

Visions for Kimball Creek

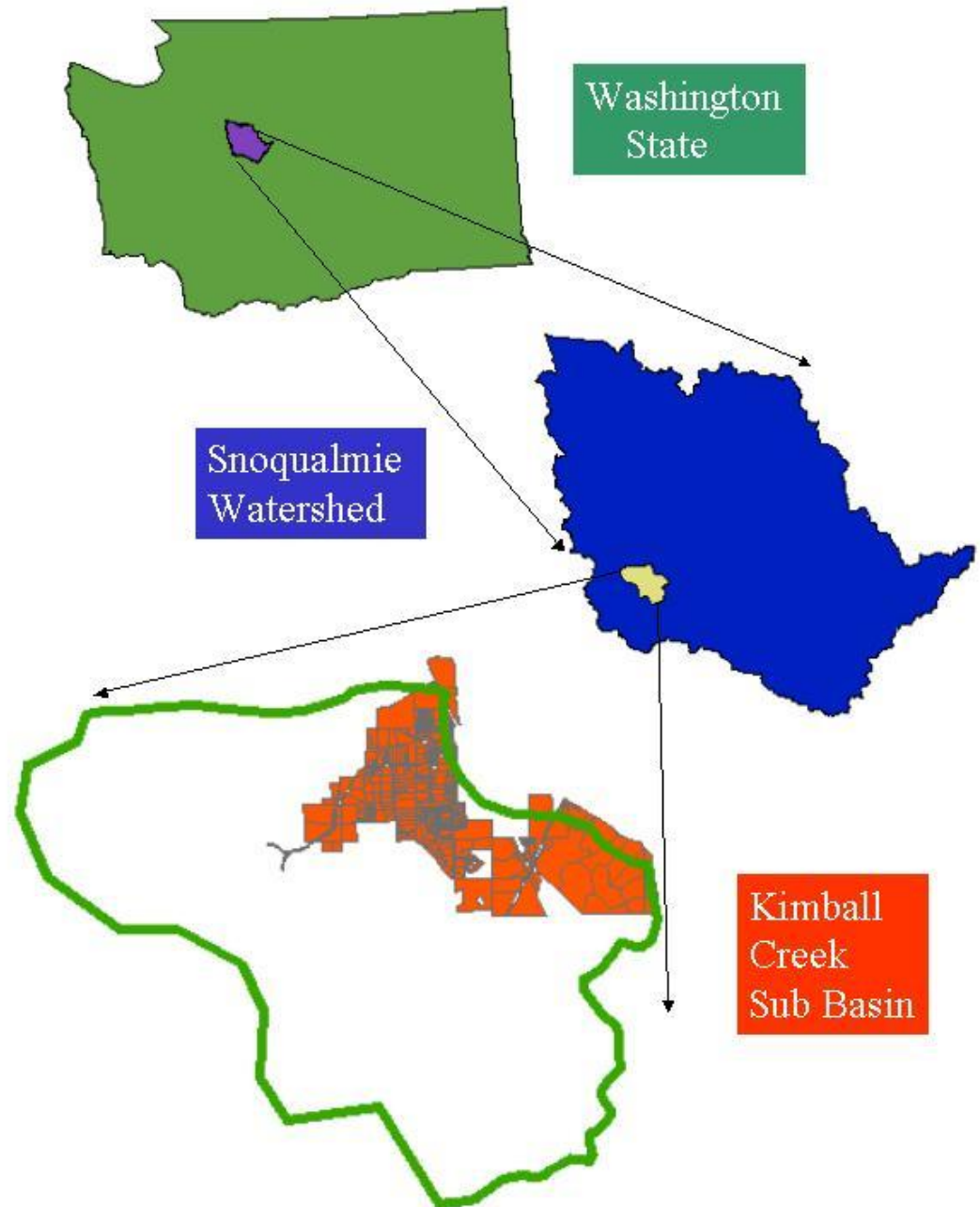


University of Washington
Institute for Hazards Mitigation
Planning and Research

Introduction and Project Overview

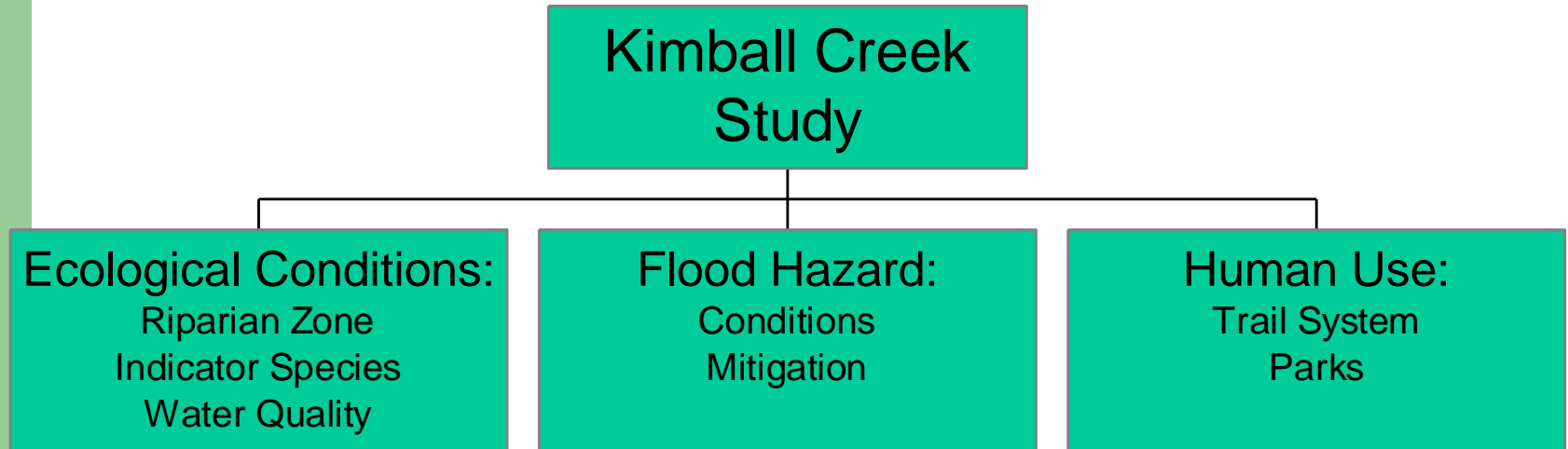


Kimball Creek – Locational Context



Preliminary
Focus:
Is Kimball Creek a
Flood Hazard?

Three Lenses of Analysis



Methodology

- Methodology varied somewhat from lens to lens
- Topical research was completed by analyzing existing studies and documents, field visits, field interviews
- Mapping was completed through field work and a GIS database
- Discussion of areas of potential connection and/or conflict

Visions for Kimball Creek

- A healthy, diverse ecosystem (habitat, species richness, C³)
- Community involvement efforts (restoration, education)
- Accessible, integrated unit of the Snoqualmie community (recreation, trail system)

Products

- Descriptions of existing conditions
- Problems and opportunities
- Map products
- Suggested approaches for each topic area (stream ecology, water quality, flooding, and community use).

