 6.10 Proposed Booming and Collection Strategies – Lower Columbia River (continued) - Revised

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-95.0R	Ridgefield Levee Breach #2 45.74477 -122.75804	Exclusion	Boom 500ft	Yes	Remote Stage at SA-LCR-97.7R, Langsdorf Landing	Sensitive Resources Nearby, Waterfowl and Shorebird Concentrations, Wildlife Refuge	Site is decommissioned dike road at Ridgefield National Wildlife Refuge where drainage has eroded the road and dike to create breach that could open to Post Office Lake at high water.	74	389
LCR-97.0R	NW Lower River Road 45.71624 -122.76053	Collection	Boom 500ft	Yes	Remote Stage at SA-LCR-97.7R, Langsdorf Landing.	Downstream Resources, Sensitive Resources Nearby	Property is owned by New Columbia Gardens. Contact for access.	74	391
LCR-97.5R	Caterpillar Island - N end (WA) 45.70888 -122.76006	Exclusion	Boom 400ft	Yes	Remote Stage at Langsdorf Landing, SA-LCR-97.7R	Houseboats, Sensitive Resources Nearby, Wetland Habitat	Site is boat access only. Recreational vessels and houseboats on slough.	74	393
LCR-98.4L	Dairy Creek (OR) 45.69826 -122.77601	Exclusion	Boom 300ft	Yes	Remote Stage at SA-LCR-97.7R	Habitat Restoration Site/Project, Wetland Habitat	Dairy Creek feeds into Sturgeon Lake, which is an important wildlife area. Log jams and debris are present upstream from mouth. At low water, this strategy may not be feasible or necessary.	76	395
LCR-98.6R	Caterpillar Island - S end (WA) 45.69395 -122.76462	Exclusion	Boom 600ft	Yes	Remote Stage at Langsdorf Landing, SA-LCR-97.7R	Sensitive Resources Nearby, Wetland Habitat	Boat access only. Sensitive resources in the vicinity.	76	397

Figure 6.10 Proposed Booming and Collection Strategies – Lower Columbia River (continued) - Revised

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-99.9R	Frenchman's Bar Park (WA) 45.67702 -122.76812	Collection	Boom 500ft	Yes	Onsite Stage onsite at Frenchman's Bar Park.	Downstream Resources, Public Recreation Site/Area, Sensitive Resources Nearby	Strategy site is Frenchman's Bar Park. Sandy beach and recreational area with paved parking and vehicle access to river.	76	399
LCR-100.8R	Vancouver Lake/ Flushing Channel (WA) 45.66549 -122.75889	Collection, Exclusion	Boom 1000ft	Yes	Onsite Stage onsite at Frenchman's Bar Park.	Downstream Resources, Sensitive Resources Nearby, Wetland Habitat	Vehicle access from Lower River Road. Boat access from Vancouver or Portland. Notify Environmental Unit when deploying strategies in this area.	76	401
LCR-107.1R	Waterfront Park on SE Columbia Way 45.61485 -122.65596	Collection	Boom 1000ft	Yes	Remote Stage at SA-LCR-108.4R, Marine Park in Vancouver	Economic Resource, Economic Resource, Habitat and Waterfowl, Public Recreation Site/Area	Site is upstream from a public park along SE Columbia Way. Sensitive resources exist in this area. Contact the Environmental Unit for guidance before deploying this strategy.	82	403
LCR-108.4R	Marine Park Boat Ramp - upstream of Ryan Point 45.61164 -122.63282	Collection	Boom 800ft	Yes	Onsite Marine Park Boat Ramp, Vancouver, SA-LCR-108.4R	Downstream Resources	Marine Park Boat Ramp access via Marine Parkway.	82	405
LCR-109.1R	Marine Park wetland (WA) 45.61276 -122.62344	Exclusion	Boom 800ft	Yes	Remote Stage at Marine Park, SA-LCR-108.4R	Economic Resource, Freshwater Wetlands	Site is directly to the east of Marine Park in Vancouver and to the south of the Water Resources Education Center.	82	407

Figure 6.10 Proposed Booming and Collection Strategies – Lower Columbia River (continued) - Revised

