Priority Stream Reaches for the Columbia River Basin Water Management Program

Teresa Scott
Jon Kohr
Paul LaRiviere
Washington Department of Fish and Wildlife

for

CRBWMP PAG

24 October 2007

Presentation Outline

- Why prioritize stream reaches?
- Prioritized for the Washington Trust Water Program – “sixteen critical basins”
- Trust program objectives call for prioritization
- WDFW’s role
- Considerations for ranking stream reaches
- Current stream reach priorities
- Future direction

Why Prioritize Stream Reaches?

- ✓ Target acquisition activities
- ✓ Target riparian restoration projects
- ✓ Water quality improvement projects
- ✓ Water conservation & water re-use projects

- ➢ Water Acquisition Program
- ➢ Salmon recovery projects
- ➢ Watershed Plan implementation projects
- ➢ Ecology Water Quality Program
- ➢ CRBWMP grants

Cost Effectiveness

Why Prioritize Stream Reaches?

- ✓ Target acquisition activities
- ✓ Target riparian restoration projects
- ✓ Water quality sample sites
- ✓ Score conservation & water re-use projects

- ➢ Washington Water Acquisition Program
- ➢ Salmon recovery projects
- ➢ Watershed Plan implementation projects
- ➢ Ecology Water Quality Program
- ➢ CRBWMP grants

Water Acquisition Program Objectives

"Target stream flow efforts to streams and reaches most biologically important for current & future fish populations, especially where chronically low flow impedes fish recovery."

"Acquire & protect a sufficient amount of water to meet stream flows for fish populations within priority critical basins in order to maximize productivity of salmon stocks."

"Ensure cost-effective & efficient use of state and federal investments in water rights acquisitions."

Washington Water Acquisition Program - Finding Water To Restore Streams, Pg. 12

Prioritizing Where and When to Acquire Water Rights

- Develop prioritization criteria.
- Gather and analyze information regarding:
  - Current stream flow adequacy,
  - Fish usage & status,
  - Number of diversions,
  - Amount of water needed to improve flow conditions
- Select priority basins and streams within each basin.
- Produce maps for each priority basin, indicating potential acquisition areas.
- Share information with key stakeholders.

Washington Water Acquisition Program - Finding Water To Restore Streams, Pg. 13

WDFW's Role in the Water Acquisition Program

- Provide priorities for stream reaches most in need of water

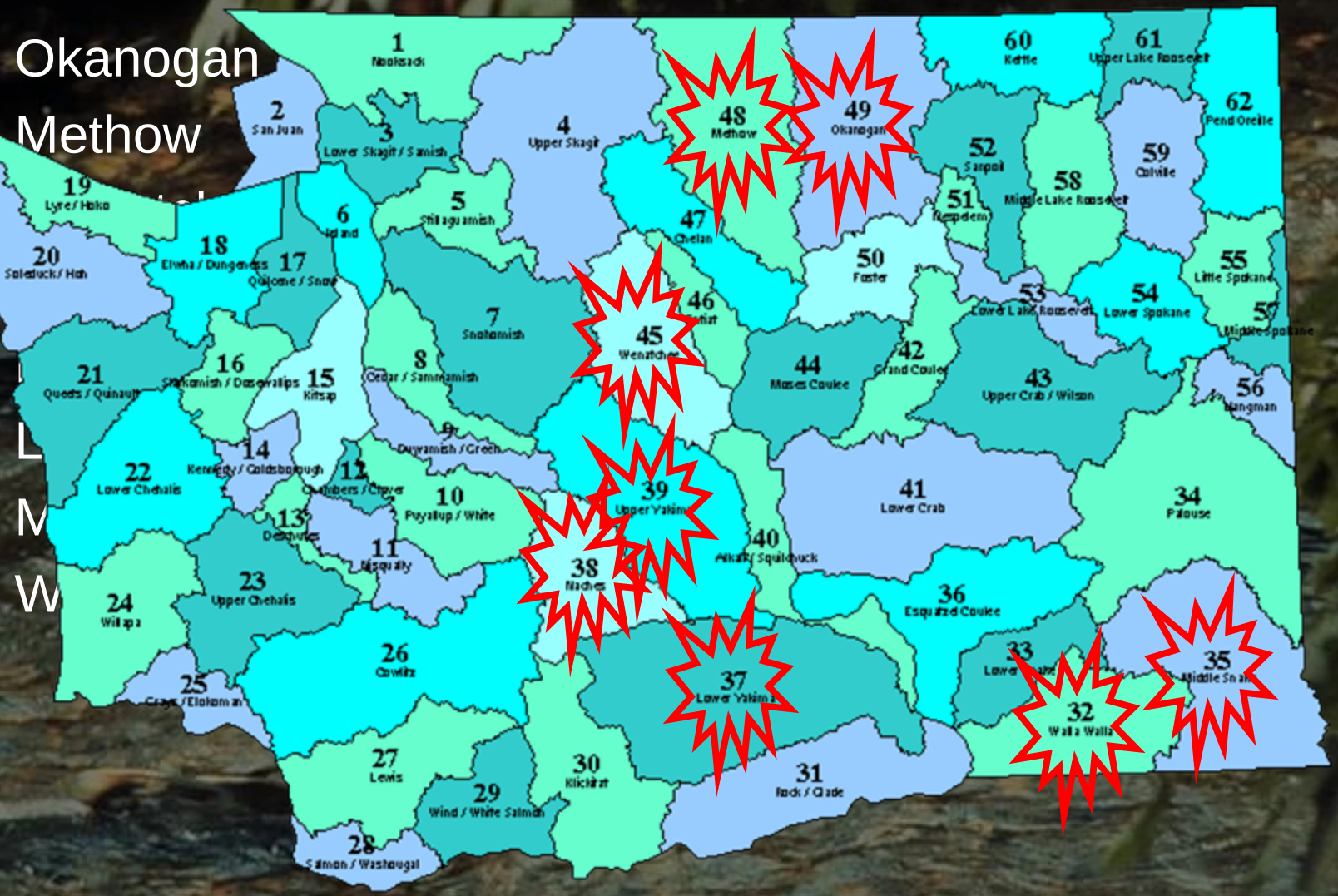
  "Provide measurable biological benefits …