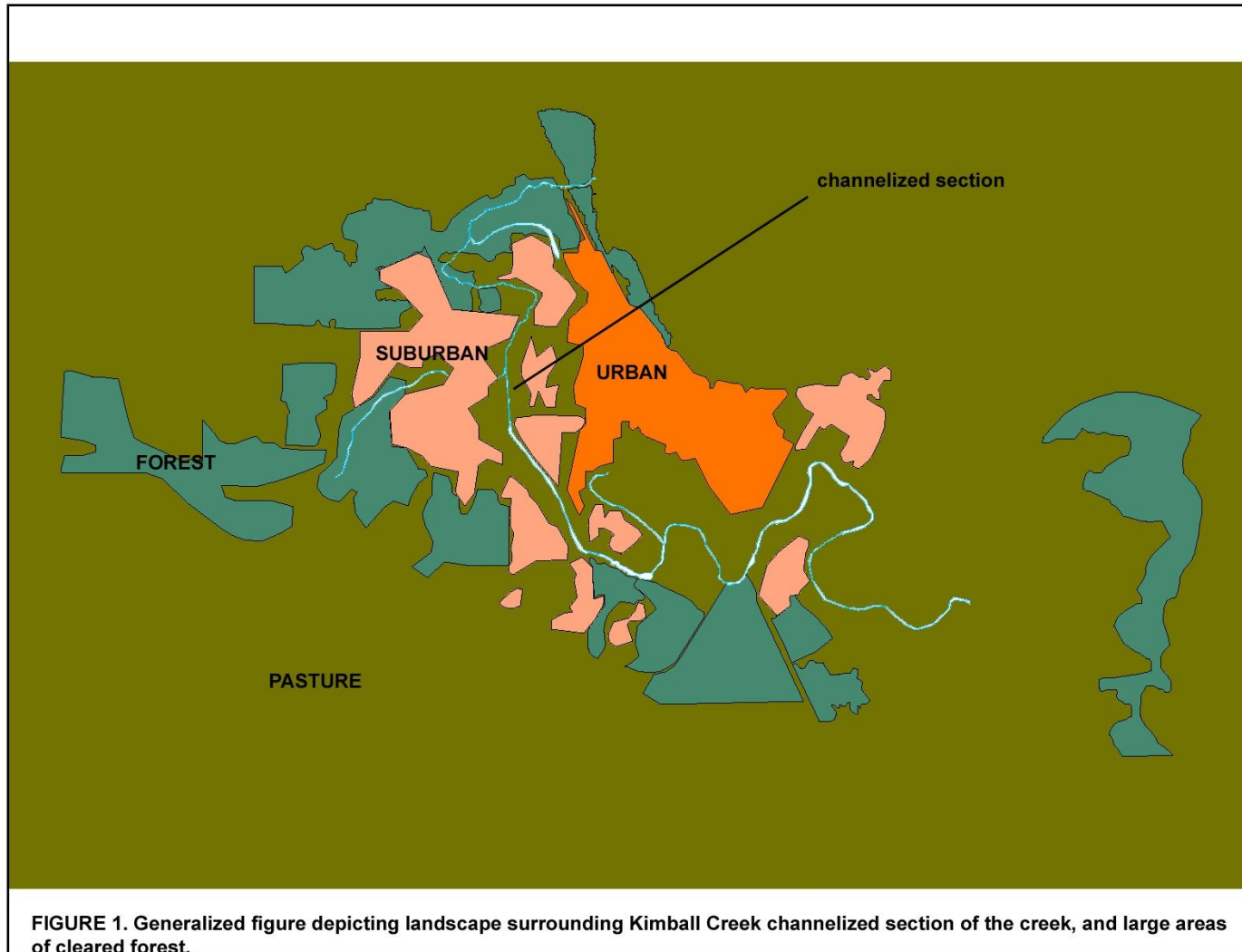
Ecological Conditions



The Landscape of Kimball Creek



The Landscape of Kimball Creek



Ecology of the Creek and Landscape

- Level of Function
- Functioning Landscape
- Functioning Riparian area
- Functioning Active channel

Ecology of the Creek and Landscape

- Level of Function
 - Focusing on fish and birds as a way to think about important creek function and value
 - Maintains native populations
 - Patch size
- Functioning Landscape
- Functioning Riparian area
- Functioning Active channel

Ecology of the Creek and Landscape

- Level of Function
- Functioning Landscape
 - Patch → Corridor → Matrix
 - Native biodiversity
- Functioning Riparian area
- Functioning Active channel

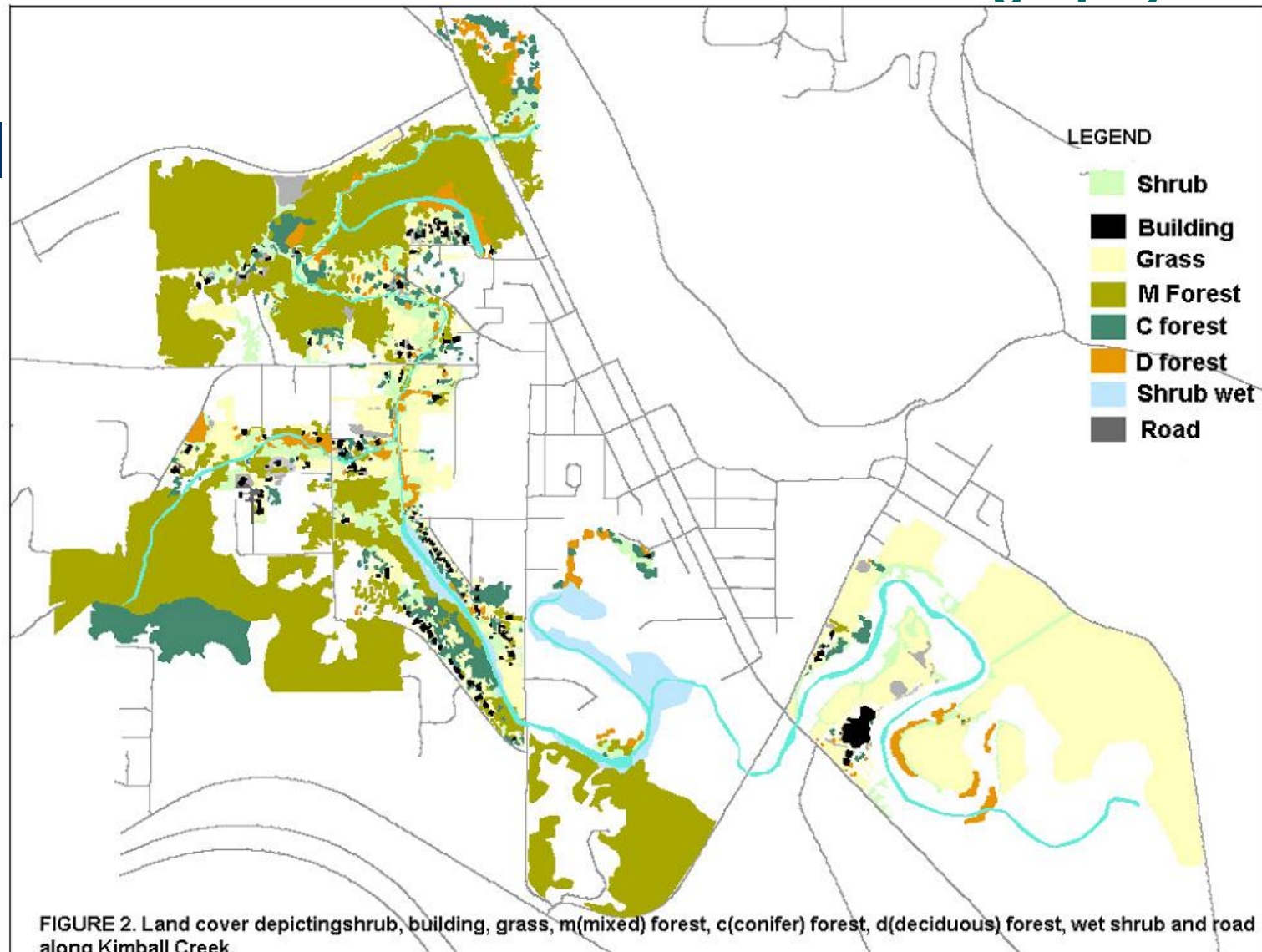
Ecology of the Creek and Landscape

- Level of Function
- Functioning Landscape
- Functioning Riparian area
 - Serves as a buffer for the creek
 - Shading
 - Width
 - Native versus exotic plants and animals
- Functioning Active channel

