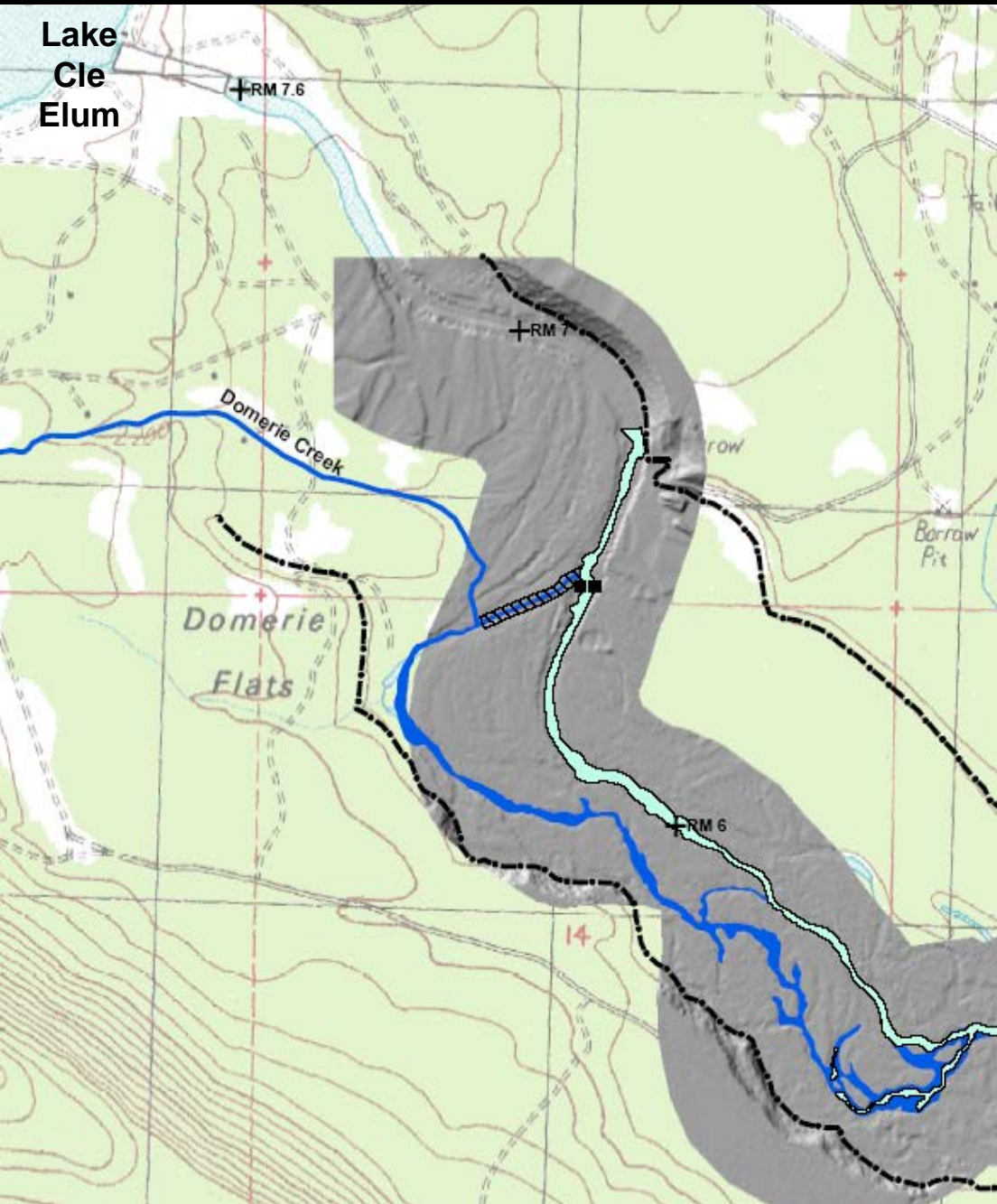


LOWER CLE ELUM RIVER ENGINEERED LOG JAMS & DOMERIE SIDE CHANNEL FLOW RESTORATION

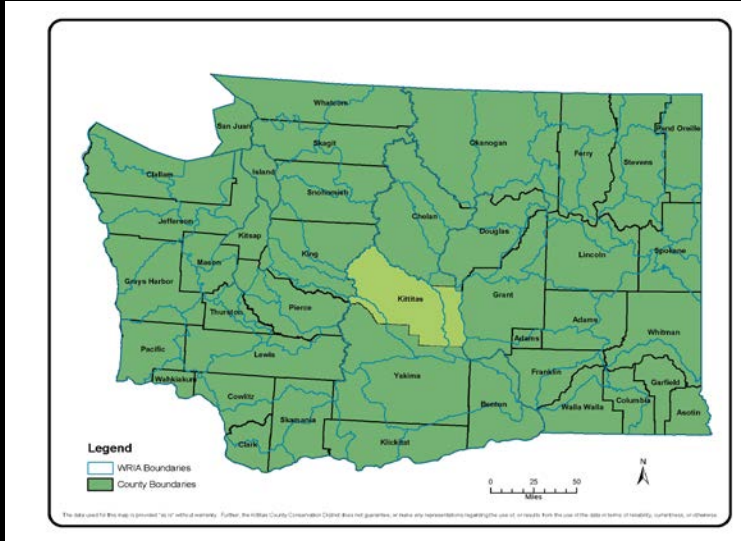
2009

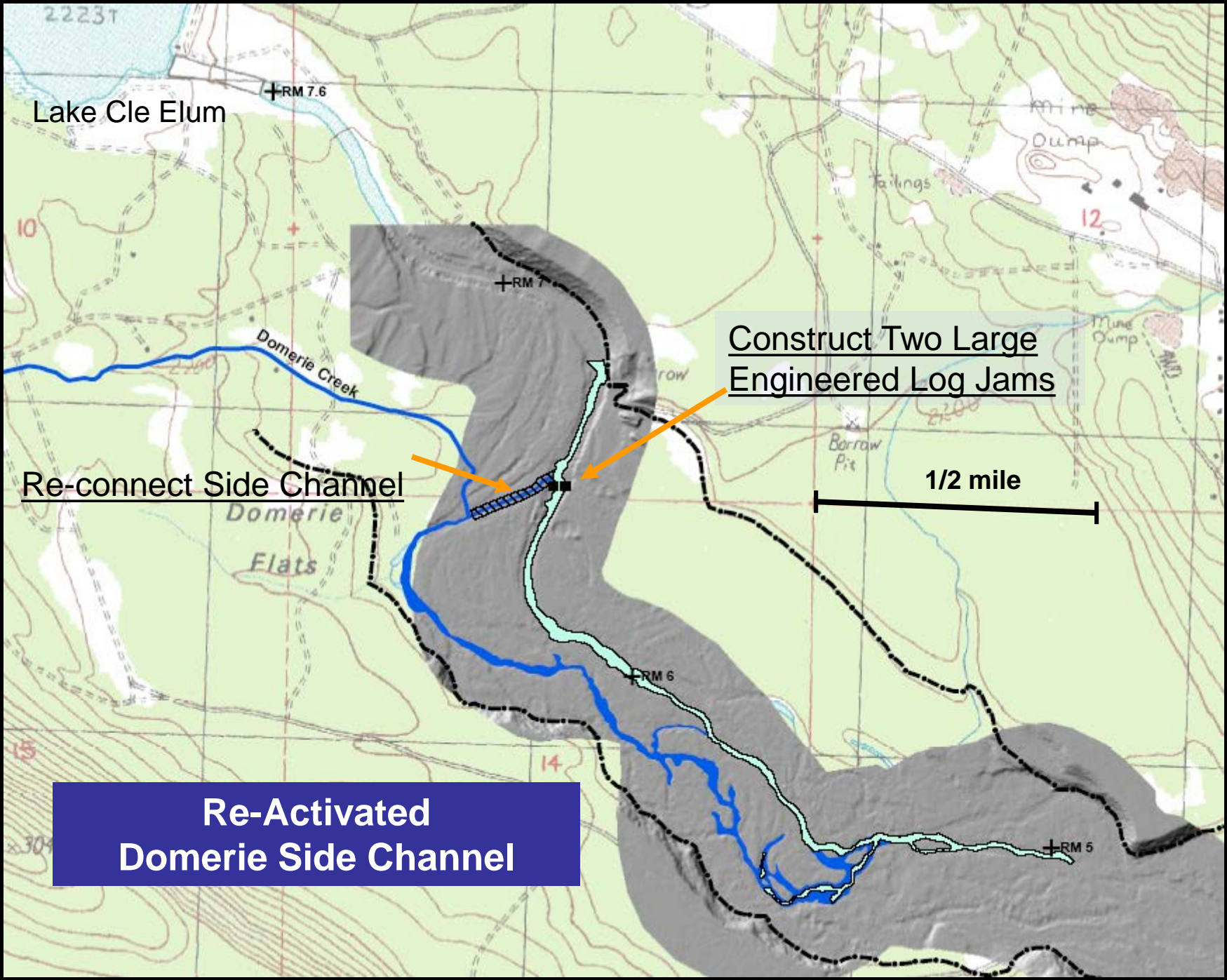


Lower Cle Elum River – River Mile 5 – 7



**UPPER YAKIMA RIVER BASIN
KITITAS COUNTY, WA**





Lake Cle Elum

RM 7.6

10

Domerie Creek

RM 7

Construct Two Large Engineered Log Jams

Re-connect Side Channel

Domerie Flats

Borrow Pit

1/2 mile

RM 6

Re-Activated Domerie Side Channel

RM 5

15

14

30

Mine Dump

Tailings

12

Mine Dump

AND

row

2200

2223T

ELJ site
East Bank
(downstream)



**ELJ Site
East Bank
(upstream)**



SCHEMATIC DESIGN PLANS
& DETAILS
NOT FOR CONSTRUCTION

NOTES:

- 1) SEE SHEET C-
- 2) SEE SHEET C-

**EXCAVATED
PILOT CHANNEL**

ELJ's

DOMERIE SIDE CHANNEL

DOMERIE CREEK