  … in stream reaches that make the most sense for fish"

- Evaluate success of water acquisition transactions in terms of biological benefits
- Monitor to ensure continuing benefits

Eastside Critical Basins

- Okanogan
- Methow
- [illegible]



Prioritization Criteria

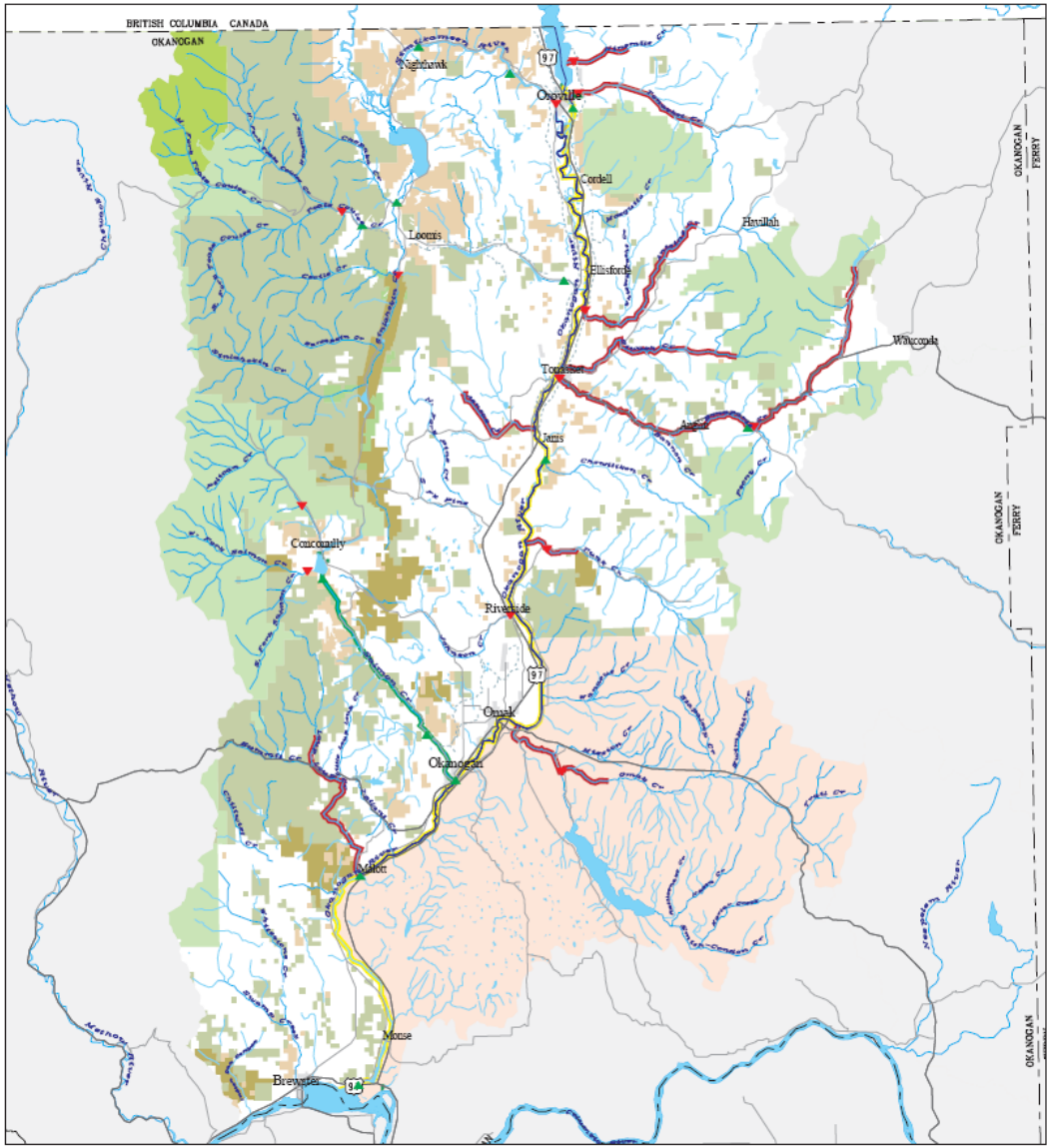
- Species presence & ESA &/or SaSI status (threatened, depressed, healthy)
- Fish use (spawning, rearing, migration)
- Current habitat condition:
  - Substrate; riparian; off-channel habitat;
  - Flood plain connectivity
  - Passage barriers & riffle depth
- Potential for flow improvement:
  - Significant increase
  - % of time flows are inadequate

Characteristics of Higher Priority Stream Reaches

(compared with other reaches)

- ESA-listed (need recovery); healthy (need protection)
- Important spawning or rearing habitat
- Has extreme low flow conditions &/or associated high water temps
- Flows inadequate a higher % of the time
- Small additional flows can achieve large benefits
- Increased flow can reasonably be expected enhance biological productivity (i.e. existing habitat is in relatively good condition, except for current low flows)

Okanogan



Stream Flow Prioritization: Okanogan WRIA 49

Water Resources Program

WASHINGTON STATE DEPARTMENT OF ECOLOGY

GIS Technical Services
12/13/02
sfp49-mpla

- US Forest Service
- US Wildlife Refuge
- US Parks/Recreation
- USFS Wilderness Area
- Bureau of Land Management
- US Dept. Defense/Energy
- Wa. Dept. of Fish & Wildlife
- Wa. Dept. of Natural Reasources
- State School/Hospital/Prison
- Wa. Parks & Recreation
- City/County Watershed/Park
- Tribal Lands
- Incorporated City
- USGS Stream Flow Gage
- Ecology Stream Flow Gage
- Water Right Purchase