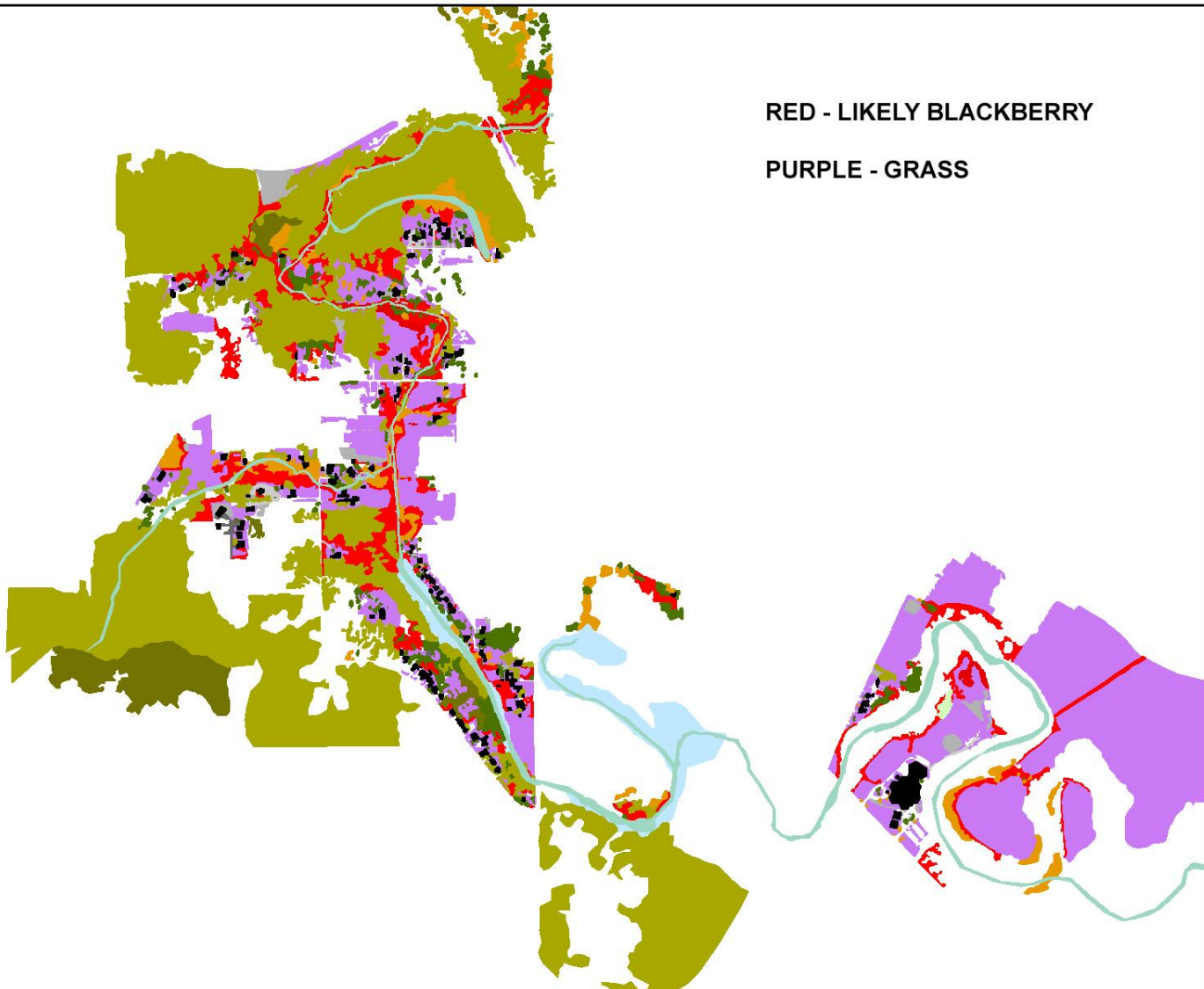
Ecology of the Creek and Landscape

- Level of Function
- Functioning Landscape
- Functioning Riparian area
- Functioning Active channel
 - Large Woody Debris (LWD)
 - Clean and Clear
 - Meanders

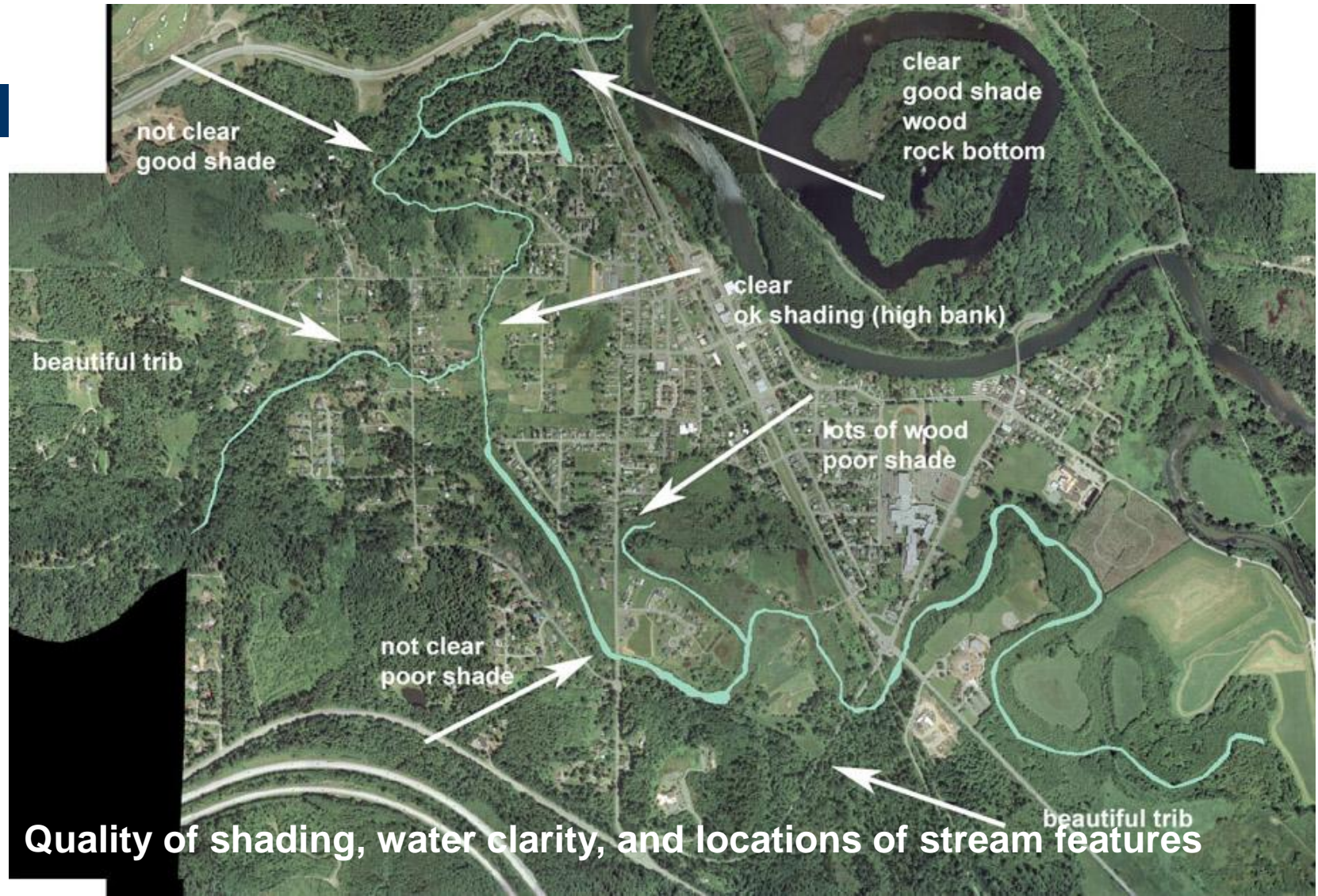
Current Conditions- Aerial Photography / GIS



Current Conditions- Aerial Photography / GIS



Current Conditions – field survey



Suggestions

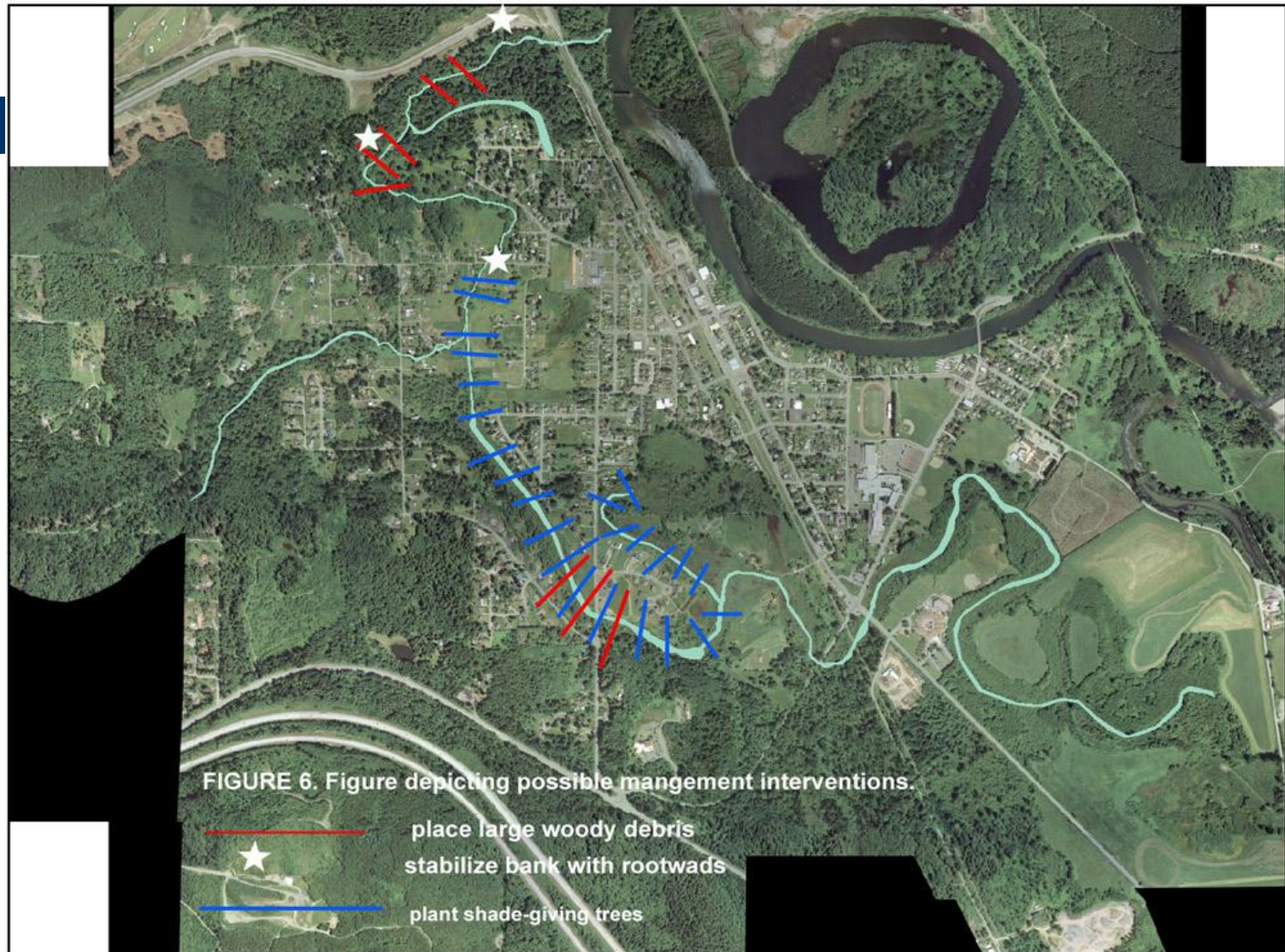
- Increasing Buffer Width
- Adding Wood to Your Creek!
- Pulling Weeds and Planting Natives
- Involving students and young people in restoration projects