PROPOSED EXCAVATION OF INLET
TO SIDE CHANNEL
SEE SHEET C-3 FOR MORE
INFORMATION

APPROXIMATE LOCATION OF ABANDONED
WATER INTAKE

PROPOSED EAST BANK ENGINEERED
LOG JAM,
SEE SHEET C-4 FOR MORE INFORMATION

PROPOSED WEST BANK ENGINEERED
LOG JAM,
SEE SHEET C-4 FOR MORE INFORMATION

PROPOSED LENGTH
OF EXCAVATION

PROPOSED RE-ACTIVATED
SIDE CHANNEL

PROPOSED LOG
HABITAT STRUCTURES
SEE SHEET C-3 FOR
MORE INFORMATION

GLE ELUM RIVER



LEGEND			
	PROPOSED AQUATIC HABITAT		EXISTING PAVED ROAD
	FG MAJOR CONTOUR		EXISTING GRAVEL ROAD
	FG MINOR CONTOUR		EXISTING APPROXIMATE ORDINARY HIGH WATER
	PROPOSED LOGJAM		EXISTING CREEK
	PROPOSED LOG HABITAT STRUCTURE		EXISTING TRAILS



SCALE IN FEET

PROPOSED EXCAVATED INLET TO SIDE CHANNEL
SEE SHEET D-3

POTENTIAL LOCATION FOR TREES
AND GRAVEL HIGHLINE TO BE
DETERMINED IN THE FIELD.