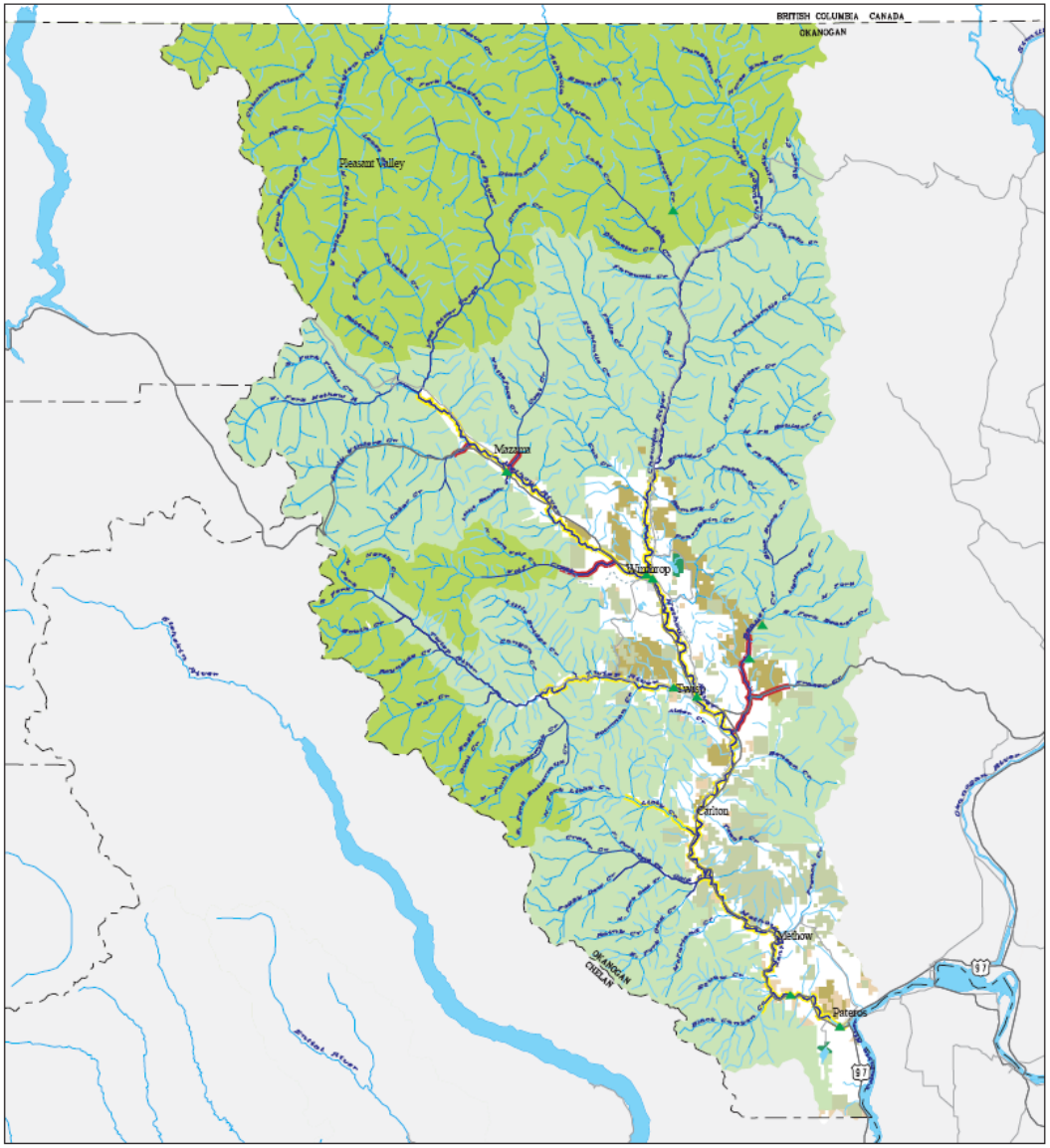
Miles 0 4 8

- Low priority stream
- Medium priority stream
- High priority stream
- Salmon/Bull Trout Spawning/Rearing area
- Other streams
- Canal/ditch/pipe
- County
- Highway
- Local Paved Roads

Subject to Revision

WDNR/Ecology - Major Public Lands 2002 100k
WDFW/Ecology - Hydrography, 2000 100k
Ecology - WRIA, 2002 24K
WDOT - Transportation, 2001 24K
WDFW - Streamn Flow Prioritization 2002
WDFW - Spawning/Rearing Areas 2002 100k
USGS/Ecology - Stream Gages 1:100k