Increasing Buffer Width

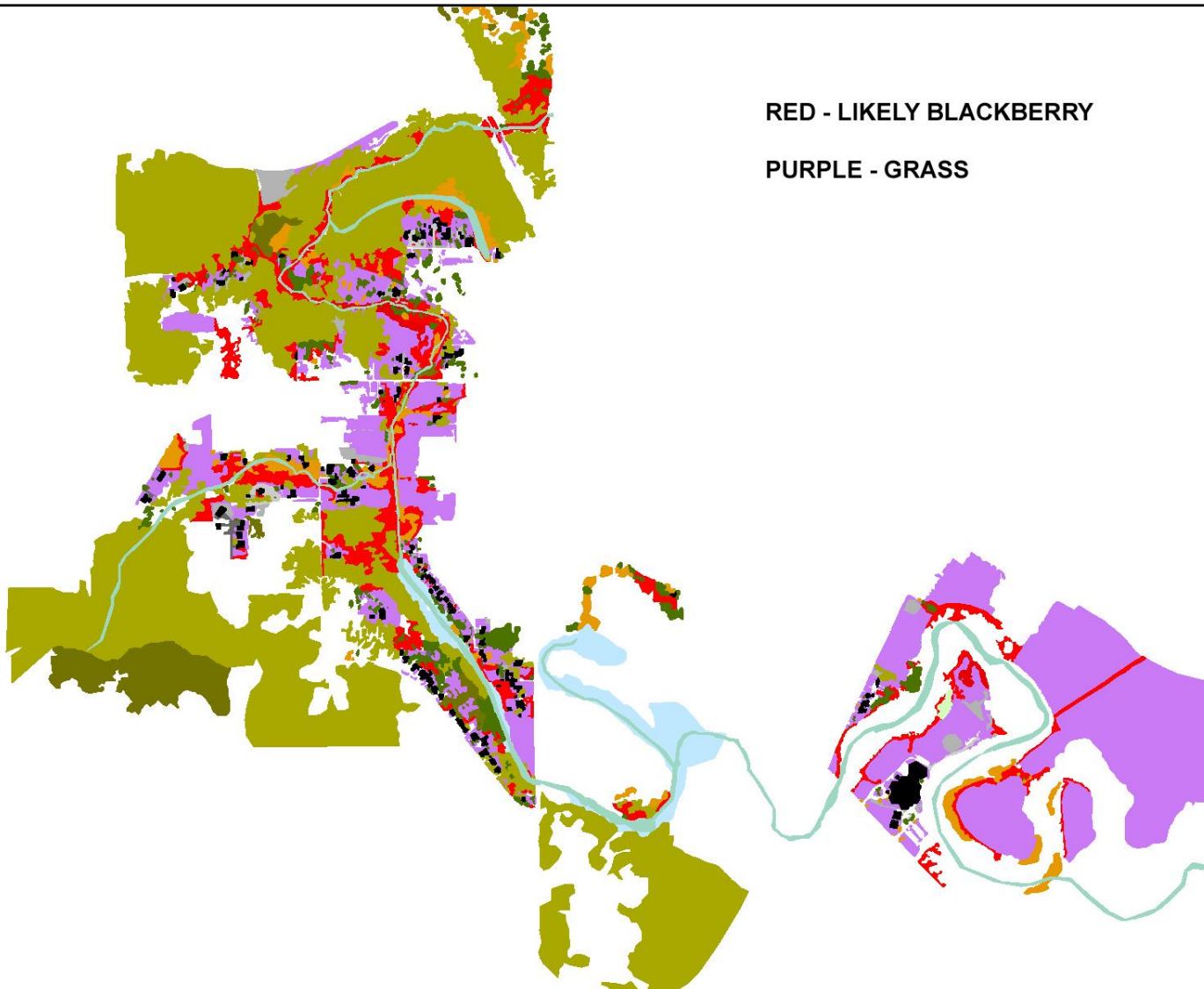


Locations where buffer widening is recommended

Adding Wood to Your Creek!



Pulling Weeds and Planting Natives



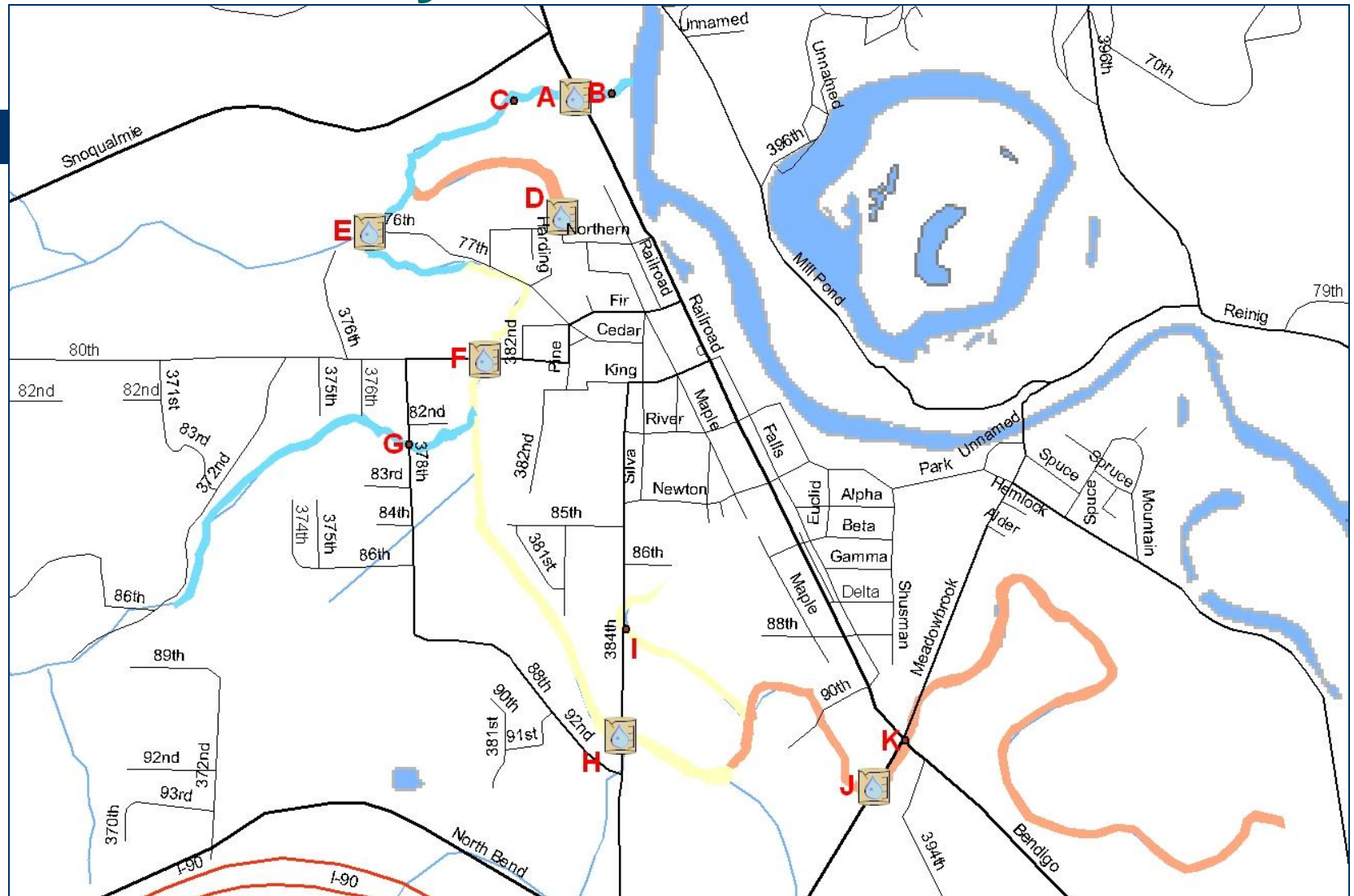
Water Quality



Standards

- Kimball Creek is designated as a Class A (excellent) water body
- Actual water quality found to be below the standards of the WAC at 4 of 6 sampling points.
- Status of Creek not well defined