EXISTING ABANDONED WATER INTAKE
TO BE INTEGRATED INTO ELI

CONSTRUCT ENGINEERED LOG JAM
INCORPORATE EXISTING WATER INTAKE
STRUCTURE

100
feet

PROPOSED CLEAN GRAVEL NOURISHMENT BAR
PLANTED WITH NATIVE VEGETATION.
WATER FOR GRAVEL NOURISHMENT WILL BE
EXCAVATED MATERIAL FROM THE PROPOSED
SIDE CHANNEL.

CONSTRUCT ENGINEERED LOG JAM

NATIVE VEGETATION (TYP.)

PROPOSED CLEAN GRAVEL NOURISHMENT BAR
PLANTED WITH NATIVE VEGETATION.
MATERIAL FOR GRAVEL NOURISHMENT WILL BE
EXCAVATED MATERIAL FROM THE PROPOSED
SIDE CHANNEL.

MATERIAL
SEE SHEET C-3

OLE ELUM RIVER

LEGEND

- FG MAJOR CONTOUR
- FG MINOR CONTOUR
- DAYLIGHT LINE
- PROPOSED LOGJAM
- PROPOSED LOG HABITAT STRUCTURE
- PROPOSED ALIGNMENT
- APPROXIMATE EXISTING ORDINARY HIGH WATER
- EXISTING TRAILS
- EG MAJOR CONTOUR
- EG MINOR CONTOUR
- GRAVEL NOURISHMENT BAR