Methow



Stream Flow Prioritization: Methow WRIA 48

Water Resources Program

WASHINGTON STATE DEPARTMENT OF ECOLOGY

GIS Technical Services
12/13/02
sfp48-mpla

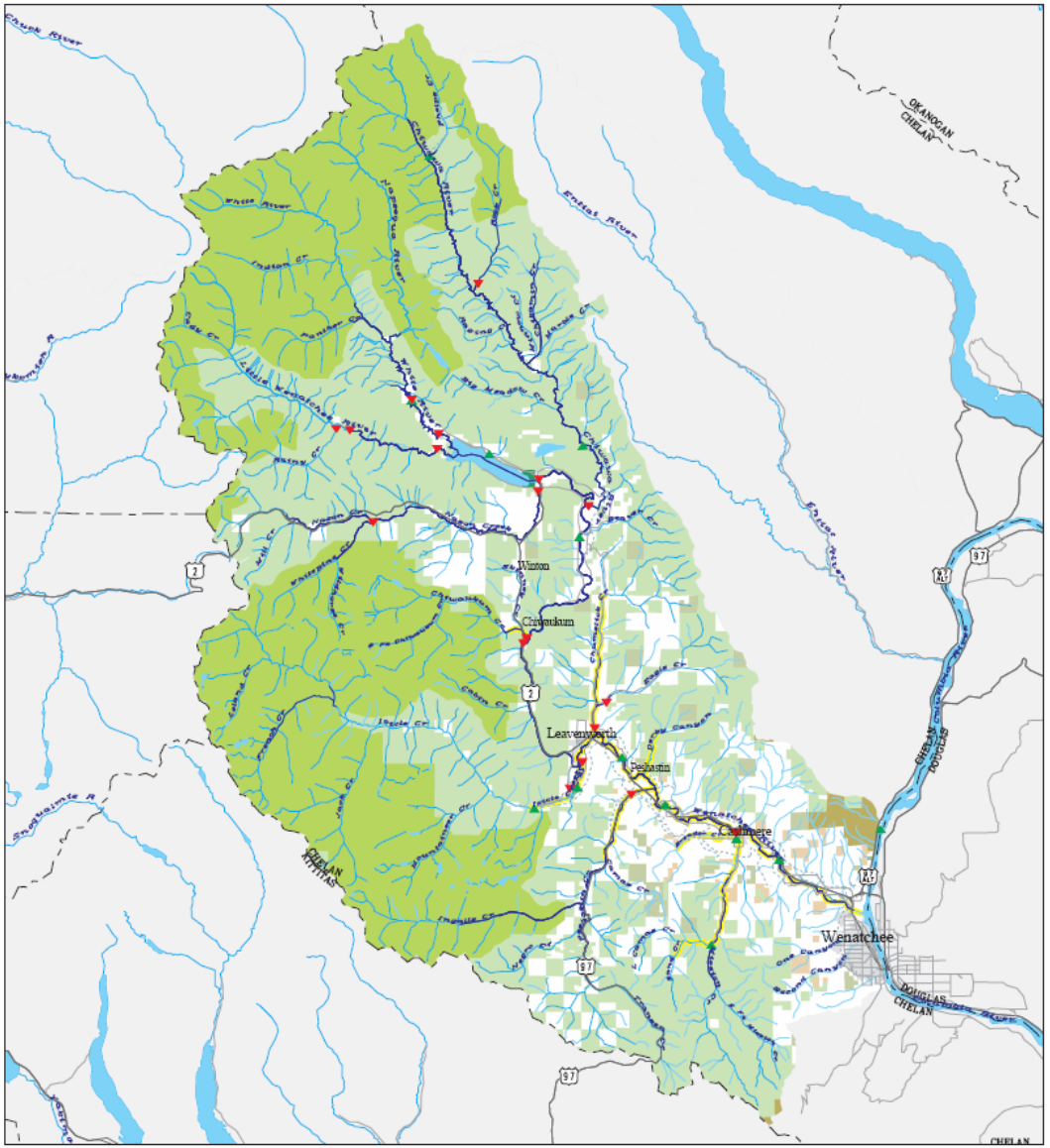
- US Forest Service
- US Wildlife Refuge
- US Parks/Recreation
- USFS Wilderness Area
- Bureau of Land Management
- US Dept. Defense/Energy
- Wa. Dept. of Fish & Wildlife
- Wa. Dept. of Natural Reasources
- State School/Hospital/Prison
- Wa. Parks & Recreation
- City/County Watershed/Park
- Tribal Lands
- Incorporated City
- USGS Stream Flow Gage
- Ecology Stream Flow Gage
- Water Right Purchase
- Low priority stream
- Medium priority stream
- High priority stream
- Salmon/Bull Trout Spawning/Rearing area
- Other streams
- Canal/ditch/pipe
- County
- Highway
- Local Paved Roads

Miles
0 4.5 9

Subject to Revision

WDNR/Ecology - Major Public Lands 2002 100k
WDFW/Ecology - Hydrography, 2000 100k
Ecology - WRIA, 2002 24K
WDOT - Transportation, 2001 24K
WDFW - Stream Flow Prioritization 2002
WDFW - Spawning/Rearing Areas 2002 100k
USGS/Ecology - Stream Gages 1:100k

Wenatchee



Stream Flow Prioritization: Wenatchee WRIA 45

Water Resources Program
WASHINGTON STATE DEPARTMENT OF ECOLOGY
GIS Technical Services
12/13/02
sfp45-mpla

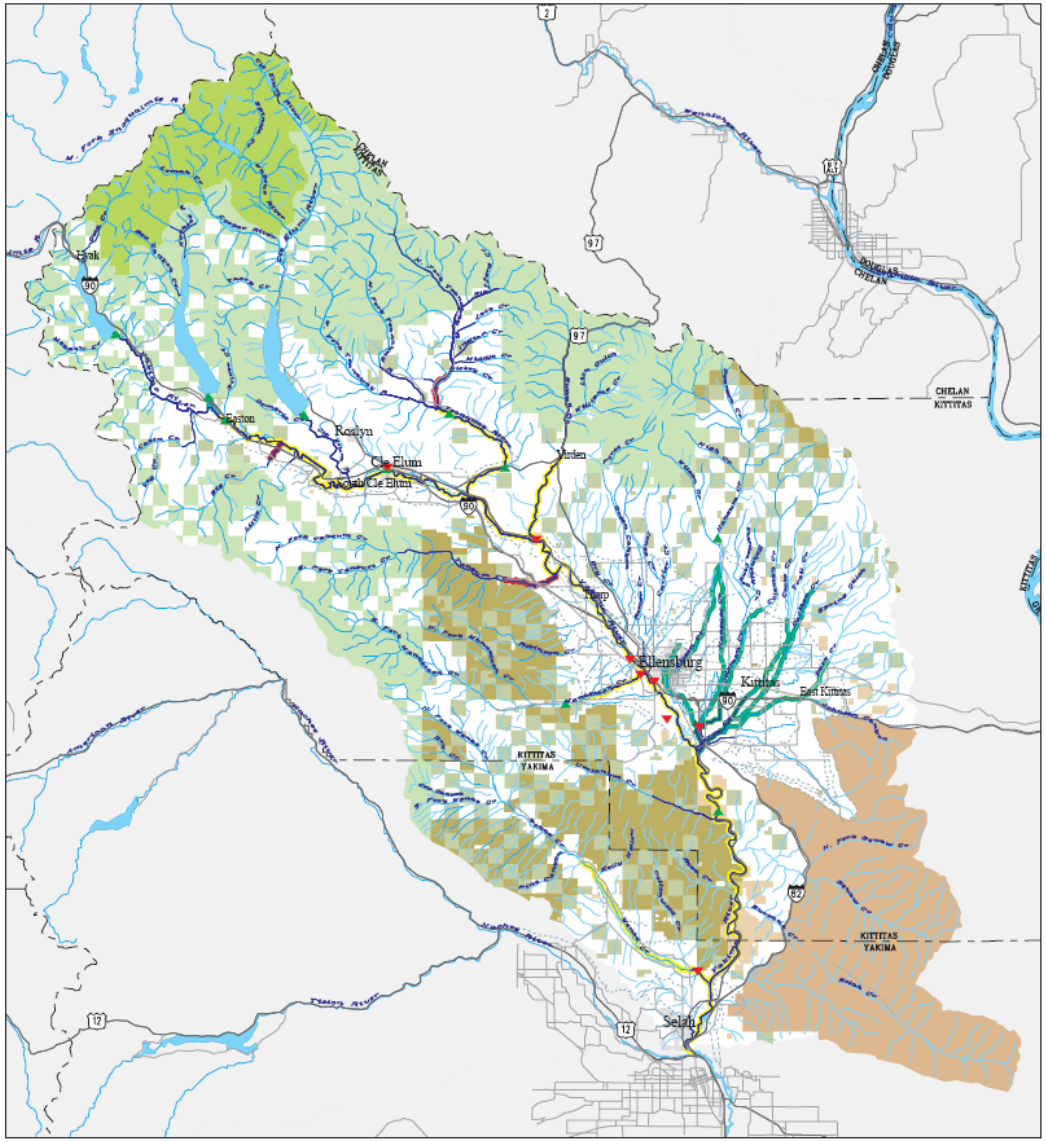
- US Forest Service
- US Wildlife Refuge
- US Parks/Recreation
- USFS Wilderness Area
- Bureau of Land Management
- US Dept. Defense/Energy
- Wa. Dept. of Fish & Wildlife
- Wa. Dept. of Natural Reasources
- State School/Hospital/Prison
- Wa. Parks & Recreation
- City/County Watershed/Park
- Tribal Lands
- Incorporated City
- USGS Stream Flow Gage
- Ecology Stream Flow Gage
- Water Right Purchase
- Low priority stream
- Medium priority stream
- High priority stream
- Salmon/Bull Trout Spawning/Rearing area
- Other streams
- Canal/ditch/pipe
- County
- Highway
- Local Paved Roads