Strategy Name	Location	Strategy Type	Boom Length	Boat Req?	Staging Area	Resources At Risk	Comments	Sector Map (Page #)	Strategy Details (Page#)
LCR-109.6R	Wintler Park (WA) 45.61028 -122.61143	Collection	Boom 500ft	Yes	Remote Marine Park Boat Ramp, SA-LCR-108.4R	Downstream Resources	Boat access from the ramp at Marine Park. Vehicle access off of Highway 14.	82	409
LCR-111.0R	Hillcrest Community Club Park (WA) 45.60498 -122.58069	Collection	Boom 900ft	Yes	Onsite Stage onsite at community park.	Downstream Resources, Economic Resource, Economic Resource, Habitat and Waterfowl, Public Recreation Site/Area	Site is a private park owned by the Hillcrest Community Club. Gate is unlocked, but access is restricted to community members and guests.	82	411
LCR-113.3M	Government Island Slough (OR) 45.58530 -122.54299	Exclusion	Boom 500ft	Yes	Remote Stage at SA-LCR-109.4L, M. James Gleason Memorial Boat Ramp. Launch from same BL-LCR-109.4L.	Critical Waterfowl Area, Wetland Habitat	Length of boom needed will vary depending on water level.	82	413
LCR-113.8R	Steamboat Landing (WA) 45.59237 -122.52786	Deflection, Exclusion	Boom 800ft	Yes	Remote Stage at SA-LCR-109.4L, M. James Gleason Memorial Boat Ramp. Launch from same BL-LCR-109.4L	Boat Basin/Marina, Marina, Sensitive Resources Nearby	Boat access from Vancouver or Portland, land access from SE Evergreen Highway. There is a strong eddy which moves water east (upriver) along the shoreline.	82	415

Figure 6.11. Clean Rivers Co-op Boom Site List - Revised

Environmental Resources	Columbia River Mile	Pre-staged Boom Available at	Boom Function and Estimated Length Required (feet)
Columbia Slough	0.9 (Willamette River)	RES Portland	400' deflection & 500' containment
Multnomah Channel	3.0 (Willamette River)	RES Portland	3,000' deflection & containment
Vancouver Lake Channel	101	RES Portland	400' containment
Hathaway Lake Entrance	92.3	St. Helens	300' protection
Bachelor Island Slough	91.5 & 87.6	St. Helens	1,200' deflection & containment
West Side of Lewis River	84.0 – 87.0	St. Helens	800' containment, 1,300' protection
Deer Island Slough	82.4	St. Helens	300' containment
Burke Island/Martin Island	81.0 – 81.3	St. Helens	1,600' deflection & containment
Kalama River	73.0	Rainier	500' protection
Carroll's Channel	71.5	Rainier	400' deflection & 800' containment
Longview Dock	67.5	Rainier	3,000' containment
Slaughters Dike Entrance	66.0	Rainier	400' containment
Cottonwood Island	70.0 – 72.0	Rainier	400' containment
Brix Marina	67.8	Rainier	800' protection
Fisher Island	60.4 – 60.0	Stella	800' deflection
Coal Creek, East	57.0	Stella	1,000' containment
Coal Creek, West	57.0	Stella	600' containment
Crims Island	57.0	Stella	1,200' deflection & 1,700' containment
Pacific Biofuels	53.8		
Wallace Island	50.0	Stella	1,000' containment & protection
Cathlamet Channel	47.0	Cathlamet	2,000' deflection & 3,000' containment
Elochman Slough	37.0	Skamokawa	200' containment
Westport Slough	43.3	Wauna	1,000' deflection & containment
Wauna Channel	42.0	Wauna	1,000' containment
Puget Island	46.0	Wauna	1,600' containment
Steamboat Slough	35.0	Skamokawa	600' deflection & 600'containment
Brooks Slough	33.0	Skamokawa	300' containment
Skamokawa Marine	33.0	Skamokawa	1,000' containment
Big Creek Entrance	28.0	Tongue Point	200' containment
Karlson Island	27.0	Tongue Point	200' containment
Miller Sands Lagoon	24.0	Tongue Point	2,000 containment
Crooked Creek	23.0	Tongue Point	100' containment
Grays River	22.5	Tongue Point	1,000; protection
Deep River	21.0	Tongue Point	500' containment
Brix Bay Marsh	20.0	Tongue Point	500' containment
Portuguese Pt. Marsh	19.0	Tongue Point	3,00' containment

Environmental Resources	Columbia River Mile	Pre-staged Boom Available at	Boom Function and Estimated Length Required (feet)
John Day River Entrance	18.0	Tongue Point	600' containment
Clifton Channel	36.0	Astoria	2,000' deflection & 3,00'containment
West Basin Seal Haulout	15.0	Astoria	1,200' protection
West Basin Marina	13.0	Astoria	200' protection
Lewis & Clark River	13.0	Astoria	1,000' containment
Skipanon Waterway	11.0	Astoria	600' containment
Tansy Point	10.0	Astoria	600' deflection
Hammond Marina	8.0	Astoria	600' containment
Swash Lake Entrance	7.0	Astoria	600' containment
Youngs River	7.0	Astoria	700' containment
Ilwaco Marina	3.0	Astoria	400' containment, 4,100' sorbent & 1,000' deflection