Water Quality



Water Quality Problems

- Sediment
- Fecal Coliform Bacteria
- Low Dissolved Oxygen

Water Quality Problems

- Sediment
 - Sources not easily defined
 - Monitoring during storm events is needed
 - Community involvement in monitoring:
“adopt a tributary”
- Fecal Coliform Bacteria
- Low Dissolved Oxygen

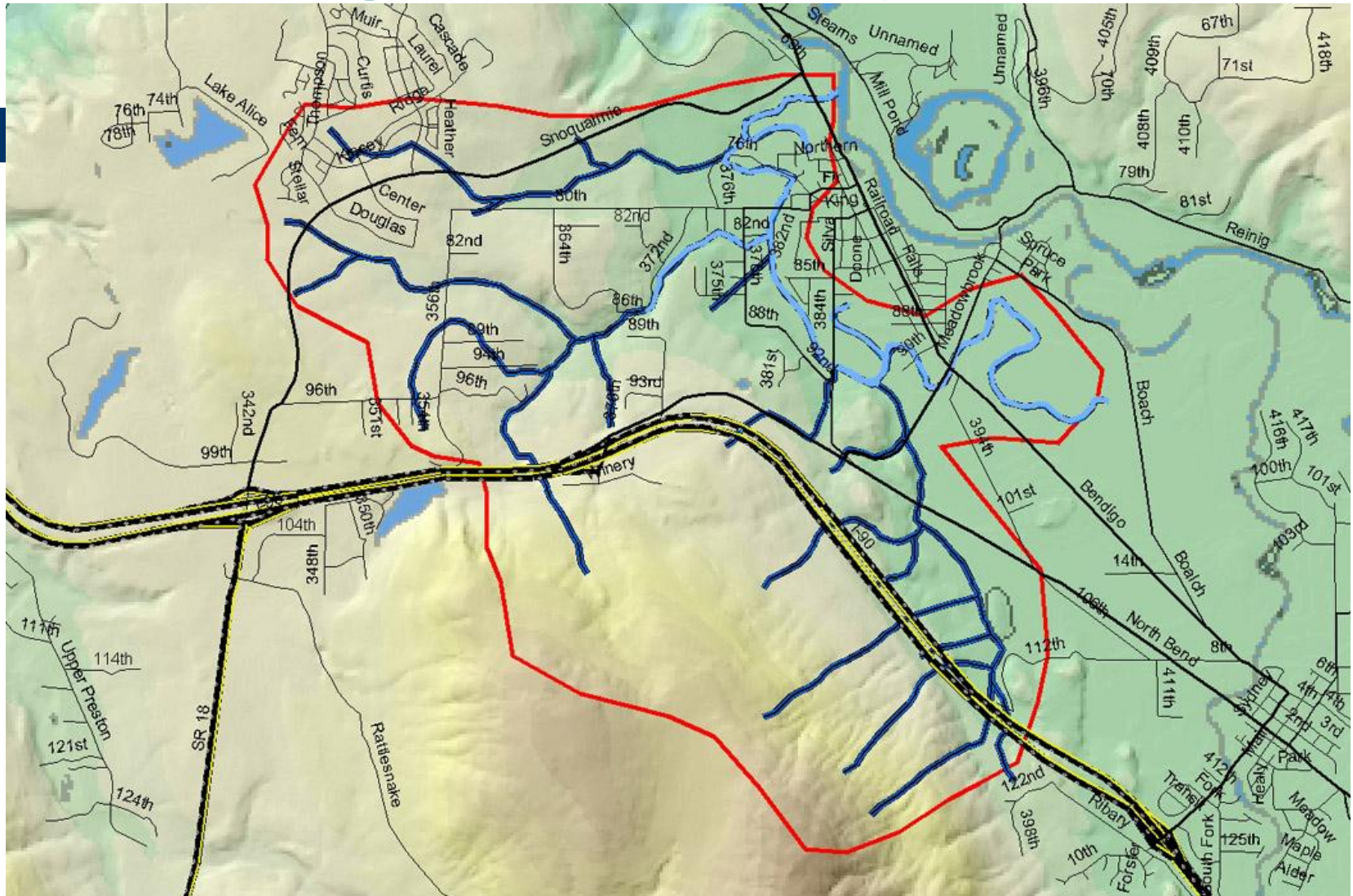
Water Quality Problems

- Sediment
- Fecal Coliform Bacteria
 - Several possible sources
(likely combination of all)
 - Low cost septic dye tests
 - Expansion of sewerage to Williams Addition
 - Stop additional stormwater diversions
- Low Dissolved Oxygen

Water Quality Problems

- Sediment
- Fecal Coliform Bacteria
- Low Dissolved Oxygen
 - Lawns and agricultural lands adjacent to stream
 - Failing septic
 - Stagnant flow in dry seasons
 - Lack of shading and elevated temperatures