Miles 0 4 8

Subject to Revision

WDNR/Ecology - Major Public Lands 2002 100k
WDFW/Ecology - Hydrography, 2000 100k
Ecology - WRIA, 2002 24K
WDOT - Transportation, 2001 24K
WDFW - Stream Flow Prioritization 2002
WDFW - Spawning/Rearing Areas 2002 100k
USGS/Ecology - Stream Gages 1:100k

Upper Yakima



Stream Flow Prioritization: Upper Yakima WRIA 39

Water Resources Program

WASHINGTON STATE DEPARTMENT OF ECOLOGY

GIS Technical Services
12/13/02
sfp39-mpla

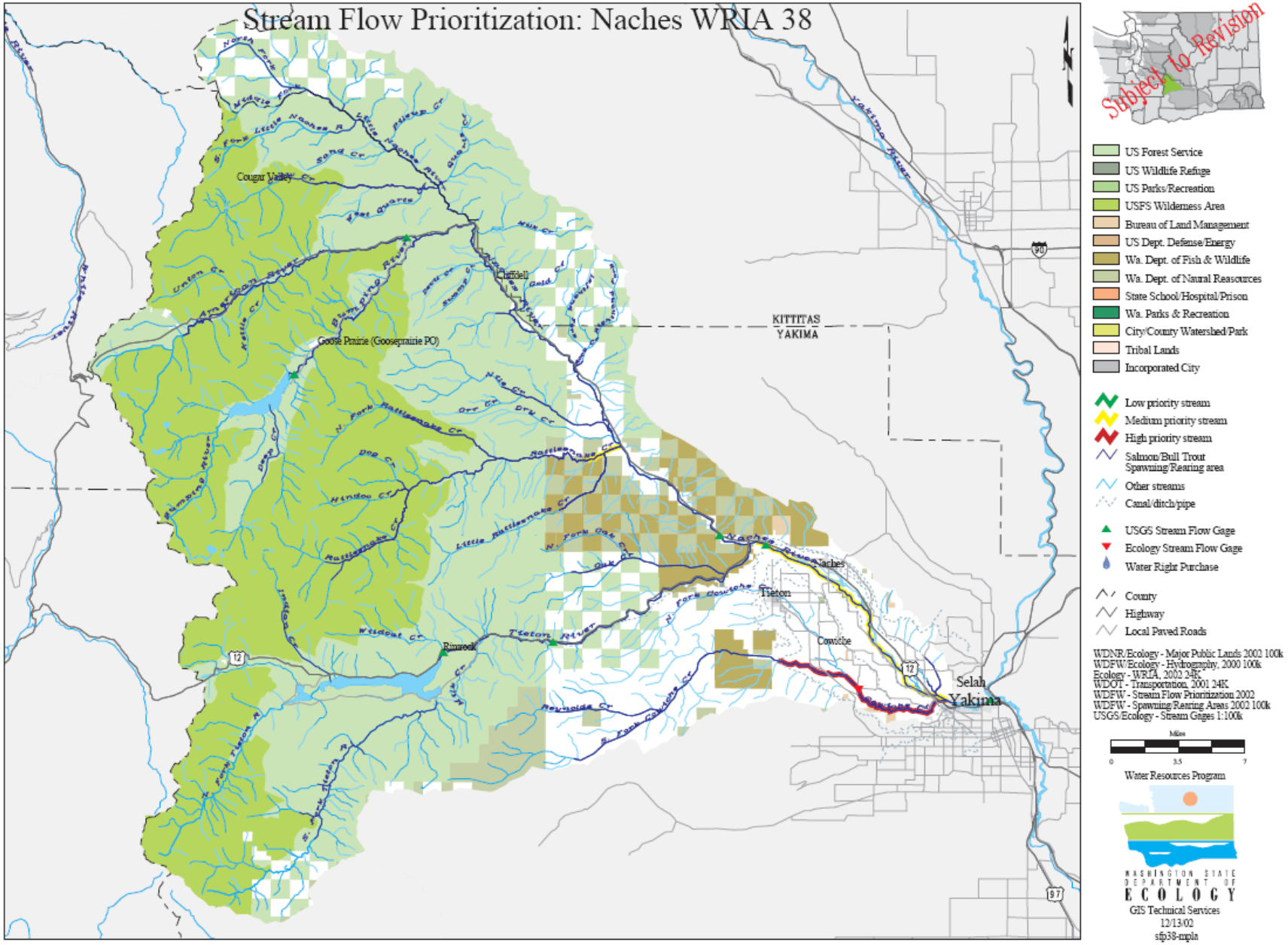
- US Forest Service
- US Wildlife Refuge
- US Parks/Recreation
- USFS Wilderness Area
- Bureau of Land Management
- US Dept. Defense/Energy
- Wa. Dept. of Fish & Wildlife
- Wa. Dept. of Natural Resources
- State School/Hospital/Prison
- Wa. Parks & Recreation
- City/County Watershed/Park
- Tribal Lands
- Incorporated City
- USGS Stream Flow Gage
- Ecology Stream Flow Gage
- Water Right Purchase
- Low priority stream
- Medium priority stream
- High priority stream
- Salmon/Bull Trout Spawning/Rearing area
- Other streams
- Canal/ditch/pipe
- County
- Highway
- Local Paved Roads