SCHEMATIC DESIGN PLANS
& DETAILS
NOT FOR CONSTRUCTION

CLE ELUM DAM
 CLE ELUM DAM
 SPILLWAY

CLE ELUM RIVER

HWY 903

ROSLYN WATER
 LINE BRIDGE

WINSTON RD

TO INTERSTATE-90

LOCATION OF PROPOSED
 WINSTON RD. BRIDGE BY
 OTHERS

DOVERIE CREEK

NOTE:
 CONTRACT LOCAL LOGGER TO SET UP
 HIGHLINE TO WINCH LOGS ACROSS CLE ELUM
 RIVER

**Trees w/
 rootwads
 collected
 from
 uplands**

PROPOSED
 ACCESS ROAD
 PROPOSED LOG
 HABITAT STRUCTURES
 PROPOSED
 RE-ACTIVATED
 SIDE CHANNEL

STAGING/STORAGE
 AREA ±0.5 AC

BAKERS RD.




Log Staging Areas





PROPOSED
 ENGINEERED LOG
 JAWS

STAGING/STORAGE
 AREA ±1.5 AC

TO INTERSTATE-90

LEGEND

-  PROPOSED STAGING AREA
-  EXISTING GRAVEL ROAD
-  EXISTING CREEK

-  EXISTING ACCESS ROADS
-  PROPOSED ACCESS ROADS
-  PROPOSED LOGJAM
-  PROPOSED LOG HABITAT STRUCTURE

Trees donated by Suncadia
from road rights of way



East bank staging area



West bank staging area





West bank ELJ
construction
coffer dam

West bank fish salvage



West bank ELJ construction pad





Vertical members imbedded ten feet into substrate with rootwad down



Horizontal members placed and lashed

Front end “look-outs” placed and lashed, backfill structure with excavated cobbles