Improving Water Quality



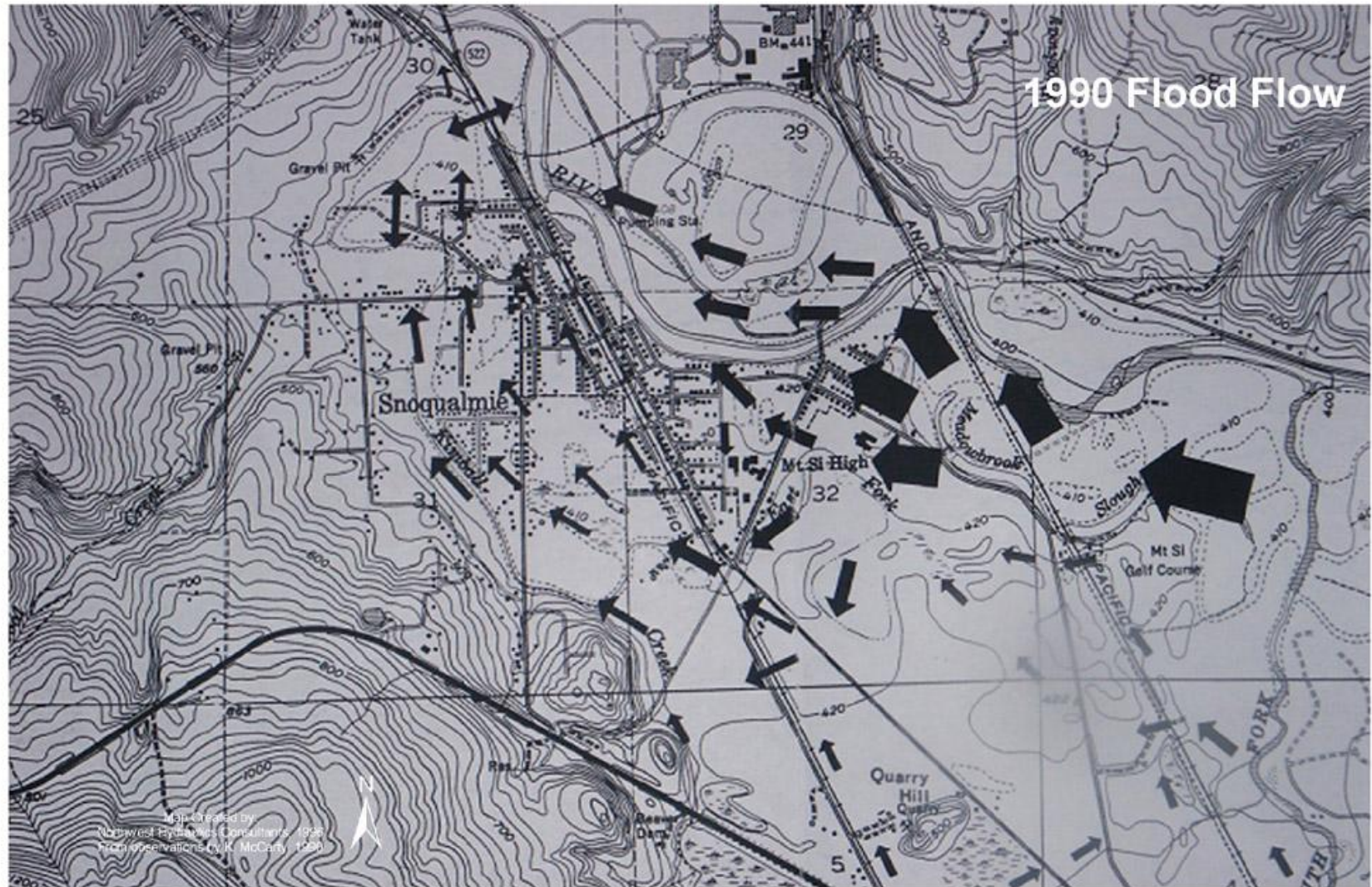
Flood Risk



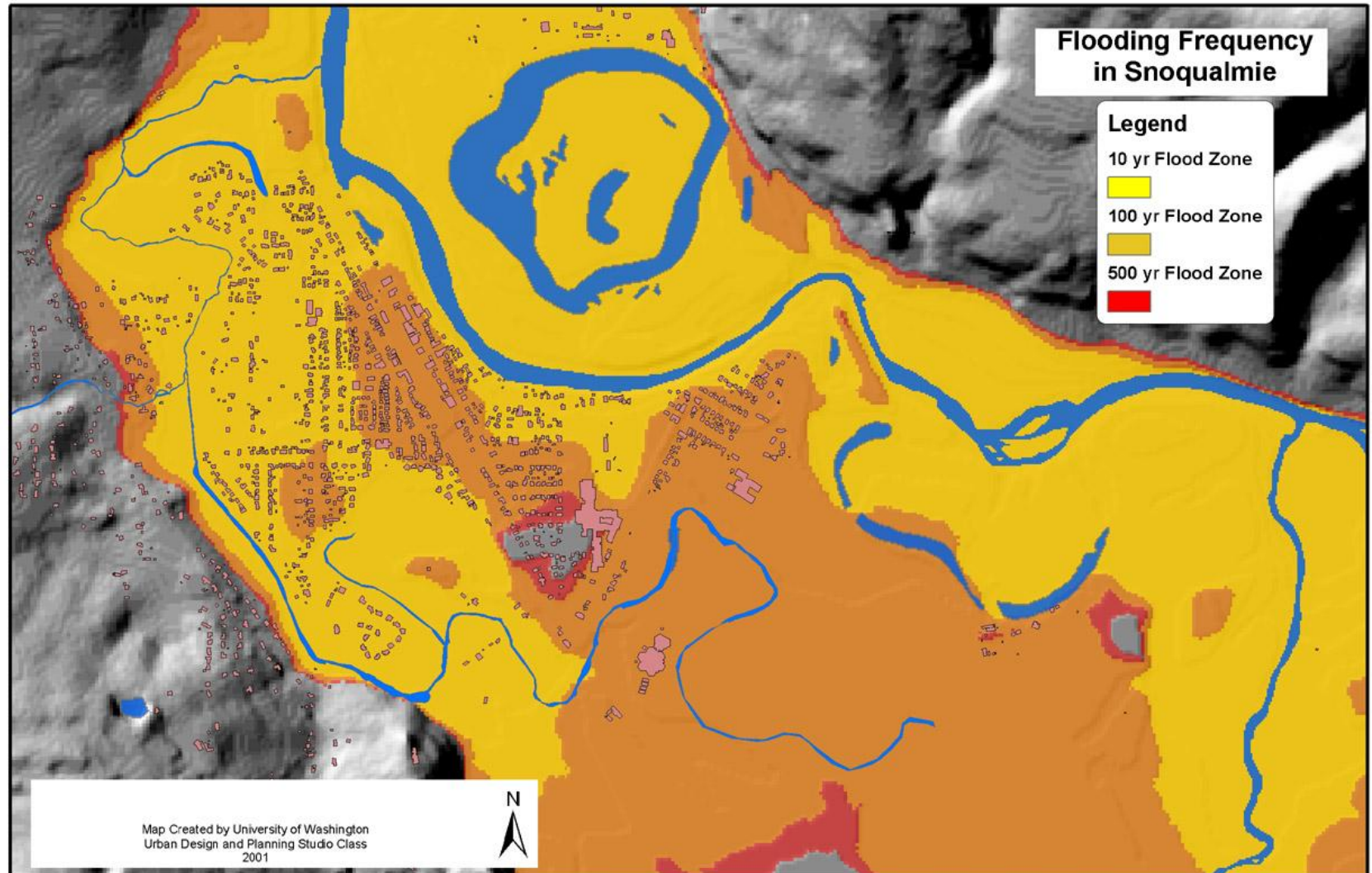
Kimball Creek Flood Character

- Flow patterns
- Vulnerabilities
- Potential effects of current projects

Map of Flood Flow Patterns



The 10, 100, 500 Year Flow Map



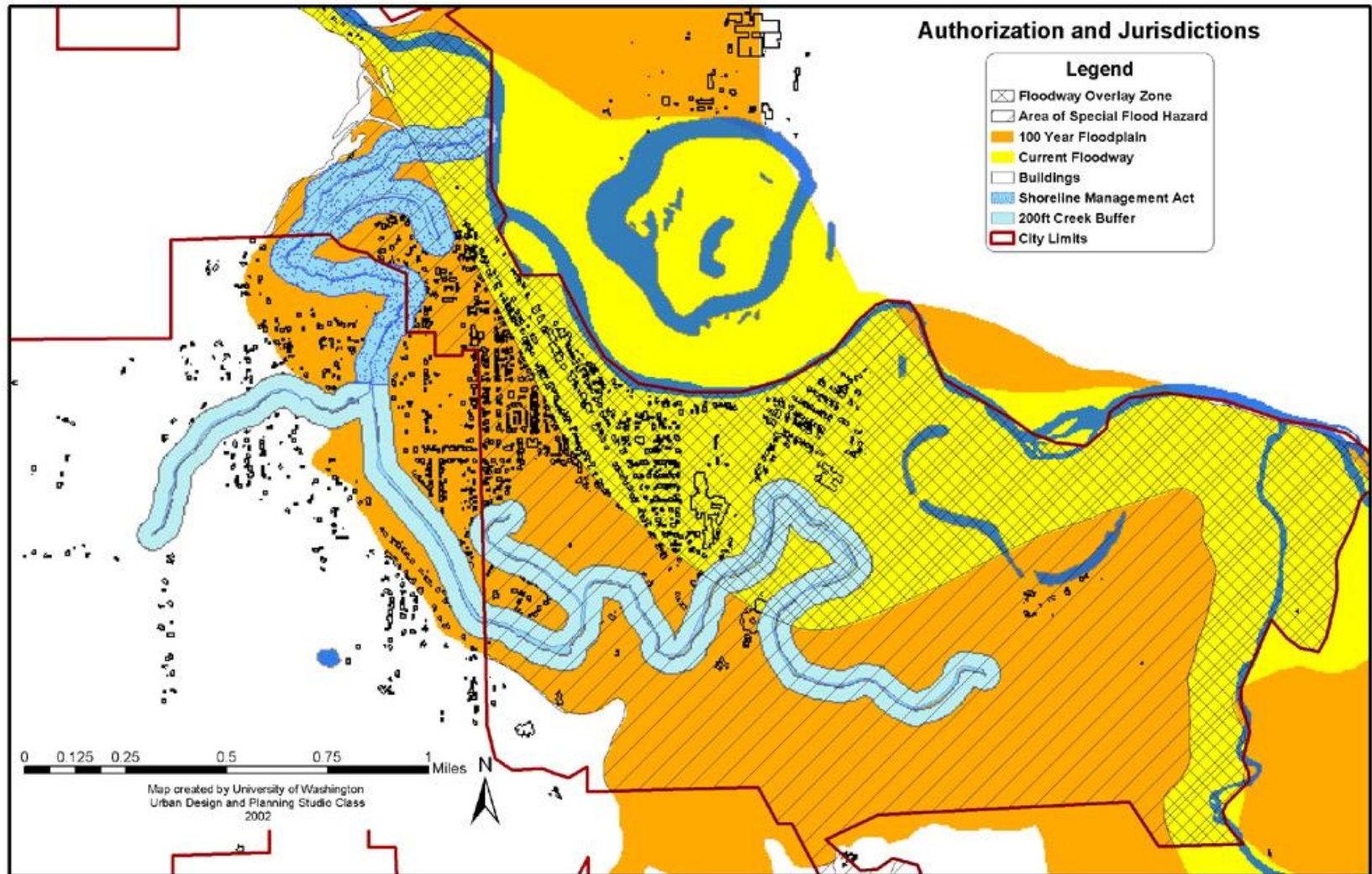
Options: Flood Damage Reduction

- Structural measures and dredging not recommended
 - Expensive
 - Potentially ineffectual
 - Ecologically damaging
 - Future flood levels uncertain

Options: Flood Damage Reduction

- Encourage home elevation
- Encourage public purchase of residences
 - Funds available
 - Public ownership can provide community-wide benefits
- Update first floor elevation database