Miles
0 4.5 9

Subject to Revision

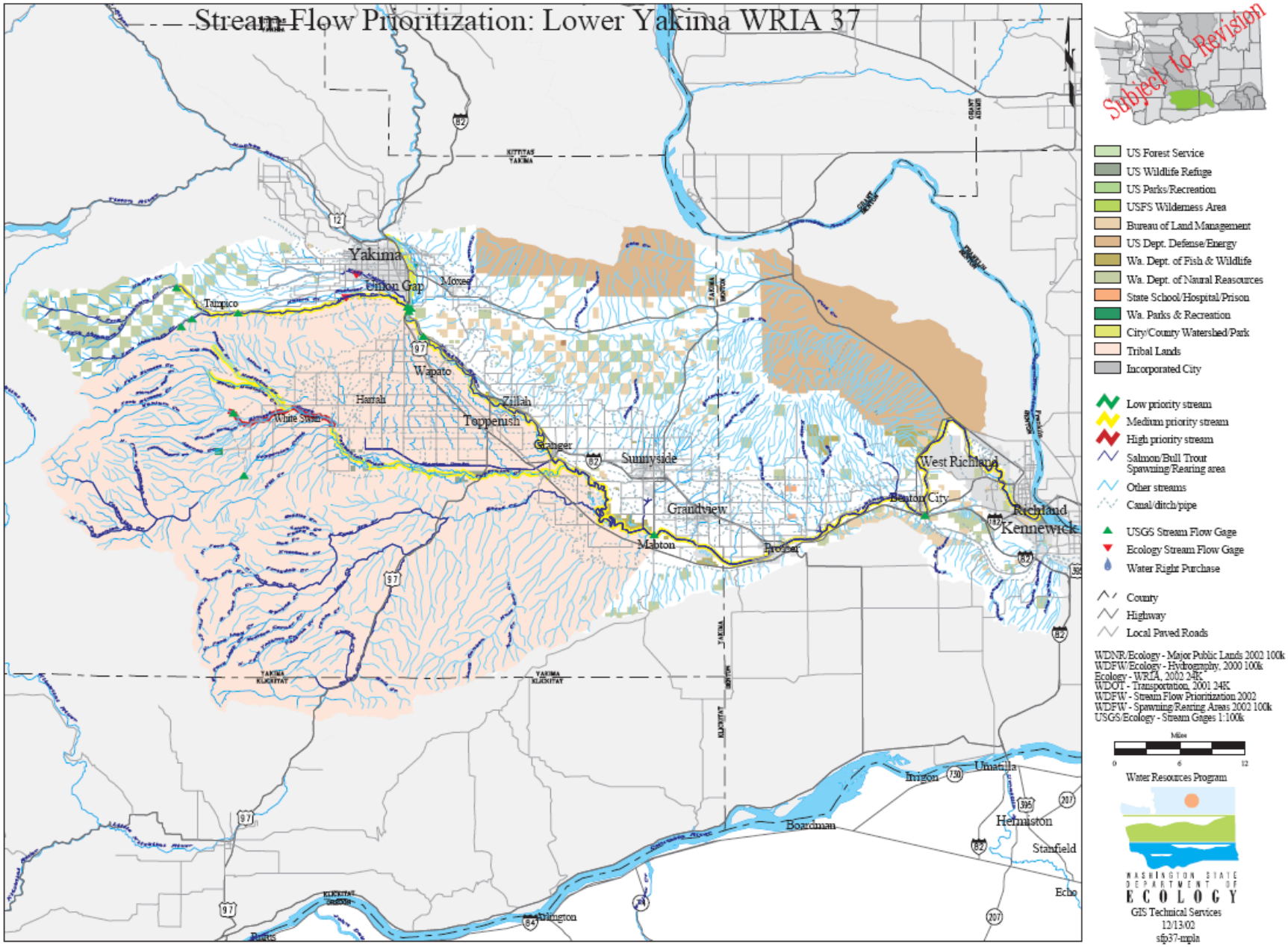
WDNR/Ecology - Major Public Lands 2002 100k
WDFW/Ecology - Hydrography, 2000 100k
Ecology - WRIA, 2002 24K
WDOT - Transportation, 2001 24K
WDFW - Stream Flow Prioritization 2002
WDFW - Spawning/Rearing Areas 2002 100k
USGS/Ecology - Stream Gages 1:100k