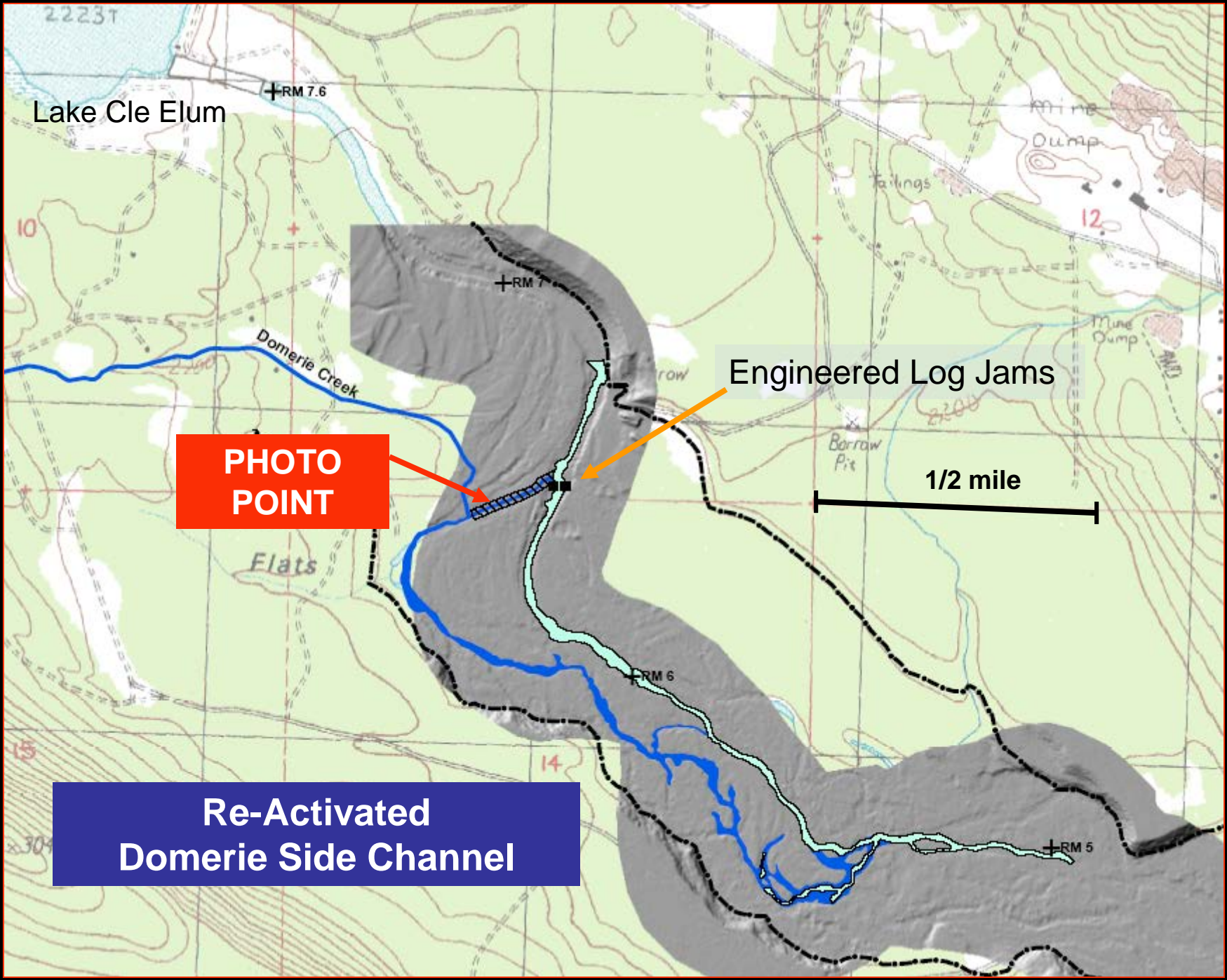
Racking logs
stuffed under
look outs

Plug removed from excavated side channel inlet



Flow restoration –
Domerie Side Channel





Lake Cle Elum

RM 7.6

Domerie Creek

RM 7