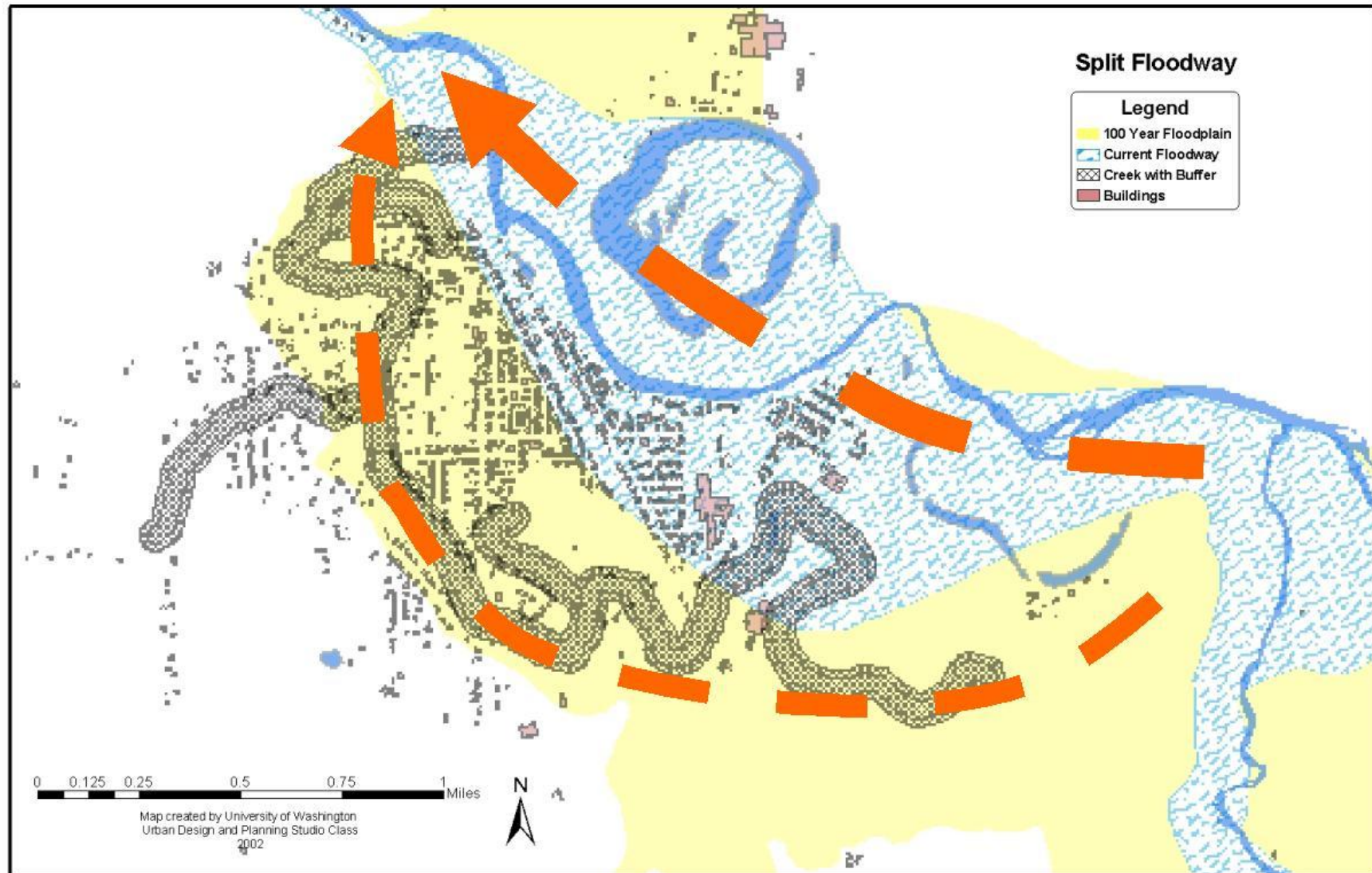
Current Development Code



Current Code

- Much of city core is within the Floodway Overlay Zone
- No new development or substantial improvement allowed
- Hardship for residents

The “Split Floodway” option



Split Floodway

- What is a floodway?
 - Provides conveyance of floodwater
 - Determined by hydrologic modeling
 - Not intended to represent flow patterns

Split Floodway

- Why split the floodway?
 - Removes floodway hardship without substantially affecting Kimball Creek residents
 - Protects city fringe from future development
 - Allows for denser development in the city core
 - More closely represents actual flood flow patterns

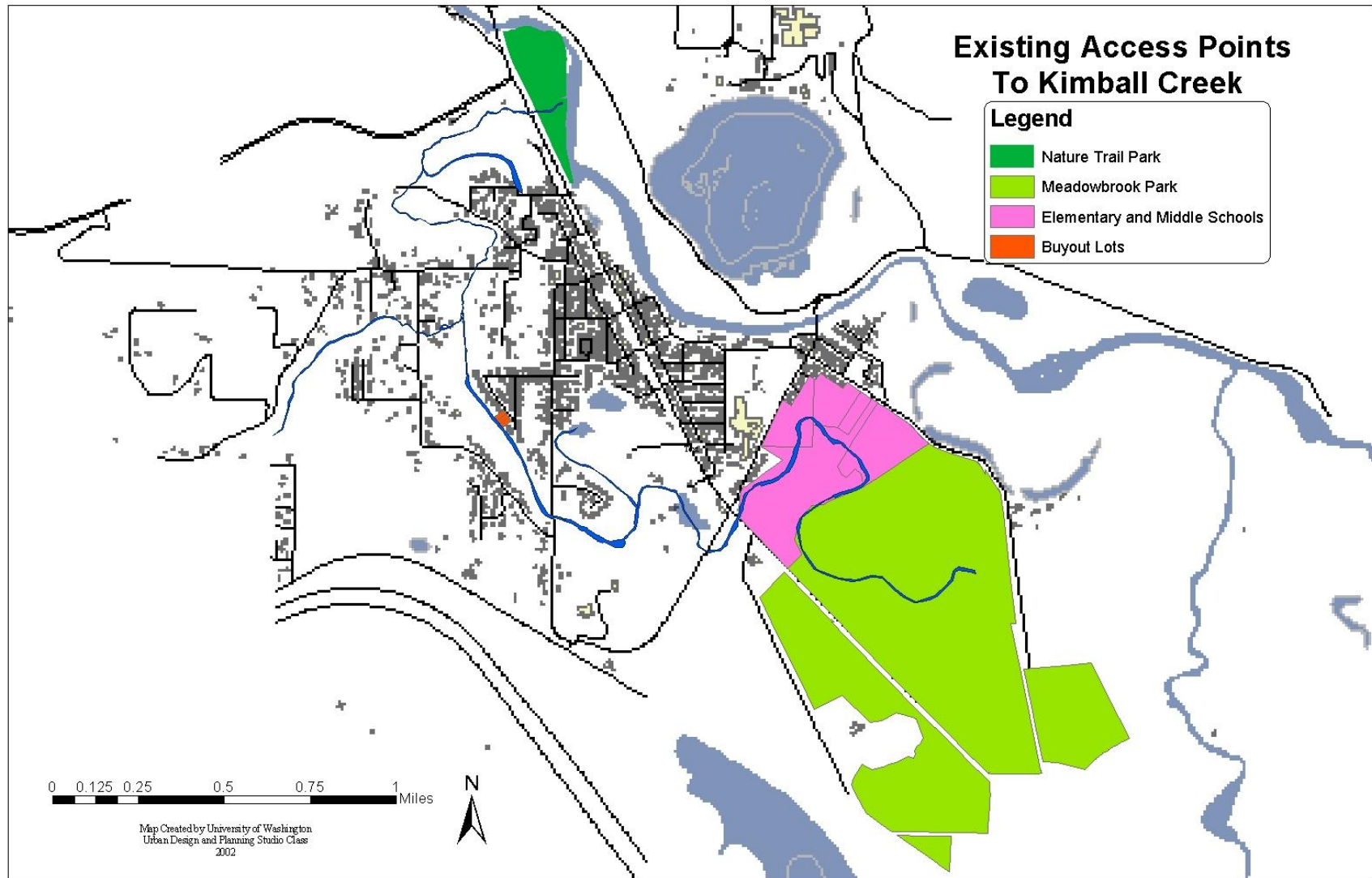
Flood Hazard Reduction Opportunities: Summary

- Encourage home elevation
- Encourage public purchase of flood-prone properties
- Update the first floor elevation database
- Consider a split floodway