Naches



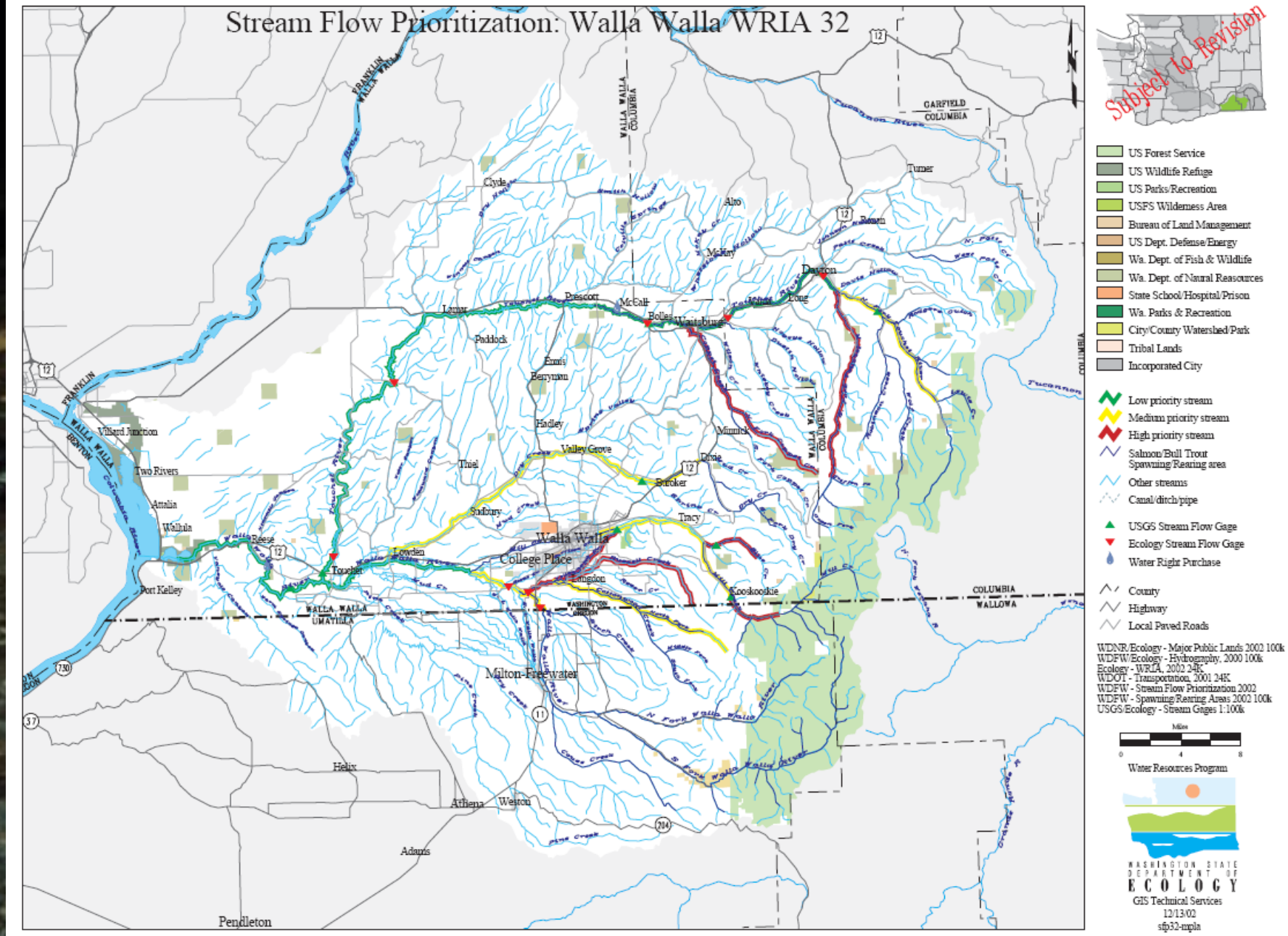
Stream Flow Prioritization: Naches WRIA 38
Subject to Revision
US Forest Service
US Wildlife Refuge
US Parks/Recreation
USFS Wilderness Area
Bureau of Land Management
US Dept. Defense/Energy
Wa. Dept. of Fish & Wildlife
Wa. Dept. of Naural Reasources
State School/Hospital/Prison
Wa. Parks & Recreation
City/County Watershed/Park
Tribal Lands
Incorporated City
Low priority stream
Medium priority stream
High priority stream
Salmon/Bull Trout Spawning/Rearing area
Other streams
Canal/ditch/pipe
USGS Stream Flow Gage
Ecology Stream Flow Gage
Water Right Purchase
County
Highway
Local Paved Roads
WDNR/Ecology - Major Public Lands 2002 100k
WDFW/Ecology - Hydrography, 2000 100k
Ecology - WRIA, 2002 24K
WDOT - Transportation, 2001 24K
WDFW - Stream Flow Prioritization 2002
WDFW - Spawning/Rearing Areas 2002 100k
USGS/Ecology - Stream Gages 1:100k
Miles
0
3.5
7
Water Resources Program
WASHINGTON STATE DEPARTMENT OF ECOLOGY
GIS Technical Services
12/13/02
sfp38-mpla
KITTITAS
YAKIMA
Cougar Valley
Cliffdell
Goose Prairie (Gooseprairie PO)
Naches
Tieton
Cowiche
Rimrock
Selah
Yakima
Naches River
Tieton River
Yakima River
Bumping River
American River
Little Rattlesnake Cr
Rattlesnake Cr
N. Fork Rattlesnake Cr
Wildcat Cr
Reynolds Cr
S. Fork Cowiche Cr
N. Fork Cowiche Cr
Oak Cr
Hindoo Cr
Dog Cr
Orr Cr
Dry Cr
Nile Cr
Gold Cr
Milk Cr
Sand Cr
Pileup Cr
Quartz Cr
Union Cr
Kettle Cr
Deep Cr
Indian Cr
Mill Cr
Little Naches R
Middle Fork
North Fork
S. Fork Little Naches R
S. Fork Tieton R
N. Fork Tieton R
12
90
97

Lower Yakima



“Middle Snake”