Engineered Log Jams

PHOTO POINT

1/2 mile

Flats

RM 6

**Re-Activated
Domerie Side Channel**

RM 5

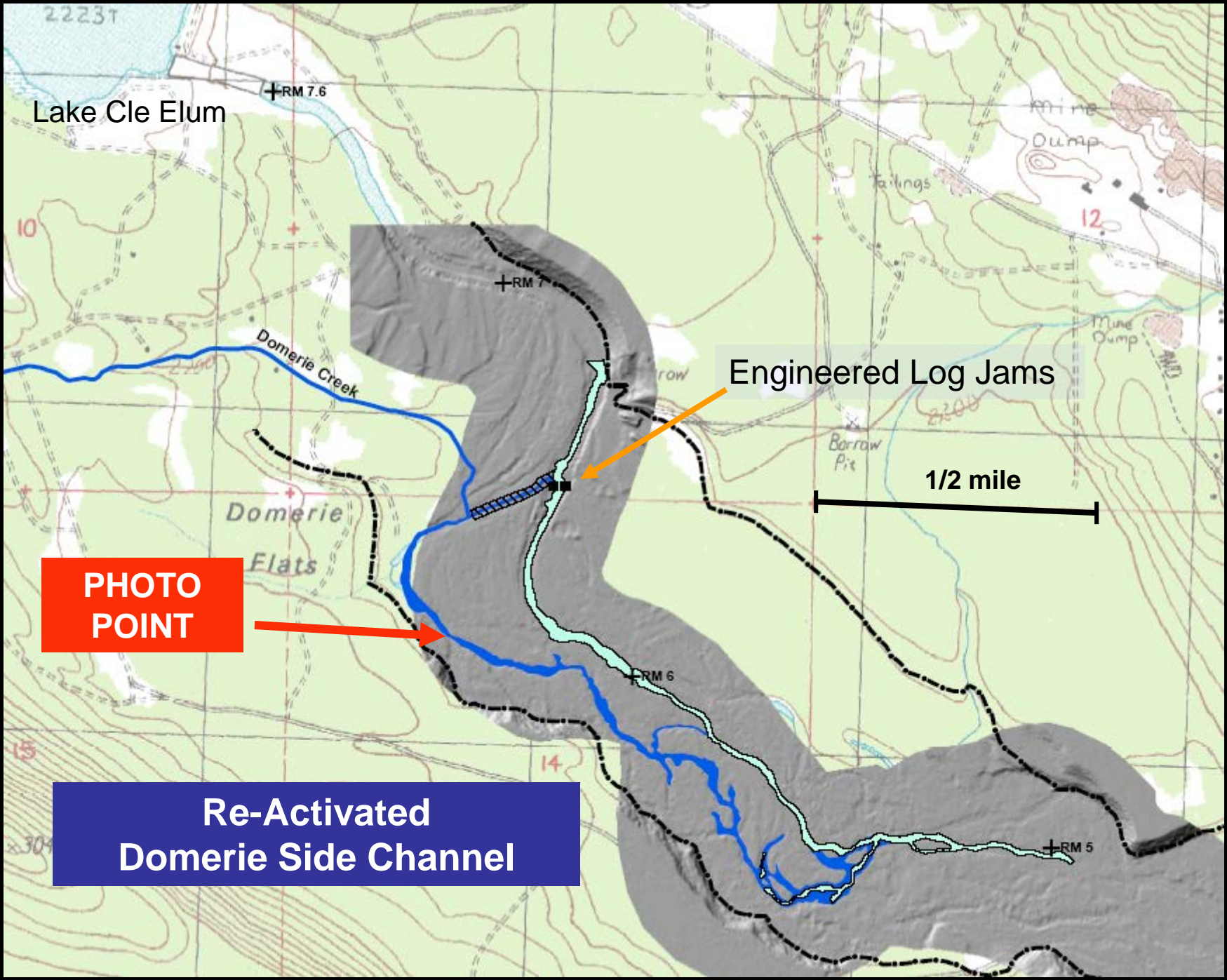
**DOWNSTREAM
VIEW**



UPSTREAM VIEW

(native species re-vegetation)