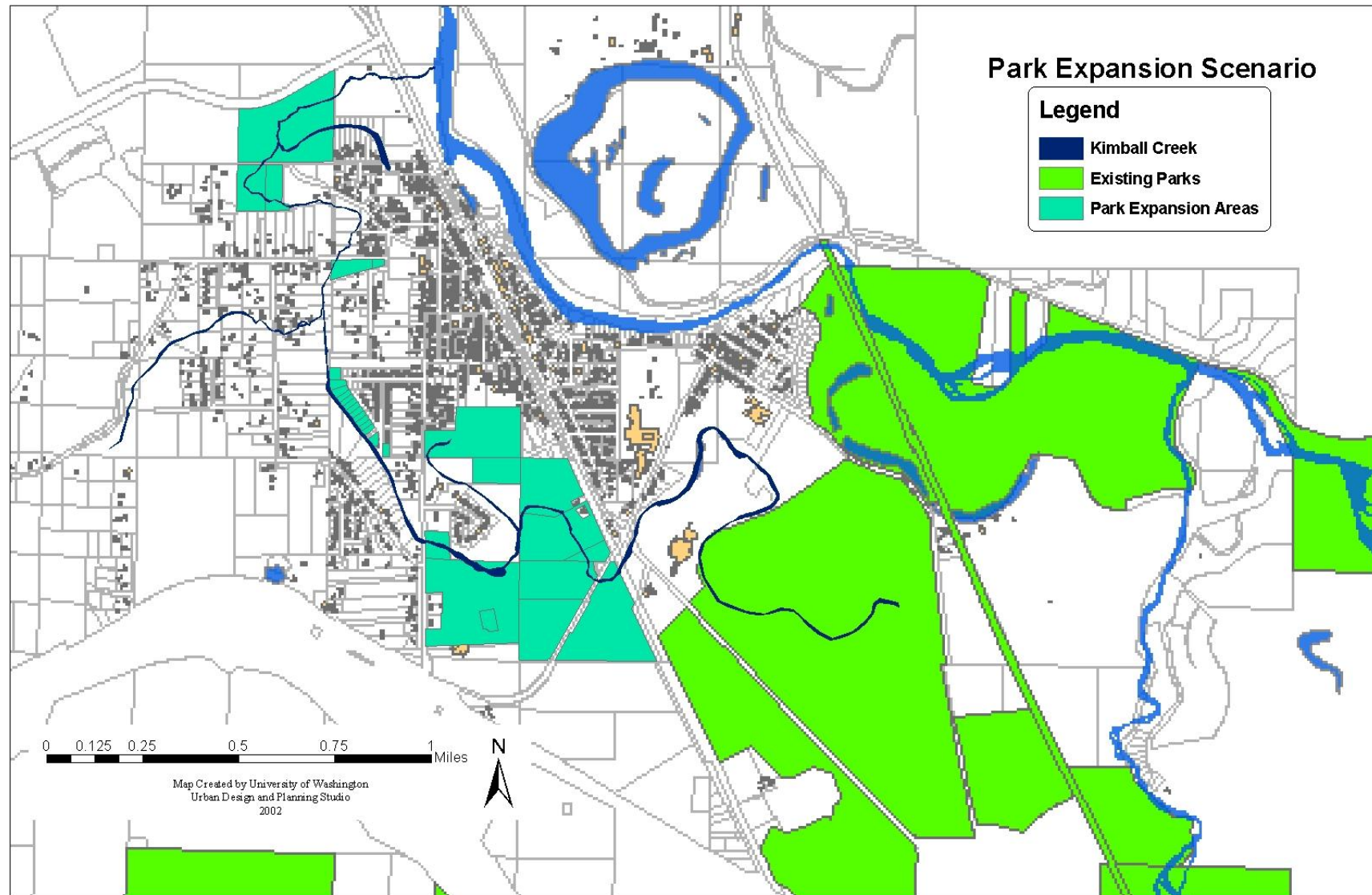
The Community Uses of Kimball Creek



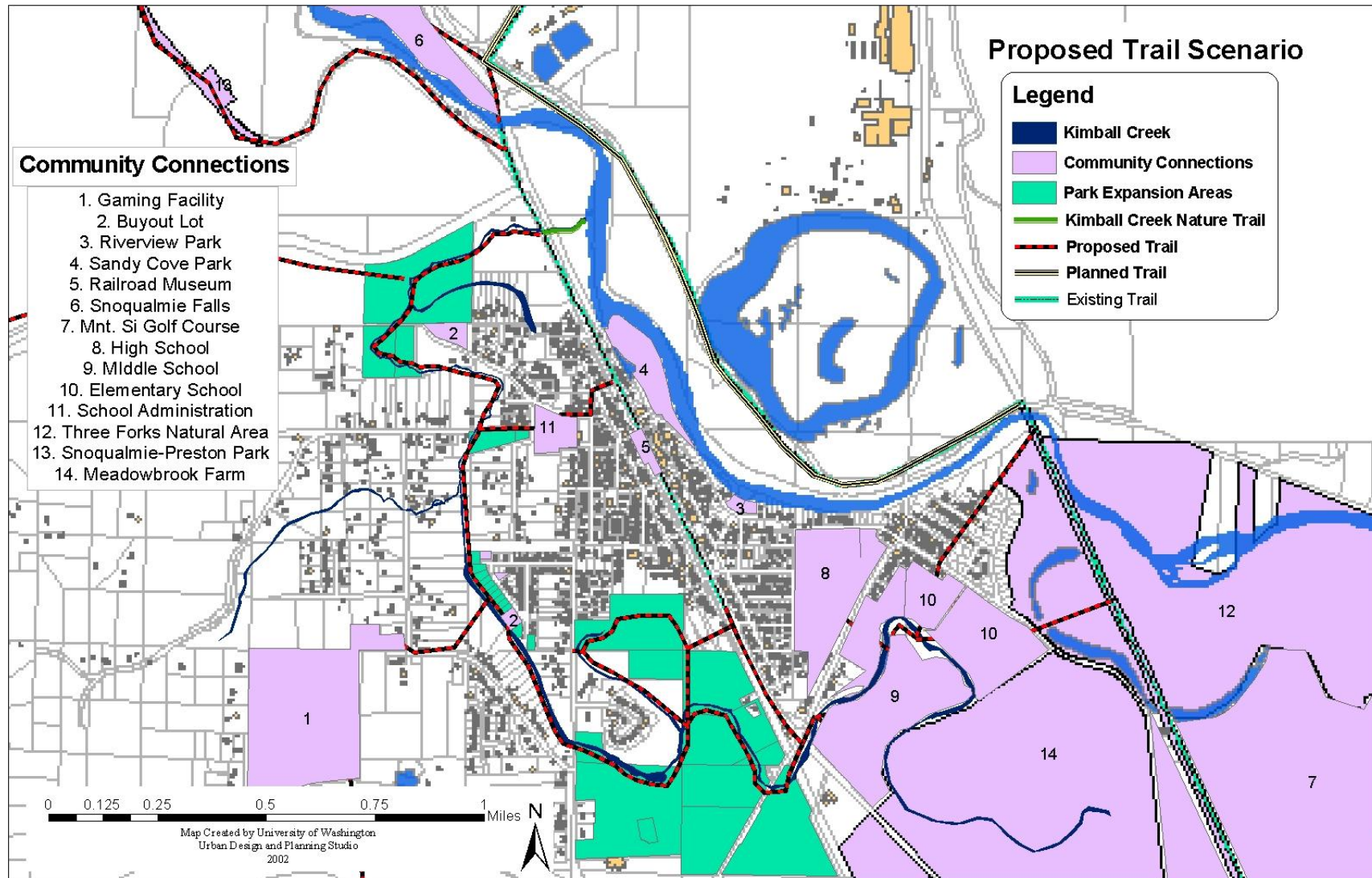
Potential Community Uses



Potential Community Uses



Potential Community Uses



Recommendations



Visions for Kimball Creek

- A healthy, diverse ecosystem (habitat, species richness, C³)
- Community involvement efforts (restoration, education)
- Accessible, integrated unit of the Snoqualmie community (recreation, trail system)

Suggested Approaches

- Restore creek and improve habitat
- Buy out strategic lots
- Create a split floodway
- Increase human use and community involvement

I. Restore creek and improve habitat

Potential habitat improvement strategies

- *Address contamination issues*
- *Improve storm water management*
- *Consider specific restoration projects*



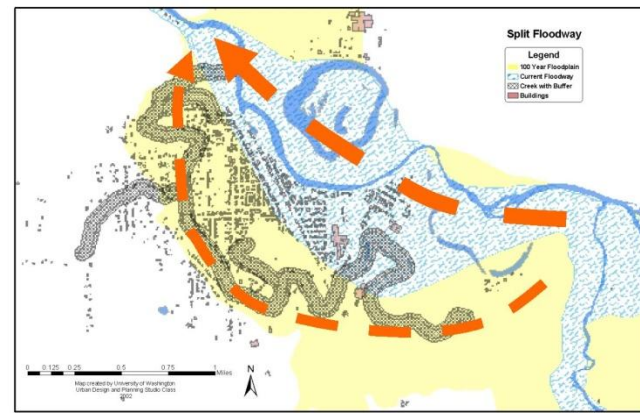
II. Buy out strategic lots

Potential buyout criteria

- *Parcels bordering the creek.*
- *Parcels adjacent to existing buyouts.*
- *Parcels served by septic systems.*



III. Create a split floodway



The split floodway would:

- *Permanently preserve very low-density development on the fringes of the City of Snoqualmie, and disallow any new building in that area.*
- *Allow for improved public access to the recreational and educational resource of Kimball Creek as development patterns change to create new open space in the corridor.*
- *Give greater control of the ecological health of the stream. The split floodway supports the FEMA buyout option described above, strengthening the argument for public ownership of lots in the corridor.*
- *Reinforce establishment of Kimball Creek Corridor.*

IV. Increase human use and community involvement



1. Visioning Process and Stakeholders Committee

2. Suggested Activities for Human Use

- *Educational Opportunity.* The creek provides a powerful educational opportunity for those who live near or visit the creek.
- *Public Amenities.* Create more public amenities such as signage, park furniture, landscaping and adequate parking at existing publicly owned lands.
- *Strategic Acquisition.* Identify lots that through future buyouts could expand and enhance existing publicly owned lands.
- *Trail System.* Use the creek corridor as the basis for an extensive trail system connecting the city together.

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