Walla Walla

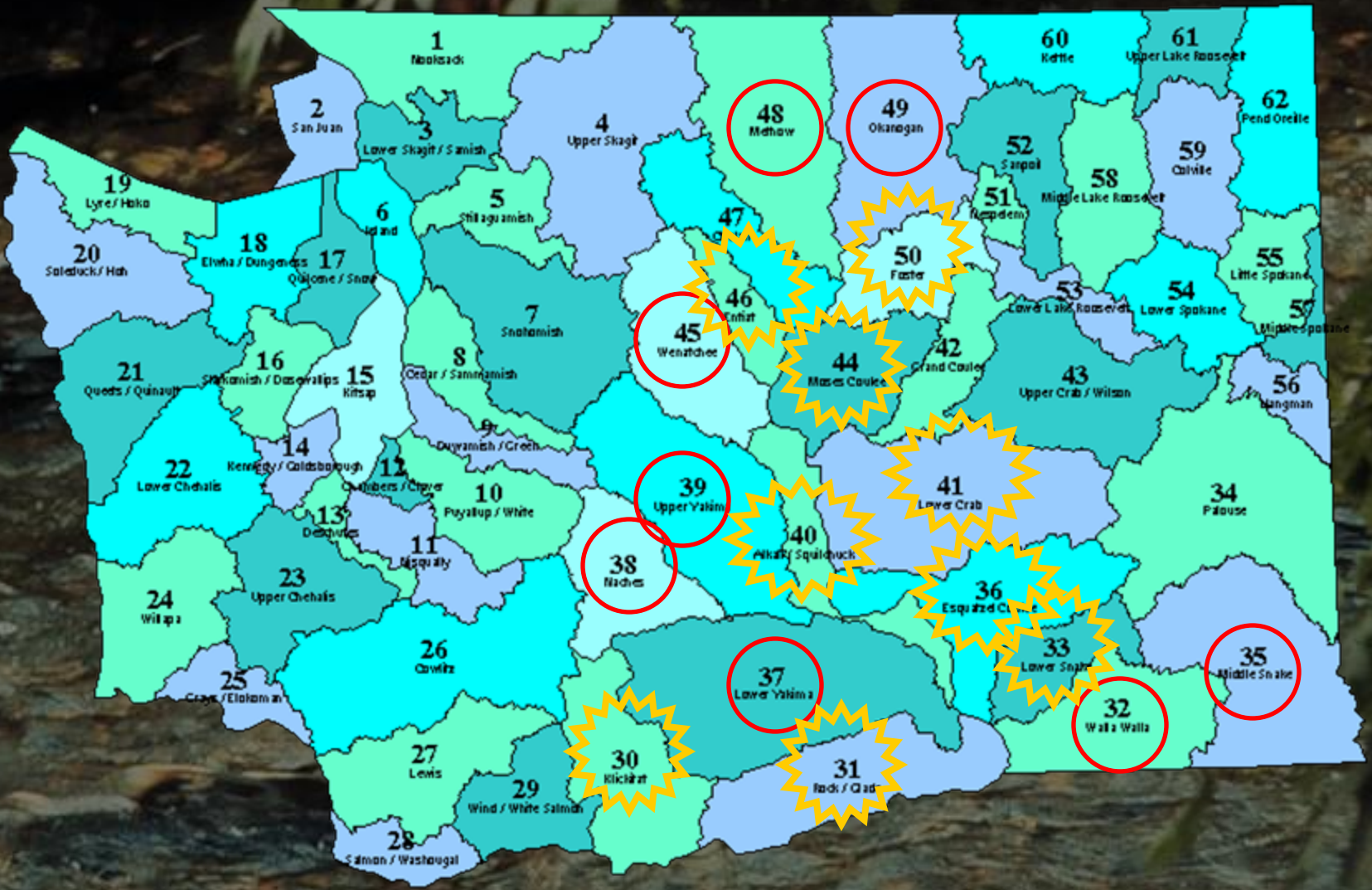


Stream Flow Prioritization: Walla Walla WRIA 32
Subject to Revision
US Forest Service
US Wildlife Refuge
US Parks/Recreation
USFS Wilderness Area
Bureau of Land Management
US Dept. Defense/Energy
Wa. Dept. of Fish & Wildlife
Wa. Dept. of Naural Reasources
State School/Hospital/Prison
Wa. Parks & Recreation
City/County Watershed/Park
Tribal Lands
Incorporated City
Low priority stream
Medium priority stream
High priority stream
Salmon/Bull Trout Spawning/Rearing area
Other streams
Canal/ditch/pipe
USGS Stream Flow Gage
Ecology Stream Flow Gage
Water Right Purchase
County
Highway
Local Paved Roads
WDNR/Ecology - Major Public Lands 2002 100k
WDFW/Ecology - Hydrography, 2000 100k
Ecology - WRIA, 2002 24K
WDOT - Transportation, 2001 24K
WDFW - Stream Flow Prioritization 2002
WDFW - Spawning/Rearing Areas 2002 100k
USGS/Ecology - Stream Gages 1:100k
Miles
0
4
8
Water Resources Program
WASHINGTON STATE DEPARTMENT OF ECOLOGY
GIS Technical Services
12/13/02
sfp32-mpla
Walla Walla
College Place
Milton-Freewater
Waitsburg
Dayton
Prescott
Lamar
Paddock
Ennis
Berryman
Hadley
Valley Grove
Thiel
Sudbury
Lowden
Touchet
Reese
Wallula
Attalia
Two Rivers
Villard Junction
Port Kelley
Helix
Athena
Weston
Adams
Pendleton
Langdon
Kooskooskie
Tracy
Buroker
Dixie
Minnick
Long
Alto
McKay
Turner
Clyde
Rowan
WALLA WALLA
COLUMBIA
GARFIELD
COLUMBIA
WALLOWA
UMATILLA
FRANKLIN
BENTON

Eastside Critical Basins

- Okanogan (49)
- Methow (48)
- Wenatchee (45)
- Upper Yakima (39)
- Naches (38)
- Lower Yakima (37)
- Middle Snake (35)
- Walla Walla (32)

Eastside Basins for further consideration

- Foster (50)
- Entiat (46)
- Moses Coulee (44)
- Lower Crab (41)
- Alkali-Squilchuck (40)
- Esquatzel Coulee (36)
- Lower Snake (33)
- Rock / Glade (31)
- Klickitat (30)

Water Resource Inventory Areas