Lake Cle Elum

RM 7.6

10

Domerie Creek

RM 7

Engineered Log Jams

1/2 mile

PHOTO POINT

Domerie Flats

RM 6

Re-Activated Domerie Side Channel

14

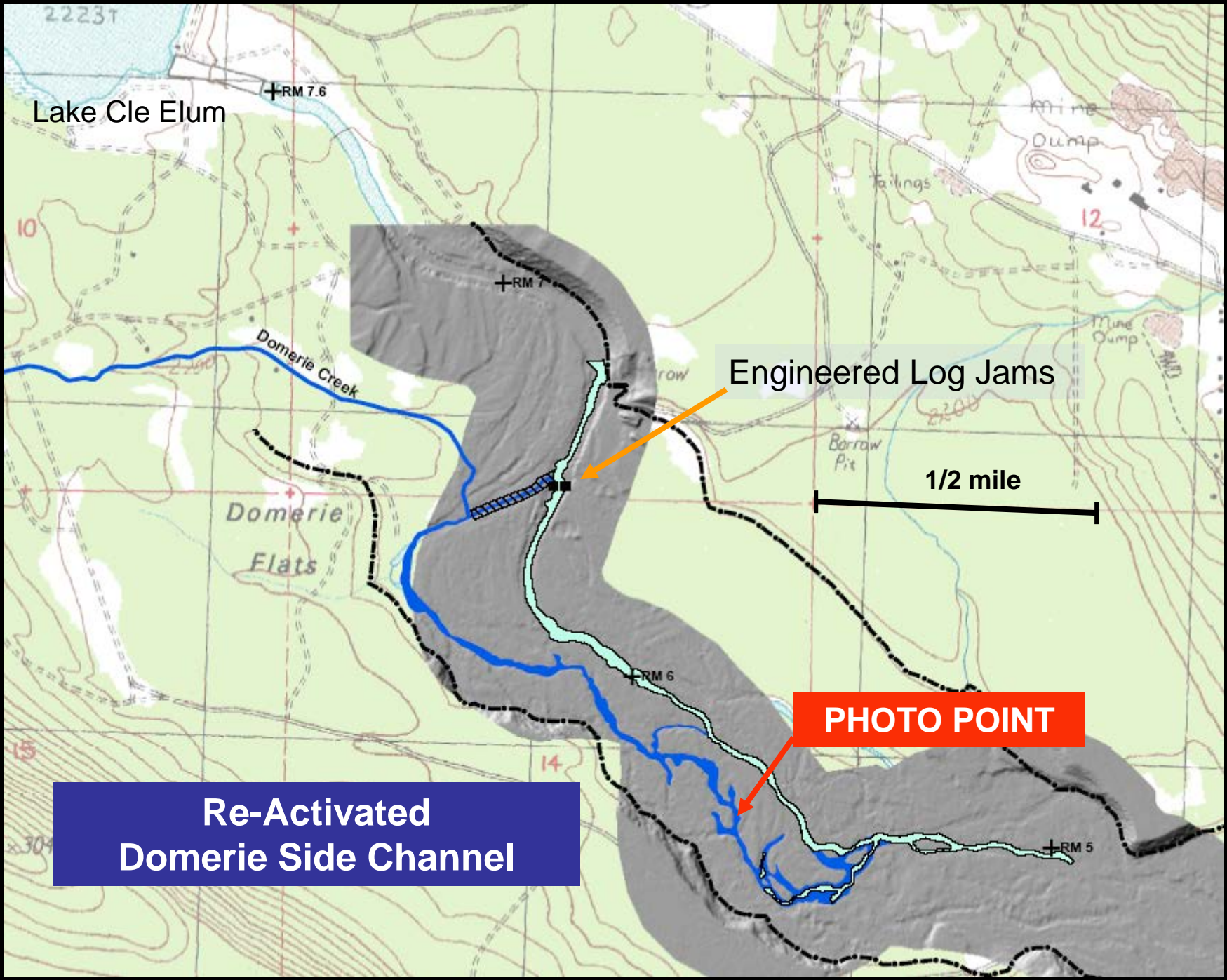
RM 5

BEFORE





AFTER



Lake Cle Elum

RM 7.6

Domerie Creek

Domerie Flats

Engineered Log Jams

1/2 mile

PHOTO POINT

Re-Activated Domerie Side Channel

RM 7

RM 6

RM 5

Borrow Pit

Mine Dump

12

14

2223T

10

15

304

2200

row

Mine Dump

AND



BEFORE



AFTER



Side channel entry

East bank ELJ,
similar construction

**W.C.C.
planting
crew**









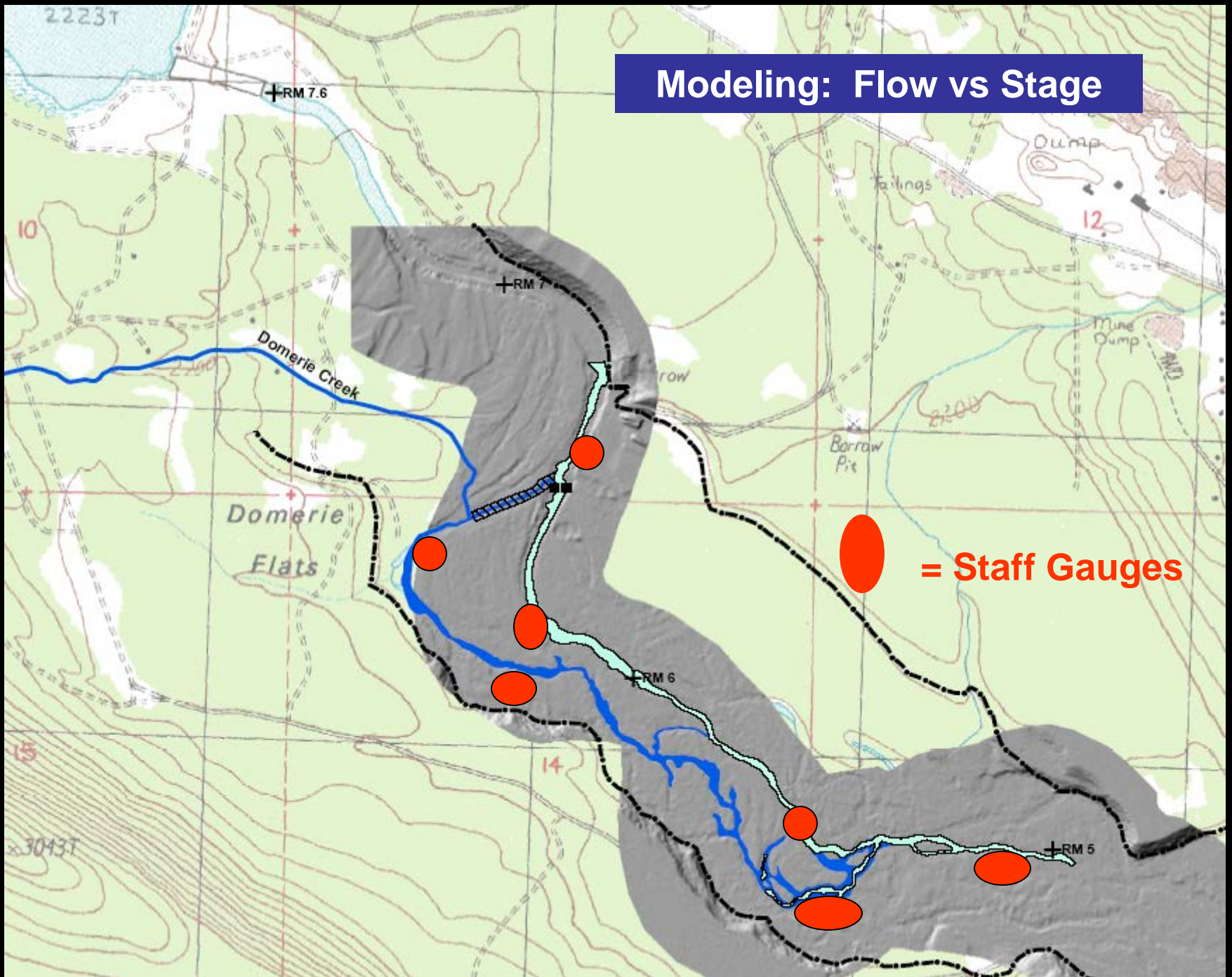
East bank ELJ

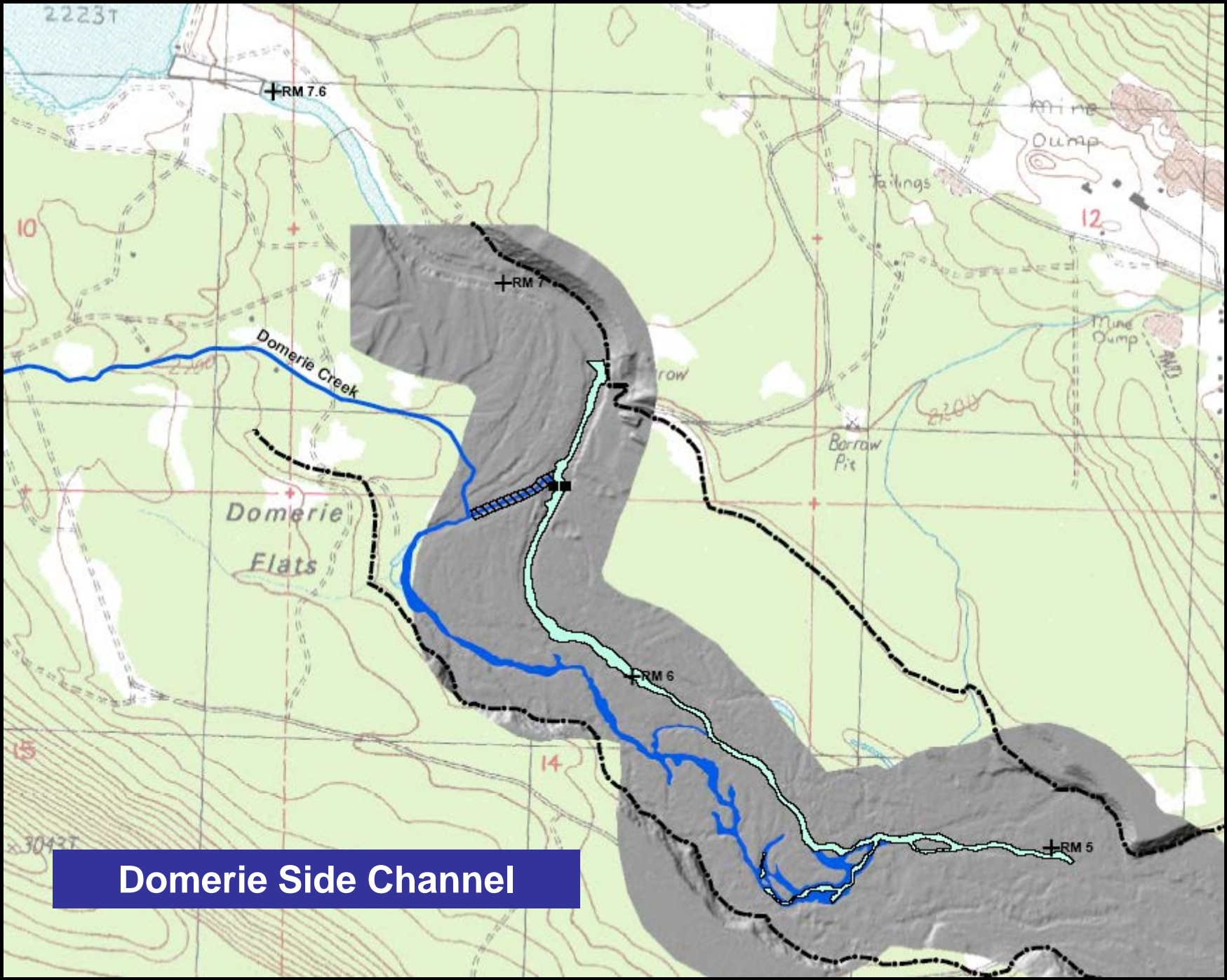
FLOW

West bank ELJ + side-channel entrance

CLE ELUM RIVER

Modeling: Flow vs Stage





Domerie Side Channel